

PSI in LMIC

**Title: Psychosocial interventions for addiction-affected families in Low and Middle Income Countries: a systematic review**

Running Title: PSI in LMIC

**List of authors:** Anil Rane<sup>a</sup>, Sydney Church<sup>b,c</sup>, UrvitaBhatia<sup>c</sup>, Jim Orford<sup>d</sup>, Richard Velleman<sup>c,e</sup>, Abhijit Nadkarni<sup>c,f</sup>

- a) Institute of Psychiatry and Human Behaviour, Goa, India
- b) School of Oriental and African Studies, UK
- c) Addictions Research Group, Sangath, Goa, India
- d) School of Psychology, University of Birmingham, UK
- e) University of Bath, Bath, UK
- f) South London & Maudsley NHS Foundation Trust, London, UK

Total Number of pages: 43 (including 11 of Supplementary on-line table)

Word Count: 3745

Tables: 03

Figures: 01

Appendix: Supplementary on-line table (01)

Corresponding Author: Dr Anil Rane, Institute of Psychiatry and Human Behaviour, Bambolim, Goa, India. 403002. Email: dranilrane@gmail.com Phone: 0091-98230993093

**Published on-line: *Addictive Behaviors*, 74 (2017) 1–8.**  
<http://dx.doi.org/10.1016/j.addbeh.2017.05.015>

## **Psychosocial interventions for addiction-affected families in Low and Middle Income Countries: a systematic review**

### **Abstract:**

**Aim:** To review the literature on psychosocial interventions for addiction affected family members in Low and Middle Income Countries (LMIC).

**Methods:** A systematic review with a detailed search strategy focussing on psychosocial interventions directed towards people affected by addiction without any gender, year or language specifications was conducted. Identified titles and abstracts were screened; where needed full papers retrieved, and then independently reviewed. Data was extracted based on the aims of the study, to describe the modalities, acceptability, feasibility and effectiveness of the interventions.

**Results:** Four papers met our selection criteria. They were published between 2003 and 2014; the total sample size was 137 participants, and two studies were from Mexico and one each from Vietnam and Malaysia. The predominantly female participants comprised of parents, spouses and siblings. The common components of all the interventions included providing information regarding addiction, teaching coping skills, and providing support. Though preliminary these small studies suggests a positive effect on affected family members (AFM). There was lowering of psychological and physical distress, along with a better understanding of addictive behaviour. The interventions led to better coping; with improvements in self-esteem and assertive behaviour. The interventions, mostly delivered in group settings, were largely acceptable.

**Conclusions:** The limited evidence does suggest positive benefits to AFMs. The scope of research needs to be extended to other addictions, and family members other than spouse and female relatives. Indigenous and locally adapted interventions are needed to address this issue keeping in mind the limited resources of LMIC. This is a field indeed in its infancy and this under recognised and under-served group needs urgent attention of researchers and policy makers.

**Keywords:** Psycho-social interventions, Addictions, Affected family members, LMIC, Systematic reviews, Alcohol misuse, Drug misuse, Families

## **1. Background:**

Well over 100 million family members worldwide are affected by the addictive behaviour of a relative (Orford et al., 2013), which has a highly stressful impact on them (Powers, 1986; World Health Organization, 1993; Velleman et al., 1993; Caetano et al., 2001; Barnard, 2006; Velleman & Templeton, 2016). Affected family members (AFMs) experience high levels of physical and mental health symptoms, with knock-on effects on their finances, work performance, parenting skills, etc. (Velleman et al., 1993; Svenson et al., 1995; Velleman, 2000; Ray et al., 2007; Orford et al., 2010a; Ahmedani et al., 2013; Mathews & Volberg, 2013). Such adverse impact appears to be universal in nature and is seen across cultures worldwide (Orford et al., 1998; Orford et al., 2000; Orford, 2005; Kishor et al., 2013).

There has been a steady increase in the per capita consumption of alcohol in most parts of the world and it is projected to rise in the coming years. There has been an increase in alcohol availability, and an associated increase in alcohol consumption and alcohol-related disorders (Obot, 2006; Prasad, 2009) in Low and Middle Income Countries (LMIC); led by countries such as India and China, possibly due to rising incomes and aggressive marketing by the alcohol industry (World Health Organization, 2014). Substance use disorders contribute to a significant proportion of the global burden of disease and this will continue to increase as disease patterns continue to shift from communicable to non-communicable diseases, especially in LMIC (Van Ginneken et al., 2013; Whiteford et al., 2015).

As the number of people using alcohol and illicit substances increases, the number of AFMs will also increase. The number of people negatively affected by each person with an addictive problem vary depending on the assumptions made to generate these

## PSI in LMIC

estimates (Copello et al., 2010a) but they range from two (Velleman & Templeton, 2003) to 10 (Ladouceur et al., 1994).

Although AFMs exist in large numbers across the world, for many years very little support was offered to them: they were (and sometimes, still are) considered to be part of the problem (co-dependency). More recently, psychosocial interventions for AFMs have been developed (Copello et al., 2005), and there is now evidence that providing support to AFMs leads to significant benefits for them (improved coping and reduced symptoms) and for society (e.g. reduced health costs), and may also improve outcomes for the relative with the addiction (UKATT Research Team, 2005a,b; Mortimer & Segal, 2006; Meads et al., 2007; Copello et al., 2009; Copello et al., 2005; Orford, 2005; Raistrick, 2006).

There are a number of treatment approaches which involve family members in addiction treatment, and these are broadly categorised by Copello et al (2005) into those that: empower family members to bring misusers into treatment (Barber & Crisp, 1995; Meyers et al., 1998); involve families in the subsequent treatment of the misusers (Thomas & Ager, 1993; Epstein & McCrady, 2002; Copello et al., 2002); and are directed at family members as needing help in their own right (Copello et al., 2000). However, most of these interventions are from the developed world with scarce literature on interventions for or involving families in LMIC. Families in LMIC play an important role in social organisation, and cross-cultural variations are important considerations in explanatory models of how addictions affect family members and how they cope. Hence, there is a need to systematically evaluate the existing literature on interventions for AFMs in LMIC; to look for gaps in knowledge that would inform

the development of new culturally appropriate interventions, or lead to contextual adaptations of existing interventions.

The aim of this review is to synthesise the evidence for psychosocial interventions directed at AFMs in LMIC and specific objectives are to:

1. Assess the size and scope of available research literature on psychosocial interventions to directly help AFMs in LMIC,
2. Describe these psychosocial interventions, and
3. Identify the research evidence for their effectiveness, acceptability, and feasibility.

## **2. Methods**

### **2.1 Search strategy:**

A systematic search for papers (inclusion criteria in Table 1) was made in the Cochrane Library, Medline, EMBASE (ExcerptaMedicadataBASE), PsycINFO, Global Health and CINAHL (Cumulative Index to Nursing and Allied Health Literature). Bibliography of selected studies and relevant reviews were inspected for additional potential studies. Forward search was conducted on Web of Science to identify studies which might have been missed in the original search, and to identify studies which cite any of the included studies. We used three main search concepts under which the search terms were grouped: addictions (e.g. substance use disorders), AFM (e.g. significant other) and psychosocial intervention (e.g. counselling). We extended the scope of addictions to include sex, gambling, and technology addiction. AFMs included immediate family, as well as other relatives and friends. Search terms for psychosocial interventions were kept broad without emphasis on any particular type of therapy to make the search as comprehensive as possible. A comprehensive list of

synonyms and their variations were used for the search terms and search strategies were adapted depending upon the requirements of the individual databases (Supplementary On-line Table 1). A dual strategy of Medical Subject Headings (MeSH) and 'free-text' terms were used for maximum coverage. All addition terms (combined with an 'OR') were then combined with AFM and psychosocial intervention (each combined with 'OR'). The search was restricted to LMIC; the term LMIC and its synonyms as well as a list of all LMIC countries as specified by the World Bank (<http://data.worldbank.org/about/country-and-lending-groups>).

## **2.2 Selection of studies and data extraction:**

SC conducted the search and two reviewers (AN, SC) independently inspected the identified abstracts. If the title, abstract, and keywords did not offer enough information, the full paper was retrieved to ascertain eligibility. The two reviewers discussed their selections and in the case of any disagreement regarding inclusion, RV was consulted. One eligible foreign language paper was translated into English. A data extraction form was designed to extract data relevant to the study aims. SC performed data collection under supervision from AN. For qualitative studies, the themes signifying acceptability, feasibility and perceived effectiveness of interventions were documented.

## **2.3 Analyses:**

A qualitative synthesis of the studies was carried out but meta-analysis was not possible due to heterogeneity of outcome measures.

## **3. Results:**

4970 papers were identified, of which 3891 papers were screened after eliminating duplicates. 3879 identified papers did not meet the eligibility criteria (mostly for not being from LMIC); full texts of 12 papers were further screened (Figure 1). Eight papers were rejected as they did not describe the delivery of any specific intervention or the intervention was targeted at the relative with the addiction and not the AFM. Four papers met eligibility for our review (Table 3) (Tiburcio & Natera, 2003; de los Angeles Cruz-Almanza et al., 2006; Baharudin et al., 2014; Li et al., 2014).

### **3.1 Study sample and setting:**

Identified studies were one each from Malaysia (Baharudin et al., 2014), and Vietnam (Li et al., 2014); and two from Mexico (Tiburcio & Natera, 2003; de los Angeles Cruz-Almanza et al., 2006). One was a cross-sectional study (Baharudin et al., 2014), one a pilot cluster randomised control trial (RCT) (Li et al., 2014), and two were treatment cohorts (Tiburcio & Natera, 2003; de los Angeles Cruz-Almanza et al., 2006). In the cluster RCT, two centres received the intervention and the other two received standard care. Study samples ranged from 8 to 83 adult participants (Total N=137) comprising parents, siblings, and spouses; and were predominantly female. The relatives of the AFMs were addicted to a variety of substances including alcohol, cocaine, and injectable drugs (not specified). All studies were based in community centres providing de-addiction services.

### **3.2 Intervention modalities:**

The interventions were family psycho-educational (FPE) (Baharudin et al., 2014), 'Intervention V' (Li et al., 2014), Rational Emotive Behaviour Therapy (REBT) based

coping enhancement (de los Angeles Cruz-Almanza et al., 2006), and 5-Step Method<sup>1</sup> (5-Step) (Tiburcio & Natera, 2003). Interventions were delivered in group settings in three studies, with 8-10 members in each group. In the 5-Step study the intervention was delivered individually and, where requested and where the AFMs were parents, to both parents. Delivery of the intervention was conducted by counsellors, volunteers and former drug users in the FPE intervention, health educators or local health workers in Intervention V, or by trained therapists in the REBT intervention; details of the interventionists were not stated in the 5-Step study. The interventions were delivered weekly or monthly and lasted from 4-12 months. The 5-Step intervention was conducted over 4-7 sessions, with a follow up after three months.

### **3.3 Intervention content:**

In the FPE model, the intervention focussed on family psycho-education, support groups and family retreats, designed to elicit resilience and healing in family members. Intervention V focussed on family support, healthy family routines and care-giving with an aim to overcome family challenges, manage negative emotions, learn coping skills, develop realistic goals and support positive behaviour change. In the REBT intervention, a trained therapist helped spouses to correct cognitive bias and defective information, establish emotional regulation strategies, to acquire assertive interpersonal skills and promote self-esteem. Deep diaphragmatic breathing, progressive muscle relaxation, modelling and role play were employed. The 5-Step

---

<sup>1</sup>The 5-Step Method is based on the Stress-Strain-Coping-Support model (Orford et al, 2010b). Each of the components of the model (e.g. stresses and strains; coping; social support) is incorporated within a step-wise model (with 5 steps) to be used when supporting family members. Each step can be delivered over one meeting or combined, if circumstances require, into a smaller number of sessions, including in some instances, a single interaction. The five steps are: Step 1: Listen, reassure and explore concerns; Step 2: Provide relevant, specific and targeted information; Step 3: Explore coping responses; Step 4: Discuss social support; Step 5: Discuss and explore further needs. The 5-Step Method, which is completely unrelated to the 12-Step Fellowship system of self-help, has been tested in various settings (Copello et al, 2010b; Velleman et al, 2011).

Method involved listening and exploring the family's experiences, providing relevant information, identifying coping strategies, exploring support available, and referring to specialised sources of help, if necessary.

### **3.4 Assessments:**

The FPE model was assessed through a qualitative study (interviews and observations). The other studies used structured scales to compare change in participants' symptoms before and after interventions, or across control groups (Zung Self Rating Scale, Symptom Rating Test); family functioning (Family Functioning Scale); coping behaviour (Brief COPE Scale, Coping Questionnaire), assertiveness (Assertion Inventory), self-esteem (Self-esteem Inventory) and drug use behaviour (Addiction Severity Index).

### **3.5 Outcomes:**

**3.5.1 Physical and Psychological symptoms:** Two studies measured changes in symptoms. Tiburcio & Natera(2003) reported significantly reduced physical symptom, post-intervention( $Z=2.460$ ,  $p\leq 0.05$ ), and fewer reports of psychological symptoms post the 5-Step intervention. Intervention V reduced depressive scores and the effect was significant at 6 months, when compared to the non-intervention group (Li et al., 2014).

**3.5.2 Coping:** All four studies reported improved coping which, where measured, persisted over subsequent months. Significant improvements in coping (estimated difference in improvement= $4.923$ ,  $p= 0.03$ ) were reported in the Intervention V group at 3 months compared to the non-intervention group(Li et al., 2014). The REBT intervention did not result in any immediate improvement in coping but generated

significant improvement at 3-6 months(pre-test mean 52.2, post-test mean 37.2,  $Z = -2.67$ ,  $p=0.007$ ) and 18 months(pre-test mean 53.6, post-test mean 37.2,  $Z = -2.64$ ,  $p=0.008$ )(de los Angeles Cruz-Almanza et al., 2006). In the 5-Step intervention, coping was reported to have changed to a more “engaged and supporting style compared to the engaging but insisting and arguing style” after the intervention; and the proportion of coping responses reported by all of the participants changed over time so that there was more withdrawal coping and less tolerant or engaged coping, which was identified as healthy (Tiburcio & Natera, 2003). Participants in the FPE model reported to have discovered new ways of looking at their situation and themselves and ways to deal with their problems (Baharudin et al., 2014).

**3.5.3 Awareness of needs, self esteem and assertiveness:** After the FPE intervention families “seemed to know what they needed and wanted and what would be helpful to them” (Baharudin et al., 2014). The REBT intervention reported improved self esteem and assertiveness which persisted several months after the intervention, which was not seen in those who did not receive the intervention (de los Angeles Cruz-Almanza et al., 2006).

**3.5.4 Impact:** Participants of FPE intervention gained new insight, had better understanding of addiction and continued using the strategies learnt even after the program (Baharudin et al., 2014). Participants treated with REBT improved other aspects of their lives- such as getting a job, leaving their partner, or getting their partner to seek help. Untreated participants reported that leaving the programme led to crises and none of them abandoned their abusive partners (de los Angeles Cruz-

Almanza et al., 2006). Some in the 5 Step intervention decided to choose further intense help for their other family or individual problems (Tiburcio & Natera, 2003). Significant improvement in family functioning ( $p < 0.0001$ ) was also reported on account of intervention V (Li et al., 2014). There was no impact on the user's behaviour (Li et al., 2014); or if there was any change, it was marginal (Tiburcio & Natera, 2003). There were no reports of worsening of AFMs distress or relatives drinking behaviour as a result of the FPE, REBT or Intervention V; however two families receiving 5-Step intervention did not experience any benefits.

**3.5.5 Acceptability:** Participants expressed satisfaction with the 5 Step intervention; receiving information regarding the addiction behaviour was identified as helpful and they perceived changes in their lives as well as in their relationship with the drug user (Tiburcio & Natera, 2003). Therapeutic alliance between the family and the counsellor was identified as essential in the FPE model. Participants wanted the intervention in their local vernacular and wanted more one to one sessions (Baharudin et al., 2014).

#### **4. Discussion**

This review aimed to identify psychosocial interventions for AFMs in LMIC; and one of our main findings is that the evidence base is extremely sparse. Despite our broad inclusion criteria, only four studies from all LMIC across the world were identified. These four studies were either exploratory or pilot trials with small sample sizes. There is a need for more work in this field to generate robust evidence for effective interventions, keeping in mind the cultural context and the resource limitations in LMIC.

## PSI in LMIC

The studies reviewed here had predominantly female participants, comparable to other similar studies from High Income Countries (HIC)(Templeton et al., 2010). The predominance of females in the AFM groups is an important consideration for future interventions since the brunt of negative behaviours related to a relative's addiction often falls on the female members, especially in a patriarchal social organisation common in most LMIC (Satyanarayana et al., 2015).

The preliminary evidence from these small studies suggests a positive effect on AFMs. Although the studies measured varied elements due to which a quantitative synthesis was not feasible, a qualitative synthesis of the available findings suggests that there was lowering of psychological and physical distress, along with a better understanding of the user's addictive behaviour and better coping; with associated improvements in self-esteem and assertive behaviour. The interventions, mostly delivered in group settings, were largely acceptable to all the participants.

Numerous studies have examined the differential effects of various psychotherapies, both within the alcohol field (eg Project MATCH, UKATT) (Cutler& Fishbain, 2005; UKATT Research Team, 2005) and elsewhere (Barth et al, 2013), and shown that, as long as the intervention is delivered according to its guidelines and there is a positive helping relationship between the therapist and the client, differences are minimal, and all the therapies obtain better results than waiting-list controls or usual care. These studies generally show that effect sizes are moderate in strength (eg Barth et al showed that, of the seven psychotherapies tested, "the differences were moderate to large, meaning that the average person in the group that received therapy was better

off than about half of the patients in the control group”, and that when comparing the therapies with each other, small or no differences were shown) (Barth et al, 2013).

A review of psychosocial interventions published before 2010 for family members affected by a relative’s alcohol problems was undertaken by Templeton et al (2010). Although there were no restrictions on language or country (they reviewed forty-three publications stemming from 34 studies), they mainly found studies from HICs (although they did utilise a range of other criteria such as the extent of detail in the description of what the intervention consisted of, which meant that the two papers described in this present review which concerned alcohol-affected families would have been excluded). Templeton et al (2010) suggest that ‘Interventions for AFMs’ in itself is a field in its infancy. The work and advancements that have taken place in this field have occurred primarily in the developed world; and over the decades the focus has shifted from relying on family member involvement (in the rare situations where it occurred) solely as part of the treatment for the substance user to a greater consideration of the needs of the family in their own right. They describe interventions where the user is not involved as mostly unilateral or group oriented, with two approaches dominating this field: the Australian ‘Pressure to change’ model<sup>2</sup> and the UK-based ‘5-Step Method intervention’(the method used in the Tiburcio & Natera (2003)paper reviewed in this present review. Other interventions were either individually focussed to improve user’s motivation and strengthen support networks or group based to provide support and information. Interventions where the user is involved were dominated by behaviour couples therapy, mostly from the USA, and

---

<sup>2</sup>The Pressures to Change model developed by Barber (Barber and Crisp 1995; Barber and Gilbertson 1996, 1998))begins with assessment and feedback and then focuses on teaching partners to encourage incompatible activities, avoid ‘enabling’, and negotiate contracts with the drinker to abstain or reduce drinking. The partner then enlists other individuals’ cooperation in applying these skills.

## PSI in LMIC

some family focussed approaches. Although this review uncovered a small number of further studies in this area, it did not identify any significant work being undertaken within LMIC. This further underscores the need to bring to attention the needs of AFMs in LMIC.

Two of the interventions in our review were based on earlier formative work done with AFMs within the same communities as the intervention. The other two were based on a theoretical approach (REBT) or existing practises (FPE). Three out of four interventions were whole-family oriented and group-based. Considering the collectivist nature of LMIC societies where families are more involved in the care of their members (Chadda & Deb, 2013), one could speculate that such an approach would fare better. However it is not possible from the limited available evidence to draw such a conclusion. The common components of all the interventions included providing information regarding addictive behaviour, teaching assertive coping skills, and providing support. Despite the heterogeneity in delivery, all approaches seemed to have modest benefits in terms of lowering psychological distress and improving coping skills. Traditionally, managing addictive behaviour has focussed on the user; but there is some evidence (from this and the Templeton et al (2010) review) that addiction, which affects the entire family, might more effectively be dealt with holistically i.e. instead of focusing only on how family members can engage and support the user through treatment to adopting a wider focus which considers the needs of family members in their own right.

Our review explores an under researched area using a protocol driven process. Though we included a broad range of addictive behaviour, our search identified

interventions only in alcohol and drug users. There are several limitations to the studies included in the review. Small sample sizes, exploratory or pilot study designs and short follow-up intervals can generate only very preliminary evidence on the effectiveness of the interventions. Methodological limitations and lack of clarity on numerous areas such as the development of the intervention modules, training of the delivery agents, and outcome measures, further limit the conclusions that can be drawn from this review. Evidence shows that studies with significant, positive, results have a better chance of being published, are published earlier, are published in journals with higher impact factors, and are easier to find. Furthermore, research from LMIC might be poorly represented in high impact journals published in HIC. Hence, conclusions drawn exclusively based on published studies could be misleading. We have not reviewed grey literature and may have missed relevant but inaccessible papers. However we believe that the use of multiple databases, double screening and the robust search strategy followed in our review has allowed us to identify all eligible papers. While drawing attention to the extremely limited research undertaken in LMIC related to AFMs of alcohol and drug misusers, this review also identifies a major gap in knowledge regarding interventions for AFM in other addictive behaviours such as gambling and technological addictions which are on the rise.

## **5. Conclusions**

Despite the increasing addiction burden in LMIC (Prasad, 2009; Fereidouni et al., 2015), very little attention has been paid to AFMs which is evident from the scarce literature. There are several implications of our findings for research and practise. First, though preliminary and very sparse, the evidence does lend support to the notion that interventions aimed at AFMs do have benefits to the family and can lead to better

overall outcomes. Second, this under recognised and underserved group needs urgent attention of researchers and policy makers. Third, it would be ideal to develop indigenous intervention models based on local experiences and expectations but this would take time and significant collective efforts, especially in LMIC, where there are multiple pressing health priorities and limited resources. In such situations, it would seem prudent to culturally adapt interventions and further test them through well-designed RCTs to demonstrate effectiveness in LMIC contexts. Considering the scale of the problem and the scarce resources in LMICs, research should focus on group based approaches and those that could be delivered by lay health workers - innovations which are being currently tested in such settings (Van Ginneken et al., 2013). Fourth, the scope of such research should be broadened beyond alcohol and drug use to cover other addictions, and (because males are under-represented in existing research) to family members other than spouses and female relatives. In developing countries where joint family structures are common and there is less reliance on the state to provide welfare, robust interventions that target people who typically take care of others are especially valuable. Hence, the overall conclusion is that interventions for AFMs is a field in its infancy and there is more urgent work which is needed.

.

**Declaration of Interest:** This review is part of a project supported by a grant from Grand Challenges Canada.

**Conflicts of Interest:** None

## References

Ahmedani BK, Kubiak SP, Kessler RC, de Graaf R, Alonso J, Bruffaerts R, Zarkov Z, Viana MC, Huang Y & Hu C (2013) Embarrassment when illness strikes a close relative: A World Mental Health Survey Consortium multi-site study. *Psychological Medicine* 43: 2191-2202.

Baharudin DF, Mohd Hussin AH, Sumari M, Mohamed S, Zakaria MZ & Sawai RP (2014) Family intervention for the treatment and rehabilitation of drug addiction: an exploratory study. *Journal of Substance Use* 19: 301-306.

Barber J & Crisp B (1995) The 'pressures to change' approach to working with the partners of heavy drinkers. *Addiction* 90: 269-276.

Barber J and Gilbertson R (1996) An experimental study of a brief unilateral intervention for the partners of heavy drinkers. *Research on Social Work Practice* 6:325–336.

Barber J and Gilbertson R (1998) Evaluation of a self-help manual for the female partners of heavy drinkers. *Research on Social Work Practice* 8(2):141–151.

Barnard M (2006) *Drug Addiction and Families*. Jessica Kingsley Publishers.

Barth J, Munder T, Gerger H, Nuesch E, Trelle S, et al. (2013) Comparative Efficacy of Seven Psychotherapeutic Interventions for Patients with Depression: A Network Meta-Analysis. *PLoS Med* 10: e1001454.

Caetano R, Nelson S & Cunradi C (2001) Intimate partner violence, dependence symptoms and social consequences from drinking among White, Black and Hispanic couples in the United States. *The American Journal on Addictions* 10: s60-s69.

Chadda RK & Deb KS (2013) Indian family systems, collectivistic society and psychotherapy. *Indian Journal of Psychiatry* 55: S299.

Copello A, Templeton L & Powell J (2009) Adult family members and carers of dependent drug users: prevalence, social cost, resource savings and treatment responses. *London: UK Drug Policy Commission* 50: 45-52.

Copello A, Templeton L & Powell J (2010a) The impact of addiction on the family: Estimates of prevalence and costs. *Drugs: Education, Prevention and Policy* 17(S1): 63-74.

Copello A, Templeton L, Orford J & Velleman R (2010b) The 5-Step Method: evidence of gains for affected family members. *Drugs: Education, Prevention and Policy*, 17 (S1): 100–112.

Copello A, Templeton L, Krishnan M, Orford J & Velleman R (2000) A treatment package to improve primary care services for relatives of people with alcohol and drug problems. *Addiction Research* 8: 471-484.

Copello A, Orford J, Hodgson R, Tober G, Barrett C & Team UR (2002) Social behaviour and network therapy: basic principles and early experiences. *Addictive Behaviors* 27: 345-366.

Copello AG, Velleman RD & Templeton LJ (2005) Family interventions in the treatment of alcohol and drug problems. *Drug and Alcohol Review* 24: 369-385.

Cutler R & Fishbain D (2005) Are alcoholism treatments effective? The Project MATCH data. *BMC Public Health* 5:75.

Delos Angeles Cruz-Almanza M, Gaona-Márquez L & Sánchez-Sosa JJ (2006) Empowering women abused by their problem drinker spouses: Effects of a cognitive-behavioral intervention. *Salud Mental* 29: 25-31.

Epstein E, McCrady B, Epstein EE & McCrady BS (2002) Couple therapy in the treatment of alcohol problems. In: Gurman A, Jacobson N, (Eds). *Clinical Handbook of Marital Therapy*, 3<sup>rd</sup>edn (pp 597-628), New York: Guilford Press.

Fereidouni Z, Joolae S, Fatemi NS, Mirlashari J, Meshkibaf MH & Orford J (2015) What is it like to be the wife of an addicted man in Iran? A qualitative study. *Addiction Research & Theory* 23: 99-107.

Kishor M, Pandit LV & Raguram R (2013) Psychiatric morbidity and marital satisfaction among spouses of men with alcohol dependence. *Indian Journal of Psychiatry* 55: 360.

Ladouceur R, Boisvert J-M, Pépin M, Loranger M & Sylvain C (1994) Social cost of pathological gambling. *Journal of Gambling Studies* 10: 399-409.

Li L, Hien NT, Lin C, Tuan NA, Tuan LA, Farmer SC & Detels R (2014) An intervention to improve mental health and family well-being of injecting drug users and family members in Vietnam. *Psychology of Addictive Behaviors* 28: 607.

Mathews M & Volberg R (2013) Impact of problem gambling on financial, emotional and social well-being of Singaporean families. *International Gambling Studies* 13: 127-140.

Meads C, Ting S, Dretzke J & Bayliss S (2007) A systematic review of the clinical and cost-effectiveness of psychological therapy involving family and friends in alcohol misuse or dependence. *Health Technol Assess Rep* 65: 97.

Meyers RJ, Miller WR, Hill DE & Tonigan JS (1998) Community reinforcement and family training (CRAFT): Engaging unmotivated drug users in treatment. *Journal of Substance Abuse* 10: 291-308.

Mortimer D & Segal L (2006) Economic evaluation of interventions for problem drinking and alcohol dependence: do within-family external effects make a difference? *Alcohol and Alcoholism* 41: 92-98.

Obot IS (2006) Alcohol use and related problems in sub-Saharan Africa. *African Journal of Drug and Alcohol Studies* 5: 17-26.

Orford J, Copello A, Velleman R & Templeton L (2010b) Family members affected by a close relative's addiction: the stress-strain-coping-support model. *Drugs: Education, Prevention and Policy*, 17 (S1):36–43.

Orford J, Natera G, Copello A, Atkinson C, Tiburcio M, Velleman R, Crundall I, Mora J, Templeton L & Walley G(2005) *Coping with alcohol and drug problems: The experiences of family members in three contrasting cultures*. Taylor & Francis, London.

Orford J, Natera G, Davies J, Nava A, Mora J, Rigby K, Bradbury C, Copello A & Velleman R (1998) Stresses and strains for family members living with drinking or drug problems in England and Mexico. *Salud Mental* 21: 1-13.

Orford J, Templeton L, Copello A, Velleman R & Bradbury C (2000) *Worrying for drinkers in the family: an interview study with Aboriginal Australians in urban areas and remote communities in the Northern Territory*. Final Report to the Living with Alcohol Program, Territory Health Services, Northern Territory, Australia.

Orford J, Velleman R, Copello A, Templeton L & Ibanga A (2010a) The experiences of affected family members: A summary of two decades of qualitative research. *Drugs: Education, Prevention and Policy* 17 (S1): 44-62.

Orford J, Velleman R, Natera G, Templeton L & Copello A (2013) Addiction in the family is a major but neglected contributor to the global burden of adult ill-health. *Social Science & Medicine* 78: 70-77.

Powers R (1986) *Aggression and violence in the family*. Blackwell, Oxford.

Prasad R (2009) Alcohol use on the rise in India. *The Lancet* 373: 17-18.

Raistrick D, Heather N & Godfrey C (2006) *Review of the effectiveness of treatment for alcohol problems*. London: National Treatment Agency for Substance Misuse.

Ray GT, Mertens JR & Weisner C (2007) The excess medical cost and health problems of family members of persons diagnosed with alcohol or drug problems. *Medical Care* 45: 116-122.

Satyanarayana VA, Hebbani S, Hegde S, Krishnan S & Srinivasan K (2015) Two sides of a coin: Perpetrators and survivors perspectives on the triad of alcohol, intimate partner violence and mental health in South India. *Asian J Psychiatr* 15:38-43

Svenson L, Forster D, Woodhead S & Platt G (1995) Individuals with a chemical-dependent family member. Does their health care use increase? *Canadian Family Physician* 41: 1488.

Templeton L, Velleman R & Russell C (2010) Psychological interventions with families of alcohol misusers: A systematic review. *Addiction Research & Theory* 18: 616-648.

Thomas E & Ager R (1993) Unilateral family therapy with spouses of uncooperative alcohol abusers. In: O'Farrell T, ed. *Treating alcohol problems: marital and family interventions*. New York: Guilford Press:3-33.

Tiburcio M & Natera G (2003) Evaluación de un modelo de intervención breve para familiares de usuarios de alcohol y drogas. Un estudio piloto. *Salud Mental* 26: 33.

UKATT Research Team (2005a) Effectiveness of treatment for alcohol problems: findings of the randomised UK Alcohol Treatment Trial (UKATT). *British Medical Journal* 331: 541-544.

UKATT Research Team (2005b) Cost effectiveness of treatment for alcohol problems: findings of the randomised UK Alcohol Treatment Trial (UKATT). *British Medical Journal* 331: 544.

Van Ginneken N, Tharyan P, Lewin S, Rao GN, Meera S, Pian J, Chandrashekar S & Patel V (2013) Non - specialist health worker interventions for the care of mental,

neurological and substance - abuse disorders in low - and middle - income countries. *The Cochrane Library*.

Velleman R (2000) Alcohol and the family. In: Cooper D, Ed (pp 63-74). *Alcohol use: The Handbook*. Abingdon: Radcliffe Medical Press.

Velleman R, Orford J, Templeton L, Copello A, Patel A, Moore L, Macleod J & Godfrey C (2011) 12-month follow-up after brief interventions in primary care for family members affected by the substance misuse problem of a close relative. *Addiction Research and Theory*, 19(4), 362-374.

Velleman R & Templeton L (2003) Alcohol, drugs and the family: results from a long-running research programme within the UK. *European Addiction Research* 9: 103-112.

Velleman R & Templeton L (2016) Impact of parents' substance misuse on children: an update. *BJPsych Advances* 22: 108-117.

Velleman R, Bennett G, Miller T, Orford J, Rigby K & Tod A (1993) The families of problem drug users: a study of 50 close relatives. *Addiction* 88: 1281-1289.

World Health Organization (1993) *Psychological impact of substance use on families: a literature review*. World Health Organization, Geneva.

World Health Organization (2014) Global status report on alcohol and health. World Health Organization. Retrieved from:  
[http://apps.who.int/iris/bitstream/10665/112736/1/9789240692763\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/112736/1/9789240692763_eng.pdf)

Whiteford H, Ferrari A, Degenhardt L, Feigin V & Vos T (2015) The global burden of mental, neurological and substance use disorders: an analysis from the global burden of disease study 2010. *PLoSOne*; <https://doi.org/10.1371/journal.pone.0116820>

**Table 1: Inclusion criteria**

<b>Year, Gender, Language</b>	Any
<b>Age</b>	Above 18 years
<b>Study design</b>	Randomized Control Trials, Observational studies, Case series, Qualitative studies, Any reviews
<b>Population</b>	Spouse, parent, siblings, adult children, grandparents or other caregivers affected by family member's alcohol drinking
<b>Intervention</b>	Any psychosocial intervention package designed specifically to address the needs of the AFM.
<b>Setting</b>	Any setting within LMIC
<b>Outcome measures</b>	Decrease in psychological problem; improvements in coping, inter-personal relationship, productivity, mood and cognition, physical health, uptake of formal and follow up services; acceptability, satisfaction and cost

**Table 2: Search concepts**

<b>Addiction</b>	Addiction, Substance use disorder, Drug /Alcohol/ Substance abuse, Drug /Alcohol/ Substance Misuse, Harmful use, Hazardous use, Dependence, Drug/Alcohol/Substance Abuser, Drug/Alcohol/Substance addicted, Addictive behaviour, Drinking, Smoking, Alcohol, Alcoholism, Alcoholic, Narcotics, Cocaine, Opiate/Opioids/Heroin/morphine/codeine/Propoxyphene, Cannabis/Cannabinoids/ Marijuana/ , Hashish, Hallucinogens/Ketamine/LSD, Amphetamines/MDMA(ecstasy), Benzodiazepine/Hypnotics, Tobacco/ Nicotine, Anabolic steroids, Sex Addiction, Gambling Addiction, Internet Addiction, Computer Addiction, Phone Addiction
<b>AFM</b>	Family, Family member, Significant other, Spouse, Husband, Wife, Partner, Parents, Father, Mother, Siblings, Brother, Sister, Children, Son, Daughter, Grandparents, Grandmother, Grandfather, Relative, Friend, Caregiver
<b>Psychosocial intervention</b>	Psychosocial intervention, Counselling, Psychological treatment, Psychosocial treatment, Psychological therapy, Psychosocial therapy, Psychological intervention, Psychological support, Psychosocial support, Psychotherapy, Coping

**Table 3 Included papers**

Author (Year), Country, Language	Sample	Sample size	Study design	Design and Intervention	Outcomes
Baharudin (2014), Malaysia, English	Family members of drug abusers. 42-62 years of age, 2 fathers, 4 mothers, one single-mother, one sibling	8	Cross sectional study.	Volunteers, former drug users and counsellors offered family psycho- education, monthly group meeting and twice a year family retreat.	Therapeutic alliance between counsellor and participants, described as important, helped them gain new insights for looking at their situation and themselves, learnt different ways of handling problems, gathered more knowledge and understanding about addiction and strategies they may find useful
Li (2014), Vietnam, English	Adult family member of injection drug users across four communes, 100% of standard treatment group and 81.4% of	83	RCT (pilot study)	Health educators delivered 4 interventions over 4 weeks to groups of 10 members followed by booster	Family members demonstrated increased levels of coping reduced depressive symptoms and improved family functioning at 3 and 6 months.

PSI in LMIC

	intervention group were women (40% spouses, 34% parents, 12% siblings)			session after 2 and 4 months. sessions focussed on importance of family support, overcome family challenges, manage negative emotions, learning coping skills, support positive behaviour change and integration into community	
De los Angeles Cruz-Almanza (2006), Mexico City, Spanish	Women, spouses of problem drinkers, between 25 and 50 years of age, not participating in support groups during the study, not being under	18	Treatment cohort with before-after assessment.	18 group sessions of 150 minutes based on Rational Emotive Behaviour Therapy delivered by trained therapist.	Significant improvement on assertiveness, coping responses and self esteem. Degree of discomfort created by intimidating situations showed a moderate or no improvement. Treated participants improved other

PSI in LMIC

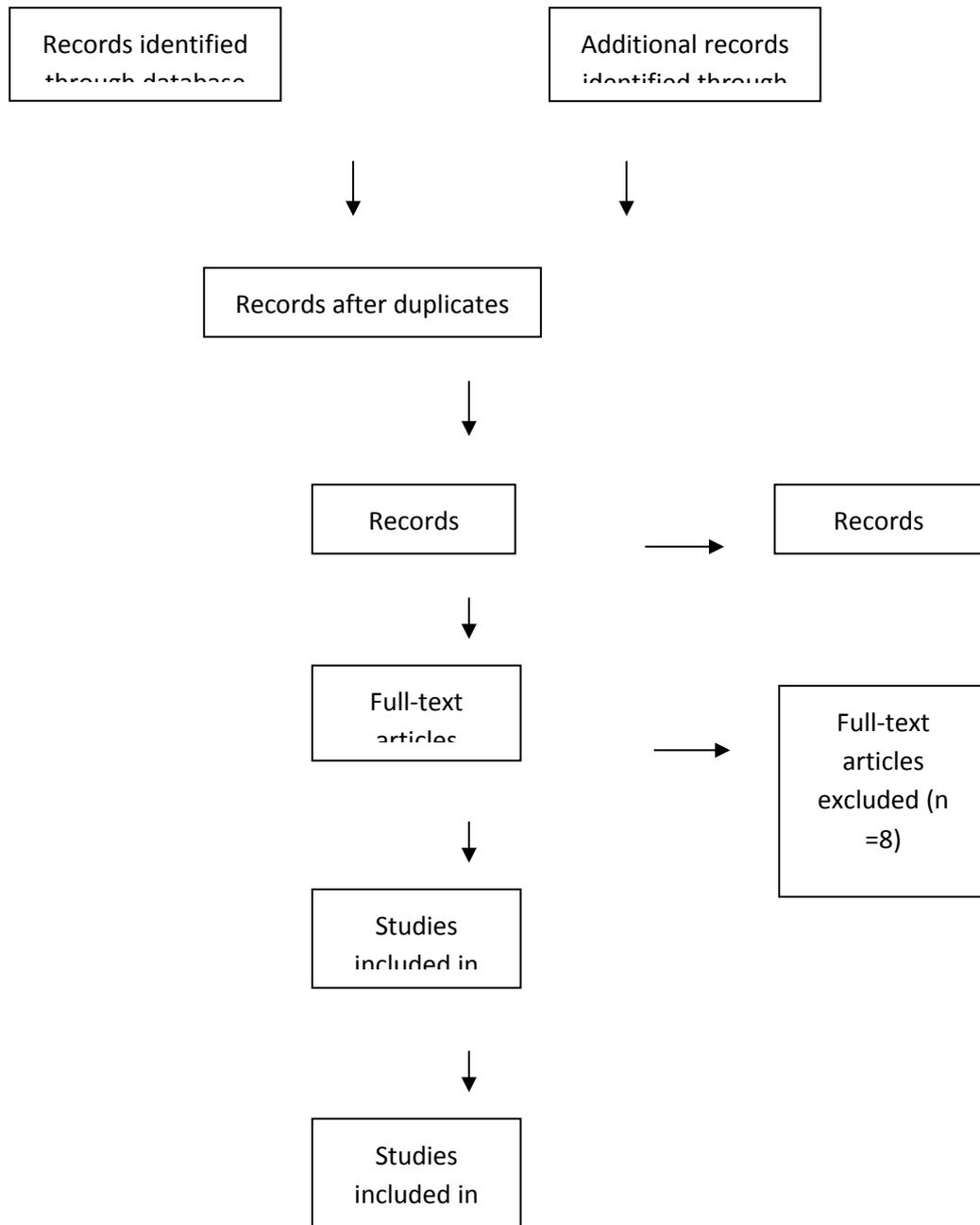
	psychological or psychiatric treatment, having completed at least 6 grades of elementary education.				aspects of their lives-got a job, left their partner or got their partner to seek help and showed better general attitude. Untreated participants reported that leaving the programme led to crises and none of them abandoned their abusive partners.
Tiburcio & Natera, (2003), Mexico, Spanish	Families of alcohol and drug users,(9 men, 19 women)	28	Cohort study with before after assessment (pilot study)	Intervention based on the 5 Step method and delivered over 4-7 sessions. 1)listen and explore principle perceptions and circumstances of how the consumption affects the family 2)	Tolerant and engaged ways of coping decreased after the intervention. Responses related to withdrawal increased-identified as a healthy sign in previous studies. Presence of physical and psychological symptoms decreased. Perceived some changes with alcohol or drug use.

PSI in LMIC

				<p>Proportionate relevant and objective information about the substances and their effects 3)Identify the eight natural confrontation mechanisms and analyse their advantages and disadvantages. Show that more efficient alternatives exist. 4) Explore the supports given and suggest new ones. 5)Conduct the consumer to specialised help if he/she requires it</p>	
--	--	--	--	--	--

PSI in LMIC

**Figure 1: Sequential screening and selection of eligible papers for the systematic review**



**Supplemental File:**

**Search Strategy:**

1. Addict\*.tw
2. Substance use disorder.tw
3. Substance related disorder.tw
4. Drug use disorder.tw
5. Drug dependen\*.tw
6. Substance abus\*.tw
7. Drug abus\*.tw
8. Alcohol abus\*.tw
9. Substance misus\*.tw
10. Drug misus\*.tw
11. Alcohol misus\*.tw
12. Harmful substance use\*.tw
13. Hazardous substance use\*.tw
14. Addictive behavior\*.tw
15. Drug addict\*.tw
16. Substance addict\*.tw
17. Alcohol addict\*.tw
18. Drink\*.tw
19. Smok\*.tw
20. Alcohol\*.tw
21. Alcohol dependen\*.tw
22. Alcohol use disorder.tw
23. Narcotic\*.tw
24. Cocaine.tw
25. Opioid\*.tw
26. Opiate\*.tw
27. Heroin.tw
28. Morphine.tw
29. Codeine.tw
30. Propoxyphene.tw
31. Cannabi\*.tw

PSI in LMIC

32. Marijuana.tw
33. Hallucinogen\*.tw
34. Ketamine.tw
35. LSD.tw
36. Lysergic acid diethylamide.tw
37. Amphetamine\*.tw
38. MDMA.tw
39. 3,4-methylenedioxy-methamphetamine.tw
40. Ecstasy.tw
41. Sedative\*.tw
42. Hypnotic\*.tw
43. Benzodiazepine\*.tw
44. Nicotine.tw
45. Tobacco.tw
46. Cigarette\*.tw
47. Anabolic steroids.tw
48. Sex ADJ3 addict\*.tw
49. Gambling ADJ3 addict\*.tw
50. Internet ADJ3 addict\*.tw
51. Computer ADJ3 addict\*.tw
52. Phone ADJ3 addict\*.tw
- 53. OR (1-52)**
54. Addiction/
55. Addict/
56. Substance use disorder/
57. Substance related disorder/
58. Drug use disorder/
59. Drug dependence/
60. Substance abuse/
61. Drug abuse/
62. Alcohol abuse/
63. Substance misuse/
64. Drug misuse/
65. Alcohol misuse/

## PSI in LMIC

66. Harmful substance use/
67. Hazardous substance use/
68. Addictive behaviour/
69. Drug addiction/
70. Drug addict/
71. Substance addiction/
72. Substance addict/
73. Alcohol addiction/
74. Alcohol addict/
75. Drinking/
76. Smoking/
77. Alcohol/
78. Alcohol dependence/
79. Alcohol use disorder/
80. Narcotic/
81. Cocaine/
82. Opioid/
83. Opiate/
84. Heroin/
85. Morphine/
86. Codeine/
87. Propoxyphene/
88. Cannabis/
89. Cannabinoid/
90. Marijuana/
91. Hallucinogen/
92. Ketamine/
93. LSD/
94. Lysergic acid diethylamide/
95. Amphetamine/
96. MDMA/
97. 3,4-methylenedioxy-methamphetamine/
98. Ecstasy/
99. Sedative/

PSI in LMIC

100. Hypnotic/
101. Benzodiazepine/
102. Nicotine/
103. Tobacco/
104. Cigarette/
105. Anabolic steroids/
106. Sex addiction/
107. Gambling addiction/
108. Internet addiction/
109. Computer addiction/
110. Phone addiction/
- 111. OR (54-110)**
- 112. 53 or 111**
113. Family.tw
114. Families.tw
115. Family member\*.tw
116. Significant other\*.tw
117. Caregiver\*.tw
118. Carer.tw
119. Spouse\*.tw
120. Husband\*.tw
121. Wife.tw
122. Wives.tw
123. Partner\*.tw
124. Parent\*.tw
125. Father\*.tw
126. Mother\*.tw
127. Sibling\*.tw
128. Brother\*.tw
129. Sister\*.tw
130. Child\*.tw
131. Son\*.tw
132. Daughter\*.tw
133. Grandparent\*.tw

PSI in LMIC

- 134. Grandfather\*.tw
- 135. Grandmother\*.tw
- 136. Relative\*.tw
- 137. Friend\*.tw
- 138. OR (113-137)**
- 139. Family/
- 140. Families/
- 141. Family member/
- 142. Significant other/
- 143. Caregiver/
- 144. Carer/
- 145. Spouse/
- 146. Husband/
- 147. Wife/
- 148. Wives/
- 149. Partner/
- 150. Parent/
- 151. Father/
- 152. Mother/
- 153. Sibling/
- 154. Brother/
- 155. Sister/
- 156. Child/
- 157. Son/
- 158. Daughter/
- 159. Grandparent/
- 160. Grandfather/
- 161. Grandmother/
- 162. Relative/
- 163. Friend/
- 164. OR (139-163)**
- 165. 138 or 164**
- 166. Psychotherap\*.tw
- 167. Therap\*.tw

PSI in LMIC

- 168. Counsel?ing.tw
- 169. Psychosocial intervention\*.tw
- 170. Psychosocial treatment\*.tw
- 171. Psychosocial therap\*.tw
- 172. Psychosocial support.tw
- 173. Psychological intervention\*.tw
- 174. Psychological treatment\*.tw
- 175. Psychological therap\*.tw
- 176. Psychological support.tw
- 177. Coping.tw
- 178. Support\*.tw
- 179. OR (166-172)**
- 180. Psychotherapy/
- 181. Therapy/
- 182. Counselling/
- 183. Psychosocial intervention/
- 184. Psychosocial treatment/
- 185. Psychosocial therapy/
- 186. Psychosocial support/
- 187. Psychological intervention/
- 188. Psychological treatment/
- 189. Psychological therapy/
- 190. Psychological support/
- 191. Coping/
- 192. Support/
- 193. OR (180-192)**
- 194. 179 or 193**
- 195. 112 AND 165 AND 194**
- 196. Developing.tw
- 197. Less\$ developed.tw
- 198. Under developed.tw
- 199. Underdeveloped.tw
- 200. middle income.tw
- 201. low income.tw
- 202. lower income.tw

## PSI in LMIC

203. or (196-202)
204. countr\$.tw
205. nation\$.tw
206. population\$.tw
207. world.tw
208. or (204-207)
209. 203 AND 208
210. Lmic.tw
211. Lmics.tw
212. Lamics.tw
213. Lamic.tw
214. third world.tw
215. Lami countr\$.tw
216. Transitional countr\$.tw
217. Or (210-216)
218. Afghanistan.tw
219. Albania.tw
220. Algeria.tw
221. Angola.tw
222. Antigua.tw
223. Barbuda.tw
224. Argentina.tw
225. Armenia\$.tw
226. Aruba.tw
227. Azerbaijan.tw
228. Bangladesh.tw
229. Benin.tw
230. Byelarus\$.tw
231. Belarus.tw
232. Belorussian.tw
233. Belorussia.tw
234. Belize.tw
235. Bhutan.tw
236. Bolivia.tw
237. Bosnia.tw
238. Herzegovina.tw
239. Hercegovina.tw
240. Botswana.tw
241. Brazil.tw
242. Bulgaria.tw
243. Burkina Faso.tw
244. Burkina Fasso.tw
245. Upper Volta.tw

## PSI in LMIC

246. Burundi.tw
247. Urundi.tw
248. Cambodia.tw
249. Khmer Republic.tw
250. Kampuchea.tw
251. Cameroon\$.tw
252. Cameron\$.tw
253. Cape Verde.tw
254. Central African Republic.tw
255. Chad.tw
256. Chile.tw
257. China.tw
258. Colombia.tw
259. Comoros.tw
260. Comoro Islands.tw
261. Comores.tw
262. Mayotte.tw
263. Congo.tw
264. Zaire.tw
265. Costa Rica.tw
266. Cote d Ivoire.tw
267. Ivory Coast.tw
268. Croatia.tw
269. Cuba.tw
270. Cyprus.tw
271. Czechoslovakia.tw
272. Czech Republic.tw
273. Slovak\$.tw
274. Djibouti.tw
275. French Somaliland.tw
276. Dominica\$.tw
277. East Timor.tw
278. East Timur.tw
279. Timor Leste.tw
280. Ecuador.tw
281. Egypt.tw
282. El Salvador.tw
283. Eritrea.tw
284. Estonia.tw
285. Ethiopia.tw
286. Fiji.tw
287. Gabon\$.tw
288. Gambia.tw

## PSI in LMIC

289. Gaza.tw
290. Georgia\$ Republic.tw
291. Ghana.tw
292. Gold Coast.tw
293. Grenada.tw
294. Guatemala.tw
295. Guinea.tw
296. Guam.tw
297. Guiana.tw
298. Guyana.tw
299. Haiti.tw
300. Honduras.tw
301. India.tw
302. Maldives.tw
303. Indonesia.tw
304. Iran.tw
305. Iraq.tw
306. Jamaica.tw
307. Jordan.tw
308. Kazakh\$.tw
309. Kenya.tw
310. Kiribati.tw
311. Korea.tw
312. Kosovo.tw
313. Kyrgyz\$.tw
314. Kirghiz\$.tw
315. Kirgizstan.tw
316. Lao PDR.tw
317. Laos.tw
318. Latvia.tw
319. Lebanon.tw
320. Lesotho.tw
321. Basutoland.tw
322. Liberia.tw
323. Libya.tw
324. Lithuania.tw
325. Macedonia.tw
326. Madagasca\$.tw
327. Malagasy.tw
328. Malay\$.tw
329. Sabah.tw
330. Sarawak.tw
331. Malawi.tw

## PSI in LMIC

332. Nyasaland.tw
333. Mali.tw
334. Marshall Islands.tw
335. Mauritania.tw
336. Mauritius.tw
337. Agalega Islands.tw
338. Mexico.tw
339. Micronesia.tw
340. Middle East.tw
341. Moldov\$.tw
342. Mongolia.tw
343. Montenegro.tw
344. Morocco.tw
345. Ifni.tw
346. Mozambique.tw
347. Myanma\$.tw
348. Burma.tw
349. Namibia.tw
350. Nepal.tw
351. Netherlands.tw
352. Antilles.tw
353. New Caledonia.tw
354. Nicaragua.tw
355. Niger\$.tw
356. Mariana Islands.tw
357. Oman.tw
358. Muscat.tw
359. Pakistan.tw
360. Palau.tw
361. Palestine.tw
362. Panama.tw
363. Paraguay.tw
364. Peru.tw
365. Philippines.tw
366. Philipines.tw
367. Phillipines.tw
368. Phillippines.tw
369. Romania.tw
370. Rumania.tw
371. Roumania.tw
372. Russia£.tw
373. Rwanda.tw
374. Ruanda.tw

## PSI in LMIC

- 375. Saint Kitts.tw
- 376. St Kitts.tw
- 377. Nevis.tw
- 378. Saint Lucia.tw
- 379. St Lucia.tw
- 380. Saint Vincent.tw
- 381. St Vincent.tw
- 382. Grenadines.tw
- 383. Samoa\$.tw
- 384. Islands or Navigator Island.tw
- 385. Navigator Islands.tw
- 386. Sao Tome.tw
- 387. Senegal.tw
- 388. Serbia.tw
- 389. Montenegro.tw
- 390. Seychelles.tw
- 391. Sierra Leone.tw
- 392. Slovenia.tw
- 393. Sri Lanka.tw
- 394. Ceylon.tw
- 395. Solomon Islands.tw
- 396. Somali\$.tw
- 397. Sudan.tw
- 398. Surinam\$.tw
- 399. Swaziland.tw
- 400. Syria.tw
- 401. Tajikistan.tw
- 402. Tadjhikistan.tw
- 403. Tadjikistan.tw
- 404. Tadjhik.tw
- 405. Tanzania.tw
- 406. Thailand.tw
- 407. Togo\$.tw
- 408. Tonga.tw
- 409. Trinidad.tw
- 410. Tobago.tw
- 411. Tunisia.tw
- 412. Turkey.tw
- 413. Turkmen\$.tw
- 414. Uganda.tw
- 415. Ukraine.tw
- 416. Uruguay.tw
- 417. USSR.tw

- 418. Soviet Union.tw
- 419. Union of Soviet Socialist Republics.tw
- 420. Uzbek\$.tw
- 421. Vanuatu.tw
- 422. New Hebrides.tw
- 423. Venezuela.tw
- 424. Vietnam.tw
- 425. Viet Nam.tw
- 426. West Bank.tw
- 427. Yemen.tw
- 428. Yugoslavia.tw
- 429. Zambia.tw
- 430. Zimbabwe.tw
- 431. Rhodesia.tw
- 432. or (218-431)
- 433. 209 or 217 or 432
- 434. 433 AND 195**

For 'Medline' and 'Embase' databases, 'Text Word' and 'MeSH Subject Heading' were used in the indexing field.

For 'Psyc-info' and 'Global health' databases, 'Abstract' and 'Subject heading' were used correspondingly.

For 'Cinahl', 'Abstract' and 'MM Major subject heading' were used.

For 'Cochrane', 'Abstract' was used and MeSH words left out.