Occupational risks, health needs and victim identification of trafficked fishermen in the Greater Mekong Subregion (GMS)

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I, Nicola Suyin Pocock, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis. This thesis was supervised by Dr. Cathy Zimmerman, Dr. Ligia Kiss and Dr. Heidi Stöckl (London School of Hygiene and Tropical Medicine). The advisory committee for this thesis included Dr. Siân Oram (Kings College London) and Dr. Fiona Adamson (School of Oriental and African Studies).

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ABSTRACT

Background

Commercial fishing at sea is among the world's most dangerous occupations. With 24-hour cycles of physically demanding work, adequate rest and recovery are often elusive in deep-sea commercial fishing. Human trafficking in the fishing industry has been identified as a problem in the Greater Mekong Subregion (GMS), with reports documenting 18-24 hour work days and severe violence. As a largely unregulated sector with activities conducted in international waters far from shore and outside of national jurisdiction, the commercial fishing industry poses unique risks to workers' health, safety and well-being. Yet, research on the health needs of trafficked fishermen is sparse. Moreover, extraordinarily little research exists on policy responses to this problem. This thesis aims to investigate the health needs of trafficked fishermen, and understand how victim identification and assistance are being conducted in Thailand, a key transit and destination country for fishing trafficking.

Methods

The thesis comprises four studies: i) a systematic review of the literature on occupational health among GMS migrant and trafficked fishermen and other seafarers; ii) a quantitative exploration of factors associated with work-related injuries and violence among labour-trafficked men that used post-trafficking services in the GMS; iii) a mixed methods study examining the health needs of trafficked fishermen and health service provision; and iv) a qualitative study examining how potentially trafficked fishermen are identified and assisted by frontline responders to trafficking in Thailand.

Results

The systematic review found limited research on occupational hazards faced by migrant and trafficked fishermen and seafarers. Findings from quantitative analysis of a cohort of labour-trafficked males from different sectors indicated that work-related injuries were associated with severe violence and being trafficked for fishing. Ever having experienced violence was associated with being in the fishing sector and fluency in the language of the destination country. Having documents did not appear

to be protective against injuries or violence. The mixed methods study found that dizzy spells and exhaustion were common among trafficked fishermen. There were strong associations between physical health symptoms and severe violence, injuries, or detention by immigration authorities. Trafficked fishermen are perceived by boat captains to be disposable when injured or sick. While health can be a means to reach trafficked men, health and welfare providers faced challenges including language barriers and negotiating payment for services for uninsured fishermen and accident compensation with employers. The qualitative study found that frontline responders perceived trafficking to take place outside of Thai waters and that migrant brokers caused employers to inadvertently traffick men. Confusion about whether debt bondage or withholding of documents counted as trafficking indicators may be linked to ambiguous inclusion of these indicators in policy documents. Institutional constraints included limited staff with increased remits and interpreter shortages.

Conclusion

There is evidence that trafficked fishermen face more extreme occupational hazards and abuse compared to men trafficked into other sectors, with a high burden of physical and mental ill-health experienced. Promising strategies employed by health and welfare providers to reach men highlight the importance of targeted outreach. Beliefs about the locus of the problem and institutional constraints among frontline responders indicate that further training on trafficking indicators, as well as institutional change, is needed to improve victim identification and assistance.

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ABBREVIATIONS

ACTIP	ASEAN Convention Against Trafficking in Persons, Especially Women and Children
ASEAN	Association of Southeast Asian Nations
AVRR	Assisted Voluntary Return and Reintegration
CCCIF	Command Centre for Combatting Illegal Fishing
COMMIT	Coordinated Mekong Ministerial Initiative against Trafficking
DAG	Directed Acyclic Graph
DLPW	Department of Labour Protection and Welfare
DOE	Department of Employment
DOF	Department of Fisheries
DSI	Department of Special Investigation
DSM	Diagnostic and Statistical Manual of Mental Disorders
EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organization
FOC	Flag of Convenience
GMS	Greater Mekong Subregion
HICS	Health Insurance Card Scheme
HSP	Health Services Provider
IDC	Immigration Detention Centre
ILO	International Labour Organization
IOM	International Organization for Migration

IMO	International Maritime Organization
IPSR	Institute of Population and Social Research, Mahidol University
IUU	Illegal, Unreported and Unregulated fishing
LSHTM	London School of Hygiene and Tropical Medicine
MD	Marine Department
MDT	Multi-Disciplinary Team
MLC	Maritime Labour Convention
MOPH	Ministry of Public Health Thailand
MP	Marine Police
MSDHS	Ministry of Social Development and Human Security
NCPO	National Council for Peace and Order
NFAT	National Fisheries Association of Thailand
NGO	Non-Governmental Organization
NV	Nationality Verification
OSH	Occupational Safety and Health
OSSC	One Stop Service Centre
PIPO	Port In Port Out
PPE	Personal Protective Equipment
PTSD	Post-Traumatic Stress Disorder
PTSP	Post-Trafficking Service Provider
PVIP	Preliminary Victim Identification Process
RAI	Research Assistant Interpreter

RTP	Royal Thai Police
SAH	Self-Assessed Health
SCID	Structured Clinical Interview for the DSM (see above)
SEAFDEC	Southeast Asian Fisheries Development Centre
STEAM	Study on Trafficking, Exploitation and Abuse in the Mekong
TIP	Trafficking in Persons
TOFA	Thailand Overseas Fisheries Association
UCS	Universal Coverage Scheme
UN	United Nations
UNACT	United Nations Action for Cooperation against Trafficking in Persons
UNCLOS	United Nations Convention on Law of the Seas
UNIAP	United Nations Inter-Agency Project on Human Trafficking
VMS	Vessel Monitoring System
VOT	Victim of Trafficking
WIF	Work in Fishing Convention

1   BACKGROUND

While trafficking and forced labour are receiving increased attention in academic literature, there is an acute lack of research on trafficked men. This thesis seeks to describe the health needs of trafficked fishermen, and to understand how victim identification and assistance is conducted with potentially trafficked fishermen in Thailand. Section 1.1. in this Chapter will introduce the problem of human trafficking in the fishing industry. Section 1.2 outlines legislative and policy responses to trafficking in the fishing sector, at the international level and in Thailand. Section 1.3 introduces the aim and objectives of this thesis.

1.1   Trafficking and forced labour in fishing

Human trafficking is a crime of extreme exploitation that affects men, women and children globally. Estimates from the International Labour Organization (ILO) suggest that there were 18.7 million forced labourers in the private sector in 2012, including 4.5 million victims of sexual exploitation and 14.2 million forced labourers in sectors including agriculture, construction, domestic work and manufacturing (1). Men comprised 60% of total forced labour in the private sector and the Asia-Pacific region alone was home to an estimated 11.7 million forced labourers in the private sector (1). In Asia-Pacific, there is rapidly growing recognition of the sectors in which migrant men and boys are exploited, including the long-haul fishing industry (2–7). Recent media and investigative reports have graphically depicted abuses and slave-like treatment of men and boys recruited onto fishing vessels (8,9). Trafficking for fishing is characterized by deceptive recruitment, working 18-20 hours a day with limited rest, physical violence by superiors, threats and financial coercion/debt bondage, with some men witnessing murder and unlawful disposal of corpses into open seas (2,10). Human trafficking usually dovetails with Illegal, Unreported and Unregulated (IUU) fishing, which globally is estimated to account for 11-26 million tonnes of illegally caught fish each year, worth between $10 billion and $23.5 billion (11). IUU fishing is connected with environmental degradation and unsustainable fishing practices which severely damage marine ecosystems (11).

Thailand, which is the world's fourth biggest exporter of fish products after China, Norway and Vietnam (12), has faced intense scrutiny from Western countries following allegations of trafficking in the fishing sector. Threatened with trade sanctions and bans on seafood imports by the US and EU (13,14), the Thai government has implemented reforms including labour inspections and vessel monitoring aimed at addressing trafficking and IUU fishing (15,16). A growing slavery free supply chains movement has emerged, pressuring major seafood buyers to audit their supply chains for forced labour. Against this backdrop, it is increasingly important for a wide range of stakeholders to understand the health and well-being of trafficked fishermen.

Thailand hosts an estimated 4-5 million migrants, mainly from neighbouring countries Cambodia, Laos and Myanmar (CLM), of whom 1-2.5 million are estimated to be irregular migrants working in the informal economy (17). Irregular migrants are those working without work permits or visas, some of whom do not have identity documents from their home country. According to the Ministry of Interior, there were 3.5 million migrants in 2013, with the majority from Myanmar (71.6%) followed by Cambodia (16.9%) and Laos (11.5%) (18). While some Thais continue to work in the fishing sector, the majority are migrants from Myanmar and Cambodia.

1.1.1 Capture fisheries and fishing labour in Thailand

Within the fishing sector, the sub-sector of concern to this study is commercial marine capture fishing. Capture fishing is "an economic activity to catch or collect aquatic organisms which grow naturally in public waters and which do not belong to the property of any person" (19). Capture fishing can be either small-scale (i.e. subsistence, artisanal or traditional) or commercial. There is no common definition of these categories in Southeast Asia - countries have their own definitions (19). Usually, commercial marine fishing involves larger boats which have the capacity to fish offshore for several days, compared to smaller boats used for subsistence fishing (20).

Fisheries and aquaculture production combined generated an estimated $US 6.6 billion in exports in 2014 (12), with the economic contribution at 2.3% of GDP that year

(21), Major importers of Thai seafood products in 2013 included the USA (22.8%) and Japan (20.4%) (22).

Thailand ranks 13th globally for marine capture production specifically, producing 1.49 million tons of seafood in 2015 (Figure 1.1) (23). Figure 1.1 shows the decline in marine capture production in Thailand in recent years,[a] which may be attributable to declining fish stocks, challenges in recruiting crew and higher fuel costs (24). Overfishing in the Gulf of Thailand and Andaman sea, alongside poor fisheries management has pushed commercial operators further out to sea (25), where vessels spend longer periods for lower catch returns (24). With profitability of commercial marine capture fishing becoming elusive due to rising fuel costs and depleting global fish stocks, coupled with persistent difficulties in recruiting crew that have plagued Thai firms, trafficking men and boys into commercial fishing may ensure that production costs remain low. Commercial operators are increasingly seeking higher catch returns outside of Thailand's Exclusive Economic Zone (EEZ),[b] with an estimated 40% of recorded total marine catch caught outside of Thai waters (26). However, Illegal Unreported and Unregulated (IUU) fishing, particularly outside Thailand's EEZ, is a longstanding problem. Between 1950 – 2010, reported catch from outside of Thailand's EEZ totalled an estimated 30 million metric tonnes, compared to an estimated 147 million metric tonnes that went unreported (27). IUU fishing is usually conducted in violation of national laws or internationally agreed conservation or management regulations in oceans, and can include fishing without a license, use of prohibited fishing gear, failing to report catches and keeping fish that are otherwise protected by regulations (28).

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[a] Marine production statistics represent catches and landings of marine and brackishwater species of aquatic organisms, killed, caught, trapped or collected for all commercial, industrial, and subsistence purposes. This excludes catches from sports fishing, recreation and research (19).

[b] An Exclusive Economic Zone (EEZ) is an area up to 200 nautical miles (370km) from the shoreline, whereby the coastal State assumes jurisdiction over the exploration and exploitation of marine resources (413).

Figure 1.1: Thailand marine capture fishing production, 2010-2015
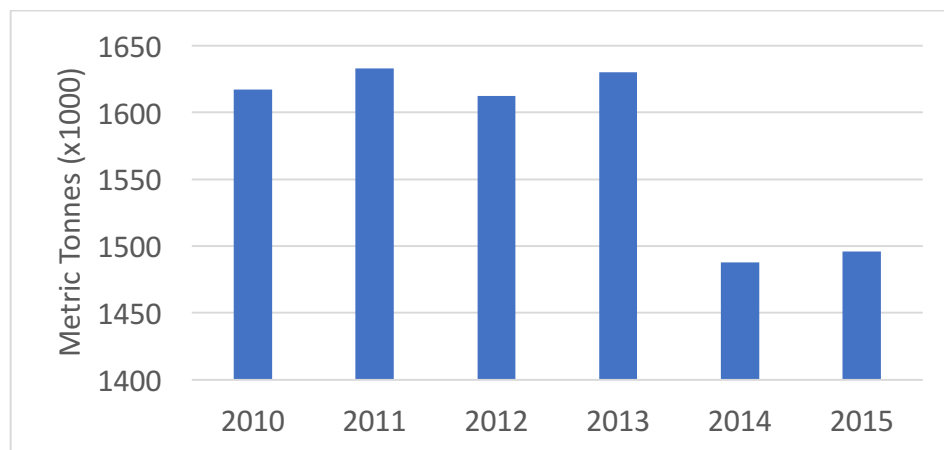
Sources: 2010-13: SEAFDEC Fishery Statistical Bulletin (19), p.21

2014-15: FAO Global Capture database updated to 2015 (23), p.2

Globally there has been a steady decline in fishing employees engaged in capture fishing relative to aquaculture in recent years (29), which may be related to declining fish stocks and technological advances in aquaculture production. While marine capture production fell by 24% and inland seafood production fell by 1.5% between 2003-2014 (12), aquaculture production (mainly shrimp farming) has increased significantly in Thailand (21). Seafood processing of capture fisheries and aquaculture production, notably of shrimp, is of growing importance to the Thai economy (12). Besides trafficking in marine capture fishing, investigative reports show that fishmeal used in aquaculture is produced from trash fish[c] and other low value fish caught using forced labour (3). Instances of forced labour have also been documented in seafood processing (30).

Major fishing ports by quantity and value of catch are located in Samut Sakhon, Songkhla, Pattani, Nakhon Si Thammarat and Trat (26). In Samut Sakhon alone, there are an estimated 160-200,000 labour migrants, mostly working in seafood processing and marine capture fishing (30). There are no definitive numbers of fishermen in Thailand (19). A survey among members of the National Fisheries Association of Thailand (NFAT) estimated 142,845 fishers on 9,523 boats in 2012 (31). This figure

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[c] Trash fish are low-value marine products (usually smaller species or baby fishes) used for animal feed, not suited for human consumption (3).

reflects both registered and unregistered migrants working in the sector, but is likely a lower end estimate as not all vessel owners are registered with fishing associations (31).

In Thailand, fishing labour shortages were estimated at 50,000 in 2012 (31). High demand and insufficient labour supply mean that it is relatively easy for migrants to find work in the industry. Employers rely on and prefer inexpensive migrant labourers. In a study by Pearson (2006), for example, 50% of fishing sector employers believed migrants worked harder than Thais and were easier to control, and 75% believed the Thai government should permit more migrants come and work legally (32). Yet migrant workers are shunning work in the fishing sector because of low pay, harsh working conditions and growing awareness of trafficking and forced labour. Labour shortages are a key factor leading to deceptive and coercive recruitment and labour practices including forced labour and trafficking (31).

1.1.2 Defining trafficked or forced fishermen

The United Nations Protocol to Prevent, Suppress and Punish Trafficking in Persons, which came into force in 2003, defines human trafficking to involve:

a) Recruitment, transportation, transfer, harbouring or receipt of persons;

b) Using the threat or use of force, coercion, abduction, fraud, deception, abuse of power, vulnerability, or giving payments or benefits to a person in control of the victim;

c) For the purpose of exploitation, including for the purpose of prostitution of others, sexual exploitation, forced labour, slavery or similar practices and the removal of organs (33).

The term "human trafficking" sometimes appears interchangeably with other terms such as modern day slavery, unfree labour, bonded or forced labour (5), with the International Labour Organization's (ILO) Forced Labour definition being the most widely operationalized measure in victim screening tools (5). According to the ILO's Forced Labour Convention which came into force in 1932, forced labour involves:

"All work or service which is exacted from any person under the threat of a penalty and for which the person has not offered himself or herself voluntarily." (34)

The Forced Labour Protocol (2014) further clarifies that menace or threat of penalty refers to a wide range of penalties used to compel someone to work (35). These include coercion, non-payment of wages or debt bondage, which is defined as a situation where a debt cannot be paid off in a reasonable timeframe which workers are forced to accept (36). People in debt bondage often end up working for no wages, or wages below the minimum, to repay the debts contracted or advances received, even when the value of the work they carry out exceeds the amount of their debts (36). Voluntariness refers to the free and informed consent of a worker to take a job, and their freedom to leave at any time (35).

The definitions of "human trafficking", "forced labour" and related terms have been subject to contentious debate (37), with questions remaining about precise indicators of what defines various cases of trafficking. Criticisms of the UN protocol on human trafficking include the absence of mandatory protections and lack of guidance on the victim identification process (38) and poor guidance on the health sector response. As Oram et al. (2011) assert, human trafficking often involves extreme violence and various physical, sexual and mental health consequences, but the health dimension of trafficking is lacking in the UN definition as well as in the ILO's forced labour definition. Consequently, the concept of harm is not integrated in policies addressing human trafficking or forced labour (39).

It is beyond the scope of this thesis to explore debates surrounding the definitions of trafficking or forced labour. Additionally, there are no definitive estimates on the prevalence of forced labour and/or trafficking in the commercial fishing sector. While there are probably many men working in commercial fishing who are not working under forced labour conditions, this study focusses on those who are considered forced or "trafficked". Therefore, this thesis refers to "trafficked fishermen" where their situation is described by the definition in the UN Trafficking in Persons (TIP) Protocol and/or the ILO Forced Labour Protocol.

That is, men and boys who are trafficked for commercial fishing will have been moved into or forced to remain, by menace of penalty, in exploitative labour conditions by coercion, deception or force. More specifically, the males who are the focus of quantitative analyses (Papers 1 and 2) in this thesis comprise a cohort of individuals using "post-trafficking services" by an NGO or government service. Trafficked fishermen, for the purposes of this study, includes males aged 10 and above.

I use the term "fisher" in some parts of this thesis, where (for example, in a minority of studies in the systematic review), the sample includes female fishers. While "fisher" and "fisherman" are sometimes used interchangeably, I mainly use the term "fishermen" throughout this thesis, as this term is more widely understood.

1.1.3   Vulnerability and potential risk factors for being trafficked for fishing

In the trafficking literature, vulnerability to being trafficked is associated with several factors beyond income poverty and a lack of employment opportunities at home. For sex-trafficked women and girls, prior sexual abuse (especially during childhood), prior physical and/or emotional abuse, parental neglect, low self-esteem and vulnerability to peer pressure, and a desire to escape personal circumstances, are suggested risk factors for being trafficked (40–42). Inadequate knowledge about safe migration routes and awareness of trafficking are other suggested risk factors (43). However, there has been no rigorous research evaluating vulnerability to trafficking, or whether commonly implemented interventions including pre-departure awareness training, reduces the risk of being trafficked (43).

With few livelihood opportunities at home, recruitment into fishing appears to be a negative choice for most migrants, as fishing is renowned as a dangerous, difficult job (44). Elsewhere, some trafficked fishermen reported perceiving that fishing was an easy occupation, because it didn't require special training or expertise and was based on strength and durability (10). Finding fishing work via asking friends and family, as well as asking experienced fishermen about employment practices, appears to be protective against trafficking (44,45). As UNIAP (2007) reports, trafficked men were not aware of working conditions until speaking with other Cambodian crew members

on passing boats about their boat owner's notoriety for exploitative practices and non-payment of salaries (46). Being unable to find out about long-haul boat working conditions and "good" employers in advance may be one factor associated with the high prevalence of trafficking on long-haul boats (2).

This thesis focuses specifically on men and boys from the Greater Mekong Subregion (GMS) (Cambodia, Laos, Myanmar, Thailand, Vietnam, China's Yunnan province) trafficked for commercial fishing at sea, versus land-based workers in the fishing sector, e.g., shrimp and fish processing industries (30,32). Compared to people trafficked into land-based sectors, trafficked fishermen's heightened mobility across maritime boundaries puts them at potentially greater risk of longer-term and cumulative harm with fewer opportunities for assistance or escape. For example, Pearson et al. (2006) found that 20% of fishermen considered themselves to be forced labourers, compared to 9% in the land-based fish processing industry (32).

Being trafficked for long-haul fishing poses particular risks due to transshipment at sea, whereby large refrigerated vessels or "reefers" collect catch from long-haul boats in exchange for supplies. Compared to short-haul fishing where boats dock daily, weekly or monthly, transshipment allows long-haul fishing vessels to remain at sea for indefinite periods, with few or no visits to shore (47). In the ILO's survey at Thai ports, 25% of long-haul compared to 15% of short-haul fishers experienced forced labour (31). Vulnerable to exploitation and abuse at sea, media reports cite murders, beatings and abusive conditions among trafficked fishers in the GMS (48,49).

The International Organization for Migration's (IOM) Assisted Voluntary Return and Reintegration (AVRR) program has repatriated increasing numbers of Cambodian and Burmese long-haul fishermen, from Indonesia, Malaysia, Thailand and as far afield as Mauritius and South Africa (50,51). Cambodian, Laotian and Burmese men are at risk of trafficking due to lack of livelihood opportunities at home and in the case of Myanmar, political persecution and escaping state forced labour under the previous military government (10). Migrant men are usually promised lucrative work in Thailand only to find themselves on boats bound for Indonesia or further afield.

The demographic profile of men from Cambodia, Laos and Myanmar assisted by IOM Indonesia gives an idea of potential risk factors for being trafficked. Among 1178 fishermen assisted between 2011-15, 75% migrated in search of a better job, 22% had economic problems at home and 96% self-defined as "poor" at the time they were trafficked (10). Most (70%) were migrating to Thailand for the first time, and among those who had previously migrated to Thailand, 32% had worked in fishing before (10). Men who are trafficked usually come from low-income households and are prompted by poverty to migrate. While new migrants to Thailand, especially those without a network of family or friends from whom to seek advice, are susceptible to trafficking (32), men who had prior experience in fishing in Thailand were also trafficked in the IOM sample, suggesting that prior migration experience is not always protective.

Elsewhere, some reports on GMS fishermen suggest that low education levels are a risk factor for trafficking, with many having no formal schooling or primary education only (10). However, Cambodia and Myanmar's education systems are poorly developed and rather than being a risk factor for trafficking, could simply reflect availability of education at home. In NGO reports, 62% of Filipino trafficked fishers had a high school diploma or college education (7), while 87% of Ukrainian trafficked seafarers had specialist seafaring qualifications (52). These countries have better developed education systems. It is therefore unclear whether lower education levels among GMS fishermen puts them at greater risk of trafficking.

1.1.4   Migration and trafficking routes for fishing in Thailand

After being recruited by brokers or agents, often in home villages, men are transported on land to Thailand. Figure 1.2 displays known migration and trafficking routes from Cambodia and Myanmar to the main Thai ports of Samut Sakhon[d], Samut Prakan, Rayong, Chonburi in the East, and Songkhla, Pattani and Surat Thani in the Southwest (2). Please see Appendix 1 for information on trafficking routes.

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[d] Samut Sakhon and Mahachai are used interchangeably in reports – these refer to the same port.

Figure 1.2: Migration and trafficking routes to Thai ports

Source: adapted from Perri (2010) (53)

Once individuals are in port, trafficked fishermen often find themselves on Thai-registered boats bound for Indonesian or Malaysian waters, with some reaching as far ashore as East and Southern Africa (51). Fishermen assisted by IOM Cambodia mainly returned from Indonesia, Malaysia and Thailand, common locations where trafficked men can "jump ship" nearer to shore or escape while at port (4). But men have also been repatriated from Senegal, South Africa, Mauritius, Fiji, Singapore, Taiwan and American Samoa (4).

1.1.5 Experiences of recruitment, retention and payment practices among migrant and trafficked fishermen

Reports by UN agencies and NGOs assisting trafficked fishermen offer some information about recruitment patterns, exploitative conditions and abuses including financial coercion, which are described below.

Deceptive recruitment and financial coercion

Many men and boys trafficked for fishing are deceived into this work. Reports note that while some migrants know they will do fishing work, others discover that they have been "bought" by their employer (44). A common finding across reports on trafficking or working conditions in fishing is that even when migrants are aware of the types of work they will do in advance, deception is rife about the true nature of working conditions, duration of trips at sea and salary in the fishing industry (2,32,44,45).

Trafficking into fishing has been associated with becoming indebted to a recruitment agent for transportation and job placement (7,44) and not having specific information on work type prior to migration (44). However the IOM's (2016) report of trafficked fishermen found that the majority knew and consented to work in fishing initially (86% of GMS, and 98% of Indonesian fishers), but that men were however unaware about the true nature of working conditions and payment terms (10). These men experienced financial coercion including high fees and debt bondage. Among those who were requested to pay recruitment fees, 87% were required to sign debt contracts the day before departure and those who paid fees upfront reported paying large sums (between US$2000-$4000), with 88% of men altogether having their salaries withheld (10). Among the n=101 migrant fishers who were forced labourers in the ILO's (2013) survey, the majority (71%) were forced labourers with financial penalty (could not quit because of debt) rather than for non-financial reasons (e.g. threats of violence, withholding of documents) (31). These findings suggest that financial coercion is enough to keep men trapped in trafficking-like work situations.

Documentation

Being unregistered and undocumented leaves many migrants vulnerable to being recruited or trafficked onto fishing boats. Not having identification documents or legal permission to work does not prevent boat owners from hiring workers (2,44). Such work may even by preferred by migrants initially - as one interviewee in Brennan's (2009) report noted, "working on boats you are safe from arrest. If you are on land, going around, you risk arrest" (p.7) (44). Concerns about the cost of documents and

evading arrest were key factors for trafficked foreign fishers to Indonesia to choose work in long-haul fishing (10). Being less open to scrutiny, the chance of being discovered as illegal and possibly deported in fishing is lower than in land-based sectors. Reports on migrant fishermen in Thailand have found low rates of official registration among fishermen compared to land based workers, from 66% (32) to 84% (54) and 92% (44).

Lack of legal work permits and documents is a disincentive to complain against unfair work practices, as employers threaten to call the authorities to arrest and deport workers once their labour has been exhausted (44). Documentation-related constraints are pervasive in the fishing industry, with 43% of fishing sector workers stating that they couldn't obtain documents from employers when requested - 71% did not hold their original documents (32). Furthermore, relative to other sectors, Pearson et al. (2006) note that "registered migrants in fishing were much more likely to feel bonded to their employer and the worksite, due to their inability to obtain their identification documents" (p.38) (32). These reports suggest that retention in fishing is indirectly coerced by withholding documents.

Payment

Being able to save money is a lesser-known reason for choosing fishing over other types of work – 48% of fishermen in the ILO's (2013) survey at Thai ports choose fishing due to the wages (31). As fishermen are at sea for long periods, there are no outlets to spend money (44), which was a suggested reason for initially choosing fishing among GMS fishers trafficked for long-haul fishing in Indonesia (10). This is both a motivation and a constraint, particularly for long-haul fishermen who are typically paid at the end of a trip. Non-payment or under payment was cited in all reports, especially for migrant fishers. For example, Myanmar and Cambodian fishers were paid 5500 – 6100 baht per month on average, compared to 13,000 baht/month among Thai fishers in the ILO's (2013) survey (31).

A common practice in long-haul boat employment is to pay fishermen an advance payment, *ka yep rua*, which is deducted from total earnings. These funds are managed by the captain and the amount given depends on various factors (e.g. worked with the

captain and boat before, previous experience). This is effectively a minimum guaranteed wage, with the remainder dependent on the quality and volume of the catch and the worker's performance (54).

A recurring problem is that some men agree to work but then run away before the boat leaves, taking the advance money with them. When boats do not have enough crew members, *ka yep rua* money may be used to pay brokers to procure trafficked men for the boat. Trafficked fishermen are often told they must work off their debt to captains, just as those who are paid advances must do (2). But, once they have paid back this debt with labour, they may or may not start earning money – this is highly dependent on the boat captain. Many hold trafficked men without pay indefinitely. For those on long-haul boats, the risk of being cheated is high as workers are only paid at the end of trips, which can last for years at a time. In addition, being in foreign waters and docking at foreign ports, workers are paid allowances in local currency, which creates confusion when workers are not aware of exchange rates (44).

1.1.6 Work tasks on fishing boats: occupational hazards and risks

Work carried out by commercial fishermen in Southeast Asia depends on the size of the boat and whether it is a coastal/short-haul boat or a long-haul boat. Commercial vessels are over five gross tonnes and are equipped with inboard engines, utilize modern gears and can remain at sea for long periods without returning to port (26). Short-haul boats are broadly considered those at sea for periods of one month or less, usually in Thai waters. Long-haul boats can be at sea for months or years at a time due to transshipment, usually in international waters or other countries' EEZs (2,44). Long-haul boats are medium to large vessels that can carry up to 50 workers, usually migrant fishermen, along with Thai crew members including the captain and engineer/mechanics workers (55,56). Often, the captain's assistant and cook are also migrants, appointed by the captain (54).

Work tasks include hauling nets and sorting, cleaning and storing fish (25). Other tasks vary according to the captain's orders and the boat's size which indicate different working hours and manpower needs. For example, short-haul boats which return to

shore daily are often medium sized vessels which carry out "black trawls" which require 15 workers to haul the trawl three times per day, with the laying process taking four to five hours. In contrast, larger vessels undertake "dragging trawl trips", which can take 15-20 days and require 40 to 50 workers (55). While tasks vary according to the captain's orders and the size (medium or large), Fujita et al. (2010) describe what a working day for short-haul fishers might entail. Boats search for fish using sonar devices, with workers spreading nets once fish schools are detected. The boat then trawls the nets for around two hours. After this task is performed, workers may rest for up to five hours. During this time, the boat searches for more fish schools, before the trawling process resumes. The work cycle is repeated over 24 hours. During rest time, workers have meals, bathe (with seawater, rinsing with freshwater) and sleep. When it rains, workers sleep inside the cabin, otherwise out on deck (54). The cyclical nature of the work means that 24-hour shifts are not uncommon (45).

Long-haul fishermen cast and haul in fishing nets, lines or portable traps used to catch small fish. Fishermen on drift netter boats may "splice ropes", physically demanding work which involves inserting spikes into ropes and creating a loop to attach a trawl (net used for trawling). Fishermen on long-liner boats will attach bait to hooks, which may involve baiting hundreds or thousands of hooks on a single line (e.g. lines can be up to 14 kilometres in length and hold around 4000 hooks) (7). Long-haul fishermen usually work as nets or lines are cast out, to physically stop the nets and lines from twisting as they extend from the boat (50).

1.1.7 Defining violence and abuse among trafficked fishermen

In this thesis, the definition of violence is taken from the WHO's Violence Prevention Alliance (VPA) World report on violence and health (WRVH) (2002) as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation." The WHO VPA definition also distinguishes four types of violence; physical, sexual, psychological, and deprivation. Violence occurs at three levels - the self (self-harm, suicide), at the interpersonal level (violence between individuals, including family

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members and employers). Interpersonal violence encompasses family and intimate partner violence (IPV) and community violence, which may be perpetrated by acquaintances or strangers in any setting, including the workplace. Violence may also occur at the collective level (violence perpetrated by groups of individuals) and is sub-divided into social, political and economic violence (57).

In this thesis, interpersonal violence and/or self-harm is defined as that that occurs during recruitment into fishing or seafaring, as well as while working at sea or onshore during a work period. The VPA definition is preferred to workplace violence definitions, such as that offered by the US Department of Labour, which only consider violence perpetrated on worksites. Trafficked fishermen may face violence in transit towards the worksite, thus the WHO VPA definition is more suitable for the purposes of this study. Previous reports on trafficked or forced fishermen find high prevalence of physical violence, ranging from 10-50%, with the most extreme violence documented among long-haul fishermen (2,7,31). To date, there has been no comprehensive review of existing studies of violence prevalence among trafficked fishermen.

1.1.8 Exiting from exploitation

As described in section 1.1.5, restrictions on freedom of movement and indirect forms of coercion make it difficult to escape. In Ry's (2014) study, Cambodian trafficked fishermen who were undocumented or had documents withheld by employers reported fear of arrest for not having documents (58). Elsewhere, trafficked fishermen whose wages were withheld were reluctant to leave in the hope of eventually getting paid (50). In Pearson et al.'s (2006) study, a third of employers in fishing were unsure whether workers had the right to leave the worksite without permission under Thai law, and half of them agreed that locking migrants in at night to make sure they didn't escape was acceptable (32).

Escape is a high-risk endeavor, with anecdotal reports of men jumping ship when the boat is near to shore or berthed in port (2,7,45). Some men have drowned during escape attempts, with bodies washing up regularly near East Malaysian ports known to berth long-haul vessels from Thailand (25).

Trafficked fishermen who manage to escape are frequently detained in government-run Immigration Detention Centres (IDCs). When Thai boats are caught fishing illegally in other countries' EEZs, destination country authorities often raid boats and detain the entire crew. It is extremely uncommon for trafficked fishermen to be screened for trafficking in detention (7,45). In some cases, trafficked men report paying for their own travel costs and bribing authorities to speed up the deportation process, an additional source of stress when many have not received wages for months or years of work (58). Men may also be transferred between several IDCs before being deported home (58). In IDCs, deplorable conditions often induce health problems or exacerbate existing chronic conditions. Detained undocumented migrants in Malaysia report physical and sexual assault by guards, insufficient food and drinking water and denial of basic hygiene (including showers, toilet breaks) (59). Due to unsanitary conditions and overcrowding, detainees reported suffering from skin conditions, tuberculosis, kidney problems and beriberi (vitamin B1 deficiency) as well as mental health problems, with some detainees attempting suicide (60). Deaths in custody are not uncommon and causes of death are often left unspecified or are not ascertained by autopsies (61). Severe overcrowding has also been reported in Indonesian and Thai IDCs by trafficked Cambodian fishermen (58). Evidence suggests that long periods of immigration detention are associated with high prevalence of mental health disorders, suicidal ideation and self-harm among refugees and asylum seekers (62,63). No such studies have been conducted with trafficked men.

Once detained in a foreign country, deportation or repatriation to home countries by authorities or the IOM respectively are possible outcomes. However, trafficked fishermen who had jumped ship in Malaysia report other post-escape outcomes, including: hiding in forests or rural areas, before being found and sold to plantations by Chinese, Malaysian or Thai brokers; or being returned back to fishing boats by the Malaysian authorities (45). Trafficked Ukrainian seafarers in Russia also reported being returned to ships by law enforcement – for some, this meant that despite terrible conditions, fear of treatment by complicit authorities discouraged them from attempting escape (52). For Cambodian men who escaped in Thailand, brokers paid for their release while in detention, before trafficking them to overseas fishing boats (2). These are clear examples of re-trafficking. In Malaysia, others reported being assisted

to find work on "good" plantations by Cambodian men who had previously escaped fishing at sea (45). Other outcomes for trafficked fishermen who managed to escape include permanent settlement – hundreds of mainly Burmese, Thai and Laotian men were reported to be living in the jungles and towns of remote Indonesian islands (Tual, Ambon and Benjina) (9,64). Some men had met local wives and had children, and worked in odd jobs (e.g. unloading fish at ports). Men cited not having enough money, documents or knowledge of how to return home as reasons for permanent settlement, and many expressed a desire to go home (64). Among the estimated 4000 fishermen stranded on these islands, the majority were repatriated by IOM and government authorities following an Associated Press investigation published in March 2015 (10,65). Post-escape outcomes are not linear and men face obstacles including corrupt officials, risk of re-trafficking, immigration detention, lack of documents, money and awareness of how to return home if they are not identified and assisted by authorities.

1.2 Legal framework and policy responses

This section describes the main international legal and regulatory frameworks applicable to fishing, before outlining legislative and policy responses to trafficking in the fishing sector in Thailand before, during and after data collection for this thesis.

1.2.1 International regulation of deep sea fishing and labour standards

The United Nations Convention on Law of the Seas (UNCLOS), which entered into force in 1994, provides the international legal framework for fisheries and environmental protection (66,67). Within the UNCLOS, there are three categories of state relevant to different aspects of marine governance: flag state; coastal state and port state (66). UNCLOS accords countries with specific zones of jurisdiction in the ocean and corresponding rights. Here, coastal states have full territorial jurisdiction in the area up to 12 nautical miles from shore. The area up to 200 nautical miles from shore is known as the Exclusive Economic Zone (EEZ), where coastal states have sovereign rights to explore, exploit and protect resources, but not sovereignty over the waters (66,68). In

the high seas (or international waters) beyond EEZs, no countries have sovereign rights. The high seas are essentially ungoverned, although article 111 in UNCLOS specifies that foreign ships may be pursued by coastal states when they believe that the ship has violated the laws and regulations of the coastal state (66). In general, UNCLOS deals with relationships between states (e.g. demarcation of waters) and their rights and responsibilities in use of the world's oceans (68).

Vessels must display the flag of the country where the vessel is registered, i.e. flag state. Flag states have primary responsibility for compliance with international maritime law, even when the ship is outside of the flag state's territorial waters (69). But there are problems with the flag state system. Namely, vessel owners may select flag states where enforcement of labour and/or environmental protections is weak or non-existent. Selection of flags on this basis is known as "Flags of Convenience" (FOC). For example, Mongolia is a known FOC according to the International Transport Workers' Federation (70). As Surtees (2013) points out, since opening its flag state register in 2003, more than 1,600 ships have been registered, partnering with Singapore to facilitate ship registration. It is questionable how a landlocked country without a port and with an overseas based registry can effectively ensure inspection and monitoring of ships flying its flag (68). Mongolian flagged vessels have been linked with illicit activities including people and diesel smuggling, a high rate of fatal accidents, and floating armories of unregistered weapons off the coast of Somalia (used by pirates) (71). Ships using FOCs are usually connected with Illegal, Unreported and Unregulated (IUU) fishing and with human trafficking (47,68).

Port states have territorial jurisdiction over foreign vessels in their ports, and can exercise Port State Control (PSC) measures such as vessel inspections to investigate compliance with the requirements of international conventions, such as the Maritime Labour Convention (72). Because most of these conventions apply to seafaring and not fishing, fishing vessels are not included in PSC measures currently (68). While port disembarkation or inspections can be a way to identify trafficked fishers or seafarers, they may face immigration restrictions that require them to remain on boats at port, hindering escape (73). Furthermore, many PSC inspectors are not aware of trafficking or forced labour indicators or may not see labour abuses as part of their remit (68).

Even where men are interviewed during inspections, language barriers and fear of authorities (e.g. fear of imprisonment as an irregular migrant, corruption and being returned to boats) may hinder victim identification (68).

There are two main international conventions related to labour at sea. The first, the Maritime Labour Convention (MLC) (2006) is related to decent work and safety protections for seafarers. Entering into force in 2013, the MLC has been signed by 81 countries to date, including Thailand in June 2016 (enters into force in June 2017) (74). The MLC outlines minimum requirements for seafarers on ships with provisions on working conditions, work and rest hours, accommodation standards, health protections, medical care and social security (75). Compliance and enforcement take place via complaints procedures for seafarers, vessel owners' and ship masters' supervision of ship conditions, flag state's jurisdiction and control over their ships, and port state inspection of foreign ships. A maritime labour certificate can be issued once flag states verify that labour conditions comply with national laws and regulations implementing the MLC (75).

The second, the Work in Fishing Convention (WIF) (2007) has been signed by just nine countries to date (76). The WIF convention contains provisions for decent working conditions on board fishing boats, including improved OSH, medical care at sea and onshore, minimum rest hours, written contracts and the same levels of social security as other workers (77). As with the MLC, compliance will be assured by port state inspections, but there are no other compliance mechanisms (78). The WIF is much less ambitious than the MLC, perhaps due to a history of poor ratifications of fishing conventions in the past (77).

Fishers under the WIF are much less protected than seafarers under the more detailed MLC (68). With around 90% of world trade carried by the international shipping industry (79), it is of comparatively greater economic and strategic importance to states than fisheries. Seafaring has its own dedicated UN agency, the International Maritime Organization. By industry, health-related interventions also differ. For example, seafarers are often mandated in home countries to have pre-departure medical assessments (80), while fishermen do not undergo such assessments.

It is beyond the scope of this thesis to examine the full extent of international maritime legal provisions that can be applied in trafficking in fishing or seafaring cases. However, in an analysis of legal and regulatory frameworks to address trafficking of seafarers and fishers, Surtees (2013) concludes that current legal and regulatory frameworks in which seafaring and fishing operates are weak, particularly for commercial fishing. Consequently, fishers may be more prone to abuses than seafarers, although the unique nature of working at sea (shifting between national and international jurisdictions, escape at sea impossible) render all seafarers and fishers vulnerable to exploitation and abuse (68).

1.2.2 Regional efforts to address trafficking

Regional mechanisms and instruments to address trafficking are also in place. The Coordinated Mekong Ministerial Initiative against Trafficking (COMMIT) of GMS countries (Cambodia, China, Laos, Myanmar, Thailand and Vietnam) was established in 2004 following the signing of an MOU on sub-regional cooperation for trafficking. COMMIT involves commitments to implement agreed sub-regional plans of action (81). The Australia-Asia Trafficking in Persons (AATIP) program is another inter-governmental initiative between ASEAN countries focusing on criminal justice responses to trafficking. Recently ASEAN states, supported by the COMMIT secretariat UN Action for Cooperation Against Trafficking in Persons (UNACT), the ILO and IOM, have agreed on a harmonized set of victim identification indicators (82). While it is not definitive, the indicators provide a structure for states to develop their own detailed indicators in line with their national legislation.

ASEAN's Convention Against Trafficking in Persons, Especially Women and Children (ACTIP) entered into force in February 2017, in the six countries to have signed it to date (Cambodia, Singapore, Thailand, Vietnam, Myanmar, Philippines) (83). The convention aims to harmonize standards on how identified trafficking victims are treated, as well as how trafficking is criminalized, investigated and prosecuted (83). ACTIP is important given the expected increase in population mobility with ASEAN's integration under the ASEAN Economic Community (AEC). AEC purports to involve the free flow of goods, services, investment, capital and skilled labour (84) . While the

movement of skilled labour (e.g. nurses, engineers) is covered by ASEAN's Mutual Recognition Agreements (MRAs), the movement of unskilled labour is not mentioned at all. Tellingly, ten years after the ASEAN Declaration on the Protection and Promotion of the Rights of Migrant Workers, a deadlock on the creation of an ASEAN treaty to protect migrant workers remains, including whether undocumented workers should be covered (85). Arguably, when governments don't implement legal safeguards they deny the necessity of low skilled labour, which creates spaces in which trafficking can flourish (86).

Regionally, men were only recently recognized as trafficking victims in national anti-trafficking legislation, for example in Cambodia and Thailand since 2008, and in Myanmar and Vietnam since 2012 (87). While China and Lao PDR address forced labour in their penal codes which include men, neither country has an anti-trafficking law (87). Men's exclusion from trafficking legislation until recently has meant that women and children were more likely to be identified through official channels relative to men, and were therefore likelier to enter formal and informal protection systems (e.g. shelters) (88). Since several fishing trafficking exposés and growing awareness about male forced labour, this has changed somewhat, but women and girls are still identified in greater numbers (see Table 1.1).

1.2.3   Thai government legal and policy responses addressing human trafficking

This section outlines the political context of Thailand's response to fishing trafficking, before describing the evolution of key legislation and policies initiated to address human trafficking in Thailand, particularly those most directly related to fishermen's health, namely labour inspections, victim screening and post-trafficking support. A timeline of key legal changes, policies and external events is shown in Figure 1.3.

External factors and political context affecting Thailand's approach to human trafficking since 2014

As shown in Figure 1.3, key events in 2014 prompted successive key legislative and policy changes. Prior to 2014, Thailand had languished on the Tier 2 Watch list of the US State Department's Trafficking in Persons (TIP) report, a global rating exercise for

anti-trafficking efforts, for four years and was due an automatic downgrade to Tier 3, alongside countries such as North Korea and Saudi Arabia. Tier 3 countries are those "whose governments do not fully comply with the Trafficking Victims Protection Act (TVPA) minimum standards for the elimination of trafficking and who are not making significant efforts to do so" (89). The Tier 3 downgrade in 2014 marked a turning point in government efforts to address trafficking. The downgrade came shortly after a military coup and installation of the interim military government, the National Council for Peace and Order (NCPO) (90). The downgrade also coincided with a damning exposé on trafficking in the fishing sector by the Guardian newspaper, which followed an investigative report released by the advocacy group Environmental Justice Foundation a few months earlier. These events, alongside NCPO pledges to crackdown on government corruption and to address vast numbers of undocumented migrants in Thailand, prompted a seemingly accelerated response to trafficking, particularly in fishing. Border controls were tightened and unofficial border crossings were closed in May 2014. Fears of a government crackdown on undocumented workers prompted the exodus of an estimated 250,000 Cambodian migrant workers from Thailand throughout June 2014, with some citing fear of being shot by the army or police (91).

In early June 2014, Thailand's reputation was dealt a further blow when the Thai government appeared to be the sole opposition to a binding ILO protocol on forced labour. Having voted for a non-binding recommendation, citing that they were not ready to implement a binding protocol, the Thai government reversed the decision following strong criticism from the international community a week later (92).

In 2015, several events further sullied Thailand's international reputation as a destination country for trafficking. In March 2015, the Associated Press (AP) released the results of a yearlong investigation into the conditions endured by hundreds of "slave fishermen", mostly Burmese, Thai and Cambodian fishers stranded on the remote Indonesian island of Benjina, a known docking port for Thai vessels (9). Sporadic reports had emerged from Benjina, Ambon and Tual islands in Eastern Indonesia of GMS fishermen over the previous decade (93,94) but none had the reach and impact of the AP investigation. In April 2015, the European Union (EU), the world's largest single market for fish imports globally (12), issued Thailand with a yellow card

for IUU fishing (13), which put further pressure on the government to address rampant abuses in the sector.

By mid 2015, the Rohingya boat crisis in ASEAN sparked outcry internationally when Thailand, Malaysia and Indonesian authorities towed boats full of Rohingya refugees (and some Bangladeshi migrants) back out to sea, refusing them rights to land. The boat crisis was spurred by the state persecution and ethnic cleansing of the Rohingya in Myanmar's Rakhine state by military forces (95). Soon after, hundreds of mass graves in former "trafficking jungle camps" were discovered along the Thai-Malaysia border, impelling authorities to take action against traffickers and complicit officials. A raft of low level officials were arrested (96). Survivors of the trafficking camps spoke of men being sold to Thai fishing boats when they couldn't afford the ransom demanded by traffickers (97).

The following sub-sections discuss the evolution of legislation and policies to related to trafficking, before and after key events which took place in 2014.

Figure 1.3: Timeline key events, legislation and policies relevant for human trafficking in the fishing sector
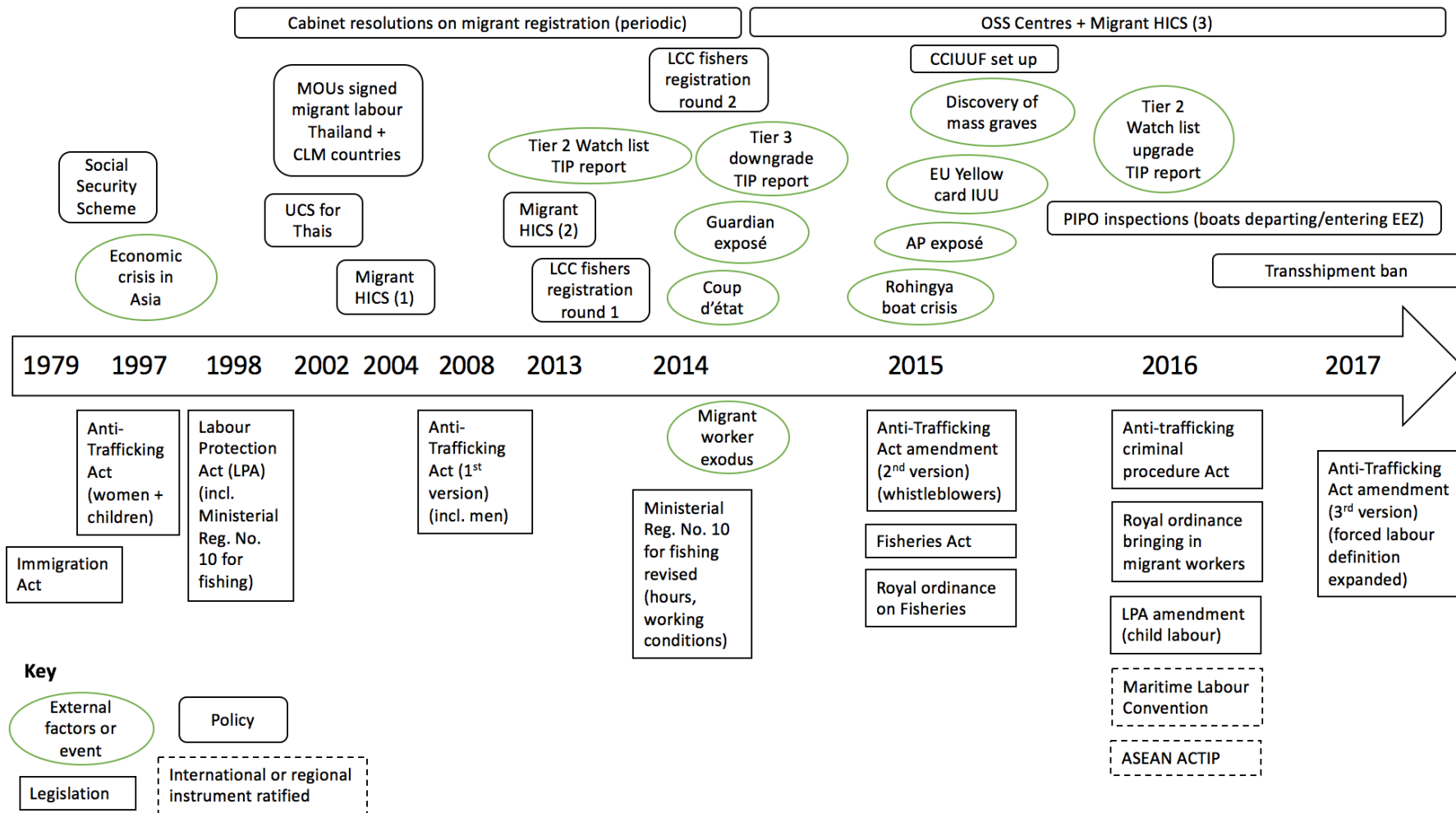
Adapted from Suphanchaimat (2017) (98)

Evolution of Anti-trafficking legislation

Thailand's policy response to trafficking has shifted gradually from a sole focus on sex trafficking towards inclusion of labour trafficking. The rapid growth of sex tourism since the 1980's made sexual exploitation visible, which was sometimes conflated with sex trafficking (99). Measures for Prevention and Suppression of Trafficking in Women and Children Act B.E. 2540 were adopted in 1997, which made it an offence to transfer any woman or child (girls and boys) under 18 years old for sexual gratification, indecent sexual purposes or to gain any illegal benefit for themselves or another person, regardless of consent of the trafficked person (100,101). The Act also covered trafficking for purposes other than sex work and specified that people who aided exploiters would receive equal punishment. Protections for women and children included temporary shelter (not in a detention centre or prison), food and repatriation to their home countries (100,101). The Anti-Trafficking in Persons Act B.E. (2551) followed in 2008, which repealed the 1997 law and now included men. Greater emphasis was placed on victim compensation and protection, including temporary permission to work (102). A new anti-trafficking in persons fund was established as a formal funding mechanism for victim assistance (provision of food, shelter, medical treatment, physical and mental rehabilitation, education, training, legal aid and repatriation to home countries) (102).

Anti-trafficking legislation has progressively increased penalties for the crime, particularly since the 2014 Tier 3 downgrade. For example, amendments to the law in 2015 saw increased prison terms and fines for traffickers, while also increasing officials' remits to shut down workplaces immediately if evidence of trafficking was found (103). The Anti-Trafficking Act amendment (3rd version) (2017) revised the definition of forced labour to include debt bondage and document confiscation (104).

Victim identification and assistance

The Ministry of Social Development and Human Security (MSDHS) is responsible for the protection of Victims of Trafficking (VoT) and oversees nine main shelters, including four shelters for men and boys located in Chiang Rai, Pathumthani, Ranong and Songkhla provinces (105). MSDHS play a key role in victim identification and assistance alongside law enforcement. In 2016, 824 individuals were identified as

trafficked persons, with 561 agreeing to receive assistance in MSDHS shelters (Table 1.1). The higher number of victims identified in 2015 is attributable to the Rohingya boat crisis described earlier. A similar explanation (large number of Rohingya assisted) is given for the high number of victims identified in 2013 (106).

Table 1.1: Victims identified and assisted by Thai authorities and granted permission to work, 2013-16

	2013	2014	2015	2016
Victims identified from victim screening process (total)	1020	595	982	824
Male	-	215	451	411
Female	-	380	531	413
Victims assisted in MSDHS shelters (total)	681	303	471	561
Male	219	187	-	290
Female	462	116	-	271
Victims assisted in MSDHS shelters by exploitation type*				
Forced labour	231	188	301	305
Sexual exploitation	364	108	142	243
Begging	86	7	2	13
Victims with permission to work (total)**	-	57/236 (24%)	47/471 (10%)	196/561 (35%)
Male	-	42/167	-	-
Female	-	15/69	-	-

Source: 2017 Country Report on TIP submitted to USDOS (data for years 2015, 2016) (104), 2015 Country Report (data for years 2013, 2014) (15)

*26 missing for 2015

**Permission to work inside or outside of the shelter. Figures for 2014 are for foreign victims only.

As Table 1.1 shows, greater numbers of forced labourers are being assisted compared to victims of sexual exploitation and begging since 2014. Increased number of victims are being granted permission to work, since a 2012 policy whereby victims can be granted work permits in either construction (males) or domestic work (females) (107). Since 2015, victims have been granted permission to work in other sectors, including agriculture, farming and retail (104). In 2016, work options inside shelters included making handicrafts for sale, becoming beauticians, food vendors, or being a Thai traditional masseuse (104), most of which seem oriented towards female victims. According to Thailand's TIP country report for 2016, most of the unemployed were

aged under 15, were still in the recovery period or were in the process of being repatriated (104). For those who were not employed, vocational training and activities included construction and electrical wiring, child development, Thai kickboxing, Thai massage training, or beautician training depending on the person's interests and skills (104).

Evolution of migration registration, health and employment policies

Migration policies in Thailand have arguably not addressed the root causes of irregular cross-border migration, instead opting for short term fixes (98,108). A prime example is the Immigration Act (1979), which states that "illegal" (undocumented) migrants must be deported (109). Since the Immigration Act was passed, governments have frequently invoked the power specified in Section 17 of the Act, which permits that the Minister (with Cabinet approval) can permit certain migrant groups to remain in Thailand under certain conditions, exempting them from automatic deportation (98). These Cabinet Resolutions have been used successively over the years to grant employers and migrant workers a reprieve from the deportation clause in the Immigration Act, allowing periods of temporary registration (98,108). Usually, Cabinet Resolutions are passed in periods where migrant workers are considered necessary for economic development. However, allowing temporary registration doesn't address fundamental underlying legislative changes that are needed to improve migration policy.

As shown in Figure 1.3, numerous Cabinet Resolutions pertaining to migrant worker registration were passed between 1999 to 2012, including one specifically on registration of migrant fishers. The ILO along with industry partners and Ministry of Labour established seven Labour Coordination Centres (LCCs) for fishermen in coastal provinces in late 2013. LCC registration involved registering for a residence document (known as Tor-Ror 38/1) with the Ministry of Interior (MOI). Fishermen subsequently had to undergo a health check (costing 500THB) at the nearest Ministry of Public Health (MOPH) hospital, before visiting the Department of Employment (DOE) office to apply for temporary work permits by presenting the Tor-Ror 38/1 document and health check results. During the first round of LCC registration in late 2013, some 6000 fishermen registered for the Tor-Ror 38/1 but most did not complete the health check

and/or subsequent work permit application (110). In the second round of LCC registration in mid 2014, the responsible agencies (MOI, MOPH, DOE) came together under one roof in a One Stop Service Centre model, but still had to return a second time for the health check. Despite this attempt to streamline the process, very few fishers were registered (110). Following the military coup in May 2014, the LCC policy was abandoned and instead, a nationwide One Stop Service Centre (OSSC) policy was initiated. The same three agencies were responsible for issuing temporary registration cards, except now the health check was conducted on the same day and work permits could be applied for immediately afterward, meaning that the OSSC process could be completed within one day (111). Figure 1.4 shows the layout of a OSSC.

Figure 1.4: Layout of a One Stop Service Centre

Tied up with the registration policies was the Migrant Health Insurance Card Scheme (HICS). Initially introduced in 2004, the HICS scheme was an alternative for the vast majority of migrants who were not covered by the Social Security Scheme for formal sector workers. In 2013, the HICS benefit package was quite comprehensive, including inpatient and outpatient care and ARV treatment for patients with HIV/AIDS (98). The HICS was also opened to undocumented migrants, a first in ASEAN countries (112). Notably, Thailand is the only Southeast Asian receiving country to accept (and treat) HIV-positive migrants in the workforce, compared to Malaysia and Singapore where HIV-positive migrants are refused work permits and are deported (112).

During LCC registration, paying the year's premium for the HICS card was optional, and few migrants purchased it (cost 2200 THB) (110). As part of the OSSC policy following the military coup, purchase of the HICS became mandatory. The cost of the HICS premium was reduced (1600THB) and the benefit package was further expanded to include renal replacement therapy and treatment for psychosis and drug addiction (98).

Following the health check and payment for the HICS premium, migrants receive a temporary work permit (known as the "pink card", Figure 1.5) which restricts their movement to the area of their employment (113). They are then required to approach their home country's embassy for Nationality Verification (NV) where they can apply for temporary passports and work permits. When data collection was undertaken for this thesis, the migrant HICS was not portable between provinces or hospitals, a particular problem for fishermen docking at different provincial ports.

Figure 1.5: Temporary identification card (a.k.a. pink card)
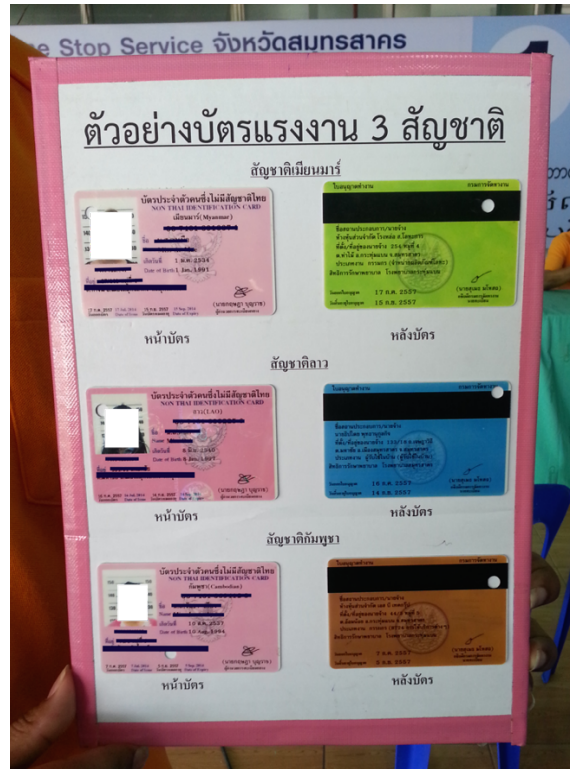
N.B. Each nationality has a different colour on the back of the card

Source: Author

Work permits for fishermen were orange, while work permits for migrants in land-based sectors were blue (Figure 1.6). At the time of data collection, migrant workers in fishing were not permitted to switch to land-based employment once registered. Identification of fishermen was made easier with the orange permit. Long-haul fishermen who were departing Thai waters and entering other countries' EEZs were also required to have a Seaman's book, issued by the Marine Department (Figure 1.7). Only migrants with passports and work permits could apply for a Seaman's book, making it unlikely that the mostly undocumented, or OSS registered fishermen who did not yet have passports, would apply for Seaman's books.

Figure 1.6: Work permit for fishing and land-based work sectors, issued by the Department of Employment

N.B. Fishing work permit (orange), land-based sector work permit (blue)

Source: Author

Figure 1.7: Seaman's book for fishermen departing Thai waters and entering other EEZs, issued by the Marine Department

N.B. The green book is for fishermen, the blue book is for crew of cargo ships (e.g.

carrier or mother ships used for transshipment)

Source: Author

Improved labour protections for fishermen were included in the 2014 update of the Ministerial Regulation on Fishing (part of the Labour Protection Act). Whereas previously, children aged 15-17 could work on vessels with parents' permission, the 2014 revisions raised the age to 18, with mandated minimum hours of rest in 24 hours (10 hours) and 7 day (77 hours) periods. Crew were to sign multilingual contracts and be brought onshore for inspections every 12 months. The update also mandated provision of freshwater and sanitation (114).

Other legislative changes in labour policy since data were collected for this thesis are promising. Employers are now required to pay for all recruitment fees and transport costs of migrant workers in line with the Royal Ordinance Concerning Rules on Bringing Migrant Workers to work with Employers in the Kingdom (2016) (115). The law also aims to address informal labour recruitment via brokers, by making it illegal for employers to bring migrant workers to Thailand through unlicensed agents (104). The Labour Protection Act was further amended in 2016 with increased penalties for child labour (104). Collectively, these legislative changes signal a shift towards a longer-term view being taken by the Thai government to address human trafficking and irregular migration.

Concurrent to this long-term view is the development of formalized migration channels alongside curtailing and controlling irregular movement (116). The Thai government has made it clear that the aim is to completely eradicate migration via informal channels, with 100% of migration taking place via MOUs by 2020 (104). MOUs signed with CLM countries in 2004 included provisions for migrants to be directly hired (by government approved employment agencies) from CLM countries to Thailand. But MOU recruitment of migrant workers has been marred with operational problems, including the high administrative burden on employers and a lengthy approval process to hire workers (98,117). The Thai government has pledged to reduce processing times of MOU recruitment (104).

Labour inspections and IUU fishing policies
In the year preceding the Tier 3 downgrade, the Thai Navy and Marine Police conducted over 10,000 registration and ownership inspections of fishing vessels but

did not find any instances of forced labour (89). Following the Tier 3 downgrade in 2014, the Thai government intensified labour inspections efforts, including a training program for the 120 labour inspectors in all 22 coastal provinces and development of a manual in partnership with ILO (15). Between January and March 2015, inspections of 599 fishing vessels found violations of the revised fisheries laws (2014) in 21 vessels, mainly related to paying below the minimum wage and the employment of minors (below 18 years old) (15). Similarly, however, none of these inspections found instances of forced labour.

Legislative and policy changes following the issuing of the EU's yellow card for IUU fishing are arguably geared towards addressing IUU first, and trafficking second. New legislation includes The Royal Ordinance on Fisheries B.E. 2558 (November 2015) passed shortly afterward, which superseded the revised Fisheries Act (June 2015). The Royal Ordinance provided a comprehensive overhaul of fisheries governance, mainly related to fishing vessel registration, monitoring, gear licensing, traceability systems and Port-In-Port-Out (PIPO) measures, whereby vessels over 30 gross tonnes departing and entering Thai waters had to report to one of 32 designated PIPO control centres (114,118). Overseen by the Command Centre to Combat IUU Fishing in Bangkok (established in 2015), PIPO centre inspections of incoming and departing vessels are the primary method of implementation and enforcement of regulations specified in the Royal Ordinance on Fisheries (118). As with labour inspections prior to 2015, PIPO inspections are conducted by a Multi-Disciplinary Team (MDT) of several government agencies including the Department of Fisheries and the Department of Labour Protection and Welfare. The scope of inspections is broad, and includes checking captain and engineer's certificates, fishing gear licenses, vessel registration and work permits for migrant workers (118). Each fishing vessel must now be part of the Vessel Monitoring System (VMS) for tracking purposes.

A further key policy event was the six-month ban on transshipment in late 2016, which has been extended to the present day (119). Transshipment of fishermen and crew is completely banned, while transshipment of fish can only take place with observers on board in line with international practice. Government documents indicate that 50 such fisheries observers have been deployed since July 2016 (119).

The suite of policy and legal changes since 2014 suggests a firm commitment to reducing IUU fishing and trafficking. Some activists and NGOs have however suggested that the government cares more about IUU issues and document violations than labour and welfare issues among fishermen (120), and hint at continuing problems with labour inspections. These points are discussed in Paper 3.

Conclusion of policy section

Sweeping legal and policy changes aiming to address trafficking in the fishing sector have been initiated since key events in 2014, namely the installation of the military government (NCPO) and the TIP report Tier 3 downgrade. Papers 2 and 3 in this thesis explore how policies directly related to trafficked fishermen's health, particularly the HICS policy, victim screening processes and labour inspections, were being implemented in the months immediately after key policy events of 2014.

1.3 Thesis aims and objectives

Aim: This thesis aims to investigate the health needs of trafficked fishermen, and to understand how victim identification and assistance is conducted with potentially trafficked fishermen in Thailand. The objectives are to:

1. Understand the prevalence of violence, health risks and occupational safety and health (OSH) conditions of migrant seafarers and fishermen in the GMS, including conditions when trafficked into the sectors;

2. Describe factors associated with injuries and violence among labour-trafficked men using post-trafficking services;

3. Describe factors associated with poor physical health among trafficked fishermen using post-trafficking services, including health service provision for migrant and potentially trafficked fishermen;

4. Understand how frontline responders view "trafficking", and how perceptions are shaped by policy and legal definitions and narrative constructions of fishing trafficking;

5. Describe key constraints faced by frontline responders in identifying and assisting potentially trafficked fishermen.

Four Conceptual Frameworks (A-D) were drawn up based on the literature, to inform analysis for the research objectives. These Conceptual Frameworks are described in Chapter 2.

2 THEORETICAL PERSPECTIVES AND CONCEPTUAL FRAMEWORKS

There are currently few theoretical frameworks that bring together migration and health and even fewer that draw together migration, exploitation and health (121–123). Moreover, there are currently no conceptual frameworks that aim to understand the linkages between migration, health and exploitation in fishing.

This section describes four Conceptual Frameworks that were developed to guide research design and analysis in this thesis and the theoretical perspectives that informed their design and content. Section 2.1 presents Conceptual Frameworks A and B from a health and well-being perspective at the individual level of the migrant. Section 2.2 explores theoretical approaches for political or policy factors (Conceptual Frameworks C and D) that may affect frontline and policy responses to trafficking in the fishing sector.

2.1 Trafficking, migration, exploitation and health

In this section, I outline the literature and describe two frameworks which focus on proximal factors influencing physical health of trafficked fishermen (Conceptual Framework A), and health service access (Conceptual Framework B).

2.1.1 Physical and mental health effects of trafficking

Trafficking and health has been conceptualized as a multi-stage process of cumulative harm, with various influences on health at the pre-departure, transit, during and post-trafficking stages (124). During trafficking health risks include physical, sexual and psychological abuse, restrictions on movement and poor living and working conditions (124). Conceptual Framework A (Figure 2.1) shows factors influencing physical health of trafficked fishermen at different stages of the migration/trafficking process. For example, it highlights exposures at the trafficking stage which affect health, including occupational hazards, poor living conditions, violence and non-payment of wages.

Figure 2.1: Conceptual Framework A. Factors influencing physical health of trafficked fishermen

Pre-trafficking	Trafficking stage	Exit from trafficking	Post-trafficking routes	Post-trafficking physical health	
			RISK OF RETRAFFICKING	**1 month**	**3-12 months**
*Socioeconomic characteristics - age - education - income *Past physical or mental abuse exposures *Health knowledge/practices *Masculinity and health seeking behavior *Perceived health needs *Location of home/worksite, relative to HSPs & transport access - opportunity cost of accessing services **Risk factor for violence: - language barrier** *Ability to access healthcare (financial, logistical) *Self-treatment *Rights to care in home country *Social and cultural barriers or facilitators	*Occupational harm/exposures - overexposure to elements - badly maintained or no equipment - long working hours - few or no rest breaks - fatigue/sleep deprivation - repeated bending/lifting heavy objects - unstable platforms - exposure to chemicals - serious injuries *Poor living conditions - food/water deprivation - restricted space - poor hygiene - isolation at sea, inability to access care *Violence exposures - severity and frequency of physical and psychological abuse by superiors - witness of murder - forced drug taking *Duration of trafficking situation *Risky behaviours ☒ - condom use - alcohol/substance abuse *Cash payments (frequency and amount)	*Escape - high risk (jump ship/escape at port whilst docked) *Outside intervention - police / immigration raid (with/without NGO) - NGO alone *Other - paid off debt and allowed to leave - injured and let go	*Find alternative work - e.g. plantations/agriculture *Detention - risk of return to boat owner by police - poor healthcare access - unsanitary conditions - duration of detention *NGO/shelter - physical health support - mental health support - culturally appropriate services for men - types of assistance offered (e.g. training, business grant) - duration of shelter stay - ability to work whilst in shelter (restricted mobility / inability to work > risk of re-trafficking) - follow-up assistance after leaving shelter (physical health, counseling, grants) *No assistance ☒ - identified +unassisted (no assistance offered/available, identified but did not need assistance/declined assistance - unidentified and unassisted	*Perceived health needs *Masculinity and health seeking behaviour *Ability to access healthcare (financial, logistical) *Social support (family, shelter) *Anticipated stressors - financial (ability to work + earn, work opportunities, family needs, debt) - social (isolation, experience of shame, fear and stigma) - own physical or mental health - exposure to violence on return - unmet needs (above) *Future hopes - social (marriage, kids) - financial (job, income) - cultural (ability to fulfill family and social obligations) *Feelings of empowerment ↕ *Mental health - depression - anxiety - PTSD	*Coping responses ☒ - Positive and negative (e.g. substance abuse) *Recovery environment characteristics - access to health services/mental health support - work opportunities - social support *Anticipated stressors *Current perceived needs/future hopes/feelings of empowerment *Mental health ☒ - depression - anxiety - PTSD
HEALTHCARE ACCESS AS CITIZEN	**POLICY AND POLITICAL INFLUENCES OVER HEALTHCARE ACCESS FOR MIGRANTS** - migrant healthcare access policies/legislation – illegality&health-related "deservingness" - perceptions of public health/security risk				**HEALTHCARE ACCESS (CITIZEN OR MIGRANT)**

☒   Relevant to overall conceptual model but will not be included in analyses (due to nature of STEAM data or not feasible)

↔   Anticipated stressors mediate relationship between trafficking exposures and mental health (examined at one time only)

☒   Relevant to overall conceptual model but will not be included in analyses (due to nature of STEAM data or not feasible)

The framework also highlights possible outcomes at the post-trafficking stage for fishermen, including detention and re-trafficking. As has been observed in Malaysia and Indonesia, fishermen are frequently detained once they exit from the trafficking stage (2,45). In addition, Cambodian fishermen in Sabah, Malaysia have escaped and been re-trafficked (45), although it is not clear whether working conditions at new worksites amount to forced labour. It remains unknown how trafficked men access health services while in detention, or as irregular migrants once they have escaped in a third country. The detention and re-trafficking outcomes are depicted in Conceptual Framework A (Figure 2.1).

Previous research with trafficked persons indicates potential health problems and risk factors for poor health. In a systematic review of prevalence and risk factors for violence, and physical, mental and sexual health problems associated with trafficking (125), just 3 of 31 studies included labour-trafficked men in the sample (126–128). The remaining papers focused on sex-trafficked women and girls. In Turner-Moss et al.'s (2013) study which included labour-trafficked males in the UK (n=27/35), the main health problems were headaches (43%), back pain (36%), fatigue (30%), eye pain or injury and dental problems (23% respectively). A third (30%) experienced violence (127). A similarly high proportion (42%) of men experienced violence in Oram et al.'s (2016) study of trafficked persons using health services in the UK (128). Headaches (21%) and exhaustion (17%) were commonly reported health problems among men, 40% of whom were symptomatic of mental health disorder (128). A third of men reported high-risk drinking. Risky behaviours are depicted in Conceptual Framework A as affecting fishermen's health.

Ensuring access to mental health services is a key concern once urgent physical health needs are met (124). Trafficked men and women in Europe have been shown to experience severe psychological distress in the immediate post-trafficking period, with high levels of depression, anxiety and hostility recorded in victims (40,128,129). In Oram et al.'s (2016) study, physical violence, injuries and restrictions on freedom of movement were associated with high levels of mental health disorders (128). Mental health and coping strategies are depicted in Conceptual Framework A as affecting physical health.

Conceptual Framework B (Figure 2.2) delineates factors influencing healthcare responses for migrant or trafficked fishermen. For example, freedom of movement and proximity to Health Service Providers (HSPs) are key factors affecting whether healthcare is received by fishermen. Legal status and possession of documents may affect entitlements and access to care at the trafficking, exit from trafficking and post-trafficking stages.

Figure 2.2: Conceptual Framework B. Factors influencing healthcare responses for migrant or trafficked fishermen in Thailand

Healthcare responses as citizen	HEALTHCARE RESPONSES AS MIGRANT				Healthcare responses as citizen or migrant
Pre-trafficking	**Trafficking stage**	**Exit from trafficking**	**Post-trafficking routes** **RISK OF RETRAFFICKING**	**Post-trafficking health service access**	
				1 month	**3-12 months**
*Perceived healthcare needs *Rights to care in home country *Education, gender, culture, age, income - health knowledge/practices - health seeking behaviour *Social and cultural barriers or facilitators *Location of home/worksite, relative to HSPs & transport access - opportunity cost of accessing services *Ability to pay for healthcare *Self-treatment	*Freedom of movement *Fear of arrest/deportation *Location of worksite, i.e. physical isolation at sea *Physical proximity of public/private HSPs & access to transport *Ability to pay for care/transport to HSP *Working hours, time off for sickness/HSP visits *Legal status & possession of documents (e.g. work permits, MHI card, passport) that enable access to care *Language skills/translator availability at HSP *Perceived healthcare needs *Masculinity & health seeking behaviour *Knowledge/information on how to access care *Healthcare knowledge of co-workers/ boss/ trafficker (when care received is not from health worker), re. type of care/remedy received *Irregular migrant worker health insurance entitlements – knowledge of worker and HSP *Self-treatment	Escape, outside intervention (NGO, police) or other: *Perceived healthcare needs *Masculinity & health seeking behaviour *Injuries/illness requiring immediate attention *Ability to travel to/knowledge of HSP location *Ability to pay for healthcare *Legal status & possession of documents *Self-treatment	*Perceived healthcare needs *Language skills/translator availability at HSP *Masculinity & health seeking behaviour *Alternative work - location of worksite relative to HSPs & transport access - ability to pay for care/transport - legal status & possession of documents *Detention - restricted movement - referral mechanisms for health services - perceived deservingness for care & referrals by detention staff *Post-trafficking network healthcare - health worker expertise/capacity - mental health support available - services for men - referral mechanisms for specialized health services *Self-treatment	*Perceived healthcare needs *Masculinity & health seeking behaviour *Social and cultural barriers or facilitators *Ability to pay for care/transport to HSP *Language skills/translator availability at HSP *Self-treatment	*Perceived healthcare needs *Masculinity & health seeking behaviour *Social and cultural barriers or facilitators *Ability to pay for care/transport to HSP *Recovery environment characteristics - location of home/worksite, relative to HSPs & transport access - mental health support *Language skills/translator availability at HSP *Self-treatment
POLICY AND POLITICAL INFLUENCES OVER HEALTHCARE REPONSES TOWARDS MIGRANTS - migrant healthcare access rights/ policies / legislation - illegality and health-related "deservingness" - perceptions of public health /security risk **POLICY AND POLITICAL INFLUENCES OVER OHS/LABOUR PROTECTION** - fishing sector regulation - moral worthiness of male migrant's bodies - neoliberal organization of labour					

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Several theoretical approaches towards health determinants and root causes of vulnerability, are relevant for migrants and trafficked persons. Dalgren and Whitehead's (1991) well-known social determinants of health model (130) is a starting point for conceptual frameworks for migrants' wellbeing (122,131), but is limited by the exclusion of political factors. Krieger's (1994) eco-social theory of disease distribution conceptualizes the myriad ways that social inequalities (e.g. class, gender, race) become biologically embodied, creating health inequities (132,133).

More recently, conceptual and theoretical models for understanding migrant health which pay heed to political factors have emerged. Siriwardhana et al.'s (2017) health vulnerability of migrant populations model shows how individual, meso level (e.g. irregular employment status, lack of labour protection) and macro level (power of corporations, exploitative governments) factors influence migrant health across the different stages of the migrant's journey from origin, transit, destination and return (122). Willen et al. (2017) propose that migrants live in environments of "syndemic vulnerability", defined as synergistic, delirious interactions among comorbid conditions fuelled by inequities which are in turn caused by upstream social, political and structural factors (134). Rooted in medical anthropology and informed by public health and human rights approaches, the syndemics view asks us to consider how and where we can disrupt syndemics (upstream and downstream) to improve the health of vulnerable populations (134). By paying explicit attention to power and inequities in structuring vulnerability, a syndemics view is activist in its orientation, calling upon clinical, public health, civil society partners to apply research insights towards prevention of environments of syndemic vulnerability, treating their effects, or both (134). Upstream policy and political influences over healthcare access and responses to migrants are acknowledged at the bottom of Conceptual Frameworks A and B. Downstream factors (i.e. individual and meso-level exposures) at each stage of the migration/trafficking process are shown in both Conceptual Frameworks A and B.

The health of trafficked labour migrants is inherently political, linked to exploitative capitalism, labour market insecurity and erosion of labour rights which may be considered under the umbrella term "precarious employment" (135,136). Migrants in precarious jobs often lack the complaints mechanisms and labour protections that

native citizens have available to them, particularly in contexts where migrants are prohibited from organizing such as in Asia (137). Undocumented migrants in precarious work may be especially vulnerable to rights violations and health-related adversity (134). For victims of trafficking and extreme exploitation who are undocumented, political decisions such as exclusion from public health systems can be particularly harmful (138). Conceptual Framework B recognizes that the neoliberal organization of labour, and migrant entitlements to healthcare, are factors influencing healthcare responses for migrant or trafficked fishermen.

2.1.2   Masculinities, health, well-being and trafficking

It is well known that men often delay care seeking and present late to health providers when ill (139,140), linked to gendered social norms or notions of infallibility (141,142). Masculinity as affecting health seeking behaviours is represented in Conceptual Frameworks A and B (Figures 2.1 and 2.2).

Trafficked men are often "unwilling victims" of trafficking, or do not identify as such (143). When a trafficked person does not define the experience as abusive, he/she will likely not seek help or engage in recovery (144). Design and delivery of post-trafficking support can therefore be challenging. There is extremely limited research on men's post-trafficking service needs (144). Thailand's anti trafficking policy has recently shifted to allow men and women resident in government shelters to work, an approach which is more responsive to both women and men's needs to earn income while awaiting legal cases. Elsewhere, a reintegration study in the GMS highlights a disconnect between vocational training offered to trafficked persons in shelters, and needs in communities of origin (145). Men and women will likely have different training and reintegration needs depending on their future plans. Conceptual Framework A depicts various anticipated stressors (e.g. ability to work) and recovery environment characteristics (e.g. access to health services) that may affect reintegration. This framework also acknowledges that receiving no assistance (in Post-trafficking routes) may affect physical health of trafficked fishermen.

Potential stigma associated with accessing mental health support in the GMS may influence trafficked fishermen's health seeking behaviour. Research with trafficked Ukrainian seafarers and fishermen suggests, for example, that many men did not seek out psychological support, because they perceived accessing these services as signs of weakness and debilitation (52). Stigma and shame may differ along gendered lines.

In the Mekong context, acceptance of karmic fate is central in the Buddhist tradition (146). This may further explain why some trafficked persons do not seek out assistance (i.e. sentiment that "I deserved this experience due to some misdeed in a past life") (87). Cultural and community norms valorize familial and communal obligations, linked to Buddhism and filial piety (respect and responsibility towards one's parents) (87). Men and boys' feelings of guilt or shame may be linked to failing their wider family and community. Familial and cultural obligations are depicted in the post-trafficking stage as potentially affecting physical health in Conceptual Framework A (Figure 2.1).

2.2   Political and policy frameworks

In this section, I outline the literature and describe two frameworks which integrate policy and political factors explicitly. Conceptual Framework C situates individual exposures of fishermen alongside contextual factors (i.e. policies) as affecting their health. Conceptual Framework D delineates how narrative constructions of other stakeholders (namely NGOs, officials and industry) shape service and policy responses to trafficked fishermen in Thailand. Conceptual Frameworks A and B are referenced in this section where the literature has informed development of those frameworks.

In Conceptual Framework D, frontline responders' perceptions of trafficking and decisions around intervention and victim screening were initially embedded within a larger framework for a planned policy analysis. However, due to time constraints the policy analysis was dropped. Only selected theories (relevant to the final analysis) which informed the design of Conceptual Framework D are described below.

2.2.1 Governing migrant health

Migrants, migrant health and their health service use are politically sensitive topics. Governments generally discourage actions that could increase the labour cost of doing business, including compulsory health insurance and health education for migrants (147). Universal health coverage is usually defined on the basis of citizenship, which excludes international migrants (112). For migrants in the informal sector, access to health services is often dependent on the employers' willingness to assist workers to access services, as has been found for undocumented Filipino workers in Sabah, Malaysia (148). Absence of official documentation often prevents migrants from using health services, and is a potential factor affecting fishermen's health in Conceptual Frameworks A, B and C (Figures 2.1, 2.2 and 2.3).

Figure 2.3: Conceptual Framework C. Risk and protective factors for migrant fishermen's health

EXPOSURES

CONTEXTUAL FACTORS

Direct

OUTCOMES

*Occupational health hazards
- overexposure to elements
- badly maintained or no equipment
- long working hours
- few or no rest breaks
- fatigue/sleep deprivation
- repeated bending/lifting heavy objects
- unstable platforms
- exposure to chemicals
- serious injuries
- no personal protective equipment (PPE)

*Poor living conditions
- food/water deprivation
- poor hygiene
- restricted space
- isolation at sea

*Violence exposures
- severity and frequency of physical and psychological abuse by superiors
- witness of murder
- forced drug taking

* Poor working conditions
- insecure legal/work status > fear of arrest/deportation
- non-payment of salary
- no written contracts
- access to services

Occupational Health and Safety (OHS)
- boat safety
- safety training manual (employer+worker)
- Good Labour Practices/ 1st aid kits
- labour inspections
- **Bureau of OHS, DoF, NFAT, ILO, DLPW**

Health Policies
- Irregular migrant eligibility
- medical exams (work permits)
- identification procedure/ forensic medical exams (VoT)
- health cards
- health promotion/outreach
- accessible services (ports)
- **MoPH, NGOs**

Fishing Sector Policies
- sector management (overfishing)
- length of time at sea
- working conditions
- subsidies (fuel)
- safety/survival equipment
- technology available
- licensing and use of equipment
- **DoF**

Immigration Policies
- work pass eligibility/criteria
- recruitment mechanisms (MOUs, brokers)
- ability to switch employer
- regularization programs
- local identity schemes
- Labour Coordination Centres (LCCs) (NFAT)
- **DoE (MoL)**

Labour Policies
- legal requirements in fishing work (Min. reg. No 10)
- minimum wage (300 THB/day)
- child labour
- informal work
- work contract terms
- trade unions/right to organise
- **DoE, DLPW (MoL), NGOs**

Human Trafficking Policies
- prevention education
- labour inspections
- identification procedure
- first responders SOPs
- post-trafficking services
- **MSDHS**

Biologic/Physical Environment
- overfishing= reduced stocks/ declining catch
- sea/weather conditions
- target fish species/toxins
- fishing location
- **Employer/DoF**

Policing/Criminal Justice
- reporting, raids/rescue
- identification procedure
- penalties for employers
- corruption
- prosecution
- **POLICE, DSI (MoJ)**

Illegal Unreported Unregulated (IUU) fishing
- Overfishing
- Vessel monitoring system (VMS)
- boat inspections
- regulatory capacity
- Limited entry EEZ
- **Marine Dept (MoL)**

Fishing Economics
- fishing farming (trash fish)
- food security concerns
- legislation and structure of fishing industry
- **DoF**

Global Supply Chains
- advocacy
- consumer awareness
- regulations (California)
- **Supply chain NGOs**

Environmental Policies
- marine conservation/overfishing rules
- boat type/structure permitted in coastal/deep sea areas
- fishing gear permitted (trawls)
- **Marine dept/DoF**

Trade Policies
- economic importance of fishing
- trade agreements
- **DoFT**

Foreign Policies
- bilateral relations (MOUs)
- information sharing (boats+crews, labour/ boat inspections, rescue+return)
- **MoFA**

Migrant Fisherman's health, safety and well-being

<-------------------------------------Perceptions of moral deservingess/situated ethics------------------------------------->

Indirect

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Contrary to public perception, young adult migrants, the largest migrant group in Southeast Asia, are generally healthier than non-migrants in host countries and those left behind, as migration is selective of those in higher socioeconomic groups (149–151). But, the healthy migrant bias can disappear when migrants are concentrated in dirty, difficult and dangerous (3D) jobs, as trafficked persons often are. Poor living and working conditions can put them at higher risk of occupational injuries, psychosocial or physical health problems, underlining the need for health services for vulnerable migrants including trafficked persons.

Migrants are often portrayed as a security threat and are thus subject to policies that "securitize" their movement and access to services. Securitization occurs when a given issue becomes framed as a security threat that requires "extraordinary" measures. A security threat is therefore a subjective creation; there need not be an objective danger so long as a threat is perceived to exist (152). These perceptions have informed current policy responses to trafficked fishermen who escape in Malaysia, where they are often detained on the basis of violating the Immigration Act as illegal migrants (25). In global public health, the spread of infectious diseases (including HIV/AIDs) has dominated security concerns in recent years (153). Because of their mobility, migrants are often portrayed as "infectious disease carriers". Public health and migrant security concerns collide in practice. In some parts of Thailand, it is reported that police frequently check migrants for registration cards, work permits and hospital health check receipts (154). Perceptions of migrants being security risks or disease carriers is depicted as a cross-cutting factor affecting fishermen's physical health and access to services in Conceptual Frameworks A and B respectively.

Policymakers in Thailand have expressed concern that improved health services for unregistered migrants will encourage further in-migration (155). However, research suggests otherwise. Migrants are more likely to be influenced by overall push and pull factors, such as work availability and political conflict at home (155). Policies governing access to health services often do not specify who can access services in what circumstances - for example, a labour migrant versus a trafficked person.

As depicted in Conceptual Framework C (Figure 2.3) under "Fishing Sector Policies" and "IUU fishing", maritime authorities focus on selective issues, including boat registration and illegal, unreported and unregulated (IUU) fishing, not labour violations (52). Official responses to maritime boundary transgressions involve chasing away boats, or the arrest and detention of fishermen (156). These responses attempt to securitize borders and constrain the mobility of migrants, rather than identify labour exploitation. Trafficked fishermen are unlikely to be identified in both situations.

Separate to immigration detention of irregular migrants, trafficked persons are often detained in government run shelters across Southeast Asia. Shelter detention is justified by security concerns (e.g. risk of re-trafficking), the victim's consent to enter the shelter and their need for services (88). Trafficked persons usually cannot freely leave government run shelters, and this may be a factor affecting physical health (Conceptual Framework A, Figure 2.1). In Thailand, some shelters permit free movement and allow trafficked persons to work outside the shelter, while Malaysia, another destination for trafficked fishermen, does not. There is evidence that shelter detention may be harmful for mental health. An IOM assessment in one Malaysian government shelter for trafficked persons found that 50% of shelter residents had severe PTSD, with a further 25% probable cases identified. Similarly, 37% of trafficked persons had anxiety scores in the abnormal range, and 34% were diagnosed with depression (157). Little research explores what sort of psychosocial support should be made available for trafficked persons in shelters in Southeast Asian countries.

2.2.2   Migrants as less deserving than citizens: biopolitics in Southeast Asia

Biopolitics is a term used in social theory to describe strategies used by regimes of authority (e.g. States) to manage human life (158). States may use different techniques to govern human social and biological processes (158). Here, states "exceptionalize" certain spaces or groups in the name of national security or economic concerns (159). For Ong (2003), people in different zones (e.g low wage manufacturing, illegal labour markets, refugee camps) experience "systems of variegated citizenship in which populations subjected to different regimes of value enjoy different kinds of rights, discipline, caring and security" (p.43) (159). In Agamben's (1998) view, refugees

represent the ultimate biopolitical subject or example of "bare life", where they have a right to simply exist, but their quality of life is not of concern to states, and they do not have other political freedoms (160). Similarly, irregular labour migrants can be said to be "bare life" in contexts where state policy is unconcerned with their welfare, where rampant exploitation is permitted by states, and where they do not have political rights. Southeast Asia is a prime example.

In Southeast Asia, the space to agitate for improvements in migrant worker's living and working conditions is constrained by two factors. First, the common belief that it is legitimate for the state to discriminate against non-citizens in favour of citizens. Second, the focus on the employer as innocent and the migrant as suspect in disputes (161). In general, ethics and morals must be "situated" in a cultural and historical context (161). This context has implications for how NGOs problematize the exploitation and abuse of migrant workers, and thus how they strategize to gain improvements in migrant workers' welfare. For example, NGOs working with migrant domestic workers in Malaysia put forward ethical claims for their right to a healthy and unthreatened body, or "bio-welfare", rather than legal claims which include human rights, better wages, or citizenship (162).

Against the backdrop of a general perceived legitimacy in treating migrant groups very differently to native populations, Ong's (2006) concept of bio-welfare is a moral-economic argument for mere survival, an absence of bodily abuse, or an argument for "sheer life" (163), defined as situations where "categories of the human – refugees, the undocumented, failed state subjects, non-state persons – exercise claims on the basis of sheer survival, not citizenship" (p.34) (164). These "counter politics of sheer life" represent "a situated form of political mobilization that involves ethical claims to resources articulated in terms of their needs as human beings" (p.29) (163). Importantly, bio-welfare demands do not precede legal rights claims. What most migrant workers want, Ong (2006) contends, is not citizenship, but legal residence and permission to work, as well as the ability to move freely from host to home country (161). This claim is supported by migrant testimonies in Thailand (165).

Overall, migrants are governed very differently to native populations in Southeast Asian countries. Different governance is considered legitimate by citizens and policymakers, and such beliefs feed into perceptions of deservingness of migrants among Street-Level Bureaucrats (SLBs) (166) which are described in the following section.

2.2.3   Moral and health-related deservingness of migrants

Perceptions of moral, and health-related deservingness of migrants among frontline responders or SLBs affects how potentially trafficked fishermen are identified and assisted (or not).

Chauvin (2012) describes a "moral economy" of illegality when it comes to civic membership in Western countries (which may or may not involve conferral of official citizenship). Irregular migrants are not completely seen as illegitimate due to their illegal status, because they can act in other ways that demonstrate "good citizenship", in the name of civic honour, in hope of lesser deportability, or in view of future legalization (167). For example, in the USA, children of undocumented immigrants have integrated into formal institutions such as schools and universities despite their irregular status (168). By being a hardworking student with aspirations to being a good citizen, it becomes a moral question whether deporting such an emblematic "informal" citizen is good for the polity or not. Chauvin (2012) describes how these practices of "bureaucratic incorporation" of irregular migrants are often connected with humanitarian concerns of SLBs (166,167), e.g. teachers, police officers, who may ignore the irregular status of migrants and assist them anyway (169).

As Fassin (2005) observes among asylum-seekers, officials' perceptions of deservingness may also be related to medical evidence of trauma and violence (e.g. physical wounds or mental health trauma) (170). The rise in use of medical certificates in asylum claims appears to progressively substitute an asylum seekers' testimony (170). Similarly, a trafficked fisherman's claims about violence and abuse may not be considered legitimate by secondary responders unless it can be "objectively" proven that he has endured such abuses.

Besides the existing Health Insurance Card Scheme (HICS) for migrants, health may be an entry point to further improve services for marginalized migrants in Thailand, where the discourse surrounding universal health coverage as a fundamental right has gained legitimacy since implementation of the Universal Coverage Scheme (UCS) policy in 2001 (111). This discourse may apply to migrant workers differently – anthropologists note the need for more research on the deployment and impact of discursive frames that portray migrants as worthy or undeserving of health benefits (171). Here, Willen (2012) provides a framework to understand three aspects of the social determinants of healthcare access for migrants. First, there are judicial rights, policies and formal entitlements to healthcare that are codified. Second, perceptions of moral "deservingness" by policy actors and healthcare providers towards migrants exist. Third, the empirical, or healthcare access by migrants in practice – which may or may not be influenced by judicial rights, but is generally affected by perceptions of moral deservingness (172). Systematic reviews find that health workers' poor treatment of migrant workers may be related to language and communication barriers, cultural misunderstandings (169,173) and prejudice and racism (173,174). However, health workers face time and resource constraints that may prompt them to ration or restrict services by treating migrants poorly, shown in Conceptual Framework D (Figure 2.4) "Policy Implementation" as potentially affecting service responses to migrant and trafficked fishermen.

Figure 2.4: Conceptual Framework D. How narrative constructions of migrant or trafficked fishermen shape service/policy responses in Thailand

UNITS OF ANALYSIS

NGOs and agencies
(local– seafarer welfare centres, fishermen's NGOs, migrant organizations, international - demand side activists, multilateral agencies)

Policymakers
(national – MOL (marine department, DLPW), DoF, MSDHS, DSI, Anti-HT Police, Immigration dept)

Industry actors
(local/national)– NFAT, Samut Sakhon Fisheries Association, Thai Frozen Foods Association, Fishing companies)

Provincial implementers
(local – labour inspectors, LCC/OSSC managers, Royal Marine Police, Thai Navy, Royal Thai Police, Offices of Labour Protection & Welfare, HSPs, PTSPs)

NGO PROCESSES OF MEANING CONSTRUCTION (FRAMING)
Arguments/frames deployed by different interest groups to reduce fishermen's vulnerability
⇒ What constructions of trafficked fishermen do NGOs use to gain support in local ethical context (bio-welfare)? Do these work in case of male migrants (racialized others)?
⇒ Direct service provision@pier, how related to ethical/social/political context
⇒ Advocacy campaigns
⇒ Frame alignment processes - Bridging (linking frames) amplification (invigorating/emphasizing cultural values), extension (enlarging reach+incidental views to recruit adherents), transformation (changing old meanings/generating new)

POLICY IMPLEMENTATION - early stage implementation & feedback
⇒ Who is responsible for implementation (guiding institution)?
⇒ Street-level bureaucrats
　○ Discretion, autonomy
　○ Resources/caseloads vs. responsibilities
　○ Ration/restrict services, priority cases & deservingness, control of work situation
⇒ Engagement with employers
⇒ Engagement with NGOs (raids/rescues)
⇒ First response to potential VoT cases (NGO, health, labour, police)
⇒ Moral deservingness – what assistance/labour and occupational protection do migrant and trafficked fishermen deserve or not deserve? (employers + provincial implementers)

MEANING CONSTRUCTION/FRAMING – how all actors construct/ identify/ negotiate what the problem is
⇒ Indicators
　○ Magnitude/severity and changes
　○ Credibility (e.g. research reports, media)
⇒ Focusing events (timing)
　○ Disaster/crisis/experience + pre-existing perceptions
⇒ Feedback - existing programs for migrants/fishermen/VoTs
⇒ NGO frames – environmental/marine degradation, food security, IUU fishing, trafficking, corruption, supply chains, legal/human rights, others – which are most effective for influencing decision-makers?

POLITICAL CONTEXT - consensus building by bargaining/lobbying
⇒ National mood (conservative, tolerant, etc)
⇒ Party ideology/elections/regime change
⇒ Interests at stake for the Thai government?
　○ Global reputation
　○ Seafood industry revenue
⇒ External pressures
　○ USDOS TIP report

INTERVENING VARIABLES
Policy window - opportunities for actors to push proposed policies or problems (coupling, problems or politics window)

Policy entrepreneurs - individuals who couple problems, policy and politics streams (Softening, Framing, Resources, Access, Strategies)

POLICY FORMULATION - technical solutions and ideas that are proposed to address problems. Consensus building by persuasion.
Policy proposal selection criteria:
⇒ Technical feasibility
　○ Clearly communicated, cost-effective, scientific evidence, simple to implement
⇒ Congruence with societal values
⇒ Anticipation of future constraints
　○ Budgetary
　○ Public acceptability
　○ Political acceptability
⇒ Dominant concerns of each actor?
　○ Trafficking
　○ Seafood exports
　○ Worker safety
　○ Labour rights
　○ Others?

FORMULATION + EARLY STAGE IMPLEMENTATION OF LABOUR/OSH POLICIES
⇒ Legislative change of Labour Protection Act (LPA) to include fishermen. Ministerial Regulation No.10 revision to guarantee protection regardless of: length of time vessel is outside Thai waters, no. fishers
⇒ Labour Coordination Centres (LCCs) (n=7) operated by NFAT
⇒ Vessel Monitoring System (VMS) for Thai Vessels, mobile registration units (DoF, Marine dept)
⇒ OSH training manual/course being developed for fishing industry (NFAT, DLPW, OSH Bureau, ILO), First aid kit distribution to boats (n=300) (NFAT/ILO)
⇒ Employer code of conduct (NFAT), Good Labour Practices (GLP) in fishing sector (Sept 2013). Contracts available in 3 languages
⇒ National Minimum Wage (1 Jan 2013) – 300 THB per day
⇒ Pilot inspection of fishing boats – Songkhla, Nakhon Si Thammarat in 2013 (RTP, Marine Police, RTN)
⇒ Samut Sakhon/Samae San models (2012/2013) – central government operations team +provincial teams to inspect work contracts/conditions/HT indicators (DLPW, Marine Police, Provincial Fishery Office, MSDHS, Marine Dept, PTSP)
⇒ Pilot migrants regulatory system Samut Sakhon, Ranong – residential zoning + public health services
⇒ Revised labour inspection form (HT indicators)+training 300 labour inspectors/task force in 2014 (MOL)
⇒ Multi-sectoral mobile labour inspection units (DLPW)

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Perceptions of deservingness as a key factor influencing frontline responders' decisions around identification and assistance of migrant and potentially trafficked fishermen are shown in Conceptual Frameworks A, B, C and D. During fieldwork, I wanted to understand how officials constructed trafficked and migrant fishermen – did officials see this group as morally deserving, does this differ by legal status of the migrant, and what were they deserving of? Inherent in these questions is how male migrants in Thailand are "othered" (108). Perceptions of moral deservingness directly contribute to a migrant's health, because perceptions are integral to problem identification, which in turn affects policy formulation and healthcare access in practice. In Willen's terminology, illegal migrants can "embody" their vulnerability – they may avoid seeking support services for fear of arrest or deportation, or they may internalize exclusionary arguments that they are "undeserving" (172). It is not uncommon for undocumented migrants to present at healthcare providers in the late stages of a preventable condition, leading to disability and sometimes death (172). Their illegality is what conditions access. In this thesis, I considered notions of deservingness as central to understanding how officials treated migrant and potentially trafficked fishermen.

3 METHODS

This chapter outlines the candidate's role in research design for this thesis and provides an overview of the mixed methods approach used, followed by information on the quantitative data analysed. Research design and ethical issues for the qualitative study are described, and the chapter ends with personal reflections about the research process.

3.1 Research aim and objectives

Aim: This thesis aims to investigate the health needs of trafficked fishermen, and to understand how victim identification and assistance is conducted with potentially trafficked fishermen in Thailand. The research objectives, methods and corresponding paper are presented in Table 3.1 below.

Table 3.1: Research objectives, Methods, Paper

Objective	Method	Paper
1. Understand the prevalence of violence, health risks and occupational safety and health (OSH) conditions of migrant seafarers and fishermen in the GMS, including conditions when trafficked into the sectors	Systematic review of academic and grey literature	Systematic review
2. Describe factors associated with injuries and violence among labour-trafficked men using post-trafficking services	Quantitative: Directed Acyclic Graphs (DAGs), Univariable description by sector, Logistic regression (bivariable, multivariable)	Paper 1
3. Describe factors associated with poor physical health among trafficked fishermen using post-trafficking services, including health service provision for migrant and potentially trafficked fishermen	Mixed methods: Quantitative: Univariable description by long/short haul fishing, Logistic regression (bivariable) Qualitative: Thematic analysis of interview data with health and welfare providers (government and NGOs), industry and international organization participants	Paper 2
4. Understand how frontline responders view "trafficking", and how perceptions are shaped by policy and legal definitions and narrative constructions of fishing trafficking	Qualitative: Thematic analysis of interview data with labour, health and welfare officials, law enforcement, NGOs and industry, document analysis of Anti-Trafficking Act and screening forms	Paper 3
5. Describe key constraints faced by frontline responders in identifying and assisting potentially trafficked fishermen	Qualitative: Thematic analysis of interview data with labour, health and welfare officials, law enforcement, NGOs and industry,	Paper 3

3.2 Candidate's role in research design and overall thesis

I came to the LSHTM on a Bloomsbury Colleges Scholarship, which required the candidate to analyse data from the Study on Trafficking, Exploitation and Abuse in the Mekong (STEAM), a multi-site, longitudinal survey carried out with men, women and children using post-trafficking services in Thailand, Cambodia and Vietnam (see section 3.4). I analysed secondary quantitative data collected in the STEAM study which was designed and carried out by my PhD supervisors. I had no role in the study design or formulation of survey instruments. During my first year as a PhD student, I undertook a consultancy to clean and integrate the country datasets into a single STEAM dataset. This exercise enabled me to have a deep understanding of the quantitative data and its strengths and limitations. I drafted a data guide for external use of the dataset by another PhD researcher, as well as team members analyzing the data for the main report. I also helped my supervisors (STEAM co-PIs) with data analysis for the STEAM report and other thematic papers (126,175,176). I led the design and data collection for the qualitative component of my thesis (see section 3.5). For this thesis, I led the conception of research questions, the methodological approach and the drafting and revision of all four research papers. The forms outlining the specific contributions of the candidate and co-authors for each research paper are included at the end of this thesis.

3.3 Rationale for mixed methods approach

This exploratory study used mixed methods. Triangulation, defined as the process of studying a problem using different methods to gain a complete picture, is commonly used in mixed methods research (177). This research combines, rather than integrates, methods (178). Quantitative data collection for a larger study (see section 3.4) was conceptualized initially by the co-PIs without an integrated qualitative component. As fishermen were a large occupational group in the survey sample, I decided to focus on their experiences and needs which have not been explored in academic research to

date. Qualitative data collection was conceptualized subsequently, to complement data available on fishermen in the STEAM dataset. I decided to explore themes around victim identification and assistance which involved conducting in-depth interviews with NGOs, government agencies and industry. Quantitative data on fishermen's individual experiences of exploitation, violence, injuries and health symptoms, were examined alongside qualitative data elucidating more macro social processes that engender *how* a trafficked fisherman comes to have the experiences enquired about in the survey, and how they are assisted. During thematic analysis of qualitative data, I deliberately focused on themes not covered in survey data. Quantitative and qualitative methods are operationalized at different points depending on the specific research objective (see Table 3.1) with the two datasets brought together at the point of analysis, interpretation and theorizing a revised conceptual framework (see Chapter 8) (178).

Both the quantitative and qualitative data were considered to equally contribute to knowledge about the health needs of trafficked fishermen, and processes of victim identification and assistance. I did not treat each method as exclusive to a particular research paradigm (179). Instead, as applied, mixed methods research geared towards policy, I aimed to draw attention to the complexity of human trafficking in the fishing sector. For the qualitative study, I provide detailed explanations of data collection procedures in section 3.5 below, and details of the how thematic analysis was conducted in Papers 2 and 3, so that readers can assess whether the conclusions drawn are supported by the data (180). Further detail on how methods used addressed the research objectives can be found in each paper. Reflexivity and position of the researcher are explained in section 3.6 below.

3.4   Study on Trafficking, Exploitation and Abuse in the Mekong (STEAM)

Study design, sampling and recruitment

I analysed data from the Study on Trafficking, Exploitation and Abuse in the Mekong (STEAM), a multi-site, longitudinal survey carried out with men, women and children

who received assistance after a trafficking experience between October 2011-May 2013. The study was a collaboration between the LSHTM and the International Organization for Migration (IOM), funded by Anesvad Foundation (a Spanish donor) and the IOM Development Fund. The sample was selected in two stages. First, 15 post-trafficking service providers were purposively selected in Thailand, Cambodia and Vietnam based on the diversity of clientele, relationship with IOM country teams and Anesvad Foundation and agreements with government institutions. Second, a consecutive sample of individuals aged 10 or older were invited to participate within 0-14 days of admission to one of the service providers. Follow up interviews were conducted with individuals who remained in contact with services between 30-90 days after the first interview. Information on ethics, and participant consent forms for STEAM, can be found in Appendix 2.

Study participants were identified as trafficked and referred to service providers by the police or immigration officials in destination countries. For detailed information about referral and screening criteria for identifying trafficked persons, please see Paper 1 "Study design and participants" section in Methods. Study participants may or may not meet the UN definition of being trafficked outlined in Chapter 1, because different countries had different legal definitions of trafficking that influence different screening criteria used to identify trafficked persons. While we cannot say that the study is representative of individuals using post-trafficking services overall due to differing eligibility criteria between and within countries for services, the study is representative of individuals using the 15 service providers.

Study instrument

The STEAM survey provides data on physical and mental health symptoms at time of interview, occupational health risks, exploitation, emotional, physical and sexual abuse during a trafficking situation, pre-trafficking abuses, and perpetrator information. The questionnaire was based on an instrument used in a previous study with sex trafficking victims in Europe (40), and can be found in Appendix 3.

Questions on violence were derived from the violence and health outcome modules of the WHO multi-country study (181). These items asked about acts of violence that

participants may have experienced before and while being trafficked. An additional item, "released a dog to bite or scratch you", was added after consultation with service providers about acts commonly reported by trafficking survivors. Participants were also asked about threats against themselves or loved ones.

Mental health was assessed using the Hopkins Symptoms Checklist 25 for depression and anxiety and the Harvard Trauma Questionnaire for post-traumatic stress (PTSD) (182–184). Binary variables for being symptomatic of anxiety, depression and PTSD were calculated based on cut-off scores of 1.75, 1.625 and 2.0 respectively (126). For rationale on the cut-off points used in the STEAM study, please see Appendix 4.

Sample size

Sample size estimates for STEAM were first calculated based on the prevalence of depression, anxiety in refugee and labour migrants (185), and experiences of violence among refugees (186). Based on the practical constraints of data collection and fieldwork duration, a sample estimate of a minimum of 385 interviews per country was established. For detailed sample size calculations, please see Appendix 5.

The STEAM study was not designed to result in a large sample of fishermen (consecutive sampling, where participant profiles are not determined in advance). At the mid-term project meeting in November 2012, IOM country teams noted the large number of fishermen participating in STEAM, and proposed that analysis of this sub-group would be useful to understand the health needs and risks faced by trafficked fishermen. To address the research objectives of this thesis, I analysed data collected with men and boys from the first interview only.

3.5 Qualitative study

For this thesis, I designed a qualitative study to explore key stakeholders' perceptions of trafficking, and to understand how potentially trafficked fishermen were identified and assisted by frontline responders. Participants included NGO and INGO staff, government officials, law enforcement and senior policymakers. Data collected addressed research objectives 3, 4 and 5. I obtained funding for qualitative data

collection from a Gordon Smith Travelling Scholarship at LSHTM. Data collection for the qualitative study took place between July-October 2014.

3.5.1 Study design

Sampling and recruitment

A combination of purposive and snowball sampling was used. I compiled an initial sample frame, based on review of reports and policy documents, identifying actors with significant involvement in policy development related to trafficking into fishing, authors of policy reports, and actors involved in service provision to migrant or trafficked fishermen in port settings. These actors were categorized into three groups during design of topic guides: NGOs (local and international, includes technical experts); provincial implementers (officials and law enforcement); and decision makers (policy and industry). As only a handful of NGOs across Thailand were known to work with migrant and trafficked fishermen, all were included in the sampling frame. Purposive sampling was used because the research required specific actors with domains of expertise relevant to the human trafficking in fishing or health service provision to migrant fishermen, the domains of enquiry. Further snowball sampling with participants at the interview was also carried out, until no new names were suggested.

Participants were usually contacted by phone by myself or one of the Research Assistant Interpreters (RAIs) to explain the purpose of the research and to invite them to interview at a convenient time and date for the participant. For frontline staff in government agencies, the RAI was usually requested to fax the information and consent form to a senior official for review. The agency would then grant permission for the interview.

Sample size

I aimed for a sample size of 30, with at least 10 interviews per group (NGOs/INGOs, provincial implementers, decision makers) until theoretical saturation was achieved. The final sample included 33 participants across these groups (Table 3.2), although the categorization of participants differs for Papers 2 and 3 based on the focus of analyses

and differing responses by sub-categories of participant. For example, labour inspectors and law enforcement were excluded from analysis in Paper 2 on health, because these participants typically did not discuss health issues during interviews.

Table 3.2: Participants interviewed for qualitative study (n=33)

Organization type	Total
Labour, health or welfare officials (Off.)	9
Law enforcement officers (LE)	6
NGO service providers (NGO)	12
INGO representatives (INGO)	3
Industry representatives (Ind.)	3
Total	**33**

Interviews were semi-structured rather than narrative, conducted with detailed topic guides. Theoretical saturation was achieved without a large sample per subgroup. As outlined in the qualitative methods literature, saturation with a relatively homogenous group on behaviours and perceptions can be achieved within 12 interviews, with meta-themes identified within six interviews (187). Consensus analysis theory suggests that experts tend to agree more with each other (with respect to their particular domain of expertise) than do novices (188). Consensus analysis research finds that small samples, as few as four participants, can be sufficient to provide complete and accurate information on patterns of agreement and disagreement (i.e. how unified beliefs are), within a particular cultural context (189). Participants must possess a certain degree of expertise, known as "cultural competence", about their domain of inquiry (189). Participants in this study were familiar with human trafficking in the fishing sector, policy initiatives to reduce its prevalence, and in the case of health service providers, migrant access to services. Thus, consensus analysis guidelines were appropriate to guide sample size estimations.

Selection criteria for research site

Thailand was selected as the research site following discussion with IOM partners, who clarified that the majority of trafficked fishermen in the STEAM study were trafficked to Thai ports. Many men were subsequently trafficked to third countries including Indonesia and Malaysia. Selection criteria for the port research site in Thailand, where interviews with NGOs and provincial implementers were conducted, included the following: have one or more NGOs providing services to migrant or trafficked

fishermen, and be a provincial implementation site for anti-human trafficking initiatives in the fishing industry. Interviews with provincial implementers and local NGOs usually took place in the port province, or Bangkok if the NGO had an office there with staff who travelled to the port province) to conduct their work. Interviews with policy and industry decision makers, INGO representatives and central anti-trafficking law enforcement units took place in Bangkok. The port research site is anonymized throughout this thesis for confidentiality and safety reasons. Participants are likely to be known to higher authorities, and small sub samples (e.g. n=3 Industry representatives) for some categories of participant means that there is a risk of participants being identifiable if the province is named.

Document collection

During interviews, I collected documents from participants including victim screening forms used by officials and law enforcement, fishermen's contracts and policy reports. Because fishermen's contracts were not used at the time of data collection (they had just been given to industry participants by the Department of Employment), so they were not analysed as part of the research. English versions of Thailand's Anti-Trafficking Act (2008), other relevant legislation and policy documents were obtained from the ILO website and the Thai government's anti-trafficking website.

3.5.2 Ethical considerations and institutional affiliation

I decided that no interviews would be conducted with trafficked fishermen when designing the qualitative study for two reasons. First, as noted in Chapter 1, several NGO reports using qualitative data from interviews with trafficked fishermen about their experiences of abuse and exploitation were published in the period leading up to fieldwork for my qualitative study. I felt that additional narratives from fishermen would yield limited new information that would address the research objectives. Furthermore, the STEAM survey provided extensive quantitative information on trafficked fishermen's health needs which was used to address research objectives 2 and 3; quantitative information about men's experiences had been lacking to date. Second, I felt that what was missing were narratives from frontline responders and service providers about how they assisted men. In the year leading up to the

qualitative study, over 10,000 boat inspections had been conducted but no cases of trafficking had been found, despite NGO and media reports of trafficking cases. I felt that this puzzle deserved further exploration. Therefore, research objectives 4 and 5 were drafted to address this research gap.

While interviewing key stakeholders and not trafficked fishermen posed comparatively fewer ethical risks, I was cautious about the sensitive nature of trafficking at the time of data collection (see Chapter 1) and potential risks participants could face by speaking out on the topic. Participants sometimes requested to have the audio recorder turned off when discussing sensitive issues, mainly corruption. I have taken extra steps to ensure that participants cannot be identified, by anonymizing the province.

Throughout data collection, I was affiliated with the Institute for Population and Social Research (IPSR), Mahidol University, Thailand, as a visiting student. Beyond this being a requirement for the funder, the IPSR affiliation was invaluable to understand the cultural context of the study and nuances around the sensitivity of phrasing questions about trafficking. Dr. Kanokwan Tharawan, a medical anthropologist, oversaw aspects of research design and data collection. One Research Assistant Interpreter (see section 3.5.4 below) was recruited from IPSR. Ethical approval was obtained from the LSHTM's Observational Ethics Committee (IRB no. 8368) and from the IPSR's Institutional Review Board at Mahidol University (IRB No. 2014/1-1-22).

Informed consent

Participants could choose whether to conduct the interview in Thai or in English, except for one interview which was conducted in Burmese with an interpreter. Written consent in English or Thai was obtained from all participants prior to interview. Participants were assured that they had the option of declining to participate and if they agreed to participate, that they could delay or terminate the interview at any time. All interviews were audio-recorded, except for one interview at the request of the participant. Instead, I took notes and analysed these along with other interview transcripts. Copies of the information sheet and consent form are found in Appendix 7.

Confidentiality & anonymity of participants

Interviews were conducted in private. A minority of interviews (n=3) were group interviews of 2-3 persons. In one case, participants were pre-assigned by their government agency to take part in the interview. In two other cases, the main participant had colleagues who wanted to participate and for another, the informal setting permitted another colleague to wander in and join the interview. In these cases, I asked participants if they were comfortable expressing views in front of their colleagues, and whether additional participants were happy to sign the consent form afterward. The confidentiality and anonymity of the interviewees was preserved in transcripts, data entry and research papers. No names or identifying information were included on any interview-related documents. Participants were asked for their permission to use anonymous quotes in published materials, for which personal details were sufficiently altered to ensure that individuals could not be identified. Personal identifiers were replaced with numeric codes and type of respondent (e.g. law enforcement officer) for data presentation. Direct quotes should thus not be attributable to a given individual.

3.5.3   Data management and storage

During the project and until completion of the PhD, paper records, including field notes and signed consent forms, were stored securely. Electronic records, namely transcripts and audio files, were stored in a password protected folder in an encrypted personal file, and on a portable hard drive kept in a safe place. All identifying information on audio files and transcripts was removed and replaced with numeric codes.

Audio recordings will not be available for sharing (via a repository or requested access) at any time for two reasons. First, following investigative reports into trafficking in fishing, the topic is very politically sensitive in Thailand. After discussion with the research assistants and local academic advisor, I felt that assuring participants that audio data would remain confidential and accessible only by the research team would encourage them to participate in the study. Furthermore, because participants were well known to each other and, in several instances, had given media interviews about

their work in trafficking, there was a risk that participants could be identified from the audio recordings.

After completion of data analysis and the PhD viva, audio recordings will be managed and stored in LSHTM's Secure Server for 10 years (as per academic journal requirements when data are used in publications), after which time files will be disposed of securely. While audio recordings will not be available for sharing, participants were asked for their permission to have their anonymized transcripts stored in LSHTM's data repository after completion of the PhD viva. The anonymized transcripts will be made available via requested access to myself. The transcripts will be disposed of securely after 10 years.

3.5.4   Language issues: interpretation, transcription and translation

Conducting research in Thai was challenging. My basic Thai allowed me to build some rapport with participants at the beginning of interviews, but I could not conduct interviews in Thai without an interpreter. It is important to recognise that collecting data in one language, and presenting findings in another, involves taking deliberate decisions that may impact the validity of the research findings (190). Factors which affect the quality of interpretation and translation include linguistic competence and the interpreters' knowledge of the culture of people in the study (190). In this section, I describe how interpretation during interviews and subsequent transcription and translation were conducted, and efforts taken to minimize any potential impacts on validity.

Role of Research Assistant Interpreters (RAIs)

Two Research Assistant Interpreters (RAIs) were recruited with the background and skills to conduct interviews in Thai. Both RAIs had Masters degrees and extensive experience of conducting social research. Reena Tadee (IPSR, Mahidol University) had conducted interviews for a previous study on human trafficking, and Wangsiri Rongrongmuang (independent consultant) had previously researched marine life and fishing labour conditions at Thai ports. Two RAIs were recruited as both had other work commitments and were not always available. A further two interpreters were

recruited for one interview each, respectively, when RAI's were not available, as well as a third interpreter for an interview in Burmese. A total of five interpreters were recruited throughout data collection. Each of the four Thai interpreters were sent a copy of the protocol summary, and translation glossary, by the researcher, and before the interview were briefed on the research objectives, expected questions, and interview technique. The Burmese interpreter was an intern at the participant's organization, and did not receive this training, due to the constraints of time and learning of the availability of this interpreter close to the interview date. The RAIs underwent separate interviewer training and review of topic guides, where we also discussed ethical concerns and confidentiality requirements of the study.

I initially hoped that the RAIs could conduct interviews in Thai autonomously, with myself present during interviews only to clarify questions or issues raised by the RAI or participant. I believed that this would save time taken for sequential interpretation, which may be boring for the participant as they waited during interpretation to English. However, upon discussion with the RAIs, both stated that they were more comfortable with sequential interpretation, so it would be clear who was asking the questions (which may be controversial) and culturally, inappropriate for them to be asking directly. Both RAIs also suggested that participants would prefer this mode of interviewing as more interactive. Therefore, sequential interpretation was carried out.

Twenty interviews were conducted in Thai with one of the RAIs, who were trained on topic guide content and interview technique. One interview was conducted via a Burmese interpreter, and I conducted the remaining 12 interviews in English alone. Interviews lasted 1.5 hours on average. Topic guides were informed by the study's conceptual frameworks (see Chapter 2) and policy document review. Questions focused on participants' experiences of directly assisting fishermen, or on colleagues' experiences of doing so in their organization (e.g. for senior officials who guided policy). Participants were asked their opinions about human trafficking, labour inspections, migrant registration drives and victim screening processes, and the challenges they faced conducting any of these tasks. Please see Appendix 6 for an example topic guide.

Transcription and translation process

Interviews in Thai were transcribed by a Thai transcriber, and subsequently translated to English by a separate translator (two-step process). A random selection of the transcriptions to Thai script from audio recordings, and the subsequent translated transcripts in English, was checked by one of the RAIs for accuracy and meaning. For the interview in Burmese, the interpreter's words were transcribed to English due to difficulties finding a Burmese transcriber.

The transcriber and translator were not professionals, but had prior experience in transcribing or translating research interviews respectively. Both the transcriber and the translator signed confidentiality agreements agreeing to keep any information from audio files, or transcripts, confidential in line with research ethics requirements. The transcriber also agreed to delete audio files on completion of transcripts. Transcribers were sent audio files using a dropbox download link, accessible for a set period before I deleted the file from dropbox. I have removed identifying information on transcripts prior to their deposit in the LSHTM research repository.

3.6   Personal reflections on process, position of researcher

As described in section 3.3, I was motivated to explore health needs and experiences of fishermen due to the large number who appeared to be trafficked according to the STEAM survey and emerging media and NGO reports. When I started the PhD, there was no academic research on this group, and discussions with IOM partners for STEAM indicated that trafficked fishermen experienced some of the worst kinds of abuse and violence seen among trafficked persons they'd ever assisted. I was strongly motivated to conduct research that might help to inform assistance and services offered by IOM to trafficked fishermen. It is important to me that any research conducted is policy relevant and useful to service providers.

Data collection for the qualitative study was delayed following the military coup in Thailand in May 2014. Shortly afterward came the Guardian's damning exposé on trafficking in the fishing sector, and the USDOS TIP report downgrade to Tier 3 (see

section 1.2.3). These events undoubtedly impacted participants' responses during interviews, which began in July 2014. Before starting interviews with government officials, I was usually asked to clarify the nature and purpose of the research. Two participants mentioned that journalists had posed as researchers to obtain information for media exposés, and one participant refused audio recording as a result. In these cases, I felt it necessary to clarify that I wasn't a journalist looking to criticise government efforts, but that as a researcher I sought to understand how the government was addressing fishing trafficking. The affiliation with Mahidol University, a well-known academic institution in Thailand, helped in establishing credibility as a researcher (rather than a journalist). Despite the events leading up to data collection, no interviews were refused. If anything, participants (particularly government officials) seemed glad for the opportunity to explain Thailand's efforts to reduce trafficking, and to discuss their frustrations around how Thailand was being portrayed as a trafficking pariah in the international community. Being aware that the timing of data collection may have introduced bias in these participants' responses, I was careful to corroborate these claims with NGO participants. Since data collection ended, several NGO reports on fishing trafficking cases and policy responses have also been invaluable in triangulating findings with officials' responses (24,47,118,191). On two occasions following interviews with law enforcement, the RAI suggested that I should be sceptical about some of the participants' responses. Allegations of corruption among law enforcement at all levels in Thailand made it difficult to address this issue head on. Due to sensitivity and not wanting to make participants uncomfortable, I did not ask directly about corruption during interviews. But corruption usually came up as participants responded to questions about problems with trafficking policy responses. When participants alluded to corruption at higher levels in law enforcement or the government, I was usually asked to turn off the recorder. Participants were more open discussing corruption at the level of local police. This reflects the personal risk that participants faced in speaking out against corruption at higher levels. Further discussion of corruption can be found in Chapter 8.

Having worked and lived in Singapore and Malaysia prior to starting the PhD, I've found it helpful to draw on my ethnic background (half Malaysian-Chinese) in establishing rapport when meeting people in both personal and professional

capacities, in Southeast Asia. Sometimes I discussed my ethnic background in relation to trafficking efforts in Singapore, where I had previously worked with migrant domestic workers, during interviews. In some instances, participants commented on my appearance and asked where I was from. In these cases, I found that being "half-Asian" was an advantage, as participants felt that I understood the "Asian way" of doing things. Namely, this involves appreciating concepts such as "face", the understanding that people have pride and do not appreciate being publicly named or shamed. Closed door meetings are preferred to discuss sensitive issues such as trafficking, rather than public condemnation such as that which Thailand had received in the period prior to data collection. Without generalizing too much, Asian social norms also involve deferring to authority and respecting hierarchies within organizations. It can therefore be difficult for junior staff to speak out against institutional direction or practices. In some instances, with government officials, I was asked to turn off the recorder when they had something potentially critical to say about their superiors, or Thailand's trafficking response.

I've played a role in disseminating the overall STEAM study results in Southeast Asia. Along with my supervisor Ligia Kiss, I presented STEAM findings at country dissemination meetings in Bangkok, Phnom Penh and Hanoi in November 2014, returning to Bangkok to present the overall findings at the joint report launch with IOM in February 2015. I was an invited speaker at an intergovernmental meeting of the Australia-Asia Trafficking in Persons (AATIP) in Bangkok a few months later, which offered the opportunity to discuss post-trafficking health and wellbeing with criminal justice practitioners from ASEAN countries. In October 2015, I was invited to attend an informal AATIP meeting about trafficked fishermen specifically, with other NGO researchers, practitioners and activists. At some of these meetings I've met participants from the qualitative study again, which has enabled a more sustained connection. Through these meetings, I've also made contacts that will be helpful in disseminating the overall thesis findings. I plan to write a one page brief for each research paper, and have this translated to Thai, for dissemination purposes.

As is discussed in Chapter 8, opinions about trafficking and policy responses were diverse and relationships between government agencies, industry and NGOs were

sometimes strained. I was careful during interviews not to voice strong opinions (i.e. condemnation), and tried to come across as a neutral figure researching policy responses and implementation. I felt that this helped participants to be candid with their experiences and opinions. In a minority of interviews with government officials who had been assigned by agency to speak with me, I felt that participants were guarded in their responses. I was also conscious during those interviews not to take up too much time, as these officials had many tasks to complete. Following interviews, participants were given a ballpoint pen from Mahidol University to say thank you. In analysing and presenting this research, I have endeavoured to reflect the diversity of perspectives among participants.

4 SYSTEMATIC REVIEW

4.1 Preamble to systematic review

As no region specific systematic review had been conducted on the health needs of fishers and seafarers beyond HIV, this review focused on GMS fishers and seafarers working anywhere in the world and the broad range of health problems and risks they may face. The complete data tables for this review can be found in Appendix 9.

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RESEARCH PAPER COVER SHEET

PLEASE NOTE THAT A COVER SHEET MUST BE COMPLETED <u>FOR EACH</u> RESEARCH PAPER INCLUDED IN A THESIS.

SECTION A – Student Details

Student	Nicola Suyin Pocock
Principal Supervisor	Cathy Zimmerman
Thesis Title	Occupational risks, health needs and victim identification of trafficked fishermen in the Greater Mekong Subregion (GMS)

<u>If the Research Paper has previously been published please complete Section B, if not please move to Section C</u>

SECTION B – Paper already published

Where was the work published?			
When was the work published?			
If the work was published prior to registration for your research degree, give a brief rationale for its inclusion			
Have you retained the copyright for the work?*		Was the work subject to academic peer review?	

*If yes, please attach evidence of retention. If no, or if the work is being included in its published format, please attach evidence of permission from the copyright holder (publisher or other author) to include this work.

SECTION C – Prepared for publication, but not yet published

Where is the work intended to be published?	Occupational and Environmental Medicine
Please list the paper's authors in the intended authorship order:	Nicola S Pocock, Nguyen Hoang Long, Don Eliseo Lucero-Prisno III, Cathy Zimmerman, Sian Oram
Stage of publication	Not yet submitted

SECTION D – Multi-authored work

For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)	I conceptualized the review, screened all abstracts and papers, analyzed the data, drafted and finalized the manuscript.

Student Signature: _____ **Date:** _____07/06/2017_____

Supervisor Signature: _____ **Date:** _____07/06/2017_____

4.2 Systematic review

Occupational, physical, sexual and mental health and violence among commercial fishers and seafarers from the Greater Mekong Subregion (GMS): systematic review

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ABSTRACT

Objectives

Little is known about the health of Greater Mekong Subregion (GMS) commercial fishers and seafarers, many of whom are migrants and some trafficked. This systematic review summarizes evidence on occupational, physical, sexual and mental health and violence among commercial fishers and seafarers from Mekong countries.

Methods

We searched 5 electronic databases, hand-searched one journal and purposively searched grey literature. Quantitative or qualitative studies reporting on prevalence or risk of any relevant outcomes were included. Two reviewers independently screened papers for eligibility; reviewer one appraised quality and extracted data for all studies while reviewer two conducted quality appraisal and data extraction for a randomly selected 33% of included studies. Data were extracted on nationality and whether fishers were long or short-haul where available.

Results

We identified 33 eligible papers from 27 studies; 13 were grey literature or non-health papers. Of grey literature, 12/13 papers included trafficked or forced fishers/seafarers. Of the 20 peer-reviewed papers, 19 papers included commercial fishers/seafarers who were not defined as trafficked; among these papers, 11 focused on HIV/AIDS/sexual health and nine on occupational/physical health; one study included mental health of trafficked fishers. Violence was quantitatively measured in eight papers mainly from grey literature with prevalence of 11-26% in port convenience samples and 68-100% in post-trafficking service samples. Studies indicate that commercial fishers/seafarers whether trafficked or not worked extremely long hours; trafficked fishers experienced a high burden of violence, injuries and poor mental health; trafficked long-haul fishers had very limited access to care following injuries or illness. Migrant fishers reported relatively high condom use but were likelier to self-treat compared to native fishers. Lesser known health risks reported among fishers included penile oil injections, sea snake bites and beriberi (vitamin B1 deficiency). We found just one work safety intervention study and inconclusive evidence for differences in the outcomes by

nationality. Reporting of study design and analysis methods in grey literature was often unclear. Findings are limited by the methodological weaknesses of primary studies.

Conclusion

Results show an absence of high quality epidemiological studies beyond sexual health. Formative and pilot intervention research on occupational, physical and mental health among commercial fishers and seafarers from the GMS is needed. Future studies should include questions about violence and exploitation. Ethical and reporting standards of grey literature papers should be improved.

Review registration number: PROSPERO 2014: CRD42014009656

BACKGROUND

Rationale

Commercial fishing at sea has been identified as among the world's most dangerous occupations (192). The Food and Agriculture Organization (FAO) estimates that Asians comprise 78% of 37.8 million working in capture fisheries globally (12), with China, the Philippines and Indonesia among the largest supply countries for an estimated 1.65 million seafarers worldwide (193). Common occupational illnesses among seafarers include gastrointestinal, dental and dermatological conditions; and injuries to the extremities and back (194). Accident risk is increased by inadequate use of protective gear, crew inexperience, and fatigue linked to insufficient manpower, long working hours and sleep deprivation, from noise and vibration of the boat, adverse weather conditions and night working or watch shifts (195). However, most evidence on occupational health, injuries and illness focuses on seafarers in or from developed regions in Europe, North America, and Australasia. A study of commercial fishers in New Zealand, for example, found high risks of occupational hazards including operating heavy equipment, falling objects, falls on deck or into the sea, death from drowning; and injuries to hands/fingers, head and trunk (196). Fewer scientific studies have been conducted among crew from Asian countries whom may have different patterns of illness due to differences in health and safety cultures, behaviours and diets (197).

Fishers and seafarers are vulnerable to exploitation and abuse, which is often exacerbated by their physical isolation in off-shore, mobile worksites. In recent years, the trafficking of fishers has emerged as a growing phenomenon in the Greater Mekong Subregion (GMS) (9) as has the trafficking of seafarers in Central Asia (52). Cambodian, Burmese, Laotian and Thai men and boys have been trafficked onto Thai fishing boats bound for Indonesian waters, from where large numbers of trafficked long-haul fishers have been repatriated reporting harsh working conditions, severe abuse and exploitation at sea (9). Because fishing transcends national borders, fishers face restrictions that require them to stay on board vessels while in port, preventing escape and access to medical care (73).

While several systematic and non-systematic reviews on various aspects of health among commercial seafarers and fishers have been conducted (195,198–200). these reviews do not include studies on trafficked men. The review of sexual risk behaviour and HIV among fishers in Africa and Asia did not consider other health outcomes or men's experiences of violence (200). Furthermore, most reviews do not report the outcomes by nationality or migrant/citizen status, or by long or short haul fishing, factors which may shape experiences of occupational hazards or health outcomes (201).

Objectives

We sought to synthesize evidence on occupational health risks, physical, sexual and mental health problems, abuse and violence among fishers and seafarers from the GMS countries (Cambodia, Laos, Myanmar, Thailand, Vietnam, China's Yunnan province) working anywhere in the world, whom may be migrant, trafficked or working within their country of birth. While commercial fishing is the primary sector of interest in this review, seafaring is included because occupational health risks in seafaring can be considered similar to those in commercial fishing. Both sectors involve adverse working conditions in deep seas, with most work performed on open decks exposed to the elements, although fishing is more labour intensive, subject to less regulation than seafaring and has correspondingly higher mortality rates than seafaring (199). Long-haul fishing usually involves fishing trips conducted for periods of more than four weeks outside of territorial waters, whereas short-haul fishing refers to operations of four weeks or less within territorial waters (31).

This review deliberately scopes broad health outcomes, risks and associated factors, to provide an overview of all existing health related studies for this population. We reviewed all primary studies that measured the outcomes, risk behaviours and other factors affecting the outcomes. We compared findings by nationality and by long or short haul fishing where data were available.

METHODS

Search strategy

The review protocol is registered with the PROSPERO database of systematic reviews, registration number CRD42014009656. This review followed PRISMA guidelines (202). A multi-stage search strategy was employed, comprising an electronic search of five databases (Embase, MEDLINE, Global Health, PsychoINFO and Academic Search Complete), using keywords and MESH/exploded terms (see Appendix 8) for studies published between 1 January 1980 and 25 May 2016. We also hand searched the International Maritime Health journal, and purposively searched the grey literature (e.g. reports from United Nations agencies) based on authors' knowledge of previous studies on migrant and trafficked fishers and seafarers from the GMS.

Selection criteria

Studies were eligible for inclusion if they: 1) included males or females from the GMS region working as commercial marine fishers/seafarers anywhere in the world; 2) measured the prevalence of any reported measure of occupational or physical health (e.g. risks/hazards, accidents/injuries/mortality, safety attitudes), sexual health (e.g. risk factors, diseases), mental health (e.g. disorders, suicide attempts), violence or treatment seeking behaviour for any health problem at either the workplace or individual level; 3) presented results from peer or non-peer reviewed research based on either cross sectional surveys, cohort studies, experimental studies with baseline measures for the outcomes of interest, qualitative studies or case studies (featuring interviews or focus groups). Grey literature, including technical reports and doctoral theses, were eligible. There were no language restrictions, or restrictions on the method used to measure the outcomes. When multiple eligible papers from the same study were identified, only the most definitive results were included for each relevant outcome. Each paper's most definitive findings are reported separately in Tables 4.3-4.6 (see Appendix 9) but referenced in terms of the overall study in the discussion. The inclusion criteria initially included studies with fishers and seafarers of all Asia-Pacific nationalities and/or fishing/seafaring taking place anywhere in the Asia-Pacific. Inclusion criteria were narrowed at the full text screening stage to those above to yield a smaller number of regionally focused studies which would be more useful to academics and service providers working with this population.

Studies were excluded if they: 1) did not include commercial marine GMS fishers/seafarers (e.g. studies on inland fishers on lakes/rivers, divers, traditional non-commercial fishers, leisure fishers were excluded); 2) did not present disaggregated data for the outcome measures where the eligible study population were included as a sub-group/data were unobtainable; 3) had study samples of fewer than five participants. Systematic and other reviews were also not eligible for inclusion, although they were identified during title and abstract screening and used for the purposes of forward/backwards citation tracking.

Data extraction

Two reviewers (NP and NHL) screened the downloaded titles and abstracts for potential inclusion; the same reviewers then assessed the full text of potentially eligible papers against the inclusion criteria. If studies collected data on the study population as part of a larger sample, authors were contacted for relevant disaggregated data. An online data extraction form was developed and piloted by NP. Data from all included papers were extracted by NP; NHL independently extracted data from a random sample of 33% included studies as a check; disagreements were resolved by discussion. We contacted nine authors for further information, five responded and provided disaggregated data by nationality as requested (n=2/5 of these studies were later excluded due to a sample size of fewer than five participants and not including the study population respectively).

Data were extracted on study design, sample characteristics, the outcomes and definition and method of assessing the outcomes. Sample characteristics included whether participants were trafficked or forced labourers, as defined by participants, providers or researchers: no restrictions were placed on the method by which trafficking/forced labour status was assessed.

For sexual health, we extracted data for condom use, alcohol/drug use, knowledge attitudes and practices (KAP). For occupational and physical health, we extracted data for KAP towards OSH, hazards, working hours, accidents and injuries, clinical symptoms of physical health problems. For mental health, we extracted data for disorders, suicides and emotional well-being indicators and for violence, any reported

measure. For all outcomes, data on factors affecting treatment seeking behaviour were extracted.

Data analysis

We reported mainly prevalence, odds ratios and risk ratios for quantitative studies, focusing on adjusted analyses where available. Where possible, outcome measures were extracted separately by nationality and/or by long or short haul fishing. Pooled estimates were not calculated for the outcomes due to heterogeneity in study sample selection, definitions, methods of assessing the outcomes and predominance of non-representative/convenience samples. Instead, we focused on describing the studies, their results, limitations and implications. We did not use qualitative synthesis methods for qualitative studies. Instead, for qualitative studies on trafficked fishers of non-GMS nationalities, results were summarized for the whole sample with nationality/long or short haul distinctions made clear where available in that study. Similarly, all results relevant to the outcomes of interest for this review were summarized for qualitative studies that included key informants.

Quality appraisal

The methodological quality of studies was appraised independently by two reviewers; NP appraised all studies, while NHL appraised a randomly selected 33% of studies (n=11, the same studies for which data were extracted by NHL). We used the National Heart Lung and Brain Institute (NHLBI) quality assessment tool for quantitative studies (203) and the Critical Appraisal Skills Programme (CASP) for qualitative and mixed methods studies (204). The NHLBI tool included 14 questions about study quality and the CASP tool included ten items. Reviewers were then asked to rate the study as Good, Fair or Poor based on their answers and to report the study's limitations. Questions in both tools focus on sampling methods, sample characteristics, the participation rate and analysis method. Quality ratings and limitations were not used to exclude studies, but are referred to in the discussion. Quality ratings are reported in Tables 4.1 and 4.2. With predominantly cross-sectional studies included and considering the limitations of this study design, we use the term "quality" rather than risk of bias to indicate that studies/papers were assessed based on the best methodology the authors could offer for a cross-sectional study, rather than

theoretical grounds for risk of bias (202). We did not assign overall quality ratings for two grey literature reports where conducting a research study was not the explicit aim (i.e. investigative reports), but for which qualitative information was provided/useful when discussing the remaining studies.

RESULTS

The study selection process is presented in Figure 4.1. Including grey literature, our searches returned 5725 unique records, of which 5228 were excluded following title and abstract screening. Full text copies of the remaining 528 papers that met or potentially met the inclusion criteria were retrieved. After full text screening, 33 papers were retained for inclusion in the review. Of the 33 papers, 20 were identified from the database search (Table 4.1) and 13 papers were identified from the purposive search of grey literature (Table 4.2). None of the included papers were published in a language other than English.

Figure 4.1: Flowchart of primary study selection
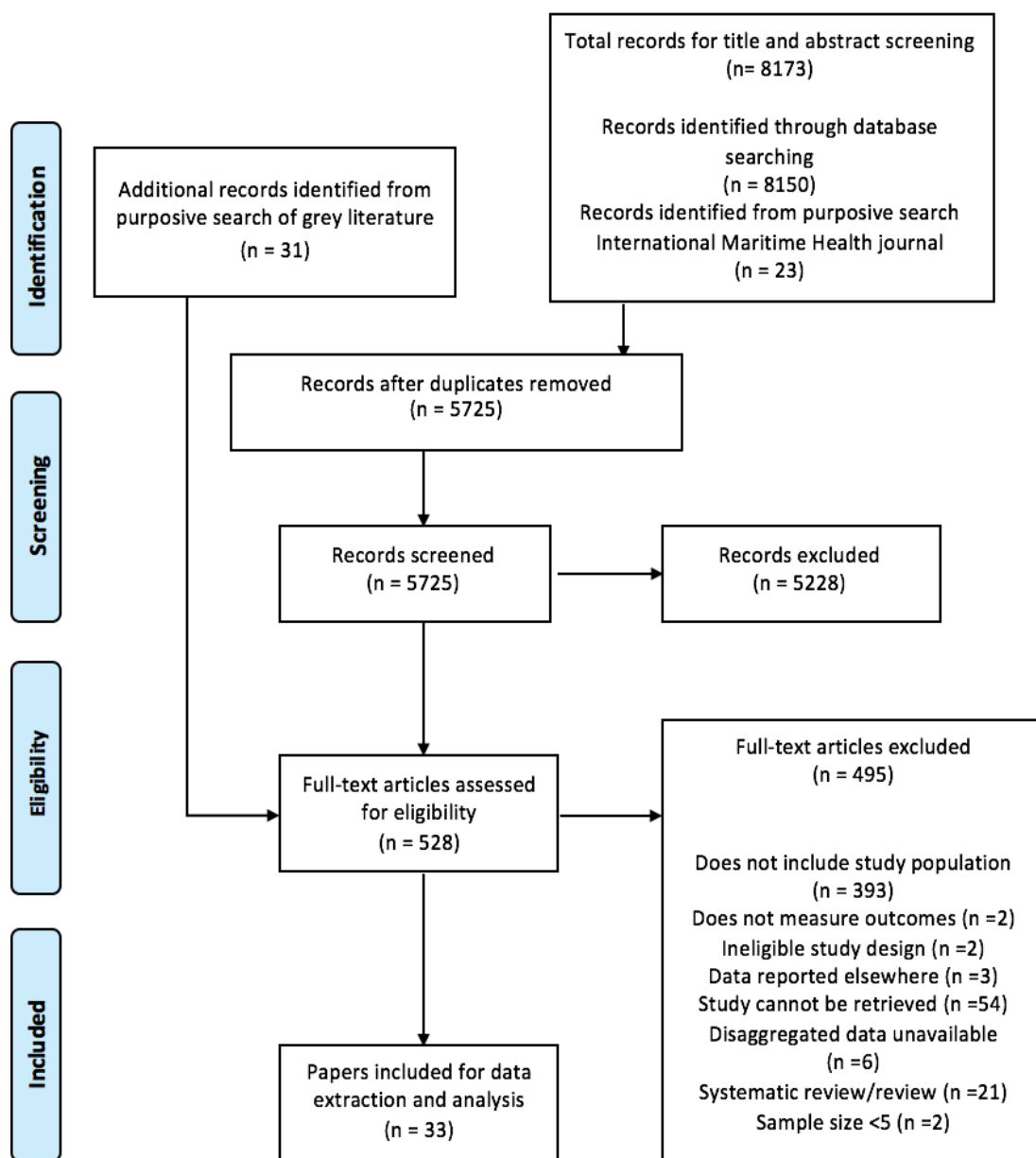
Characteristics of included papers

Tables 4.1 and 4.2. summarize the key features of the 33 included papers. Papers that report on the same studies are grouped together. The 33 papers reported on 27 studies, which were based in Thailand (n=14), Vietnam, Myanmar and Cambodia (n=2 respectively), USA, Denmark and South Africa (n=1 respectively); four studies were conducted in multiple regions. Papers from peer reviewed literature (Table 4.1, n=20) examined health among citizen or migrant fishers/seafarers; 11 papers focused on sexual health, nine on occupational and physical health; one paper included mental

health. Thirteen grey literature papers focused on adverse conditions and exploitation in smaller samples (Table 4.2), twelve of which included trafficked or forced fishers/seafarers; eight papers (seven grey literature, one peer-reviewed) quantitatively measured violence among trafficked fishers/seafarers.

Table 4.1: Peer-reviewed papers on health from database search (n=20)

Author (year)	Study design (year data collected)	Sampling method	Sample description	Outcomes of interest	Method of assessing outcomes	Country (province)	Study quality
Entz et al. (2000)[a] (205)	Cross-sectional survey (1998)	Convenience sampling at fishing ports	N=818 Fishermen (582 Thai, 137 Burmese, 99 Cambodian)	HIV/AIDS, Condom use, Alcohol/drug use	HIV status assessed using oral fluid testing (immunochromatography assay kit/Western Blot). Standardized questions on sexual health/healthcare seeking behaviour	Thailand (Trat, Songkhla, Samut Sakhon, Ranong)	Good
Entz et al. (2001)[a] (206)	Cross-sectional survey (1998)	Convenience sampling at fishing ports	N=818 Fishermen (582 Thai, 137 Burmese, 99 Cambodian)	Sexual health, Treatment seeking behaviour	HIV status assessed using oral fluid testing (immunochromatography assay kit/Western Blot). Standardized questions on sexual health/healthcare seeking behaviour	Thailand (Trat, Songkhla, Samut Sakhon, Ranong)	Good
Nguyen et al. (2011) (207)	Cross-sectional survey (2007)	Purposive sampling via marine companies	N=94 Vietnamese seafarers	HIV/AIDS, Hepatitis B	HIV/Hepatitis B assessed using serological testing (immunochromatography assay kit/Western Blot)	Vietnam (Hai Phong)	Poor
Ford and Chamrathrithirong (2007)[b] (208)	Cross-sectional baseline survey (2004)	Stratified, snowball sampling by occupational/ geographic groups	N=1603 Fishermen (1263 Burmese, 333 Cambodian)	Condom use	Standardized questions for condom use based on core indicators of UN General Assembly Special Session on HIV/AIDS and Global Fund to Fight AIDS, Tuberculosis and Malaria	Thailand (Samut Sakhon, Samut Songkram, Ranong, Chumporn, Nakhon Si Thammarat, Phang-Nga, Prachuap, Songkhla)	Good
Ford and Chamrathrithirong (2008)[b] (209)	Mixed methods study, cross-sectional baseline survey (2004) (study (208)) Qualitative in-depth interviews and focus groups (2007)	Stratified snowball sampling by occupational/ geographic groups (quantitative) Purposive sampling (qualitative)	N=1603 Fishermen (1263 Burmese, 333 Cambodian) N=29 key informants, N=4 focus groups (5-7 Fishermen each)	Condom use, HIV/AIDS knowledge	Standardized questions for HIV/AIDS knowledge/condom use based on core indicators of UN General Assembly Special Session on HIV/AIDS and Global Fund to Fight AIDS, Tuberculosis and Malaria. Open-ended questions on ecological factors for HIV/AIDS risk behaviour for qualitative component.	Thailand (Samut Sakhon, Samut Songkram, Ranong, Chumporn, Nakhon Si Thammarat, Phang-Nga, Prachuap, Songkhla)	Good
Musumari and Chamchan (2016)*	Cross-sectional baseline (2010), endline survey (2014)*	Stratified, snowball sampling by occupational/ geographic groups	Baseline: N=578 Fishermen (148 Myanmar, 430 Cambodian). Endline:	Condom use, HIV/AIDS knowledge	Standardized questions for HIV/AIDS knowledge/condom use based on core indicators of UN General Assembly Special Session on HIV/AIDS and Global	Thailand (Samut Prakan, Samut Sakhon, Ranong, Surat Thani, Trat, Rayong)	Good

Author (year)	Study design (year data collected)	Sampling method	Sample description	Outcomes of interest	Method of assessing outcomes	Country (province)	Study quality
(210)			N=510 Fishermen (125 Myanmar, 385 Cambodian)		Fund to Fight AIDS, Tuberculosis and Malaria		
MOPH (2011) (211)	Cross-sectional baseline survey (2003-5) in randomized trial of HIV vaccine	Consecutive sampling in n=47 health service provider screening sites	N=194 Thai fishermen (N=192 screened/tested for HIV)	HIV/AIDS	HIV assessed using serological testing (EIA/Western Blot)	Thailand (Rayong, Chonburi)	Good
Sopheab et al. (2006) (212)	Cross-sectional household and individual survey (2002)	Stratified random cluster sampling	N=262 Cambodian fishermen	Condom use, Healthcare seeking behaviour	Standardized questions on condom use/healthcare seeking behaviour	Cambodia (Svay Rieng, Prey Veng, Koh Kong, Battambang)	Fair
Ohnmar et al. (2009) (213)	Cross-sectional household survey (1999)	Random sampling	N=639 Burmese fishermen	Sexual health – penile practices, Condom use	Standardized questions on condom use/sexual health/penile injections/implants	Thailand (Ranong)	Good
Samnang et al. (2004) (214)	Cross-sectional survey (2000)	Convenience sampling	N=262 Cambodian fishermen	HIV/AIDS/Sexual health, Condom use, Alcohol use	HIV assessed using serological testing (2x rapid immunosorbent assays). STI history as diagnosed by medical/health professional, condom/alcohol use by standardized questions	Cambodia (Sihanouk Ville)	Good
UNAIDs (1998) (215)	Cross-sectional survey, Qualitative in-depth interviews (year unclear)	Convenience sampling (seafarers/ fishermen) Purposive sampling (key informants)	N=110 Vietnamese seafarers/fishermen N=173 Key informants	HIV/AIDS knowledge, Drug use, Treatment seeking behaviour	Non-standardized, non-validated questions for all outcomes	Vietnam (Hai Phong, Da Nang, Rach Gia and Can Tho ports)	Poor
Levin et al. (2010)[c^] (216)	Cross-sectional survey (2005)	Convenience sampling at fishing port	N=78 Fishermen (82% Vietnamese)	Occupational health – hours, work safety attitudes	Standardized questions on work tasks, safety beliefs, self-reports of ability to use safety equipment/apply procedures aboard vessel, OSH training preferences	USA (Texas)	Fair

Author (year)	Study design (year data collected)	Sampling method	Sample description	Outcomes of interest	Method of assessing outcomes	Country (province)	Study quality
Carruth et al. (2010)c^ (217)	Focus groups, sampled from study (216) participants (year unclear)	Purposive sampling	N=3 Focus groups - 15 participants (9 Male, 6 Female, Vietnamese fishers/ key informants)	Occupational health - work safety attitudes	Open-ended questions on perceptions of risk, influences impacting safety on the vessels, training preferences	USA (Texas)	Good
Levin et al. (2016)d^ (218)	Cross-sectional baseline (2008) endline (2012) surveys in prospective quasi-experimental community trial	Consecutive, convenience sampling (baseline), convenience sampling (endline) (3 sites/interventions)	Baseline: N=227 Fishers (97% Vietnamese, 86% Male). Endline: N=206 Fishermen (99.0% Vietnamese, 89% Male)	Occupational health – work safety attitudes, hypertension	Standardized, validated questions based on Theory of Planned Behaviour framework, assessing behavioural, normative, control beliefs, intention for risk area on 6-point scale. Hypertension measured using single sitting automated blood pressure measurement	USA (Texas, Louisiana)	Fair
Levin et al. (2016)d^ (219)	Cross sectional survey (2008)	Consecutive, convenience sampling	N=227 Fishers (96.9% Vietnamese, 86% Male)	Occupational health - hearing loss	Hearing loss assessed by audiometric tests	USA (Texas, Louisiana)	Fair
Hansen et al. (2008) (220)	Secondary analysis of accident reporting data from 4 sources (2003)	NA, Administrative records	N=3253 Southeast Asian seafarers (668 Thai, 59 Vietnamese)	Occupational health - accidents	Accidents as reported in: accident reporting forms/case files, insurance records, medical records	Denmark	Fair
Pe et al. (2005)e^ (221)	Cross-sectional household survey (2003)	Unclear (suggests every household sampled – could be census)	N=46 Sea snake bite victims (98% Fishermen)	Occupational health – sea snake bite, Treatment seeking behaviour, clinical symptoms	Structured questions on circumstances of sea snake bite, fatality, treatment-seeking behaviour, use of first-aid and prophylaxis	Myanmar (Mon state)	Fair/ Poor
Pe et al. (2006)e^ (222)	Cross sectional household surveys (2003-4) (includes study (221))	Unclear (suggests every household sampled – could be census)	N=187 Sea snake bite victims (85% Fishermen)	Occupational health – sea snake bite, Treatment seeking behaviour, clinical symptoms	Structured questions on circumstances of sea snake bite, fatality, treatment-seeking behaviour, use of first-aid and prophylaxis	Myanmar (Yangon division, Mon state, Ayewaddy division)	Fair/ Poor

Author (year)	Study design (year data collected)	Sampling method	Sample description	Outcomes of interest	Method of assessing outcomes	Country (province)	Study quality
Doung-ngern et al. (2007) (223)	Cross-sectional survey, examination of medical records (2005)	Case series	N=28 Fishermen (4 Thai, 24 Burmese)	Occupational health – beriberi, clinical symptoms	Standardized questions on clinical symptoms, job responsibilities, daily activities on vessel, diet. Review of medical records, serological testing for thiamine deficiency (n=3 samples)	Thailand (Samut Sakhon)	Fair
Kiss et al. (2015)^^ (126)	Cross-sectional survey (2011-13)	Prospective consecutive sampling in post-trafficking services	N=275 Fishermen (Trafficked, 217 Cambodian – 196 Long-haul, 55 Burmese/Short-haul, 2 Thai, 1 can't recall	Occupational health– hazards, injuries, Violence, Mental health Treatment seeking behaviour	Violence: standardised, non-validated questions. Physical health: adapted version of the Miller Abuse Physical Symptoms and Injury Survey. Mental health: Hopkins Symptom Checklist 25 (depression, anxiety), Harvard Trauma Questionnaire (PTSD)	Thailand, Cambodia	Good

a. same study

b. same study

c. same study. Percentage Vietnamese is assumed from percentage whose primary language is Vietnamese.

d. same study. Percentage Vietnamese is assumed from percentage whose primary language is Vietnamese.

e. same study

^Sample is not wholly comprised of GMS fishermen/seafarers, but includes high proportion of them in the sample

*disaggregated data for fishermen from baseline and end line surveys provided by Kathleen Ford (studies 113, 209)

^^Pocock and Zimmerman were co-authors in this study

Table 4.2: Papers from grey/non-health literature from purposive search (n=13)

Author (year)	Study design (year data collected)	Sampling method	Sample	Outcomes of interest	Definition of trafficking	Host country (province)	Study quality
Robertson /IOM (2011) (2)	Qualitative in-depth interviews, focus groups (2008-9)	Purposive (via assistance organizations) and snowball sampling	N=8 Fishermen (Trafficked), N=9 Focus groups (6-15 Burmese/Cambodian fishermen each) N=63+ Key informants	Violence, Adverse conditions	Assistance provider identified/ Self-defined	Thailand (Pattani, Songkhla, Samut Sakhon, Samut Prakan, Trat, Rayong, Ranong)	Fair
Brennan/ Solidarity Centre (2009) (44)	Qualitative in-depth interviews (some quantitative findings) (2008)	Purposive sampling via assistance organization	N=25 Fishermen (some Trafficked, 24 Burmese, 1 Cambodian, 19 Short-haul, 11 Long-haul boats)	Violence, Adverse conditions, Mental health (qualitative description)	Assistance provider identified	Thailand (Samut Sakhon)	Fair
UNIAP (2009) (45)	Qualitative in-depth interviews and case analysis (2007-8)	Purposive sampling via assistance organizations	N=49 Cambodian fishermen (Trafficked)	Violence, Adverse conditions	Assistance provider identified	Thailand/Malaysia	Fair
Pearson/ ILO (2006) (32)	Cross-sectional survey, Qualitative in-depth interviews (2005)	Snowball sampling (fishermen) Simple random sampling (employers)	N=21 Burmese fishermen (some Forced labour), N=40 Thai employers	Violence, Adverse conditions Treatment seeking behaviour	Self-defined (Forced labour, ILO definition)	Thailand (Samut Sakhon)	Fair
Fujita (2010) (54)	Cross-sectional household survey (2009)	Purposive sampling via assistance organization	N=19 Burmese fishermen households	Adverse conditions	N/A	Thailand (Ranong)	Poor/Fair
ILO/ARC M (2013) (31)	Cross-sectional survey (2012)	Stratified, multi-stage convenience sampling	N=596 Fishermen (some Forced Labour, 306 Burmese, 241 Cambodian, 49 Thai, 185 Short-haul, 106 Long-haul)	Occupational health – injuries, Violence, Adverse conditions	Self-defined (Forced labour, ILO definition)	Thailand (Samut Sakhon, Ranong, Rayong, Songkhla)	Good

Author (year)	Study design (year data collected)	Sampling method	Sample	Outcomes of interest	Definition of trafficking	Host country (province)	Study quality
Baker/ UNACT (2015) (224)	Cross-sectional surveys (2009, 2012, 2013)	Systematic random sampling	N=125 Cambodian fishermen (Deportees, some Trafficked)	Occupational health – work safety, Violence, Adverse conditions	Self-defined (exploited at workplace and coerced or deceived in recruitment)	Thailand/Cambodia (Poipet/ Aranyapathet border checkpoint)	Good
Verite (2015) (225)	Qualitative in-depth interviews (year unclear)	Unclear/Not specified (could be purposive)	Unspecified no. Cambodian/Burmese fishermen (some Forced Labour), Key informants	Occupational health – hazards, Adverse conditions	Self-defined (Forced labour, ILO definition)	Thailand (Samut Sakhon, Ranong, Nakhon Si Thammarrat, Surat Thani)	N/A
Yea (2014) (226)	Qualitative in-depth interviews, case file review (2010-14)	Unclear (could be purposive, based on 2012 study)	N=24 Fishermen (Trafficked, 3 Cambodian, 21 Filipino, 1 Indonesian) N=63 case files of Filipino fishermen	Occupational health – hazards, injuries, Adverse conditions Violence	Self-defined (exploited at workplace and coerced or deceived in recruitment)	Taiwan, Singapore	Fair
Day/ HAGAR (2015) (4)	Qualitative in-depth interviews, focus groups (2014-15)	Purposive sampling via assistance organizations	N=8 Cambodian fishermen (Trafficked), N=1 Focus group (10 Cambodian fishermen), N=33 Key informants	Occupational health – injuries, Adverse conditions, Violence, Mental health (qualitative description)	Assistance provider identified	Thailand, Indonesia, Malaysia	Fair/Good
EJF (2013) (227)	Qualitative in-depth interviews (2013)	Purposive sampling via assistance organization	N=6 Burmese fishermen (Trafficked)	Adverse conditions, Violence	Assistance provider (governmental) identified	Thailand (Trang)	N/A
Stringer et al. (2016)** (5)	Qualitative in-depth interviews (2011-14)	Purposive (via assistance organization) and snowball sampling	N=292 Fishermen (Forced Labour, from Indonesia, Myanmar, China, Philippines) Unspecified no. of Key informants	Occupational health – injuries, Adverse conditions, Violence	Assistance provider identified/ self-defined (ILO/European Commission definition)	New Zealand	Fair/Good

Author (year)	Study design (year data collected)	Sampling method	Sample	Outcomes of interest	Definition of trafficking	Host country (province)	Study quality
Surtees (2014) (50)	Qualitative in-depth interviews, case file review (2013-14)	Purposive (via assistance organizations) and snowball sampling	N=11 Cambodian fishermen (Trafficked) N=20 case files of Cambodian fishermen, N=42 Key informants	Occupational health – hazards, injuries, Violence, Adverse conditions, Mental health (qualitative description)	Assistance provider identified/ self-defined (exploited at workplace and coerced or deceived in recruitment)	South Africa (Cape Town)	Fair/Good

**peer-reviewed non-health paper

HIV/AIDS/sexual health

Eight of 11 papers on HIV/AIDS/sexual health were of good quality and focused on risk factors for HIV (Table 4.3, Appendix 9). Six papers discussed migrant fishers' risk behaviours in Thailand (205,206,208–210,213), while five papers discussed domestic fisher populations in Cambodia (212,214), Thailand (211) and Vietnam (207,215). Among men who visited sex workers, condom use ranged from 75.6% (205) to 57% (212) although different timescales and populations hinder comparability. More frequent condom use with sex workers than with regular partners was linked to trust and 100% condom use policies in brothels among migrant fishers in Thailand (209). Similarly, condom use with brothel based sex workers (91.5%) was higher than with non-brothel based sex workers (70.0%) among fishers in Cambodia (214). Ohnmar et al. found that younger age, low education, Mon ethnicity and being in Thailand for longer was associated with penile oil injections (injecting oil into the penis to enhance size) among migrant Burmese fishers (213). Two studies reported that some fishers were injecting drug users which may be linked to HIV (205,215). Thai fishers had higher HIV rates relative to other sectors (211). Being a migrant fisher/seafarer was associated with increased odds for testing of ever being tested for HIV in Musumari and Chamchan (210), which Ford and Chamratrithirong suggest may be linked to knowing someone who had died of AIDS (209). One study reported greater descriptive/unadjusted improvements in AIDS knowledge and condom use among migrant Cambodian fishers than for Burmese fishers in Thailand following community based awareness raising interventions (210). Entz et al. found higher proportions of Thai fishers ever had an STD compared to migrant fishers, likely due to inaccurate self-reports/reduced likelihood that migrant fishers could visit clinics for accurate diagnosis compared to Thais (206). The same study found migrant fishers also had higher odds of self-care for general health than Thai fishers (206).

Occupational and physical health

Nine peer-reviewed papers described factors affecting occupational health, accidents/injuries, treatment seeking behaviour and physical health symptoms among fishers and seafarers; most papers (n=7/9) were fair or good quality (Table 4.1, Table 4.4 in Appendix 9). Grey literature papers which included trafficked fishers touched on similar themes; most of which was considered fair quality (n=6/11) (Table 4.1, Table

4.6 in Appendix 9). In a study of n=220 Vietnamese fishers in the USA, 29.6% worked more than 16 hours/day at baseline in an intervention study (Table 4.4 in Appendix 9) (218). In cross-sectional convenience/small samples of Burmese fishers in Thailand, long-haul fishers worked 18-24 hours/day, compared to 13-14 hours/day among short-haul fishers (some trafficked) (44); 62% of Burmese fishers worked 12 or more hours/day in another study (some forced labour) (Table 4.6 in Appendix 9) (32). In the International Labour Organization's (ILO) large cross-sectional survey at Thai ports, 28.3% and 25.3% of long and short haul fishers respectively worked 17-24 hours/day (some forced labour) (31). In Kiss et al., working hours among trafficked fishers using post-trafficking services were extreme, 41.8% worked 20 or more hours/day, every day (126). Trafficked Cambodian fishers reported working hours of 18-22 hours/day, every day in other studies (Table 4.6 in Appendix 9) (50,226).

Occupational hazards among trafficked fishers discussed in four papers were diverse and included: long hours in sun/cold/wet without breaks (96.7%) (126), men being pulled overboard by heavy nets (225), or falling off the boat during storms and not being recovered (50), being forced to work in heavy storms and in cold storage and polar regions with no protective gear (50,226). Trafficked fishers commonly reported having no or bad safety/survival equipment (126), life jackets/buoys were unavailable and/or locked up (Table 4.6 in Appendix 9) (50,226). Doung-ngern et al. described 53.6% (n=15/28) probable cases of beriberi (vitamin B1 deficiencies) on a ship comprised mainly of Burmese fishers (223). Case fatality was high (13%, n=2 deaths among 15 probable beriberi cases). Among n=13 physically examined patients, 100% were hypertensive (223). Studies with trafficked fishers noted poor or inadequate drinking water and nutrition, due to the need to conserve supplies while on long-haul trips (2,50); rotten/expired food (226); consumption of mainly raw food (4) and being forced to eat fish bait to survive (5,226). Transshipment in long-haul fishing led to months and up to 3 years at sea with no freedom of movement among trafficked fishers (50). Men were tortured/sold to other boats for attempting escape (4,50). Conversely, another study of returning migrant Cambodian fishers from Thailand noted that most (72.8%) had free movement (224). Pe et al. found high case fatality (11.2%) among sea snake bite victims in Myanmar (221,222). Bites were mainly

incurred during fishing tasks and most victims self-treated or used traditional healers (Table 4.4 in Appendix 9) (221,222).

Three papers described beliefs/attitudes towards work safety among older Vietnamese immigrant shrimp fishers in the USA (Table 4.4 in Appendix 9) (216–218). In a quasi-experimental community trial of work safety interventions, Levin et al. reported statistically and practically significant increases in safety attitudes were seen for fatigue and hearing/noise interventions, but not for winch safety (218). Among returning migrant Cambodian fishers from Thailand, 63.2% reported safe working conditions (some trafficked, lowest among sectors in survey) (224). In the ILO survey at Thai ports, 91.9% reported being aware of safety risks within fishing, despite 20.6% ever being injured (some forced labour) (Table 4.6 in Appendix 9) (31).

Hansen et al. found lower adjusted accident reporting rates among Southeast Asian seafarers (IRR 0.29, CI:0.22-0.38) compared to Eastern (IRR 0.65, CI:0.50-0.85) and Western seafarers (reference) (Table 4.4 in Appendix 9) (220). Among fishers using post-trafficking services, half (49.8%) of Cambodians (mostly long-haul) experienced serious injuries compared to a third (36.4%) of Myanmar (mostly short-haul) fishers (126); similarly, higher injuries prevalence was observed among long-haul (26.4%) compared to short-haul (19.4%) fishers in a convenience sample at Thai ports (Table 4.6 in Appendix 9) (31). Other studies with trafficked fishers discussed common injuries, including wounds/cuts from fishing hooks to the face, arms and neck lodged in the skin (4,226), injuries from unguarded machinery (50) and lost limbs (126,226). Seriously sick/injured trafficked fishers were forced to wait until docking for medical care, some died waiting (226); 36% of long-haul (mainly Burmese) fishers in another study witnessed co-workers become sick and die at sea (44). Another study of trafficked fishers found that injured men had been forced to remain below deck when in port/medical assistance was denied (Table 4.6 in Appendix 9) (5).

Care among trafficked fishers was negligible; one study found that 96.9% of Myanmar (short-haul) fishers received no care, while 43.2% of Cambodian (long-haul) fishers reported having mainly received care from traffickers/employers (126). Yea 2014 reported trafficked fishers' wounds being sewn with needle/thread with no

antiseptics/pain relief (226). Several studies reported that inadequate/basic/expired medicines were given to trafficked fishers (2,4,44,226). Language barriers noted in another study meant trafficked fishers could not discuss health problems or medicines with superiors (50). Among a small sample of Burmese fishers, half turned to each other for help when sick and a third turned to relatives (some forced labour) (Table 4.6 in Appendix 9) (32). Among trafficked fishers, Cambodians (long-haul) had worse physical health than Myanmar (short-haul) fishers, e.g. 34.6% and 9.1% respectively experienced 3 or more areas of pain. Other health problems included chronic headaches, incorrectly or unhealed broken bones (4,50), skin infections/problems and persistent coughing/lung conditions (50,126) (Table 4.6 in Appendix 9).

Mental health

One good quality study of trafficked fishers using post-trafficking services was included in the review. The study, conducted by Kiss et al., described high prevalence of mental health disorders, particularly for Cambodian compared to Myanmar fishers (e.g. 63.0% and 21.8% were symptomatic of depression respectively) (Table 4.5 in Appendix 9) (126). Higher proportions of Cambodians experienced suicidal thoughts and attempted suicide compared to Myanmar fishers (126). Despite high symptom prevalence, just 15.3% were concerned for their mental health (126). Three grey literature papers whose samples included trafficked fishers discussed aspects of mental health (Table 4.6 in Appendix 9) (4,44,50). Long-haul (mainly Burmese) fishers who were regularly beaten considered suicide in one study (44). Poor mental health from violence experienced or witnessed, with isolation at sea for extensive periods/delays in returning home compounded mental health problems among Cambodian fishers (50). Anger, fear anxiety, stress, memory loss, aggression and substance misuse were observed among returned Cambodian fishers, few of whom received health assistance (4,50).

Kiss et al. found that 33.6% of trafficked fishers were concerned about guilt or shame (126); grey literature papers noted guilt/shame feelings linked to being a "failed migrant" without earnings, being deceived and/or being unable to protect oneself, and pity from the community (4). although this may translate to feeling loved for some

men (50). Men feeling guilt/shame may avoid returning home and transfer to another boat hoping to earn money (50).

Violence

Eight studies quantitatively measured violence but used different interview schedules, hindering comparability but offering an overall indication of violence experienced. Two studies of solely trafficked Cambodian fishers found high prevalence of physical violence (93.5% and 100%) (45,50); with one study anecdotally suggesting that Cambodians were beaten more than other nationalities (50). Conversely, being severely beaten was higher among Myanmar fishers than other nationalities in a convenience sample at ports (16.3% relative to 2.5% among Cambodians) (31), while another study reported higher prevalence of severe violence among Myanmar trafficked fishers (67.3%) relative to 50.2% among trafficked Cambodians (126). Compared to trafficked fishers using post-trafficking services, three studies found lower prevalence of violence, e.g. 14% among Burmese fishers sampled at a port (32), to 50% among Burmese fishers being assisted by NGOs (44); 26.3% of Cambodian fishers sampled at the Thai-Cambodia border said violence was a problem (224). Among trafficked fishers, Stringer et al. reported that sexual abuse (groping, indecent exposure, rape) by superiors was common (5), compared to a low 1.8% prevalence of sexual violence in Kiss et al., which may be linked to reporting bias and/or only asking about forced sex (not other kinds of sexual abuse) (126). Fishers in two studies reported that they were beaten for not working hard enough or when they were caught resting (50), made mistakes, or were tired (5). Conversely, one investigative report using convenience sampling found that violence was uncommon and occurred mainly when men were drunk, overworked or when they lost their temper and fought at sea (225).

DISCUSSION

Key findings

Despite limitations in comparability across the outcomes included, this review uncovers myriad occupational and health risks that GMS commercial fishers/seafarers face. Migrant fishers were likelier to self-treat compared to Thai fishers due to cultural,

legal and linguistic barriers in accessing care (206). The Thai government has since implemented a migrant health insurance program which aims to mitigate some of these barriers (111). Penile oil injections, a lesser reported health risk among migrant fishers, leads to painful complications and highlights a clear need for targeted awareness-raising campaigns. Among peer-reviewed studies, those focused on HIV/AIDS/sexual health tended to be of higher quality compared to studies reporting other health risks, reflecting the dominance of policy concerns around HIV/AIDS transmission among predominantly migrant fishers to the general population.

Occupational risks were diverse. Commercial fishers worked long hours, with extreme hours observed among trafficked fishers, who have fewer to no breaks or respite between trips compared to non-trafficked men. Similarly, occupational hazards in commercial fishing may be similar but trafficked fishers often have limited to no access to protective gear. The review uncovered other lesser known occupational risks such as sea snake bites and poor nutrition (vitamin B1 deficiency) leading to beriberi, which has been observed among trafficked fishers in Thailand recently (47). High case fatality from this preventable condition can be avoided if fishing companies ensure a varied diet, via more frequent shipments of meat/vegetables, provision of unpolished rice and/or supplements (228). Levin et al. highlighted the importance of culturally and literacy appropriate work safety interventions (218). A captain's leadership was important to influence deckhands and lead safety training, which should: be delivered in deckhands' primary language at appropriate literacy levels; be hands on/practical; be conducted during off-season periods; end in completion certificates and be culturally appropriate e.g. bright T-shirts with safety messages (217,218). We found a paucity of safety intervention studies with GMS fishers/seafarers, despite commercial fishing being one of the most dangerous occupations (192). Hansen et al.'s findings on lower accident reporting rates on among Southeast Asian seafarers compared to Eastern and Western European seafarers are suggestive of under-reporting or reporting bias among foreign crew, who may experience negative consequences of reporting accidents (e.g. being medically signed off from duty, causing financial losses). We may need targeted interventions to encourage accident reporting among Southeast Asian seafarers. In samples which included trafficked men, long-haul fishers faced a higher burden of injuries than short-haul fishers; transshipment (the practice

of keeping fishers at sea for long periods) and long periods spent at sea lead to treatment delays which put men at risk, especially among trafficked fishers (226). Preventive interventions such as ensuring OSH knowledge and adequate PPE is particularly important for long-haul fishers. Notably, no studies focused on chronic disease prevalence or risk factors, except two studies which reported on hypertension (218,223). Physical health symptoms in two other studies with trafficked fishers indicated undiagnosed tuberculosis (50,126). A permanent ban on transshipment would alleviate the risk of being trafficked for extremely long periods and ensure that men who needed care would have a better chance of receiving it (47).

Economics and the regulatory environment affect occupational hazards experienced (229). Increases in accident rates in the US Gulf of Maine indicated that some boats may have been taking longer trips with fewer crew, or taking more risks in tough financial times (230). Similar trends are observed in Thailand, where economic pressures on operators and reluctance to modernise has led to a reliance on trafficked labour (227). Future studies in the GMS and Asia broadly should consider how the economic, regulatory and policy environment affects hazards experienced.

We found just one study on mental health among trafficked fishers (126), with none among GMS fishers who may not be trafficked. Studies with trafficked Cambodian fishers noted limited mental health services upon return (50). A non-systematic review of seafarers mental health in worldwide fleets estimated that suicides comprised 13% of deaths due to illness (198), hinting at a mental health burden which is exacerbated by stressors including family separation, loneliness, fatigue, communication difficulties between multinational crews, limited recreation activity and sleep deprivation (231). Among trafficked fishers, there is an urgent need to identify culturally appropriate interventions that can be implemented in low-resource environments with non-professionals. Pre-departure mental health screening could be conducted among seafarers and long-haul fishers both for evidence generation and for practical reasons; pre-departure psychiatric assessment among Filipino seafarers may be related to low disembarkation rates for psychiatric problems compared to fishers of other nationalities (80). Among seafarers and fishers generally, improvements in working

conditions (reduced hours/duty tours, increased shore leave) would positively affect mental health.

Although definitional variations complicate interpretation, we found that violence was only reported in studies with trafficked fishers. Elsewhere, violence accounted for 5% of injuries among seafarers from Denmark, Spain, Croatia, Finland and the Philippines (232). Violence and exploitation questions should be included in studies with fishers/seafarers to enhance our understanding of their prevalence and associated risk factors.

We found inconclusive evidence for differences in the outcomes by nationality as just two studies reported adjusted analyses (205,206,220). Descriptive analyses indicated that Cambodian trafficked fishers had more injuries and worse physical and mental health than Myanmar trafficked fishers,(126) whom appeared to face a higher burden of violence than Cambodians (31,126). Future studies should explore associations between nationality and health outcomes.

Many studies, particularly grey studies with trafficked fishers, did not report whether ethical approval had been obtained from Institutional Review Boards (IRB). Quality of grey literature was a concern; reporting of data analysis methods was infrequent and presentation of results was suboptimal (e.g. raw survey data). Several studies were unclear about whether they used quantitative or qualitative designs (44,45,54). There is a need for better reporting standards in NGO and grey literature papers, akin to Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) criteria for observational studies (233); following these standards would enhance readability. Much grey literature research is commissioned by international agencies, whom should ensure ethical issues are considered and approved by an external IRB and reporting standards improved.

Future research priorities

This review highlighted the lack of evidence on GMS fishers/seafarers; previous maritime occupational health reviews show that the majority of studies focus on North American and European populations, with a smaller number of studies concentrating

on Chinese and Filipino seafarers. More epidemiological studies should be conducted with Asian samples, whom comprise the majority of the world's seafarers and commercial fishers (197). However, recent Asian origin countries for fishers/seafarers often lack the registers/skills in collecting such data (234), and data collection and management capacity should be strengthened. Potential data collection points include: pre-departure medical examinations (underlying chronic conditions); radio medical records at sea (accidents, illnesses); port based clinics/hospitals or repatriation services (acute illnesses); shore based sources (death certificates, hospital records, census returns where occupation is declared) (234). Future research with GMS fishers/seafarers on occupational, physical (including chronic disease) and mental health is necessary to inform appropriate interventions, alongside efforts by researchers to build consensus and validate appropriate instruments to improve comparability. Studies should include questions on nationality and whether fishers are long or short-haul.

Limitations of the review

The search strategy omitted citation tracking and contacting experts due to lack of resources. Studies from developing countries are less likely to be indexed in international databases which may bias our results. The methodological problems of the primary studies included in this review limit the conclusions that can be drawn. Most studies used convenience or purposive sampling in cross-sectional designs, many did not explain rationale for sample size and did not discuss sample representativeness. Heterogeneity of measurement of outcomes (e.g. violence) hindered comparability. Differing operational definitions of trafficking and forced labour hinders interpretation of findings. The findings of this review indicate that more extreme cases of abuse, exploitation, and poor health outcomes may be more likely among post-trafficking service users compared to convenience samples of fishers recruited at ports. Yet, many trafficked persons do not access services. Moreover, the proportion of trafficked or exploited fishers/seafarers that were included in studies conducted outside of post-trafficking services is unclear. An indication of the "true" situation of trafficked GMS fishers may therefore lie in-between the figures reported for fishermen using post-trafficking services, and those sampled at ports, in this review. Grey literature findings were mainly qualitatively described; it was not clear

whether validated questions were used to assess the outcomes reported. Many peer-reviewed studies also gave limited information about study instruments. Most research findings and all of those from grey literature were descriptive; information continues to be lacking on the demographic and other factors associated with poor health outcomes and that could inform interventions targeting occupational, physical and mental health.

Conclusion

There is a significant evidence gap on occupational, physical and mental health problems among GMS fishers. However, available evidence suggests high levels of need for such evidence. Formative research and pilot intervention studies on culturally appropriate interventions is needed across these thematic areas, especially for work safety among long-haul fishers who face delays in reaching shore following accidents/injuries. We should not need an HIV epidemic or trade sanctions for forced labour to care about this population, who are an essential part of global supply chains (47).

5 OCCUPATIONAL HEALTH RISKS, INJURIES AND VIOLENCE

5.1 Preamble to Paper 1

The systematic review uncovered a lack of academic research on occupational and physical health among trafficked fishers. It was unclear what specific hazards and injuries trafficked fishers faced, and which factors which may be protective against violence or injuries. To address these research gaps, I conducted exploratory analysis of STEAM survey data comparing labour-trafficked males across fishing, manufacturing and other sectors. Descriptive data were presented comparing characteristics of men and boys trafficked for different sectors and their experiences during trafficking. I used Directed Acyclic Graphs (DAGs) as a conceptual tool to guide adjusted analyses using logistic regression. DAGs explicitly showed the assumptions underpinning statistical analyses. Further information about the analytic strategy can be found in Appendix 10, with a complete list of DAGs used to guide analysis in Appendix 11.

RESEARCH PAPER COVER SHEET

PLEASE NOTE THAT A COVER SHEET MUST BE COMPLETED FOR EACH RESEARCH PAPER INCLUDED IN A THESIS.

SECTION A – Student Details

Student	Nicola Suyin Pocock
Principal Supervisor	Cathy Zimmerman
Thesis Title	Occupational risks, health needs and victim identification of trafficked fishermen in the Greater Mekong Subregion (GMS)

If the Research Paper has previously been published please complete Section B, if not please move to Section C

SECTION B – Paper already published

Where was the work published?	PLoS One		
When was the work published?	December 2016		
If the work was published prior to registration for your research degree, give a brief rationale for its inclusion			
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Stage of publication	

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For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)	I conceptualized and conducted data analysis, drafted and finalized the manuscript.

Student Signature: _____   Date: _____07/06/2017_____

Supervisor Signature: _____   Date: _____07/06/2017_____

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5.2   Research Paper 1

Labour Trafficking among Men and Boys in the Greater Mekong Subregion: Exploitation, Violence, Occupational Health Risks and Injuries

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ABSTRACT

Background

Men comprise nearly two-thirds of trafficked and forced labourers in common low-skilled labour sectors including fishing, agriculture and factory work. Yet, most evidence on human trafficking has focused on women and girls trafficked for sex work, with scant research on trafficked men and boys.

Methods

We analyse survey data from the largest systematic consecutive sample of trafficked people collected to date to describe the prevalence of violence, occupational health risks and injuries and associated factors. Participants were labour-trafficked men and boys using post-trafficking support services in Thailand, Cambodia and Vietnam.

Findings

Data are presented on 446 males aged 10-58. Men and boys were mainly trafficked for fishing (61.7%), manufacturing (19.1%) and begging (5.2%). Fishermen worked extensive hours (mean 18.8 hours/day, SD 5.9) and factory workers worked on average 11.9 hours/day (SD 2.9). 35.5% of male survivors had been injured while trafficked; 29.4% received no personal protective equipment (e.g. gloves). The most commonly reported injuries among all males were deep cuts (61.8%) and skin injuries (36.7%), injuries for which fewer than one-quarter reported receiving medical care. Six fishermen lost body parts, none of whom received medical care. Most males (80.5%) had no or very few rest breaks. One-third (37.8%) experienced severe violence. Work-related injuries were associated with severe violence (AOR 3.44, CI:1.63-7.26), being in the fishing sector, (AOR 4.12, CI:2.39-7.09) and threats (AOR 2.77, CI:1.62-4.75). Experiencing any violence was associated with threats (AOR 26.86, CI:14.0-51.23), being in the fishing sector (AOR 18.53, CI:8.74-39.28) and fluency in language of destination country (AOR 0.39, CI:0.20-0.75).

Conclusion

This study highlights the abuse and extreme occupational hazards suffered by trafficked men and boys. Occupational health and safety interventions are urgently needed to protect male migrant labourers working in high-risk sectors, particularly fishing.

INTRODUCTION

Human trafficking is a crime of extreme exploitation that affects men, women, and children globally. While there is a growing body of literature on the health of female trafficking survivors (125), there is currently little to no evidence on the health needs of trafficked men and boys. To date, few studies have measured violence, occupational risks and injuries experienced by male trafficking survivors, despite the substantial likelihood of injury and enduring health problems in work sectors into which men and boys are commonly trafficked (235,236). International Labour Organization (ILO) estimates suggest that men comprised 60% of total forced labour in sectors including fishing, agriculture and factory work in 2012 (1).

It is estimated that in the Asia-Pacific region there are 11.7 million forced labourers, who comprise 56% of forced labourers globally (1). In the Greater Mekong Subregion (GMS), there is rapidly growing recognition of the sectors in which migrant men and boys are commonly exploited, in particular, the long-haul fishing industry (2–4). Recent media reports have graphically depicted deplorable abuses, imprisonment and other slave-like treatment of men and boys recruited onto fishing vessels (8,9). This study aimed to explore the prevalence of occupational health risks, injuries and violence and associated factors among men and boys trafficked for fishing, manufacturing and other sectors.

Human trafficking, migrant workers and health and safety

Migrant workers, especially those labouring in high risk, under-regulated sectors comprise a substantial proportion of victims of labour trafficking (235,237). Compared to non-migrants, migrant workers in these sectors are often assigned the most dangerous tasks and are likely to experience more hazardous work and living conditions whether they are trafficked or not, often leading to higher rates of morbidity and mortality. Research shows that migrant workers have greater risk of fatal and non-fatal injuries compared to native populations, even when performing the same job (236,238,239). They frequently receive inadequate safety and occupational training and rarely have specialist skills or previous experience (235). Limited local language ability can prevent migrant workers from asking questions, expressing concerns about occupational safety and health (OSH) and make it equally difficult for

employers to provide training and guidance (235,237). While personal protective equipment (PPE) should meet industry standards, safety gear is often absent or under-utilized by migrant workers and rarely, if ever, offered to trafficked workers (127). Furthermore, migrants, particularly irregular migrants, are rarely aware of or willing to assert their rights to safe work conditions. Migrant workers with undocumented status in the USA, for example were generally accepting of unsafe work conditions, extended hours and even concealed injuries, fearing job loss if they complained (236,240,241). Workers without identity documents are often excluded from compensation and insurance schemes, leaving them unable to seek necessary healthcare and support (240,242,243). Exiting hazardous situations can be difficult for migrant workers because of debt repayment obligations and because they are often owed back-pay by employers (236,241).

When migrant workers are trafficked, the hazards of these conditions are exacerbated, and often include physical and/or sexual abuse and severe deprivation, making injuries, illness and distress nearly inevitable. A study among male trafficking survivors in the UK found that 42.3% of men reported violence and 32.7% experienced injury during trafficking (128). The limited research on trafficked men also suggests the links between acts associated with human trafficking and mental health problems, specifically indicating that injuries during trafficking, restricted freedom, physical violence, fear of traffickers and lack of a confidante were associated with symptoms of depression, anxiety and post-traumatic stress disorder (128).

Workplace violence

According to the ILO, workplace violence involves "any action, incident or behaviour that departs from reasonable conduct in which a person is assaulted, threatened, harmed, injured in the course of, or as a direct result of, his or her work"(244,245).

Research on workplace-related interpersonal violence among migrant male labourers is scarce, with few studies conducted with irregular migrant workers (245). Among 116 migrant farm workers in the USA, violence was more commonly experienced by migrants than native workers, attributable to poor living conditions, crowding, lack of recreational activities and availability of alcohol (246). According to the ILO, homicide

was the leading cause of workplace death among foreign-born workers in the US (245). Sexual violence against men and boys in all settings, including the workplace, is significantly under-researched (247). Among migrant workers in Asia, qualitative reports note physical and sometimes sexual violence perpetrated by police and authorities (60,248). However, abuse appears to be poorly documented, perhaps because of workplace sub-cultures where even severe physical assaults might be normalized or ignored (245,249).

Violence, threats and imprisonment are common in trafficking situations. One in ten males in a survey of 596 commercial fishermen in Thailand was beaten severely (250). Trafficked fishermen have reported being abused when they complained, were found resting, were not working fast enough or did not understand instructions (7,44,45). Being too sick or weak to work has also led to beatings or even murder by boat captains (2).

Work hazards

Work-related hazards are common in jobs done by migrant labourers, especially men and boys trafficked into particularly dangerous industries such as commercial fishing, manufacturing, agriculture and construction (236). In the GMS, increasing numbers of so-called "sea-slaves" are being identified in Southeast Asian waters (9,251). Commercial fishing is among the world's most dangerous occupations (192), involving 24-hour work cycles of physically demanding tasks, poor use of protective gear, crew inexperience and high injury rates, from for example, deep cuts from fishing equipment, falls on deck or into the sea and drowning (196,252,253). Adverse weather and night working also increase accident risk (195,231). While commercial fishing generally demands long work shifts, trafficked fishermen tend to work for even more extensive periods, often labouring for weeks or months at a time without respite (2,7,44,250). Despite the high risk of injury and illness, most reports on migrant and trafficked fishermen note limited or no access to healthcare (7,54). In a study comparing migrants' working conditions across multiple sectors in Thailand, higher proportions of fishermen experienced poor working conditions, including document confiscation, delayed payments and inadequate rest compared to factory or agricultural workers (32).

Industrial or factory work for electronics and consumer goods also employ high numbers of migrant workers, a proportion of whom work in forced labour conditions and are exposed to work-place hazards including harmful chemicals, airborne particles, machine-related injuries and extreme time pressures (254). A study in China showed that migrant workers regularly disregarded safety precautions to increase work speed (254). Factory workers report suffering physical assaults by management, machine-related amputations, crushed body parts, fractures and musculoskeletal pain (255–257). Research shows that trafficked factory workers are rarely given adequate, if any, protective gear, have very restricted movement and are often subjected to violence (258–262).

Occupational hazards are similar for agricultural workers, also a common sector for trafficked labour, including injuries from heavy farm machinery and chemical hazards that cause skin and respiratory diseases (263,264). Studies have shown that risk factors for injuries among agricultural workers were being male; having an education level beyond high school; having fewer than five years of machine operating experience; daytime drowsiness; being in debt; having lower family income; and feeling stressed (264,265).

Risks associated with construction work include: exposure to harmful chemicals; lifting heavy objects or repetitive motions; overexposure to UV rays; falls from working at heights; crush injuries; being struck by falling objects and injuries from hand tools (266). Among male construction workers in China, leading causes of injuries included collisions, cuts/piercings and falls (267). Injuries were significantly associated with heavy smoking; serious alcohol consumption; no injury prevention and safety education; and depressive symptoms (267). This study is the first to explore occupational health risks and injuries amongst labour-trafficked men and boys in these hazardous industries.

METHODS

Study design and participants

This study analyses data from a first interview with 446 males who participated in the Study on Trafficking, Exploitation and Abuse in the Mekong (STEAM) and who reached

the country of exploitation. All males were trafficked across borders except 11 boys aged 12-17 who were trafficked internally, mainly for begging in Thailand (n=9). STEAM is a multi-site, longitudinal survey carried out with men, women and children receiving post-trafficking assistance in Thailand, Cambodia and Vietnam. A two-stage sampling strategy was employed. First, the study team selected fifteen post-trafficking service providers in Thailand, Cambodia and Vietnam based on diversity of clientele (age, sex, sector of exploitation, country of origin), relationship with country teams at the International Organization for Migration (IOM) and agreements with government agencies (126). Second, a consecutive sample of individuals participated in face to face interviews within 0-14 days of entry to the service, and 30-90 days later if they were still in contact with services (126,176). Males were identified and interviewed in 7 of the 15 services at first interview. Service providers received clients referred from police and immigration services, non-governmental and international organizations and government agencies (e.g. Cambodia's Department of Anti-Trafficking and Juvenile Protection, Thailand's Department of Social Development and Welfare, Vietnam's Department of Social Evils Prevention) (126,176). These countries may have different legal definitions of human trafficking that influence differing screening criteria used to identify trafficked persons. For example, potential victims in Thailand and Cambodia undergo an initial screening process by first responders. The Cambodian assessment form applies debt bondage as a trafficking indicator, whereas the Thai form does not (268,269), as "debt bondage" is not included in Thailand's current legislative definition of human trafficking (270,271). Criteria used to determine who is eligible for services also varies. For example, in Thailand, data represented individuals using government-operated services who had agreed to participate in legal cases against traffickers (88). In Vietnam, data are from individuals using government-contracted services. Only Vietnamese citizens can be referred to these services. The STEAM study describes individuals who received post-trafficking services, regardless of differing legal definitions of trafficking and service eligibility criteria between countries (126).

Data collection

The survey instrument was translated into Khmer, Thai, Vietnamese, Burmese, and Lao, refined through group discussions with IOM counter-trafficking teams, further revised through pilot-testing, and reviewed after back-translation into English (126).

Interviews were conducted onsite at services by social workers or caseworkers, following intensive training by the principal investigator (LK) and the IOM, with interpreters when needed. Data collection and entry were coordinated by the local IOM offices, with oversight by the London School of Hygiene and Tropical Medicine between October 2011 and May 2013 (126).

Ethics

Interviewers were recruited from participating shelter staff, selected social workers (Thailand) and International Organization for Migration partners, and were trained to follow a strict ethics protocol based on the World Health Organization Ethical Recommendations for Interviewing Trafficked Women (authored by one of the STEAM Principle Investigators) (272). Guidance included ensuring participation was voluntary and confidential, avoiding and managing distress, e.g. by asking questions in non-judgmental ways and affirming responses in a supportive manner, alongside outlining options for supported referral. Survey participants were identified and interviewed by experienced service providers, and for those who were under 18 years old, the child's care team were consulted. All interviewers had the professional training or experience to identify when an individual should not be interviewed, when to stop or pause an interview, how to respond to distress and when to make necessary referrals. During consent procedures, the interviewer explained the study content and option to refuse or interrupt participation without consequences for services provision (273). The response rate among men and boys was 100%, although one male did not finish the interview and was referred for health services. Written consent was given by name or thumbprint among adults and children, with additional written consent by a legal guardian for children aged under 18. Data were anonymized and questionnaires were stored securely in each country. Ethical approval was obtained from the London School of Hygiene and Tropical Medicine and national ethics boards in each of the study countries (176).

Variables

The survey instrument was adapted from a prior European study on health and trafficking, and comprised sections on socioeconomic background, pre-trafficking

experiences, living and working conditions during trafficking, violence, health and post-trafficking emotional wellbeing and concerns (40).

Violence: Questions on abuse exposures were developed from the violence and health outcome modules of the WHO multi-country study on women's health and domestic violence (181). A categorical outcome variable for violence was calculated based on the categories often used in violence studies, with the following classified as "severe violence": being kicked, dragged, beaten up, tied or chained, choked or burned; having a dog released to bite or scratch, being threatened with a weapon, cut with a knife, shot and forced to have sex. "Less severe violence" was classified as: slaps, pushes and hits (126,274).

Injury and occupational hazards: A binary variable for "ever having experienced a work-related injury" was created. This outcome variable included injuries that were incurred at work but not related to violence; the variable "injuries from violence" had a high proportion of missing data and is not included in this analysis. The occupational health risks (OHR) score was created by combining binary variables on occupational hazards and presence of personal protective equipment (PPE) for that hazard. For example, "long hours in the sun without a break" and "sun hat" would give a binary score of zero OHR, whereas "long hours in the sun without a break" and "no sun hat" would give a score of 0.5 (conservative approach assuming the hat is 50% protective) for this OHR. OHRs were then summed per sector and the proportion endorsed by each sector was calculated, with minimum score 0 and maximum 100. The OHR score was entered as a continuous variable in bivariable and multivariable models.

Working and living conditions: A categorical variable for hours worked/day was created as was a variable for days worked/week. A continuous variable for living conditions was created summing the number of items endorsed for living conditions; a higher score indicates poorer living conditions. Binary variables for sector (fishing or other), weekly rest day, cheated of wages and no documents (either had none or had documents but these were withheld) were created, as was a continuous variable for wages received/day. A binary variable was created for restricted freedom, depending

on whether a participant endorsed the items "Ever been locked in a room" and/or was "Never" free (126).

Language proficiency: A binary variable "fluent" for whether participants spoke the language of destination country was also created. While many trafficked fishermen were repatriated from Indonesia and third countries, correspondence with IOM indicates that almost all of these men and boys were trafficked via Thailand on Thai owned boats (51). The fluent variable was therefore coded among fishing sector males as positive if the participant spoke Thai and the destination country was Malaysia, Indonesia, Mauritius or Thailand (51).

Data analysis

As our analysis is exploratory, we drew Directed Acyclic Graphs (DAG), mapping our assumptions and hypotheses conceived a priori (Figure 5.1). Figure 5.1 shows the overall conceptual thinking behind the analyses – a complete list of DAGs can be found in Appendix 11. DAGs were used to identify exposures for which we could estimate associations with the outcomes with minimal bias and thus include as covariates in statistical models. Initial selection of covariates was based on literature regarding the causes of injuries among migrant and trafficked workers. Variables hypothesized to cause injuries were hours and OHR score (primary exposures), cheated wages, violence and threats (secondary exposures) and language and documents (tertiary exposures). Further explanation can be found in Appendix 10.

Figure 5.1: Directed Acyclic Graph of effect of exposures on work related injuries and violence among trafficked males

Ability to pay broker fee

Knew trafficking risks pre–departure

Sector T1

Sector T2

Time in trafficking

Threats

Documents T1

Documents T2

Hours

Poor living conditions

Not free

Breaks

Tiredness/exhaustion

Mental stress

Cheated wages

Language

No Personal Protective Equipment

Previous experience in sector

Occupational Health Risk score

Ever injured from work

No training

Age

Education

Employer compliance OSH regulation

Attitudes/OSH behaviours

Bivariable logistic regression was used to describe the frequency and distribution of exposure variables with each outcome variable (work-related injuries or any violence experienced). Adjusted odds ratios were then calculated for the exposure variables to describe their relationship with the outcomes using multivariable logistic regression. Age and time in trafficking were included as continuous variables in multivariable models to avoid loss of information (275). A quadratic term for age and a cubic term for months in trafficking, were created and included in multivariable models, based on their respective theorized relationships to injuries and/or violence (conceived after graphically examining bivariable scatterplots with lowess smoothing lines) (276,277). The age variable was centered on the mean, and months in trafficking centered on the median to aid interpretation in models. All theorized primary, secondary and tertiary exposures for injuries were included in multivariable models, not solely those that were statistically significant in bivariable analyses (278).

The effects of the primary exposures (hours and OHR score) on injuries could not be estimated because the variable "Employer compliance with OSH regulation" was unobserved and could not be controlled for, violating the assumptions of the DAG; for further explanation, please see Appendix 10 and 11. We present the unadjusted and adjusted odds ratios for hours and OHR score as indicative of possible relationships; however they must be interpreted with caution and not as indicating causality. Analyses were conducted in Stata 14 (279).

RESULTS

Participant characteristics

The majority (71.6%) of the 446 males in this study were aged 18-34 and most were trafficked for fishing (n=275, 61.7%) and factory work (n=85, 19.1%) (Table 5.1). Males in other industries included child beggars (n=23), men and boys trafficked for agriculture (n=21) and construction work (n=16) and small-scale industries like car care (n=5) and home businesses (n=5). Fishermen were primarily from Cambodia (78.9%) and most factory workers (80.0%) were from Vietnam. Education levels differed by sector, with 22.9% of fishermen not having any formal education compared to 2.4% among factory workers and 14.0% among workers in other sectors. The main destination countries were Indonesia (46.9%) for fishermen and China (80.0%) for

factory workers. Approximately half of participants in other sectors, including agriculture and begging (55.8%), worked in Thailand. Over one third (38.9%) of fishermen spent more than two years in the trafficking situation, whereas the majority of factory workers (61.2%) were trafficked for between 1-6 months.

Table 5.1: Characteristics of labour-trafficked men and boys accessing post-trafficking services in Thailand, Cambodia and Vietnam (n=446)

	Whole sample (n=446)		Fishing (n=275)		Factories (n=85)		Other (n=86)	
	N	%	N	%	N	%	N	%
Age								
10 to 14	27	6.1%	1	0.4%	-	-	26	30.2%
15 to 17	36	8.1%	12	4.4%	9	10.6%	15	17.4%
18 to 24	168	37.7%	103	37.5%	47	55.3%	18	20.9%
25 to 34	151	33.9%	123	44.7%	14	16.5%	14	16.3%
>=35	64	14.3%	36	13.1%	15	17.6%	13	15.1%
Mean age (SD) (range)	446	25.6 (8.1) (10-58)	275	27.0 (6.9) (12-55)	85	24.9 (8.1) (15-55)	86	21.9 (10.1) (10-58)
Education								
Primary or less (1-5 grade)	217	48.7%	136	49.5%	29	34.1%	52	60.5%
Secondary (6-8 grade)	125	28.0%	63	22.9%	43	50.6%	19	22.1%
Higher (10-11 grade)	22	4.9%	10	3.6%	11	12.9%	1	1.2%
University degree	3	0.7%	3	1.1%	-	-	-	-
No formal education	77	17.3%	63	22.9%	2	2.4%	12	14.0%
Missing data	2	0.4%	-	-	0	-	2	2.3%
Country of origin								
Cambodia	257	57.6%	217	78.9%	12	14.1%	28	32.6%
Laos	5	1.1%	-	-	-	-	5	5.8%
Myanmar	65	14.6%	55	20.0%	4	4.7%	6	7.0%
Thailand	12	2.7%	2	0.7%	1	1.2%	9	10.5%
Vietnam	106	23.8%	-	-	68	80.0%	38	44.2%
Other	1	0.2%	1	0.4%	-	-	-	-
Country of destination								
China	107	24.0%	2	0.7%	68	80.0%	37	43.0%
Malaysia	30	6.7%	28	10.2%	2	2.4%	-	-
Thailand	140	31.4%	77	28.0%	15	17.6%	48	55.8%
Vietnam	1	0.2%	-	-	-	-	1	1.2%
Indonesia	129	28.9%	129	46.9%	-	-	-	-
Mauritius	33	7.4%	33	12.0%	-	-	-	-
South Africa	6	1.3%	6	2.2%	-	-	-	-
Speaks language of destination country	142	31.8%	113	41.1%	2	2.4%	27	31.4%
Sector of exploitation								
Sex workers	1	0.2%	-	-	-	-	1	1.2%
Animal farming/meat preparation	3	0.7%	-	-	-	-	3	3.5%
Agriculture/farming/plantation	21	4.7%	-	-	-	-	21	24.4%
Begging	23	5.2%	-	-	-	-	23	26.7%
Car care	5	1.1%	-	-	-	-	5	5.8%
Domestic worker/cleaner	2	0.4%	-	-	-	-	2	2.3%
Construction	16	3.6%	-	-	-	-	16	18.6%
Factory	85	19.1%	-	-	-	-	-	-
Fishing	275	61.7%	-	-	-	-	-	-
Home business	5	1.1%	-	-	-	-	5	5.8%
Street seller/shop	5	1.1%	-	-	-	-	5	5.8%
Other	5	1.1%	-	-	-	-	5	5.8%
Has previous experience in sector	38	8.5%	18	6.6%	4	4.7%	16	18.6%
Time in trafficking (months)								

	Whole sample (n=446)		Fishing (n=275)		Factories (n=85)		Other (n=86)	
	N	%	N	%	N	%	N	%
<1	41	9.2%	8	2.9%	9	10.6%	24	27.9%
1 to 6	156	35.0%	58	21.1%	52	61.2%	46	53.5%
7 to 12	51	11.4%	36	13.1%	10	11.8%	5	5.8%
13 to 23	67	15.0%	62	22.5%	5	5.9%	-	-
>=24	110	24.7%	107	38.9%	-	-	3	3.5%
Missing data	21	4.7%	4	1.5%	9	10.6%	8	9.3%
Median months in trafficking (median absolute deviation)	425	6.3 (5.5)	271	16.0 (11.5)	76	3.0 (1.0)	78	1.9 (0.0)
Country of service access								
Thailand	105	23.5%	56	20.4%	13	15.3%	36	41.8%
Cambodia	235	52.7%	219	79.6%	4	4.7%	12	14.0%
Vietnam	106	23.8%	-	-	68	80.0%	44	44.2%

Occupational hazards and exploitation

The most common occupational health risks reported by all males were repeated bending or lifting (75.6%), and lifting heavy objects (69.9%) (Table 5.2). Almost one-third of participants (29.4%) reported having been given no personal protective equipment. Nearly all fishermen (96.7%) reported working long hours in the sun, cold or wet without a break. Fishermen worked the longest hours per week (mean of 132.3 hours, SD 40.2), with over a third (41.8%), labouring 20 or more hours per day. Factory workers worked approximately half the hours of fishermen (mean of 79.6 hours/week, SD 21.3). The vast majority of trafficked males (86.5%) worked everyday and 80.5% had no or very few rest breaks.

Almost all males experienced at least one bad living condition (96.4%), on average experiencing four (SD 2.5) bad living conditions. Three-quarters of fishermen (75.9%) reported having no documents or having their papers kept from them, compared to almost all factory workers (92.9%) and workers in other sectors (96.5%). Nearly three-quarters of survivors (72.4%) reported severely restricted freedom, i.e., "never" being free or being locked in a room. Most (70.4%) reported being cheated of wages.

Table 5.2: Occupational hazards, exploitation and violence during trafficking among men and boys using post-trafficking services in Thailand, Cambodia and Vietnam (n=446)

	Whole sample (n=446)		Fishing (n=275)		Factories (n=85)		Other (n=86)	
	N	%	N	%	N	%	N	%
Occupational hazard								
Repeated bending or lifting	296/408	75.6%	261/275	94.9%	15/85	17.7%	20/48	41.7%
Lift heavy objects	285/408	69.9%	257/275	93.5%	12/85	14.1%	16/48	33.3%
Use sharp instruments	179/408	43.9%	154/275	56.0%	12/85	14.1%	13/48	27.1%
Work with harsh chemicals, cleaning solutions	91/408	22.3%	52/275	18.9%	32/85	37.7%	7/48	14.6%
Working in dusts or fibers	28/106	26.4%	-	-	22/85	25.9%	6/21	28.6%
Operating big or heavy machinery	21/101	20.8%	-	-	19/85	22.4%	2/16	12.5%
Working up high off the ground	13/101	12.9%	-	-	3/85	3.5%	10/16	62.5%
Working with raw meat	2/24	8.3%	-	-	-	-	2/24	8.3%
Working with or near pesticides	4/24	16.7%	-	-	-	-	4/24	16.7%
Unstable or heavy work platforms	226/275	82.2%	226/275	82.2%	-	-	-	-
Work along rocky coasts or in remote offshore	179/275	65.1%	179/275	65.1%	-	-	-	-
Small, unstable or badly maintained fishing vessel	94/275	34.2%	94/275	34.2%	-	-	-	-
Badly maintained or no fishing equipment	77/275	28.0%	77/275	28.0%	-	-	-	-
No safety/bad or no survival equipment	170/275	61.8%	170/275	61.8%	-	-	-	-
Long hours in the sun, cold or wet without a break	266/275	96.7%	266/275	96.7%	-	-	-	-
Working near road traffic	26/57	45.6%	-	-	-	-	26/57	45.6%
Long hours in the sun without a break	30/57	52.6%	-	-	-	-	30/57	52.6%
Long hours in the cold or wet without a break	19/57	33.3%	-	-	-	-	19/57	33.3%
No personal protective equipment given	131	29.4%	37	13.5%	33	38.8%	61	70.9%
Mean OHR score (SD)&	441	39.3 (23.3)	275	49.5 (17.5)	85	16.1 (16.9)	81	28.7 (24.5)
Hours worked per day								
<=8	40	9.0%	15	5.5%	1	1.2%	24	27.9%
8 to 10	44	9.9%	5	1.8%	22	25.9%	17	19.8%
11 to 15	57	12.8%	25	9.1%	18	21.2%	14	16.3%

	Whole sample (n=446)		Fishing (n=275)		Factories (n=85)		Other (n=86)	
	N	%	N	%	N	%	N	%
16 to 19	23	5.2%	21	7.6%	2	2.4%	-	-
>=20	117	26.2%	115	41.8%	2	2.4%	-	-
No fixed hours	161	36.1%	94	34.2%	39	45.9%	28	32.6%
Don't know	4	0.9%	-	-	1	1.2%	3	3.5%
Hours worked per day mean (SD)*	281	15.6 (6.8)	181	18.8 (5.9)	45	11.9 (2.9)	55	8.2 (3.6)
Days worked/week								
6 or fewer	24/443	5.4%	4/274	1.5%	11/83	13.3%	9/86	10.5%
Everyday	383/443	86.5%	267/274	97.5%	63/83	75.9%	53/86	61.6%
No fixed days	36/443	8.1%	3/274	1.1%	9/83	10.8%	24/86	27.9%
Hours worked/week mean (SD)*	280	108.9 (47.7)	180	132.3 (40.2)	45	79.6 (21.3)	55	56.3 (25.8)
Could not change hours/time off if sick/holiday	367	82.3%	239	86.9%	74	87.1%	54	62.8%
Cheated of wages	314	70.4%	195	70.9%	71	83.5%	48	55.8%
Median wage (USD/day) (median absolute deviation)	128	3.5 (2.8)	79	1.4 (1.1)	13	9.5 (0)	36	6.3 (3.2)
No or very few rest breaks	359	80.5%	245	89.1%	67	78.8%	47	54.7%
At least one hazardous living condition	430	96.4%	275	100.0%	85	94.1%	75	87.2%
Living situation mean score (SD)&&	446	4.2 (2.5)	275	5.6 (1.8)	85	1.7 (1.4)	86	2.2 (1.8)
Threats to self or loved ones	254	57.0%	191	69.5%	31	36.5%	32	37.2%
No documents	369	83.1%	208	75.9%	79	92.9%	82	96.5%
Restricted freedom	323	72.4%	232	84.4%	49	57.7%	42	48.8%
Violence severity**								
No violence	219	49.3%	79	28.7%	72	86.8%	68	79.1%
Less severe violence	57	12.8%	48	17.5%	2	2.4%	7	8.1%
More severe violence	168	37.8%	148	53.8%	9	10.8%	11	12.8%
Violence type								
Physical violence^^	215	48.2%	188	68.4%	10	11.8%	17	19.8%
Sexual violence^	6	1.4%	5	1.8%	-	-	1	1.2%
Physical or sexual violence, or both**^^	215	48.4%	188	68.4%	10	12.1%	17	19.8%
Violence exposures (selected)								

	Whole sample (n=446)		Fishing (n=275)		Factories (n=85)		Other (n=86)	
	N	%	N	%	N	%	N	%
Slapped you, shoved you or threw something that could hurt you	163	36.6%	145	52.7%	5	5.9%	13	15.1%
Pushed or shoved you	159	35.6%	142	51.6%	7	8.2%	10	11.6%
Hit with a fist or something that could hurt you	143	32.1%	123	44.7%	9	10.6%	11	12.8%
Kicked, dragged or beat you up	112	25.1%	101	36.7%	5	5.9%	6	7.0%
Threatened to use gun, knife or weapon against you	103	23.1%	91	33.1%	5	5.9%	7	8.1%
Violence perpetrator								
Employer (when not agent, trafficker)	109/225	48.4%	92/196	46.9%	4/11	36.4%	13/18	72.2%
Trafficker	45/225	20.0%	38/196	19.4%	4/11	36.4%	3/18	16.7%
Co-worker	51/225	22.7%	47/196	24.0%	2/11	18.2%	2/18	11.1%
Police/authority/government official	9/225	4.0%	9/196	4.6%	-	-	-	-
Family member or acquaintance	9/225	4.0%	5/196	2.6%	1/11	9.1%	3/18	16.7%
Security staff/bouncer	57/225	25.3%	55/196	28.1%	-	-	2/18	11.1%
Other	8/225	3.6%	7/196	3.6%	-	-	1/18	5.6%

&Min score 0, max 100

&&Min score 0, max 9

*Among n=280 males who worked fixed hours/could recall them

**2 missing whole sample

^3 refused to answer

^^excluding being threatened with a weapon

Violence

Nearly one in two survivors (48.2%) were subjected to physical violence and 37.8% reported severe violence, including 23.1% who were threatened with a weapon and six males who suffered sexual violence. Half of the fishermen (53.8%) experienced severe violence compared to approximately one in ten factory and other workers (10.8%; 12.8%). The main perpetrators of reported violence were employers (48.4%), security staff/bouncers (25.3%) and co-workers (22.7%). For fishermen, perpetrators were often the boat foremen. Threats were common, especially among fishermen; twice the proportion of fishermen (69.5%) reported threats to self or loved ones compared to 36.5% of factory workers and 37.2% of other workers.

Injuries and healthcare access

One-third (35.5%) of men and boys had been injured at least once, of whom 47.0% reported still experiencing pain or difficulty from their injuries at the time of interview (Table 5.3). Deep or long cuts were the most commonly reported injury (61.8%), followed by skin damage or injury (36.7%), which was particularly common among factory workers (72.7%). Back or neck injuries were sustained by 35.3% of participants, especially among those in sectors other than fishing or factory work (41.7%), such as agriculture and begging. Almost half (45.2%) of those who were ever injured or reported needing healthcare while trafficked did not receive medical care, including for very serious injuries. None of the six fishermen who lost body parts received medical attention. Of 18.0% who sustained a serious head injury, 81.5% did not receive medical attention. Of those reporting an injury or that they needed care while trafficked, 52.3% of fishermen compared to 27.6% of factory workers and 23.3% of other workers, received no care. Of those who did receive care, there was variation in the provider of this care. Higher proportions of factory workers (27.6%) and other workers (23.3%) saw a doctor or nurse compared to only 7.9% of fishermen. One-third (36.5%) of fishermen reported receiving some form of care from traffickers or employers compared to 20.0% of other workers and 6.9% of factory workers.

Table 5.3: Work related injuries among trafficked men and boys using post-trafficking services in Thailand, Cambodia and Vietnam (n=446)

	Whole sample (n=446)				Fishing (n=275)				Factories (n=85)				Other (n=86)			
	Injury prevalence (n=152)		No medical care received		Injury prevalence (n=128)		No medical care received		Injury prevalence (n=11)		No medical care received		Injury prevalence (n=13)		No medical care received	
Injury from work	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Deep or very long cut	94/152	61.8%	71/94	75.5%	87/128	68.0%	69/87	79.3%	2/11	18.2%	-	-	5/13	38.5%	2/5	40.0%
Very bad burn (not sunburn)	24/150	16.0%	23/24	95.8%	24/127	18.9%	23/24	95.8%	-	-	-	-	-	-	-	-
Serious head injury	27/150	18.0%	22/27	81.5%	26/127	20.5%	22/26	84.6%	-	-	-	-	1/12	8.3%	-	-
Back or neck injury	53/150	35.3%	48/53	90.6%	46/127	36.2%	42/46	91.3%	2/11	18.2%	2/2	100.0%	5/12	41.7%	4/5	80.0%
Skin damage or injury	55/150	36.7%	47/55	85.5%	41/127	32.3%	38/41	92.7%	8/11	72.7%	6/8	75.0%	6/12	50.0%	3/6	50.0%
Broken bone	7/150	4.7%	4/7	57.1%	6/127	4.7%	4/6	66.7%	-	-	-	-	1/12	8.3%	-	-
Lost a body part	6/150	4.0%	6/6	100.0%	6/127	4.7%	6/6	100.0%	-	-	-	-	-	-	-	-
Eye injury/damage	16/150	10.7%	13/15**	86.7%	15/127	11.8%	12/14	85.7%	1/11	9.1%	1/1	100.0%	-	-	-	-
Ear damage	17/150	11.3%	17/17	100.0%	16/127	12.6%	16/16	100.0%	1/11	9.1%	1/1	100.0%	-	-	-	-
Other^	22/149	14.8%	18/22	81.8%	19/126	15.1%	17/19	89.5%	1/11	9.1%	-	-	2/12	16.7%	1/2	50.0%
Injury frequency/severity																
Injured at least once*	152/428	35.5%	-	-	128/273	46.6%	-	-	11/76	14.5%	-	-	13/79	16.5%	-	-
Injured once	66/446	14.8%	-	-	54/275	19.6%	-	-	6/85	7.1%	-	-	6/86	7.0%	-	-
Injured afew times	50/446	11.2%	-	-	41/275	14.9%	-	-	5/85	5.9%	-	-	4/86	4.7%	-	-
Injured many times	36/446	8.1%	-	-	33/275	12.0%	-	-	-	-	-	-	3/86	3.5%	-	-
No injury	276/446	61.9%	-	-	145/275	52.7%	-	-	65/85	76.5%	-	-	66/86	76.7%	-	-
Can't remember	18/446	4.0%	-	-	2/275	0.7%	-	-	9/85	10.6%	-	-	7/86	8.1%	-	-
Injuries still cause pain/difficulty&	71/151	47.0%	-	-	66/128	51.6%	-	-	-	-	-	-	5/13	38.5%	-	-
Healthcare access																
Ever needed healthcare or was injured from work	237	53.1%	-	-	178	64.7%	-	-	29	34.1%	-	-	30	34.9%	-	-

	Whole sample (n=446)				Fishing (n=275)				Factories (n=85)				Other (n=86)			
	Injury prevalence (n=152)		No medical care received		Injury prevalence (n=128)		No medical care received		Injury prevalence (n=11)		No medical care received		Injury prevalence (n=13)		No medical care received	
Received care from doctor or nurse	29/237	12.2%	-	-	14/178	7.9%	-	-	8/29	27.6%	-	-	7/30	23.3%	-	-
Received care from trafficker or employer	72/237	30.4%	-	-	65/178	36.5%	-	-	2/29	6.9%	-	-	6/30	20.0%	-	-
Received care from coworker	27/237	11.4%	-	-	13/178	7.3%	-	-	5/29	17.2%	-	-	9/30	30.0%	-	-
Received care from traditional healer/other	17/237	7.2%	-	-	4/178	2.3%	-	-	6/29	20.7%	-	-	7/30	23.3%	-	-
Received no care	107/237	45.2%	-	-	93/178	52.3%	-	-	8/29	27.6%	-	-	7/30	23.3%	-	-

^3 missing whole sample   &1 missing whole sample   **1 missing from prevalence and medical care   *Excludes those who cannot remember

Factors associated with injuries and violence

In bivariable analyses, longer hours worked daily was associated with injuries, e.g. working 20 or more hours a day (Unadjusted Odds Ratio 7.66, CI: 2.80-20.97), as was working everyday (UOR 4.40, CI: 1.28-15.02) (Table 5.4). Other factors associated with injuries in bivariable analyses that were not primary, secondary or tertiary exposures included poor living conditions (UOR 1.45, CI: 1.32-1.60), having no breaks (UOR 2.15, CI: 1.23-3.75) and restricted freedom (UOR 1.88, CI: 1.18-3.01). Men with documents had three times the odds (1/0.33) of experiencing violence compared to men without documents (UOR 0.33, CI: 0.19-0.58).

Multivariable models and their corresponding Directed Acyclic Graphs with a single exposure and outcome are listed in Appendix 11 and Table 5.4. In multivariable analyses, injuries were significantly associated with severe violence (Adjusted Odds Ratio 3.44, CI:1.63-7.26), being in the fishing sector (AOR 4.12, CI:2.39-7.09) and experiencing threats (AOR 2.77, CI:1.62-4.75) (Table 5.4). Men who received their wages had twice the odds (1/0.42) of being injured compared to those who were cheated of wages (AOR 0.42, CI:0.24-0.71). Men with documents had slightly greater odds (1/0.63) of being injured compared to men without documents (AOR 0.63, CI:0.37-1.07), suggesting a marginal relationship between documents and injuries. The effect of hours worked on injuries may plateau at 16-19 hours (AOR 4.22, CI:1.11-15.99), although we urge caution in interpreting this result (please see limitations section in Discussion).

Factors significantly associated with violence in the multivariable analysis included threats (AOR 26.86, CI:14.0-51.23), being in the fishing sector (AOR 18.53, CI:8.74-39.28), and language fluency; those who were fluent had twice the odds (1/0.39) of experiencing violence compared to those who were not fluent (AOR 0.39, CI:0.20-0.75). Violence was also slightly associated with younger age (AOR 0.90, CI:0.86-0.95).

Table 5.4: Factors associated with work related injuries and any violence experiences among trafficked males using post-trafficking services in Thailand, Cambodia and Vietnam (n=446)

	Work-related injuries			Any violence		
	Unadjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)	Model	Unadjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)	Model
PRIMARY EXPOSURES						
Hours worked/day			A			
8 to 10	1.75 (0.51-5.93)	1.85 (0.44-7.66)				
11 to 15	3.91 (1.30-11.70)	4.28 (1.31-14.00)				
16 to 19	7.41 (2.13-25.76)	4.22 (1.11-15.99)				
>=20	7.66 (2.80-20.97)	3.75 (1.25-11.22)				
No fixed hours	2.86 (1.05-7.80)	2.33 (0.78-6.92)				
Days worked/week			A			
Every day	4.40 (1.28-15.02)	2.09 (0.41-10.65)				
No fixed days	1.12 (0.22-5.57)	1.86 (0.22-15.57)				
OHR score	1.02 (1.01-1.03)	1.02 (1.01-1.03)	A			
SECONDARY EXPOSURES						
Cheated of wages	0.68 (0.45-1.05)	0.42 (0.24-0.71)	B			
Violence			C			
Less severe	3.21 (1.67-6.16)	1.92 (0.83-4.45)				
More severe	6.72 (4.16-10.85)	3.44 (1.63-7.26)				
Threats	4.80 (3.04-7.58)	2.77 (1.62-4.75)	D	18.76 (11.46-30.68)	26.86 (14.0-51.23)	L
Fishing sector	4.81 (2.93-7.91)	4.12 (2.39-7.09)	E	11.97 (7.42-19.31)	18.53 (8.74-39.28)	L
TERTIARY EXPOSURES						
Not fluent in language of destination	0.50 (0.33-0.77)	0.72 (0.42-1.22)	F	0.26 (0.17-0.41)	0.39 (0.20-0.75)	L
No documents	0.43 (0.26-0.72)	0.63 (0.37-1.07)	G	0.33 (0.19-0.58)	0.81 (0.35-1.84)	L
COVARIATES						
Age^	1.03 (1.00-1.07)	0.99 (0.95-1.03)	H#	1.01 (0.98-1.04)	0.90 (0.86-0.95)	L
Age^2	0.99 (0.99-0.99)	0.99 (0.95-1.00)		0.99 (0.99-0.99)	1.00 (0.99-1.00)	L
Months in trafficking^^	1.04 (1.02-1.05)	1.03 (1.01-1.05)	I#			

	Work-related injuries			Any violence		
	Unadjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)	Model	Unadjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)	Model
Months in trafficking[3]	0.99 (0.99-0.99)	0.99 (0.99-1.00)				
Poor living conditions score	1.45 (1.32-1.60)	1.33 (1.14-1.54)	J#			
No previous experience in sector	1.53 (0.72-3.27)	1.60 (0.75-3.44)	K			
No breaks	2.15 (1.23-3.75)					
No PPE	0.51 (0.32-0.82)					
No freedom	1.88 (1.18-3.01)					
Actual wages/day (USD)	0.96 (0.90-1.02)					
Education						
No formal schooling	1.33 (0.74-2.38)					
Primary	1.29 (0.82-2.03)					

^Centred at mean (including in quadratic term)　　　　^^Centred at median (including in cubic term)

Reference group for hours/day: <8 hours, for days/week: 6 or fewer days, for violence: no violence, for education: secondary or higher.

Multivariable models (based on DAGs in Appendix 11) included the following:

A. Hours (exposure), daysweek, ohr (exposure), age, age^2, months, $months^3$

B. Cheated wages (exposure), documents, hours, daysweek, ohr, age, age^2, months, $months^3$

C. Violence (exposure), documents, language, sector, threats, hours, daysweek, ohr, age, age^2, months, $months^3$

D. Threats (exposure), hours, daysweek, ohr, age, age^2, months, $months^3$

E. Sector (exposure), documents, previous experience, age, age^2

F. Language (exposure), hours, daysweek, age, age^2, months, $months^3$

G. Documents (exposure), sector, previous experience, age, age^2

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H. Age (exposure), age^2, months, $months^3$, hours, daysweek

I. Months (exposure), $months^3$, sector, age, age^2, hours, daysweek, ohr

J. Living conditions (exposure), ohr, sector, age, age^2, hours, daysweek, months, $months^3$

K. Previous experience (exposure), age, age^2 L. Threats (exposure), sector (exposure), language (exposure), documents (exposure), age, age^2

#This multivariable model was underpowered to detect this effect size, estimate should be interpreted cautiously

DISCUSSION

In the face of increasing global labour migration, there has been growing recognition that a substantial proportion of individuals will end up in highly exploitative, violent and sometimes fatal circumstances. As the largest study to date on the health of male trafficking survivors, these findings confirm that human trafficking is not limited to women and girls, but that men and boys experience extreme forms of exploitation. Moreover, these abuses of trafficked males are not isolated to a single country or a certain sector, as the men and boys in the study were trafficked to seven countries and into a dozen different labour sectors.

Our findings also confirmed some of the media's reports of horrors at sea by offering data showing that men and boys who are trafficked for commercial fishing suffer egregious abuses, are exposed to inhuman work hours, and sustain serious injuries, including lost limbs. The results suggest that the unsustainable work hours over months, sometimes years, led to fatigue, accidents, and increased risk of injury. While fishing is an industry with substantial risk of injury, the trafficking survivors in our sample appear to have higher injury rates than a population of fishermen surveyed in Thai ports. In the International Labour Organization's (ILO) survey of commercial fishermen in Thailand, 20.6% experienced injury, whereas 46.6% of fishermen in this study suffered injuries. Similarly, half of fishermen (53.8%) in our study were subjected to severe violence, whereas 10.1% of fishermen in the ILO survey were severely beaten (250).

Some of our findings contradict our original hypotheses. Men who received their wages had greater odds of injury; having documents does not appear to be protective for injuries or violence; and men with some language skills had greater odds of experiencing violence. Future work could explore whether the amount paid affects injury risk. Anecdotally, documents appear not to be protective against wider violations and abuse including police extortion and arrest (248,280,281); documents may not be protective against poor working conditions and injuries either. Men who are fluent could talk back to managers or protest their conditions, which may anger and incur punishment from employers. Further research may help understand the

ways that language skills might influence employment conditions and work relationships.

These patterns of abuse, occupational hazards, and injuries among some of the most exploited workers perhaps hint at the larger economic and structural forces that fuel, sustain, or neglect worker health and safety. Currently, in Southeast Asia, as in most other parts of the world, consumer demands, supply chains, and global manufacturing and trade are linked to poor or absent labour protections and extreme exploitation of workers who left home with aspirations of earning a fair wage (282,283). Stronger enforcement of standard occupational health and safety measures is critical, including punishments for violations of occupational safety and health (OSH) regulations. Currently, in Southeast Asia OSH legislation is either non-existent or poorly enforced. Labour inspectorates have limited funding and yet pressure to expand their remits (284). There is inconsistent and limited evidence on the effectiveness of labour inspections for injury prevention, with an urgent need for large-scale randomized trials to evaluate whether different types of inspection methods might reduce hazardous occupational exposures, illnesses and injuries (285). Recent efforts have been made to regulate Thailand's vast commercial fishing sector (286), but it remains to be seen whether these actions will also address workplace occupational hazards or provide workers with the health insurance schemes they need.

Informal sectors, such as agriculture, domestic work, and fishing, which are commonly comprised of mostly migrant workers, are vast and unregulated, and workers are often unaware of their legal rights—where these exist (287–289). In Southeast Asia, under-developed legal systems, corruption problems and fear of authorities mean that for many migrants, regardless of status, legal recourse is uncommon and this reality is exploited by employers (248). In many countries, migrant workers are prohibited from forming or leading trade unions and thus from collective bargaining to improve their working conditions (288). However, there are examples of successful worker-driven efforts to negotiate better work conditions. The Migrant Worker Rights Network (MWRN) has been able to influence conditions in Thailand's seafood export industry, for example, by supporting workers to negotiate with employers or filing complaints at government labour offices and education on labour law and rights. These types of

assistance have led to positive outcomes in some cases, such as elimination of recruitment fees and workers being able to retain their identity documents (290).

Addressing sub-cultures of violence that have been normalized in some of these sectors may be more difficult. While there is growing evidence to inform prevention of violence against women and girls (291), efforts to reduce male on male interpersonal violence are not well-documented. We still know little about what works to reduce violence among men in the workplace and elsewhere (292). Greater efforts need to be made by policy-makers and those driving global supply chains to address abuse of migrant workers, particularly those with insecure legal status.

Compensation is also a clear area for urgent improvement. Males who become permanently disabled from injuries face slim chances of future employment or ability to earn a living or support their families (293). Failure to fulfill breadwinner expectations and feelings of guilt or shame post-trafficking is common among men (176,294). Injuries have been also been associated with higher odds of incurring mental health disorders among labour-trafficked men (128). Trafficked males who have incurred injuries will require both clinical services to treat physical wounds, and may also require mental health support and job placement services.

This study has some limitations. The study included users of post-trafficking services. As noted, screening processes and service eligibility for referral to post-trafficking services vary between countries and is often linked to differing legal definitions of trafficking. While we cannot generalize our findings to a larger population of trafficked males in the region (126), we believe our findings are indicative of a population of male post-trafficking service recipients affected by similar types of trafficking. Our study indicates the occupational hazards and abuses faced by men and boys who reach assistance after a trafficking experience. Findings on men's health needs will help service providers prioritize the care needs and make efficient use of often-scarce financial and human resources available to assist trafficked men. Furthermore, we anticipate that many of the hazards described in this study are similar to those faced by the larger population of men trafficked for fishing and manufacturing in the region.

Our analytic strategy (Directed Acyclic Graphs) did not permit estimation of effects of the primary exposures, hours worked per week and OHR score in the multivariable injuries analysis due to the presence of unobserved variables along the hypothesized backdoor paths from these exposures to injuries (see Appendix 10 and 11), i.e. we have uncontrolled confounding in multivariable analyses for the primary exposures. Future research should include information about state implementation of OSH regulations and employer compliance, as well as worker attitudes towards OSH. Despite our use of DAGs, which theoretically guide causal estimation, our study is exploratory and hypotheses generating and did not aim to estimate causal effects of the exposures.

Given the widespread nature of human trafficking for labour and the enduring damage that these abuses cause to individuals, there is an urgent need to ensure survivors receive adequate post-trafficking care that responds to their health needs, as well as helps them to rebuild their lives and hopes for a better future. However, ultimately, the aim should be prevention. Without urgently implemented occupational health and safety and other interventions to confront these extreme forms of labour exploitation, individuals migrating for work will continue to endure pain and humiliation from simply seeking to earn a living for themselves and their families.

6 HEALTH NEEDS AND SERVICE PROVISION

6.1 Preamble to Paper 2

As uncovered in the systematic review, trafficked fishermen's health needs had not been explored in academic or grey literature to date. In this research paper, I combined STEAM data and qualitative interview data with service providers to explore trafficked fishermen's health needs and service provision challenges. The systematic review identified long-haul fishing as particularly challenging for care provision. Therefore, descriptive data on experiences during trafficking, post-trafficking physical and mental health were presented by short and long-haul fishing. I used bivariable logistic regression to analyse factors associated with poor physical health. Qualitative data were analysed thematically to explore factors affecting service provision for fishermen.

RESEARCH PAPER COVER SHEET

PLEASE NOTE THAT A COVER SHEET MUST BE COMPLETED <u>FOR EACH</u> RESEARCH PAPER INCLUDED IN A THESIS.

SECTION A – Student Details

Student	Nicola Suyin Pocock
Principal Supervisor	Cathy Zimmerman
Thesis Title	Occupational risks, health needs and victim identification of trafficked fishermen in the Greater Mekong Subregion (GMS)

If the Research Paper has previously been published please complete Section B, if not please move to Section C

SECTION B – Paper already published

Where was the work published?			
When was the work published?			
If the work was published prior to registration for your research degree, give a brief rationale for its inclusion			
Have you retained the copyright for the work?*		Was the work subject to academic peer review?	

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SECTION C – Prepared for publication, but not yet published

Where is the work intended to be published?	Globalization and Health
Please list the paper's authors in the intended authorship order:	Nicola S Pocock, Reena Tadee, Kanokwan Tharawan, Wangsiri Rongrongmuang, Brett Dickson, Soksreymom Sous, Ligia Kiss, Cathy Zimmerman
Stage of publication	Not yet submitted

SECTION D – Multi-authored work

For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)	I conceptualized and conducted data analysis, drafted and finalized the manuscript.

Student Signature: _____ Date: 07/06/2017

Supervisor Signature: _____ Date: 07/06/2017

6.2 Research Paper 2

"Because if we talk about health issues first, it is easier to talk about human trafficking." Findings from a mixed methods study on health needs and service provision among migrant and trafficked fishermen in the Mekong

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ABSTRACT

Background

Human trafficking in the fishing industry or "sea slavery" in the Greater Mekong Subregion is reported to involve some of the most extreme forms of exploitation and abuse. A largely unregulated sector, commercial fishing boats operate in international waters far from shore and outside of national jurisdiction, where workers are commonly subjected to life-threatening risks. Yet, research on the health needs of trafficked fishermen is sparse. This paper describes abuses, occupational hazards, physical and mental health and post-trafficking well-being among a systematic consecutive sample of 275 trafficked fishermen using post-trafficking services in Thailand and Cambodia. These findings are complemented by qualitative interview data collected with 20 key informants working with fishermen or on issues related to their welfare in Thailand.

Results

Men and boys trafficked for fishing (aged 12-55) were mainly from Cambodia (n=217) and Myanmar (n=55). Common physical health problems included dizzy spells (30.2%), exhaustion (29.5%), headaches (28.4%) and memory problems (24.0%). Nearly one-third (29.1%) reported pain in three or more areas of their body and one-quarter (26.9%) reported being in "poor" health. Physical health symptoms were strongly associated with: severe violence; injuries; engagement in long-haul fishing; immigration detention or symptoms of mental health disorders. Survivors were exposed to multiple work hazards and were perceived as disposable when disabled by illness or injuries. Employers struggled to apply internationally recommended Personal Protective Equipment (PPE) practices in Thailand. Non-governmental organizations (NGOs) encountered challenges when trying to obtain healthcare for uninsured fishermen. Challenges included fee payment, service provision in native languages and officials siding with employers in disputes over treatment costs and accident compensation. Survivors' post-trafficking concerns included: money problems (75.9%); guilt and shame (33.5%); physical health (33.5%) and mental health (15.3%).

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Conclusion

Fishermen in this region are exposed to very serious risks to their health and safety, and their illnesses and injuries often go untreated. Men who enter the fishing industry in Thailand, especially migrant workers, require safe working conditions and targeted protections from human trafficking. Survivors of the crime of sea slavery must be provided with the compensation they deserve and the care they need, especially psychological support.

BACKGROUND

The trafficking of fishermen has emerged as a growing phenomenon in Asia-Pacific (50,58,64,65,295). Beyond the myriad of occupational risks, including drowning, injuries from operating heavy equipment, fatigue from long working hours, and sleep deprivation from poor weather conditions (252,253), men trafficked for commercial fishing are especially vulnerable to exploitation and abuse because of the isolation in deep off-shore, mobile worksites which evade authorities' interventions. Men trafficked for long-haul fishing may be stranded on vessels for months or years, made possible by transshipment, whereby cargo vessels re-supply commercial fishing boats and pick up their catches, obviating the need to dock in port and making escape almost impossible for trafficked men on board (2,3,295). There have been reports of men who, in desperation, jump overboard and drown while fleeing vessels (64). Even when boats eventually dock at overseas ports, international security regulations often require foreign crew to stay aboard vessels, preventing access to medical care and stopping their escape (73).

Trafficked fishermen report working 18-24 hour days with limited to no rest, poor occupational safety and health (OSH) and violence (2,44,45,58). Among a sample of fishermen who were defined as forced labour or trafficked, reports of physical abuse ranged from 10%-50%, (31,44,45) with some of the most extreme violence documented among long-haul fishermen (2,7,31). Men are threatened and beaten with weapons or may be cast overboard by superiors when sick or non-compliant. Men who were regularly physically beaten have contemplated or acted on suicidal thoughts (2,7,44,45). This study examines health needs and service provision for trafficked and migrant fishermen.

Physical and mental health among trafficked populations and associated factors

Health problems among labour-trafficked men have included headaches, back pain, fatigue, depression, anxiety and PTSD (125). In addition to violence and restricted freedom during trafficking, mental health disorders among labour-trafficked men in the UK were associated with post-trafficking factors, namely fear of traffickers, absence of a confidante and pre-trafficking sexual violence (128).

Although most literature focuses on the abuses that occur while individuals are in the trafficking situation, previous work has identified multiple health risks that are associated with the post-trafficking period, including during immigration detention and re-trafficking following escape (123). Trafficked fishermen who manage to escape are frequently detained in immigration detention centres. Many are not formally identified as victims of trafficking and some have been re-trafficked (2,4,45,58). When detained by authorities and not identified as trafficking victims, men typically must pay fees or bribes to speed up the deportation process or cover their travel expenses home, which is an additional source of stress (58). Evidence suggests that among asylum seekers who were torture survivors, immigration detention is linked to mental health disorders, suicidal ideation and self-harm, as well poor physical health from unsanitary conditions and assaults from immigration officers (62).

Somatic symptoms of poor physical health among migrants or trafficked persons may indicate psychological distress, or may result from prolonged exposure to poor conditions, violence and untreated injury (127,296). Post-traumatic responses reported by Cambodian migrant workers included: headaches; sleeplessness; dizziness and appetite loss, which were indicated by cultural idioms of distress including "sadness", "thinking too much" and "worry in the heart" (297); somatic symptoms were also common among traumatized Cambodian refugees (298,299).

Healthcare seeking and services for migrant fishermen in Thailand
Both undocumented migrants and those with work permits may avoid seeking care for fear of arrest or deportation, or they may internalize exclusionary arguments that they are "undeserving" (172,300), which usually leads to high rates of self-treatment or use of private clinics (243,301). Among migrant fishermen in Thailand, higher proportions of Burmese and Khmer fishermen self-treated compared to Thai fishermen (206).

Migrant fishermen in Thailand can enrol in the Health Insurance Card Scheme (HICS), administered the Ministry of Public Health (MOPH). This benefits package includes inpatient and outpatient care, and notably ARV treatment (302). In 2014, the premium was 2,100 THB (66 USD) and 600THB (19 USD) for a pre-employment health screening (303), paid annually by either employer or employee, although the coverage period

has now been extended to two years at a cost of 3,200 THB (100 USD) and 500 THB (16 USD) respectively (304).

Undocumented migrants can enrol in the HICS, although some hospitals have requested that would-be enrolees show official documents including residence cards (305). A health screening is conducted alongside registration for temporary work permits (pink card), which restricts migrant workers' movement to their area of employment (300). Migrants with the pink card are then eligible to apply for temporary passports as part of the Nationality Verification (NV) process, where they then apply for a new visa with permission to remain legally for two years (renewable up to a maximum of four years) (98). When this study was conducted in 2014, the HICS was restricted to the hospital where the card was obtained and was not portable between provinces or hospitals, which was problematic for fishermen docking at different provincial ports. Not all migrants enrol, or some enrol but subsequently drop out of the scheme (98). HICS has improved migrants' access to services and reduced out-of-pocket payments (OPPs), but outpatient utilization rates have remained low. Migrants primarily used only inpatient services, which meant that there were high self-treatment rates and many delayed seeking care (111,302,306). The Social Security Scheme (SSS) provides similar levels of health coverage as the HICS for migrants who entered Thailand via a bilateral Memorandum Of Understanding (MOU) with neighbouring countries, or whom have had passports issued following Nationality Verification. However, under this scheme, both employers and employees must make monthly contributions, and migrants cannot avail of retirement or unemployment benefits despite paying for these. Furthermore, fishermen are effectively ineligible as "informal" sectors including fishing are excluded from the SSS (98,307).

Post-trafficking services for trafficked fishermen in Thailand and Cambodia
Trafficked fishermen formally identified by Thai authorities are sent to one of four shelters for male trafficking survivors, where food, accommodation and vocational training are provided alongside medical care, assistance with legal cases, repatriation and reintegration support (308). Cambodian trafficked fishermen identified overseas are mainly repatriated via IOM's Assisted Voluntary Return and Reintegration (AVRR) scheme, to temporary accommodation in Phnom Penh where they receive a medical

check-up including psychological evaluation, clothing, a cash grant and travel support to return home (309). Most, if not all, Cambodian men return to deprived rural areas, sometimes with serious psychological conditions, with few or no health services or where they require payments which they often cannot afford. Many suffer with untreated conditions (4). This study presents the first health data on trafficked fishermen from a large sample and describes how health and welfare providers reach migrant and potentially trafficked fishermen.

METHODS

Analyses were conducted in an exploratory, sequential design. Quantitative data on occupational risks and health needs were analysed first. Subsequent qualitative data analysis explored themes that would benefit from a more in-depth understanding of key topics that were absent from the quantitative data, such as strategies used by providers to reach fishermen and challenges to providing care. While analyses were conducted separately, quantitative and qualitative findings are reported together in Results by theme.

Quantitative data collection

Quantitative data were analysed from structured interviews with 275 male survivors of trafficking for commercial fishing who were in the care of post-trafficking services (as part of a larger study) (126). The sample was selected in two stages; first, 15 post-trafficking services were selected based on relationship to IOM country teams and agreements with government agencies. Second, a consecutive sample of service users were asked to participate in interviews carried out by shelter staff within 2 weeks of service admission between December 2011 and May 2013. Trafficked fishermen (including boys) were using either a post-trafficking service in Cambodia or Thailand. Written informed consent was obtained from participants prior to interview. A strict ethics protocol based on the World Health Organization Ethical Recommendations for Interviewing Trafficked Women was followed (272). Ethics approval was obtained from the Ministry of Social Development and Human Security in Thailand, the National Ethics Committee for Health Research in Cambodia and the London School of Hygiene and Tropical Medicine (LSHTM).

Data coding and analysis

Physical health was assessed using an adapted version of the Miller Abuse Physical Symptom and Injury Scale for abuse-specific health problems (310). A binary variable was created based on a participant endorsing "quite a lot" or "extremely" for each physical health symptom. Binary variables were created for experiencing poor self-assessed health and experiencing 3 or more areas of pain. The 4 most commonly reported physical health symptoms, poor self-assessed health and reporting 3 or more areas of pain were selected as response variables in bivariable analysis.

The occupational health risks (OHR) score was created by combining binary variables on occupational hazard exposures and presence of personal protective equipment for that hazard (311). Fishermen were categorized as "long-haul" if they were trafficked to Indonesia, Malaysia, Mauritius or South Africa, and "short-haul" if they were trafficked to Thailand, following consultation with study partners. Binary variables were created for ever experiencing a serious injury and ever being detained by authorities. Questions on abuse were derived from the violence and health outcome modules of the WHO multi-country study on intimate partner violence (181). Violence was classified as less severe if it involved slaps, pushes and hits, and more severe if it included: being kicked, dragged or beaten up; tied or chained; choked or burned; released a dog to bite or scratch; being threatened with a weapon; cut with a knife, shot or forced to have sex (129,312). The living situation score was the sum of 9 endorsed items; the post-trafficking concern score summed endorsed items from 12 concerns. Mental health was assessed using the Hopkins Symptoms Checklist 25 for depression and anxiety and the Harvard Trauma Questionnaire for post-traumatic stress (PTSD) (182–184). Binary variables for being symptomatic of anxiety, depression and PTSD were calculated based on cut-off scores of 1.75, 1.625 and 2.0 respectively (126).

Unadjusted odds ratios were calculated using logistic regression to explore the relationship between theorized exposures that may impact physical health. We conducted bivariable rather than multivariable analysis due to small sample sizes for the health outcomes and because earlier construction of a Directed Acyclic Graph indicated that our multivariable analysis would be biased due to the direction of the

relationships between some theorized predictors (313,314). Continuous variables for hours worked/day, OHR score, living situation score and post-trafficking concerns score were rescaled on the interquartile range to aid interpretation in bivariable analyses, where the odds ratio allows comparison between a person with a typical "high" value on the predictor to a person with a typical "low" value (315). Analysis was conducted in Stata 14.

Qualitative data collection

Semi-structured interviews were conducted with key informants between August to October 2014 working either directly with fishermen or on issues related to their welfare (Table 6.1). Purposive and snowball sampling were used to recruit participants, based on an initial sample frame of service providers compiled from reviewing reports/policy documents. Written informed consent was obtained from each participant. Most interviews were conducted in Thai with a research assistant interpreter, who was trained in interview techniques and topic guide content. Interviews were digitally recorded, transcribed verbatim to English or Thai and subsequently translated to English. Ethics approval was obtained from the Institute of Population and Social Research, Mahidol University, Thailand and the LSHTM.

Table 6.1: Participants interviewed for qualitative sample (n=20)

Organization type	N
NGO health and welfare providers (NGO)	10
Government health and welfare providers (HSP)	4
Fishery associations (FA)	3
International organizations (IO)	3
Total	**20**

Qualitative data coding and analysis

Qualitative data were analysed using thematic analysis. Transcripts were read and re-read to familiarize with the data and generate initial codes. A priori themes identified from the topic guides and conceptual framework (deductive approach) shaped earlier versions of a coding framework. New codes were also identified from the data (inductive approach). Taken together, emergent codes and a priori codes were collapsed and collated under overarching themes. Themes were continually reviewed for internal consistency and distinguishability from other themes until refined themes

were developed, taking care to include negative cases and less prominent themes (316). Qualitative data were coded and analysed by hand, in NVivo 11 and OneNote.

RESULTS

Participant characteristics of trafficked fishermen

Most long-haul fishermen were from Cambodia (99.0%) accessing services in Cambodia, while most short-haul fishermen were from Myanmar (71.4%) accessing services in Thailand (Table 6.2). Most fishermen (44.7%) were aged 25 to 34. Long-haul fishermen were mainly trafficked to Indonesia (65.2%) and spent much longer time in trafficking situations compared to fishermen on short-haul boats (median 23 and 5 months respectively). Many long-haul fishermen (43.9%) reported that they had been detained by authorities compared to 27.3% of short-haul fishermen. Long-haul fishermen spent a median of one month in immigration or police detention compared to 10 days among short-haul fishermen (Table 6.2).

Table 6.2: Participant characteristics, fishermen using post-trafficking services in Cambodia and Thailand (n=275)

	Long-haul fishermen (n=198)		Short-haul fishermen (n=77)		Whole sample (n=275)	
	N	%	N	%	N	%
Age						
10 to 14	-	-	1	1.3%	1	0.4%
15 to 17	6	3.0%	6	7.8%	12	4.4%
18 to 24	71	35.9%	32	41.6%	103	37.5%
25 to 34	96	48.5%	27	35.1%	123	44.7%
>=35	25	12.6%	11	14.3%	36	13.1%
Education						
Primary or less (1-5 grade)	97	49.0%	39	50.6%	136	49.5%
Secondary (6-8 grade)	42	21.2%	21	27.3%	63	22.9%
Higher (10-11 grade)	4	2.0%	6	7.8%	10	3.6%
University degree	-	-	3	3.9%	3	1.1%
No formal education	55	27.8%	8	10.4%	63	22.9%
Country of destination						
China	2	1.0%	-	-	2	0.7%
Malaysia	28	14.1%	-	-	28	10.2%
Thailand	0	0.0%	77	100.0%	77	28.0%
Indonesia	129	65.2%	-	-	129	46.9%
Mauritius	33	16.7%	-	-	33	12.0%
South Africa	6	3.0%	-	-	6	2.2%
Home country						
Cambodia	196	99.0%	21	27.3%	217	78.9%
Myanmar	-	-	55	71.4%	55	20.0%
Thailand	2	1.0%	-	-	2	0.7%
Can't remember	-	-	1	1.3%	1	0.4%
Time in trafficking (months)						
<1	1	0.5%	7	9.1%	8	2.9%
1 to 6	25	12.6%	33	42.9%	58	21.1%
7 to 12	22	11.1%	14	18.2%	36	13.1%
13 to 23	50	25.3%	12	15.6%	62	22.5%
>=24	99	50.0%	8	10.4%	107	38.9%
Missing data	1	0.5%	3	3.9%	4	1.5%
Median months in trafficking (median absolute deviation)	197	23.0 (13.0)	74	5.1 (3.8)	271	16.0 (11.5)
Speaks language of destination country	198	49.0%	77	20.8%	275	41.1%
Previous experience in sector	15	7.6%	3	3.9%	18	6.6%
Country of service access						
Cambodia	198	100.0%	21	27.3%	219	79.6%
Thailand	-	-	56	72.7%	56	20.4%
Ever detained by authorities in destination country	87	43.9%	21	27.3%	108	39.3%
Time in detention (months)						
<=1	39	44.8%	14	66.7%	53	49.1%
2 to 5	35	40.2%	6	28.6%	41	38.0%
>=6	13	14.9%	1	4.8%	14	13.0%
Median months in detention (median average deviation)	87	1.0 (0.9)	21	0.3 (0.3)	108	1.0 (0.9)

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Occupational hazards, safety, violence and abuses at sea

Half (49.5%) of trafficked long-haul fishermen incurred at least one serious injury compared to 40.0% of short-haul fishermen (Table 6.3). Common accidents and injuries described by NGO participants assisting men included severed limbs, injuries from rope pulleys, winches and sharp fish bones. Other hazards included inhaling poisonous fumes from the fish storage room and men falling off the boat accidentally:

> "They work during the night and there are no toilets on the boat. They must walk along the keel and do their business hanging from the boat. If it is a new worker without proper skill there could be a chance that he would fall into the sea and simply disappear." (NGO, 6)

NGOs and industry participants cited crew inexperience leading to accidents and injuries. Swimming under boats to retrieve tangled fishing nets and cutting them from the propeller was another occupational hazard, bringing risk of death among fishermen who did not know how to swim. Children were deemed particularly suited for this task by some employers because captains perceive that they were smaller and more agile to swim under the boat:

> "I ask why you (captain) need children in the vessel? They say "sometimes we throw the rope, or for swimming under the fishing vessel, the children are really nice"… (they) swim, pull the rope [free]." (NGO, 13)

Most trafficked short-haul fishermen (84.4%) reported having no safety or survival equipment compared to 53.0% of long-haul fishermen (Table 6.3). Just 26.9% of trafficked fishermen had a life vest. Most short-haul fishermen (81.8%) had sun hats compared to 38.4% of long-haul fishermen, a higher proportion of whom received gloves (76.3%) compared to short-haul fishermen (31.2%). An industry participant spoke about the difficulties and questioned the suitability of applying global safety standards and personal protective equipment (PPE) recommendations in the Thai context:

"The ILO had meetings with us about [boat] safety. They told us that, in foreign countries, when we pull the rope, we must put on gloves and shoes. But the foreign fishery and Thai fishery are different. Sometimes wearing gloves can be dangerous as the ropes we use are fluffy and the gloves get stuck. If we don't pull out our hands in time, it can be really dangerous… Sometimes we can't apply some requirements with the way we work." (FA, 21)

He went on to describe other examples of how applying Western safety standards was not suitable:

"Sometimes the ship is slippery and in Europe, the workers put on mechanic jumpsuits. But we can't do this as the weather is really hot and it can be uncomfortable… We only put on working shoes when we go to the cold storage [room] or when we catch live fish and need to protect ourselves from them. Besides that, we don't wear them as they are slippery and uncomfortable." (FA, 21)

This participant alluded to PPE not only being uncomfortable in the climate, but as causing more danger. International organization (IO) participants suggested that OSH was not prioritized by employers; they did not see it as enough of a problem, and were reluctant to invest in safety measures following already large upfront costs of the boat, particularly among employers using trafficked labour:

"Safety of the workers is not their priority." (IO, 3)

To improve outcomes, one participant said that boats would have to be redesigned completely, e.g. winches covered, requiring more investment. Other hazards included extreme working hours (median 21 hours/day) among trafficked fishermen; 89.1% had no or few rest breaks. Half (52.7%) of trafficked fishermen had inadequate drinking water; 44.0% had insufficient food (Table 6.3). Among key informants, descriptions of food provision varied between inadequate/not fresh to unlimited fresh fish supplied. One government Health Service Provider (HSP) described the case of a fisherman returning from Indonesia with vitamin deficiencies because of a lack of vegetables, as

has been observed in several cases of beriberi at Thai ports recently (47,317). Half (53.8%) of trafficked fishermen experienced severe violence (Table 6.3). Being killed and thrown overboard was sometimes threatened by superiors. Among trafficked men who were sold from boat to boat, one participant noted the toll the work would take on men and how quickly they'd fall sick:

> "When they sold [a fisherman], first it's 15,000 baht, and work 1 year without wages… after that they sold to the second vessel, 8000 baht. [They] work maybe 6 to 8 months, until they're sick. No need to treatment. And they throw to the sea." (NGO, 13)

Men were ultimately perceived as disposable once their labour and health had been exhausted. Being forced to take drugs was another abuse, experienced by 7.6% of long-haul and 1.3% of short-haul trafficked fishermen (Table 6.3).

Table 6.3: Occupational hazards, abuses and healthcare during trafficking among fishermen using post-trafficking services in Cambodia and Thailand (n=275)

	Long-haul fishermen (n=198)		Short-haul fishermen (n=77)		Whole sample (n=275)	
	N	%	N	%	N	%
Occupational hazards (selected)						
Unstable or heavy work platforms	169	85.4%	57	74.0%	226	82.2%
Work along rocky coasts or in remote offshore	111	56.1%	68	88.3%	179	65.1%
Small, unstable or badly maintained fishing vessel	56	28.3%	38	49.4%	94	34.2%
Badly maintained or no fishing equipment	48	24.2%	29	37.7%	77	28.0%
No safety/bad or no survival equipment	105	53.0%	65	84.4%	170	61.8%
Long hours in the sun, cold or wet without a break	189	95.5%	77	100.0%	266	96.7%
Protective gear						
Sun hat	76	38.4%	63	81.8%	139	50.6%
Gloves	151	76.3%	24	31.2%	175	63.6%
Life vest	59	29.8%	15	19.5%	74	26.9%
No protective gear given	28	14.1%	9	11.7%	37	13.5%
Hours worked per day						
<=8	13	6.6%	2	2.6%	15	5.5%
8 to 10	0	0.0%	5	6.5%	5	1.8%
11 to 15	12	6.1%	13	16.9%	25	9.1%
16 to 19	9	4.5%	12	15.6%	21	7.6%
>=20	103	52.0%	12	15.6%	115	41.8%
No fixed hours	61	30.8%	33	42.9%	94	34.2%
Median hours worked/day (median average deviation)*	137	22 (2)	44	18 (3)	181	21 (3)
Occupational health risk score (median)^	198	50	77	60	275	50
Worked every day$	192	97.5%	75	97.4%	267	97.5%
No or very few rest breaks	176	88.9%	69	89.6%	245	89.1%
No time off for sickness or holiday	172	86.9%	67	87.0%	239	86.9%
Experienced at least 1 serious injury$$	98	49.5%	30	40.0%	128	46.9%
Injuries still cause pain/difficulty	57/98	58.2%	9/30	30.0%	66/128	51.6%
Ever needed healthcare or was injured	129	65.2%	49	63.6%	178	64.7%
Who provided medical care**						
Doctor	10	7.8%	2	4.1%	12	6.7%
Nurse	2	1.6%	-	-	2	1.1%
Owner/manager	44	34.1%	13	26.5%	57	32.0%
Co-worker	8	6.2%	5	10.2%	13	7.3%
Received regular health checks from trafficker/employer	6	4.7%	2	4.1%	8	4.5%
Other	2	1.6%	2	4.1%	4	2.3%
Did not receive healthcare	61	47.3%	32	65.3%	93	52.3%
Cheated of wages	140	70.7%	55	71.4%	195	70.9%
Median payment in USD/day (median average deviation)	58	$1.33 ($1.00)	21	$2.52 ($1.73)	79	$1.44 ($1.14)
Restricted freedom&	162	81.8%	70	90.9%	232	84.4%
No documents	151	76.3%	57	75.0%	208	75.9%
Violence severity						
No violence	61	30.8%	18	23.4%	79	28.7%
Experienced less severe violence	36	18.2%	12	15.6%	48	17.5%
Experienced more severe violence	101	51.0%	47	61.0%	148	53.8%
Living conditions						

	Long-haul fishermen (n=198)		Short-haul fishermen (n=77)		Whole sample (n=275)	
	N	%	N	%	N	%
Living and sleeping in overcrowded rooms	176	88.9%	67	87.0%	243	88.4%
Sleeping in dangerous conditions (close to generator or engine)	80	40.4%	28	36.4%	108	39.3%
Nowhere to sleep/sleeping on the floor	141	71.2%	71	92.2%	212	77.1%
Poor basic hygiene	127	64.1%	52	67.5%	179	65.1%
Inadequate water for drinking	101	51.0%	44	57.1%	145	52.7%
Insufficient food	94	47.5%	27	35.1%	121	44.0%
No clean clothing items	155	78.3%	64	83.1%	219	79.6%
Overexposure to sunlight or rain	191	96.5%	76	98.7%	267	97.1%
Other hazards	30	15.2%	21	27.3%	51	18.6%
Living situation score (mean, SD)^^	198	5.5 (1.8)	77	5.8 (1.9)	275	5.6 (1.8)
Alcohol						
Never drank alcohol	86	43.4%	44	57.1%	130	47.3%
Drank afew times per year	82	41.1%	13	16.9%	95	34.6%
Drank afew times per month	23	11.6%	19	24.7%	42	15.3%
Drank afew times per week	4	2.0%	1	1.3%	5	1.8%
Drank everyday	3	1.5%	-	-	3	1.1%
Forced to take drugs by employer or trafficker	15	7.6%	1	1.3%	16	5.8%

*Among those who specified hours worked

^Score min=0, max=100

^^Score min=0, max=9

**Among those ever injured or specifying that they needed care during trafficking

&Either "Never" being free or being locked in a room

$1 missing

$$2 missing

Health as an inroad to assisting trafficked men

Health and welfare NGOs' mandates involved addressing health (primarily HIV) among migrants, not trafficking. However, their health mandate did grant NGOs access to potentially trafficked fishermen, as health was a less contentious topic for employers. When NGOs provided free medicines and health education, it allowed NGOs to become useful to employers and ultimately gain their trust:

"When we work on AIDs or health issues they are already a soft topic. We sometimes approach [employers] individually and introduce them to our drop in [centre]… The workers can come in and get treated without going to the doctor so [employers] see the benefit of the place… They want their workers to work

with them for a long time without sickness or health issue or at least get treated when they do." (NGO, 6)

This participant went on to explain how the NGO's position of putting health before legal concerns about undocumented workers had won employers over:

 "Our selling point is that they do not feel that we are harmful to them. Their concern is that they have employed illegal workers, but we assure them we understand that there are many requirements to get the workers registered... At first we were not trusted, but after a time they saw our work and started trusting us." (NGO, 6)

Similarly, other NGO participants discussed using the "healthy employee" frame to encourage employers to invest in migrant fishermen's health. Health provided a less controversial entry point before discussions or awareness raising with employers about trafficking could take place:

"Because if we talk about health first it is easier to talk about human trafficking. That is a serious issue. But when we mix everything in all together I think there is a better chance, I think this is a good strategy." (NGO, 6)

Trafficking is a sensitive subject with employers. Another NGO participant observed that some employers were not receptive to them expanding their remits beyond health to include trafficking, labour conditions or human rights. NGOs might demand that employers improve working or living conditions, or raise awareness among migrant workers about their rights:

"The employer sometimes thinks the NGO is the problem… they don't need us to be close with the fishermen. Because we will teach them everything. They will understand what is their right. That's why, when we need something from [employers], if I need information, it's difficult to go you see. But when I say 'employer, today we have announcement from MOH, maybe you get vaccine'…If we go and give, the employer allows." (NGO, 13)

"We just step in about health issues first… [employers] really like that. Not the human rights issue…" (NGO, 7)

NGOs had a better chance of safeguarding access to fishermen via free health services or education, which gave employers benefits in the form of a healthier workforce. To preserve access, NGOs could not be seen to be assisting trafficking cases directly. Instead they referred potential cases to a government unit or another NGO (not from the local area) to conduct the rescue:

"If I go to that area and help a trafficking case, maybe the trafficker will say 'next time don't allow this van go to this area'. And now I [provide] HIV training, health education, medicines, then we can get closer with the fishermen. Then we can talk with them "what happened?" If its trafficking or something they can report to us." (NGO, 13)

This strategy safeguarded NGOs' access to the area for health promotion and continued monitoring of potential trafficking cases.

Healthcare and contact with health providers

Most (86.9%) trafficked fishermen could not take time off for sickness or holidays, but two thirds (64.7%) reported ever needing healthcare or being injured (Table 6.3). Among them, 52.3% said they did not receive care. Most long-haul fishermen (58.2%) were still in pain from their injuries at the time of interview. Among those who received care, one-third (32.0%) said they received some form of care from their manager, 7.3% said they were treated by co-workers and just 6.7% saw a doctor. Following accidents and injuries, lack of first aid knowledge at sea was cited as a problem among health and welfare providers, leading to makeshift self-treatment by fishermen:

"We only saw workers who have been in accidents and are getting complications. For example if a worker got his hand into the boat winch and bled, he would put tobacco paste on it, [causing] swelling or inflammation. Or… if a worker broke his arm he would just put oil on it instead of using a slab to

hold it in place. The bone would join themselves back together in 15 days [resulting] in a crooked arm. They do not know how to do it properly… a lot of people get stung by jelly fish and when they don't do first aid complications will follow. That takes us longer to treat them. That is an important issue." (HSP, 27)

Self-treatment without proper knowledge could result in long-term harm e.g. wrongly fused bones.

Availability

Drop in centres, port outreach and mobile health units ensured availability of primary health services for migrant fishermen. Drop in centres were inviting, including free snacks, books, television; men could access health information, STI testing and Voluntary Counselling and Testing (VCT) for HIV/AIDs. Staff availability was a key theme:

> "(This centre) opens at 8 and closes at 5. But we usually we accept people the whole day because the staffs are always here. If you want to drop by then just knock on the door anytime." (NGO, 15)

One health provider described a pilot Floating Hospital initiative, whereby short-haul fishermen were trained in basic first aid and given medicines to dispense at sea. Participating boats with at least one trained fisherman were given a flag so that other boats could recognise and approach it when men were injured or sick. When boats docked, serious cases were referred to the hospital via mobile health units near ports:

> "We have a mobile health unit to do check-ups for crew members. [We diagnose] chronic diseases that are not contagious, diabetes, and high blood pressure. There is also waist measurement to gauge the possibility of being overweight." (HSP, 27)

Beyond treating injuries, this health provider was concerned about chronic diseases and related risk factors among fishermen. One industry participant described the

MOPH doing health checks for infectious diseases among crew on boats returning from international waters:

> "… Sometimes they come with diseases… [MOPH] has a space, like the airport… Sometimes the (crew) just walk through, nobody there. [But] if there's some news about [infectious diseases], now Ebola, if the plane comes from West Africa, then [MOPH] has to come." (FA, 8)

During a global infectious disease outbreak, where state concerns about disease transmission from mobile groups like fishermen was heightened, checks were more likely to be carried out according to this participant.

Health worker attitudes

Staff attitudes and fear of arrest partly governed the decision around which health provider to bring migrant workers. Private clinics where fees could be paid upfront asked fewer questions and were sometimes considered a safer and easier option. This NGO participant suggested that staff at government hospitals were prejudiced against migrant workers who requested fee waivers:

> "Sometimes we don't go to the hospital… We, they [migrant] are scared. We bring them to the sub district hospital… a small treatment centre… If we pay cash they don't ask too much. If we need assistance from government... Sometimes the hospital (staff) think that the migrant is spending our Thai budget... They don't like it. Their acting is not human, [like migrants] are not same as their level. They study nurse, the study doctor, but they don't have heart." (NGO, 13)

This participant expressed disappointment in health workers who seemed to lack professional ethics in treating migrant workers well, due to inability to pay or perhaps racism. Transporting undocumented migrants in Thailand is illegal, thus getting fishermen to larger, public HSPs entailed personal risk for this participant:

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"Sometimes we go to a nearby clinic, pay money and finish… Sometimes we don't need to bring them far from their home… maybe I will be arrested... Because they are illegal." (NGO, 13)

Other NGO participants discussed similar fears of arrest and how the law prompted them to be very careful with their work. One participant's colleague faced criminal charges for transporting an undocumented migrant in their car. Other participants suggested that health workers were welcoming of migrants in healthcare settings, linked to higher volumes of migrants entering Thailand and the ASEAN Economic Community's (AEC) policy encouraging freer labour movement:

"But I feel like the new doctors that recently graduated are friendly to Burmese because they see more of them and AEC is opening soon. They tell me what they expect from these workers and ask if there is anything they could do to help develop them." (NGO, 15)

"[Our] hospital is like their ally. [Migrants] can come with or without the money. They are not afraid of this hospital." (HSP, 27)

In high migration areas where these participants were based, younger doctors and HSPs may be more familiar with and kinder towards migrants seeking care.

Paying for treatment

Among trafficked fishermen, 70.9% were cheated of wages and among the few men who received wages these were extremely low (median US$1.44/day) (Table 6.3), implying that it would be near impossible to pay out-of-pocket for healthcare. Existing long term relationships with HSPs were important when it came to negotiating free treatment, or flexibly paying costs over time, for uninsured migrant workers. When employers refused to pay for treatment, NGOs often had to step in and negotiate with hospitals on fishermen's behalf:

"We have to check the cost, for example 5000 baht. [Fisherman] do not have [that money]. So, that hospital say we only need to pay for the treatment or

the medicine… they reduce the cost. So we agree, OK we'll pay 2000 baht. So the hospital say OK… But sometimes it's very difficult also." (NGO, 17)

HSPs had discretion to waive fees entirely, or request payment for specific items only. When fees could not be waived entirely, one NGO participant described migrant savings clubs making up the shortfall where fishermen were members. For men in post-trafficking care, hospital invoices would be sent to the Anti-Human Trafficking Fund for payment. Both NGO and government health and welfare providers were concerned about budget constraints when paying treatment costs for uninsured migrants. One HSP noted high awareness among migrants and NGOs about the HSP's duty to provide free care when needed:

> "[Migrants] knew that the government hospitals must give free treatments. We are still doing it now, giving free treatments to illegal foreign workers. In the past 5 years that has cost us 65 million baht. We did not get even a single baht back. 65 million baht, we are in trouble… When we are working with NGO we always request them to help find funding for the government hospital but they always refuse us saying it would be illegal to do so. It is very difficult because it is the government hospital's responsibility to provide treatment to everyone in need." (HSP, 27)

This participant highlighted the difficulty of balancing budgets while fulfilling both a legal and moral duty to provide care. Enrolling in the Health Insurance Card Scheme (HICS) was one suggested solution, but fishermen "outside the border" were less likely to enrol than other migrants. HICS could only be used for healthcare in Thailand, so long-haul fishermen on boats departing for Indonesia or elsewhere would not be able to use HICS for treatment costs incurred overseas. Other barriers to uptake of HICS included fishermen only being concerned with their health when they had an accident, by which time they would have to pay out-of-pocket. The HSP participant noted that discontinuity of care was common among fishermen because of limited time onshore to have check-ups and get medicines. Some inpatients discharged themselves early to avoid paying for treatment. One NGO participant explained how fishermen were also unlikely to avail of health benefits under the Social Security Scheme (SSS) as they did

not enter Thailand via the MOU. Fishermen were entirely dependent on employers'
goodwill to pay out-of-pocket when they were not registered:

"On one boat, there are approximately 40 men, maybe only 2 have documents
– pink card [work permit] or passport. Employers don't normally register
them…When they get sick, it depends on how much the employers will take
care of them." (NGO, 25)

NGOs were often contacted by fishermen to help negotiate settlements with
employers. One participant discussed numerous challenges in obtaining accident
compensation for migrant workers:

"Mostly it's the social security officers, they try to say that the employers have
paid for the treatment, they paid like hundreds of thousand baht… Sometimes
they think we are the one who told the employee to be tough. But our duty is
to explain to the employees what their losses are, how much they should be
compensated. Employees are threatened by employers too. Sometimes we
have to help the employees; when they had an accident at work, they cannot
work, we have to take care of their rent and food until the case is closed. There
are many challenges. Everyone is threatened." (NGO, 25)

Social security and other government officers also sided with employers during
disputes according to other participants, indicating that migrant testimony is not taken
seriously by authorities compared to employers' claims. Employers may threaten
migrant employees and NGOs not to pursue compensation claims to avoid pay-outs.

Language barriers, interpreters and treatment
Among trafficked fishermen, just 41.1% could speak the language of the destination
country (Table 6.2). Key informants described language barriers as deterring migrant
workers from seeking care, or from understanding the benefits of migrant health
insurance; one suggested that some health workers' poor attitudes towards migrants
were amplified by frustrations around language:

"Sometimes, the nurse, or official in the hospital sometimes they don't welcome [migrants]... in my place we don't have an interpreter in Myanmar or Cambodia language, and then when the nurse shouting them, they don't want to go. They have problems." (NGO, 13)

Lack of interpreters in health facilities and the possibility of being reprimanded for language inability discouraged migrants from seeking care. Migrant health volunteer (MHV) interpreters were key in facilitating access to care. An NGO participant who had played a major role initiating a provincial MHV program with the MOPH described high demand for interpreter services. MHVs were not paid, but took pride in their work; they were trained by the NGO and the local public hospital; doctors had translated medical terms to Burmese for the MHV handbook. Being a MHV was a privilege that extended to affording protection from the police, who might otherwise arrest migrant workers:

"Each volunteer will get a Migrant Worker Volunteer shirt... They would let the governor sign their shirts so that the police know they are working with the Health Department and will not arrest them." (NGO, 15)

The MHV program had extensive support from the provincial health office and governor, indicating that local authorities valued the health of migrants. This support enabled MHVs to operate without having to worry about being arrested. Another participant whose NGO organized their own migrant health interpreters described how employers appreciated this service:

"We have officers and volunteers that can speak Cambodian. We can understand them. When workers are sick, employers send them to the drop in [centre] to let them go to the hospital with volunteers so that they can translate for them. Now the employers saw what we do so they have given us a car to deliver patients. In some cases the workers are sick and they want to go home, we send them all the way to the border with expenses covered by employers." (NGO, 6)

Employers saw value in interpreter services, engendering further cooperation and a positive relationship with the NGO. Over half of trafficked fishermen (61.7%) were symptomatic of any mental health disorder (Table 6.4). Key informants also discussed challenges finding interpreters or counsellors speaking native languages in post-trafficking care. One shelter described calling interpreters to translate by phone, or sometimes requesting a resident trafficked person with language skills to interpret. The same shelter usually observed mental health problems among Thai and not migrant residents, for reasons that are unclear but may be related to lack of interpreters to facilitate diagnosis or treatment. One IO provided an additional psychologist and interpreter to support the shelter psychologist with group and individual counselling. Another participant noted that culturally, migrant men dealt with trauma by "getting on with things", which may be related to treatment in other languages being unavailable:

> "They're kept in the shelters simply for rehabilitation purposes, which generally fishermen, there's really not much involved in rehabilitation. For migrants… of course they suffer the trauma, but it's a very different way of dealing with trauma in this culture, you just get on with things… and the centres are not equipped to provide counselling to people in different languages…They have very basic translators… this is not the kind of advanced stuff, if you're going to give psychological counselling, you at least need to have decent translators, otherwise how could you do it?" (IO, 2)

For this participant, having professional interpreters, perhaps with medical or specialist knowledge, as opposed to informal interpreters, was considered important to provide appropriate treatment.

Table 6.4: Physical and mental health symptoms and concerns post-trafficking among fishermen using post-trafficking services in Cambodia and Thailand (n=275)

	Long-haul fishermen (n=198)		Short-haul fishermen (n=77)		Whole sample (n=275)	
	N	%	N	%	N	%
Symptom*						
Dizzy spells	69	34.9%	14	18.2%	83	30.2%
Headaches	67	33.8%	11	14.3%	78	28.4%
Dental problems	32	16.2%	10	13.0%	42	15.3%
Nausea/indigestion	46	23.2%	10	13.0%	56	20.4%
Diarrhea/gastrointestinal	24	12.1%	8	10.4%	32	11.6%
Back pain	40	20.2%	17	22.1%	57	20.7%
Skin problems	37	18.7%	14	18.2%	51	18.6%
Feeling completely exhausted	63	31.8%	18	23.7%	81	29.5%
Fainting	6	3.0%	2	2.6%	8	2.9%
Significant weight loss	56	28.3%	7	9.1%	63	22.9%
Memory problems	58	29.3%	8	10.4%	66	24.0%
Persistent coughing	33	16.7%	5	6.5%	38	13.8%
Reporting >=3 areas of pain	62	31.3%	18	23.4%	80	29.1%
Self-assessed health (past month)						
Poor	63	31.8%	11	14.3%	74	26.9%
Fair	100	50.5%	27	35.1%	127	46.2%
Good	34	17.2%	32	41.6%	66	24.0%
Very good	1	0.5%	7	9.1%	8	2.9%
Want to see doctor or nurse for these symptoms#	135/177	76.3%	35/66	53.0%	170/243	70.0%
Post-trafficking mental health^^						
Symptomatic of depression	122	61.9%	27	35.1%	149	54.4%
Symptomatic of PTSD	94	47.7%	14	18.2%	108	39.4%
Symptomatic of anxiety	106	53.8%	17	22.1%	123	44.9%
Symptomatic of any Mental Health Disorder (MHD)	197	69.5%	77	41.6%	169	61.7%
Self-harm	11	5.6%	3	3.9%	14	5.1%
Suicide attempts	11	5.6%	1	1.3%	12	4.4%
Thoughts of ending your life	18	9.1%	2	2.6%	20	7.3%
Post-trafficking concerns^^						
Own physical health	73	37.1%	19	24.7%	92	33.6%
Own mental health	36	18.3%	6	7.8%	42	15.3%
Earning money/having job/paying debt	110	55.8%	24	31.2%	134	48.9%
Nowhere to stay short term	17	8.6%	4	5.2%	21	7.7%
Nowhere to stay long term	45	22.8%	12	15.6%	57	20.8%
Money-related problems in family	130	66.0%	40	52.0%	170	62.0%
Health-related problems in family	90	45.7%	38	49.4%	128	46.7%
Afraid of trafficker or associates	11	5.6%	10	13.0%	21	7.7%
Guilt or shame	73	37.1%	19	24.7%	92	33.6%
Documents	15	7.6%	21	27.3%	36	13.1%
Spiritual/religious concerns/ghosts	7	3.6%	7	9.1%	14	5.1%
Other	24	12.2%	23	29.9%	47	17.2%
No concerns	5	2.5%	8	3.5%	13	4.7%
Money concerns (aggregate personal or family)	161	81.7%	47	61.0%	208	75.9%
Post-trafficking concern score (mean)`	198	3.2	77	2.9	275	3.1

*Proportion endorsing "quite a lot" or "extremely"

^^One missing for depression, anxiety, each post-trafficking concern, self-harm, suicide

attempts among long-haul fishermen/whole sample   `Score min=0, max=12

Physical and mental health, post-trafficking concerns

Key informants described seasickness, headaches, muscle pain, fevers and colds as health problems among men at sea, although one HSP noted that it was difficult to know about health problems faced by long-haul fishermen because they did not self-identify as such when seeking care. Among trafficked fishermen, the most commonly reported physical health symptoms were: dizzy spells (30.2%); feeling completely exhausted (29.5%); headaches (28.4%); memory problems (24.0%) (Table 6.4). If fishermen had escaped trafficking, those who had experienced abuse may experience memory problems:

> "Sometimes these people they tend to forget their actual age already because of the continued abuse and exploitation." (NGO, 7)

Memory problems can complicate repatriation when men forget key information, e.g. names and home addresses. A quarter (26.9%) of trafficked fishermen reported poor self-assessed health and 29.1% reported pain in three or more areas (Table 6.4). The majority (70.0%) wanted to see a doctor or nurse for their symptoms. Trafficked fishermen had high symptom levels for depression (54.4%), PTSD (39.4%) and anxiety (44.9%); long-haul fishermen had worse mental health than short-haul fishermen; 69.5% of long-haul fishermen were symptomatic of any mental health disorder and 9.1% had suicidal thoughts, compared to 41.6% and 2.6% of short-haul fishermen respectively (Table 6.4). Money-related concerns (75.9%) and health-related problems in the family (46.7%) were the main post-trafficking concerns among trafficked fishermen (Table 6.4). Higher proportions of long-haul fishermen were concerned for their physical health (37.1%) and mental health (18.3%), compared to 24.7% and 7.8% respectively among short-haul fishermen. A third (33.6%) were concerned about guilt or shame.

Factors associated with poor physical health

Among trafficked fishermen, being injured was strongly associated with all physical health symptoms, particularly dizzy spells (UOR 3.39, CI:1.97-5.86) and headaches (UOR 3.13, CI: 1.80-5.43) (Table 6.5). More severe violence was associated with most physical health symptoms, e.g. dizzy spells (UOR 3.27, CI: 1.65-6.45), poor self-assessed

health (UOR 3.41, CI: 1.61-7.20). Being symptomatic of mental health disorders was strongly associated with all physical health symptoms, e.g. pain in three or more areas (UOR 9.00, CI: 4.11-19.68); wide confidence intervals indicate that findings should be interpreted cautiously. Being a long-haul fisherman was associated with most symptoms, e.g. memory problems (UOR 3.57, CI:1.61-7.90). Experiencing more poor living conditions was associated with poor self-assessed health (UOR 2.42, CI: 1.49-3.93); being detained was associated with memory problems (UOR 4.14, CI: 2.30-7.43); being trafficked for more than six months was associated with pain in three or more areas (UOR 3.81, CI: 1.72-8.41). Financial concerns were associated with poor self-assessed health (UOR 2.17, CI:1.06-4.42) and headaches (UOR 2.04, CI: 1.02-4.08). Feeling guilt or shame was associated with poor self-assessed health (UOR 2.08, CI: 1.20-3.60).

Table 6.5: Factors associated with poor physical health of fishermen using post-trafficking services in Cambodia and Thailand (n=275)

	Dizzy spells (n=83)	Feeling completely exhausted (n=81)	Headaches (n=78)	Memory problems (n=66)	Poor SAH (n=74)	Reporting =>3 areas of pain (n=80)
	Unadjusted OR	Unadjusted OR	Unadjusted OR	Unadjusted OR	Unadjusted OR	Unadjusted OR
Ever seriously injured	3.39 (1.97-5.86)	3.06 (1.77-5.28)	3.13 (1.80-5.43)	2.26 (1.28-3.99)	2.34 (1.35-4.05)	2.28 (1.33-3.88)
Hours worked/day^^#	1.62 (1.01-2.61)	1.09 (0.70-1.71)	1.11 (0.71-1.73)	1.43 (0.83-2.45)	1.78 (1.05-3.00)	0.87 (0.56-1.35)
Occupational Health Risk score^^	1.25 (0.93-1.69)	1.38 (1.02-1.88)	1.12 (0.82-1.51)	1.14 (0.83-1.57)	1.40 (1.02-1.92)	0.86 (0.64-1.17)
Long-haul fisherman	2.40 (1.25-4.60)	1.50 (0.81-2.76)	3.06 (1.51-6.19)	3.57 (1.61-7.90)	2.80 (1.38-5.66)	1.49 (0.81-2.74)
Violence^						
Less severe	1.69 (0.69-4.09)	1.66 (0.68-4.03)	1.91 (0.81-4.46)	1.42 (0.54-3.74)	3.13 (1.27-7.72)	1.50 (0.66-3.41)
More severe	3.27 (1.65-6.45)	3.04 (1.53-6.01)	2.36 (1.21-4.63)	2.78 (1.34-5.76)	3.41 (1.61-7.20)	1.80 (0.95-3.41)
Living situation score^^	1.80 (1.15-2.82)	1.68 (1.07-2.61)	1.40 (0.90-2.18)	1.79 (1.10-2.89)	2.42 (1.49-3.93)	0.96 (0.62-1.47)
Ever detained by authorities	1.47 (0.87-2.48)	2.12 (1.25-3.59)	1.99 (1.17-3.40)	4.14 (2.30-7.43)	1.83 (1.06-3.14)	2.16 (1.27-3.66)
Symptomatic of any MHD	9.67 (4.42-21.15)	3.43 (1.85-6.36)	5.47 (2.72-10.99)	6.33 (2.88-13.92)	6.66 (3.14-14.11)	9.00 (4.11-19.68)
Post-trafficking concerns						
Post-trafficking concern score^^	1.14 (1.01-1.28)	1.18 (1.05-1.34)	1.20 (1.06-1.36)	1.09 (0.96-1.24)	1.22 (1.08-1.38)	1.07 (0.95-1.20)
Financial concerns	1.21 (0.65-2.24)	1.73 (0.89-3.34)	2.04 (1.02-4.08)	2.06 (0.98-4.32)	2.17 (1.06-4.42)	1.72 (0.89-3.33)
Family health problems	1.08 (0.64-1.82)	1.52 (0.90-2.57)	1.15 (0.68-1.96)	0.57 (0.32-1.01)	1.29 (0.75-2.20)	1.20 (0.71-2.02)
Guilt or shame	1.17 (0.68-2.02)	1.23 (0.71-2.12)	1.50 (0.86-2.59)	0.82 (0.45-1.49)	2.08 (1.20-3.60)	0.86 (0.49-1.50)
Spent >6 months in trafficking	1.83 (0.94-3.53)	1.38 (0.73-2.61)	2.07 (1.04-4.14)	2.78 (1.25-6.19)	1.89 (0.94-3.79)	3.81 (1.72-8.41)

^reference group no violence=0

^^rescaled on interquartile range distance

#among those who specified hours (n=180)

DISCUSSION

Trafficked long-haul fishermen experienced a higher burden of serious injuries and poor health than short-haul fishermen in our sample. Qualitative findings raise questions about adapting Personal Protective Equipment (PPE); how might clothing and PPE be adapted to the weather and Thai context so that fishermen are protected? Besides intense physical exertion, unsanitary, cramped living conditions and poor nutrition exacerbate poor health. Following deaths from beriberi (caused by vitamin B1 deficiencies) linked to such conditions among fishermen (223,317), MOPH issued guidance on beriberi prevention in the sector is welcomed but it remains to be seen how this information will reach captains and fishermen (318). We know little about what works to reduce occupational injury and uptake of PPE in low and middle income countries (319); formative research with migrant fishermen should examine feasibility of different culturally appropriate interventions.

Transshipment in long-haul fishing has undoubtedly contributed to vulnerability and has exacerbated health problems of migrant and trafficked fishermen at sea for extremely long periods. Self-treatment or receiving care from superiors was common in our sample; qualitative findings indicated that such treatment took place without accurate health or first aid knowledge. The Floating Hospital model of having first aid trained fishermen with medicines on boats holds promise, particularly for long-haul fishermen whom cannot reach shore on time following injuries. Encouragingly since September 2016, the Thai government banned transshipment at-sea permanently, and observers on board are now required by law on all Thai overseas commercial fishing vessels. These observers could be trained in first aid and treatment applications for commonly experienced conditions among long-haul fishermen. July 2016 saw the dispatch of the first fisheries observers to the long-haul fishing fleet, but it is unknown whether they had any health background or training (47).

Making health services migrant friendly is important. Our findings corroborate those in other settings; HSPs are torn between budget constraints and duty to provide care, employing strategies like fee waivers and partnering with NGOs to cover treatment costs (169). Men tend to delay seeking healthcare when ill (139), indicating that preventive interventions, via port outreach and mobile health units, must continue.

Improved registration of migrant fishermen is needed; reforms allowing HICS benefits to be portable would help fishermen to access services wherever they dock in Thailand. Employers of long-haul fishermen should be required to purchase international policies when men apply for work permits; the Ministry of Labour could consider including health insurance on the labour inspection checklist. Our findings show that interpreters encouraged care-seeking and built goodwill with employers. The Migrant Health Volunteer model holds promise, although it has only been implemented in two coastal provinces (320). In another large-scale NGO program, Migrant Field Officers provide similar support alongside negotiating disputes with police, employers and health workers (321). In Thailand's civil service, foreigners are limited to low skilled work and cannot officially be hired as professional interpreters. The government recently announced that migrants could work as "language assistants" but it is too early to tell whether and how this policy affects health or support services for migrant or trafficked fishermen (322). To date, some migrant interpreters have been employed as cleaners by hospitals who find budget lines to do this. The volunteer MHV scheme itself is hampered by sustainability and budgetary concerns (323). As per systematic review findings on care provision for migrants, informal interpreters (e.g. friends, family) are considered appropriate by providers when clinical situations are uncomplicated (e.g. coughs, fever) (169), but for mental health or serious conditions trained interpreters are important. Despite interpreters' valuable role in healthcare settings (324), there appears to be little policy discussion about interpreter services in Thailand. Formative pilot research and economic evaluation of different modalities of interpreting (e.g. including use of information technologies, NGO partnerships) using available conceptual tools (325) may be beneficial to ascertain what could feasibly be implemented in the Thai context.

Stark differences in mental health between long and short-haul fishermen suggest pernicious psychological effects of being trafficked for extended periods at sea. Symptoms of depression and PTSD were more common in our sample compared to adult refugees and conflict afflicted populations where prevalence was measured with similar instruments (326). With few mental health professionals there are limited referral options; in Cambodia, only severe psychiatric cases among trafficked men were referred to health providers (4). Men may be "unwilling victims" of trafficking

and stigma associated with mental health support may influence care seeking (143,144); many trafficked Ukrainian seafarers and fishermen did not seek psychological support because they perceived using services as signs of weakness and debilitation (52). As our findings show, despite the high burden of mental health symptoms, just 15.3% were concerned for their mental health. Mental health is essential in packages of care for trafficking survivors; research is urgently needed to identify culturally appropriate mental health interventions with men that can be implemented by non-professionals in low-resource settings (126).

Fishermen's financial concerns, as well as guilt or shame, were associated with poor physical health, which itself may be a somatic symptom of serious psychological distress indicated in our findings. Rescued men often return to deprived origin communities where prospects for work and income are limited, prompting many to re-migrate (4). Feelings of guilt and shame from failure to fulfil breadwinner expectations are common (294); Cambodian trafficked fishermen report ridicule from family members for not bringing money home, or some return home to find wives remarried, which may complicate men's access to social support (4,327) Fishermen returning with many tattoos have been stigmatized as gangsters or troublemakers, with some reporting discrimination in the job market as a result (327). In Thailand, promising reforms in 2016 allow trafficked persons to work on one year visas with a quicker application process, with the Anti-Human Trafficking fund covering health insurance and medical examinations needed to apply for work permits (328).

Our study has some limitations. We did not ask fishermen about length of trips at sea. Mental health symptoms may be endorsed differently by nationality. Instruments to measure mental health symptoms were not diagnostic but have been used with traumatized refugees in the same region and among post-trafficking service users in Europe (40,186,329). PTSD symptoms should be interpreted with caution as they may be capturing Acute Stress Disorder (126,330). We were only able to conduct bivariable analyses due to small sample sizes for the health outcomes and causal diagrams indicated that multivariable analyses would be biased due to the direction of theorized relationships (331). While we cannot generalize from qualitative findings, they offer

important insights about how service providers reach and assist migrant and potentially trafficked fishermen.

CONCLUSION

Improving migrant and potentially trafficked fishermen's health requires greater investment in OSH interventions and migrant friendly health services. Trafficked long-haul fishermen face immense ill-health, yet resources to restore their wellbeing are not commensurate: most services in the Mekong focus on the needs of women and girls (87,145). Now is the time to invest in service provision and research on culturally appropriate care and interventions for migrant and potentially trafficked fishermen.

7 IDENTIFYING AND ASSISTING TRAFFICKED MEN

7.1 Preamble to Paper 3

To better understand how trafficked fishermen were identified and assisted, I conducted a qualitative study among frontline responders and policy stakeholders across government, NGOs and industry. Findings are described in two parts: first, stakeholders' perceptions about human trafficking and key indicators for trafficking; second, how frontline responders made decisions about who was trafficked and the key constraints they faced during labour inspections and victim screening. I conducted thematic analysis of interview data and reviewed key policy documents, namely anti-trafficking legislation and screening forms used by officials.

RESEARCH PAPER COVER SHEET

PLEASE NOTE THAT A COVER SHEET MUST BE COMPLETED __FOR EACH__ RESEARCH PAPER INCLUDED IN A THESIS.

SECTION A – Student Details

Student	Nicola Suyin Pocock
Principal Supervisor	Cathy Zimmerman
Thesis Title	Occupational risks, health needs and victim identification of trafficked fishermen in the Greater Mekong Subregion (GMS)

__If the Research Paper has previously been published please complete Section B, if not please move to Section C__

SECTION B – Paper already published

Where was the work published?			
When was the work published?			
If the work was published prior to registration for your research degree, give a brief rationale for its inclusion			
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Where is the work intended to be published?	Migration Studies
Please list the paper's authors in the intended authorship order:	Nicola S Pocock, Heidi Stöckl, Fiona Adamson, Cathy Zimmerman
Stage of publication	Not yet submitted

SECTION D – Multi-authored work

For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)	I conceptualized and conducted data analysis, drafted and finalized the manuscript.

Student Signature: _____ **Date:** 07/06/2017

Supervisor Signature: _____ **Date:** 07/06/2017

7.2 Research Paper 3

Victims or suspects? Identifying and assisting potentially trafficked fishermen: a qualitative study with frontline responders and policy stakeholders in Thailand

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ABSTRACT

Background

Thailand has faced international pressure to eradicate human trafficking in the fishing sector, prompted by successive media exposés on the extent of slavery, violence and abuse in the seafood supply chain. The Thai government has implemented several policies aiming to address trafficking. Yet we know little about how the authorities, NGOs and industry stakeholders perceive the problem, or how trafficked fishermen are identified and assisted.

Method

We conducted thematic analysis of qualitative data from 33 in-depth interviews with key stakeholders and frontline responders to trafficking across government, NGOs and industry in Thailand. Key themes around trafficking problem identification, labour inspections, victim screening and migrant registration policies were explored by hand, in NVivo 11 and OneNote, complemented by a review of policy documents.

Findings

Violence and physical confinement were considered key indicators of trafficking. Officials commonly expressed confusion about whether debt bondage and document confiscation "counted" as trafficking indicators, due to their absence in the Anti-Trafficking Act and imprecise wording on screening forms. Language barriers plagued the entire process from rescues to victim screening, where "verifying facts" was crucial to proceed with victim assistance. Authorities and industry participants usually blamed migrant brokers for causing employers to "inadvertently and unknowingly" traffick men. Trafficking was perceived to take place on long-haul boats outside of Thai waters beyond the Thai government's jurisdiction. Structural constraints, including expanded remits of inspectors without commensurate increases in staff and frequent rotations, hindered officials' capacities to respond to human trafficking.

Conclusion

Results can help policymakers to understand the constraints faced by frontline responders and highlight gaps in identification and assistance procedures.

BACKGROUND

Thailand has faced pressure to eradicate human trafficking in the fishing sector in recent years. An EU ban on seafood imports from the worlds 4th largest seafood exporter has loomed large, prompted by successive media exposés on the extent of slavery, violence and abuse in the commercial fishing sector (8,9,227). Following a downgrade to Tier 3 (worst offender status) in the US State Department's Trafficking in Persons report in 2014, the Thai government has implemented wide-ranging reforms and policies in the fishing sector. These include labour inspections, vessel monitoring, improved victim identification procedures and migrant registration centres. Yet we know little about what key stakeholders, namely government agencies, NGOs and industry, mean when they talk about "trafficking". This paper explores how trafficking is described among key stakeholders, how frontline responders identify and assist potentially trafficked fishermen, and the challenges they face in so doing.

"Banal" exploitation, "exceptional" trafficking and regulating migrant fishermen

Human trafficking is a contested concept in literature on precarious work and unfree labour, where deconstructing binaries of "victim and perpetrators" and "trafficked or non-trafficked" is central. How states identify "deserving" victims from "undeserving" suspects, who are usually irregular migrants, is of concern. As Yea (2015) contends, trafficking is often exceptionalized as instances of extreme violence and physical confinement (i.e. being "trafficked enough"), while "banal exploitation" involving deceptive recruitment, debt bondage and exploitative working arrangements of the larger migrant workforce is normalized (332). Meanwhile, neoliberal capitalism situates migrant workers in precarious jobs where unequal and unfair bargaining relations with employers are common; bonded by debt, employers have no need to physically confine workers. Even if migrants leave economically exploitative jobs, they are not guaranteed basic economic redress via compensation, because men who experience banal exploitation alone are not deemed "trafficked enough" to warrant state intervention (332). Exceptionalization of "worst cases" of trafficking is reflected in a criminalization and human rights approach to regulation, which doesn't reduce instances of trafficking because it does not address economic, social and legal conditions that leave migrants vulnerable to the banal exploitation that constrains

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them. In this context, workers' unfreedom can only be addressed via labour rights (332,333).

Dominated by short term, guest worker programs that discourage permanent settlement, migration regimes in Asia are governed by the common ethical belief that it is legitimate for the state to discriminate against non-citizens in favour of citizens. Employers are innocent and migrants are suspect in disputes (164). Migrant workers and their bodies are typically ascribed lesser value, with correspondingly fewer rights and caring regimes, while facing greater disciplinary and security regimes (relative to the native population) (334) that directly affect their wellbeing (e.g. healthcare entitlements). In Thailand, migrants face restrictions on freedom of movement and routinely report arbitrary arrest and extortion by authorities seemingly in a bid to assert state control (335). Migrant workers' political rights are also constrained, where they do not have the right to self-organize in trade unions and cannot vote (335).

Thailand has grappled with regulating the fishing industry across its vast shoreline. Faced with severe overfishing and declining fish stocks in its Exclusive Economic Zone (EEZ), allegations of trafficking and forced labour have prompted several policy responses including labour inspections, vessel monitoring, improved victim identification procedures and temporary migrant worker registration centres. Tellingly, these policies are not aimed at improving the substantive freedoms of fishermen. Instead, as Derks (2010) asserts, men are literally immobilized at sea and on land: at sea via the captain's disciplinary techniques of violence; and on land where indirect forms of coercion, including debt bondage and direct ones, such as arrest and extortion by the police, combine to ensure that migrant fishermen's agency is severely constrained (336). State protections are only guaranteed in cases of extreme violence or physical confinement (332). Fishing is regulated differently from other sectors, and typically includes lesser rights protections than land-based work regarding working time, salary payment and time off (337). Whether these protections are adhered to is subject to the employer's discretion in physically unregulated and unchecked deep seas, where men can effectively be incarcerated for years (336).

Brokers, traffickers and debt bondage

In the Mekong context of sex trafficking, both traffickers and the trafficked person may not necessarily see the relationship as exploitative, but one of "helping", due to historically grounded patron-client relationships whereby debt bondage is not seen as a moral problem (338). Traffickers deny their complicity through assertions of helping (ibid). Similarly, slaveholders in India do not see (debt) bonded labour as problematic, but as a mutually beneficial relationship; labourers receive "care" (perceived as provision of food, shelter, minimal financial recompense) in exchange for their continued labour and respect (339). Withholding pay and limiting opportunities to mobilize is an important strategy to control workers, and mixing free and unfree labour is used as a strategy to repress revolt (ibid). However, in some instances, workers are voting with their feet and slaveholders yearn for the past when workers were perceived as grateful, hardworking and honest. This nostalgia and lamenting of workers' new job choices perhaps hints at slaveholders' sense of loss and decline. Perpetrators are "often small time operators only slightly more powerful than their slaves, driven by cultural inertia, a desire for profit and more frequently, a need for basic sustenance" (ibid). Molland (2012) also discusses "accidental traffickers", with deceptive recruitment often taking place within a village's network of social relationships. In this context, debt bondage may sometimes be a conscious choice by the migrant to reduce the risks associated with migration (340). While traffickers and brokers are often depicted as organized crime networks by media and authorities, they are more often fluid, informal, familial networks, with some migration in the Greater Mekong Subregion (GMS) beginning as voluntary but ending up as trafficking (338).

Trafficking indicators, local ethical regimes and deciding migrant "deservingness"

Closely based on the definition offered in the United Nations Protocol to Prevent, Suppress and Punish Trafficking in Persons (33), Thailand's Anti-Trafficking in Persons Act (2008) informs the trafficking indicators used in the national Preliminary Victim Identification Process (PVIP) form (Table 2). The definition of "forced labour or service" in Thai legislation included the following elements:

- Compelling the person to work or provide services (Act)
- Putting the person in fear of injury to life, body, liberty, reputation or property, by means of intimidation, by use of force or ***any other means*** causing person to be unable to resist (Means) (341)

The ILO has more specific operationalized indicators of forced labour, which have informed the Ministry of Labour's inspection form (Table 3). While the ILO's indicators are contested, they are the closest to internationally agreed indicators of forced labour (5). Yet, as with all concepts that are derived from international rights discourses, the ILO's indicators must be translated to situated ethical norms, i.e. they can only gain traction when they correspond with local cultural values about equity, gender, humanity and solidarity (162). As Willen (2012) contends, the concept of "moral deservingness" of undocumented migrants for public services illuminates what situated ethical norms actually look like (172). Moral deservingness is distinct from formal assertion of entitlements, which are judicial in nature (e.g. rights, policies), as well as questions about "access" to such entitlements (172). For example, even where migrants have legal or policy entitlements to healthcare, these might be denied by frontline health staff if they do not perceive migrants to be morally deserving of care. Street-level bureaucrats (SLBs) usually exercise discretion to make decisions and perceptions of deservingness may undergird these decisions (166).

Immigration assimilation research offers further ideas about how native populations' perceptions affect perceived deservingness; immigrants who are most likely to be accepted include those from a country that is perceived to be culturally similar, i.e., with the same skin colour, race or religion as natives (342–344). Migrants who arrive legally are considered as "more legitimate" members of the national community (345). Documents are relevant for perceived deservingness in Thailand. In a survey with Thai citizens in states bordering Myanmar, just 18% thought unregistered migrants should have the same labour protections as Thai's, compared to 52% for registered migrants (346). Few Thais felt that unregistered (6%) and registered (19%) migrants should enjoy the same wages as citizens (ibid). Having documents more positively affected health-related deservingness; 75% felt that registered migrants should receive the same standard treatments as Thai's, compared to 40% for unregistered migrants (346).

Perspectives on trafficking among frontline responders

Despite inspections of over 10,000 vessels conducted by authorities, no instances of trafficking or forced labour were identified in the year preceding Thailand's downgrade to Tier 3 (89). And despite the repatriation of 1,917 men suspected to be trafficked from Indonesian islands between 2014-16, just 53 were classified as Victims of Trafficking (VoTs) by Thai authorities (104). Low victim identification rates worldwide have been attributed to: the covert nature of trafficking; low disclosure by victims due to high levels of trauma experienced and distrust of law enforcement; poor awareness among law enforcement about trafficking indicators; and limited awareness among potential VoTs about their legal rights and status (347). Studies show that law enforcement are rarely aware of key trafficking indicators, with trafficking mainly perceived as sex trafficking (348). Potential VoTs who initially consented to exploitative jobs may be considered at fault by law enforcement (349). In one study, police officials' initial experiences of dealing with TIP cases (usually sex trafficking) governed their responses to subsequent cases, even when circumstances were very different (350). Routine practices were slow to change (ibid). Police officials often indicate a need for ongoing training and support to deal with TIP cases (351).

While guidelines with recommendations for victim identification processes are available for first responders across law enforcement, health and social welfare (352–354), these guidelines predominantly draw on limited empirical studies from the United States, Europe and Australia. These studies are often normative, outlining best practices, and do not always examine how victim identification and assistance are being conducted. Among frontline government responders or street-level bureaucrats implementing policies, exercising discretionary power can help them to cope with on-the ground challenges, to resist authority, or to achieve performance gains (355). This study addresses a significant knowledge gap about how potentially trafficked fishermen are identified and assisted in Thailand. We explore how frontline responders use discretion during inspections and victim screening to make decisions about who is trafficked and who is not, as well as factors including documentation status which may affect perceived "deservingness" of VoT status.

METHODS

Sampling and recruitment

Semi-structured interviews were conducted between August to October 2014 with 33
key informants (Table 7.1). Most (n=24) were frontline responders to potentially
trafficked fishermen and nine were policy stakeholders; this breakdown by sector is
not shown in Table 7.1 to safeguard anonymity of participants. Purposive and snowball
sampling were used to recruit participants, based on an initial sample frame of service
providers compiled from reviewing reports and policy documents. Government agency
participants were a mix of senior and frontline officials involved in various aspects of
rescues, victim screening and labour inspections, including: the Department of Labour
Protection and Welfare (DLPW); the Department of Employment (DOE); Ministry of
Social Development and Human Security (MSDHS); Department of Fisheries (DOF);
Marine Department; Royal Thai Police (RTP) and Marine Police; Department of Special
Investigation (DSI); and the Ministry of Public Health (MOPH). Officials from these
agencies formed the Multi-Disciplinary Team (MDT) primarily responsible for victim
screening but who were also mobilized to perform joint labour inspections at the time
of data collection. NGO participants were less diverse, usually providing health and
welfare services to migrant and Thai fishermen. For two larger NGOs, multiple
participants (n=2-3) were interviewed where the participants' roles differed drastically
(e.g. legal services or frontline response). Industry participants were industry
representatives who had previously been employers of fishermen. A provincial port
research site and major fishing hub was chosen as the primary location to interview
frontline responders, followed by Bangkok, where senior officials and NGO
management were usually based. This research site is not named to preserve the
anonymity of participants.

Data collection and ethics

Twenty interviews were conducted in Thai with one of two research assistant
interpreters, who were trained on topic guide content and interview technique. One
interview was conducted with assistance from a Burmese interpreter working at the
organization, with the remaining 12 interviews conducted in English by NP alone.
Interviews lasted 1.5 hours on average. Topic guides were informed by the study's
conceptual framework and policy document review. Questions focused on participants

experiences of directly assisting fishermen, or on colleagues' experiences of doing so in their organization (for senior officials who guided policy). Participants were also asked their opinions about labour inspections, migrant registration drives and victim screening processes, and the challenges they faced conducting any of these tasks.

Written informed consent was obtained from each participant. Except for one interview, interviews were digitally recorded, transcribed verbatim to English (including the interview in Burmese, where the interpreter's words were transcribed due to difficulties finding a Burmese transcriber) or Thai and subsequently translated to English. Ethics approval was obtained from the Institute of Population and Social Research, Mahidol University, Thailand and the London School of Hygiene and Tropical Medicine.

Table 7.1: Participants interviewed for qualitative sample (n=33)

Organization type	Total
Labour, health or welfare officials (Off.)	9
Law enforcement officers (LE)	6
NGO service providers (NGO)	12
INGO representatives (INGO)	3
Industry representatives (Ind.)	3
Total	**33**

Data analysis

Qualitative data were analysed using thematic analysis. Transcripts were read and re-read to gain familiarity with the data and generate initial codes. A priori themes identified from the topic guides and conceptual framework (deductive approach), e.g. labour inspections and political context of trafficking response, shaped earlier versions of a coding framework. New codes were also identified from the data (inductive approach). Together, emergent codes and a priori codes were collated under overarching themes. Themes were continually reviewed for internal consistency and distinctions between themes until refined themes were developed, taking care to include negative cases and less prominent themes (316). Themes were also explored by organization type (Table 7.1) as a possible source of heterogeneity in perceptions and responses, with findings written up accordingly. Qualitative data were coded and analysed by hand, in NVivo 11 and OneNote, by one researcher (NP). Following thematic analysis of interview data, policy documents including the Anti-Trafficking in

Persons Act (2008) and victim screening forms used by officials were analysed to assess how legal and policy definitions of trafficking intersected with participant's perceptions of trafficking.

FINDINGS

Perceptions of the "problem"

"Inadvertent trafficking" and brokers

The concept of "inadvertent trafficking" is based on the idea that employers mistakenly or accidentally trafficked fishermen. Notions of "inadvertent trafficking" emerged regularly, and usually involved employers or authorities reporting how employers were deceived by brokers and fishermen. Labour shortages in fishing were intrinsic to "inadvertent trafficking". Boat captains had to compete with land-based sectors where migrants preferred to work, which involved paying fishermen one-month's salary in advance (usually via brokers) to convince crew to join their boat. Land based sectors did not pay advances. Problems arose when fishermen ran away soon after receiving advances, leaving employers out-of-pocket, when they had paid the advance to fishermen directly or believed they had done so via brokers. One official suggested that the labour policy was deliberately designed to make it difficult to switch from fishing to land-based work:

> "If we let them change [jobs] all of the fishing labourers will go to work on land. We have different colour cards for [land based work and fishing]. The reason we do this is because most of the boat business employers will give advance money to the workers. But… some workers work for only one trip, 10-15 days, and simply quit or disappear. The employers are at loss here." (Labour official, 20)

This official (among others) indicated sympathy with boat captains whose workers ran away after receiving advances. Because of the advance payment scheme, a system of exploitation had "grown organically" in response to labour shortages according to an NGO participant. Boat captains were unapologetic about holding men on boats (forcibly, or by default because it was impossible to escape at sea) after paying the advance, and did not see this as forced labour. Industry participants referred to

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"inadvertent trafficking" when discussing their primary concerns of labour shortages and recruitment. One industry participant explained how smaller operators paid advances to recruit fishermen quickly, so they could set sail sooner and earn needed profits to alleviate business debts, compared to wealthier operators who could afford to keep vessels grounded for longer (Ind., 21). One INGO participant suggested that abusive captains were often more financially constrained and had a harder time recruiting crew, eventually using trafficked labour. A captain with less ability to find fish would be under pressure to work crew harder and demand backbreaking work (INGO, 2). A police officer explained how his friends, who were boat owners, might have committed "inadvertent trafficking" because they believed that locking up workers was simply a way of ensuring they would recoup their advance payments:

> "They think that that they have already paid these people so they must work for them; it is different from forcing unwilling workers to work, which is a path to prison." (Law enforcement officer, 29)

He compared "inadvertent" trafficking by his friends with other owners who he deemed had a criminal intent to commit trafficking. He often advised his friends about how to avoid criminal charges:

> "Many of my friends are owners and they would tell me that they will follow these workers and lock them on the boat so that they can pay for what they took [advance payment]. So I told them they couldn't do that, it would be a human trafficking case. Your assets can be seized…The owners did not know this." (Law enforcement officer, 29)

This officer perceived that his friends genuinely did not understand that confining workers, even to protect their investments, was a criminal act. Brokers were a key part of inadvertent trafficking. Captains had to use brokers due to language barriers, but they may be unaware that brokers enforced debt bondage and hence were "conned" by them. One industry participant suggested that NGOs colluded with brokers and fishermen. NGOs benefitted from media exposure of trafficking cases and received donor funds, while brokers and fishermen gained by running away with advances (Ind.,

8). NGO participants contested the idea that employers weren't aware of what trafficking involved (NGO, 30). Another NGO participant suggested that insufficiently strong law enforcement and a plethora of laws might cause employers to "inadvertently traffick" men:

"I think all of the employers know what constitutes human trafficking like forcing the labours to work... I think the issue is the enforcement of the law... It seems like sometimes [employers] omit their duties because they try to understand the abundant requirements." (NGO service provider, 6)

Employers not knowing what the Human Trafficking Law involved also meant that they could inadvertently traffick men, because using brokers to recruit crew was prohibited under the Anti-Trafficking Act:

"And some traders don't even know yet that there's such law. Like me, I've been working in this area for 20-30 years and I just realized that there's human trafficking law. At first, I thought it was about prostitution. But... the oppression of workers, overwork, child labour... All of this is human trafficking including supplying workers... if the law is written like this, all the traders here are guilty of human trafficking." (Industry representative, 21)

This industry participant's view that the trafficking law only covered sex work is common worldwide. Across participants, migrant brokers especially were blamed for trafficking. Thai brokers were infrequently mentioned or considered less of a problem. Usually, employers elicited sympathy as "victims":

"The agents who are the same nationality as the workers are the problem, there are Thai agents too but only a few of them. Those foreign agents trick the workers and also Thai business owners. They also became victims." (Law enforcement officer, 29)

Brokers were a convenient and fast way to recruit crew, compared to the Memorandum of Understanding (MOU) recruitment process (a formal government to

government channel whereby documented migrants could legally enter Thailand). Recruitment via the MOU was expensive, bureaucratic and time-consuming and employers did not think it worthwhile for sectors like fishing where worker retention was low. Consequently, using brokers continued, along with the possibility of "inadvertent trafficking". Migrants might also be "inadvertently trafficked" when they did not pay the brokers' fees upfront before the journey to Thailand. When they became indebted to brokers, migrants were more likely to be sold or persuaded to work in the fishing sector. Document analysis reveals that PVIP indicators heavily emphasize the role of brokers in the recruitment and transport of persons (See "ACT", Table 7.2), which implicates captains who use brokers. The in-depth case interview which takes place at government shelters (see "Conducting inspections and victim screening" below) reinforces the centrality of brokers in trafficking. The form includes an extensive section for brokers' details. Both the PVIP indicators (Table 7.2) and the case interview recognized that multiple brokers could be used across the migration journey.

Table 7.2: Indicators of trafficking in Preliminary Victim Identification Process (PVIP) form used by police and law enforcement, Royal Thai Police, Thailand (2008)

Question (remit)	Indicator	Definition	Stakeholders implicated
Was the person subjected to one of the following acts? **(ACT)**	Procuring/buying	Giving money for exchange of a person	Brokers, Employers
	Selling/vending	Receiving money for exchange of a person	Brokers, Employers
	Bringing from	Taking person from place of origin, inside or outside Thailand	Brokers
	Sending to	Moving person to a receiver or location, inside of outside of Thailand	Brokers, Employers
	Detaining/confining	Forcing person to be confined in any place	Brokers, Employers
	Harbouring	Preparing a place for stay or rest	Brokers, Employers
	Receiving	Receiving someone at a place for stay or rest	Brokers, Employers
The acts were committed by any of the following methods? **(MEANS)**	Threat	Person felt frightened, afraid of damage to self, family or their property by imminent danger	Brokers, Employers
	Use of force	Physically force person to do something or *force by other means (body or mind) which causes person to not resist*^	Brokers, Employers
	Fraud	Deceiving or cheating person	Brokers, Employers
	Deception	Deliberately lying to person/making them believe something that is untrue	Brokers, Employers
	Abuse of power	Exerting influence over person regardless of their consent, or any act causing damage to person which is against laws or regulation	Brokers, Employers
	Giving money or benefits to achieve the consent of the person having control over another person in allowing the offender to exploit the person under his control	Giving money or benefits to parents or guardians, so that they allow the person under their protection to be taken advantage of*	Brokers, Employers
The acts and methods were done for any of the following purposes?	Prostitution	Benefits received for sexual intercourse	Employers/Traffickers
	Pornography	Production and distribution of materials	Employers/Traffickers
	Other sexual exploitation	Benefits received for other sexual relief	Employers/Traffickers
	Slavery	Person being under absolute power of another person they must work for	Employers/Traffickers
	Begging	Person forced to beg	Employers/Traffickers

Question (remit)	Indicator	Definition	Stakeholders implicated
(PURPOSE)**	Forced labour or service	Compelling person to work or provide services, by putting person in fear of injury to life, body, liberty, reputation or property, by means of intimidation, use of force or **any other means^** causing person to be unable to resist	Employers/Traffickers
	Organ removal	Coerced removal of organs for trade	Brokers, Traffickers
	Other forced extortion	Exploitation by use of force to obtain person's consent	Employers/Traffickers

*implies children. By giving money or profit to parents or guardians, so that parents or guardians allow the seeking of benefit from the person under their protection. "Seeking benefits" in the sense of "taking advantage"

**children (aged less than 18) are automatically defined as trafficked if they are exploited for any purpose listed on the form (prostitution, pornography, any sexual exploitation, slavery, forced begging, forced labour or service, coerced organ removal for trade purposes, any other practices leading to forced extortion), regardless of whether they consented

^bolded wording could be interpreted to include debt bondage

Registration policy flaws

Grievances with registration policies were often raised by participants. One Stop Service Centres (OSSCs) were government operated temporary centres for registering undocumented workers who had entered Thailand illegally (compared to MOU recruitment for documented workers entering legally). Many fishermen were undocumented and had entered Thailand illegally. Upon registering at OSSCs, migrants received a temporary identification card ("pink card"). Subsequently, they are required to apply for temporary passports and valid work permits as part of Nationality Verification (NV). OSSCs were set up to simplify registration procedures and ostensibly to bypass brokers. But fishing labour shortages, combined with restrictions on changing employers, heightened the risk of men being held against their will. One NGO participant felt that the policy prohibiting change of employers was unreasonable and contributed to trafficking:

> "I think the problem is the policy... [fishermen cannot change employers] unless the previous employer is deceased or not complying with the regulations. This qualifies as forcing them to work. How can you expect a worker to stay with an employer for the whole year? These kinds of policies contribute towards human trafficking." (NGO service provider, 6)

Because there was no unified government database which tracked men individually, and separate databases for land-based work and fishing, migrant workers could register twice at OSSCs. Migrant fishermen could therefore register and runaway with advances multiple times, which was a perceived problem among employers. Because authorities were overloaded with registration backlog and were not technologically savvy, workers continued to register twice with no penalty (Ind., 26). Language barriers added to the confusion and meant that migrants could easily re-register, according to another industry participant:

> "When I make a list of my workers, I have to write the way they look instead of their names such as the bald man, the small guy, etc... These [Burmese migrants] always change their names when they make a new [registration] card." (Industry representative, 21)

Confusion around names meant that it was hard to find and charge migrants who'd runaway with advances according to one official (Off., 20). Problematically, the short validity period for men to undergo NV and obtain passports (next step after receiving the temporary "pink card" at OSSCs) meant that many men became undocumented again (Ind., 8). Temporary identity documents were not necessarily protective against trafficking according to NGO participants. For some, OSSCs were a visible, short-term policy designed to show the international community that Thailand was addressing trafficking. Principle flaws included brokers not being required to register, and insufficient enforcement of migrant's rights after they had obtained documents (NGO, 11). Even migrants with documents could be taken advantage of by agents and employers because of corruption. This NGO participant discussed how fishermen felt that they didn't get benefits from registering. It was cheaper to make under-the-table payments to authorities than it was to formally register:

> "[The fishermen] said "we don't need to register, because we are legal or illegal, it is the same". It's expensive to register, 2000 baht or more... They say "we don't have money to register... it's better we pay 300, or 600 [baht] per month, for corruption."" (NGO service provider, 13)

One industry participant suggested that corruption by authorities was another reason why the OSSCs were not open year-round. During periods of closure, undocumented migrants would have to continue making under-the-table payments to authorities (Ind., 8). This participant felt that year-round opening of the registration centres would address recruitment issues. In contrast to NGO participants, law enforcement and officials felt that OSSCs and registration of undocumented workers was the primary way to "solve" the trafficking problem:

> "When [migrants register] they have an identity, a card, a number. You know where they are, you can track them. There will be no human trafficking. They will also have access to their rights... But we want them to come in legally so that they can be safe..." (Health official, 27)

Coming into Thailand with documents already, or registering at the OSSC, were assumed to be protective among officials and law enforcement, as documents gave migrants an identity. This would dissuade employers from mistreating or murdering them.

Outside of Thailand on long-haul boats

Most participants felt that trafficking took place on long-haul boats outside of Thailand, although NGOs described receiving requests for help both within and outside of Thai waters. While officials who conducted rescues cited cases in Thailand, officials conducting labour inspections said it was rare to find trafficking cases within Thai waters. The short-haul boats that officials inspected docked frequently, offering more opportunities for men to escape (Off., 16). An NGO participant echoed this sentiment, while defining trafficking as being forcibly held and beaten:

> "I haven't seen anything much... I am talking about a worker being held and beaten to work; there are only a few of those cases. I think human trafficking in fishing industry will happen in boats that go outside the border and leave for years at a time. In those cases the workers might be gone and lost to the sea." (NGO service provider, 6)

Trafficking was likelier to take place on long-haul boats outside of Thai waters according to most participants. Indonesia was frequently mentioned as cases were emerging of men stranded on remote islands at the time of interview. A senior official acknowledged that transshipment in international waters may contribute to trafficking. This participant defined "trafficking" to include being away from Thailand for years at a time and being unable to come home (Off., 9). A law enforcement officer was confident that inspections and OSSC registration were "controlling migrant workers" and "solving" trafficking within Thai waters. Contrary to the perception that trafficking was widespread in Thailand, labour shortages meant that captains had to treat crew extremely well to retain them:

"The workers here are being pampered like sons of the owners. They take them to restaurants to treat them, afraid that they would run away." (Law enforcement officer, 22)

This participant went on to describe how men who changed their minds on long-haul boats could "turn into" trafficking cases when they had been at sea for years:

"Sometimes people agree to go and work on the boat voluntarily, but after a year or two they change their minds and want to come back. But the boat is not due back and there are no return vessels… So they file a complaint that they were forced to work and haven't been home for 4-5 years. That is the problem today." (Law enforcement officer, 22)

Fishermen changing their minds on long-haul boats was a perceived problem among some officials and law enforcement (n=4) and industry (n=3). Fishermen might claim that they'd experienced trafficking (defined as violence, forced labour, deception, not being paid) because they found the work too hard, did not like it and wanted to come home. The PVIP form addendum states that:

"The fact that there may be initial consent of the trafficked person in a case, established through legal migration or issuance of a work permit, shall not mean that such a person is not a trafficked person. It shall be investigated as to whether the act of trafficking occurred afterwards." (Point 4, PVIP form addendum)

This definition recognizes that men with documents or work permits may also be trafficked, but implies that initial consent can only be achieved via documents. Undocumented men who initially consented to work on boats but who are exploited are not acknowledged in this statement. Although participants recognized that complaints could be filed in Thailand when boats returned from overseas, actual trafficking acts were considered to take place overseas, suggesting that violations occurred outside of Thailand's legal remit (LE, 22). When discussing cases in Thai waters, government and industry participants often referred to cases outside of the

province. Despite being a major base for fishing operations, these participants felt that their province was not inherent to the trafficking problem.

Conducting inspections and victim screening

Labour inspections were conducted by a Multi-Disciplinary Team (MDT) of officials from various agencies (see Methods) within Thai waters. Inspections could be pre-informed, or random and unannounced, conducted on land either before departure, upon return to shore, or at sea. For boats departing Thai waters, inspections were conducted by Immigration and the Marine department. Employers had to inform agencies when they intended to depart, and of their arrival back to Thai ports for inspections both times. Immigration officers cited very low numbers of fishing boat inspections (20/month) which were usually for mother ships used in transshipment. The Marine department carried out permit checks more frequently (around 8 days/month, inspecting 10-20 boats/day). For boats departing Thai waters, law enforcement officers acknowledged that the pre-notification system meant that they were unlikely to inspect boats with forced labour on board:

> "It is possible that they depart to Indonesia without notifying us. If they are doing something wrong they probably will not call us in for inspection." (Law enforcement officer, 32)

Fishermen with fake Seaman's books (document required for fishermen departing Thai waters) were smuggled onto long-haul boats after inspections (Off., 20). Unconnected registration databases of different government departments made it difficult to tell which documents were forged and which were real (Off., 20). The MDT was also responsible for victim screening following labour inspections or rescues. Victim screening took place at two stages, a preliminary victim identification form (PVIP) used by police with three outcomes (Yes, No and Maybe) (indicators displayed in Table 7.2) and an in-depth case interview at the government shelter (for Yes or Maybe cases). Men who were classified as VoTs were sent to government shelters. Participants indicated that men who were not classified as VoTs and who did not have documents were considered "illegal" migrants, and were sent to Immigration Detention Centres (IDCs) for deportation:

"We must always keep in mind that if they are not a victim then they will be guilty of illegally entering the country. That is why we ask very detailed questions." (Law enforcement officer, 29)

Men who were not VoTs, but who had documents and were working in Thailand legally, were released (NGO, 12), while Thai men were assisted to return home by the MSDHS. Men who were classified as VoTs but who did not want to proceed with legal cases or go to the shelter could "choose" to be deported according to some NGOs (NGO, 12). However, men did not usually refuse going to the shelter once they were aware of what assistance entailed, according to this official:

"If he is really a victim then we must tell the benefit of going [to the shelter]… We must tell them that they have the right to sue and get compensation… We have to let them know how the government can help them… No one has refused, because we tell them their right." (Welfare official, 24)

Men classified as "Maybe" could be held for 24 hours and if their status could still not be determined, officials would have to petition the court for a seven-day extension, where they would be sent to the government shelter for the in-depth case interview. Legally, the police and MSDHS would have to classify the case as Yes or No within seven days. Police used the PVIP form while labour inspectors used a different form (Table 7.3). The PVIP (Table 7.2) indicators were somewhat crude operationalizations of terms used in the Anti-Trafficking Act (which was modelled on the UN definition). The labour inspection form included more specific indicators which reflected the ILO's indicators for forced labour (Table 7.3), linked to the Ministry of Labour's partnership with the ILO at the time of data collection, in piloting and revising the form and conducting training with 120 labour inspectors in coastal provinces. It is unclear whether this form was being used by inspectors interviewed in our study, but its inclusion allows us to understand how trafficking was being conceived by authorities at the time of data collection. In both screening forms, children were classified as those under 18 years old. In the PVIP form, children were automatically classified as VoTs regardless of their consent if they experienced any Acts and were exploited for any Purpose (Table 7.2).

Table 7.3: Preliminary screening form for Victims of Trafficking used by labour inspectors, Department of Employment, Ministry of Labour, Thailand (2014)

PROCESS AND MEANS	Yes	No	Other
1. Are you under 18 years old?			
1. Were you under 18 years old when you arrived in Thailand? If yes, you were ………….. years old Duration of your work in Thailand …. days …. months …… years.			
2. Were you recruited for work? If YES, who recruited you?			
3. Did someone force or threaten or persuade you to leave your village/town to work in Thailand?			
4. Was you travel to work in Thailand (for this time) against your will?			
5. Do you have to pay the recruiter? If yes, How much? ……………			
6. Do you to pay debt to your employer/agent?			
7. Did you cross the border at an official entry point? If yes, please specify….			
8. Did you use a proper travel document to enter Thailand?			
9. On the travel date, did you have a passport/travel document with you? If not, who had yours……			
10. Did anyone facilitate your border crossing? Who? And How?			
11. Is the work place in Thailand same as your promised work? (city and province)			
12. Do you receive the amount of salary you were promised?			
13. Do your working conditions (working hours / holidays/ leave) conform with what you were promised/informed?			
EXPLOITATION			
14. Does your work conform with you were informed?			
15. Are you forced to engage in work activities against your will?			
16. Do you work more than 12 hours a day? If YES, ………..hours			
17. Are you allowed to change working hour, take sick leave, and take annual leave?			
18. Do you have day-off?			
19. Do you have break time for leisure during working hours?			
20. After work, do you have freedom of movement (according to the law)?			
21. Have you ever been locked in the room?			
22. Have you ever been beaten by your employer/agent?			
23. Have you ever been threatened to harm your life with dangerous weapon by your employer/agent?			
24. Have you ever been threatened to harm your family/beloved by your employer/agent?			
25. Have you ever seen any employee who want to quit beaten by your employer/agent?			
26. Have you ever been verbally abused by your employer/agent?			
27. Have you ever been sexually abused by your employer/agent?			
28. Have you ever been forced to use drug by your employer/agent?			
29. Do you have to pay a debt to your recruiter/employers/agent?			
30. If yes, is the amount of debt increased from the same amount you were informed?			
31. Now, do you have your passport/travel document/work permit?			
32. Did anyone ever take your passport/travel document/work permit?			
33. Do you get paid for your work?			
34. Is your salary deducted to pay the agent/recruiter?			
35. Do you have work permit? If yes, Work permit number ……… Issue date……... Expiry date………Type of work indicated in work permit …….. Duration of permit …….. months/years			

Verifying facts and being "sure" it's trafficking

Verifying facts and being sure was an important theme throughout the assistance process, from pre-rescue to victim screening. NGOs described having to verify that potential trafficking cases were genuine when they worked with authorities, who would demand further information before agreeing to conduct a rescue. NGOs and police may be blamed for acting against employers if it were not a "true" trafficking case (NGO, 17), which corresponds with employers' perceptions about fabricated cases (see "Inadvertent trafficking and brokers"). Some NGOs conducted rescues alone because of authorities' collusion with employers:

> "Even though this is already hard for me, I cannot raid with the police…
> Sometimes when they arrested, police raid and send them back to the boat. So
> how can I call the police?" (NGO service provider, 7)

Because of the risk associated with transporting undocumented migrants (which was illegal), NGOs who intervened alone also needed to be sure it was a genuine trafficking case beforehand. One official described how it was important to differentiate between labour exploitation alone and "true" trafficking cases during initial screening:

> "They will sort them whether they are a human trafficking victim or criminal
> victim or simply a victim of labour law violation… violation of labour law is not
> always a human trafficking case. For example if a child under the legal age is
> found working in the factory then the owner will be prosecuted according to
> the Labour Protection law. But if the employer beat the child or lock the child
> up then it turns into both a human trafficking case and child labour
> case." (Labour official, 9)

Physical abuse and confinement were considered indicators of genuine trafficking cases according to this official. Police and social workers normally conducted victim screening as required by the Anti-Trafficking Act. The DLPW may also be present to ascertain wages due. NGOs might also participate, by supplying interpreters, or providing additional input on screening outcomes. For law enforcement and officials, it was important to ascertain the facts when serious allegations of trafficking were made,

so that employers were not wrongly accused (LE, 22). Following up with employers the next day was preferable for one police officer, despite the possibility that employers could influence workers' responses during that time. Social workers had specialist interviewing skills which enabled them to discern the "facts" from potential VoTs:

> "We must send in a Social worker. The cases that come in are not always true. We must confirm them." (Welfare official, 23)

One police officer described how police needed social skills to get the facts from victims alongside social workers, as well as build trust (LE, 29). According to some law enforcement officers, challenges encountered during victim screening included VoTs lying, which made it difficult for police to reconcile conflicting decisions about VoT status with social workers (LE, 18). While the police often had the final say and legal authority to bring victims to government shelters, MSDHS social workers and NGOs played a key role gathering more facts from the interview to come to a mutual decision. But evidence of trafficking was not usually visible, posing a challenge for the investigation and legal case (Off., 33). When VoTs had physical wounds, photos and doctor's reports were used in court as evidence of trafficking:

> "… If the person is a victim, we ask them of the places on their body that they were abused, they would show us. The police take pictures as evidence. The victims later write down to confirm the authenticity and source of the injury. This will be used in the court… If they have any physical injury the police will send them to the police hospital after the interview to get it checked up and to get a medical certificate from the doctor which will be used in the court too." (Welfare official, 33)

Forensic medical evidence was important, as it was used to claim compensation. The PVIP form addendum mentions how "mental and physical appearance (wounded, signs of abuse, panicked, depressed, sickness)" should be considered in VoT assessment. The shelter case interview also features a long section on physical and mental health conditions assessed by a doctor (although it is not clear if or what screening tools are used for mental health). During victim screening, police sometimes disagreed with

NGOs and social workers about VoT status, often because local police (compared to specialist units from Bangkok) did not perceive debt bondage as an indicator of trafficking, or were less familiar with trafficking law. For officials, physical violence was a strong indicator, but cases where pay was withheld (implying debt bondage) needed to be carefully assessed as to whether they counted as trafficking:

> "If they do not pay the worker then we have to analyse if it is a human trafficking case or not. But if they physically hurt the worker then it is 100% a human trafficking case. According to Thai law this [withholding pay] is just almost there, but not yet. But for foreigners and NGO this is already human trafficking." (Labour official, 20)

This participant alluded to different perceptions of trafficking between NGOs and the international community. The relatively new anti-trafficking law (8 years at time of interview) did not include debt bondage, leading to the perception among police and even courts that debt bondage alone did not indicate trafficking (NGO, 4). While PVIP indicators do not explicitly include debt bondage, the use of "force by other means (body or mind) which causes person to not resist" (Table 7.2) could be interpreted to include financial coercion. Officials would have to consult the PVIP form addendum for an explicit definition of debt bondage:

> "The act of binding oneself in a contract which creates excessive and unreasonable debts, that is not possible to release, may be another category of exploitation in trafficking in persons." (Point 6, PVIP form addendum)

Further indication that debt bondage is implicitly, rather than explicitly, considered in assessing VoT status is alluded to in the shelter case interview, which includes a detailed section on debts acquired by the potential VoT and their family members, from brokers and employers. Debt bondage is subject to officials' interpretation when they conduct the initial interview, which is partly linked to their non-explicit inclusion in the Act or the PVIP form upfront. While the labour inspector's form included specific questions about debt bondage (Q's 6,29,30,34, Table 7.3), it is questionable if positive answers to these questions were considered indicators of trafficking by labour

inspectors, when debt bondage was not explicitly included in the Anti-Trafficking Act. Elsewhere, police sometimes refused to screen potential trafficking cases because they were influenced by local employers. One NGO participant described the case of a 15-year-old boy sold to a boat:

> "It was clear to us that it was human trafficking… We brought the victim to report the complaint but the police said that he was not a victim of human trafficking… I feel like [the policeman] didn't want to work… There are many local influencers that make him not want to accept the complaint. The police didn't do anything about this case at all. So we took the boy back." (NGO service provider, 12)

NGOs with their own shelters provided assistance in cases rejected by authorities, or when fishermen did not want to go to government shelters.

Language barriers, interpreters and procedural flaws with inspections

Language barriers plagued the entire assistance process, from initial phone contact to arrange rescues to victim screening. During initial phone contact, fishermen who couldn't read Thai were unable to specify boat names for authorities to locate them. Instead men could only describe the colour of the boat, its number or the type of boat they were on (NGO, 13,17). Language barriers were also a challenge during inspections:

> "For example, there are 20 workers in one ship. [Interpreters] only ask one worker for interview and they don't allow other workers to answer or confirm the facts. When there is an issue, they ask the entire ship to come back to shore. This is a waste of time and opportunity." (Industry representative, 21)

This industry participant expressed resentment for being called back to shore, based on a flawed inspection process which relied on one fisherman's testimony. He went on to discuss how the presence of many officials may intimidate workers and cause them to mistakenly answer questions, even when an interpreter was present (Ind., 21). Conversely, one official suggested that interpreters put migrant workers at ease when

there were many officials on-board (Off., 16). Elsewhere, it was suggested that interpreter shortages might discourage officials from inspecting migrant labour heavy industries like fishing. For NGO participants, inspections were unlikely to find trafficking as migrant workers were often told how to respond to officials by their employers. Interpreters colluding with employers was also a problem:

> "…the workers are told what to say and they're forced to speak … just going in and doing some random inspection, often using the translators of the company, they're often brokers or very influential bad people. So there's the management relying on these kinds of wicked people to be their translators, it's a big issue." (INGO stakeholder, 2)

One social worker described the difficulties of conducting victim screening when potential VoTs spoke minority languages and no interpreters were available (Off., 24). Even when interpreters were available, officials couldn't rule out miscommunication:

> "Because when you are communicating through an interpreter all the information does not travel to the other side. That is a disadvantage. Sometimes we can't deliver 100% of what we want to say or understand 100% of the information we are receiving… I tried to get the officers to learn Burmese to make them interpreters but it is difficult. Sometimes they can't even communicate in Thai properly let alone Burmese…" (Welfare official, 23)

This official went on to discuss how social workers building trust with interpreters was even more important, as interpreters were not trained in specialist interview skills as social workers were. Being unsure about what was being interpreted was a source of unease for two officials. NGOs were frequently contacted to provide interpreter services during victim screening, but they were usually unpaid. Budget constraints meant that one NGO participant had to turn down interpreter requests from police, who assumed the NGO had funding for such requests:

> "Sometimes it costs 1,000 Baht to travel back and forth. Sometimes I wanted to ask the police for transportation expense. But they should know because they

are the ones who invite me… maybe they think we have budget. But we don't."
(NGO service provider, 25)

While government employed interpreters were available from the DLPW, some officials indicated a preference for NGO interpreters (Off., 23). The government shelter described using registered NGO interpreters, who were international students with MSDHS training, paid up to 1200 baht/day. But there were not enough registered interpreters and the shelter often had to wait. Or, shelters called the police to tap their network of unregistered interpreters, who were local migrant workers with good language skills, including in some cases migrants awaiting deportation at the IDC (Off., 33). Other procedural flaws in the inspection process included fishermen not being separated from captains, where they may not be able to speak out. Both officials and NGOs discussed how pre-announced inspections, or those conducted at port, were unlikely to find forced labour, as they could not observe actual working conditions (NGO, 12).

Structural constraints and decision making

Workloads, new remits and resource constraints

Officials cited structural constraints, including increased workloads now that their remits had expanded to fishing inspections. One law enforcement officer discussed how news media, trade embargoes and the relatively new trafficking law meant that inspections were now more stringent than before:

"We have to increase both the quality and quantity of our work, noticeably different from 2-3 years ago… Today instead of checking only the crew members we have to do more during the inspection… now we have to take pictures, go down to the engine room and much more. That is the problem resulted from the news." (Law enforcement officer, 32)

Even before the TIP report downgrade to Tier 3, these officers felt that heavier workloads and a focus on prevention were leading to tiredness among officers. Labour inspectors were considered reactive by some NGO participants, only investigating when complaints were received:

"… the government official, they're working inside the air-conditioned room, sitting in the chair. That's all. If they go, they just see, and take photos. They will not talk direct with the fishermen, they never have." (NGO service provider, 17)

Labour inspectors' newly expanded remits may have been partly responsible for their reactive approach (Off., 9). Another official discussed the difficulty of juggling existing responsibilities with inspections, as well as gender barriers to conducting inspections when most of the agency's staff were female:

"Sometimes the women [officers] are not flexible. And it is rather dangerous to inspect these boats. There are no restrooms either. If it is a male officer then it is easier, but for ladies, it is difficult." (Labour official, 20)

Female staff were sometimes unwilling, and perceived as unsuitable to conduct boat inspections. Women's presence on boats was considered bad luck in Thailand and captains were often reluctant to have women on board according to one participant (INGO, 1). Budget constraints and rising fuel costs also limited the number of inspections that could be carried out according to several participants.

Civil service policy restrictions and procedural flaws
Policies and procedural flaws that restricted officials' capacity to address trafficking was an emergent theme. Only government officials (i.e. civil servants, not government employees or agency staff) could conduct inspections (Off., 20). With just eight officials to some 80 contract staff trying to fulfil the existing responsibilities in one agency, inadequate numbers of officials was a limitation:

"An inspection requires officers… We can't employ anyone to go. The law states that only government officials [who have] served for 4 years or more can go on boats. This is a new law. If you just came in for a year then you can't go to the inspection." (Labour official, 20)

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Similar constraints were faced at the MSDHS, where social workers needed a special permit to conduct victim screening (Off., 23). In addition to the legal requirements for inspections and victim screening, two officials discussed how civil servant distribution across provinces was decided centrally with uniform allocations based on the province's size:

> "There are 2 people taking care of migrant workers [here]… they drafted the same system for every province. Small, medium or large. Some provinces do not have any work and they have 8 personnel each. Our province is a medium size province and we have 8 [officials]." (Labour official, 20)

Officials implied that higher numbers of migrant workers, and perception that their province was targeted for trafficking activities, meant that more officials should be allocated to help. With a large quota of inspections to complete each month, labour inspectors might be inclined to inspect nearly compliant businesses. Fishing boats were likely to have many violations and it would be better not to check them as "everything is illegal" (INGO, 1). Recording many violations would increase the inspectors' workload as they had to follow up and ensure compliance within 2 weeks (INGO, 1). The civil service rotation policy was a further impediment to identifying TIP cases discussed by NGOs and officials. Frequent rotations in specialist trafficking units lead to gaps in knowledge when incoming officials or police officers did not know much about trafficking:

> "We have that [expert] unit. You shouldn't rotate a lot, because the TIP case is complicated...[Police rotate] every year. It's the policy. Because this [specialist trafficking] unit is very powerful. The policemen want to work on this… they want to move, because your power is over Thailand, it's not like local police." (Law enforcement officer, 31)

Some participants implied that officials would pay large sums of money to rotate to the central trafficking unit, because police could exert greater influence in the national unit and perhaps demand more bribes. Another policy constraint was no time limit on investigations by the special investigation department (DSI) who took on many fishing

TIP cases, unlike the central police anti trafficking division (AHTD) which had a six-month investigation limit. The DSI might take a long time to collect evidence, leading to legal delays, which would prolong men's stay in shelters (NGO, 4). A procedural flaw was that inspectors could be sued by employers for giving them a bad inspection report, or when they disagreed with the inspectors order to pay the employee (Off., 16). The chance of being sued may act as a disincentive to inspect employers who were likely to be incompliant (INGO, 1). Besides procedural flaws, practical challenges included labour inspectors not being used to being on boats and experiencing seasickness (Off., 16), as well as coupling inspection boats with fishing vessels at sea due to waves (Off., 28).

Officials' discretion concerning documents and labour protection

Wording of regulations was sometimes ambiguous, and frontline officials had to use their discretion to make decisions. For example, fisheries law (at the time of interview) did not specify a minimum wage, written contracts or maximum working hours. Boats with less than 20 employees did not have to document pay, and the law excluded long-haul boats fishing outside of Thailand for one year or more. Inspectors might find it difficult to ascertain what acceptable employment practice involved. Researching the going salary rate locally in cases of wage disputes was a strategy to ascertain what was fair according to one official (Off., 16). Prior to the piloting of the form in Table 7.3, labour inspectors from the DLPW could only ask questions related to the Labour Protection Act (LPA), which did not include withholding of passports (INGO, 1). Inspectors may find it difficult to ascertain whether document confiscation was an unfair labour practice, or indicator for trafficking. Some captains claimed to keep fishermen's documents to ensure they didn't get wet or spoiled at sea. Officials understood captains' reasoning:

> "Legally they are wrong, but we give them exceptions… I'm not telling the employers to confiscate the workers' cards, I'm just telling them to hold on to them... I think that confiscating the cards of the workers partially qualifies as a human trafficking crime. Not 100% but bordering." (Labour official, 20)

This official interpreted the relevant laws flexibly allowing exceptions for some captains, but was unsure whether document confiscation constituted trafficking according to the law. His confusion was warranted; document confiscation was not explicitly included in the Act, PVIP form or even mentioned in the case shelter interview. Yet it was included in the labour inspectors form (Q's 9,31,32, Table 7.3). Elsewhere, a senior official described 25 boats (of 605 inspected) found to be breaking the law, usually because of document confiscation. None were forced labour cases. Keeping workers' documents only qualified as trafficking among long-haul, not short-haul, fishermen, according to this official:

> "[Not having the ID card on the boat] qualifies as human trafficking because they can't run away. If the [captain] keeps it for them but they cannot jump from the sea and swim away with the documents then it qualifies as human trafficking." (Senior labour official, 9)

Two conditions led to trafficking: being unable to escape and swim away from long-haul boats (far from shore), along with not having documents. He assumed that men on short-haul boats (closer to shore) could escape easily, which meant that they couldn't be trafficked. The labour inspector's form included an indicator on freedom of movement (Q.20, Table 7.3), which could be construed as the inability to escape. This official went on to explain the difference between voluntary deposit and actual document confiscation:

> "We have to ask [fishermen] and find out if the documents are really deposited or confiscated. If they were confiscated then we have to take our steps. But I haven't seen a case like that yet. Most of them say that they voluntarily deposited them… If they are voluntary then it can all be made right." (Senior labour official, 9)

Establishing whether documents were voluntarily deposited was crucial to determine whether a case qualified as trafficking. This official probably used his discretion to decide who a potential VoT was, as consent for document removal was not specified on the labour inspectors form (Q's 9,31,32 ask whether anyone had ever taken your

documents, not whether this was voluntary or forced). One NGO participant suggested that labour shortages in fishing prompted authorities to not check documents thoroughly:

> "I understand that in the fishing industry, [authorities] can't check everything… Thai people do not want to do these jobs. So we still need [migrants]. We have to sometimes, put it directly, turn a blind eye. There are no labours." (NGO service provider, 15)

DISCUSSION

Findings from this study offer insights into how human trafficking is described by key stakeholders and the reasons for their views. Employers and officials generally try to lay blame on brokers, who are integral to employers "inadvertently and unknowingly" trafficking fishermen. Locating the problem "outside of Thailand" allows industry and authorities to distance themselves from fishing trafficking and avoid culpability. The narrative that brokers were the problem may partly be informed by the emphasis on financial transactions among recruitment and brokers in the Anti-Trafficking Act (341) and in the PVIP form (Acts). Employers' narratives conflict with accounts of NGOs and rights activists about who is at fault for fishing trafficking, which has emerged amidst a perfect storm of labour shortages, declining fish stocks and increased fuel costs. NGO reports suggest the impossibility of making any kind of profit without using slave labour (2). Revised fisheries laws have required significant investment by operators, including new monitoring systems (118), prompting a painful adjustment period in Thai fisheries. Smaller operators have been going out of business, while only businesses large enough to be compliant with new regulations have survived (356). As Choi-Fitzpatrick (2017) notes and as suggested by our findings, employers, or sometimes traffickers, yearn for a past when workers had fewer job choices, when labour was easy to come by and workers were, according to them, more hardworking (339). Conversely, in a report on cases of trafficked Cambodian fishermen in South Africa, captains who said they were unaware of deception have reportedly been outraged after learning that crew were unpaid, calling brokers to complain on their crew's behalf, returning men's documents and purchasing men's return air tickets (50). However, in this same study, captains were sometimes violent according to crew (ibid),

indicating that while non-payment was viewed as objectionable, violence was considered acceptable (by both captains and crew). An extension of the ILO's indicators to include non-payment and financial coercion upon exiting trafficking based on interviews with over 200 trafficked fishermen is illustrative of the importance of financial recompense to men themselves (5).

Study results also indicate that there are typologies of operators; not every operator is a trafficker. Industry participants were keen to dispel the singular view that all fishing operators were traffickers, especially following extensive (and perceived unfair) media coverage in their locale. Employers' and officials' perceptions of "inadvertent and unknowing trafficking" and the suggestion that men fabricate trafficking claims extends previous research in Asia where employers are seen as innocent and migrants as suspect in disputes, even when evidence is presented to the contrary (164). Corruption, most commonly via bribery and the abuse of power by border and visa officials, is a major reason why trafficking persists (357). Broader societal prejudices towards migrant workers as "other" may also play a role (108). While we did not find that medical evidence supplanted victim's testimony (170), medical certificates were used to bolster arguments in court that a person was indeed "trafficked".

Narratives around trafficking among our respondents may have been partly informed by the legal definition. In other words, participants' perceptions about the "problem" are reasonably reflected in the Anti-Trafficking Act (brokers, debt bondage is not a problem where it is not explicitly defined in law or screening forms, neither is document confiscation). Our findings suggest that mismatch between the law and indicators on screening forms caused confusion among officials. PVIP indicators in 2014 were a direct and crude attempt to operationalize the legal definition in the Anti-Trafficking Act; having specific indicators that leave little room for interpretation may help officials to assess potential VoTs more efficiently. Since this study was carried out, a plethora of legal and policy updates has ensued (114). An expanded definition of "forced labour" now includes document confiscation and debt bondage in the revised Anti-Trafficking Act (358). A new eight page screening form used by all officials identified over 800 individuals during 2016, of whom 524 (including 305 labour-

trafficked persons) accepted assistance from the MSDHS (104). It is unclear how many of them were fishermen.

Our findings indicated flaws in the labour inspections process, which contributed to few VoTs being identified in the fishing sector, corroborating NGO reports (118,191) and a formal complaint submitted by trade unions to the ILO in 2016 (359). Since this study was conducted, 32 "Port In Port Out" (PIPO) centres have been established, where MDTs conduct inspections of long-haul vessels departing and re-entering Thai waters. Men were not screened individually and were screened with captains present according to recent reports (47,191). Inspection processes have been inadequate to identify labour exploitation, when inspections consisted of cursory checks of crew lists against migrant workers' documents (118). As suggested by an NGO participant, it was understandable that officials did not conduct thorough document checks if this meant finding undocumented fishermen, who would be deported. This would exacerbate labour shortages endemic to the industry, which in May 2017 were estimated at 60,000 (360). Inspectors are somewhat incentivised against conducting thorough document checks because of labour shortages. Moreover, finding trafficked men or labour dispute cases would increase their workload (victim screening, filing reports, following up on cases).

Findings raise questions about the value of documents and registration. Officials in our study frequently assumed that registration drives and documents were protective, which is contradicted in other research. For example, registration of thousands of fishermen by mobile units in 2015 was found to be regularizing victims of exploitation and abuse, with some officials assuming that fishermen with formal identification documents did not need to be screened for indicators of trafficking, forced or bonded labour (191). Similar perceptions of officials have been noted during inspections (118). Documents themselves are not necessarily protective in contexts where laws are not enforced due to corruption and bribery. For example, even when Lao migrants used legal channels to migrate to Thailand, documents were not protective against exploitation or debt bondage (361). The Thailand-Myanmar government MOU recruitment scheme ostensibly removes unscrupulous brokers, but NGOs have suggested that recruitment via the MOU has led to "legal human trafficking" in cases

where government-endorsed agencies have exploited workers (300). Findings suggest that interventions and advocacy are necessary around enforcing the rule of law and rights associated with documents. Our study found flaws in registration policies that may contribute to trafficking rather than reduce it, e.g., men's inability to change employers. In a positive development, since the study was conducted, legislative changes permit migrants to change employers in several circumstances, including in cases of physical abuse or if they are working in a hazardous environment that affects their wellbeing (104). Over 7000 fishermen had reportedly exercised this right as of end 2016 (119). It remains to be seen whether this new provision is an incentive for employers not to mistreat crew.

Addressing structural barriers, such as resource constraints, may improve victim identification and assistance of potentially trafficked fishermen. As labour inspectors' remits have expanded, increases in numbers of inspectors is not commensurate across Asian countries (284). Time constraints prevented inspectors from speaking with crew (118). The DLPW appear to have taken steps to increase the number of inspectors with the authority to conduct inspections. As of March 2017, there were 565 authorized labour inspectors and 229 temporary employees appointed to assist in labour inspections (359). With coastal provinces under greater pressure to identify potential VoTs compared to inland provinces, civil service staffing allocations should be based on provincial need not uniform numbers for each province. Civil servants in specialist trafficking units should not rotate frequently to avoid loss of valuable knowledge in handling TIP cases.

Language barriers were a major concern during inspections and during victim screening, where untrained local migrant workers often step in to provide interpreter services. Dependent on legal changes, foreigners could be hired in the civil service and specially trained as interpreters for TIP cases. Recent policies indicate nascent progress: by end 2016, 254 interpreters were registered with the government (104); DLPW were hiring two migrant language coordinators for each of the 32 PIPO inspection centres (ibid); multilingual hotlines and mobile applications are now available; and complaints forms are now produced in Khmer, Laos and Burmese languages (359). However, findings also raise questions about why languages are not

learned by Thai stakeholders, e.g. one operator could not speak adequate Burmese to learn crew's names, despite hiring Burmese workers for 20 years. The operator's attitude is perhaps reflective of prejudice against doing so in the native population (108). Prior survey research with Thais conveys an expectation to speak Thai: 74% and 84% believed that unregistered and registered migrants respectively should use Thai to communicate with them (346). Language interventions with both crew and captains could positively affect fishermen's wellbeing.

This study has some limitations. Trafficked fishermen were not interviewed about their experiences of being identified and assisted, which may limit conclusions drawn. Instead, our study builds on similar research conducted with Cambodian fishermen (58), and offers compelling findings about how frontline authorities respond to trafficking. Our findings will help policymakers to understand frontline officials' key frustrations, limitations and challenges. Within the government category of participants, our sample was heterogeneous by Ministry or Department, which may raise concerns about representativeness of our findings. However, we interviewed all stakeholders involved in the Multi-Disciplinary Team (MDT), which conducted victim screening and were beginning to conduct inspections at the time of interview. Theoretical saturation was achieved with our final sample. Future research using participant observation and ethnography would be invaluable in illuminating how policies such as inspections are implemented. A final limitation was the rapidly changing policy landscape since data were collected in 2014 for the relevance of our findings. However, a recent complaint to the ILO by trade unions suggests that forced labour, use of brokers and debt bondage continues in the Thai fishing industry (359). Our findings should remain useful for policymakers seeking to understand how victim identification processes can be improved.

CONCLUSION

A migrant labour governance regime that condones bare protections for migrant workers does not seriously address debt bondage, precarity or exploitation overall. Instead, trafficking is "exceptionalized" to the most heinous cases marked by violence and physical confinement. Such cases are generally considered "morally deserving" of VoT status by authorities; by its very nature, having a binary choice between victim or

non-victim renders those who experience "banal exploitation" less deserving (and less seriously attended to) than those classified as VoTs. Employers thus continue to mistreat migrants so long as this doesn't breach the trafficking boundary (332), particularly in the absence of meaningful penalties (while penalties have significantly increased since 2014, prosecution rates remain low). The "exceptionalization" of trafficking is not unique to Thailand, but is reflective of acceptance of "banal exploitation" in capitalism worldwide. Such exploitation continues unimpeded by moral concerns for migrant labourers' wellbeing beyond their sheer, physical survival or "bare life", as non-political subjects who cannot contest their conditions (160). The nascent slavery free supply chains movement is encouraging, which along with trade sanctions has prompted the vigorous policy response by the Thai government to address fishing trafficking in recent years. With fishermen's lives at stake, researchers and activists should continue to monitor adherence with policy commitments, to ensure that fishermen get the support and assistance they need.

8   DISCUSSION

This chapter summarizes the main findings of this thesis by research paper according to the research objectives presented in Chapter 1. Each paper includes a discussion section specific to the findings presented in that paper. In this final chapter of the thesis, I review the findings and main discussion points from these papers, before discussing overarching themes across paper findings. I then present a revised conceptual framework for factors affecting trafficked fishermen's physical and mental health, including service provision and victim identification. The thesis limitations are then discussed, followed by policy and practice implications, areas for further research, and the thesis conclusion.

8.1   Thesis findings

There has been no research with labour-trafficked men and boys on their health and well-being to date. The aim of this thesis was to describe the health needs of trafficked fishermen, and to understand how victim identification and assistance was being conducted with potentially trafficked fishermen in Thailand.

The findings from this thesis suggest that: 1) there is a gap in research on occupational, physical and mental health among Mekong commercial fishermen; 2) labour-trafficked men and boys face extreme exploitation and occupational health risks, which may not be alleviated by documents or language fluency; 3) trafficked fishermen, especially long-haul fishermen, face an immense burden of physical and mental ill-health; poor physical health is related to violence and abuses, including immigration detention by authorities; 4) frontline responders perceived violence and physical confinement as key trafficking indicators but expressed confusion about debt bondage and withholding of documents, which may be linked to legal and policy definitions; and 5) frontline responders faced constraints which hindered their ability to identify trafficked men, including resource constraints and shortages of interpreters. The research objectives, corresponding paper and its main findings are summarized in Table 8.1.

Table 8.1: Objectives, corresponding paper and main findings

Objective	Paper	Main findings
1. Understand the prevalence of violence, health risks and occupational safety and health (OSH) conditions of migrant seafarers and fishermen in the GMS, including conditions when trafficked into the sectors	Systematic review	33 papers from 27 studies were identified; 13 were grey literature or non-health papers, of which 12/13 included trafficked or forced fishers/seafarers, compared to 1/20 peer-reviewed papers. Among peer-reviewed papers, 11 focused on HIV/AIDS/sexual health and nine on occupational/physical health; one study included mental health of trafficked fishers. Violence was quantitatively measured in eight papers mainly from grey literature with prevalence of 11-26% in port convenience samples and 68-100% in post-trafficking service samples. Studies indicate that commercial fishers/seafarers worked extremely long hours; trafficked fishers experienced a high burden of violence, injuries and poor mental health; trafficked long-haul fishers had very limited access to care following injuries or illness. Migrant fishers reported relatively high condom use and were likelier to self-treat compared to native fishers. There was inconclusive evidence for differences in prevalence of risks or health outcomes by nationality. Breadth of the review and different instruments used to measure the outcomes hindered comparability. Grey literature reporting was often unclear. Findings are limited by methodological weaknesses of primary studies.
2. Describe factors associated with injuries and violence among labour-trafficked men using post-trafficking services	Paper 1, Quantitative	Men and boys (n=446, aged 10-58) were mainly trafficked for fishing (61.7%), manufacturing (19.1%) and begging (5.2%). Fishermen worked extensive hours (mean 18.8 hours/day, SD 5.9) and factory workers worked on average 11.9 hours/day (SD 2.9). One third of male survivors (37.8%) experienced severe violence and injuries (35.5%); 29.4% received no protective gear (e.g. gloves). Deep cuts (61.8%) and skin injuries (36.7%) were commonly reported among males, injuries for which fewer than one-quarter reported receiving medical care. Work-related injuries were associated with severe violence (AOR 3.44, CI:1.63-7.26), being in the fishing sector (AOR 4.12, CI:2.39-7.09) and threats (AOR 2.77, CI:1.62-4.75). Experiencing any violence was associated with threats (AOR 26.86, CI:14.0-51.23), being in the fishing sector (AOR 18.53, CI:8.74-39.28) and fluency in language of destination country (AOR 0.39, CI:0.20-0.75).
3. Describe factors associated with poor physical health among trafficked fishermen using post-trafficking services, including health service provision for migrant and potentially trafficked fishermen	Paper 2, Mixed methods	Men and boys trafficked for fishing (aged 12-55) were mainly from Cambodia (n=217) and Myanmar (n=55). Common physical health problems included dizzy spells (30.2%) and exhaustion (29.5%); one-quarter (26.9%) reported being in "poor" health. Physical health symptoms were strongly associated with: injuries; severe violence; long-haul fishing; immigration detention or mental health disorders, e.g. injuries with headaches (UOR 3.13, CI: 1.80-5.43); severe violence with dizzy spells (UOR 3.27, CI: 1.65-6.45); long-haul fishing (UOR 3.57, CI:1.61-7.90) and immigration detention (UOR 4.14, CI: 2.30-7.43) with memory problems; mental health disorder symptomatology with exhaustion (UOR 3.43, CI: 1.85-6.36). Survivors were exposed to multiple work hazards and were perceived as disposable when disabled by illness or injuries. Employers struggled to apply internationally recommended Personal Protective Equipment (PPE) practices in Thailand. Non-governmental organizations (NGOs) encountered challenges when trying to obtain healthcare for uninsured fishermen, including language barriers, negotiating fee payments and officials siding with employers in disputes over treatment costs and accident compensation. Survivors' post-trafficking concerns included: money problems (75.9%); guilt and shame (33.5%) and physical health (33.5%).

Objective	Paper	Main findings
4. Understand how frontline responders view "trafficking", and how perceptions are shaped by policy and legal definitions and narrative constructions of fishing trafficking	Paper 3, Qualitative	Violence and physical confinement were considered key indicators of trafficking among key informants (n=33). Officials commonly expressed confusion about whether debt bondage or document confiscation "counted" as trafficking indicators, which may be due to their absence in the Anti-Trafficking Act and ambiguous inclusion on screening forms. Authorities and industry participants usually blamed migrant brokers for causing employers to "inadvertently" traffick men, while also blaming fishermen for registering twice and running away with salary advances. Flaws in registration policies contributed to trafficking but registration and documents were largely considered protective against abuses. Trafficking was perceived to take place on long-haul boats outside of Thai waters and thus beyond the Thai government's jurisdiction.
5. Describe key constraints faced by frontline responders in identifying and assisting potentially trafficked fishermen	Paper 3, Qualitative	Language barriers and interpreter shortages hindered officials' attempts to identify potentially trafficked fishermen. Civil service policy restrictions included inadequate numbers of officials who could conduct inspections, provincial civil service staffing not based on need, and frequent rotations of staff with TIP experience. Labour inspectors exercised discretion around enforcing labour protections including document confiscation, linked to uncertainty about whether this was a trafficking indicator and dependence on whether documents were voluntarily deposited or confiscated.

In this section, I now summarize the main discussion points related to each papers' findings presented in Table 8.1 above.

8.1.1 Systematic review

The systematic review of academic and grey literature revealed a shortage of high quality studies on occupational, physical and mental health among GMS commercial fishers and seafarers. After screening for eligibility criteria, the review included 20 peer-reviewed health papers and 13 grey literature/non-health focused papers of which 12 focused on trafficked fishers and seafarers. Among peer-reviewed studies, most focused on HIV/AIDS/sexual health and these studies were of higher quality compared to studies reporting other health risks, reflecting the dominance of policy concerns around HIV/AIDS transmission among predominantly migrant fishers to the general population. While variations among studies in definitions of the outcomes hinder comparability, the review uncovered diverse occupational and health risks. Just one work safety intervention study was identified, which highlighted the importance of culturally and literacy appropriate work safety interventions (218).

Although definitional variations complicate interpretation, we found that violence was only reported in grey literature studies which included trafficked fishers. Fishermen formally identified as trafficked or who were in contact with NGOs reported higher prevalence of violence than fishermen who were convenience sampled at ports. In one of the few peer-reviewed health studies with seafarers, violence accounted for 5% of injuries among seafarers from Denmark, Spain, Croatia, Finland and the Philippines (232). Violence and exploitation questions should be included in academic studies with fishers and seafarers to enhance our understanding of their prevalence and associated risk factors.

We found inconclusive evidence for differences in the outcomes by nationality as just two studies reported adjusted analyses (205,206,220). Descriptive analyses indicated that Cambodian trafficked fishers had more injuries, worse physical and mental health than Myanmar trafficked fishers (126), whom appeared to face a higher burden of

violence than Cambodians (31,126). Future studies should explore associations between nationality and health outcomes.

While the review offers an indication of health risks among GMS fishers and seafarers, most evidence is not robust or high quality. There is a significant evidence gap on occupational, physical and mental health problems among GMS fishers. However, available evidence suggests high levels of need for such evidence. An important finding of the systematic review was that, there was no published academic research examining occupational, physical and mental health among trafficked fishers. Subsequent analyses in this thesis sought to address this gap in the literature.

8.1.2 Occupational health risks, injuries and violence

To address some of the research gaps identified in the systematic review, I conducted exploratory analysis of STEAM survey data comparing labour-trafficked males across fishing, manufacturing and other sectors. Descriptive data were presented comparing characteristics of men and boys trafficked for different sectors and their experiences during trafficking. I used Directed Acyclic Graphs (DAGs) as a conceptual tool to guide adjusted analyses using logistic regression. DAGs explicitly showed the assumptions underpinning statistical analyses.

In descriptive analysis, I found that higher proportions of trafficked fishers experienced injuries, abuses and occupational hazards compared to males trafficked for manufacturing or other sectors. Fishermen worked inhuman hours (mean 18.8 hours/day) with little to no rest and half (46.6%) sustained serious injuries, including six fishermen who lost body parts but did not receive medical care. In comparison, 14.5% of factory workers and 16.5% of males in other sectors incurred injuries. While fishing is an industry with substantial risk of injury, the trafficking survivors in our sample appear to have higher injury and violence rates than a population of fishermen surveyed in Thai ports (31).

In adjusted analyses, being in the fishing sector was strongly associated with work-related injuries and violence. Work-related injuries were also associated with threats

and severe violence, indicative of these stresses affecting injury risk during abusive work situations. I also found counterintuitive results which contradicted original assumptions shown in the DAG. Males who received their wages had greater odds of injury; having documents did not appear to be protective for injuries or violence; and males with some language skills had greater odds of experiencing violence. Anecdotally, documents appear not to be protective against wider abuses including police extortion and arrest (248,280,281); documents may not be protective against poor working conditions and injuries either. Men who were fluent could talk back to managers or protest their conditions, which may anger and incur punishment from employers. Future research could explore how documents and language skills influence employment conditions and work relationships, and whether amount paid affects injury risk.

This paper is the first quantitative study in the peer-reviewed literature to focus soley on trafficked men and boys. Findings confirmed that human trafficking is not limited to women and girls, and showed that men and boys experience extreme forms of exploitation, particularly fishermen. Findings raised questions about trafficked fishermen's health needs, which were explored in subsequent analyses of the STEAM dataset.

8.1.3   Health needs and service provision

Trafficked fishermen's health needs had not been explored in academic or grey literature to date. In this research paper, I combined STEAM data and qualitative interview data with service providers to explore trafficked fishermen's health needs and service provision challenges. The systematic review identified long-haul fishing as particularly challenging for care provision. Therefore, descriptive data on experiences during trafficking, post-trafficking physical and mental health were presented by short and long-haul fishing. I used bivariable logistic regression to analyse factors associated with poor physical health. Qualitative data were analysed thematically to explore factors affecting service provision for fishermen.

In descriptive analysis, trafficked fishermen experienced extremely poor physical and mental health, particularly long-haul fishermen who were nearly all Cambodian. Most (69.5%) long-haul and a third (41.6%) of short-haul fishermen were symptomatic of a mental health disorder. Symptoms of depression and PTSD were more common among trafficked fishermen compared to adult refugees and conflict affected populations where prevalence was measured with similar instruments (326). But, men may be "unwilling victims" of trafficking and stigma associated with mental health support may influence care seeking (143,144). For example, despite the high burden of mental health symptoms, just 15.3% were concerned for their mental health, indicating that few would seek care. In bivariable analysis, severe violence, injuries, long-haul fishing, immigration detention or being symptomatic of a mental health disorder (MHD) were strongly associated with reported physical health symptoms. Poor physical health may be a somatic manifestation of serious psychological distress indicated in findings, alongside money concerns and feelings of guilt or shame. Fishermen often return to deprived origin communities where limited prospects for work and income could engender physical and mental distress. Failure to fulfil breadwinner expectations induced feelings of guilt and shame in grey literature reports featured in the systematic review.

Qualitative findings highlighted the importance of migrant-friendly health services, and corroborated findings from a global systematic review on migrant service provision challenges. For example, health providers are often torn between budget constraints and duty to provide care, employing strategies like fee waivers and partnering with NGOs to cover treatment costs (169). Informal interpreters (e.g. friends) are considered appropriate when clinical situations are uncomplicated, but as suggested by one participant, trained interpreters are important for mental health conditions (169). Qualitative findings drew attention to innovative service provision models. For example, language barriers were alleviated by Migrant Health Volunteers (MHVs). Self-treatment or receiving care from superiors was common, often without accurate health or first aid knowledge. The Floating Hospital model of having first aid trained fishermen with medicines on boats holds promise, particularly for long-haul fishermen whom cannot reach shore on time following injuries.

This paper is the first to examine health needs among trafficked fishermen. Trafficked long-haul fishermen face immense ill-health, yet resources to restore their wellbeing are not commensurate: most services in the Mekong focus on the needs of women and girls (87,145). A key determinant for care provision is whether trafficked fishermen are identified in the first place. Subsequent analysis in Paper 4 explored this question in detail.

8.1.4 Identifying and assisting trafficked fishermen

To better understand how trafficked fishermen were identified and assisted, I conducted a qualitative study among frontline responders and policy stakeholders across government, NGOs and industry. Findings are described in two parts: first, stakeholders' perceptions about human trafficking and key indicators for trafficking; second, how frontline responders made decisions about who was trafficked and the key constraints they faced during labour inspections and victim screening. I conducted thematic analysis of interview data and reviewed key policy documents, namely anti-trafficking legislation and screening forms used by officials.

For perceptions of trafficking, employers and officials generally blamed brokers, who were integral to employers "inadvertently" trafficking fishermen. Employers' and officials' perceptions of "inadvertent trafficking" and the suggestion that men fabricate trafficking claims extends previous research in Asia where employers are seen as innocent and migrants as suspect in disputes by authorities, even when evidence is presented to the contrary (164). Corruption, most commonly via bribery and the abuse of power by border and visa officials, is a major reason why trafficking persists (357). Broader societal prejudices towards migrant workers as "other" may also play a role (108). Locating the problem on long-haul boats "outside of Thailand" allowed industry and authorities to distance themselves from trafficking and avoid culpability. Violence and physical confinement were perceived as key indicators of trafficking among officials. Confusion around whether debt bondage or document confiscation counted as trafficking indicators may be because of their omission in anti-trafficking legislation and ambiguous inclusion in screening forms.

Findings indicated flaws in the labour inspections process, which contributed to few trafficked fishermen being identified, corroborating NGO reports which describe men not being screened individually or being screened with captains present (47,191). Inspection processes have been inadequate to identify labour exploitation, when inspections consisted of cursory checks of crew lists against migrant workers' documents (118). Officials are somewhat incentivised against conducting thorough document checks, because undocumented fishermen would have to be deported, exacerbating labour shortages. Moreover, finding labour violations or disputes may increase officials' workloads (e.g. filing reports, following up on cases). While registration and documents were assumed to be protective by officials, NGO reports and migrant testimony contradicts this assumption. For example, registration of fishermen was found to be regularizing victims of exploitation and abuse; some officials assumed that fishermen with identification documents did not need to be screened for forced labour (191). Documents are not necessarily protective in contexts where laws are not enforced due to corruption and bribery. For example, even when Lao migrants used legal channels to migrate to Thailand, documents were not protective against exploitation or debt bondage (361).

Key constraints faced by frontline responders included inadequate numbers of officials to conduct inspections and frequent rotations of knowledgeable staff. Language barriers were a major concern among officials. Worryingly, untrained migrant workers often step in to provide interpreter services. A Thai operators' reluctance to learn languages spoken by migrants may be reflective of prejudice against doing so in the native population (108). In one survey, 74% and 84% of Thais believed that unregistered and registered migrants respectively should use Thai to communicate with them (346).

Overall, findings from this qualitative study offer evidence of an understudied policy implementation process (victim identification and assistance of trafficked men). Most studies with frontline responders focus on singular groups (e.g. law enforcement only) in high-income settings, with no studies conducted in low and middle income countries to date. The unique data presented in this study furthers our understanding of factors

affecting whether and how trafficked fishermen are assisted, which are grounded in stakeholders' perceptions of the "problem".

8.2 Discussion of cross cutting themes and new knowledge

This section elaborates on cross cutting themes of this thesis. Thesis findings are discussed and situated within the wider literature relevant to the theme. Contributions to knowledge are listed at the end of each section.

8.2.1 Frontline officials' behaviours may be related to overwork and corruption

In response to challenges of their work, frontline responders or street-level bureaucrats (SLB) employ various strategies to reduce complexity, gain control over their work and manage stress (166). Being rude to migrant workers in a hospital setting (Paper 2) may be one way that SLBs discourage demand for services, when they are overworked (166). Another way to ration services and thus demands on SLB workloads, is to act on personal biases about who is deserving of a service (or not). As findings in Paper 3 demonstrate, officials often construe that migrant fishermen are blameworthy (by running away with the advance, cheating their employers). The finding that officials may side with employers during disputes about accident compensation or treatment costs (Paper 2), and that officials sympathized with employers who "inadvertently trafficked" fishermen (Paper 3), provides support for previous research that employers are regarded as innocent and migrants as suspect in disputes (161). As Yea (2017) contends, officials' bias in favour of employers during mediation processes is a key reason why trafficking persists in Singapore. Officials often do not investigate migrant's claims of contract substitution (with worse conditions upon arrival) or that documents have been signed under duress (362). Furthermore, Yea (2017) contends that deliberately vague contracts (endorsed by the state) and documents which can easily be forged (e.g. fraudulently signed payment slips) legitimize salary deductions and increases employer's security in face of potential complaints brought by employees (362). Similarly, an interview participant mentioned a Fishing Association who asked migrant fishermen to sign a "contract" in English and

Thai stating "I am not forced" with no other terms and conditions specified. This event took place in the Fishing Association's office under the watchful eye of captains according to one key informant. This kind of coercion is commonplace in Asia, where migrants have limited bargaining power or political rights (290).

SLBs often face resource constraints and heavy workloads, with continually expanding demand (166). Officials frequently mentioned staffing constraints and inadequate money for fuel for boat inspections (Paper 3). It was suggested that officials' enforcement of labour laws was deliberately weak due to fishing labour shortages, which corroborates findings from another study that economic concerns frequently prompted officials to turn a blind eye to rights and welfare violations (108).

Corruption is also a common empirical thread through this thesis. Some officials returned trafficked fishermen who had escaped back to boats (systematic review, Paper 3). One participant suggested that having periodic opening times for migrant registration is because officials can demand bribes from employers and migrants during closure periods of registration. Officials at the Command Centre for Combatting Illegal Fishing (CCCIF) have been accused by employers of demanding bribes to allow their boats to leave Thai waters (363). Anecdotally, I attended a meeting whereby NGOs described an "informal" registration scheme, where migrants or employers paid 100THB/month for an identity card produced by the local police. Migrants with the informal card would not be arrested by police subsequently. This scheme was based on bribes. Conversely, corruption among SLBs can also be seen as a shortcut to reduce their heavy workloads (e.g. labour inspector need not file a complaint, and follow up, if any employer pays them to ignore the labour violation). In the long term, corruption makes officials' work more difficult, as bribes further entrench the bad practices that SLBs face pressure (from higher authorities) to regulate.

Between 2013-16, 45 officials were charged for their collusion in trafficking (104), including for money laundering, but these appear to be low-level officials. In 2016, the General assigned to investigate trafficking in Rohingya jungle camps in Thailand made headlines when he landed in Australia seeking asylum (364). The General described how his investigation was thwarted by higher authorities, who had deliberately

transferred him to a province in conflict-ridden Southern Thailand where the lack of rule of law meant he would be killed easily. Unless corruption is rooted out at the upper echelons of the authorities, it is doubtful whether trafficking will meaningfully be reduced.

The thesis contributes new insights connecting the SLB strategy of rationing services with perceived deservingness for "trafficking" status among officials who are frontline responders. Officials expressed sympathy for "cheated" employers whose employees ran away with advances. The narrative that migrants were to blame may be partly responsible for low rates of victim identification for trafficked fishermen to date. Linked to legal and policy definitions, officials construed trafficking to involve violence and physical confinement. Arguably, if debt bondage and document confiscation were considered as definitive trafficking indicators, officials' workloads would increase exponentially given the pervasiveness of these practices in Thailand.

8.2.2 Labour inspections and migration policies may not be addressing human trafficking substantively

Labour inspections were suggested to be a performative exercise for the international community to show that the Thai government was responding to trafficking allegations (Paper 3). Image, reputation and "face" are important in Asia, notably for Thais. Similarly, other research has found that the Health Insurance Card (HICS) policy was broadened to include undocumented migrants and migrant dependents in 2013 as part of Thailand's international image campaign, which would show that the government was tackling human trafficking after the Tier 2 Watch List downgrade in 2010 (98). Suphanchaimat (2017) asserts that the HICS was not conceived out of genuine humanitarian intentions of policymakers (98)

Findings in this thesis (Paper 3) suggest that the Tier 3 downgrade in the US TIP report in 2014 prompted a similarly zealous response from the Thai government, to show that they were addressing trafficking. Numerous exposés of slavery in the fishing sector in 2014 to today were another source of international pressure. The OSS centre policy was quickly implemented to register undocumented workers and has remained in

place until today. Ostensibly OSS centres simplified the process of registration by bringing the relevant government agencies (MOI, MOL and MOPH) together in one venue to register migrants, although it is questionable whether policies across these agencies have been truly integrated (98). Participants lamented the short opening periods of OSS registration centres, problematic for fishing operators who may be at sea during the few weeks the centres were open. OSS registration centres were cited as too far away from ports in some cases, and for some migrants the fees were still too expensive.

Migration policies in Thailand have arguably not addressed root causes of irregular cross-border migration, instead opting for short term fixes (98). A prime example is the Immigration Act (1979), which states that "illegal" (undocumented) migrants must be deported. Over the decades, governments have frequently invoked the power specified in Section 17 of the Act, which permits that the Minister (with Cabinet approval) can permit certain migrant groups to remain in Thailand under certain conditions, exempting them from automatic deportation (98). These Cabinet Resolutions have been used successively over the years to permit temporary registration amnesties of migrant workers when they were considered necessary for economic development (98,108). But temporary Cabinet Resolutions don't address fundamental underlying legislative changes needed to improve migrant worker management. Recent legislative changes are promising, from amendments to fisheries labour protection and regulations on bringing migrant workers into Thailand (115,365). As noted in Chapter 1, The Thai government has made it clear that the aim is to completely eradicate migration via informal channels, with 100% of migration taking place via MOUs by 2020 (104). Legislative and policy changes signal a shift towards a longer-term view being taken by the Thai government to address human trafficking and irregular migration.

Findings in Paper 3 illuminate structural flaws in trafficking response (e.g. civil service hiring limitations) as well as motivations of frontline responders. If officials are motivated by reputation or top down orders, inspections become performative, which may shed light on possible reasons why trafficked fishermen are not being identified in greater numbers.

8.2.3 Prejudice against migrant workers and state policy

When participants were discussing service responses, they alluded to experiences of prejudice and discrimination against migrants. Migrant workers are commonly perceived as a national security threat, a health security threat, or both, with a dominant policy frame deployed according to prevailing economic and political conditions (98). For example, in 2016 rights groups recorded a surge in anti-migrant feeling and national security discourse linked to the stagnating Thai economy, prompting another crackdown on migrants (366). A Thai immigration police chief said:

> "We have received many complaints about illegal immigrants working in markets including Vietnamese and even South Asians who were stealing jobs from Thais... They should be doing the jobs that Thais don't want to do like work as house cleaners." (366).

Restricting migrants to low skilled or undesirable work is a form of discrimination enshrined in law. The MOL decree issued in 2004 states that migrants from CLMV countries can only undertake one of 27 occupations which broadly fall under the categories of 1. Manual labour (including fishing) and 2. Domestic service (98). Traitongyoo (2008) goes further to connect the concept of "Thai-ness" to discriminatory regimes of irregular migration management (IMM). She asserts that the government continually strives to maintain the country as an ethnically homogenous society which privileges Thai hegemony ("Thai-ness"), framed as the ability to speak Thai, follow Buddhism and love the King (108). Promotion of "Thai-ness" is essential for national security and sovereignty to be protected. A consequence of "Thai-ness" is the creation of "other" in society, namely migrant workers and ethnic minority hill tribes. Traitongyoo (2008) notes that:

> "'Thai-ness' plays an important role in encouraging and aggravating discrimination against migrants, by perpetuating the political ideology that 'Thai hegemony' is to be preserved by Thai ethnic homogeneity and the adherence to Thai collective national identity." (p.4-5)

Discrimination against migrant workers is evident in migration policies where they are restricted to low skilled work, and where they are overtly prevented from permanent settlement in Thailand. Migrant workers can only occupy specific jobs for maximum periods of 4 years under the MOU policy, which offers little opportunity for career advancement or long term residency. As with other ASEAN countries, Thailand's migration regime encourages short term stay only (137). Assimilation and integration are not policies pursued by the Thai state, which were hinted at in this thesis' findings. For example, the captain who could not speak a word of Burmese despite hiring migrant workers for the past 20 years (Paper 3). Historical grievances, such as the Burmese invasion of Thailand and disputes with Cambodia over ownership of temples on the Thai-Cambodia border (108), helps to fuel anti-migrant sentiment among the general population. Arguably, the Thai state deliberately engineers MOUs and IMM policies towards legitimization of employment of irregular migrant workers to reduce production costs for export goods, allowing employers access to a cheap source of labour (108). While the Thai social welfare system is evolving towards the gradual inclusion of migrants (111), the complete lack of policy discussion on permanent residence and citizenship acquisition indicates that the Thai state will not change its position towards permanent settlement anytime soon (108).

8.2.4   Disciplinary techniques used by employers and the state

Findings in Paper 3 allude to techniques employers may use to control fishermen, including withholding documents and wages, which they did not perceive as forced labour. Migrant workers' freedom to contest exploitative conditions is often limited by other employer strategies, including removing workers who are "unproductive" (when injury has arisen, or when workers refuse excessively long shifts), or because they complain and are labelled as "troublemakers" (362). In Singapore, migrant workers who leave the workplace without notice are often rendered irregular because change of employer is permitted only in exceptional circumstances. Workers who file complaints with the Singaporean MOM are disciplined by employers who file false police reports, commonly citing stealing, gambling or use of illegal substances (362). Another way employers remove "troublemakers" is to cancel work permits and deport them without paying their salaries (362,367). The threat of deportation discourages

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migrants who may be trafficked from seeking assistance, and has also been found to be among the most important proximate social determinants of mental illness, and mediator of the impact of workplace conflict on mental health, among male migrants in Singapore (368).

Migrant workers in Southeast Asia face constraints on organizing and collective bargaining to improve working conditions. Beyond inability to form Trade Unions in most countries (288), there are other reasons why migrants don't organize. Eberle (2011) suggests that Burmese migrants in Chiang Mai work in such precarious conditions, with high degrees of exploitation and insecurity, which has generated overwhelming disinterest in political issues (369). Burmese migrants have been prevented from organizing politically at home under decades of military rule, which may further inhibit them from organizing overseas. Buddhist or Karmic belief in "fate' may also encourage acceptance of current political conditions, and belief that men are deserving of them (146)

8.3 A revised conceptual framework for understanding factors affecting trafficked fishermen's health

In this section, a revised, integrated conceptual framework is presented which incorporates findings from the thesis. First, I mapped key exposures for poor health among fishermen uncovered from the systematic review and STEAM data, using Zimmerman et al.'s conceptual model of health influences during stages in the trafficking process (124). Next, I specified Thai government policies that were the focus of enquiry in this thesis, as mediators for fishermen's health, along with outcomes of being screened or not for trafficking. Finally, I included cross-cutting factors that emerged from the research as affecting exposures (e.g. language, documents) and policy mediators (e.g. perceptions of migrant deservingness) which would impact trafficked fishermen's health (the outcome).

Figure 8.1 presents a revised conceptual framework for understanding factors affecting trafficked fishermen's physical and mental health. Because research for this

thesis explored a new phenomenon and was highly exploratory, the framework does not allude to causal relationships, but offers suggestions for further, confirmatory research.

The top half of the framework shows individual exposures at stages of the trafficking process. Language and possession of documents are cross-cutting exposures that may impact experiences during trafficking, propensity to escape and re-trafficking. Further, confirmatory research is needed to examine whether or how documents and language fluency are protective, particularly in contexts where labour protections and rights that are associated with documents are not upheld. In turn, whether protections are upheld is related to cross cutting factors affecting frontline officials' responses like corruption and deservingness, which are depicted in the lower half of the framework as mediating officials' responses and policy implementation.

Thai government policies (mediators) are those that most directly affected whether fishermen were identified and assisted. More indirect policies included as contextual factors in Conceptual Framework D (Figure 2.4), e.g. fishing trade agreements, are excluded here. While thesis findings touch on elements of more "distal" policies (e.g. MOL suggestion that consumers should pay more for fish, implying fishermen would then be paid more), the aim of this thesis was to focus on describing how policies which most directly impacted fishermen were realised by frontline responders.

Policy domains are colour coded, and placed depending on the immediacy of a presumed impact of policies. For example, at the Exploitation stage, OSH compliance (work safety) most directly impacts fishermen's health, followed by labour regulations (wages, working time). For Thai government policies, agencies who are primarily responsible are the first policy domain, followed by the secondary agency. For example, the MOL was primarily responsible for migrant registration, followed by the MOPH.

The framework also highlights research gaps. Post-escape, fishermen who are not screened as potential trafficked persons face several outcomes, including; re-trafficking onto other boats or other sectors, or immigration detention if they do not

have documents, both of which negatively affect health. Fishermen may also escape and attempt to make their way to their home province or country independently, or they may seek work legally (by registering at OSS) or illegally (without registration) in Thailand. Very little is known about men who are not identified, and who pursue these routes.

Figure 8.1: A revised conceptual framework to investigate factors influencing service provision and victim identification of trafficked fishermen
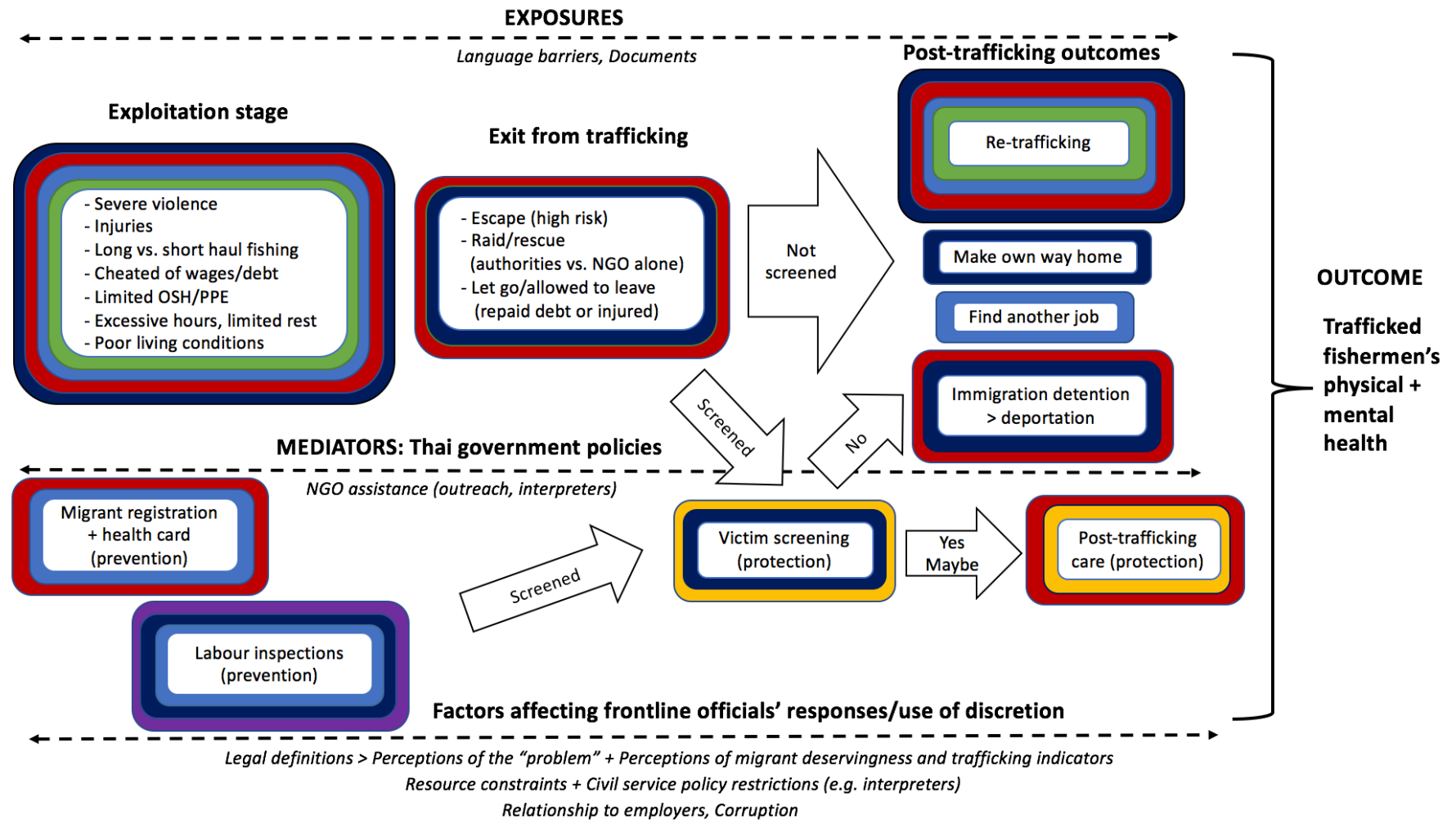
8.4   Study challenges and limitations

Limitations specific to each paper are discussed in those papers. In this section I will discuss the most significant conceptual, practical and methodological challenges I faced in conducting the research for this thesis and the limitations of the findings.

8.4.1   Representativeness of findings

It is extremely difficult, if not impossible, to obtain representative data for a general population of trafficked persons, for reasons which are discussed below.

Systematic review

Studies included in the systematic review were based on small samples, which often used convenience or purposive sampling in cross-sectional designs. Many studies did not explain rationale for sample size and did not discuss sample representativeness. Heterogeneity of measurement of outcomes (e.g. violence) hindered comparability. Differing operational definitions of trafficking and forced labour also hinders interpretation of the systematic review's findings. Findings of the review indicated that more extreme cases of abuse, exploitation, and poor health outcomes may be more likely among post-trafficking service users compared to convenience samples of fishers recruited at ports. Yet, as suggested in the revised conceptual framework above, many trafficked persons are not identified or they do not accept assistance. Moreover, the proportion of trafficked or exploited fishers/seafarers that were included in studies conducted outside of post-trafficking services is unclear. An indication of the "true" situation of trafficked GMS fishers may therefore lie in-between the figures reported for fishermen using post-trafficking services, and those sampled at ports, in the systematic review.

STEAM study

The STEAM survey included data for only those trafficked people who were using services of study partners, and is not representative of the general population of trafficked persons. Besides the inherent difficulties in sampling a hidden and vulnerable population, there are several reasons why the STEAM sample is highly

unlikely to be representative of the general population of trafficked persons. Nonprobability sampling was used in the selection of the participating services. As noted in Paper 1, selection criteria used to determine who is eligible for services varies between countries and sometimes service providers and is often linked to differing legal definitions of trafficking. While findings cannot be generalized to a larger population of trafficked males in the region (126), findings are indicative of a population of male post-trafficking service recipients affected by similar types of trafficking. STEAM data indicates the occupational hazards and abuses faced by men and boys who reach assistance after a trafficking experience. Furthermore, many of the hazards described in this study are likely similar to those faced by the larger population of men trafficked for fishing and manufacturing in the region.

Moreover, as discussed in section 8.3, not all trafficked persons accept assistance (370). Findings from a study of trafficked persons who decline assistance suggest that those who do accept assistance generally have few, if any alternative forms of support, implying that those who use post-trafficking services may be more disadvantaged with less external support than those who decline assistance (370,371). The survey collected data on individuals who underwent a screening process with immigration officials, police or other agencies and thus it is impossible to know the potential effects of this selection bias, when the situation of individuals who were screened but who declined assistance is unknown. This is a known problem with surveying trafficked persons.

Despite the selection biases in sampling shelter populations, researchers acknowledge that they are however the most suitable population with which to conduct primary research (370,372). In shelters and post-trafficking services, individuals can be safely and ethically identified and recruited for interviews. Should individuals need assistance during or after the interview, service staff are on hand to provide support (370). In contrast, attempting to access current trafficked individuals may be dangerous for both the individual and the researcher. Finding former trafficked persons poses other problems, such as the risk of stigmatization in the community if the individual concerned does not want their experience to be known (370). Even the most careful

and well-intentioned researcher may put the individual at risk of harm if he is currently in a trafficking situation (272).

Qualitative sample limitations

A limitation of this thesis was that I did not conduct in-depth interviews with fishermen themselves for the qualitative component. This may limit the conclusions drawn about how men were being identified and assisted. As explained in the Methods chapter of this thesis, I deliberately chose to not conduct interviews with trafficked fishermen because several NGO reports using qualitative data were published as I was designing the qualitative study. Moreover, with the extensive, new information from fishermen collected in the STEAM study, I felt that it was of greater importance for my thesis aims to gain perspectives of service providers and frontline responders about how they assisted men, as these types of data were lacking. To mitigate this limitation, I triangulated data from NGO reports and a Master's thesis where trafficked fishermen were interviewed about their experiences of victim screening, identification and assistance in Thailand, Indonesia and Malaysia (24,58,227). In particular, Ry (2014) offered detailed case studies of nine Cambodian trafficked fishermen's experiences of victim screening, immigration detention and assistance in those countries (58). Research objectives 4 and 5 in this thesis were deliberately designed to focus on frontline responders as a case study in policy implementation. Further discussion of validity and generalizability of the qualitative data collected are discussed below in section 8.4.4.

8.4.2   Researching an ongoing policy process

Participant responses may have been affected by events leading up to data collection (Figure 1.3), namely the military coup, fishing trafficking exposés and TIP report downgrade to Tier 3. Contrary to my expectations, many participants, particularly government officials, consented to be interviewed. Some participants may have felt that they had "something to prove" in response to all the negative publicity surrounding Thailand at that time.

While designing the qualitative study, I initially wanted to research how policies were being formulated to address fishing trafficking, in addition to frontline responders' practices around implementation (Figure 2.4). However, it quickly became clear that limited time for data collection (July-October 2014) and the quickly changing policy landscape, even during the fieldwork period, meant that this would be difficult to achieve. The migration policy landscape in Thailand has continued to evolve rapidly in the period since data collection ended, with several rounds of OSS registration, a four month ban on CLM migrants entering Thailand during 2016 (officially so that the government could conduct a migrant worker census) (373), and several legislative and policy changes that are detailed in Paper 3. To keep up, I have consulted policy reports, including the government's 200-page yearly submission to the US State Department for the TIP report, and followed events on English language media.

The rapidly changing policy landscape also raises questions about the relevance of my findings. However, a recent complaint to the ILO by trade unions suggests that forced labour, use of brokers and debt bondage continues in the Thai fishing industry (359). Continued problems with labour inspections include a focus on verifying migrants' documents and IUU fishing rather than work conditions (120). Findings should remain useful for policymakers seeking to understand how victim identification processes can be improved.

Ministries and Departments involved in efforts to reduce trafficking in the fishing sector were numerous. Strenuous efforts were made to obtain information from all key policy perspectives, across the Department of Fisheries, Ministry of Labour, Ministry of Public Health, Royal Thai Police, Department of Special Investigation and Ministry of Social Development and Human Security, the main ministries (besides the Ministry of Interior) who were involved in frontline implementation. The focus of this thesis was policies which most directly affected fishermen's wellbeing, namely victim screening measures, labour inspections and the OSS registration centres. Other policies included vessel and boat registration and equipment licensing, vessel monitoring system, criminal justice reform and updates to the Port-in Port-Out (PIPO) system for long-haul fishing boats which were ongoing at the time of data collection. While I asked about aspects of these policies and changes during interviews, they were

not the focus of this thesis. Other research approaches to the neglected issues in this thesis could involve: a framing analysis of media articles and policy statements; qualitative research exploring trafficked persons' perceptions of the criminal justice system; legal analysis of legislative changes in fisheries and labour; and ethnographic methods to observe PIPO inspections.

8.4.3   Limitations with quantitative data and analysis

There were some limitations with STEAM data. First, fishermen were not asked about duration of trips at sea, i.e. whether they were long-haul or short-haul fishers. The categories long and short-haul fishing presented in Paper 2 were created after consulting IOM study partners and an NGO report (51), which made clear that fishermen in the STEAM study were trafficked via Thailand, to long-haul destinations (Indonesia, Malaysia, Mauritius, South Africa) or remained as short-haul fishermen in Thailand itself. However, it is possible that a minority of fishermen were recruited as short-haul fishers in typical long-haul destinations (i.e., they may have spent periods of less than one month at sea in Mauritius), although this is highly unlikely. Furthermore, long-haul fishermen typically spend longer overall periods in trafficking because it is more difficult for them to escape, compared to short-haul fishers who dock more frequently. Accordingly, 75.3% of long-haul fishermen spent a year or more in trafficking, compared to 26.0% of short-haul fishermen. Similarly, the variable "fluent" was coded based on consultation with IOM and the NGO report. Many fishermen are trafficked from Thailand on boats with Thai captains to the long-haul destinations specified above. Fishermen were coded positively if they spoke Thai in destination countries: Malaysia, Indonesia, Mauritius, and positive if speaking English in South Africa, where Cambodian fishermen were transported directly according to case files. Coding for the fluency variable is potentially inaccurate in a minority of cases.

A further limitation arises from the use of screening tools to measure mental health symptoms. The screening tools for depression and anxiety (Hopkins Symptom Checklist-25) and PTSD (Harvard Trauma Questionnaire) were not structured clinical interviews and cannot provide clinical diagnoses of mental disorder. Furthermore, the screening tools have not been subject to extensive epidemiological testing in non-war

affected populations (374). A study comparing the use of the Structured Clinical Interview for DSM-IV (SCID) with the Harvard Trauma Questionnaire (HTQ) in a Cambodian population unaffected by war, found that the SCID may be more conservative in identifying PTSD cases than the HTQ (374). Only one primary study has been conducted to date that uses structured diagnostic instruments to measure mental disorders among trafficked people (375). The authors report lower prevalence of depression and PTSD among trafficked women at baseline and follow up than have authors using the HTQ and Hopkins Symptom Checklist-25 (HSCL-25) (274,376). Another historical cohort study analysed clinical electronic health records of trafficked persons using mental health services in London (377). Mental health diagnoses were coded using the International Classification of Diseases (ICD-10). Similar to the primary study, lower prevalence of PTSD was recorded compared to studies using the HTQ (377). Without further testing in trafficked populations, the accuracy of the screening tools used for STEAM in identifying cases cannot be fully ascertained.

Instruments used for mental health were not validated with the specific population of trafficked fishermen, which could also induce measurement error (378). However, the HSCL-25 and HTQ have been validated with traumatized Cambodian, Vietnamese and Laotian refugees who had experienced torture and other abuses (186,329). These instruments have been used in studies with sex-trafficked women in Europe and with sex and labour-trafficked women in Nepal (40,376). As detailed in Paper 1, steps were taken to improve validity and reliability of the overall STEAM instrument including the HTQ and HSCL-25. These steps included translation to native languages and back translation, revisions to the survey after pilot testing, use of trained social workers or caseworkers (and professional interpreters where required) to conduct interviews. Following discussion with service providers, item 14 on sexual interest on the HSCL-25 for depression was omitted as it was culturally inappropriate to enquire about this in the study countries. Among fishermen in STEAM, the HSCL-25 and HTQ displayed good internal reliability according to Cronbach's alpha scores (measure of a scale's reliability) for all mental health disorders assessed (Cα=0.86-0.90). To date, there are few validated and culturally appropriate tools available for mental health research with labour and sex-trafficked persons (379). Further research should explore the options for creating new assessment tools specifically for trafficked persons, whose

mental health symptomologies (particularly for depression and anxiety in the HSCL-25) may be more complex than those of refugees or other sufferers of rights abuses (379,380).

A practical constraint with mental health data was that another PhD student was using STEAM mental health data for their PhD, which precluded focusing explicitly on mental health in this thesis. Relatedly, I did not explore how mental health symptoms may be endorsed differently across nationalities or cultures, i.e. measures developed for a given construct for one nationality may not be assessing the same construct in another nationality group. STEAM data featured in the systematic review showed that Cambodians endorsed mental health symptoms much more frequently than Burmese trafficked fishermen (e.g. 63.0% and 21.8% for depression, 46.8% and 10.9% for PTSD respectively). This finding may be related to direct traumatic experiences or intergenerational trauma passed on in Cambodian households from the Khmer Rouge genocide of 1975-79 (381). While this thesis's research objectives did not focus on mental health, the possibility that symptoms are endorsed differently could be considered a limitation. In future research, one way to assess item equivalence between groups is to conduct a Rasch rating scale analysis, which permits assessment of the validity and reliability of measures and examines whether respondents use the rating scale categories in the intended manner (382). A study with Cambodian and Vietnamese women in the USA used Rasch analysis to explore item equivalence for the HTQ (measuring PTSD) and HSCL (measuring depression). While the majority of items were equivalent, Vietnamese women were less likely to endorse feelings of hopelessness or difficulty functioning on the HTQ, and were more likely to endorse symptoms related to inability to feel emotions or feeling irritable, hostile and on guard, compared to the inverse among Cambodians (382). Future research could explore differences in item equivalence among different national or ethnic groups of trafficked persons.

A potential limitation was the reliance on cross-sectional data in Papers 1 and 2 and possibility of reverse causality. While follow up data from the second interview (conducted 30-90 days later) was available, most (59.6%, n=164/275) fishermen could not be re-interviewed, indicating selection bias in the follow up sample. Men who left

the study may have had different characteristics, e.g. age, education, compared to men who stayed. For example, descriptive analysis comparing fishermen who were retained and who were not shows that those who left the study had poorer mental health than men who were retained (383). Research objectives of this thesis focused on the exposures during the exploitation stage and health needs in the immediate post-trafficking period, thus ruling out the need for follow up data. Furthermore, because the quantitative research was highly exploratory, I was cautious in my approach to data analysis. In Paper 1, despite the use of Directed Acyclic Graphs (DAGs) which theoretically guide causal estimation, this analysis was exploratory and hypotheses generating and did not aim to estimate causal effects of the exposures. The DAGs presented can be used to guide future confirmatory analyses.

Another limitation was absence of some variables in the STEAM dataset. The analytic strategy (Directed Acyclic Graphs) presented in Paper 1 did not permit estimation of effects of the primary exposures, hours worked per week and Occupational Health Risk (OHR) score in the multivariable injuries analysis due to the presence of unobserved variables along the hypothesized backdoor paths from these exposures to injuries (see Appendix 10 and 11), i.e. there was uncontrolled confounding in multivariable analyses for the primary exposures. Future research with migrants should include their attitudes towards OSH, and employers' compliance with state regulations. Survey questions could be designed to consider state regulations. For example, if helmets were required for construction work in Cambodia, the question should be tailored by sector and destination country, "did your employer mandate use of helmets?", and consistency of enforcement (perhaps using a Likert scale).

In Paper 2, I could only conduct bivariable analyses due to small sample sizes for the health outcomes and because causal diagrams (DAGs) indicated that multivariable analyses would be biased due to the direction of theorized relationships (331). Again, analyses were exploratory and hypothesis generating and I was cautious to avoid causal language.

8.4.4 Limitations with qualitative data and analysis

Representativeness and generalizability

Qualitative methods involve analysis of words and images, and a preference for meanings over behaviour, as they attempt to "document the world from the point of view of the people studied" (384). Qualitative approaches allow discourses (symbolic statements from a specific social position) to be identified (385). However, at the same time, qualitative methods can produce idiosyncratic explanations, and have limited ability to produce generalizable explanations (386). Studies examining health service use often employ qualitative methods, including interview and case study accounts which offer subjective narratives as explanations for behaviour (387). A key question is how far the qualitative findings presented in this thesis can be generalized to other settings or populations. Qualitative research in this thesis should be considered as a case study, where policy implementation in one province was explored to illuminate factors affecting frontline responders' responses to potentially trafficked fishermen. As discussed by Ritchie et al. (2014), there are three types of generalization of research findings: theoretical; inferential and representational. Theoretical generalization aims to draw out theoretical propositions or principles from findings for more general application (e.g. to the general population). Inferential generalization is related to whether findings can be generalized to settings or contexts beyond the sampled one. Representational generalization is whether findings can be generalized to the parent population from which the sample is drawn (388).

From a theoretical perspective, research for this thesis aimed to draw new theoretical insights about how and under what circumstances frontline responders would identify a trafficked fisherman, and how they would assist them. The conceptual framework above integrates new theoretical knowledge from qualitative analysis, such as how legal definitions and personal beliefs affect perception of trafficking indicators and migrant deservingness of VoT status. The conceptual frameworks presented in Chapter 2, the Directed Acyclic Graph (DAG) in Paper 1 (Figure 5.1) and the study's overall revised framework can be used to guide future research about trafficked fishermen's health, wellbeing and assistance. The conceptual thinking in this thesis reflects some attempt at theoretical generalization.

As for inferential generalization, core tenets of qualitative findings may be applicable in other coastal provinces. Civil service resource constraints, such as staffing allocations based on provincial need, imply that for inferential generalization to hold, provinces should have similar numbers of migrant fishermen and civil servants.

Qualitative findings could be representationally generalized to an extent. Findings revealed substantial breadth and nature of perceptions about trafficking, as well as a range of various constraints to assisting trafficked fishermen. Triangulating with media and NGO reports, I believe participant's views were broadly representative of the parent, general Thai population. As discussed in section 8.2.3, some participants alluded to discrimination against migrants which is well reflected in the general population according to other research (108).

Within the government category of participants, the qualitative sample was heterogeneous by Ministry or Department, which may raise concerns about representativeness of findings. However, interviews were conducted with all stakeholders from the Multi-Disciplinary Team (MDT), which conducted victim screening and were beginning to conduct inspections at the time of interview. A related limitation was the exclusion of the Ministry of Interior (MOI) from the sample. The MOI are involved in conceptualizing migration policies and ostensibly were involved in administering the One Stop Service (OSS) registration centres for migrants. However, policy document review did not identify anyone from MOI for the initial sample frame, and participants did not identify anyone from the MOI (when requested for names of potential study participants) in the province where data collection took place. It is possible that the MOI were less involved in OSS operations, and more involved in formulating migrant registration policies, which was not the exclusive focus of this thesis. Overall, theoretical saturation was achieved in the final sample in Papers 2 and 3.

Practical constraints and limitations

In terms of practical constraints, one limitation was the difficulty of addressing corruption in interviews with officials. As discussed in Chapter 3, I did not directly ask

about corruption during interviews due to safety concerns and not wanting to make participants uncomfortable. Participants often asked me to turn off the recorder when they alluded to corruption in their responses, reflecting the personal risk that participants faced in speaking out against corruption, particularly if this might involve higher authorities.

Moreover, it was unknown whether officials interviewed participated in corrupt practices themselves. Following two interviews with different law enforcement agencies, the Research Assistant Interpreter (RAI) commented that I should question what officials said as they may not be revealing the whole truth. Post-interview field notes were valuable reminders of the importance of scepticism, and necessity of triangulating data with NGO reports and NGO participants' responses. Government participants could disclose only selected information if they wished to. As discussed in Paper 3, officials seemed keen to dispel the notion that Thailand was a trafficking hub, and were happy to discuss policy efforts to reduce trafficking, which was probably related to negative events (TIP report downgrade, coup) immediately preceding data collection. However, officials always (except in one case with law enforcement) acknowledged that Thailand was grappling with trafficking, but that the scale was not as large as that portrayed by the international community. One INGO participant remarked that as a foreigner working on migrant rights issues, they had never experienced such hostility to their work as they were at this turbulent political time (data collection period). As discussed in section 8.2.2, "face", reputation and image are important to the Thai government, which partly explains why corruption and human rights of migrant workers was unlikely to be raised in interviews with myself, a foreign researcher.

Another limitation of the qualitative data and analysis was that I did not conduct participant observation of labour inspections. My lack of Thai language, limited time available for fieldwork (July-October 2014) and somewhat lengthy administrative process for interviews with government officials meant that in-depth interviews conducted with interpreters was the most feasible research method. Participants may have said they implemented certain practices out of social desirability bias (especially given concerns about face, reputation and my status as a foreign researcher), but I

have no way to know their actual behaviours. I attempted to overcome this limitation by triangulating findings with NGO participants' responses and NGO reports where researchers had observed inspections (47,118). I did manage to observe the migrant registration process at the One Stop Service Centre (OSSC) one afternoon. Interviewing officials and NGO participants at their offices while migrants were being assisted by other staff also gave me a sense of how services were provided, but this was limited to fleeting visits. Future research using participant observation and ethnography would be invaluable in illuminating how policies such as inspections are implemented.

My lack of Thai language was a key limitation. I was unable to review certain policy documents offered by participants during interviews when only Thai language versions were available. Budget limitations (most of the budget was spent on the two-step transcription and translation process, as well as direct fieldwork costs) meant that I could not have policy documents translated. Fortunately, contacts and some participants were able to provide English language versions of essential documents (i.e. victim screening forms) which somewhat mitigated this limitation. Not speaking Thai meant that I was reliant on the RAIs to ask relevant follow up questions for participants when conversation was flowing or when there was limited time to translate everything word for word. After reviewing the translated transcripts, there were a few instances of missed opportunities to probe interesting tangents of conversation. However, both RAIs had extensive experience in conducting interviews about human trafficking and the fishing sector, and the minority of instances when this happened would not significantly affect the data collected.

While designing topic guides, I found it difficult to design questions about perceived migrant deservingness. Prior studies on deservingness have involved ethnographic observation in combination with in-depth interviews (172,389), or framing analysis of media articles and policy documents (171,390). Because my lack of Thai language precluded ethnographic methods, I was reliant on interview questions around what frontline responders' actual practices were, as well as their narratives about trafficking, from which I could infer perceptions about deservingness.

A final practical constraint included limited time to examine more policy documents which may have been relevant to analysis, including migrant contracts. However, during qualitative analysis it became apparent that contracts were largely irrelevant, as very few fishermen had written contracts (not required by law at the time of interview) and therefore any protective effects (or not) from contracts could not be assessed. Participants seldom mentioned contracts unless asked about them, whereas identity documents (temporary registration cards, passports) were mentioned frequently in the context of protection or assistance.

8.5 Contributions to knowledge

Despite the challenges and limitations discussed above, this thesis offers unique insights and takes an important step toward addressing the gap in research on trafficked fishermen's health and victim identification and assistance. Specifically, the thesis has made the following contributions to knowledge:

1. This thesis presents an overview of the prevalence of violence, health risks and occupational safety and health conditions among fishers and seafarers from GMS countries, by conducting the first systematic review of academic and grey literature on this topic. The review revealed a significant evidence gap, with no published academic research that examines occupational, physical and mental health among trafficked fishers.

2. This thesis shows that trafficked men and boys face extreme abuses, occupational hazards and injuries, by providing the first quantitative analysis examining these exposures and outcomes among labour-trafficked men and boys from a large sample. Findings show that human trafficking is not limited to women and girls. Findings raised important questions about whether documents and language fluency were protective against violence or injuries. To my knowledge, this paper offers the first adjusted, quantitative exploration of this question.

3. This thesis drew attention to important differences in exposures and health symptoms experienced between trafficked long-haul and short-haul fishermen, in the first mixed methods analysis of their health needs and service responses.

4. This thesis offers evidence of an understudied policy implementation process, victim identification and assistance of trafficked fishermen, and to my knowledge is the first qualitative study to do so in a middle-income country in Asia. The unique data presented in this study furthers our understanding of how stakeholders' perceptions of the "problem" affects whether and how trafficked fishermen are assisted.

5. This thesis offers a conceptual tool mapping potential causal assumptions (Directed Acyclic Graph) that can guide future exploratory or confirmatory, quantitative analysis of factors associated with injuries and violence among labour-trafficked males and females.

6. This thesis includes a revised conceptual framework based on new quantitative and qualitative findings for understanding factors affecting trafficked fishermen's physical and mental health, including the influence of policies. This framework could be used in future research with migrant and trafficked fishermen and service providers in other settings.

8.6 Policy and practice implications and recommendations

Each Paper's discussion outlines implications for practice and policy. In this section I elaborate on some of the implications noted in Papers across different policy and practice domains in more detail. Recommendations are offered as a starting point, but will require further research on feasibility in the Thai context.

8.6.1 Implications for health and welfare providers

Paper 2 describes various commonly experienced health symptoms among trafficked fishermen that health service providers (HSP) and post-trafficking care providers (PTSP) should be aware of. These included headaches, dizzy spells, exhaustion and symptoms of depression, anxiety and PTSD. Migrant fishermen may present with symptoms linked to penile oil injections or implants, including difficulty urinating, reduced sensitivity and pain and erectile dysfunction (213). Targeted information awareness campaigns about the dangers of such practices could be implemented in port settings. As uncovered by the systematic review and in other reports (47), HSPs should be aware of the symptoms of beriberi (vitamin B1 deficiency) among long-haul fishermen who have been at sea for extended periods with inadequate access to vegetables and meat. Symptoms of beriberi include swelling and loss of sensation in limbs, tingling and paralysis in limbs, difficulty walking and shortness of breath (228). The MOPH recently issued beriberi prevention guidelines in the fishing sector (318), and HSPs in partnership with NGOs and industry should conduct preventive training with fishermen using these guidelines.

Trafficked fishermen in the first instance may need acute services for injuries or serious conditions. As noted by a HSP, it was unknown just how many migrants using services were fishermen. HSPs should enquire about the nature of the person's work when they present at facilities, and ascertain among fishermen whether they are long-haul or short-haul, as long-haul fishing may be a risk factor for injuries and worse physical health. In the long-term, designing and implementing culturally appropriate interventions to improve mental health will be important (see section 8.7.4 below).

This research should inform the design of post-trafficking care packages for fishermen in partnership with HSPs (e.g. Floating hospital partners in Paper 2), PTSPs and NGOs. A recent report shows that priority post-trafficking needs defined by trafficked fishermen assisted by an NGO included the need to find employment, and support with legal cases and obtaining compensation (391). PTSPs should provide job placement services, legal support and other services as demanded by fishermen themselves, and should not impose services or training on fishermen that are not

materially or practically useful to them. Available evidence in this thesis and NGO reports shows that stigma or shame associated with failing to fulfil breadwinner expectations could be alleviated with job placement and material support (4,391). Men and boys who become permanently disabled from injuries face slim chances of future employment or ability to earn a living or support their families (293), and will need specific interventions to help them transition to suitable livelihood options.

HSPs located in coastal provinces, or provinces with large migrant populations, should train staff to spot indicators of trafficking among patients. Training could be implemented using existing guidelines or by adapting them, in partnership with NGOs such as the IOM, who together with LSHTM have produced a Caring for Trafficked Persons manual for HSPs (352).

Reforms allowing HICS benefits to be portable would help fishermen to access services wherever they dock in Thailand. Employers of long-haul fishermen should be required to purchase international policies when men apply for work permits; the Ministry of Labour could consider including health insurance on the labour inspection checklist.

8.6.2   Implications for labour inspections

Labour inspections their current format do not appear to be effective in finding forced labour cases in the fishing sector. As recommended elsewhere, crew should be separated from captains or superiors during interviews and trained interpreters for TIP cases should be used (Stride reports). Labour inspectors require further training in TIP indicators (now that the Anti Trafficking Act includes seizure of documents and debt bondage). Greater staff numbers would help, although this has been increased from 120 inspectors in 2014 to 565 authorized labour inspectors and 229 temporary employees appointed to assist in labour inspections by March 2017 (359). Civil society partners could be trained to assist with labour inspections.

Long-haul fishermen should have access to civil society and government complaints channels (47), including hotlines, with contact information disseminated in ports and

on boats by stakeholders. Civil servants in specialist trafficking units should not rotate frequently to avoid loss of valuable knowledge in handling TIP cases.

8.6.3   Implications for interpreter services

Improving interpreter services for TIP cases should be a priority for the government. Legislative changes allowing migrants to be hired as "language coordinators" is promising, but it is unclear whether these language coordinators are only stationed at PIPO inspection centres for long-haul boats, or whether they are deployed in other settings where trafficked fishermen could present, such as immigration detention, or inspections not linked with PIPO. It is also unclear what benefits and training are available with the language coordinator position, vis-à-vis interpreters who are hired directly into the civil service (whom must be citizens). If not already in place, the government should ensure that a similarly high standard of selection, training and practice protocols of these two occupational groups are in place. Training on ethical protocols is essential in both positions, which could draw from existing guidelines (392).

Language interventions with both crew and captains could positively affect fishermen's wellbeing. Captains should be encouraged to learn some Burmese/Khmer, and fishermen should be encouraged to learn some Thai. Language interventions could focus on phrases related to OSH, health, expressing needs, etc. Language interventions with both crew and captains could positively affect fishermen's wellbeing.

8.6.4   Implications for immigration and migrant recruitment policies

If documents are not protective during transit and at destination, migrants have less incentive to obtain documents at the outset, and migrate via legal channels. Documents and migration via legal channels are not necessarily protective in contexts where laws are not enforced due to corruption and bribery, which unfortunately has been reported in Thailand (248,280,281). Advocacy efforts should target the enforcement of rights around documents, with law enforcement, officials and employers. Migrants with documents should not be arrested or extorted from. Where

the rule of law is enforced around documents, brokers should be registered so that those who deceive or indebt workers can be located and arrested.

The government should consider repealing the law that transporting undocumented migrants is a crime in specific circumstances, for example for NGO assisting undocumented workers to escape or access services. One NGO participant's staff member had a criminal case brought against them for bringing an undocumented migrant worker to a health centre in their car after being stopped by police. This law currently acts as deterrent for NGOs and welfare organizations from assisting potentially trafficked persons.

The Royal Ordinance on Bringing Migrant Workers to work with Employers in Thailand B.E. 2559 (2016) now stipulates that employers must cover all fees and expenses associated with bringing workers to Thailand (115). Previously, even where employers cover costs upfront, many deducted the amount paid for work permits, transport costs from employees' salaries (117). The government should ensure that there is a mechanism to prevent employers from deducting these costs from employees' wages under the new law.

There are many potentially trafficked persons languishing in Immigration Detention Centres (IDCs). Migrants in IDCs, particularly those from fishing boats, should be screened for trafficking. There is a role for HSPs and PTSPs to work with immigration authorities to establish referral channels for migrants who are identified as trafficked persons, and other migrants experiencing health problems, particularly when IDCs are known hotbeds for undiagnosed tuberculosis, skin conditions, beriberi and mental health disorders (60).

8.6.5   Implications for migrant workers' rights

Besides enforcing protections associated with documents and actively working to reduce corruption among officials and law enforcement, the government should consider legislative changes that would permit migrant workers to organize and collectively bargain (290). Migrants can legally join trade unions in Thailand, but they

often work in sectors or regions that aren't highly unionised, including fishing. Furthermore, the Labour Relations Act B.E. 2518 (1975) states that only Thai citizens can union leaders or committee members (288). Migrants therefore cannot actively participate in leadership of unions, nor can they establish their own trade unions (288).

The government should consider proposals put forward by civil society to sign the Work in Fishing Convention (WIF), which if implemented, provides enhanced protections including improved OSH, medical care at sea and onshore, minimum rest hours, written contracts and the same levels of social security as other workers (77). WIF provisions go beyond recent domestic legislative changes and protections outlined in Ministerial Regulation No. 10 B.E. 2557 (2014), which do not mention social security or medical care specifically (365).

8.7 Areas for further research

In the research papers of this thesis I have noted where further research is needed to better understand fishermen's health needs and service and policy responses. In this section, I describe areas which I believe would benefit from further research, based on this thesis' findings and evidence from studies outside of Thailand. These are: 1) occupational safety and health formative and intervention research with GMS fishermen; 2) risk and protective factors for trafficking prevention among men and boys; 3) policy research on victim identification, including implementation studies, economic evaluations; 4) follow up research with trafficked fishermen in the post-trafficking period.

8.7.1 Occupational safety and health formative and intervention research with GMS fishermen

The very limited evidence on GMS fishermen in the maritime health literature indicates a need for well-designed, epidemiological studies on OSH among this group. The majority of the world's seafarers and commercial fishers come from Asian countries (197). These recent origin countries are constrained by less developed data

collection systems at national and regional levels (234). A priority for researchers should be to work with relevant agencies to strengthen data collection systems, which should include efforts to build consensus and validate appropriate instruments to improve comparability nationally and regionally. Collaborative research with other academic researchers and policy stakeholders via an existing regional platform, e.g. The Southeast Asia Fisheries Development Centre (SEAFDEC), could be beneficial. Potential data collection points and research foci for researchers could include: pre-departure medical examinations (underlying chronic conditions); radio medical records at sea (accidents, illnesses); port based clinics or repatriation services (acute illnesses); and shore based sources (death certificates, hospital records, census returns where occupation is declared) (234). Research instruments should include questions on nationality as a potential determinant or modifier for occupational health risks experienced. As suggested throughout this thesis, whether fishers are long or short-haul is also important for health and potentially work safety outcomes. Instruments should also include whether fishermen are long or short-haul. Fishermen's experiences of exploitation, abuse and violence were completely missing from peer-reviewed health studies uncovered in the systematic review. Survey modules should include these questions in future studies.

Future research with GMS fishermen and captains on perceptions of OSH, safety behaviours and use of PPE is necessary to inform appropriate interventions to improve work safety. We know little about what works to reduce occupational injury and uptake of PPE in low and middle income countries (319); formative research with migrant fishermen should examine feasibility of different culturally and literacy appropriate interventions. In the only quasi-experimental study on work safety interventions identified from the systematic review (218), a captain's leadership was important to influence deckhands and lead safety training Vietnamese fishers in the USA. The authors concluded that safety training should include the following elements: be delivered in deckhands' primary language at appropriate literacy levels; be hands on; be conducted during off-season periods; end in completion certificates and be culturally appropriate e.g. bright T-shirts with safety messages (217,218). In GMS countries, qualitative research methods may be more suited to teasing out what is culturally appropriate in different settings.

The extent to which occupational violence is a problem in commercial fishing is unclear. Among trafficked fishermen in this thesis and in grey literature, levels of violence are high. There are no studies in peer-reviewed literature, to my knowledge, that discuss violence among migrant GMS fishermen. Globally, there is growing evidence to inform prevention of violence against women and girls (291), but efforts to reduce male on male interpersonal violence are not well-documented. We still know little about what works to reduce violence among men in the workplace and elsewhere (292). Further descriptive work with GMS fishermen and boat captains should make violence a point of enquiry. Such work could help inform design of pilot interventions to reduce violence.

8.7.2 Risk and protective factors for trafficking prevention among men and boys

This thesis and the wider literature offer only inconclusive findings about whether documents or language fluency are protective, which raises fascinating questions for future work. In anti-trafficking programming a wide range of assumptions prevail, such as: women and girls are at greater risk of being trafficked; that pre-migration information is protective; that migrating with documents via legal channels is "safer" than migrating undocumented via informal channels (43,393). As this thesis shows, research is needed to continually interrogate such assumptions, which are often based on conventional thinking (legal documents should be protective), dominant media narratives or policy frames (of sex-trafficked women and girls). Additionally, research should consider which migration-related factors are most significant or influential in determining a labour migrant's migration outcome (43).

Physical appearance is a lesser known risk factor uncovered in the qualitative analysis, where men who appeared to be physically strong were "chosen" by brokers, or persuaded by them, to work in fishing, mirroring Molland's (2012) finding that beauty was a risk factor for sex trafficking among women and girls (338). Huijsmans (2014) found that stronger migrant men graduated to better paid but risker work in plantations, which perversely lead them to be more vulnerable to injuries and illness (394). Narratives of trafficked Cambodian fishermen raise further questions about assumptions of prevention programs (395). Previous migration was not necessarily

protective, as a man with a good fishing job previously was trafficked on his second trip to Thailand. Trafficked fishermen are also described "making the decision in 2 hours" to leave for Thailand, hinting at fast decision making and risk (which may be gendered) which is also neglected in anti-trafficking programming (43). Ethnographic and qualitative methods may further tease out unknown risk and protective factors, while quantitative work could generate hypotheses for later confirmatory analyses.

Limited qualitative research has been conducted which explores the extent to which migrating with documents or via legal channels is protective (361,394). Further quantitative research (exploratory and confirmatory) should investigate whether documents, or migrating via legal channels, is protective for male migrants, who for example had privileged access to migration via legal channels from Laos to Thailand (394). There are several existing surveys that have been conducted with GMS migrants which enquire about documentation and migration channels used (396,397) which could be mined to explore these questions. And/or, a systematic review could be conducted to explore questions about protectiveness of documents and legal channels among labour migrants explicitly.

Another research direction could involve a more ethnographic approach with authorities in receiving countries about how they do (or do not) enforce protections associated with documents. Anecdotally, migrants report officials tearing up documents, asking for bribes and being arrested (248,280,281). What would work to get officials and law enforcement to respect documentation status and uphold migrants' rights? This question may be related to discrimination against migrants generally, in which case, a systematic review on prejudice reduction interventions among service providers will be a useful starting point.

Inconclusive findings in this thesis on language fluency also raise questions about how protective language skills are among labour-trafficked males. Language fluency was associated with experiencing violence and even work-related injuries among labour-trafficked males in this thesis, but it is possible that fluency made little difference for these outcomes given the extent of poor working, living conditions and abuse among trafficked men and boys. Further research with trafficked persons could explore this

question. Again, existing studies with trafficked persons (40,128) which have used similar survey instruments to STEAM could be mined to explore this question.

Elsewhere, there is little empirical research in the extant occupational health literature examining the extent to which language ability is protective for migrants (235). Survey research could compare GMS migrant and native workers in destination countries (i.e. Thailand, Malaysia) on occupational safety. And in surveys with GMS migrants exploring other outcomes, language fluency should be included in survey instruments to explore this question in detail.

8.7.3   Policy research on victim identification: implementation studies, economic evaluations

This thesis is the first academic study of an understudied policy implementation process in a middle-income country. Further qualitative research could be conducted in Thailand examining how frontline responders' perceptions and practices change over time, in connection with rapidly changing policies and legislation to address trafficking. Ethnographies with law enforcement about their moral perceptions have been conducted in France, the UK and the US (398,399), along with one police ethnography in Thailand (400). An ethnography which examines evolution of policy implementation around trafficking would be fascinating.

Future work could involve more a reflexive, prospective policy analysis approach as described by Buse (2008). Prospective policy analysis involves explicit attention to political factors, forward looking, real time documentation of key events, immediate lesson learning (analysis) and feedback which enables researchers and partners to engage in policy processes (401). Buse's approach encourages the researcher to engage with advocacy coalitions to co-produce a policy analysis. Being explicitly aware of political factors may assist advocacy organizations to seize opportunities to mobilize support. The preponderance of trafficking in Thailand, as in other countries, is inherently political, and researchers working on human trafficking tend to be activist researcher oriented, making this the prospective policy analysis method suitable for future work.

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Despite interpreters' valuable role in healthcare settings (324), there appears to be little policy discussion about interpreter services in Thailand. Yet, interpreter services for potentially trafficked persons is arguably the most important factor for victim identification. Formative pilot research and economic evaluation of different modalities of interpreting (e.g. including use of ICTs, NGO partnerships) using available conceptual tools (325) may be beneficial to ascertain what could feasibly be implemented in the Thai context. The Migrant Health Volunteer (MHV) model in Thailand holds promise and potential lessons for the engagement of interpreters in TIP cases. As noted in Paper 3, there have been increases in the number of interpreters and "migrant language coordinators" for labour inspections and victim screening. Further research could examine how and where interpreters are affecting rates of victim identification. There is a gap in research around interpreter services for migrants globally, with most research conducted in health settings (320,402). A systematic or realist review could scope feasibility of varying interpreter service models with migrant populations which may be suitable in Thailand as well as other destination countries.

8.7.4   Follow up research with trafficked fishermen in the post-trafficking period

We know little about what happens to trafficked fishermen (or indeed trafficked persons generally) after they've exited a trafficking experience. Even among those who are referred to shelters or post-trafficking service providers, trafficked persons often leave or runaway from shelters in face of pressing concerns about income (as indicated by the high LTFU rates for the STEAM second interview and qualitative interview participants). Owing to the difficulties of following up with trafficked persons, there are a dearth of longitudinal studies with this population. One notable exception is the Butterfly Project, a 10-year, longitudinal study with over 100 sex women and men in Cambodia which examines re(integration) of survivors. Beginning in 2011, the mixed methods study has followed participants throughout their transition to a community setting from the NGO Chab Dai's aftercare program (403). Thematic reports released each year chart survivors' experiences of rebuilding family and social relationships and working lives after a trafficking experience, to inform programming with sex-trafficking survivors. More high-quality, longitudinal studies such as this should be conducted in

different settings with labour-trafficking survivors, in partnership with service providers.

This thesis shows extremely high levels of poor mental health among trafficked fishermen. Yet almost all of these men will return to settings where there are very few mental health professionals. For example, there was just one mental health worker per 100,000 population in Cambodia in 2011, and 0.6 per 100,000 in Myanmar, in 2014 (404). Consequently, there are limited referral options. In Cambodia, only severe psychiatric cases among trafficked men were referred to health providers (4). Men may be "unwilling victims" of trafficking and stigma associated with mental health support may influence care seeking (143,144). Elsewhere, trafficked Ukrainian seafarers and fishermen did not seek psychological support because they perceived using services as signs of weakness and debilitation (52). As findings in this thesis show, despite the high burden of mental health symptoms among fishermen, just 15.3% were concerned for their mental health. Mental health is essential in packages of care for trafficking survivors. Research is urgently needed to identify culturally appropriate mental health interventions with men that can be implemented by non-professionals in low-resource settings (126).

Since conclusion of the STEAM study, IOM study partners in Cambodia hired a part-time psychologist who has expanded services to include group and individual counselling with returned trafficked fishermen. Basic stabilization techniques have included meditation and Buddhist water blessings, alongside community psychosocial care and training on the IOM-LSHTM Caring for Trafficked Persons guidelines with NGO and government service providers (352). Study partners report success with Eye Movement Desensitization Reprocessing (EMDR) therapy. EMDR can be administered by therapists or clinicians and is a well-established effective treatment for PTSD among trauma victims (144,405). An experimental study could be conducted to examine the efficacy of EMDR among trafficked men, as well as exploring how and in what ways spiritual practices affect mental health post-trafficking.

Furthermore, research and interventions should consider guilt or shame feelings, which likely arise because of men's perceived failure to fulfil breadwinner expectations

(294); Cambodian trafficked fishermen report ridicule from family members for not bringing money home, or some return home to find wives remarried, which may complicate men's access to social support (4,327). Follow up research should explore different ways in which men and boys cope with feelings of guilt or shame, and how these feelings can be mitigated. Research should also explore how job placement and livelihood assistance post-trafficking affects men's emotional well-being. Any such research should be participatory and collaborative, with the aim of responding to men's expressed needs.

8.8 Conclusion

In this thesis, I sought to identify and address a gap in knowledge about trafficked fishermen's health needs and victim assistance. I focused on occupational and physical health among fishermen and the ways in which frontline responders' perceptions informed decisions around identifying and assisting potentially trafficked fishermen. Trafficked fishermen face extreme occupational hazards and violence and an immense burden of poor physical and mental health. Frontline responders perceived violence and physical confinement as key trafficking indicators but expressed confusion about debt bondage and withholding of documents, which may be linked to legal and policy definitions. Based on these findings, various avenues for prevention and assistance have been identified, such as comprehensive packages of care, further training with frontline responders on trafficking indicators and removal of institutional barriers which likely contribute to low victim identification rates. Several areas for future scholarship, such as closer examination of risk and protective factors for trafficking, have been suggested, along with a revised conceptual framework that could provide the basis for future studies on trafficking in the fishing industry. Now is the time for governments, industry, NGOs and donors to invest in prevention and assistance for trafficked fishermen, in ways which prioritize their health and well-being.

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APPENDICES

Appendix 1. Migration and trafficking routes into fishing

One common route for Cambodian men trafficking for fishing is from Poipet to Aranyaptahet, before they are transported to the ports of Samut Prakan, Rayong or Chonburi on the southeastern coast of Thailand. Another route is from Battambang, Ban Laem-Chantaburi and Koh Kong-Trad onto those same ports. Because of shifting weather patterns, boats from the northern ports of Rayong and Klong Son (Trad province) shift to Pattani in the southwest of Thailand. This leads to the cyclical exchange of Cambodian workers to Pattani. Once they are on boats bound for Pattani, many find that they head into international waters, especially Malaysia and Indonesia (2).

Many Burmese trafficked fishermen come from Kawthaung, travelling onwards to Ranong and Samut Prakan, and on the southwest coast, ports at Songkla, Pattani and Surat Thani. A secondary route for Burmese workers is from Myawaddy to Samut Sakhon, Samut Prakan or Chonburi via Mae Sot. A third route is to Samut Sakhon via Three Pagodas Pass and Aranyaprathet (2).

Appendix 2. STEAM ethical considerations and consent form

Data collection for STEAM adhered to the ethical and safety protocol outlined in the WHO recommendations for interviewing trafficked women (272). The protocol specifies the need for clarity about the optional nature of participation, privacy during interviews, anonymity of data and wording of questions to minimize the risk of re-traumatizing participants. In addition, interviewers were trained to detect and respond to signs of distress and reactions to trauma recounted, and referral options for treatment were available at interview sites.

Eligibility criteria included children aged 10 to 12 years old who were identified in the participating services as having been trafficked. Children were included as they represent a substantial group accessing services, and service providers were interested to learn more about this population to improve services offered. Following consultation with an expert on children in domestic labour, it was decided that inclusion of children aged 10 to 12 years old posed little to no additional risk, as they were already using services that provide support by professionally trained social workers. Participation invitation and consent procedures were adapted for children participating in the STEAM study.

Ethical approval for the STEAM study was granted by the LSHTM Ethics Committee, as well as the Hanoi School of Public Health Institutional Ethics Review Board in Vietnam, the National Ethics Committee for Health Research in Cambodia and the Ministry of Social Development and Human Security in Thailand.

Consent form - Participants over 18 years-old

TO BE READ ALOUD

Hi. My name is _____[SAY NAME]____. I am the [SAY YOUR POSITION, JOB OR ROLE IN THE STUDY]. I am here because I am helping to do research on problems that some people have when they migrate. I hope I can tell you a little about this study now and ask you if you would be willing to tell me about your story. Would it be okay if I explain about the research now?

[WAIT FOR ANSWER…if yes, continue. If no, skip to bottom of consent form and ask participant if they would be willing to participate at another time or place. If not, ask what is the reason he/she prefers not to participate]

A coalition of post-trafficking support organizations, including the International Organization for Migration and researchers at the London School of Hygiene and Tropical Medicine are conducting research on the health of persons who have been trafficked in order to identify better ways that we and other service providers can understand your health needs and provide better health services. We would like to ask you some questions about your recent experiences, and about your health and well-being.

Although we will be writing your answers, no identifying personal details will be written down. We will not write down your name on this questionnaire, and we will not ask you about the name of your hometown, your trafficker's name, or record specific details about your family for any part of this study. There are no "right" or "wrong" answers. We only ask that you consider the questions carefully and answer as best you can. All the information you provide will remain confidential, kept secret. The information you provide will not be given to any government offices or others outside the support team and the research team Information you provide during this interview will be used only for this study. You will not be identified in any reports resulting from this study.

Some of the questions may bring up difficult memories or feelings. You can take your time answering, and can decline to answer any question. Some of the questions that I will ask during this interview might raise issues or problems that you want to continue to discuss in more in-depth with me later or with your support team at a later time.

Each question is asked for a specific reason related to your health. If you don't understand why we are asking any particular question, please ask me.

We are happy to provide you with more information or contact details of any of the other organizations involved in this research, if you wish.

You don't have to participate in this interview if you don't wish to. If you don't want to proceed it will not affect any of the other services that you receive. If you agree to proceed, you can stop the interview at any time. If you don't wish to answer a question or would like to ask me a question, please feel free to do so. This interview usually takes approximately 60 to 90 minutes.

CONSENT CONFIRMATION

1. Do you have any questions about what I have explained? (circle one) Yes   No

    If 'yes', what questions were asked:

2. Do you agree to be interviewed? (circle one)   Yes   No

    [If 'No', please note the reason for refusal:

        Doesn't want to, No time, Feeling unwell, Other:_____]

3. Is this a good time and place to talk? (circle one)   Yes   No

    If No, what would be a good time and place for us to talk? (note)

4. Can we have permission to gather anonymous data your medical records?

     Yes   No

Signature, mark (X) or fingerprint –

Place: Date:

Appendix 3. STEAM survey instrument

The follow up questionnaire is identical to the first interview questionnaire below, with the omission of questions on participant profile and experiences of exploitation and violence pre-trafficking and during trafficking. The follow up questionnaire is available upon request.

STUDY ON TRAFFICKING, EXPLOITATION AND

ABUSE IN THE MEKONG SUB-REGION (STEAM)

Survey questionnaire

Country

Confidential upon completion

July 2011

ADMINISTRATIVE DATA

⭐ **The following section, question numbers <<1-9>> should be completed before the interview begins.**

ADMINISTRATIVE DATA							
ID Number	**Country code**	**Service code**		**Number of questionnaire**			
	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	

⭐ **PLEASE FILL IN THE ID Number IN EACH PAGE OF THE QUESTIONNAIRE**

1	Interviewer name	Interviewer:_____
2	Service file number CHECK SERVICE FILE	Number:_____
3	Interpreter name (if relevant)	Interpreter:_____ No interpreter needed………………………………………………………………………97
4	Date of interview	d/d |___|___| m/m |___|___| yr |___|___|___|___|

2

5	Referred to this service by which organization/ group/ police: **CHECK SERVICE FILE**	Police...1 Immigration..2 Self..3 NGO..4 Government agency...5 Other person..6 Other..96 Specify_____
6	From your organization's records, please note the date the participant entered into your care.	d/d |___|___| m/m |___|___| yr |___|___|___|___|
7	Female or male? **CHECK SERVICE FILE**	Male...A Female..B Transgendered...C
8	Adult or child? **CHECK SERVICE FILE**	Children (under 18 years-old)..1 Adult (18 years-old or older)...2 Unclear, but probably approximately 18...............................3
9	Informed consented to be interviewed	AGREED TO BE INTERVIEWED... 1 DID NOT AGREE TO BE INTERVIEWED... 2

BACKGROUND AND DEMOGRAPHIC INFORMATION

Thank you for agreeing to this interview. We know that many people get into bad situations when they migrate. Most of the people who are here at this service have been trafficked or exploited, which means that they have been in bad working situations or been forced to do something they did not agree to do, or they have been treated unfairly. Sometimes these situations can be dangerous and cause health problems. During this interview, I am going to ask you some questions about you, your experiences when you were trafficked and your health. First, I am going to ask you some simple questions about you and your situation before you were trafficked. Then I am going to ask you about your health symptoms.

PART I
BACKGROUND AND DEMOGRAPHIC INFORMATION

10a	How old are you? **IF PARTICIPANT IS UNSURE, PROBE AND WRITE APPROXIMATE AGE, ACCORDING TO PARTICIPANT'S RESPONSE.**	|____||____| years **>> ASK Q 11** Don't know/not sure………………………………99
10b	Can you guess about how old you are? **FROM SERVICE FILE?**	12 to 15…………………………………………………………………………………………………1 16 to 18…………………………………………………………………………………………………2 19 to 20…………………………………………………………………………………………………3 21 to 25…………………………………………………………………………………………………4 26 to 30…………………………………………………………………………………………………5 31 to 40…………………………………………………………………………………………………6 41 to 55…………………………………………………………………………………………………7 56 or over……………………………………………………………………………………………8 No information……………………………………………………………………………………99

4

	⭐ **REFERENCE**	AT THIS POINT, PLEASE **DETACH THE REFERENCE SHEET** AT THE BACK OF THE QUESTIONNAIRE. YOU WILL NEED IT AS A GUIDE TO WHICH QUESTIONS YOU SHOULD ASK. MARK THE APPROPRIATE BOX IN THE **AGE CATEGORY** BASED ON THE ANSWER TO **Question 10**
11	What is your home country?	Cambodia..1 China...2 Japan..3 Laos..4 Malaysia..5 Myanmar...6 South Korea...7 Thailand..8 Vietnam...9 Other...96 Specify:_____

12	Which languages do you speak? **MARK ALL THAT APPLY**	Burmese...A
		Cantonese...B
		Dao...C
		English...D
		French..E
		H'mong..F
		Karen/Kayin..G
		Khmer..H
		Khmu..I
		Korean...J
		Laotian...K
		Luc...L
		Mandarin...M
		Nung..N
		Shan/Dai..O
		Tay...P
		Thai...Q
		Vietnamese (Kinh language)..R
		Other...X
		Specify:_____

PART II

PHYSICAL HEALTH SYMPTOMS

Thank you, now I want to ask you about certain common symptoms or problems you might have had in the last FOUR WEEKS. These questions will help me understand better any health problems that you might have.

PART II	
PHYSICAL HEALTH SYMPTOMS	
13 Thinking back over the last four weeks, how would you say your health has been? **READ OUT OPTIONS**	POOR……1 FAIR………2 GOOD………3 VERY GOOD…………………………………………………………………………………………………4

Now, I am going to show you a picture so that you can show me where you are feeling any pain or have an injury. I will give you my pencil/pen and I want you to make an X on the places of the body that are hurting or bothering you. PROBE: Any other place?

DO NOT REMOVE, BUT LET PARTICIPANT MARK BY HIMSELF OR HERSELF

FRONT   BACK
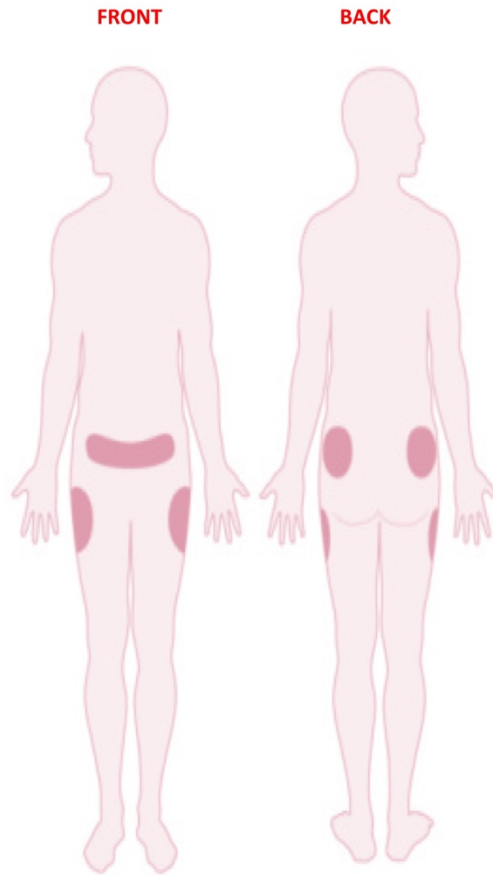
For which of these problems would you like to see a doctor or nurse if we can arrange that? Please circle which problems (circle the Xs).

8

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COPY RESULTS IN THE FIGURE ABOVE INTO QUESTIONS 14a AND 14b, AFTER YOU FINISH THE INTERVIEW

14a	**MARK BODY LOCATIONS THAT PARTICPANT PUT AN X FOR PAIN OR INJURY** **MARK ALL THAT APPLY**	Head..A
		Ears/nose/throat...B
		Eyes..C.
		Back...D
		Kidney..E
		Liver..F
		Bottom...G
		Genital area..H
		Neck/Shoulders..I
		Arms..J
		Hands..K
		Chest...L
		Stomach/belly...M
		Legs...N
		Knees...O
		Feet...P
		No painor injury...Z
		Other...X
		Specify:_____

1

14b	MARK BODY LOCATIONS THAT PARTICPANT CIRCLED INDICATING HE/SHE WANTS TO SEE A DOCTOR OR NURSE MARK ALL THAT APPLY	Head..A
		Ears/nose/throat..B
		Eyes..C.
		Back..D
		Kidney...E.
		Liver..F
		Bottom..G
		Genital area...H
		Neck/Shoulders...I
		Arms...J
		Hands...K
		Chest..L
		Stomach/belly...M
		Legs..N
		Knees..O
		Feet..P
		No pain/injury...Z
		Other..X
		Specify:_____

For questions 15a to 15l
AND
For questions 66 to 69
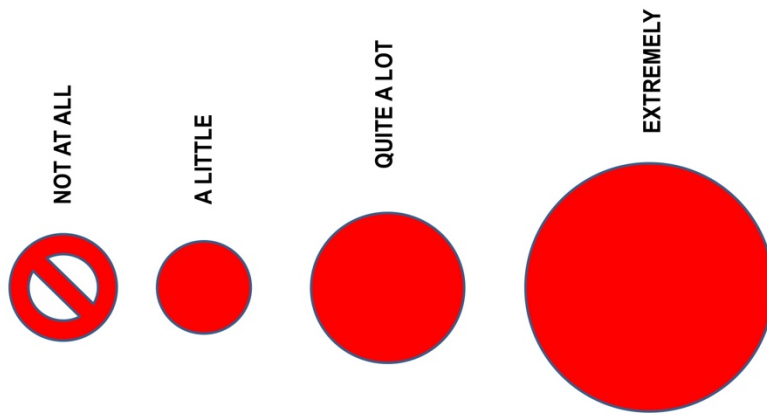
NOT AT ALL

A LITTLE

QUITE A LOT

EXTREMELY

I will now read a list of different health problems and I would like to know whether IN THE LAST FOUR WEEKS, INCLUDING TODAY, whether the problem bothered you: 'not at all; 'a little', 'quite a lot' or 'extremely'.

		NOT AT ALL	A LITTLE	QUITE A LOT	EXTREMELY
15a	Dizzy spells?	1	2	3	4
15b	Headaches?	1	2	3	4
15c	Dental problems?	1	2	3	4
15d	Feeling nauseous, sick in the stomach, Indigestion, sour belching or burping?	1	2	3	4
15e	Diarrhea or gastrointestinal problems that do not get better?	1	2	3	4
15f	Back pain?	1	2	3	4
15g	Skin problems, such as rashes, red areas, unusual bumps, sores or itching?	1	2	3	4
15h	Feeling completely exhausted?	1	2	3	4
15i	Fainting or losing consciousness?	1	2	3	4
15j	Significant weight loss?	1	2	3	4
15k	Difficulty remembering things or memory problems?	1	2	3	4
15l	Persistent coughing that doesn't get better?	1	2	3	4

⭐ **FILTER 1**	If the person reported **NOT AT ALL** to all questions on physical health symptoms: Questions 15a to 15l >> ASK Question 17

16	Do you want to see a doctor or nurse for any of these symptoms?	YES…………………………………1 NO…………………………………2 Don't know…………………………8 **TO READ ALOUD:** *At the end of our talk today, let's discuss whether we can find medical care for you.* **[REMEMBER TO DISCUSS AT END OF INTERVIEW]**

12

PART III

EXPLOITATION EXPOSURES

Thank you for explaining these health problems. I would now like to ask you some questions about what happened to you. Most of the people at this service have been trafficked or exploited in bad working situations or been forced to do something they did not agree to do, or treated unfairly. The next questions are about the trafficking situation you were in most recently.

| 17a | Please tell me what type of trafficking situation you were in most recently?

PROBE: Did you do any other type of work?

MARK ALL THAT APPLY

WRITE DOWN DETAILS YOU THINK ARE RELEVANT TO UNDERSTAND THE TYPE OF WORK THE PARTICIPANT WAS DOING. | Sex work...A >> ASK 18

Entertainment, beer girl, dancing, karaoke, massage, nightclub, manicure/ nail care/ hair wash..**B >>ASK Q17b**

Animal farming or meat/poultry preparation...**C >> ASK 18**

Agriculture/farming/ plantation..D >> ASK 18

Begging..E >> ASK 18

Car care...F >> ASK 18

Cleaner...G >> ASK 18

Construction..H >> ASK 18

Domestic work..I >> ASK 18

Factory work...J >> ASK 18

(Specify factory work sector_____) >> ASK 18

Fishing...K >> ASK 18

Home business..L >> ASK 18

Restaurant, hospitality, tourism..M >> ASK 18

Street seller...N >> ASK 18

Shop/stall...O >> ASK 18

(Specify shop sector_____)

Wife (trafficking victim of forced marriage)...P >> ASK Q17b

Surrogate mother (woman who bears a child for another person)..........Q >> ASK 17c

Not reached destination...Z >> ASK 18

Other:..X
DETAILS: |
| 17b | ⭐ **IF YES TO B or P:**

Were you ever doing sex work during this time? | YES..1

NO..2

REFUSED TO RESPOND.....................97 |

14

17c	**IF "YES" TO 'SURROGATE MOTHER', IN 17A, <mark>ASK</mark>):**
	Did you do any type of work while you in this situation? If yes, what type of work?
	WRITE DOWN INTERVIEWEE'S ANSWER (WITH HER OWN WORDS)

	 ⭐ **REFERENCE**	MARK LABOUR CATEGORY IN THE REFERENCE SHEET
18	In what country did this happen?	Cambodia..1
		China...2
		Japan...3
		Malaysia...4
		South Korea...5
		Thailand...6
		Vietnam...7
		Other...96
		Specify:_____
		Did not reach destination...97

15

19	How did you get out of this situation? **MARK ALL THAT APPLY**	Ran away/escaped………………………………………………………………………………………A
		Neighbours/people living in the surroundings helped me escape………………………………B
		Manager let me go/contract ended/ husband or husband family allowed her to go…..C
		Police/Border guards/ government officer………………………………………………………………D
		NGO……E
		Family, friend or acquaintance denounced………………………………………………………………F
		Co-worker escaped and denounced………………………………………………………………………G
		Other………..X
		Specify:_____
20	For how much time total were you in it? **COUNT ONLY TIME THAT WAS IN WORKING SITUATION,I. E., NOT TIME SINCE LEFT HOME**	Please give number of days, months or years that the person stayed in the situation: |__|__| year |__|__| months |__|__| days Did not reach destination………………………………………………97 **>> ASK Q 40** Doesn't remember/don't know…………………………………………98 No Answer……………………………………………………………………99

Thank you. Now I would like to ask you some questions about your experiences while you were in your most recent trafficking situation. These questions are important for us to understand all of your health needs. Feel free to take your time answering and you can choose not to answer any question

⭐ FILTER 2	LABOUR CATEGORIES - IN REREFENCE SHEET	
21 When you were in the trafficking situation did you do any of the following activities:	➢ C1, C2, C3, C4, C6, C7	REPEATED BENDING OR LIFTING..A LIFT HEAVY OBJECTS...B USE SHARP INSTRUMENTS...C WORK WITH HARSH CHEMICALS, CLEANING SOLUTIONS.................D
	➢ C3 C4	WORKING IN DUSTS OR FIBERS..E
	➢ C4	OPERATING BIG OR HEAVY MACHINERY...F WORKING UP HIGH OFF THE GROUND..G
READ OUT OPTIONS	➢ C6	WORKING WITH RAW MEAT...H WORKING WITH OR NEAR PESTICIDES..I
	➢ C7	UNSTABLE OR HEAVY WORK PLATFORMS..J WORK ALONG ROCKY COASTS OR IN REMOTE OFFSHORE............................K SMALL, UNSTABLE OR BADLY MAINTAINED FISHING VESSEL.........................L BADLY MAINTENED OR NO FISHING EQUIPMENT...M NO SAFETY/ BAD OR NO SURVIVAL EQUIPMENT...N LONG HOURS IN THE SUN, COLD OR WET WITHOUT A BREAK....................O
	➢ C5 C6	WORKING NEAR ROAD TRAFFIC ....P LONG HOURS IN THE SUN WITHOUT A BREAK.....................................Q LONG HOURS IN THE COLD OR WET WITHOUT A BREAK................................R

17

22	Were you given any of the following protection or safety gear for your daily work? <mark>READ OPTION OUT LOUD ACCORDING TO WORK CATEGORY (REF SHEET)</mark>	➢ **C6 C7**	SUN HAT...A
		➢ **C4**	HELMET..B
		➢ **C2 C4 C6 C7**	GLOVES...C
		➢ **C7**	LIFE VEST...D
		➢ **C4 C5 C6**	PROTECTION MASK...E
		➢ **C4**	SAFETY GOGGLES OR EYE PROTECTION..F
		➢ **ALL** <mark>ASK:</mark> **Were you given any other protection equipment?**	OTHER..X Specify_____ NO PROTECTION...Z
23	How long did a usual work day last during your last trafficking situation?(OR: How many hours did you work per day)		|__|__| hours No fixed time.................................97 Don't know.....................................98
24	How many days per week, on average, did you work?		Five or fewer days per week...1 Six days per week..2 Every day, seven days per week..3 No fixed amount of days...4 Don't know/don't remember..98
25	Could you change these hours or take time off if you wanted, if you were feeling ill or wanted to take a holiday?		Yes……………………………………1 No……………………………………..2 Don't know………………………98

26	People often live in difficult situations while working away from home. Please tell me if you experienced any the following problems, at least once during the trafficking situation? **READ OUT OPTIONS AND CIRCLE EACH REPORTED BY PARTICIPANT**	LIVING AND SLEEPING IN OVERCROWDED ROOMS..A SLEEPING IN DANGEROUS CONDITIONS (CLOSE TO GENERATOR OR ENGINE)...B NOWHERE TO SLEEP/ SLEEPING ON THE FLOOR...C LOCKED IN A ROOM..D POOR BASIC HYGIENE, SUCH AS NO OR LITTLE WASHING SOAP, CLEANING CLOTH OR WATER SUPPLY FOR BATHING OR WASHING....................................F INADEQUATE WATER FOR DRINKING...H INSUFFICIENT FOOD (OFTEN HUNGRY)..J NO CLEAN CLOTHING ITEMS..K NO OR VERY FEW REST BREAKS..L OVEREXPOSURE TO SUNLIGHT OR RAIN...N OTHER HAZARDS..X Specify_____ NONE OF THE ABOVE...Z
27	Have you been in detention in the destination country?	Yes...1 No...2 **>> ASK Q 29a**
28	For how long have you been in detention in the destination country?	|__|__| years |__|__| months |__|__| days Don't know...98
29a	When you were working in the trafficking situation, have you received cash payments?	Yes...1 No...2 **>> ASK Q 30** Don't know...........................98

29b	About how much money did you actually/really receive? ==IF RESPONDENT DO NOT KNOW EXACTLY, ASK HIM/ HER TO ESTIMATE AN APPROXIMATE AMOUNT==	Fill in amount (with periodicity and currency): _____in _____ per_____ (amount) (currency) (week OR month OR day) No cash payment………………………………………….0 Don't know/ Don't remember………………………98 Refused…………………………………………………………97
30	How often were you free to do what you wanted or go where you wanted by yourself/on your own? Would you say never, seldom, occasionally, often or always?	Never…………………………………………………………………………………………1 Seldom………………………………………………………………………………………2 Occasionally……………………………………………………………………………3 Often…………………………………………………………………………………………4 Always………………………………………………………………………………………5
31a	Did you ever have identity or travel documents?	YES………………………………………1 NO…………………………………………2 >> **ASK Q 32**
31b	Did anyone keep your documents from you while you were in the trafficking situation?	YES………………………………………1 NO…………………………………………2
32	How often were you drinking alcohol during the time you were in that situation? Would you say you: ==*All types of alcohol, including beer and wine*== ==**READ OUT ITEMS**==	YOU NEVER DRANK ALCOHOL………………………………………………………1 YOU DRANK A FEW TIMES PER YEAR………………………………………………2 YOU DRANK A FEW TIMES PER MONTH……………………………………………3 YOU DRANK A FEW TIMES PER WEEK………………………………………………4 YOU DRANK EVERY DAY …………………………………………………………………5 YOU DRANK MORE THAN FIVE DRINKS MOST DAYS OF THE WEEK……………6 REFUSED TO ANSWER………………………………………………………………………97 DON'T KNOW/ DON'T REMEMBER………………………………………………………98

20

33	Were you forced to take drugs or medication provided by your employer or by someone who had power over you?	YES..1 NO...2 DON'T KNOW...98
34	During the time you were in the trafficking situation, did you ever need any health care for any reason?	YES..1 NO...2
35	During that time, did you receive medical care from any of the following people? <mark>READ OUT AND MARK ALL THAT APPLY</mark>	DOCTOR...A NURSE..B TRADITIONAL HEALER..C OWNER/MANAGER GAVE MEDICATION OR OTHER CARE...............D CO-WORKER...E RECEIVED REGULAR HEALTH CARE/HEALTH CHECKS ORGANIZED BY TRAFFICKER/EMPLOYER..F OTHER...X DID NOT RECEIVE HEALTH CARE...Z

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	Questions below (**Q36 to Q37**) should be asked only to
⭐ **FILTER 3**	**CHILDREN AND YOUNG PEOPLE UNDER 18 YEARS-OLD**

36	Did you go to school or could you continue your studies while in the trafficking situation?	Yes………………………………………………..1 No………………………………………………….2
37	Did you have time to play or do other leisure activities while in that situation?	Yes………………………………………………..1 No………………………………………………….2

⭐ **FILTER 4**	**QUESTIONS BELLOW - ASK ALL PARTICIPANTS**

Thank you. Now I would like to ask a few more questions about some of the health problems you might have had while you were in the most recent trafficking situation. These questions are important so we can understand all of your health needs. Please feel free to take your time answering these questions. You can also choose not to answer any question.

38	While you were in this situation, did anyone threaten to hurt you?	YES………………………………………………1 NO………………………………………………2
39	During this time did anyone threaten to hurt your family or someone you care about?	YES………………………………………………1 NO………………………………………………2

22

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40	Did anyone do any of the following things to you: **MARK ALL THAT APPLY** **READ OUT OPTIONS**	A) SLAPPED YOU OR THREW SOMETHING AT YOU THAT COULD HURT YOU?	YES..1 NO...2 REFUSED.......................................97
		B) PUSHED OR SHOVED YOU	YES..1 NO...2 REFUSED.......................................97
		C) HIT YOU WITH A FIST OR WITH SOMETHING ELSE THAT COULD HURT YOU?	YES..1 NO...2 REFUSED.......................................97
		D) KICKED, DRAGGED OR BEAT YOU UP?	YES..1 NO...2 REFUSED.......................................97
		E) TIED OR CHAINED YOU	YES..1 NO...2 REFUSED.......................................97
		F) CHOKED YOU ON PURPOSE?	YES..1 NO...2 REFUSED.......................................97
		G) BURNED YOU ON PURPOSE?	YES..1 NO...2 REFUSED.......................................97
		H) RELEASED A DOG TO BITE OR SCRATCH YOU	YES..1 NO...2 REFUSED.......................................97
		I) **FORCED YOU TO HAVE SEX**	YES..1 NO...2 REFUSED.......................................97
		J) THREATENED TO USEA GUN, KNIFE OR OTHER WEAPON AGAINST YOU?	YES..1 NO...2 REFUSED.......................................97
		K) USED A KNIFE TO CUT YOU?	YES..1 NO...2 REFUSED.......................................97
		L) SHOT A GUN AT YOU?	YES..1 NO...2 REFUSED.......................................97
		⭐ IF PARTICIPANT ANSWERED **"NO" TO ALL OF THE ABOVE** >> GO TO **QUESTION 44a**	

29

41a	Who did these things to you? Was it any of the following people: You can specify one or more people: **If YES**, how often did this happen?		41b) How often did this happen?		
			Once	More than once	Regularly
		EMPLOYER (WHEN NOT TRAFFICKER/ DRIVER/ SMUGLER/ RECEIVER/ AGENT)...A	1	2	3
		TRAFFICKER..B	1	2	3
		CO-WORKER..C	1	2	3
		POLICE/AUTHORITY/GOVERNMENT OFFICIAL..................D	1	2	3
		FAMILY MEMBER (WHEN NOT TRAFFICKER)....................E	1	2	3
		ACQUAINTANCE..F	1	2	3
		HUSBAND...G	1	2	3
		CLIENT..H	1	2	3
		BOUCER/ BROTHEL SECURITY STAFF..............................I	1	2	3
		OTHER...X Specify_____	1	2	3

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	⭐ **FILTER 5**	**NEXT QUESTION – ASK ONLY TO PEOPLE WHO EXPERIENCED SEXUAL VIOLENCE (SAID "YES" TO ITEM I IN QUESTION 40)**
42	Which of these people forced you to have sex **READ OUT ITEMS** **MARK ALL THAT APPLY**	EMPLOYER (WHEN NOT TRAFFICKER...A TRAFFICKER (FOR EXAMPLE, RECRUITER, DRIVER, RECEIVER, AGENT)…………………………………………………B CO-WORKER…….C POLICE/AUTHORITY/GOVERNMENT OFFICIAL………………………………………………………………………………….D FAMILY MEMBER (WHEN NOT TRAFFICKER/ RECRUITER/ SMUGGLER/ DRIVER/ RECEIVER/ AGENT)…….E ACQUAINTANCE………..F HUSBAND/PARTNER………G CLIENT…….H BOUNCER/ BROTHEL SECURITY………………………………………………………………………………………………………..I OTHER………X Specify_____
43a	During this time, how many times did you have a serious injury that resulted from this violence?	INJURED ONCE………1 INJURED A FEW TIMES………………………………………………………………………………………………….2 INJURED MANY TIMES…………………………………………………………………………………………………3 NO INJURY…………………………………………………………4 **>>SKIP TO Q 44a** Don't know……………………………………………………98 **>>SKIP TO Q 44a**
43b	Did the pain/problem ever last more than two days?	YES…………………………………………………………………………1 NO…………………………………………………………………………2
43c	Was medical care ever received?	YES…………………………………………………………………………1 NO…………………………………………………………………………2

| 43d | Do any of these injuries still cause you pain or difficulty until today? | YES...1 |
| | | NO...2 |

Sometimes in difficult work situations, accidents happen or people are hurt by the work that they do. Now, I would like to ask you about injuries or health problems that might have happened to you from the work that you did or accidents that happened at work.

44	How many times did you have a serious injury <u>resulting from your work or accidents at work?</u>	INJURED ONCE...1
		INJURED A FEW TIMES...2
		INJURED MANY TIMES...3
		NO INJURY...4 **>> SKIP TO Q 46**
		WASN'T WORK DURING TRAFFICKING SITUATION.....................................5 **>> SKIP TO Q 46**
		CANNOT REMEMBER..98 **>> SKIP TO Q 46**
		DID NOT REACH DESTINATION...97 **>> SKIP TO FILTER 7** ⭐

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45a	Have you ever had any of the following accidental injuries in this working situation?			45b) Was MEDICAL CARE received?	
				YES	NO
		A) DEEP OR VERY LONG CUT	YES.....................................1 **ASK Q45b** NO......................................2	1	2
		B) VERY BAD BURN (NOT SUN BURN)	YES.....................................1 **ASK Q45b** NO......................................2	1	2
	ASK QUESTION 45B ONLY WHEN THE ANSWER TO QUESTION 45A IES "YES"	C) SERIOUS HEAD INJURY	YES.....................................1 **ASK Q45b** NO......................................2	1	2
		D) BACK OR NECK INJURY	YES.....................................1 **ASK Q45b** NO......................................2	1	2
		E) SKIN DAMAGE OR INJURY	YES.....................................1 **ASK Q45b** NO......................................2	1	2
		F) BROKEN BONE	YES.....................................1 **ASK Q45b** NO......................................2	1	2
		G) LOST A BODY PART	YES.....................................1 **ASK Q45b** NO......................................2	1	2
		H) EYE INJURY/DAMAGE	YES.....................................1 **ASK Q45b** NO......................................2	1	2
		I) EAR DAMAGE	YES.....................................1 **ASK Q45b** NO......................................2	1	2
		X) OTHERX SPECIFY:_____	YES.....................................1 **ASK Q45b** NO......................................2	1	2
45c	Do any of the injuries still cause you pain or difficulty?	YES...1 NO..2			
46	Did you ever see anyone who was BEATEN OR HURT INTENTIONALLY by your boss or trafficker? ⭐ **For trafficked brides/wives:** Did you ever	YES...1 NO..2 ⭐ **FOR TRAFFICKED BRIDES, SPECIFY WHO:**_____			

Adapted from European study on health and trafficking, London School of Hygiene & Tropical Medicine. Copyright © LSHTM/IOM

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	see anyone who was beaten by your **husband?**	
⭐ **FILTER 6**	NEXT QUESTIONS >> **ASK ALL PARTICIPANTS**	
47	There are many reasons that prevent people from leaving difficult situations like yours. Have you ever tried to escape or actually escaped the trafficking situation?	YES……………………………………………1 >> **GO TO FILTER 7** NO………………………………………………………………………2 ⭐

48	From the list that I will read, can you please tell me what prevented you from leaving the trafficking situation? **MARK ALL THAT APPLY**	I WAS MAKING MONEY………………………………………………………………A
		FEARED REVENGE, VIOLENCE IF I LEFT………………..…………………………B
		FEARED HARM TO MY FAMILY IF I LEFT……………………………………………C
		WAS HARMED WHEN TRIED TO LEAVE……………………………………………D
		FEARED BEING ARRESTED …………………………………………….…………E
		HAD NO IDENTIFICATION DOCUMENTS……………………………………………F
		OWED MONEY TO EMPLOYERS/TRAFFICKERS/OTHERS………………………G
		HAD NO WAY TO ESCAPE OR WAS CONFINED …………………………………H
		HOPED I WOULD GET PAID EVENTUALLY……………………………………………I
		FELT SHAME IF I RETURNED WITH NOTHING……………..……………………J
		HAD NOWHERE TO GO/ HAD NO FAMILY……………………………………K
		AFRAID, DID NOT KNOW THE LANGUAGE……………………………………L
		AFRAID TO GET LOST……………………………………………………………M
		WAS LOCKED INSIDE A ROOM/ WAS NOT ALLOUD TO LEAVE THE COMPOUND………………………………………………………………………N
		AFRAID OF BEING KILLED……………………………………………………O
		FEELING TOO WEAK TO SCAPE………………………………………………P
		DIDN'T WANT TO LEAVE CHILDREN BEHIND………………………………Q
		BELIEVED/TOLD BY TRAFFICKER OR HUSBAND THAT THE SITUATION WOULD IMPROVE……………………………………………………………………R
		FEAR OF STIGMA WHEN RETURNING HOME………………………………S
		NO MONEY TO RETURN/ NO PROSPECTS OF LIVELIHOOD UPON RETURN……………………………………………………………………………T
		OTHER………………………………………………………………………………X
		SPECIFY: _____

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PART IV

SEXUAL RISK

Thank you very much for telling me about the things that happened to you. Now, I would like to ask you some questions about your husband or boyfriend and your health. Your answers will help me understand what services you might need. We are going to talk now about the time since you left home for the last time.

PART IV SEXUAL & REPRODUCTIVE RISK	
⭐ **FILTER7**	ASK SECTION BELOW – Questions **49** to **51c** – **ASK ONLY WOMEN WHO ARE 15 YEARS-OLD OR MORE** (check **REFERENCE SHEET FOR AGE**) **IF MEN >> ASK Q 53**
49a	Have you ever had sex?	YES...1 NO..2 **>> ASK Q 53** Refused...97 **>> ASK Q 53**
49b	In the past two weeks have you had vaginal bleeding (other than your menstruation/ period)?	YES...1 NO..2 Refused..97 Don't know...98
50	Are you pregnant or do you think you might be pregnant now?	YES, pregnant..1 Not pregnant..2 Refused..97 Don't know/not sure...98

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51a	Were you ever pregnant while in the trafficking situation?	YES...1 NO..2 >> <mark>GO TO FILTER 8</mark> ☆ Refused..97 Don't know/not sure..98
51b	How many times were you pregnant during the trafficking situation?	Number of times |__|__|
51c	Did you have an intended termination/ abortion during the trafficking situation?	YES..1 NO..2 Refused to answer..97 Don't know/not sure..98
☆ **FILTER 8**		ASK ONLY **SEX WORKERS**
52	How often did you use condoms with clients?	Occasionally..1 Often..2 Always..3 Never..4 Refused to answer..97 Don't know..98

Part V

RECRUITMENT STAGE/PRE-TRAFFICKING EXPERIENCES

Now, I would like to ask you a few questions about your situation before you were trafficked.

	Part V	
	RECRUITMENT STAGE/PRE-TRAFFICKING EXPERIENCES	
53	What level of school have you finished?	Primary (1-5 grade)…………………………………………………………………………………1
		Secondary…(6-8 grade, middle school)…………………………………………………………2
		Higher (10-11 grade)……………………………………………………………………………3
		Obtained university degree or above……………………………………………………………4
		No formal schooling……………………………………………………………………………97
		Don't know………………………………………………………………………………………98
⭐ FILTER 9	**NEXT QUESTIONS 54 TO 56B should be asked to PARTICIPANTS OVER AGE 15 (CHECK REFERENCE SHEET)**	
54	Before you left home, what was your marital status?	Single , never married……………………………………………………………………………1
		Married, not living with husband/wife or boyfriend/girlfriend………………………………2
		Married and living with husband/wife or living as married……………………………………3
		Separated or divorced (Cambodia - widower just when no longer living with the partner)……………………………………………………………………………………………4
		Widowed/widower(Cambodia – widower just for when the partner died)……………5
		Other………………………………………………………………………………………………96
		Specify_____

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55a	Has your marital status changed since then?	YES…………………………………………….1 NO………………………………………………….2 **>> ASK Q 56a** Don't know………………………………98 **>> ASK Q56a** **IF STILL SINGLE/ NEVER MARRIED, ASK Q 57a**
55b	What is your current marital status?	Married and living with husband/wife or living as married………………………….1 Married, not living with husband/wife or boyfriend/girlfriend………………………….2 Separated or divorced (Cambodia - widower just when no longer living with the partner)……………………………………………………………………………………….…………………3 Widowed/widower (Cambodia – widower just for when the partner died)…….4 Other, explain_____96
56a	Do you have any children who are alive?	YES……………………………………..1 NO………………………………………2 **>> GO TO Q 57**
56b	In what country are your children living now?	Cambodia………………………………………………………………………………………………….1 China……2 Japan……3 Laos……..4 Malaysia……………………………………………………………………………………………………5 Myanmar……………………………………………………………………………………………………6 South Korea……………………………………………………………………………………………….7 Thailand……………………………………………………………………………………………………8 Vietnam……………………………………………………………………………………………………9 Other……96

⭐ **FILTER 10**	**NEXT QUESTIONS >>** **ALL PARTICIPANS should be asked**	

| 57a | Before you left home, what was your work?

MARK ALL THAT APPLY | Sex work...A >> **ASK Q58**

Entertainer/bar girl/dancing/karaoke/massage..............................B >>**ASKQ 57b**

Animal farming or meat/poltry preparation.......................................C>> **ASK Q58**

Agriculture/ farming..D>> **ASK Q58**

Begging...E>> **ASK Q58**

Car care...F>> **ASK Q58**

Cleaner...G>> **ASK Q58**

Construction...H>> **ASK Q58**

Domestic work...I>> **ASK Q58**

Factory work...J>> **ASK Q58**

(Specify sector_____)

Fishing...K>> **ASK Q58**

Home business...L>> **ASK Q58**

Restaurant, hospitality, tourism...M>> **ASK Q58**

Street seller...N>> **ASK Q58**

Shop/stall...O>> **ASK Q58**

(Specify sector_____)

Manicure/ nail care/ hair wash...P >>**ASK Q57b**

Small seller/merchant/ small business.................................Q >> **ASK Q58**

Teacher, civil servant...R >> **ASK Q58**

 Professional practice (lawyer, doctor)...................................S >> **ASK Q58**

Student...T >> **ASK Q58**

Not working...Z >> **ASK Q58**

Other...X >> **ASK Q58**

Specify_____ |

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57b	Were you doing sex work in this place?	YES……………………………………1 NO………………………………………2
57c	Were you working and earning money during the month before you left home?	YES……………………………………1 NO………………………………………2
58	Please can you tell me which of these statements describes your reasons for leaving home or your ideas before you left home? **READ OUT OPTIONS AND MARK ALL THAT APPLY**	WE NEEDED MONEY BECAUSE A FAMILY MEMBER WAS ILL……………….………..A A CLOSE FAMILY MEMBER WAS ALWAYS DRUNK……………..……………………..B LIFE WAS BORING AND I WANTED A NEW ADVENTURE………………………….……C I KNEW OTHERS WHO LEFT AND EARNED MONEY…………….……………….………D I COULD NOT FIND A JOB NEARBY………….………………………………………………E I WAS ABDUCTED………………………………………………………………………………F I DIDN'T EARN ENOUGH MONEY IN MY JOB……………………………………………G WAS EXPERIENCING VIOLENCE AT HOME……………….………………………………H NEEDED MONEY TO SUPPORT MY CHILDREN……………………….…………………I MY PARENTS COULD NOT SUPPORT ME…………………………………………………J NATURAL DISASTER, DROUGHT, ETC……………………………………………………K HAD AN ARGUMENT WITH PEOPLE IN THE FAMILY OR COMMUNITY AND NEEDED TO LEAVE…………………………………………………………………………..L NEEDED TO HIDE FROM POLICE/COMMITED A CRIME……………………………M NO HOUSE TO LIVE/LOST LIVELIHOOD……………………………………………………N OTHER………………………………………………………………………………………………X Specify:_____
59	When were you trafficked in the most recent situation?	Month |__|__| Year |__|__|__|__| Don't know/don't remember………………………98

60	Who do you think is responsible for getting you into the trafficking situation? You can give more than one answer. **MARK ALL THAT APPLY**	PARENT..A OTHER FAMILY MEMBER..B FRIEND...C WORK COLLEAGUE..D EX-BOSS...E BOYFRIEND OR GIRLFRIEND...F NEIGHBOR..G ACQUAINTANCE IN MY VILLAGE...H ACQUAINTANCE NOT NEAR MY HOME..I AGENCY/ RECRUITMENT COMPANY..J BROKER..K SOMEONE I DID NOT KNOW..L WAS ABDUCTED...M MYSELF...N OTHER...X Specify_____
61	The information that you were told about the job before you started, would you say that this was:	TRUE AND ACCURATE..1 NEARLY TRUE...2 SOMEWHAT TRUE..3 NOT AT ALL TRUE...4 DID NOT RECEIVE ANY INFORMATION...5 DID NOT REACH DESTINATION...97 DON'T KNOW..98
62	Before you left home, had you ever heard about 'human trafficking'?	YES..1 NO..2 Don't remember/Don't know.............................98

Thank you. Sometimes people who are trafficked have experienced difficult situations before they left home. The next questions are about difficult situations that you might have experienced before you were trafficked. Please take your time to answer.

63	Before you left home, has anyone ever done any of the following to you: **READ OUT ITEMS AND MARK ALL THAT APPLY**	A) SLAPPED YOU, SHOVED YOU OR THREW SOMETHING AT YOU THAT COULD HURT YOU?	YES.....................................1 NO.......................................2
		B) PUSHED OR SHOVED YOU	YES.....................................1 NO.......................................2
		C) HIT YOU WITH A FIST OR WITH SOMETHING ELSE THAT COULD HURT YOU	YES.....................................1 NO.......................................2
		D) KICKED, DRAGGED OR BEAT YOU UP?	YES.....................................1 NO.......................................2
		E) TIED OR CHAINED YOU?	YES.....................................1 NO.......................................2
		F) CHOKED YOU ON PURPOSE?	YES.....................................1 NO.......................................2
		G) BURNED YOU ON PURPOSE?	YES.....................................1 NO.......................................2
		H) RELEASED A DOG TO BITE OR SCRATCH YOU	YES.....................................1 NO.......................................2
		I) **FORCED YOU TO HAVE SEX**	YES.....................................1 NO.......................................2
		J) THREATENED TO USE A GUN, KNIFE OR OTHER WEAPON AGAINST YOU?	YES.....................................1 NO.......................................2
		K) USED A KNIFE TO CUT YOU?	YES.....................................1 NO.......................................2
		L) SHOT A GUN AT YOU?	YES.....................................1 NO.......................................2
		⭐ **If NONE of the above >> SKIP TO Q66a**	

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64a	Who did these things to you? Was it any of the following people: You can specify one or more people: **If YES**, how often did this happen? <mark>**MARK ALL THAT APPLY**</mark>		**64b) How often did this happen?**		
			Once	More than once	Regularly
		HUSBAND/WIFE ....A	1	2	3
		MOTHER ....B	1	2	3
		FATHER C	1	2	3
		OTHER FAMILY MEMBER ....D	1	2	3
		STEP PARENTS ....E	1	2	3
		BOYFRIEND/GIRLFRIEND ....F	1	2	3
		ACQUAINTANCE ....G	1	2	3
		STRANGER...H	1	2	3
		RECRUITER..I	1	2	3
		MILITARY/POLICE/SOLDIER.................................J	1	2	3
		CO-WORKERS...K	1	2	3
		OTHERS...X	1	2	3

⭐ FILTER 11	NEXT QUESTION – ASK ONLY TO PEOPLE WHO EXPERIENCED SEXUAL VIOLENCE (SAID "YES" TO ITEM I IN QUESTION 63)

65a			65b) How old were you when this first happened?
	Who forced you to have sex BEFORE YOU LEFT HOME?	Husband/wife...A	|___| ___| years
		Mother...B	|___| ___| years
		Father..C	|___| ___| years
		Other family member...D	|___| ___| years
		Step father/step mother..E	|___| ___| years
		Boyfriend/girlfriend...F	|___| ___| years
		Acquaintance...G	|___| ___| years
		Stranger...H	|___| ___| years
		Recruiter..I	|___| ___| years
		Military/police/soldier..J Others...X	|___| ___| years |___| ___| years

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Thank you. I would now like to ask you several questions about how you felt in THE PAST WEEK, including today, using the picture with the FOUR DOTS. Please listen to each question carefully and tell me how much, in the past week, each of the symptoms has bothered or distressed you, using one of these four responses: 1) NOT AT ALL, 2) A LITTLE; 3) QUITE A LOT; 4) EXTREMELY.

		NOT AT ALL	A LITTLE	QUITE A LOT	EXTREMELY
66a	Suddenly scared for no reason	1	2	3	4
66b	Feeling fearful	1	2	3	4
66c	Faintness, dizziness, or weakness	1	2	3	4
66d	Nervousness or shaking inside	1	2	3	4
66e	Heart pounding or racing	1	2	3	4
66f	Trembling	1	2	3	4
66g	Feeling tense or keyed up	1	2	3	4
66h	Headaches	1	2	3	4
66i	Spells of terror or panic	1	2	3	4
66j	Feeling restless, can't sit still	1	2	3	4

		NOT AT ALL	A LITTLE	QUITE A LOT	EXTREMELY
67a	Feeling low in energy, slowed down	1	2	3	4
67b	Blaming yourself for things	1	2	3	4
67c	Crying easily	1	2	3	4
67d	Poor appetite	1	2	3	4
67e	Difficulty falling asleep or staying asleep	1	2	3	4
67f	Feeling hopeless about the future	1	2	3	4
67g	Feeling blue	1	2	3	4
67h	Felling lonely	1	2	3	4
67i	Thoughts of ending your life	1	2	3	4
67j	Helpless/ Cannot do anything to help myself	1	2	3	4
67k	Worrying too much about things	1	2	3	4
67l	Feeling no interest in things	1	2	3	4
67m	Feeling everything is an effort	1	2	3	4
67n	Feeling of worthlessness	1	2	3	4

Thank you. The following are symptoms that people sometimes have after experiencing hurtful or terrifying events in their lives. Please read each one carefully and decide how much the symptoms bothered you in the past week.

		A) In the past week, have you felt this?			
		Not at all	A little	Quite a bit	Extremely
68a	Recurrent thoughts or memories of the most hurtful or terrifying events	1	2	3	4
68b	Feeling as though the event is happening again	1	2	3	4
68c	Recurrent nightmares	1	2	3	4
68d	Feeling detached or withdrawn from people	1	2	3	4
68e	Unable to feel emotions	1	2	3	4
68f	Feeling jumpy, easily startled	1	2	3	4
68g	Difficulty concentrating	1	2	3	4
68h	Trouble sleeping	1	2	3	4
68i	Feeling on guard	1	2	3	4
68j	Feeling irritable or having outbursts of anger	1	2	3	4
68k	Avoiding activities that remind you of the traumatic or hurtful event	1	2	3	4
68l	Inability to remember parts of the most traumatic or hurtful events	1	2	3	4
68m	Less interest in daily activities	1	2	3	4
68n	Feeling as if you don't have a future	1	2	3	4
68o	Avoiding thoughts or feelings associated with the traumatic or hurtful events	1	2	3	4
68p	Sudden emotional or physical reaction when reminded of the most hurtful or traumatic events	1	2	3	4
68q	Feeling that you have less skills than you had before	1	2	3	4
68r	Having difficulty dealing with new situations	1	2	3	4
68s	Feeling exhausted	1	2	3	4

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		A) In the past week, have you felt this?			
		NOT AT ALL	A LITTLE	QUITE A LOT	EXTREMELY
69a	Feeling ashamed of the hurtful or traumatic events that have happened to you	1	2	3	4
69b	Feeling others are hostile to you	1	2	3	4
69c	Feeling that you have no one to rely upon	1	2	3	4
69d	Feeling someone you trusted betrayed you	1	2	3	4
69e	Feeling no trust in others	1	2	3	4
69f	Spending time thinking why these events happened to you	1	2	3	4
69g	Feeling that you are the only one that suffered these events	1	2	3	4
69h	Feeling need for revenge	1	2	3	4

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For questions 70 and 71

NOT AT ALL   A LITTLE   MODERATELY   QUITE A LOT   EXTREMELY

44
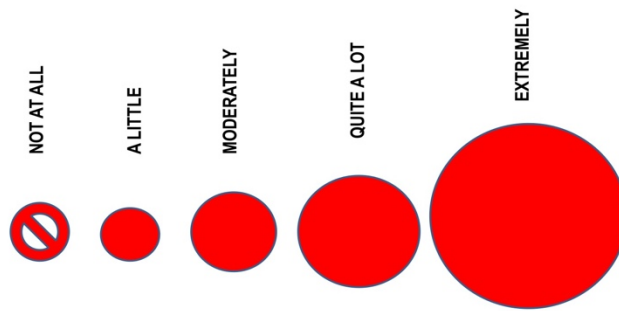
Thank you. I would now like to ask you some questions using the set of FIVE DOTS. I will ask about feelings you may have had in the past week, including today. Please listen to each question carefully and tell me how much each of the symptoms has bothered or distressed you, using one of these five responses: 1) NOT AT ALL, 2) A LITTLE, 3) MODERATELY, 4) QUITE A LOT or 5) EXTREMELY

In the past week, have you experienced any of the following?

		NOT AT ALL	A LITTLE	MODERATELY	QUITE A LOT	EXTREMELY
70a	Feeling easily annoyed or irritated	1	2	3	4	
70b	Temper outbursts that you could not control	1	2	3	4	5
70c	Having urges to beat, injure or harm someone	1	2	3	4	5
70d	Having urges to break or smash things	1	2	3	4	5
70e	Getting into frequent arguments	1	2	3	4	5
71	In the past month, have you tried to take your life (and failed)?	YES……………………………………………1 NO………………………………………………2				
72	Have you physically tried to harm yourself in any way (e.g., using sharp instruments, flame, etc.)?	YES……………………………………………1 NO………………………………………………2 REFUSED……………………………………97				

ADDED COMMENTS (please cite question number comments refer to):

Thank you. We are nearly done. Now I would like to ask you a few more additional questions to understand how you have been feeling. Please answer these questions in your own words

73	Do you worry about how people might treat you when you arrive home?	YES……………………………………………………1 NO………………………………………………………2 Don't know……………………………………98
74	Do you worry that your employer or someone else from the trafficking situation may try to hurt you or your family?	YES……………………………………………………1 NO………………………………………………………2 Don't know……………………………………98
75	Who would you like to live with after you leave the shelter or finish this NGO programme? **MARK ALL THAT APPLY**	Husband/ Wife…………………………………………………………………………….………A Boyfriend/Girlfriend……………………………………………………………………………B Parents/ Other members of the family of origin……………………………………………C Alone……………………………………………………………………………………………D Friends……………………………………………………………………………………………E Orphanage………………………………………………………………………………………F Work location……………………………………………………………………………………G Others……………………………………………………………………………………………X Specify (other):_____ Don't know……………………………………………………………………………98 **>> ASK Q76** **ASK THE FOLLOWING QUESTION AND WRITE DOWN INTERVIEWER RESPONSE WITH HER OWN WORDS** **Why do you prefer to live with these people/ this person?**

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76	Do you think you will talk to anyone outside this service about what you have experienced in the trafficking situation?	YES...1
		NO..2
		Don't know...98
		Refused to answer.......................................97
		ASK THE FOLLOWING QUESTIONS AND WRITE DOWN INTERVIEWER RESPONSE WITH HER OWN WORDS
		If yes, who will you talk to and why will you choose/have you chosen this person(s)?
		If no, what makes you feel this way/think this?

Please think back on the past week and can you tell me:

77	Is there anything that has happened in the past week that has made you feel bad or worse?	YES..1 NO..2 If **YES,** please describe:
78	At this time, what are your most important concerns or what problems come to your mind most often? **READ OUT LOUD AND MARK ALL THAT APPLY**	YOUR OWN PHYSICAL HEALTH...A YOUR OWN MENTAL HEALTH...B EARNING MONEY/HAVING A JOB/PAYING DEBT..............................C HOUSING: HAVE NOWHERE TO STAY SHORT-TERM......................D HOUSING: HAVE NOWHERE TO LIVE LONG-TERM..........................E MONEY-RELATED PROBLEMS IN FAMILY.......................................F HEALTH-RELATED PROBLEMS IN FAMILY.....................................G AFRAID OF TRAFFICKER/DRIVER/SMUGLER/RECEIVER/AGENT OR HIS/HER ASSOCIATES..H GUILT OR SHAME..I DOCUMENTS...J SPIRITUAL/ RELIGIOUS CONCERNS/ GHOSTS ....K OTHER...X Specify:_____ NONE OF THE ABOVE...Z

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79	Is there anything that's happened in the past week that's made you feel good or better?	YES……………………………………………………1 NO………………………………………………………2 If **YES,** please describe:
80	What is your best hope for the future? <mark>**WAIT FOR INTERVIWEE ANSWER AND MARK APPROPRIATE ANSWER. YOU CAN SELECT MORE THAN ONE OPTION**</mark>	Have money…………………………………………………………A Have family……………………………………………………………B Have job………………………………………………………..………C No hopes…………………………………………………..…………D Go home……………………………………………………….………E Get married……………………………………………………………X Other……………………………………………………………..………F Don't know…………………………………………………………98 <mark>**IN THE SPACE BELOW, PLEASE DESCRIBE IN INTERVIWEE'S OWN WORDS WHAT ARE HIS/HER BEST HOPES FOR THE FUTURE:**</mark>

81	Do you have any questions for me?	YES……………………………………………………1 NO………………………………………………….2 *If **YES**, write down her/his question(s):*
82	This interview is nearly over and I would like to know how you felt about talking to me this way. Please can you tell me, was this interview:	DIFFICULT……1 A LITTLE BIT DIFFICULT……………………………………………………………………………………….2 EASY…….3

Thank you very much. I know that some of these questions were not easy, but your responses were very clear and helpful. No one should have to go through what you have experienced. It is evident that you are a very courageous person for having managed to survive such a difficult experience.

If you agree, we would like to interview again three to four weeks from today to see how you are doing. This interview will include some of the same questions about your health, but you will not be asked the questions about your past experiences again. These questions will allow you to see how your health feelings have changed, they will help us identify how your health needs have changed. For this interview, you will be given money to cover your travel costs.

83a	Will you meet again to answer questions like this in three to four weeks?	YES……………………………………………………1 >> DECIDE ON A DATE FOR SECOND INTERVIEW (WRITE DATE BELOW AND ON SERVICE FORM) AND GO TO QUESTION 84 NO…………………………………………………….2 >> ASK Q84 DON'T KNOW…………………………………….98 >> ASK Q84 Date agreed for 2n interview ____/_____/_____

83b	Can you please tell me why not?	No reason..1
		Too many questions..2
		Doesn't like questions..3
		Too tiring or upsetting..4
		Doesn't want to be contacted..5
		Other...96
		Specify:_____
84	Interview completed?	YES...1
		NO...2
		If interview was interrupted, please write down why:

Discuss with participant options for health referral, if needed

Remember to fill in questions 14a and 14b, looking at information in the body figure (page 9)

REFERENCE SHEET

⭐ **AGE**

CHECK QUESTION >> RESPONDENT IS:

YOUNGER THAN 15 YEARS-OLD   [ ]   BETWEEN FIFTEEN AND 18 YEARS-OLD   [ ]   MORE THAN 18 YEARS-OLD   [ ]

⭐ **LABOUR CATEGORY**

CATEGORY 1: C1	**CATEGORY 5: C5**
SEX WORK…………………………………………………………………A	BEGGING…………………………………………………………………..E
	CAR CARE……………………………………………………………….…F
ENTRETAINMENT, DANCING, KARAOKE, MASSAGE………………….B	STREET SELLER……………………………………………………………N
WIFE……………………………………………………………………………P	SHOP/ STALL……………………………………………………………….O
OR ASWERED "YES" TO QUESTION 17B = SEX WORK…………………A	

CATEGORY 2: C2	**CATEGORY 6: C6**
DOMESTIC WORK………………………………………………………………I	ANIMAL FARMING OR MEAT/POULTRY PREPARATION……..…..C
CLEANER……………………………………………………………………G	AGRICULTURE…………………………………………………………………D
RESTAURANT, HOSPITALITY, TOURISM……………………………M	

CATEGORY 3: C3	**CATEGORY 7: C7**
HOME BUSINESS……………………………………………………………L	FISHING…………………………………………………………………………K

CATEGORY 4: C4	**CATEGORY 8: C8**
CONSTRUCTION…………………………………………………………….H	SURROGATE MOTHER………………………………………………………Q
FACTORY WORK……………………………………………………………J	

Appendix 4. Mental health disorder cut-off points

For the STEAM study, a cutoff point of 1.75 for anxiety was used based on studies with users of post-trafficking services and Mollica et al.s (1987) validation studies with Cambodian, Laotian and Vietnamese refugees who experienced trauma and torture (329,374,376).

For the HSCL depression scale, item 12 (sexual interest) was excluded because of sensitivity in cases of sexual abuse and because participants were often residing in shelter situations. Therefore, 1.625 was used as the cutoff for symptoms indicative of depression (126), departing from the 1.75 cutoff established by Mollica and colleagues (329) and assuming that each item made a similar contribution to the overall score (126).

A cutoff of 2·0 for post-traumatic stress disorder was used, based on a previous study of users of post-trafficking services (274) and in line with HTQ user guidelines (274). The 2.0 cutoff displayed the greatest balance between specificity and sensitivity in a recent community study in Cambodia (374).

Appendix 5. STEAM sample size calculations

The sample size for STEAM was initially calculated based on the prevalence of depression and anxiety in refugee and labour migrants (185), and experiences of violence among refugees (186,406) and sex-trafficked women (129,407). Initial estimates below were calculated early on in the study. However, as STEAM progressed, the principle investigators became aware that multiple sub-groups analysis would be carried out, with analysis presented by country. Because of the consecutive sampling, with no control over age and sex of participants, these guidelines were eventually dropped. With consecutive sampling, sample size is largely determined by the duration of fieldwork - initial estimates below provided guidelines for what the ideal STEAM sample size would be.

As a result, a minimum sample size of 385 individuals per country was established. Rationale for sample size guidelines and eventual decisions are provided below. Ligia Kiss, co-investigator of the STEAM study, conceived the framework to calculate the below estimates.

Table 5.1: STEAM sample size calculations

Outcome	Total sample size needed for prevalence estimates	Sample size per sex
Violence	1281	641
Depression	1165	583
Anxiety	1033	517

For mental health, conservative baseline figures on the combined prevalence rates among refugees and labour migrants for depression (35%) and anxiety (28%) from a meta-analysis of studies conducted between 1994 and 1997 was used to estimate the desired sample size (185). These conservative baseline figures were used in lieu of high prevalence rates of depression and anxiety in prior studies on sex and labour-trafficked women (408) to ensure that sample size was not underestimated. Calculations were made based on the following assumptions:

366

Precision = 5%

Prevalence = 35% (depression)

Population size = infinite

$$N = \frac{Z^2 * P(1-P)}{M^2}$$

Whereby:

N = sample size

Z = confidence level at 95% (standard value of 1.96)

P = estimated prevalence of depression

M = margin of error at 5% (standard value of 0.05)

$$N = \frac{1.96^2 * (0.35*(1-0.35))}{0.05^2} = 349.58$$

So, the sample size to estimate the proportion of individuals with symptoms of depression using post-trafficking services, with 5% precision and 95% confidence, was 350. However, stratifying by sex, the sample size must be multiplied by the design effect (loss of sampling efficiency, standard value 1.5) and the number of age-sex estimates (in this case, 2 for sex):

N = 349.5856 * 1.5 * 2 = 1048.75

A prior study of health outcomes of sex-trafficked women using post-trafficking services in Europe had a high response rate of 99.5% (129). A study with sex and labour-trafficked women from Moldova using post-trafficking services had an 81% response rate (375). We used 90% as an estimate of the response rate for the STEAM study. To account for missing

data, the team decided to oversample in 10%. Adjusting for an anticipated non-response rate of 10% derives a sample size of 1165 to estimate the prevalence of depression:

N = 1048.7568 / 0.9 = 1165.28

The same steps were followed for to calculate sample size estimates for anxiety, with a prevalence rate of 28%. Stratifying for sex and accounting for missing data, the sample size to estimate the proportion of individuals using post-trafficking services who display symptoms of anxiety should be 1033.

For experiences of violence, the team initially searched the literature for violence and injury prevalence among Southeast Asian refugee populations, as these groups may experience similar trauma as the STEAM study population of trafficked persons.

Experiences of violence among Cambodian refugees during Pol Pot's term in Mollica et al.'s (1993) study included: torture (35.8%), rape or sexual abuse (17%), beatings to the head (17.7%) and beatings to the body (26%) (409). In a community survey of Cambodian victims of mass violence, Mollica et al. (2013) found that 97.4% had experienced trauma (extreme violence), while 76.2% had experienced torture (410). In a sample of torture survivors using psychosocial and other support services in Nepal, Tol et al. (2009) found that 82.3% had experienced torture previously (406).

In a systematic review of trafficking and health outcomes, Oram et al. (2012) found a wide range in prevalence of any violence experienced by women using post-trafficking services, between 40.4% (407) and 94.8% (129). In Abas et al.'s study on sex and labour-trafficked Moldovan women, 96.6% experienced physical or sexual violence (411).

The prevalence of violence experiences vary widely depending on the outcome measures used for refugee and trafficked women populations. The team made a conservative choice of violence prevalence at 50%, giving a sample size of 385 individuals. Stratifying by sex

and adjusting for refusals and missing data, a final sample of 1281 across the countries was deemed to be the main guideline for data collection.

However, as data collection started, the calculations assuming main outcomes (depression, anxiety and violence) were dropped. A minimum of 385 interviews per country was established, based on conservative assumptions of unknown values of population parameters or prevalence, and alpha = 0.05%).

Appendix 6. Topic guide – NGO service provider

Health/OSH/labour assistance:

Can you tell me about how you assist fishermen with their health in this province?

- Role boat captains?

- Benefits of approach (access, political/cultural acceptability), drawbacks

- Fishermen response to services?

- Employer responses?

- Challenges?

Drop in centres for fishermen - when initiated? What was happening at time?

HIV support groups – fishermen's response?

Mobile clinics?

Common health needs and concerns among migrant fishermen?

What do you feel the role of the health sector should be in addressing trafficking in the fishing sector?

- Examples (e.g. victim screening, forensic medicals)

- Challenges?

OSH programs with fishermen?

- Success/challenges

How do you work with fishermen on labour issues?

- Benefits of approach, drawbacks?

- Role of fishermen themselves in addressing labour issues?

Victim of Trafficking (VoT) assistance:

When did you become aware of the issue of human trafficking in the fishing sector as something that you may need to respond to?

- What was happening at that time?

What happens if/when outreach team sees abuse?

- Referrals (who)

Can you tell me about the last time you helped a trafficked fisherman? (specific case – action taken and reasons for action)

- Raid/rescue
- Actors, your role
- Protocol for dealing with potential VoTs?

If raid/rescue, what happened?

- Who contacted you?
- Plan/coordination with agencies (who)
- Victim screening by who
- Referral to Health Service Provider (HSP), government shelter, follow up?

Escape and non-identification

- Men avoiding the system
- NGO referral channels?
- Provincial ports - Ownership and politics?

Can you tell me about last time legal help for fisherman?

- Related to what (pay, OSH, etc)
- Challenges - Status, interpretation/cultural, multiple needs/services required
- How many cases of fishermen assisted during 2013-4?
- Test cases – successes, outcomes

- Challenges faced in trying to get legal justice for MWs?

Employers:

Outreach/advocacy with fishing industry on migrant labour issues?

- What has traction? Health?
- Employer responses to your work? Which of your programs is most successful at engaging employers?
- Challenges to engage/constraints to comply?

Employer main concerns?

How are employers addressing trafficking?

Employer responses to labour inspections, OSH training, VoT screening, registration, NGO outreach

- Which initiatives have more traction/resonance with employers? Why do you think this is so?
- Employer's concerns/constraints to comply?
- Commitment to reducing trafficking in the fishing sector – why do you think this is?

Political influence of employers (who may hold govt official positions) – how affects your work? Examples?

Feedback OSH/labour/trafficking initiatives:

Boat inspections in 2013, no cases detected – what was happening at that time?

- Victim identification criteria - What is considered "bad enough" among frontline staff?
- Frontline staff perceptions of trafficking
- Employer influence
- Health?

- Role in addressing? Victim screening? Labour inspector perceptions of what trafficking is – Identification criteria?
- Challenges – Labour Protection Act, sued fear, knowledge. Other challenges facing Labour inspectors?
- Police min. no VOTs identified?
- Employer responses?
- Connection inspections + prosecution? (e.g. from raids/rescues # Labour inspections)

OSSCs, LCCs

- What prompted – what was happening at that time? - - - - seafarer docs
- Role in addressing? Screening?
- Migrant responses? Employer responses?
- Before coup? After?

OSH initiatives (fishing, if known, ILO)

- What prompted – what was happening at that time?
- Role in addressing? Screening?
- Migrant responses? Employer responses?
- Before coup? After?
- Good Labour Practices/Codes of Conduct, response?

Government:

Supportive agencies of your work? Less supportive?

- Role of provincial governor

How do you conduct advocacy with policymakers on migrant labour issues?

- What has traction? How does frame work?
- What doesn't work?
- Health?

- RTF – advocacy with PHOs on responses to local policy problems

With policymakers you've spoken with – how do they see issue of migrant workers? Trafficking? What do they see as solutions?

- Commitment to reducing - why?
- Health?
- What's working? What isn't?
- How is progress measured?

Political context of trafficking response:

How recent changes in government affecting your work?

How downgrade 2014 TIP affects government's response to human trafficking, employers response

- Changes to policy?
- Level of commitment?

How reports (Guardian, EJF, BBC) affect government's response, employer response

Recommendations to improve Thailand's response to trafficking in fishing

- Why changes are necessary?
- Why changes not yet made?
- Support/from whom?
- Opposition/from whom?

Contextual factors/closing:

What do Thai people think about human trafficking? In fishing specifically?

Factors which we haven't talked about that you feel have been important in shaping how trafficking is addressed in Thailand?

Appendix 7. Qualitative study information sheet and consent form

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Participant Information Sheet: The health of men trafficked for commercial fishing in the

GMS – the role of first responders and policy frames in human trafficking response

I would like to invite you to be interviewed as part of a research study that looks at how human trafficking in the fishing industry is being addressed in Thailand. This sheet provides information about the research being conducted and how you would be involved, explains the confidentiality and data storage arrangements, and gives details of how the research has been funded and reviewed. Please read the following information and if there is anything that is not clear, or if you would like further information, please contact the researcher.

The research is being undertaken as part of a doctoral degree at the London School of Hygiene and Tropical Medicine (LSHTM), and is supervised by Dr. Cathy Zimmerman and Dr. Ligia Kiss. The local supervisor is Dr. Kanokwan Tharawan at Mahidol University. The research is funded by an LSHTM Dr Gordon Smith Travelling Scholarship. The main study objectives are to:

- Explore the role of first responders in fishing trafficking cases at ports, and the role of health, labour and occupational health and safety interventions in human trafficking response
- Analyse how trafficked and migrant fishermen are constructed and framed in policy debates

The core research methods are:

- Interviews with health and welfare service providers, technical experts, Non-Governmental Organizations (NGOs), provincial government officers, industry representatives and policymakers
- Analysis of documents gathered from health and welfare service providers, technical experts, Non-Governmental Organizations (NGOs), government agencies, industry representatives and policymakers

I would like to interview you because of your interest in and experience of service or policy responses to migrant/trafficked fishermen in Thailand. I feel the study would benefit very much from your insights and I sincerely hope that you are able to participate. The interview will last approximately 60-90 minutes, and will be held at a location convenient to you.

If you decide to take part, you will be asked to sign a consent form. Having signed the consent form you will remain free to withdraw from the study at any time, without having to give a reason for this.

Confidentiality

With your permission, the interview will be digitally recorded and transcribed. You may request a copy of your transcript to be sent to you, and you can correct any part of the transcript that you believe to be in error.

Transcripts are anonymized during the transcription process. Direct quotes will only be used in the research reports with your consent, and all quotes will be anonymized. Only the research team, consisting of the researcher, a research assistant and a transcriber, has access to audio files.

Data Storage

Audio files and anonymized transcripts will be securely stored by the researcher until the completion of the research project in December 2015. LSHTM research governance requirements stipulate that files are then securely stored with the LSHTM records management service for a further 10 years. During this time, only the researcher can access – or give permission to access – the stored files. No permission will be granted to access the audio files. After 10 years, the files will be disposed of securely.

The funders of the research encourage researchers to archive data in a secure data repository. With your permission, the researcher will archive your anonymized transcript with LSHTM's data repository, under the option "request access", for 10 years from the point of deposit, after which time they will be destroyed. Requests for access will be sent to the researcher. Information about LSHTM data repository can be found at:

http://blogs.lshtm.ac.uk/rdmss/files/2014/04/Data-Collection-Structure-Mar2014.pdf

Participant Access to Research Findings

A summary of the study findings can also be sent to you on completion of the research, scheduled for December 2015. Electronic and paper copies of the full thesis will also be deposited in each of the LSHTM and University of London Libraries.

Ethical Review

The study has been approved by the London School of Hygiene and Tropical Medicine Ethics Committee and by the Institutional Review Board at the Institute for Population and Social Research, Mahidol University.

Further Information and Complaints

If you have a concern about any aspect of this study, please contact me and I shall do my best to answer your questions. If you are concerned about your rights as a research participant, feel you have not been treated fairly or wish to make a complaint, you may contact the London School of Hygiene and Tropical Medicine Ethics Committees at ethics@lshtm.ac.uk or call + 44 207 927 2221, quoting IRB number 8368.

If you would like to participate in the study, please contact the researcher on nicola.pocock@lshtm.ac.uk or + +66 97 2929 613 (Thailand Mobile).

Yours sincerely,

Nicola Pocock

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The health of men trafficked for commercial fishing in the GMS – the role of first responders and policy frames in human trafficking response

Participant Consent Form

DATE:

Interview Number:

Researcher: Nicola Pocock

Research Assistant:

I have read and understood the information sheet.	Yes □	No □
I have had the opportunity to ask questions about the study.	Yes □	No □
I have had my questions answered satisfactorily.	Yes □	No □
I agree to be interviewed for the study.	Yes □	No □
I understand that I can withdraw from the study at any time without having to give an explanation.	Yes □	No □
I agree to the interview being audio-taped, and to its contents being used for research purposes.	Yes □	No □

My employer (if applicable) may be identified as having participated in the research in subsequent research reports and publications.　　Yes ☐　No ☐

My anonymized words may be quoted in subsequent research reports and publications.　　Yes ☐　No ☐

My interview transcripts (in line with the conditions outlined above) may be archived and used by other LSHTM data repository registered researchers.　　Yes ☐　No ☐

I would like to be sent a copy of my transcript.　　Yes ☐　No ☐

I would like to be sent a summary of the research findings upon completion of the study.　　Yes ☐　No ☐

I would like to participate in an informal workshop on the study's preliminary results　　Yes ☐　No ☐

Name of participant (PRINT)　　　　　　**Date**　　　　　**Signature**
Name of researcher (PRINT)　　　　　　**Date**　　　　　**Signature**

Appendix 8. Search terms for systematic review

EMBASE search terms

1. (international OR nationali* OR foreign OR immigra* OR migra* OR traffick* OR slavery OR slave* OR forced labo?r OR labo?r exploitation OR exploit* OR mobile OR commercial OR non-European*) adj2 (fishing OR fisher* OR fisherm#n)

2. (international OR nationali* OR foreign OR immigra* OR migra* OR traffick* OR slavery OR slave* OR forced labo?r OR labo?r exploitation OR exploit* OR mobile OR merchant OR commercial OR non-European*) adj2 (seafar* OR seam#n OR boatm#n OR sailor OR navy OR naval)

3. 1 OR 2

4. fishing OR fisher* OR fisherm#n OR seafarer* OR seam#n OR boatm#n

5. Asia* OR Asia-Pacific OR Asia Pacific OR (Asia and Pacific) OR Southeast Asia* OR (South East Asia) OR Australia* OR Bangladesh* OR Bengali OR Bhutan OR Brunei OR Brunei Darussalam OR Burma OR Burmese OR Myanmar* OR Cambodia* OR Khmer OR China OR Chinese OR Hong Kong OR India* OR Indonesia* OR Japan* OR Korea* OR Lao* OR Lao* Peoples Democratic Republic OR Lao* PDR OR Malaysia* OR Malay OR Malacca OR Mongolia* OR Nepal* OR New Zealand OR Papua New Guinea* OR Philippines OR Filipin* OR Singapore* OR Sri Lanka* OR Thailand OR Thai OR Timor Leste OR Timor-Leste OR Vietnam* OR Viet Nam OR Taiwan* OR Pakistan* OR Cook islands OR Micronesia* OR Fiji* OR Kiribati* OR Marshall islands OR Nauru OR Niue OR Palau OR Samoa* OR Soloman islands OR Tonga* OR Tuvalu OR Vanuatu

6. 4 AND 5

7. 3 OR 6

8. exp health/ OR exp disease/

9. exp injury/ OR exp pain/

10. exp occupational disease/ OR exp occupational exposure/ OR exp occupational accident/ OR exp occupational hazard/ OR exp occupational health/ OR exp occupational safety/ OR exp occupational medicine/

11. exp fatality/ OR exp death/ OR exp homicide/

12. exp suicide/ OR exp automutilation/

13. exp sexual health/ OR exp sexually transmitted disease/ OR exp sexual behavio?r/

14. exp mental health/ OR exp mental disease/

15. exp anxiety/ OR exp depression/ OR exp hostility/ OR exp posttraumatic stress disorder/ OR exp psychosis/

16. exp fear/ OR exp guilt/ OR exp shame/

17. exp violence/ OR exp assault/ OR exp abuse/ OR exp rape/

18. (occupational OR workplace OR work OR maritime) adj1 (health OR risk OR safety OR medicine OR hazard OR disease OR exposure OR injur* OR accident*)

19. injur* OR accident* OR fatigue OR fatalit* OR wound* OR trauma*

20. Suicid* OR homicid* OR self-harm OR (self harm)

21. Health OR disease* OR illness* OR infect* OR syndrome* OR disabilit*

22. (sexual health) OR (sexually transmitted disease*) OR (sexually transmitted infection*) OR condom* OR contracept* OR (penile implant*) OR HIV OR AIDS

23. (Mental* OR psychosocial) adj2 (problem* OR disorder* OR ill* OR health OR stress* OR wellbeing OR well-being)

24. Anxiety OR depress* OR psychiatric OR bipolar OR psychos* OR schizophren* OR fear OR guilt OR hostil* OR shame

25. (post-traumatic stress) OR (posttraumatic stress) OR (post traumatic stress) adj1 disorder*

26. Violen* OR abus* OR assault* OR depriv* OR neglect OR rape

27. OR/8-26

28. 7 AND 27

29. molecul* OR membrane* OR cell* OR protein* OR pesticide* OR biomarker* OR biodivers* OR species OR multispecies

30. 28 not 29

Appendix 9. Systematic review data tables

Table 4.3: HIV/AIDs and sexual health among commercial fishers and seafarers from GMS countries (n=11)

Author (year)	Main findings
Entz (2000)[a] (205)	• Consistent condom use with sex workers/past year (75.6%); Injecting drug users (2.7%) • Frequency of alcohol/drug use before/during sex: Never (40.0%), Sometimes (38.5%), Always (21.5%) • Nationality association with HIV prevalence: Thai (14.6%) (reference), Burmese (16.1%) (UOR 1.12, CI:0.67-1.86), Cambodian (20.2%) (UOR 1.48, CI:0.86-2.55) • Factors associated with HIV prevalence (multivariable): 25-32y/o, =>6 visits to sex workers, unmarried, tattooed
Entz (2001)[a] (206)	• History of STD (30.0%); Self-treatment of last STD (31.0%); Self-treatment of general health while ashore (32.0%) • Ever had STD: Thai (35.5%) (reference), Burmese (11.1%) (AOR 0.54, CI:0.29-1.01), Cambodian (23.5%) (AOR 0.77, CI:0.45-1.32) • Self-care of last STD: Thai (27.8%) (reference), Cambodian (30.4%) (AOR 0.84, CI:0.32-2.24), Burmese (66.7%) (AOR 4.07, CI:1.30-12.77) • Self-care of general health while ashore: Thai (27.1%) (reference), Burmese (44.5%) (AOR 1.98, CI:1.33-2.95), Cambodian (46.5%) (AOR 2.21, CI:1.40-3.48)
Nguyen (2011)(207)	• Hepatitis B prevalence (54.3%) (HBsAg 9.6% + anti-HBs 44.7%); HIV prevalence (0%)
Ford (2007)[b] (208)	• No association with being a fisherman and using condoms with sex workers (AOR 0.88, CI:0.12-6.52) (other sectors is reference)
Ford (2008)[b] (209)	• AIDS knowledge score 0-15 (mean): 8.0. Fishermen had higher knowledge scores than male migrants in other sectors • Condom use (mean): sex worker (3.6, range 1-4), regular partner (0.1, range 0-1), non-regular partner (2.0, range 1-4) • Fishermen were more likely to visit sex workers, have non-regular partners, less likely to have regular partners Vs. other sectors. Condom use was similar • Seafarers feel vulnerable to HIV, seen co-workers dying with no medical assistance on boats, aware that visiting sex workers makes them vulnerable to HIV • Condom use usually 100% at brothels due to policy, less in other settings. With girlfriends/"love" relationships, condoms often not used • Alcohol can give seafarers courage to visit sex workers but reduces likelihood of condom use • Men aware of HIV testing sites, attend when feeling susceptible to HIV due to many sex partners. Some avoid going fearing positive result/time/money concerns • Treatment by co-workers: HIV positive seafarers allowed to work while healthy/strong but looked down on by coworkers/community for having too many partners
Musumari (2016)* (210)	• AIDS knowledge score**, baseline (mean): Myanmar (13.87, CI:13.15-14.59), Cambodia (13.84, CI:12.96-14.72) • AIDS knowledge score**, endline (mean): Myanmar (13.55, CI:13.11-13.98), Cambodia (16.26, CI:16.02-16.50) • Condom use at last sex with regular partner, baseline: Myanmar (6.4%), Cambodia (2.6%), endline: Myanmar (4.8%), Cambodia (13.3%) • Fishing sector significantly associated with ever testing for HIV (AOR, 2.51, CI:1.28–4.92) relative to other sectors
MOPH (2011) (211)	• HIV prevalence 5.24% (CI:3.62-6.85), AOR 4.82 (CI:2.48-9.39) (relative to other sectors, office/factory worker is reference)

Author (year)	Main findings
Sopheab (2006) (212)	• Always condom use past 3 months sex workers (57%); Always condom use past 3 months girlfriend (17%); Condom use last sex with girlfriend (68%) • Had STI treated at public or private clinic/hospital (75%)
Ohnmar (2009) (213)	• Penile oil injection prevalence (7.5%); Penile implant prevalence (12.4%); Condom use with CSWs: Penile oil injection/implant users (32.9%), Others (44.5%) • Penile practices associated with sex with commercial sex workers (CSWs): No penile practice (32.2%) (reference), Penile oil injection (70.8%) (AOR 3.03, CI: 1.39-6.60), Penile implants (57.0%) (AOR 2.18, CI: 1.19-3.99) • Factors associated with penile oil injections: younger age, low education, Mon ethnicity, +1year Thai residence. Penile implants associated +1year Thai residence
Samnang (2004) (214)	• HIV prevalence (16.2%); Among 18-22y/o (12.8%), 23-29 y/o (20.3%), >29y/o (15.0%); STI diagnosed in past year (24.0%) • Condom use: Brothel sex workers (91.5%), Non-brothel sex workers (70.0%) • Condom use/sex workers HIV association: Always (47.8%) (reference), Frequently (24.3%) (AOR 1.04, CI: 0.5-2.3), Sometimes (23.5%) (AOR 0.8, CI: 0.3-1.8) • Alcohol consumption past 12 months (79.4%); 3-4 days/week (10.0%), 1-2 days/week (11.5%), <1 day/week (25.5%), 3-4 times/month (10.5%)
UNAIDS (1998) (215)	• Seafarers/fishermen engage in commercial sex, have limited knowledge of HIV/AIDS. Comradeship on board is essential for survival and completing work tasks • Some seafarers/fishermen are injecting drug users. Some share injecting equipment because of limited finances despite being aware of risk of HIV transmission. Peer pressure, depression, family problems are push factors for drug use • Health workers, pharmacists not very knowledgeable about HIV/AIDS or transmission risks, don't actively promote condom use among seafarers. Administrators more knowledgeable. Seafarers/fishermen self-treat, seek advice from friends/purchase medicine at private pharmacies

a. same study

b. same study

*disaggregated data for fishermen from baseline and end line surveys provided by Kathleen Ford (studies 113, 209)

**AIDS knowledge score range 0-20

Table 4.4: Occupational and physical health among commercial fishers and seafarers from GMS countries (n=9)

Author (year)	Main findings
Levin (2010)[c^] (216)	• Fishing >12 hours/day (87.2%); Considers the job very safe, safe or neutral (70.5%); Receives safety training every year (59.0%)
Carruth (2010)[c^] (217)	• Work requires physical and mental prowess and endurance, Fishermen usually spend 3 weeks at sea, night fishing • Deaths from trauma, drowning, violence; Disability from physical injury. Alcohol consumption contributes to accidents, violence • Experience/ability to anticipate safety risks e.g. mechanical failures are important. Captain's leadership skills are essential. Adverse events function of experience, training/knowledge, leadership, overconfidence, carelessness, rushing, poor judgement. Safety is tied to paying attention, awareness, discipline • Influential captains earn deckhands' respect, which is necessary for captains to train them. Safety training should be in Vietnamese, based on deckhands' literacy level, convenient (off-season periods), hands on/practical (drills), end in completion certificates and target captains first
Levin (2016)[d^] (218)	**Work > 16 hours/day**: Baseline (29.6%); Endline (40.0%); **Hypertension:** Baseline, >50% stage 1 or greater hypertension **Winch safety intervention site+** • Being careful prevents injury: pre (5.59) post (5.64); Injuries from becoming caught in machinery are possible to prevent: pre (5.45) post (5.43); I can prevent injuries by being aware: pre (5.60) post (5.70); I can prevent injuries by what I wear: pre (5.43) post (5.60) **Hearing intervention site+** • Wearing ear plugs while working on vessel will protect my hearing: pre (4.66) post (5.58)**; Hearing loss from noise exposure while working on vessel is often possible to prevent: pre (4.83) post (5.45)*; I can prevent hearing loss from noise exposure while working on vessel by wearing ear plugs: pre (4.75) post (5.79)** **Fatigue intervention site+** • Enough rest prevents injuries: pre (5.27) post (5.79)*; Injuries related to fatigue are possible to prevent: pre (5.15) post (5.88)**; I can prevent injuries while working aboard vessel by working fewer than 12 hours and getting enough sleep: pre (4.60) post (5.95)***
Levin (2016)[d^] (219)	• Hearing impaired prevalence* (59.4%). Associated with >15 years experience (AOR 2.04, CI:0.98-4.21), aged =>50 y/o (AOR 2.23, CI:1.07-4.63) • Noise-Induced Hearing Loss prevalence* (53.8%). Associated with >15 years experience (AOR 2.23, CI:1.08-4.63), not aged =>50 y/o (AOR 1.37, CI:0.65-2.87)
Hansen (2008) (220)	• Accident prevalence: Thai (0.3%), Vietnamese (6.8%); Accident rate per 1000 years/sea: West Europeans (106), Southeast Asians (41), East Europeans (89) • Crude incidence rate ratio: Western Europeans (1), Southeast Asians (0.38), Eastern Europeans (0.88) • Adjusted incidence rate ratio: Western Europeans (1), Southeast Asians (IRR 0.29, CI:0.22-0.38), Eastern Europeans (IRR 0.65, CI:0.50-0.85)
Pe (2005)[e^] (221)	• Cumulative incidence 1999-2002: 75.15/100,000; Case fatality 4.3%; 70% of victims bitten on hands, usually deep sea fishermen while drawing/unloading fishing nets and sorting fish; 30% bitten on legs, usually shallow water fishermen while setting up/drawing fishing nets in sea • Healthcare seeking behaviour: local traditional healers (56.5%), hospitals (19.6%), clinics (17.4%), home treatment (6.5%) • Clinical symptoms: drowsiness (87.0%), limb muscle ache (74.0%), limb muscle stiffness (80.0%), heavy upper eyelids (84.0%), dark urine (71.0%)

Author (year)	Main findings
Pe (2006)[e^] (222)	• Cumulative incidence varies from 75.15, 118.9, 318/100,000 over 1999-2003; Case fatality 11.2% across 4 sites • 86.6% bitten during fishing activities; particularly drawing or using conical nets (34.7%), stake nets (19.3%), sorting fish (11.8%) • Healthcare seeking behaviour: home treatment (44.3%), local traditional healers (37.9%), hospitals (9.0%), clinics (6.4%), no treatment (2.1%) • Clinical symptoms: drowsiness (78.6%), muscle ache (71.6%), muscle stiffness (62.5%), heavy upper eyelids (56.6%), dark urine (31.5%)
Doung-ngern (2007) (223)	• Probable cases of beriberi: 53.6% (15 cases total, 14 cases Burmese, 1 Thai). Case fatality: 13% (2 deaths on board) • Clinical symptoms: edema (60%), chest discomfort (54%) dyspnea (27%); Among N=13 physically examined patients (includes deceased), 100% hypertensive • Diet: Fish and white rice only for 2 months prior to onset of symptoms; Total time at sea: 18 months (includes 5-month delay in docking)
Kiss (2015) (126)	**Occupational hazards** • Worked =>20 hours/day: All (41.8%), Cambodian (48.8%), Myanmar (16.4%); Worked every day: 97.1%; No time off for sickness/holiday: 86.9% • Long hours in sun/cold/wet without breaks: 96.7%; Small/unstable/badly maintained fishing vessel: 34.2%; Badly maintained or no fishing equipment: 28.0% • No safety/bad/no survival equipment: All (61.8%), Cambodian (54.4%), Myanmar (92.7%); No personal protective equipment: 13.5% **Injuries/healthcare** • Injured at least once: All (46.6%), Cambodian (49.8%), Myanmar (36.4%); Injuries still cause pain/difficulty: All (51.6%), Cambodian (57.4%), Myanmar (20.0%) • Deep/very long cut: All (79.3%), Cambodian (73.2%), Myanmar (40.0%); Serious head injury: All (20.5%), Cambodian (23.4%), Myanmar (5.0%); Back/neck injury: All (36.2%), Cambodian (43.0%), Myanmar (0.0%); Lost body part: All (4.7%), Cambodian (5.6%), Myanmar (0.0%) • Care, Doctor/nurse: All (7.9%), Cambodian (8.9%), Myanmar (3.1%); Trafficker/employer: All (36.5%), Cambodian (43.2%), Myanmar (3.1%); Coworker: All (7.3%), Cambodian (8.9%), Myanmar (0.0%); Traditional healer: All (2.3%), Cambodian (8.9%), Myanmar (0.0%); No care: (52.3%), Cambodian (41.8%), Myanmar (96.9%) **Physical health** • Headaches: All (28.4%), Cambodian (32.7%), Myanmar (12.7%); Skin problems: All (18.6%), Cambodian (20.3%), Myanmar (12.7%); Weight loss: All (22.9%), Cambodian (27.2%), Myanmar (5.5%); Persistent cough: All (13.8%), Cambodian (15.7%), Myanmar (3.6%); =>3 areas/pain: All (29.1%), Cambodian (34.6%), Myanmar (9.1%); Poor self-assessed health: All (26.9%), Cambodian (30.9%), Myanmar (10.9%); Physical health concerns: All (33.6%), Cambodian (36.6%), Myanmar (23.7%) **Violence** • Physical violence: All (68.4%) Cambodian (65.4%), Myanmar (80.0%); Sexual violence: All (1.8%), Cambodian (1.8%), Myanmar (1.8%) • Severe violence: All (53.8%), Cambodian (50.2%), Myanmar (67.3%); Less severe violence: All (17.5%), Cambodian (18.9%), Myanmar (12.7%)&

c. same study

d. same study

e. same study

^Sample is not wholly comprised of GMS fishermen/seafarers, but includes high proportion of them in the sample

+Mean scores in brackets on Likert scale 1-6 from strongly disagree/unlikely (1) to strongly agree/likely (6) *p<0.05 **p<0.01 ***p<0.001

&Severe violence: being kicked, dragged or beaten up; tied or chained; choked or burned; released a dog to bite or scratch; being threatened with a weapon; cut with a knife, shot or forced to have sex. Less severe violence: being slapped, pushed, hit with fist

Table 4.5: Mental health among commercial fishers and seafarers from GMS countries (n=1)

Author (year)	Main findings
Kiss (2015) (126)	• Depression: All (54.4%), Cambodian (63.0%), Myanmar (21.8%); PTSD: All (39.4%), Cambodian (46.8%), Myanmar (10.9%); Anxiety: All (44.9%), Cambodian (55.6%), Myanmar (5.5%)*; Suicidal thoughts: All (7.3%), Cambodian (8.8%), Myanmar (1.8%); Suicide attempts past month: All (4.4%), Cambodian (5.6%), Myanmar (0%) • Concerned for Mental health: All (15.3%), Cambodian (17.6%) Myanmar (7.3%); Guilt or shame: All (33.6%), Cambodian (34.3%), Myanmar (32.7%)

*symptomatic of mental health disorders, not clinical diagnoses

Table 4.6: Grey literature findings on mainly trafficked/forced labour commercial fishers from GMS countries (n=13)

Author (year)	Main findings
Robertson/IOM (2011) (2)	• Expected to work 18-20 hours/day, 7 days/week. Fishing boats going to foreign waters associated with greater incidence of trafficking • No toilets on small-medium boats, poor hygiene and nutrition due to need to conserve fresh water/food on long trips • Physical and mental abuse common. Injuries and sickness common, but little/no medicine available, poor access to healthcare
Brennan/Solidarity Centre (2009) (44)	• Coastal boats: 13-14 hours at sea/day, some rest. Long-haul boats: 45-60 days at sea, working 18-24 hours/day; 36% worked 24 hours/day • Witnessed physical violence by superiors: 33%; Experienced physical violence: 50%. Long-haul fishermen who were regularly beaten considered suicide • Long-haul fishermen seeing fellow workers become sick/die: 36%. Not enough medicine on board, men experience "sea malaria" with fevers
UNIAP (2009) (45)	• Long-haul boats at sea for 2+ years. Cyclical stops made in Malaysia; Up to 3 days no rest/sleep, nutritional deprivation; Hazardous, often life-threatening working conditions; Physical violence, e.g., beatings to head/body, threats to life: 100% • Deported: 100%. None screened/identified as trafficked by authorities. Some re-trafficked to palm oil/rubber plantations, some held for ransom by agents
Pearson/ILO (2006) (32)	• Worked 12+ hours/day: 62%. Could not refuse to do overtime: 100%. Just over 50% had regular days off • When sick, 50% turned to each other for help, 33% turned to health support workers, 33% to relatives • Employers unsure workers had right to leave worksite without permission: 33%; Employers believed acceptable to lock migrants in accommodation: 50% • Physical violence: 14%; Verbal abuse (scolding, swearing, threats): 80%; Forced to work in fishing: 20%; Previously forced labour: 25%
Fujita (2010)* (54)	• Trip duration: 30-40 days, 3-5 days rest on land between trips. Long-haul boats in Indian Ocean/Indonesia for 6 months/trip, feeder boats exchanged fish for supplies once/month. N=17-18 workers per boat. Meals provided by boat owner 2-4 times/day (rice, fish), vegetables consumed every 15 days
ILO/ARCM (2013) (31)	• Worked 17-24 hours/day: Long-haul (28.3%), Short-haul (25.3%); Worked indefinite hours/day: Long-haul (46.2%), Short-haul (40.0%); Less than 5 hours rest in 24 hours: Long-haul (28.3%), Short-haul (38.4%). Overall, 26.4% had inadequate rest • Aware of safety risks in fishing: All (91.9%), Long-haul (88.7%), Short-haul (92.7%); Ever injured: All (20.6%), Long-haul (26.4%), Short-haul (19.4%) • Severely beaten: All (10.5%), Thai (8.2%), Cambodian (2.5%), Myanmar (16.3%), Long-haul (17.0%), Short-haul (8.6%) • Deceived/coerced into fishing: Long-haul (16.0%), Short-haul (3.1%); Sold/transferred to another boat against will: Long-haul (5.7%), Short-haul (3.7%); Tried to escape: Long-haul (17.0%) Short-haul (9.8%); Forced labour: Thai (0%), Cambodian (9.1%), Myanmar (25.8%), Long-haul (24.5%), Short-haul (15.3%)
Baker/UNACT (2015) (224)	• Safe working conditions: 63.2% (lowest/sectors); Fair/good working conditions: 57.6% (2nd lowest/sectors) Fair/good Bosses: 68.0% (2nd lowest/sectors) • Fair/good freedom of movement: 72.0; No restrictions on freedom of movement: 72.8; Free to quit employment: 61.6% (lowest/sectors) • Violence was a problem: 26.3% (highest/sectors); Exploitative conditions: 28.8%; Cheated and/or deceived about working conditions: 44.8%; Trafficked: 21.6%
Verite (2015) (225)	• Worked 16 hours/day at sea or verbal/physical abuse/docked pay. Salary withheld for up to 10-19 months. 10USD/day mean salary among junior fishermen • Chronic sleep deprivation, no control over rest/sleep, superiors required continuous work. Men pulled overboard by heavy nets/not recovered, especially at night • Injuries and violence uncommon, usually when men are drunk/overworked, prone to lose temper/fight sometimes caused deaths at sea. Body thrown overboard to avoid contamination (captain)
Yea (2014) (226)	• Worked 18-22 hours/day, 7 days/week. No rest days/overtime pay for hours worked beyond 8-9 hours/day agreed in contracts. No rest days for sickness/injury.

Author (year)	Main findings
	• Forced to work in heavy storms/cold rooms/polar regions with no protective gear. No life jackets, life buoys locked up. Inadequate water, rotten/expired food • Verbal and physical abuse, e.g., beatings (kicks, punches, slaps) to face and body by superiors • Injuries via fishing hooks to face, arms and neck. Wounds sewn with needle and thread-no antiseptic/pain relief administered. Expired medicine given. Seriously injured men (cuts, lost limbs) forced to wait until vessel docked before receiving medical care. Deaths at sea among those who cannot wait/seriously ill
Day/HAGAR (2015) (4)	• Fishermen spent months/years at sea due to Transshipment, no freedom of movement. Tortured/electrocuted/sold to other boats for attempting escape • Sickness linked to unsanitary living conditions, eating mainly raw food (inadequate cooked food) • Injuries: stabs on limbs, unhealed broken bones, hooks lodged in skin. Paracetamol and basic medicines only given • Poor mental health including memory loss, aggression, substance abuse linked to abuses; Few fishermen receive ongoing health assistance upon return • Guilt/shame experienced for being "failed migrant"/no income, abuses witnessed or suffered, for falling victim to deception/being unable to protect self
EJF (2013) (227)	• Forced to work up to 20 hours/day, no wages received • Threatened with weapons, physical violence by senior crew/agents (e.g. beatings, cut with knife). Witnessed torture, multiple murders
Stringer (2016)** (5)	• Excessive working hours, including 18-30 hours without breaks/rest: 76%+; Wages withheld/not paid: 51-75% • Hazardous work, very bad living conditions: 76%+; Inadequate water, food (forced to eat fish bait to survive) • Experienced violence/threats of violence for work mistakes/tiredness: 76%+; Sexual abuse (indecent exposure, groping, rape by superiors) common • Injured crew forced to remain below deck when vessels docked, requests to see doctor denied. Lack of medical care for injured/sick men
Surtees (2014) (50)	• Worked min. 18 hours/day, half worked 20+hours/day, everyday. Transshipment: men kept at sea for up to 3 years • Occupational hazards: falling overboard during storms due to dizziness, some deaths. Seasickness, wounds/cuts to hands from hooks, unguarded machinery. No protective equipment/gear provided for working in cold store/on deck (e.g. clothes, goggles, safety harnesses), no life jackets/buoys • Forced to work when sick/injured/exhausted, beaten if caught resting/not working hard enough • Dirty, unhygienic, cramped sleeping/living conditions. Inadequate/unsanitary food (forced to eat fish bait), inadequate drinking water, only seawater for bathing which caused skin conditions. Language barriers: men couldn't express health problems/discuss medicine given by superiors • Physical violence (e.g. beatings, attacked with weapons): 93.5%. Cambodians beaten more than other nationalities • Psychological abuse (e.g. threatened with violence/murder, insulted/shouted at): 100% • Chronic headaches, pain from broken bones (incorrectly healed), malnourishment, skin infections, lung conditions upon return • Anger, fear, anxiety upon return; stress and mental health problems due to trauma experienced (physical violence, threats) or witnessed (beatings, murders). Isolation at sea/long delays in return compounds mental health problems • Little/no payment received. Some men don't return due to shame of returning with no money, transfer to other boats in hopes of earning income. Pity from community can translate to feeling supported/loved or can engender shame among returned men

*this study does not include trafficked/forced labour in the sample   **peer-reviewed non-health paper

Appendix 10. Further information on use of Directed Acyclic Graphs (DAGS) to guide data analysis in Paper 1

Figure 5.1 illustrates our conceptual assumptions informing the statistical analysis. For example, we hypothesize that language proficiency affects mental stress (lack of fluency is stressful) and can also affect occupational risk score (lack of fluency to protest poor working conditions or understand instructions at work), which may subsequently increase injury risk. Variables hypothesized to affect violence included threats, language, documents, sector and age, with no particular hierarchy of proposed effects. DAGs were constructed using DAGitty software (313). While DAGs typically include one outcome per diagram, we include both outcomes (injuries and violence, marked "I") in Figure 5.1 for brevity (please see Appendix 11 for complete list of DAGs). Blue variables are observed and grey are unobserved. While the DAG shows that there may be other more proximal exposures (e.g. no protective equipment) that could affect injuries, our interest was in exploring the hypothesized relations for the variables mentioned above in addition to controlling for key factors such as months in trafficking and age. Sector and documents are represented temporally (although they are the same variable) as this permits the DAG to remain acyclic (331). Possession of documents at T1 may influence which sector a migrant chooses to work in (self-selection), and at sector T1, the literature notes that fishermen may be more likely to have their documents withheld than males in other sectors (32).

The effects of the primary exposures, hours and OHR score, on injuries, could not be estimated because the variable "Employer compliance with OSH regulation" was unobserved and could not be controlled for to block off the back-door paths between the exposure and outcome; please see Appendix 11, Figures 11.2 and 11.3, which show the resultant biasing paths between hours and OHR score to injuries. Back-door paths in DAGs must be blocked to eliminate potential non-causal associations; the corollary in statistical criteria is that "Employer compliance with OSH regulation" is a confounder that can't be controlled for because it is unobserved (412). Estimates for hours and OHR score in Table 4 should thus not be interpreted in any causal sense. However, hours and OHR score, alongside days worked/week, age and months in trafficking along with their polynomial terms, were controlled for in multivariable

models for the secondary and tertiary exposures where this did not induce bias according to their respective DAGs (Appendix 11).

References

1.   Textor J, Hardt J, Knüppel S. DAGitty: a graphical tool for analyzing causal diagrams. Epidemiol Camb Mass. 2011;22: 745. doi:10.1097/EDE.0b013e318225c2be

2.   Greenland S, Pearl J, Robins JM. Causal diagrams for epidemiologic research. Epidemiol Camb Mass. 1999;10: 37–48.

3.   Pearson E, Punpuing S, Jampaklay A, Kittisuksathit S, Prohmmo A. The Mekong Challenge: Underpaid, Overworked and Overlooked: The realities of young migrant workers in Thailand: Volume One. International Labour Organization (ILO) & the Institute for Social and Population Research (IPSR), Mahidol University; 2006.

4.   Morgan SL, Winship C. Counterfactuals and Causal Inference: Methods and Principles for Social Research. 2 edition. New York, NY: Cambridge University Press; 2014.

Complete list of Directed Acyclic Graphs used to inform covariate selection for
multivariable models A – L presented in Table 5.4, Paper 1

KEY

Figure 11.2: DAG for estimating effect of Hours on injuries (Model A)
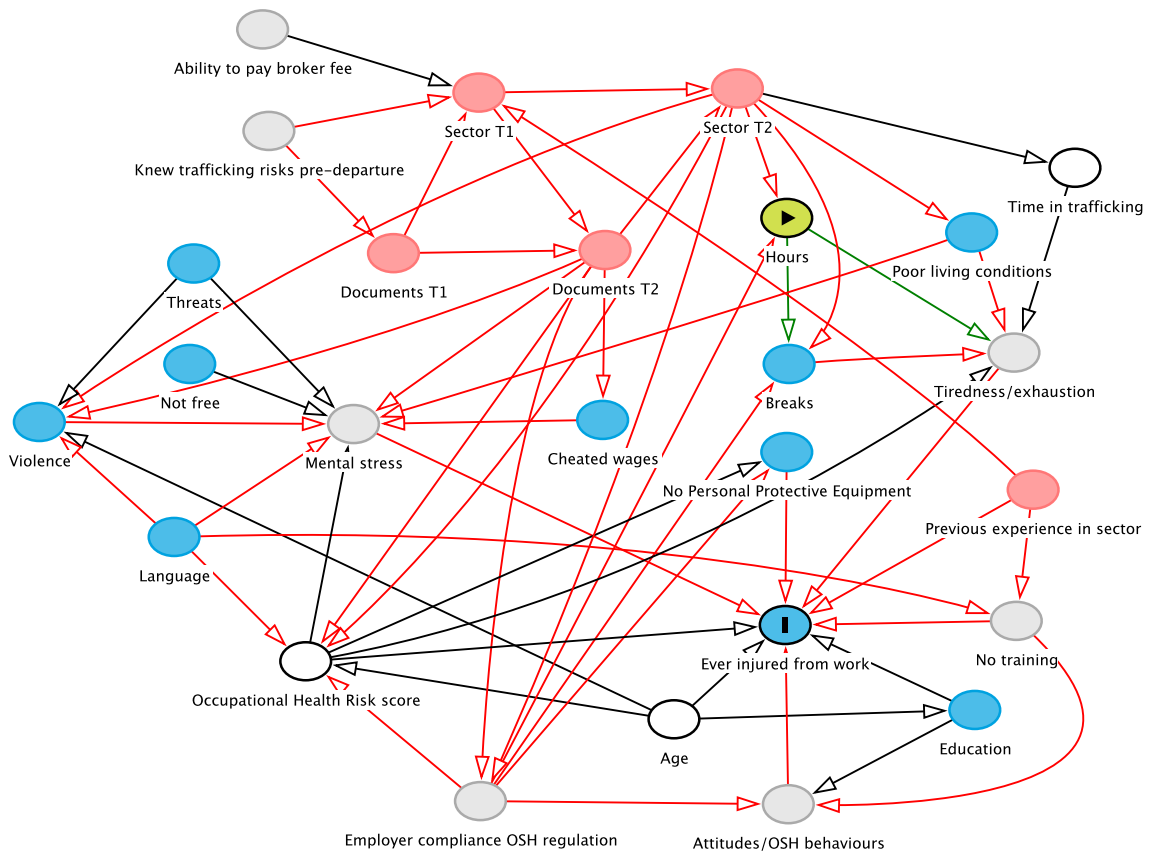
Figure 11.3: DAG for estimating effect of Occupational Health Risk (OHR) score on injuries (Model A)
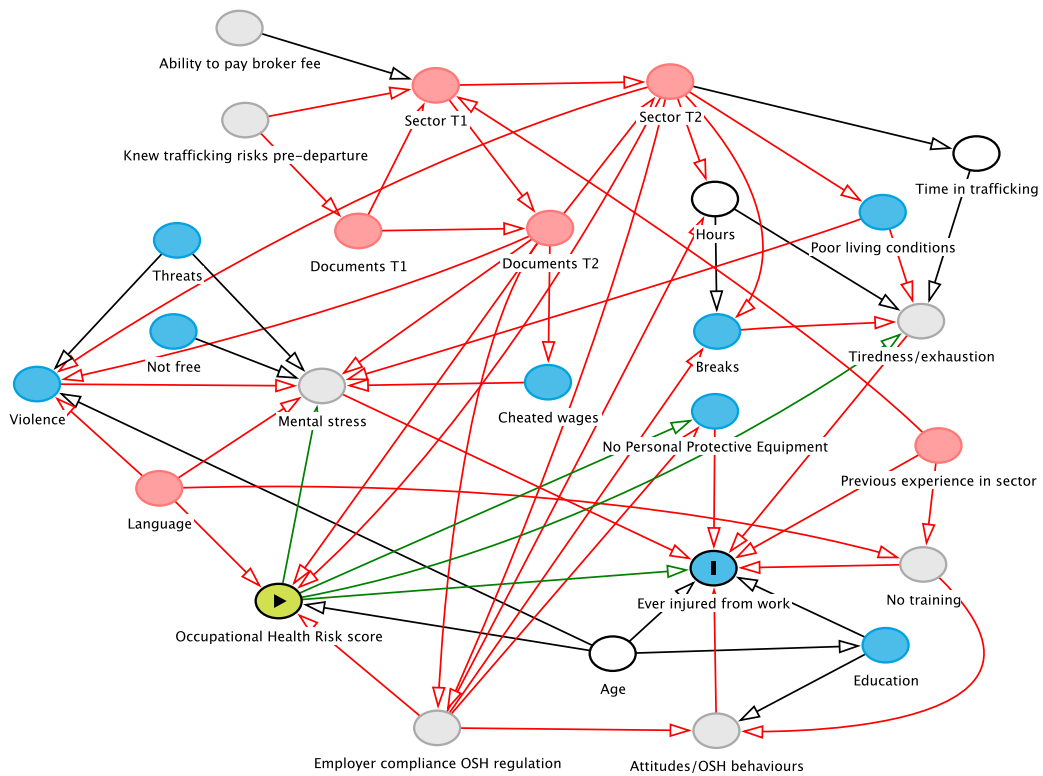
Figure 11.4: DAG for estimating effect of cheated wages on injuries (Model B)
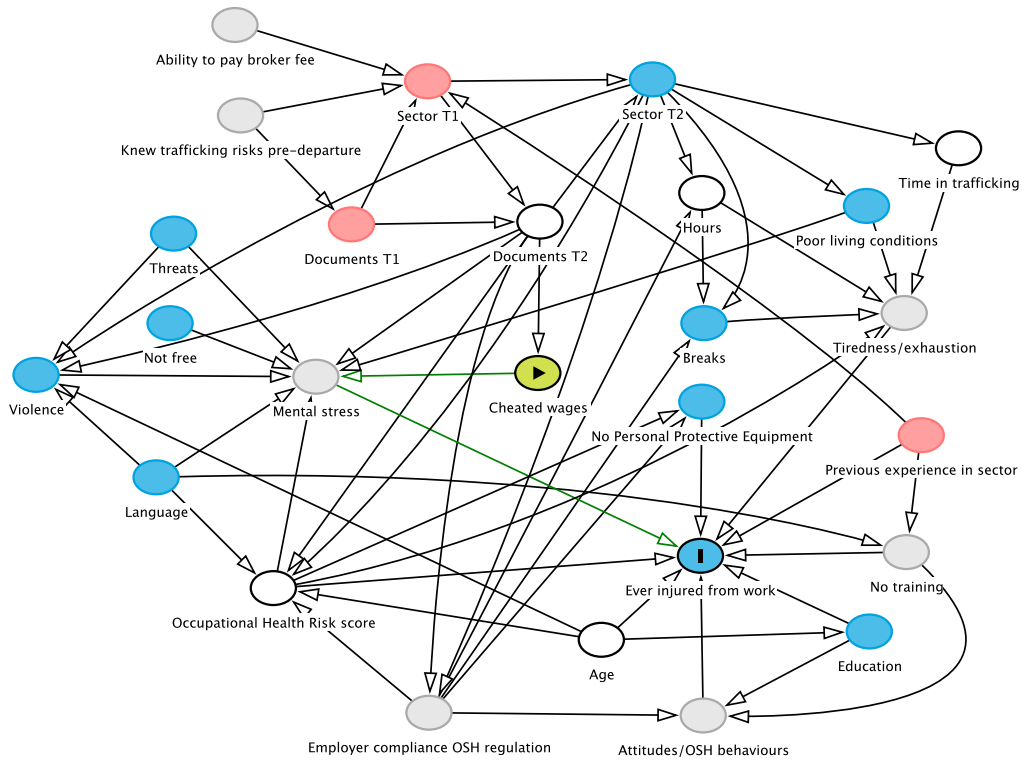
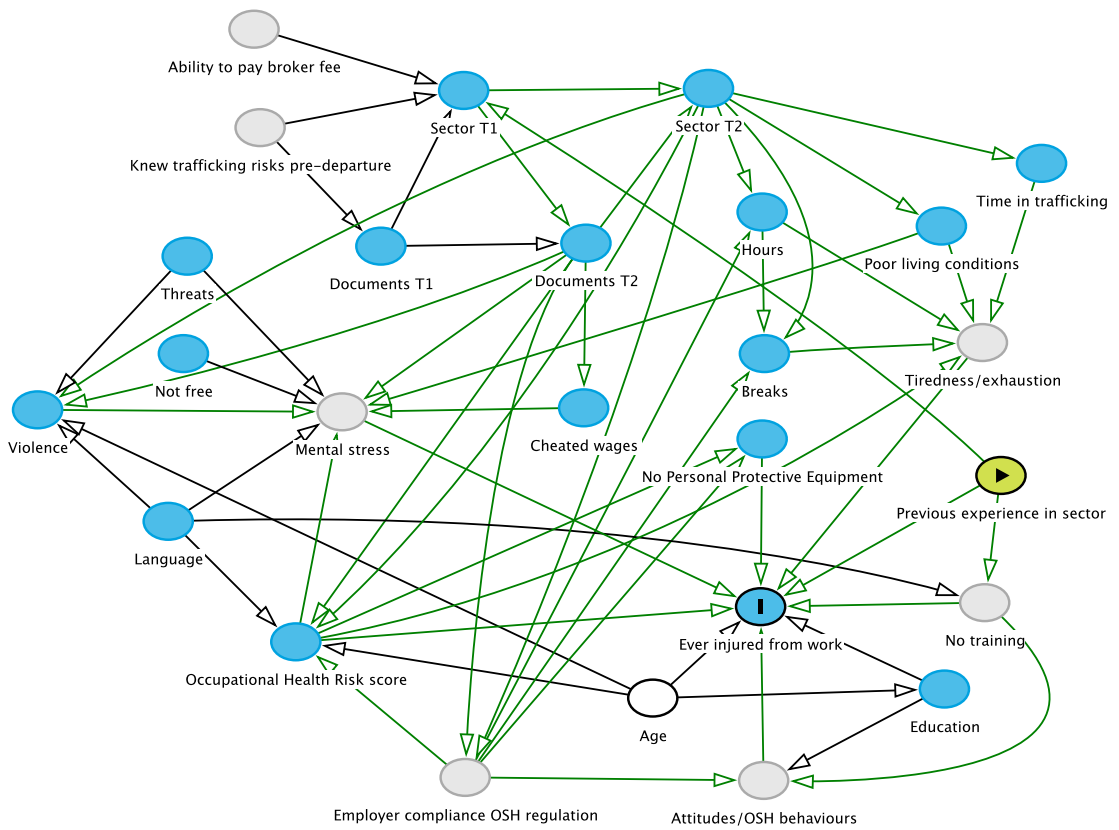Figure 11.5: DAG for estimating effect of violence on injuries (Model C)
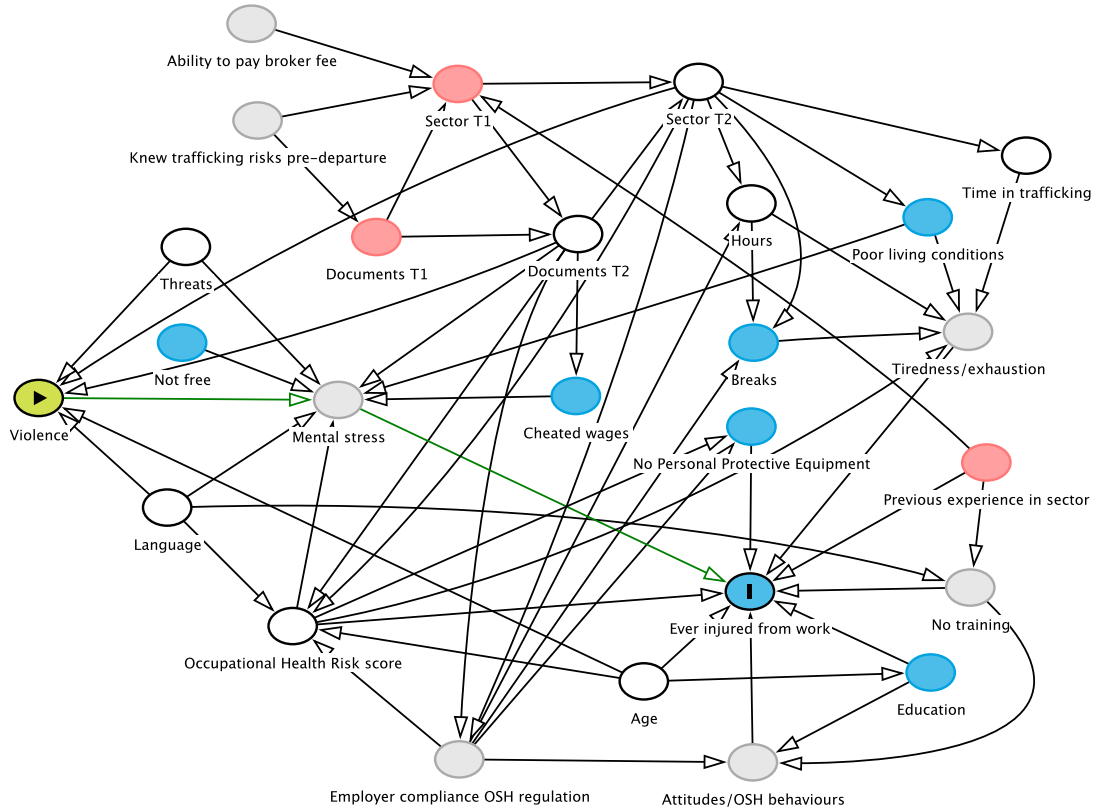
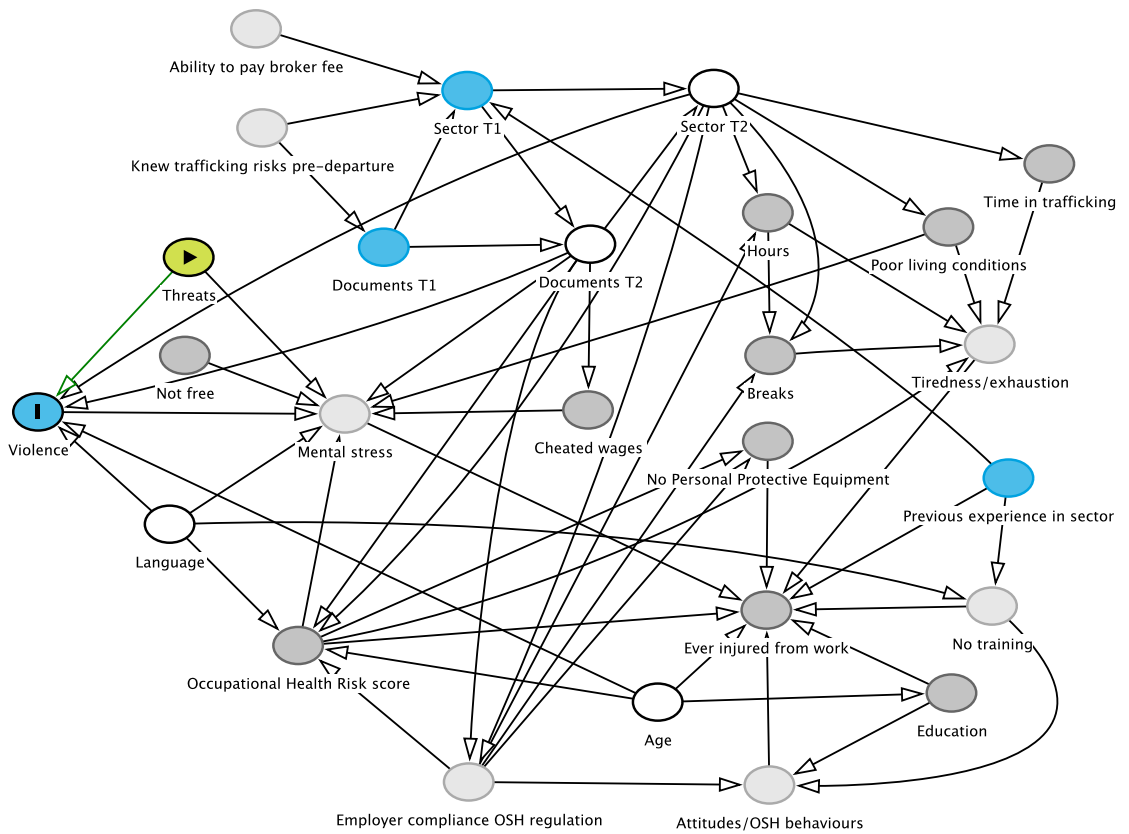Figure 11.6: DAG for estimating effect of threats on injuries (Model D)

Figure 11.7: DAG for estimating effect of sector on injuries (Model E)

Figure 11.8: DAG for estimating effect of fluency on injuries (Model F)
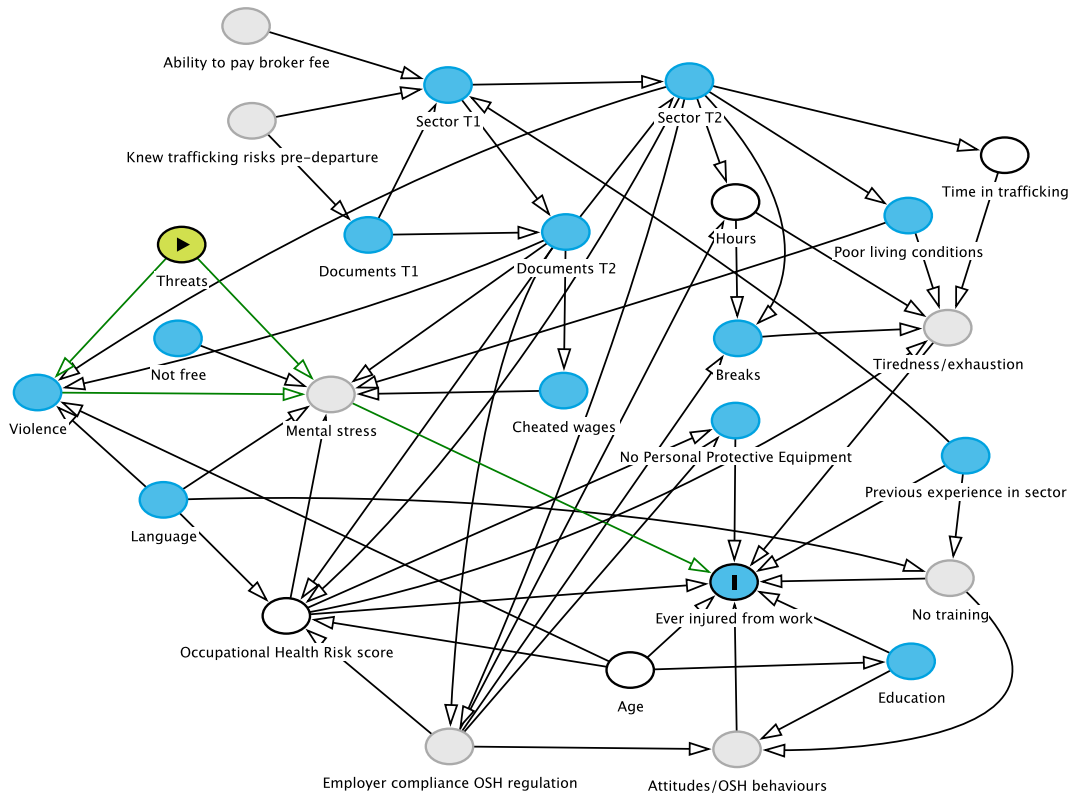
Figure 11.9: DAG for estimating effect of document possession on injuries (Model G)
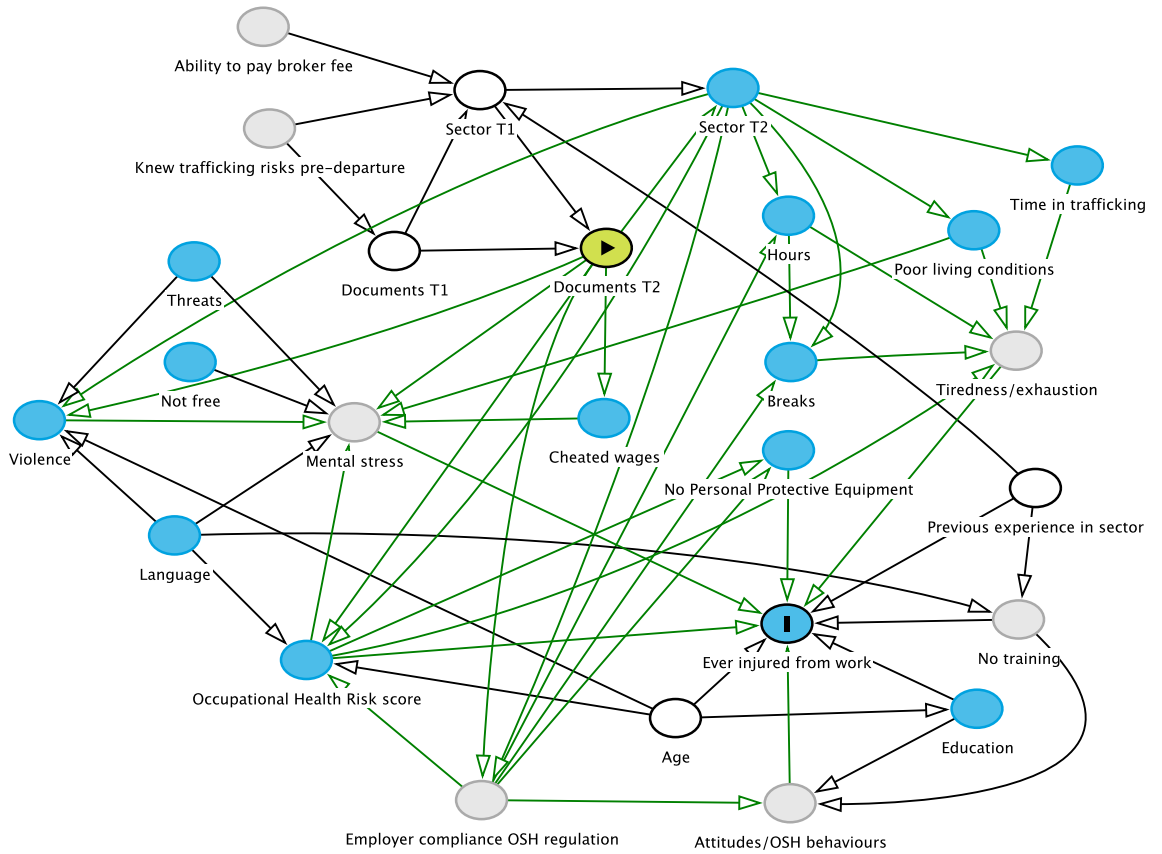
Figure 11.10: DAG for estimating effect of age on injuries (Model H)
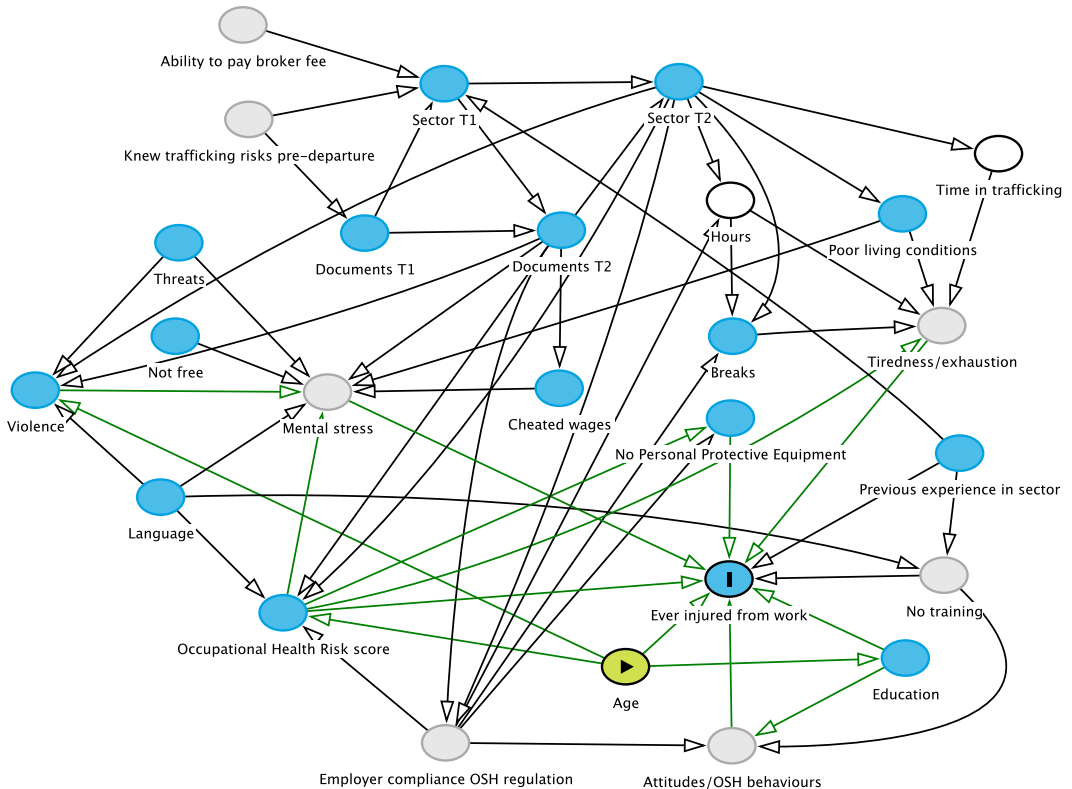
Figure 11.11: DAG for estimating effect of time in trafficking on injuries (Model I)
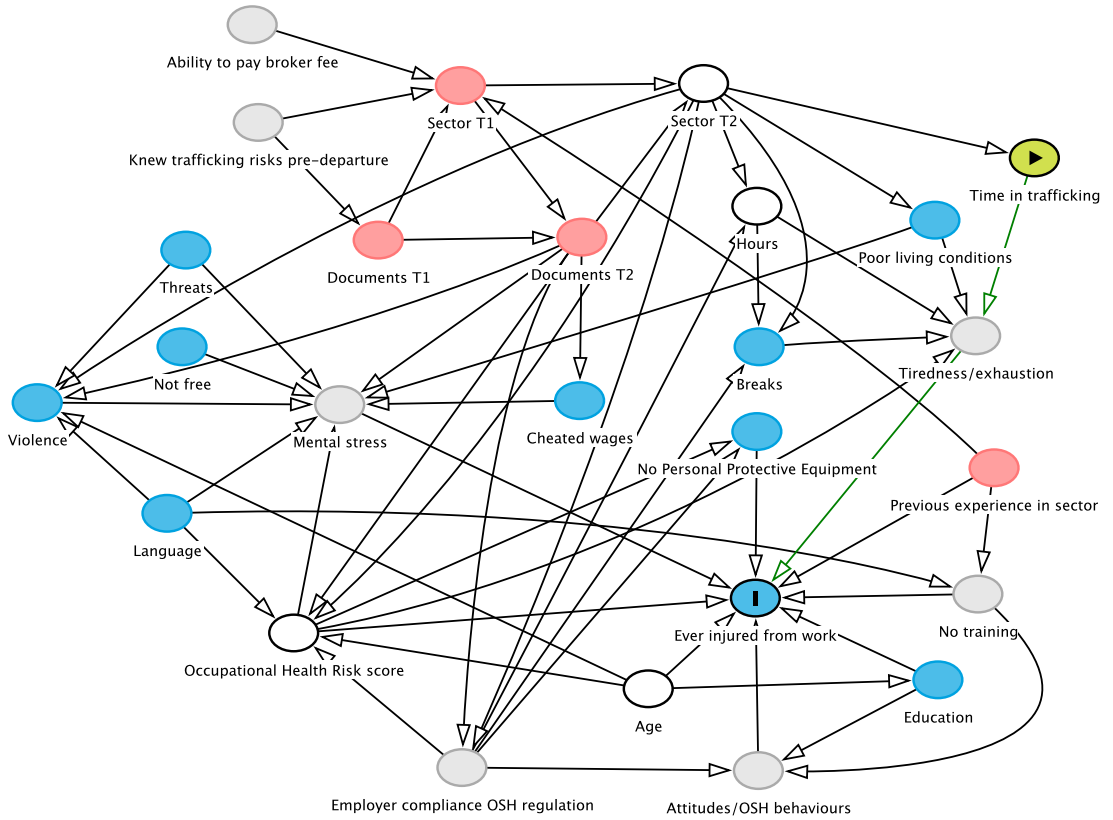
Figure 11.12: DAG for estimating effect of living conditions on injuries (Model J)
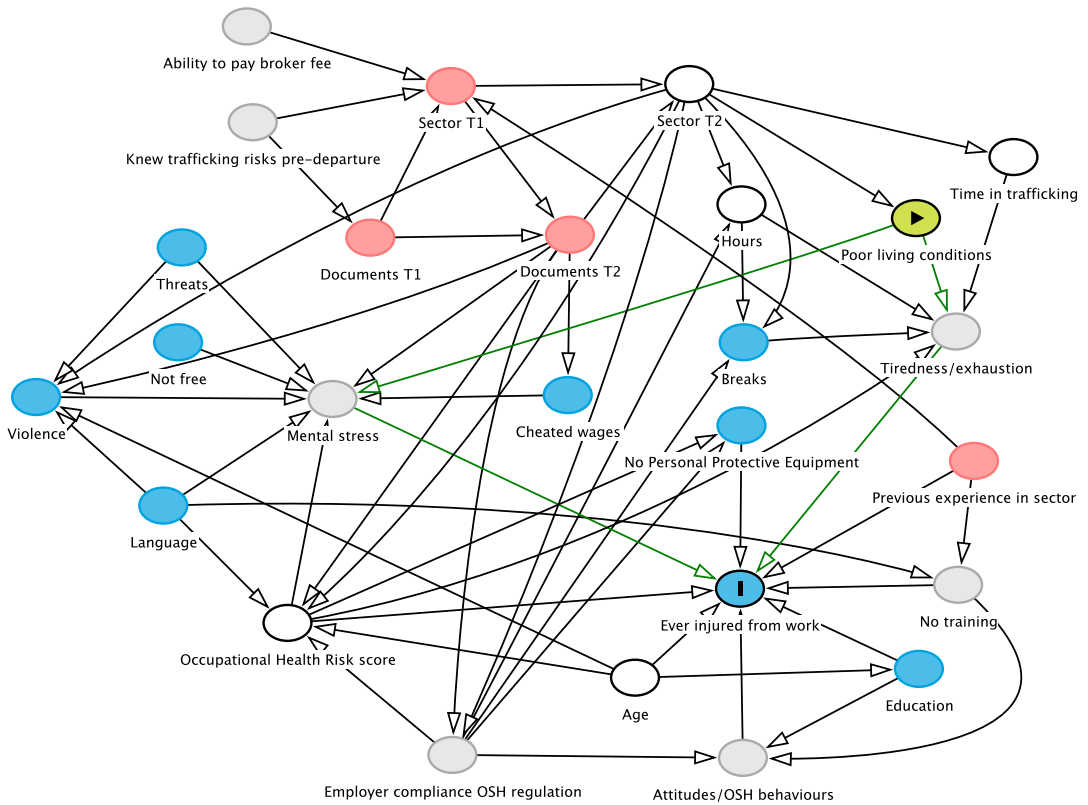
Figure 11.13: DAG for estimating effect of previous experience in sector on injuries (Model K)

Figure 11.14: DAG for estimating effect of threats on violence (Model L)

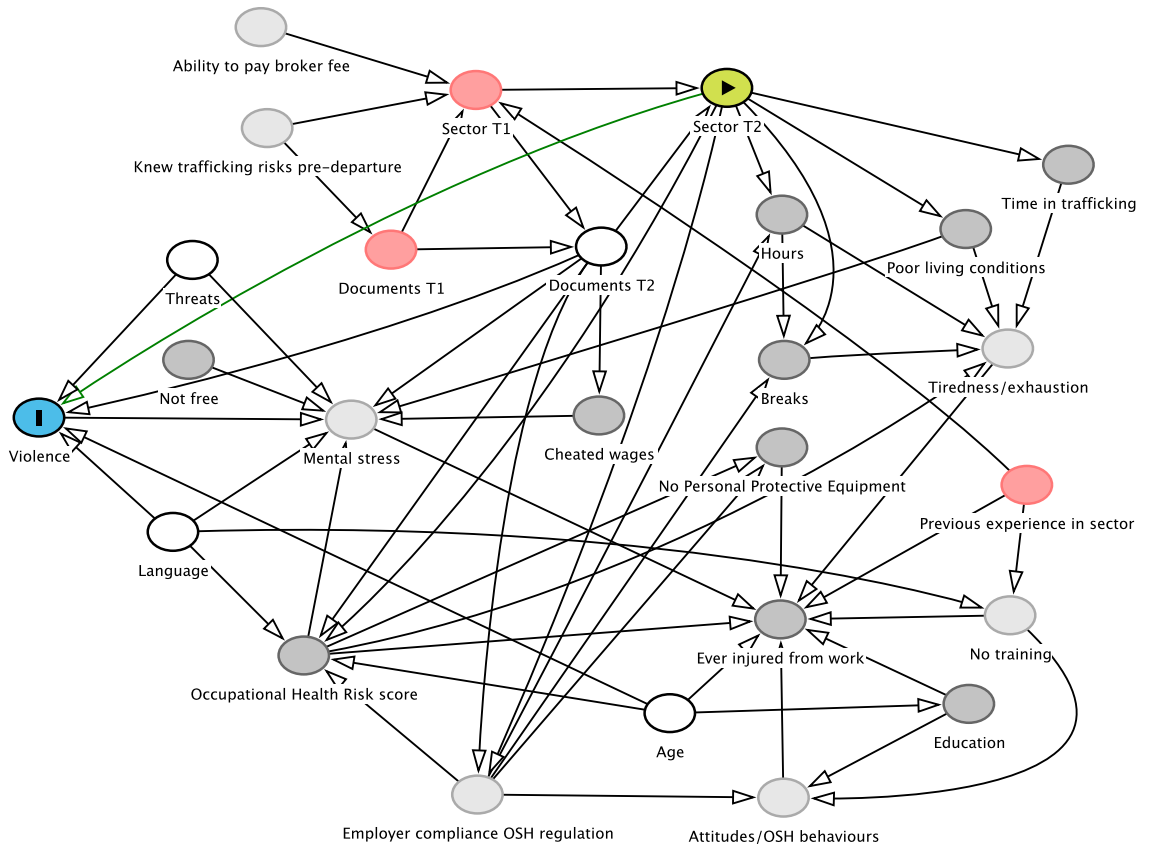Figure 11.15: DAG for estimating effect of sector on violence (Model L)

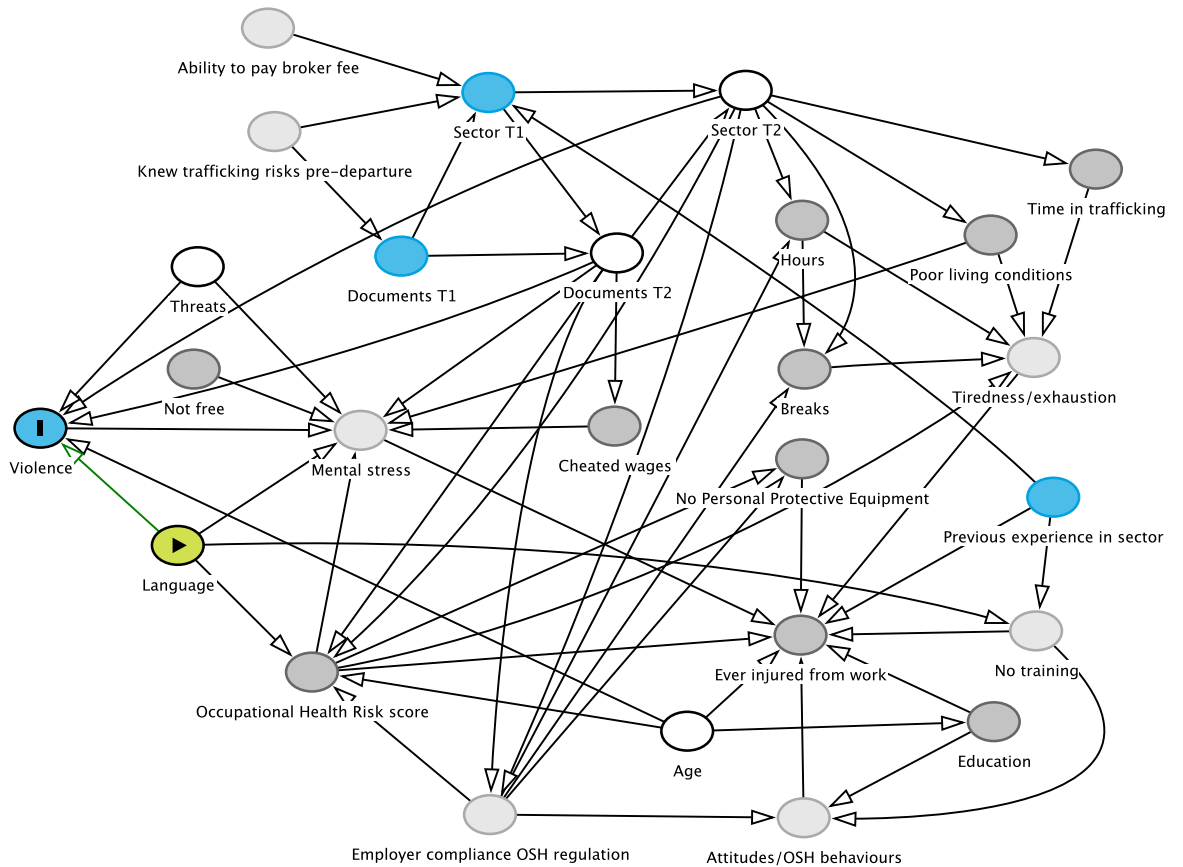Figure 11.16: DAG for estimating effect of fluency on violence (Model L)

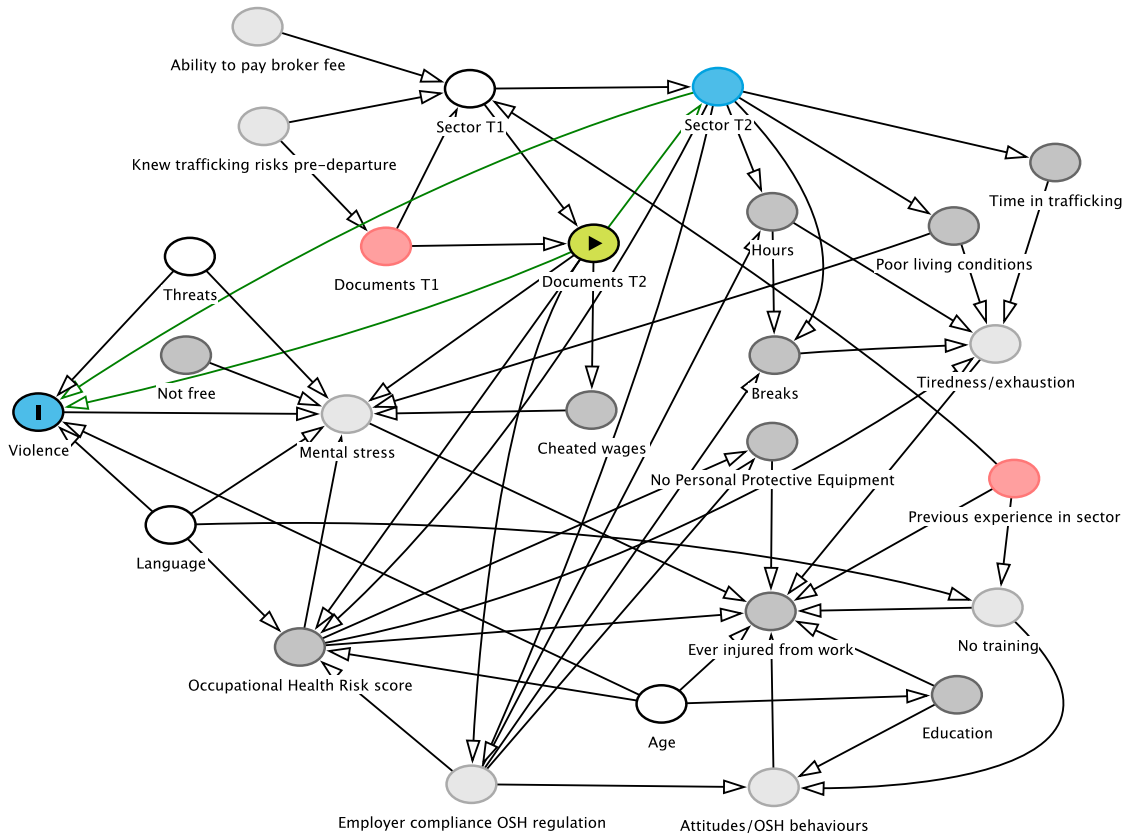Figure 11.17: DAG for estimating effect of documents on violence (Model L)

Figure 11.18: DAG for estimating effect of age on violence (Model L)