

Impact and Mental Health Mediation of Intimate Partner Violence on Child Behavior in Trinidad and Tobago

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Abstract

Intimate partner violence (IPV) is known to have detrimental effects on persons who directly experience this form of abuse. Emerging research also indicates that a parent's experience of IPV may influence their children's well-being through various intermediary pathways. However, there is still no established model to explain these mechanisms. This study is among the few that assess maternal mental health symptoms as potential mediators of the association between maternal IPV and child behavior. Using secondary data from a population-based, cross-sectional survey, we performed logistic regression analyses to assess the impact of lifetime maternal IPV exposure on child behavioral problems (withdrawal or aggression). We then applied generalized structural equation modeling to examine the mediating effects of both maternal depression and anxiety symptoms on this association. Over half (55%; 95% CI [48.3, 60.8]) of mothers had experienced IPV at some point, and 12.5% (95% CI [8.0, 19.1]) of children exhibited behavioral problems. Mothers exposed to IPV were almost three times as likely to report behavioral problems in their children compared to mothers with no history of IPV ($OR = 2.81$; 95% CI [1.08, 7.33]). Furthermore, we found that both maternal depressive and anxiety symptoms partially mediated the relationship between maternal IPV exposure and child behavioral problems. These findings suggest that the impact of maternal IPV on child behavioral problems is partially explained by maternal mental health. Reducing IPV and improving maternal mental health through enhanced screening and community-based mental health initiatives may contribute to lowering the prevalence of child behavioral problems in Trinidad and Tobago.

Keywords

epidemiology, masculinities, sex & gender, sociology, social sciences, women's studies, abuse, criminology, child development, sociology of mental health, sociology of health & illness, public health, child health, child well-being, intimate partner violence

Introduction

Background

Intimate partner violence (IPV) is a global phenomenon that disproportionately affects developing countries and poorer women (Coll et al., 2020). The most recent data from the World Health Organization (WHO) Global Database estimates that worldwide, “27% of ever-partnered women between the ages of 15 and 49 have experienced intimate partner sexual or physical violence, or both” (WHO, 2018). For some Caribbean islands, the figures are even higher—with more than half of women reporting experience of some form of IPV in their lifetime (Allen et al., 2015).

Not only does the Caribbean have high rates of IPV relative to worldwide estimates, but women who experience IPV in the region often face multiple challenges in securing appropriate help for themselves or their children due to culturally entrenched barriers (Lacey et al., 2019). In previous studies, authors have alluded to the legacy of

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Data Availability Statement included at the end of the article



slavery, persistent gender inequality, and the dominance of hegemonic masculinities as potential impetuses for the Caribbean's high gender-violence rates, with limited recourse offered amidst a "culture of silence" (Clarke, 1998; Lacey et al., 2019). Researchers have also commented on the lack of appropriate services available to women seeking assistance for IPV in the Caribbean, citing infrastructure issues and a lack of collaboration among key sectors (Clarke, 1998; Joseph & Jones, 2023). Additionally, there are many single-parent households in the Caribbean (between 22% and 44%), with mothers disproportionately bearing the burden of parenting (Stuart, 1996). Mothers in the Caribbean are therefore not only often victims of IPV, but appear to have limited support to mitigate its effects.

The burden of IPV experienced by Caribbean women may have far-reaching implications. Although no studies to date have examined IPV as a risk factor for child behavioral problems in the Caribbean, available evidence does indicate a high burden of distress among Trinbagonian youth. For instance, a school survey conducted in 2017 observed high levels of suicidal ideation (24.1%) among adolescents aged 13 to 17 (WHO, 2017). Additionally, several other studies have identified a significant increase in delinquent behaviors over the past decade, potentially reflecting an escalation in impaired emotional well-being among youth (Bernard, 2024). These behaviors include bullying, truancy, fighting, and disrespect of teachers in secondary schools in Trinidad and Tobago (Katz et al., 2023; Mustapha, 2013; Ramdass & Lewis, 2012). Some of this behavioral dysfunction among youth could be attributable to IPV.

When considering the broader, international literature, it is well established that a parent's experience of IPV can significantly impact their children's behavioral adjustment (Silva et al., 2018). A 2018 meta-analysis found that the odds of a child displaying behavioral problems were about twice as high among children whose mothers had experienced IPV as compared to children of unexposed mothers (Silva et al., 2018). A child's direct witness of IPV may undoubtedly impact their behavior; however, there are likely other, indirect factors operating between a mother's experience of IPV and child behavior, such as factors related to maternal distress. Despite a clear association being established by several studies, mediators of the relationship between maternal IPV and child behavior remain unclear (Emery, 2011; Juan et al., 2020; Maneta et al., 2017). Further, all available studies have been conducted in developed, high-income countries. The mechanisms of action identified in these settings may differ to those in low- and middle-income countries due to divergent contextual factors (Howell et al., 2016). For instance, mediating factors might differ

based on social, historical and cultural influences affecting both parents and children; such insight would prove helpful for the design of targeted interventions addressing the effects of IPV in specific contexts like developing nations.

The role of maternal mental health as a mediator of the association between maternal IPV and child behavior has a strong theoretical basis, but at present there is little direct empirical evidence establishing this link. For instance, numerous studies have observed an association between exposure to IPV and mental health challenges, such as depression, suicidality, PTSD and anxiety (Devries et al., 2013; Lagdon et al., 2014; Warshaw et al., 2009). Further, there is evidence that a mother's adverse mental health has the potential to negatively influence her parenting behaviors. For example, in a meta-analysis, mothers with depression reported that their parenting was characterized by "diminished emotional involvement, impaired communication, disaffection, and increased hostility and resentment" (Lovejoy et al., 2000). Though not as frequently assessed, several studies have also shown correlations between maternal anxiety and reduced quality of the parent-child relationship, through factors like parental over involvement, parental hostility, and parenting stress (Creswell et al., 2013; Huizink et al., 2017; Jones et al., 2021; Möller et al., 2015; Rao et al., 2016; Riva Crugnola et al., 2016; Seymour et al., 2015). The parent-child dynamic may therefore be an important determinant of children's well-being among mothers exposed to IPV, as maternal mental health is often compromised in such contexts. This premise is consistent with evidence from previous IPV studies indicating that a positive mother-child relationship may be a significant protective factor for child behavioral problems (Levendosky & Graham-Bermann, 2001; Skopp et al., 2007).

Given the evidence outlined above, we propose the following sequential mediation pathway operating between parental IPV and child behavioral problems in Trinidad and Tobago: maternal IPV affects maternal mental health, which subsequently influences parenting behaviors, ultimately impacting children's behavior. Though we do not test parenting behaviors as a sequential mediator in this study, we take an important step in testing maternal mental health as the first mediator in this proposed pathway, within an under-researched context. Our study focuses on two aspects of child well-being known to be important predictors of children's future social and academic adjustment: child withdrawal (an internalizing behavior) and child aggression (an externalizing behavior; Bierman et al., 2015; Farmer & Bierman, 2002). More specifically, our study aims to determine: (1) whether women in Trinidad and Tobago with lifetime

exposure to IPV reported having children who were more prone to behavioral problems, and (2) whether this effect is mediated by maternal mental health symptoms.

Methods

Study Design

This article features a secondary analysis of a 2017 cross-sectional, population-based survey of women's health in Trinidad and Tobago (Pemberton & Joseph, 2018). The Inter-American Development Bank sponsored this survey to assess the frequency and prevalence of different types of Violence Against Women in the Caribbean alongside associated factors, particularly women's and child health.

Sampling

The survey team used a multi-stage sampling design (probability proportionate sampling) to acquire a population-based sample of women, using a sampling frame based on the Trinidad and Tobago 2011 Population and Housing Census. They selected Enumeration Districts (EDs) as Primary Sampling Units, oversampling those communities belonging to a government-initiated community crime prevention program known as the Citizens Security Program (CSP). They then selected a fixed number of households (15) from each ED. Next, one eligible woman (between the ages of 15 and 64) was selected from each of these 15 households using a Kish Selection grid (Lewis-Beck et al., 2004). After acquiring the population-based sample, household surveys commenced. The survey team found that 4% of the original household sample lived in ineligible households due to non-intact buildings, and 18% either refused to answer the survey or were inaccessible. Of the 1,496 households selected for interview, 17% of women were deemed ineligible because they did not meet the criteria of being a woman between the ages 15 and 64. This resulted in a total of 1,243 eligible women among the sampled households.

Eighty-seven percent of eligible women ($n = 1,079$) approached by the study team completed the individual interview. A trained female interviewer administered the study questionnaire, which was written in English with sections drawn from the WHO Multi-Country Study on Women's Health and Domestic Violence. Interviewers reminded participating women of their right to withdraw consent or to omit questions due to their sensitive nature. Of the 1,079 women surveyed, 72% did not meet the criteria for inclusion in the present study because they either did not have co-resident children between the age of 5 and 12 or did not respond to the question regarding

motherhood status. We included the remaining 304 participants in this analysis.

Ethical Considerations

Upon identifying the selected respondent and obtaining verbal informed consent, a female interviewer administered the study questionnaire in English. The questionnaire included sections from the WHO Multi-Country Study on Women's Health and Domestic Violence. Survey methodology was initially employed in Jamaica with its suitability reviewed by an expert panel before its use in Trinidad and Tobago. The survey team was comprised of local female Trinbagonian staff who underwent a two week training program. This training covered the theoretical background of the survey, logistical aspects of data collection, and strategies for reducing bias. The team was coached on how to ask sensitive survey questions while retaining neutral body language. Given the sensitive nature of the survey, there was a risk that participants could become distressed when revisiting personal experiences or even experience violence as a result of their survey participation. To mitigate these risks and maintain participants' dignity, the study was discreetly named and was not publicized before the survey was completed. The team also made every effort to ensure that participant confidentiality was maintained throughout the study. Additionally, survey staff were trained to recognize and respond to signs of distress, providing support referrals where needed (Pemberton & Joseph, 2018).

This population-based study provides important insight into the scale of the violence against women (VAWG) in Trinidad and Tobago. The findings offer critical data on the national prevalence and frequency of VAWG as well as its association with women's and children's health. Given the importance of this data for informing violence prevention and response strategies, as well as the study team's adherence to strict ethical protocols, we believe that the societal benefits of this research outweigh any potential risks to participants.

All procedures for data collection were approved by the University of the West Indies Ethics Committee (Reference number: CEC067/12/12). The present secondary data analysis was approved by the London School of Hygiene and Tropical Medicine Ethics Board (Reference number: 21880).

Definition of Terms/Variables

Exposure: Maternal Lifetime Exposure to Intimate Partner Violence

In our analysis, we considered mothers to be exposed to lifetime intimate partner violence (IPV) if they reported

at least one act of physical, sexual, or emotional violence by a current or former partner. The criteria for physical violence exposure included a range of violent acts (slapped, object thrown at, pushed/shoved, hair pulled, hit with object or fist, kicked, dragged, beaten, burned, choked, threatened with weapon). Mothers were asked a series of yes/no questions regarding their exposure to each of these violent acts and were classified as having experienced physical violence if they responded “yes” to any one of them. The criteria for sexual violence exposure included a range of forced sex acts (physical force, intimidation, degrading acts/humiliation). Mothers were considered “exposed” to sexual violence if they responded “yes” to any one of these sexual acts. The criteria for emotional violence exposure encompassed a range of psychologically aggressive acts (insults, belittling/humiliation, intimidation, verbal threats of physical violence). Again, a “yes” response to any of these acts was used to determine exposure. For the purposes of analysis, we represented lifetime IPV as a dichotomous measure indicating presence or absence ($=1$ or $=0$, respectively). A participant was coded as exposed if they reported experiencing at least one form of IPV (physical, sexual, or emotional) in their lifetime. We combined the violence categories (physical, sexual, and emotional) based on research indicating that any type of IPV exposure can adversely impact mental health.

Outcomes: Child Behavioral Problems

Interviewers asked mothers whether any of their children between the ages of 5 and 12 ever displayed timid/withdrawn behavior or aggressive behavior. Although these dichotomous questions were not formally validated in Trinidad and Tobago, they were based on components of the Child Behavior Checklist (Achenbach, 1999) derived from qualitative work with IPV-exposed mothers in Nicaragua (Ellsberg et al., 2000). The study team recorded these outcome variables as binary measures, asking mothers (referring to their children between ages 5 and 12 years of age): “Are any of these children very timid or withdrawn” and “are any of them aggressive with you or other children?”

Mediator: Maternal Mental Health

Measures of depression and anxiety symptoms were adapted from the PHQ-9 and GAD-7 screening tools, respectively, both of which have been previously validated in Caribbean populations (Marc et al., 2014; Pagán Torres et al., 2020). Using these tools, the survey team asked mothers whether they had experienced symptoms of anxiety or depression in the past two weeks. During questionnaire development, the study team

modified the original PHQ-9 and GAD-7 formats by making the response options binary (yes/no), thereby removing the frequency component of the items. In our analysis, we calculated a composite score for maternal depression symptoms by summing the participant’s dichotomous responses across nine items, yielding a score from 0 to 9. This score represented the number of different depression symptoms a participant reported experiencing in the past two weeks (Cronbach’s $\alpha = .76$). We derived a composite score (range 0–7) in the same way for the anxiety section, representing the mother’s self-reported experience of a range of seven anxiety symptoms over the past two weeks (Cronbach’s $\alpha = .82$). We modeled both mediators as continuous variables in the analysis using these composite scores. The numerical value of these composite scores reflects the number of PHQ-9 or GAD-7 symptoms the mother reported experiencing in the past two weeks.

Covariates

We standardized and included the following variables as confounders in our analysis: maternal age (in years), maternal education level (categorized as none, primary, secondary, or higher), and socioeconomic status. Socioeconomic status was treated as a continuous measure, derived from the first component of a principal components analysis based on a range of household and material assets (i.e., source of drinking water, toilet facilities, roof material, appliance and vehicle ownership, internet access, and number of rooms in the dwelling; Vyas & Kumaranayake, 2006).

Statistical Analysis

Data on motherhood status were missing for 30.2% of women in the overall sample. A χ^2 analysis revealed that non-respondents to the motherhood question were significantly more likely ($p < .001$) to report no lifetime exposure to IPV. However, among women who did respond, only 5.0% were missing data on IPV exposure and their children’s behavioral outcomes. For the present analysis, we included only those mothers with complete data on both lifetime IPV exposure and child behavioral outcomes. First, we described the demographic characteristics of the sample (stratified by lifetime IPV status) using two-way tables of frequency, and applying either Pearson χ^2 or Fisher’s exact test as appropriate, to assess association. Second, we fit a logistic regression model with maternal lifetime IPV exposure as the independent variable and child behavioral problems as the dependent variable. Third, we used generalized structural equation modeling (GSEM) to conduct path analyses from maternal IPV to child behavioral problems through maternal

depression symptoms (Cain, 2021). We then calculated an overall indirect effect for the path from maternal IPV to child behavioral problems via maternal depression symptoms. We obtained bootstrap standard errors and confidence intervals for the depression parameter using 2,000 bootstrap resamples to improve the confidence limit coverage (MacKinnon et al., 2007). We then repeated this mediation analysis with maternal anxiety symptoms. We conducted all analyses using Stata version 16.0, accounting for the complex sampling design. A text file containing the Stata commands used for these analyses can be found in Supplemental Document 1.

Results

Participants

Overall, 54.6% of surveyed mothers had been exposed to at least one incident of IPV in their lifetime (physical IPV (38.0%); sexual IPV (12.8%); emotional IPV (43.0%)). Additionally, 12.5% of mothers reported observing behavioral problems among their children (withdrawn behavior (7.4%); aggressive behavior (7.6%)).

Descriptive Data

Table 1 presents the characteristics of the study sample stratified by mother's lifetime IPV status. On average, mothers in the sample were 35.8 years old. Mothers who reported experiencing lifetime violence were, on average, 3 years younger than those who did not. Regardless of IPV status, the majority of mothers were Evangelical Christian or Roman Catholic (49.2%). Additionally, 43.5% of mothers identified as being of African ethnicity; most had attained some level of secondary school education (54.7%), and the majority were currently partnered (70.6%). Most mothers resided in urban areas (76.4%) and were employed in either the public or private sector (55.2%). However, IPV-exposed mothers were less likely to be currently married (60.6%) compared to mothers who had not experienced lifetime IPV (83.1%). Socioeconomic status also varied by IPV exposure: mothers with lower socioeconomic status scores were more likely to report experiencing lifetime IPV. Child behavioral problems were more frequently reported among mothers exposed to IPV. Specifically, 17.1% of children whose mothers reported IPV exposure showed signs of behavioral problems, compared to 7.2% of children whose mothers had no IPV exposure.

Outcome Data and Mediation Results

Our unadjusted logistic model testing the association between maternal lifetime IPV and child behavioral problems indicated that children of IPV-exposed mothers

had 2.67 times higher odds of exhibiting behavioral problems compared to children of mothers with no reported IPV exposure ($OR = 2.67$; 95% CI [0.98, 7.23]). The effect was similar after adjusting for maternal age, education, and socioeconomic status ($OR = 2.81$; 95% CI [1.08, 7.33]).

Model 1 (Figure 1) presents the results of three separate path analyses examining the mediating effect of maternal depression symptoms on the association between maternal IPV and child behavioral problems. The direct effect of maternal IPV on child behavioral problems (path c') was attenuated after including maternal depression symptoms ($OR = 1.79$; 95% CI [0.68, 5.07]) in the model. Using linear regression, we found that maternal IPV was associated with increased symptoms of maternal depression (path a); namely IPV exposure was linked to an average increase of 1.22 points on the depression symptoms score (range: 0-9) ($B = 1.22$, $p = .001$). In the next step, we used logistic regression to estimate the association between maternal depression symptoms and child behavioral problems (path b), finding that children of mothers with depression symptoms were 1.35 times more likely to display behavior problems than those with mothers who did not report depression symptoms ($OR = 1.35$; 95% CI [1.05, 1.73]). We calculated the overall indirect effect of maternal IPV on child behavioral problems through maternal depression symptoms by using GSEM to combine the linear and logistic regression coefficients from paths a and b (Figure 1), producing a coefficient for the indirect effect on the log-odds scale ($b = .37$; 95% CI [0.08, 0.78]). These results suggest that maternal depression symptoms partially mediate the relationship between maternal IPV exposure and child behavioral problems in this sample.

Model 2 (Figure 1) shows the results of a logistic regressions testing the mediating effect of maternal anxiety symptoms on the association between maternal IPV and child behavioral problems. The direct effect of maternal IPV on child behavioral problems (path c') was attenuated when we included maternal anxiety symptoms ($OR = 2.19$; 95% CI [0.91, 6.04]) in the model. Maternal lifetime IPV was positively associated with maternal anxiety symptoms ($B = 1.01$, $p = .006$) in our linear regression equation (path a). In other words, within our sample, exposure to IPV was associated with an average increase of 1.01 points on the anxiety symptoms score (range: 0-7). The path between maternal anxiety symptoms and child behavior problems (path b) revealed a modest association ($OR = 1.26$; 95% CI [0.99, 1.59]). For maternal anxiety symptoms, the resulting indirect effect ($b = .37$; 95% CI [0.08, 0.78]) suggests that maternal anxiety symptoms partially mediate the relationship between maternal IPV and child behavioral problems.

Table 1. Summary of Descriptive Statistics by Lifetime IPV Status Among Women With Co-resident Children Between Ages 5 and 12 in Trinidad and Tobago.

Characteristics	Lifetime IPV exposure	
	Yes (n = 166)	No (n = 138)
Maternal age [years; mean (± SD)]	34.4 (± 6.67)	37.5 (± 8.01)
Religion	%	%
None	3.3	3.1
Roman Catholic	22.3	21.0
Evangelical	26.9	27.9
Hinduism	8.1	14.8
Baptist	14.7	9.6
Anglican	4.3	4.4
Other Christian	10.6	6.2
Other non-Christian	9.8	12.9
Ethnicity	%	%
African	51.3	33.7
East Indian	20.3	39.5
Mixed (East Indian and African)	20.8	19.9
Other	7.5	6.9
Educational attainment	%	%
No education/primary only	9.5	10.7
Secondary	54.3	55.5
Higher	36.2	33.8
Current partnership status	%	%
Currently married	60.6	83.1
Currently partnered but not married	1.8	5.3
Currently no partner	21.4	11.6
Urban/rural		
Urban	85.4	72.0
Rural	14.6	28.0
Socioeconomic status		
High	25.9	43.6
Medium	36.3	31.4
Low	37.9	25.0
Main activities during past week	%	%
Employed in a public/private corporate	57.8	52.4
Self-employed	8.1	9.6
Housework/work as unpaid family member	20.1	30.2
Unemployed	14.0	7.9
Main source of income		
Income from own work	28.8	21.3
Support from partner/husband	22.9	32.9
Equal share self and partner	26.8	32.5
Support from relatives/friends	11.8	5.3
No income/pension/social services/other	9.7	8.0
Maternal mental health [composite score; mean (± SD)]		
Maternal depressive symptoms [0–9]	2.36 (± 2.45)	1.0 (± 1.45)
Maternal anxiety symptoms [0–7]	2.76 (± 0.36)	1.63 (± 0.19)
Child behavioral problems	%	%
Yes	17.1	7.2
No	82.9	92.8

Discussion

Our study estimated that 54.6% of mothers with children aged 5 to 12 in Trinidad and Tobago had experienced lifetime exposure to physical, sexual, or emotional violence by a partner. Children of mothers exposed to IPV

had almost three times the odds of behavioral problems as compared to children of unexposed mothers ($OR = 2.81$; 95% CI [1.08, 7.33]). Additionally, we observed that maternal symptoms of both depression and anxiety

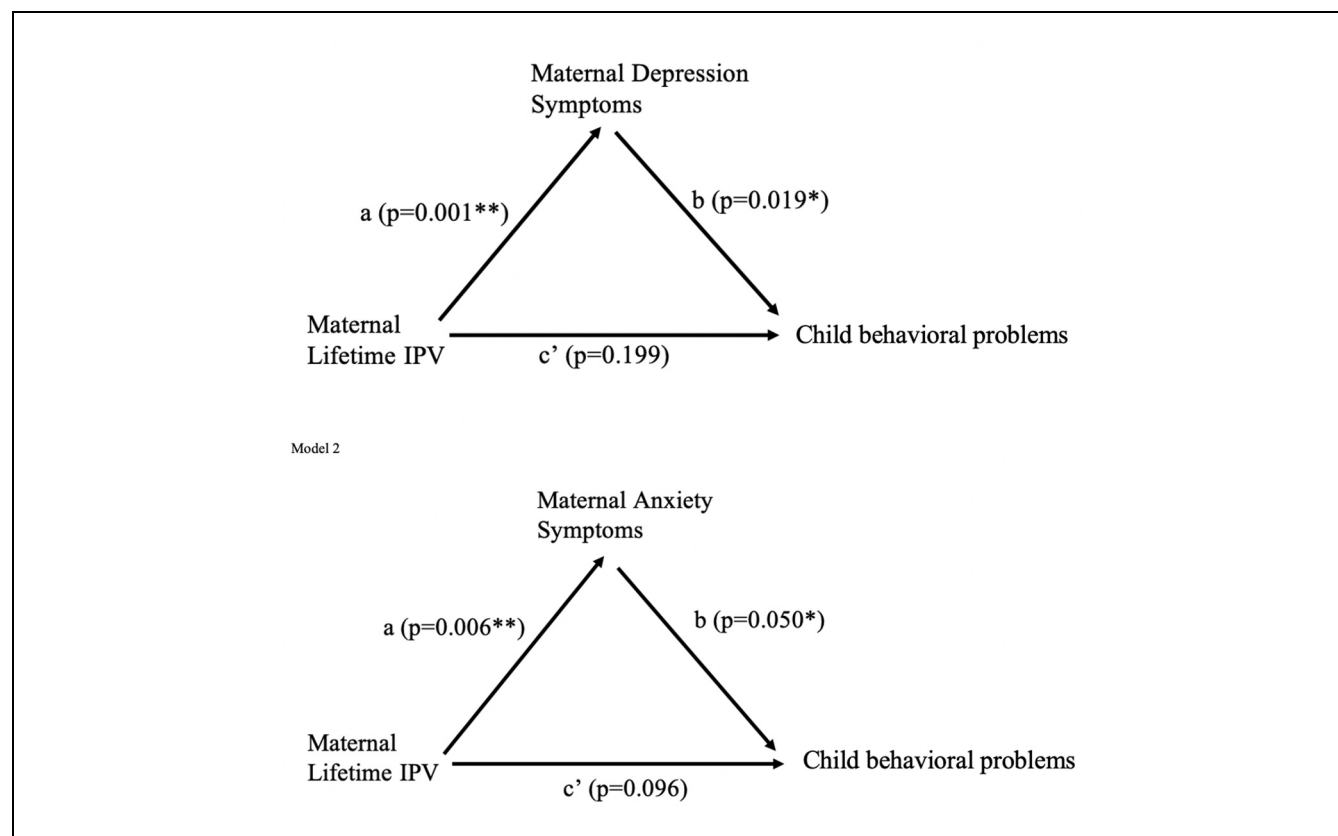


Figure 1. Mediation paths through depression and anxiety symptoms for the association between lifetime IPV and child behavioral problems among mothers in Trinidad and Tobago. Paths b and c' were estimated using logistic regression, yielding coefficients on the log-odds scale. Paths a were estimated using linear regression with unstandardized regression coefficients. Path coefficients correspond to the effect of maternal IPV compared to no maternal IPV exposure.

* $p < .05$, ** $p < .01$.

partially mediate the relationship between maternal IPV and child behavioral problems in this sample.

The IPV prevalence observed in our study (55%) exceeds previous WHO estimates for Latin America and the Caribbean, which report that one-third of ever-partnered women in the region have experienced IPV in their lifetime (Bott et al., 2019). It is important to note that the WHO estimates are not limited to mothers, whereas our findings specifically reflect the experience of mothers with young children in Trinidad and Tobago. This distinction underscores the particularly high burden of IPV faced by this subgroup, identifying a key population for targeted intervention efforts. To our knowledge, this study provides the first national adjusted estimates of the association between IPV exposure and children's behavioral problems amongst Caribbean mothers. As such, our study makes an important contribution to the growing literature linking parental IPV to poor child well-being outcomes within a range of developmental stages and contexts, further highlighting the impact of IPV on public health.

In addition, our mediation results support our proposed hypothesis: compromised maternal mental health following IPV exposure can negatively affect children's behavior. Our results emphasize the importance of screening for IPV exposure and mental health difficulties among women whose children display behavioral problems. Assessing mothers for IPV exposure may have multiple advantages: it may benefit their own mental health if IPV screening efforts include adequate avenues for maternal mental health support. Also, early detection of IPV exposure allows for timely intervention aimed at mitigating its impact on children's early stages of development. Such interventions can support parents in managing problematic child behaviors and may reduce children's risk of future difficulties in interpersonal relationships (Hukkelberg et al., 2019).

Although substantial evidence links parental IPV to child behavioral problems, relatively few studies have examined the mediating role of maternal mental health in this relationship (Bair-Merritt et al., 2015; Flach et al., 2011; Holmes, 2013; Huang et al., 2010; Tsotsi et al.,

2019; Yoo & Huang, 2013). Moreover, most of these studies were conducted in the United States or the United Kingdom, limiting the application of their findings to broader contexts where mechanisms of action may vary. Additionally, when testing its mediating effect, previous studies often grouped several maternal mental health dimensions into one overarching category, with little consistency between studies on how this concept was measured. By testing anxiety and depression symptoms separately, our study narrows the focus on specific mechanisms operating between maternal IPV and child behavior. Our findings, therefore, can be translated into actionable areas of intervention specific to depression and anxiety symptoms, rather than those broadly aimed at improving general mental health. For example, community health programs that aim to enhance parents' self-care strategies and improve mothers' understanding of managing anxiety and depression symptoms.

Given the paucity of studies conducted in the region, our study should motivate longitudinal research to examine IPV's effects on parent and child behaviors in the Caribbean. Such contextual evidence is important for understanding underlying mechanisms of action since parenting styles and relational dynamics vary widely from culture to culture (Novianti et al., 2023). Specifically, future mediation studies should build on our findings by exploring the pathways leading from parental mental health distress to diminished child well-being in the context of IPV. In particular, research should assess parenting factors to determine their role in this overall succession. While our study did not collect data on fathers, future research should collect paternal-related mediators to identify how fathers fit into this cycle of intergenerational distress, both concerning their own mental health, as well as their parenting behaviors. Lastly, future research on the effects of parental IPV should investigate how behavioral problems identified by this study correlate with children's longer-term outcomes across the developmental spectrum. For instance, while it is clear that children whose parents have experienced trauma are at risk for negative outcomes, the differential risks based on the child's age, gender and pre-existing susceptibility (genetic and sociocultural factors) have been largely unexplored. Such insight will allow researchers to gain a fuller picture of the public health impact of IPV on future generations, informing programs aimed at helping families exposed to this problem.

This study's main strength is its nationally representative sample in an under-researched population with a high prevalence of IPV. The study sample was ethnically and economically diverse, with readily accessible data on maternal covariates enabling our assessment of confounding factors and mediation effects. Additionally, the

study utilized a well-validated scale for measuring IPV, which was reviewed by an expert panel prior to its dissemination. This enabled a high response rate for sensitive questions among women who completed the interview. Furthermore, we used validated measures of mental health symptoms and evaluated their mediating effects on a continuous scale rather than relying on a cutoff score to detect "depression" or "anxiety." This helps us to gain a clearer picture of the dose effect of maternal mental health symptomology on child behaviors in the context of maternal IPV. Specifically, a greater number of mental health symptoms experienced by mothers in our sample was associated with an increased risk of behavioral problems in their children.

Several methodological limitations are relevant to this discussion. This study was cross-sectional; therefore, causation cannot be implied based on its findings. While in some instances, maternal depression has been shown to make mothers more vulnerable to experiencing IPV, it is unlikely that child behavioral problems caused mothers to experience IPV, lending confidence to our conclusion that maternal experiences of IPV preceded child behavioral problems in our analyses. Secondly, previous research has noted that women with symptoms of mental health distress may be at increased risk for exposure to IPV (Spencer et al., 2024). As such, we cannot completely eliminate the possibility of reverse causation between either maternal depression or anxiety symptoms and IPV. Third, respondents answered questions on maternal lifetime IPV and maternal mental health through self-report. This could have introduced some level of bias resulting in under-reporting of IPV or depression/anxiety symptoms, given the stigma attached to these admissions (Cullen, 2023; Sharpe & Shafe, 2016; Youssef et al., 2014). Fourth, since we used secondary data in our mediation analysis, we were restricted to dichotomous variables for IPV and child behavioral problems. Despite this limitation, we believe that our study takes an important first step in generating hypotheses for future studies in the region, which can be designed to collect more complex variables and include measures of intensity and frequency. Future researchers should aim to collect IPV, mental health, and behavioral measures on a continuous scale whenever feasible, as this facilitates more nuanced and higher powered statistical analyses.

Fifth, there may be unmeasured confounders which we were unable to account for in our analysis. For example, an important consideration might be a child's direct witness to IPV, which is related to both the exposure and outcome in our study. It is practically difficult to collect information on child witnesses of IPV in the age group included in this study (ages 5–12), particularly within the

limits of a population-based survey. However, longitudinal mediation studies should consider collecting this data where possible, perhaps through parent report. Lastly, given the significant time gap between data collection in 2017 and the published analysis in 2025, some of our study results may need to be updated to best reflect the current context in Trinidad and Tobago. In particular, the COVID-19 pandemic significantly disrupted everyday life in the country between 2020 and 2023, with reports of increased instances of violence and mental health distress in families. However, the importance of publishing these results now remains high, as the impact of VAWG on women's and children's health has likely only intensified in the aftermath of the COVID-19 pandemic.

In summary, our study points to maternal IPV as a significant factor in shaping the well-being of future Caribbean generations. Regarding interventions, children who display signs of withdrawal and aggression should be given support that takes into account their home lives as a potential catalyst for these behaviors. Their mothers, for instance, can then be equipped with tools to minimize their own symptoms of anxiety and depression, and to establish a positive relationship with their children in the midst of their distress. Similarly, current IPV prevention and support interventions should expand their programs to consider the well-being of co-resident children, providing parenting support and child counseling services. In the context of Trinidad and Tobago, the provision of mental health services needs to take into account the wide cultural and class diversity, ensuring that these are accessible for low-income households. Interventions should also consider the high levels of stigma surrounding IPV exposure and mental health concerns in Trinidad and Tobago, emphasizing community-based mental health services, as well as integrating IPV and mental health screening into other routine healthcare protocols to improve accessibility.


Conclusion


Our mediation results help strengthen the evidence base around the mechanisms by which maternal IPV leads to poor child outcomes. This has important implications for designing targeted mitigation efforts that address anxiety and depression symptoms in mothers. Given our study results, the magnitude of IPV's impact on public health might prove greater than previously thought, given its potential to catalyze cascading effects on intergenerational well-being. Our findings can help design further intergenerational research and inform interventions aimed at improving parent and child well-being in the Caribbean, where IPV is highly prevalent and where no similar analysis has been performed to date.


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Ethical Considerations

The Ethics Review Committee at the University of the West Indies approved all procedures for data collection in January 2017 (Reference: CEC067/12/12). The present secondary data analysis was approved by the London School of Hygiene and Tropical Medicine Ethics Board (Reference: 21880). Respondents gave written consent for review and signature before starting interviews.

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Declaration of Conflicting Interests

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Data Availability Statement

The data supporting the findings of this study are available from the Inter-American Development Bank; however, access is restricted, as the data were used under license for the current study and are not publicly available. Data may be obtained from the authors upon reasonable request and with permission from the Inter-American Development Bank.

Supplemental Material

Supplemental material for this article is available online.

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