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Income Level and Marital Duration as Determinants of Domestic Violence Severity Among Married Women in Indonesia

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ABSTRACT

Objective: Domestic violence against women is a critical public health issue in Indonesia, influenced by complex structural and relational factors. This study investigated the combined effects of income level and marital duration on the severity of domestic violence.

Methods and Materials: An analytical cross-sectional study was conducted involving 479 married women who reported experiencing domestic violence and self-identified as victims. Data were collected using a Rasch-calibrated Violence Against Women Instrument. A Two-Way ANOVA was performed to analyze the effects of income and marital duration on violence severity scores.

Findings: The analysis revealed significant main effects for both income level ($p < 0.001$, $\eta^2 = 0.048$) and marital duration ($p = 0.015$, $\eta^2 = 0.037$). A significant interaction effect was found ($p < 0.001$, $\eta^2 = 0.140$), indicating that patterns of domestic violence severity differed by socioeconomic status. Women in lower-income categories experienced higher violence severity, while high-income women showed a non-linear pattern, with higher scores in long-term marriages (31–35 years).

Conclusion: Domestic violence is associated with economic stressors and evolving relational dynamics. While financial disadvantage is a persistent risk factor, higher income does not guarantee protection, particularly in later stages of the marriage, when power dynamics may shift. Interventions should integrate economic empowerment with life-course counseling. These findings are associational and hypothesis-generating, requiring further longitudinal research.

Keywords: Domestic Violence, intimate partner violence, socioeconomic factors, marriage, Indonesia.

Introduction

Domestic violence against women remains a pervasive global public health concern and continues to affect women across diverse cultural and economic contexts. Global estimates show that violence against women persists at significant levels, with both partner and non-partner violence contributing to substantial physical, psychological, and social harm (Ali et al., 2023; Women, 2025). Research from 161 countries indicates that women and girls account for nearly 90% of individuals who report experiencing domestic violence, highlighting the gendered nature of this issue (Organization, 2021). In low- and middle-income countries with comparable cultural norms, economic pressures, and limited social protection systems, domestic violence also occurs at substantial levels. For instance, in Cambodia, approximately 20.7% of ever-partnered women have experienced lifetime intimate partner violence. In comparison, in the Philippines, around 16% of mothers report such experiences, and in Malaysia, 7.1% of women of reproductive age report them (Ali et al., 2023; Puno-Balagosa et al., 2025; Shaikh, 2024). These variations illustrate how structural vulnerabilities, such as gender norms, economic pressures, and limited protection systems, are associated with women's risk across global and regional settings.

Within this broader context, Indonesia faces similar challenges. Domestic violence remains a substantial and persistent public-health concern. The *Catatan Tahunan* (CATAHU) *Komnas Perempuan* recorded 289,111 cases of violence against women in 2023, with the majority occurring in the personal or domestic sphere, indicating that the home continues to be the primary site of violence (Munir, 2005). A nationally based study involving 34,086 married women aged 15–49 years found that women in the poorest wealth quintile were about 1.38 times more likely to experience intimate partner violence than those in the richest quintile (Laksono et al., 2023). Together, these data underscore how socioeconomic vulnerability, financial dependency, and limited access to support systems are linked to a heightened risk of domestic violence among women in Indonesia. However, large-scale surveys do not necessarily capture the specific experiences of women who self-identify as victims and choose to participate in online surveys.

It is therefore important to clarify the context of the present study. Rather than representing all married women in Indonesia, this analytical cross-sectional study focuses on a specific subgroup: married women in Indonesia who reported experiencing domestic violence, self-identified as victims, and participated in an online self-administered survey using non-probability sampling. This design allows a detailed examination of patterns of domestic violence severity among women who actively disclose victimization, but findings cannot be interpreted as nationally representative or causal. Within this group, structural factors play a central role in shaping vulnerability. Income level, in particular, emerges as an important structural correlate of domestic violence: women with lower household income face heightened risks due to limited financial resources, economic dependency, and restricted access to protective support systems, and may also experience more severe psychological consequences of violence (Laksono et al., 2023; Reyal et al., 2024; Sardinha et al., 2022; White et al., 2024).

Despite extensive evidence linking income and domestic violence, important gaps remain. Most studies examine income in isolation, without considering how income may interact with other structural and relational factors that vary by marital duration (Ikuteyijo et al., 2025; Mellar et al., 2024; Reyal et al., 2024; Sardinha et al., 2022).

Yet, marital duration is known to shape relationship dynamics, household responsibilities, and stressors that can contribute to domestic conflict (Einiö et al., 2023). The absence of studies that simultaneously investigate income level and marital duration restricts a contextualized understanding of how economic vulnerability and different stages of marriage are associated with domestic violence severity, particularly in low- and middle-income countries where economic inequality and evolving marital roles may influence cross-sectional patterns of violence by marital duration.

The present study addresses these gaps by examining domestic violence severity through the combined effects of income level and marital duration among married women in Indonesia who reported experiencing domestic violence in an online self-administered survey and self-identified as victims. This study focuses on

cross-sectional patterns of domestic violence severity across income groups and marital-duration categories, rather than on causal mechanisms or longitudinal trajectories. Specifically, we aim to determine whether income-based differences and length of marriage are each independently associated with domestic violence severity, and whether these two factors interact to produce different patterns of severity across marital stages. Based on prior evidence, we hypothesize that: lower income will be associated with higher domestic violence severity; certain marital-duration categories (such as early and long-term marriages) will be associated with higher severity than mid-duration marriages; and the association between marital duration and domestic violence severity will differ across income groups. By articulating these hypotheses and clearly specifying the sample and design, the study seeks to provide empirically grounded insights that can inform targeted intervention strategies, including economic support initiatives and family-based counseling, tailored to women who report domestic violence.

Methods and Materials

Study Design

This study employed an analytical cross-sectional design conducted in Indonesia between January and April 2025. This design was chosen because it allowed the measurement of the exposure variables (income level and marital duration) and the outcome (domestic violence severity scores) at a single point in time, in alignment with recommendations for observational studies on intimate partner violence (Stöckl & Sorenson, 2024). The study was specifically designed to examine cross-sectional associations, rather than to establish causal relationships or temporal trajectories. Reporting of the study follows the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for cross-sectional research.

Sampling Procedure

Data were collected using an online self-administered questionnaire distributed via social media platforms and women's community groups. The survey invitation explicitly targeted married women in Indonesia who reported experiencing domestic violence and self-

identified as victims, and who were willing to complete an online questionnaire.

The sampling approach was a non-probability, stratified convenience strategy. We aimed to obtain variation across income categories and marital-duration groups, but participation was entirely voluntary and based on self-selection into the online survey. Consequently, the sample should be interpreted as a self-selected online sample of married women reporting domestic violence, and the findings are not nationally representative of all married women in Indonesia.

The target population for this study was defined based on the most recent national data regarding the prevalence of violence against women in Indonesia. According to the *Catatan Tahunan* (CATAHU) Komnas Perempuan, a total of 289,111 cases of violence against women were recorded in 2023 (Munir, 2005). To ensure the study results were statistically representative of this population, the minimum overall sample size was estimated a priori using Cochran's formula for proportions, assuming a conservative prevalence of domestic violence of 50%, a 95% confidence level, and a margin of error of 5%, yielding 385 participants (Cochran, 1977). This approach provided an approximate target for the total number of respondents rather than a power calculation tailored to the factorial two-way ANOVA with multiple income × marital-duration cells. The primary aim of this calculation was to ensure a sufficiently large overall sample size to examine associations among income level, marital duration, and domestic violence severity, while acknowledging that it was not optimized to detect interaction effects across all income × marital duration combinations.

Participants and Eligibility Criteria

The study involved women who self-identified as victims of domestic violence. Participants were eligible if they: were a married woman aged 18 years or older, currently residing in Indonesia, able to read and understand Indonesian, had access to an internet-enabled device, and self-identified as a victim of domestic violence and reported at least one experience of domestic violence by a current or former partner.

Women who did not report any domestic violence or who did not self-identify as victims were not eligible to participate. Those who did not complete the instrument or declined consent were excluded. A total of 479 women participated and met the eligibility criteria (Figure 1).
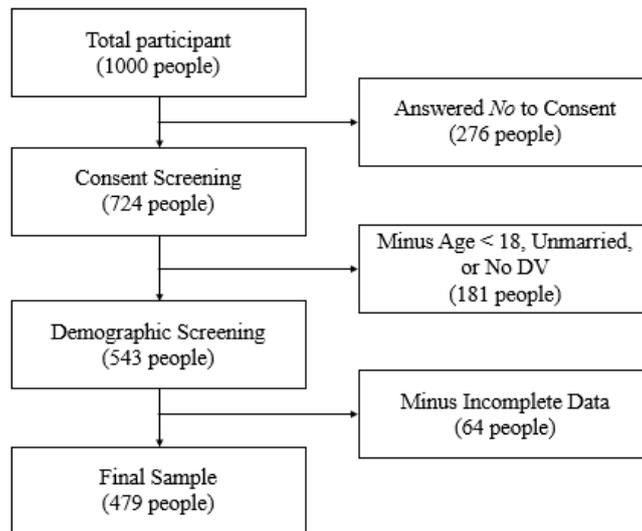
Figure 1

Participant selection diagram

As a result of these eligibility criteria, the findings of this study apply specifically to married women in Indonesia who reported experiencing domestic violence and self-identified as victims, rather than to all married women. The results should therefore be interpreted as describing patterns of domestic violence severity within this particular group.

Instruments

Domestic violence severity was measured using the *Violence Against Women Instrument*, consisting of 32 items across four dimensions: severe psychological abuse, coercive emotional abuse, restrictive isolating abuse, and financial abuse. Each item was scored using a 4-point Likert scale. Higher scores indicated more severe violence. The instrument was translated into Indonesian by bilingual experts. The translated items were reviewed by a panel of public health and gender-based violence specialists to ensure conceptual and cultural relevance, and minor wording adjustments were made to reflect common Indonesian terminology for domestic violence experiences.

Prior psychometric testing showed that the instrument demonstrated excellent reliability, with Cronbach's alpha of 0.91, item reliability of 0.98, and person reliability of 0.90 (Table 1). Rasch analysis was conducted to evaluate the instrument's measurement properties and to obtain person-level measures of domestic violence severity. The model showed acceptable measurement properties in this sample. The raw variance explained by the Rasch measures was 30.2%, and the mean item and person fit statistics were close to the expected value of 1.0 (mean item infit MNSQ = 1.00, mean item outfit MNSQ = 1.02; mean person infit MNSQ = 1.02, mean person outfit MNSQ = 1.02). Item and person separation reliabilities were 0.98 and 0.90. These results support the use of a single domestic violence severity score, while recognizing that they represent acceptable rather than strong evidence for strict unidimensionality.

Table 1

Instrument quality (32 items).

Estimation	Values
Raw variance explained by measures	30.2%
Item separation reliabilities	0.98
Person separation reliabilities	0.90
Cronbach Alpha (KR-20)	0.91
Separation index of the item	6.35
Mean item	0.00
Mean person	-0.06

Mean item infit MNSQ	1.00
Mean person in MNSQ	1.02
Mean item outfit MNSQ	1.02
Mean person outfit MNSQ	1.02

Procedure

Participants accessed the questionnaire through a Google Form link. After reading and approving the informed consent, respondents completed demographic questions (age, income, marital duration, education, occupation) followed by the violence instrument. Each participant was given approximately 10 minutes to complete the questionnaire. Data were automatically recorded in a secure database accessible only to the research team.

Variables and Measurements

The study employed two independent variables: income level and marital duration. Income level was categorized into five groups based on monthly earnings: < 2 million IDR, 2–3.9 million IDR, 4–6.9 million IDR, 7–8.9 million IDR, and ≥ 9 million IDR. These cut-points were chosen to distinguish households below approximately 2 million IDR, often aligning with national vulnerability and near-poverty thresholds, from those within the government and World Bank–linked 'middle class' range of roughly 2–9.9 million IDR per month. This categorization also created three internal bands within this middle-class interval (2–3.9, 4–6.9, and 7–8.9 million IDR) to capture gradations of socioeconomic position while ensuring adequate cell sizes for the interaction analysis between income and marital duration (Thawley et al., 2024).

Marital duration was calculated as the number of completed years in the current marriage and grouped into eight bands of 5-year increments: 1–5.9 years, 6–10.9 years, 11–15.9 years, 16–20.9 years, 21–25.9 years, 26–30.9 years, 31–35.9 years, and 36–40 years. These relatively fine-grained categories were chosen to approximate different stages of marital development and family life cycles (e.g., early adaptation, intensive child-rearing years, and later-life marriage), which have been associated with changes in marital functioning and intimate partner violence risk over time (Wickrama et al., 2020). However, this level of granularity increased the number of cells in the income × marital-duration cross-classification, and several cells had n<20, which may have reduced the stability and precision of some ANOVA and interaction estimates. These distributional issues are acknowledged as an analytical limitation.

The dependent variable was the domestic violence score, derived from the total Rasch-transformed logit measure of the 32-item instrument.

Analysis

Data were analyzed using the Rasch Model to convert ordinal Likert responses into interval-level logit measures, following methodological recommendations (Bond & Fox, 2013). Person measures were used as the dependent variable.

A Two-Way ANOVA was conducted to test the main effect of income level, the main effect of marital duration, and the interaction effect between income level and marital duration. Significance was set at $p < 0.05$. Before conducting the two-way ANOVA, we tested the assumptions of normality and homogeneity of variances. The normality of the Rasch-transformed domestic violence severity scores was evaluated using the Shapiro-Wilk test, which indicated that the assumption of normality was met ($p > 0.05$). The homogeneity of variances was assessed using Levene's test, and results showed no significant violations of this assumption ($p > 0.05$). Analyses were performed using WINSTEPS version 5.x for Rasch calibration and SPSS version 27.0 for inferential statistics.

Because income level and marital duration were combined into a 5 × 8 factorial structure, we examined the distribution of participants across all income × marital-duration cells. Several combinations had relatively small cell sizes, and some cells were empty or near-empty. The Two-Way ANOVA was therefore interpreted with caution, particularly for interaction patterns involving sparsely populated categories.

Ethical Considerations

The study protocol was approved by the institutional health research ethics committee (details blinded for review). The study was deemed ethically appropriate in accordance with the Organization (2021) standards and guidelines. All participants provided written informed consent before data collection. Participation was voluntary, and informed consent was obtained online before completing the questionnaire. Because the

research focused on domestic violence, general online safety instructions and brief information on support services were provided; however, we acknowledge that more extensive DV-specific safety protocols (e.g., automated 'quick exit' buttons or individualized risk screening) were limited in this study due to the online format and resource constraints.

Findings and Results

The overall domestic violence score, based on the Rasch-transformed logit measure of the 32-item instrument, had a mean of -0.096 and a standard deviation (SD) of 0.780. There was a significant main effect of income, $F(4, 439) = 5.57$, $p < 0.001$, $\eta^2 = 0.048$. Marital duration also showed a significant main effect, $F(7, 439) = 2.40$, $p = 0.015$, $\eta^2 = 0.037$. The interaction between income and marital duration was significant, $F(28, 439) = 2.56$, $p < 0.001$, $\eta^2 = 0.140$. The differences in Rasch-transformed domestic violence scores were observable across marital duration groups and income categories.

Although the interaction between income and marital duration was significant, no post hoc or simple-effects tests were conducted due to data constraints and the use of aggregated data. Therefore, the interpretation of the interaction effect should be considered exploratory and descriptive, rather than definitive. Women in lower-income categories tended to show higher levels of domestic violence, whereas those in middle-income ranges showed relatively more stable scores (Table 2, Figure 2). Variations were also present across different marital durations, suggesting that the risk of violence changed across stages of marriage.

Table 2

Descriptive statistics and two-way ANOVA test results.

| Differentiated Aspects	Distinct Item (Code)	n (%)	Mean Measure	Median	SD	Reliability Person	Mean Squares	F	Sig.
Marital duration	1–5.9 years (A)	148 (30.9)	-0.01	-0.01	0.50	0.88			
	6–10.9 years (B)	74 (15.5)	-0.25	-0.22	0.73	0.92			
	11–15.9 years (C)	107 (22.3)	0.00	-0.07	0.59	0.91			
	16–20.9 years (D)	19 (3.9)	-0.15	0.09	0.51	0.88	0.86	2.40	0.015
	21–25.9 years (E)	58 (12.1)	0.10	0.13	0.51	0.89			
	26–30.9 years (F)	34 (7.1)	-0.27	-0.31	0.40	0.83			
	31–35.9 years (G)	29 (6.1)	0.03	0.31	0.60	0.91			
	36–40.9 years (H)	10 (2.1)	-0.15	-0.23	0.32	0.78			
Income level (IDR)	< 2 million (1)	196 (40.9)	0.09	0.05	0.57	0.90			
	2 – 3.9 million (2)	77 (16.1)	-0.11	-0.15	0.52	0.89			
	4 – 6.9 million (3)	132 (27.5)	-0.21	-0.22	0.61	0.90	1.96	5.57	0.00
	7 – 8.9 million (4)	32 (6.7)	-0.15	.01	0.57	0.90			
	≥ 9 million (5)	42 (8.8)	-0.12	-0.11	0.42	0.85			
Length of marriage * Income							0.86	2.56	0.00
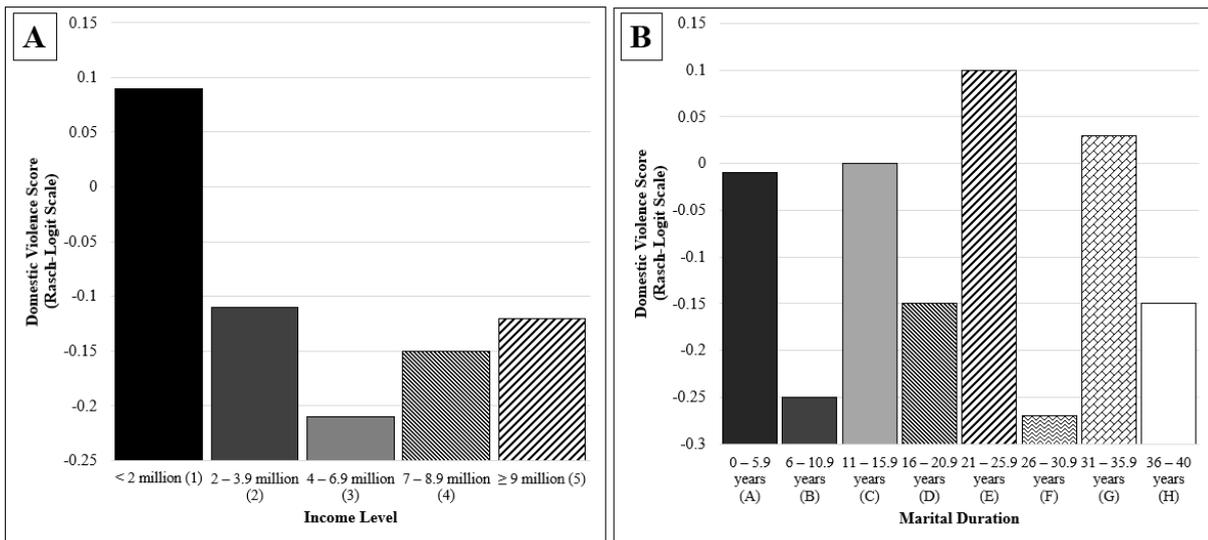
Figure 2

Estimated marginal means of Rasch-converted domestic violence scores across categories of (A) income level and (B) marital duration

Based on the Two-Way ANOVA analysis, domestic violence scores differed significantly by marital duration, $F(7, 439) = 2.40$, $p = 0.015$ (Table 2, Figure 2). The pattern indicated that certain duration groups showed elevated risk, suggesting that the likelihood of violence did not follow a linear trajectory across marital years. Income level also showed a significant main effect on domestic violence scores, $F(4, 439) = 5.57$, $p < 0.001$. Lower-income groups generally exhibited higher levels of violence, whereas middle-income categories showed comparatively lower scores.

The interaction between income level and marital duration was significant, $F(28, 439) = 2.56$, $p < 0.001$, indicating that the effect of income on domestic violence varied depending on the stage of marriage (Table 2). Figure 3 illustrates this interaction by presenting estimated marginal means for all combinations of marital duration and income categories (see Table 3).

Table 3

Estimated marginal means of domestic violence score across categories of length of marriage and income level.

Length of marriage/ income level	< 2 million (1)	2 – 3.9 million (2)	4 – 6.9 million (3)	7 – 8.9 million (4)	≥ 9 million (5)
1 – 5.9 years (A)	0.10	-0.06	-0.38	-0.16	0.22
6 – 10.9 years (B)	-0.15	0.08	-0.46	-0.20	-0.05
11 – 15.9 years (C)	0.18	-0.22	-0.14	—	-0.26
16 – 20.9 years (D)	0.32	-0.20	-0.10	-0.30	-0.55
21 – 25.9 years (E)	0.26	-0.18	0.05	-0.42	-0.43
26 – 30.9 years (F)	0.33	-0.17	-0.18	-0.48	-0.33
31 – 35.9 years (G)	0.12	—	—	+0.33	—
36 – 40 years (H)	—	-0.14	—	—	-0.25

Note: Some income × marital duration combinations are marked as missing ("—"), which corresponds to categories with insufficient data or cells with fewer than 20 participants. These combinations were excluded from the ANOVA due to their limited sample size, which could undermine the stability and interpretability of the results.
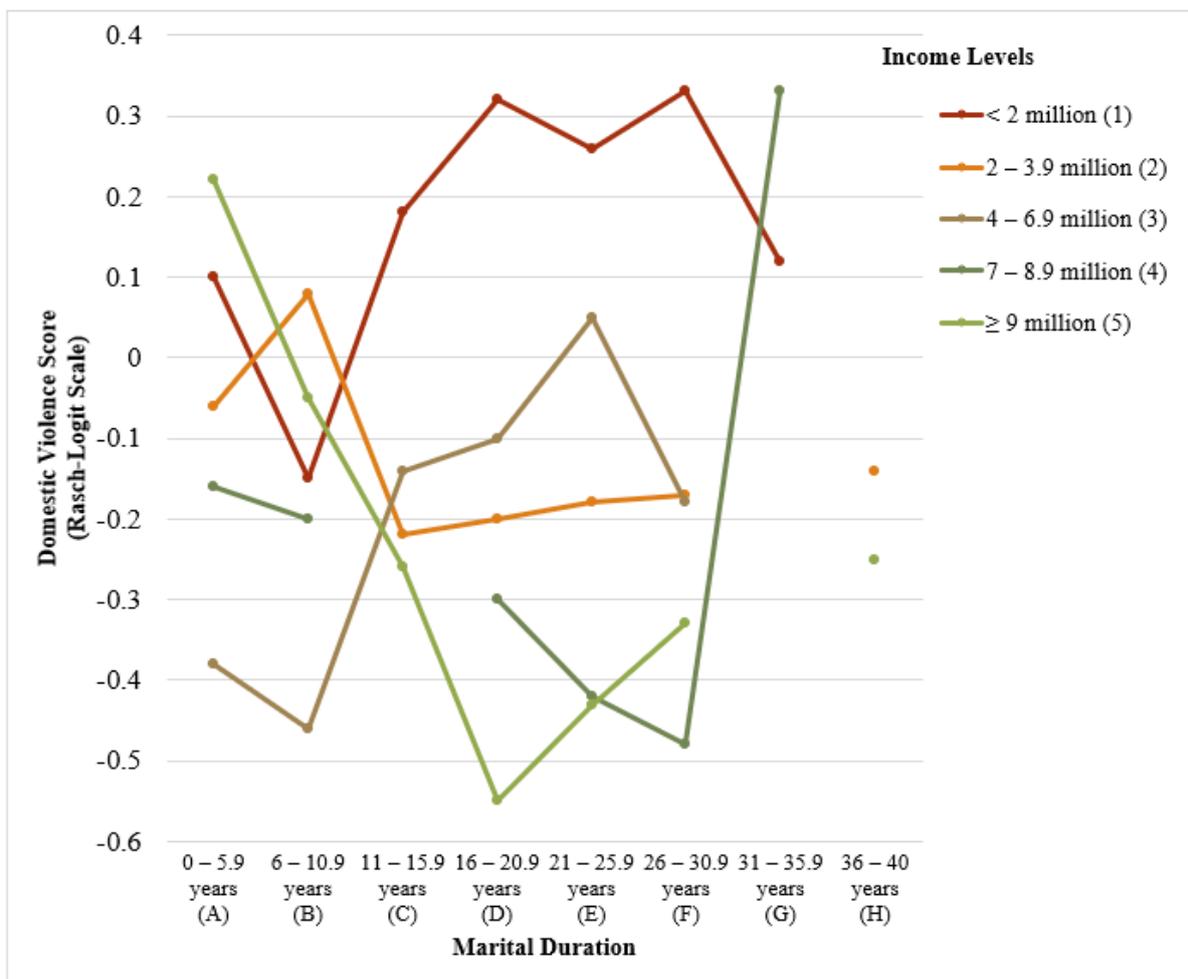
Figure 3

Estimated marginal means of Rasch-converted domestic violence scores across categories of length of marriage and income level, illustrating the interaction effects between both variables

The interaction plot showed that women with income below 2 million IDR consistently demonstrated the highest levels of domestic violence across multiple marital stages, particularly during the middle years of marriage. In contrast, women with middle incomes exhibited more stable scores over the duration of the marriage. The increase in domestic violence scores for high-income women in long-term marriages suggests that non-economic stressors, such as marital dissatisfaction or changes in family dynamics, may contribute to the observed patterns.

Discussion and Conclusion

The statistical analysis of this study indicates that both income level and marital duration are significantly associated with domestic violence severity among married women in Indonesia who reported experiencing domestic violence and self-identified as victims. The Two-Way ANOVA revealed significant main effects for both income level and marital duration, as well as a significant interaction effect between these variables. Visual inspection of the estimated marginal means suggested that domestic violence severity did not follow a simple linear progression across marital duration but varied at specific stages. Consequently, the interpretation of these patterns was based on the overall interaction term and estimated marginal means, rather than on post-hoc tests, which were not conducted due to data constraints.

Overall, women in lower-income categories generally exhibited higher domestic violence severity scores, consistent with the idea that economic vulnerability is associated with higher risks of violence. At the same

time, variations across marital duration suggest that domestic violence severity varies over the course of marital life, with certain stages of marriage linked to elevated risk. The significant interaction effect between income level and marital duration highlights that income-related differences in domestic violence are influenced by marital stage, revealing a complex pattern in which both economic stressors and relationship dynamics interact to shape women's vulnerability to violence. These findings emphasize that domestic violence results from a combination of structural and relational factors, rather than from a single determinant.

The present study showed a clear and consistent association between income level and the severity of domestic violence, with women in the lowest income group experiencing the highest Rasch-converted violence scores across multiple marital stages (Figure 2). This gradient pattern suggests that economic disadvantage not only increases overall vulnerability but also amplifies exposure to coercive emotional, psychological, and financial abuse. The significant main effect of income in the Two-Way ANOVA demonstrates that economic conditions remain a defining structural factor shaping women's risk profiles, independent of marital duration. These findings underscore how financial constraints act as a persistent stressor in intimate relationships, potentially increasing the likelihood of conflict and limiting women's capacity to resist or exit abusive dynamics.

The association between low income and heightened domestic violence severity found in this study aligns with a growing body of evidence demonstrating that economic hardship intensifies relational stress and power imbalances in intimate partnerships (Mellar et al., 2024; Reyal et al., 2024). Economic stress theory explains that prolonged financial pressure erodes emotional regulation, increases household conflict, and elevates the likelihood of partner aggression (Dabaghi et al., 2023; Ikuteyijo et al., 2025; Mellar et al., 2024). For example, a study found that financial insecurity significantly increased women's risk of emotional and physical violence in low-income households and that cash-transfer interventions reduced intimate partner violence (IPV) by alleviating economic strain (Gibbs et al., 2020). Similarly, another study found that restricted access to income and economic opportunities heightened women's vulnerability to coercive control, supporting

gendered resource theory, which posits that women with fewer financial resources have diminished bargaining power within intimate relationships (McKelway, 2022). Evidence from another report further demonstrates that economic insecurity predicts higher levels of coercive emotional abuse, particularly among couples experiencing chronic debt or unstable employment (Mellar et al., 2024). Additional cross-country analyses revealed that COVID-19–related income shocks led to substantial rises in psychological and physical IPV, reinforcing the role of economic instability as a catalyst for household conflict (Bourgault et al., 2021). Parallel findings from a report confirm that poverty, income volatility, and limited financial autonomy are among the strongest and most consistent predictors of IPV in low- and middle-income settings (Stöckl & Sorenson, 2024). Together, these studies suggest that the elevated violence observed among women in the lowest income categories in this study reflects broader structural mechanisms, such as dependency, reduced bargaining power, and chronic financial stress, which have been repeatedly validated across diverse LMIC populations.

Despite consistent associations between poverty and violence, recent research demonstrates that higher income or status does not always provide a straightforward protective effect. Analysis from a report across 24 countries found that in regions with rigid gender norms, women who possessed greater job skills or earnings than their partners faced an increased risk of intimate partner violence, supporting the relative resource theory, which posits that status inconsistency triggers conflict (Liu & Olamijuwon, 2024). Similarly, in Ethiopia, while economic empowerment is generally beneficial, it can paradoxically trigger "male backlash" when a woman's financial independence challenges traditional household authority (Jima Bedaso, 2025). Furthermore, another analysis of South African women reported that higher educational attainment was associated with higher odds of experiencing physical violence, suggesting that socioeconomic advantage can sometimes intensify risk by disrupting established power dynamics (Jima Bedaso, 2025).

Taken together, these empirical findings contextualize the results of the present study: while low income clearly heightens vulnerability to domestic violence, economic advantage does not guarantee protection. The strong positive association observed in

our lowest-income category aligns with global prevalence, which confirms that structural economic disadvantages are among the most potent drivers of IPV risk worldwide (Sardinha et al., 2022). However, the presence of violence among higher-income groups echoes the "male backlash" mechanisms, where threats to traditional breadwinner roles can precipitate conflict regardless of absolute wealth (Bhalotra et al., 2021). Thus, the study's findings reinforce the conclusion that domestic violence emerges from the interaction of structural vulnerabilities and relational power; as such, income operates not as a determinative shield, but as a variable resource that is filtered through the broader context of marital dynamics and gendered expectations.

The results of this study indicated a statistically significant association between marital duration and domestic violence severity (Table 2). However, the nature of this relationship did not follow a simple linear trajectory (Figure 2). As evidenced by the estimated marginal means, domestic violence scores fluctuated across different stages of marital duration rather than steadily increasing or decreasing over time. This suggests that vulnerability to domestic violence is not static; instead, specific phases of the marital life cycle may present heightened risks for conflict and abuse, distinct from the early adjustment phase of marriage or the stability often assumed in later years.

This non-linear pattern aligns with a growing body of literature suggesting that longer marital duration can, in certain contexts, be associated with an increased risk of, or persistence of, IPV. For instance, recent findings from a cross-sectional study in Tehran identified a positive relationship between marital duration and IPV prevalence, indicating that, without effective intervention, abusive dynamics may become entrenched or normalized over time rather than resolving (Ghorbani et al., 2025). Theoretical frameworks, such as "entrapment" and "sunk cost theory," support this view, positing that as marriages lengthen, structural barriers to leaving intensify, potentially forcing victims to remain in abusive environments (Ani & Katende-Kyenda, 2025). Additionally, research on older women has shown that accumulated emotional conflict, entrenched power imbalances, and reluctance to dissolve long-term marriages contribute to persistent violence later in life (Sasseville et al., 2022; Stubbs & Szoeke, 2022). Moreover, cultural norms in many low- and middle-income settings

may pressure women to endure long-term violence to preserve family honor, leading to an accumulation of abuse in mid-to-late marriage (Gunarathne et al., 2025). Life-stage stressors, such as the "empty nest syndrome" or menopausal transitions, have also been linked to increased psychological and physical violence in long-term unions, as shifting family roles can destabilize established power dynamics (Ghazanfarpour et al., 2022).

Conversely, some recent research provides evidence for the protective effect of marital duration, challenging the inevitability of long-term abuse. A multi-country analysis of Demographic and Health Surveys (DHS) found that in many regions, IPV risk declines steeply as the age at marriage and subsequent relationship duration increase (Coll et al., 2023). This trend is often attributed to the "selection effect" or "survivor bias," where highly conflictual or violent marriages are more likely to end in divorce early on, leaving a pool of longer-duration marriages that are inherently more stable and less violent (Sardinha et al., 2022). Additionally, a systematic review of risk factors between 2010 and 2022 highlights that relationship stability and accumulated socioeconomic resources can serve as buffers against IPV (Gunarathne et al., 2023). In these contexts, couples who successfully navigate the early years of adjustment often develop stronger conflict resolution mechanisms, resulting in a negative correlation between marriage length and violence scores (Potter et al., 2021).

The results of the present study provide a nuanced understanding of these conflicting perspectives. The elevated domestic violence score observed at the 21–25.9 year mark contradicts the purely protective hypothesis, suggesting instead that mid-life marital stages may introduce unique stressors that reignite or exacerbate conflict. It is plausible that the study population experiences a bimodal risk: an initial adjustment period, followed by a secondary phase of tension possibly related to mid-life economic pressures or changing family structures, such as children leaving home. Therefore, marital duration should not be viewed as a uniform protective factor, but rather as a variable context containing specific windows of high risk. This suggests that the relationship between marital duration and domestic violence is not linear or predictable, but context-dependent, with different marital stages posing different levels of vulnerability.

These findings have significant implications for interventions. While early stages of marriage might require interventions focused on conflict resolution and communication skills, long-term marriages might require different strategies to address accumulated emotional strain, non-economic stressors, or power imbalances that have developed over time. As such, standard early-intervention models may not be adequate for couples in long-term unions, who may be experiencing "gray IPV" or entrenched patterns of abuse that are often overlooked in conventional IPV prevention frameworks.

The statistically significant interaction between income level and marital duration suggests that the relationship between domestic violence and marital duration is not the same across different income groups (Table 2). Although the interaction was not decomposed using additional post hoc tests due to data aggregation constraints, the pattern of estimated marginal means clearly indicated distinct trajectories for low- and high-income groups. While low-income households exhibited consistently high violence scores across multiple marital stages, high-income households displayed a non-linear pattern, characterized by peaks in the earliest (1–5.9 years) and latest (31–35.9 years) stages of marriage.

The pervasive violence observed among lower-income participants aligns with the Family Stress Model, which posits that chronic financial strain depletes the emotional and cognitive resources required for conflict resolution, thereby increasing the likelihood of aggression regardless of relationship length (Karney, 2021). In these contexts, economic precarity serves as a persistent stressor that impedes the stabilization of relational dynamics often observed in longer marriages (Gunarathne et al., 2025; Mellar et al., 2024). Conversely, the data suggest that for higher-income couples, financial stability may buffer against conflict in mid-marriage but fails to prevent violence during critical transition periods. This finding supports the relative resource theory or backlash effect, observed in recent global analyses, where high status or resources can paradoxically trigger violence when traditional power dynamics are threatened or when couples face late-life role transitions (Liu & Olamijuwon, 2024; Sardinha et al., 2022).

The resurgence of violence in long-duration marriages (31–35.9 years), specifically among the highest income group, challenges the assumption that violence typically declines with age and stability. This phenomenon may be explained by the "sunk cost" effect and the unique barriers to dissolution faced by wealthy couples (Ani & Katende-Kyenda, 2025). Recent studies suggest that in high-asset marriages, the financial and social costs of divorce increase over time, potentially trapping partners in abusive dynamics that re-escalate during the "gray divorce" window or post-retirement phases (Lin & Brown, 2021). Additionally, research on IPV among older adults indicates that late-life stressors, such as health declines or the restructuring of household hierarchies after children leave home, can destabilize long-standing truces in affluent households (Bolkan et al., 2023; Schreiber & Salivar, 2021). Unlike low-income dyads, where stress is external and resource-based, violence in high-income, long-term unions may stem from entrenched coercive control that intensifies as partners become more isolated in later years (Lohmann et al., 2024).

It is also crucial to consider the bidirectional nature of these variables when interpreting the interaction. While income influences violence, recent longitudinal data confirm that intimate partner violence systematically erodes household income over time by limiting women's workforce participation and causing economic instability (Eggers del Campo & Steinert, 2022). Therefore, the lower income reported in violent marriages may be a consequence of the abuse rather than solely a cause. Additionally, social desirability bias likely skews reports in the high-income demographic, particularly during the stable mid-marriage years. Affluent women often face greater stigma regarding disclosure due to the pressure to maintain a facade of family perfection, leading to underreporting until violence becomes severe or unavoidable in later stages (Dabaghi et al., 2023). Consequently, the interaction observed in this study highlights that while economic resources provide a protective buffer, they do not immunize couples against the structural and relational shifts that occur at the beginning and end of the marital lifecycle (Jetelina et al., 2021).

To provide a clearer visualization of how these empirical patterns align with broader theoretical explanations, a conceptual synthesis of the discussion findings is presented in Figure 4. The figure schematically summarizes the cross-sectional pattern

found in the study, focusing on the lowest and highest monthly income categories. The upper panel represents women in the lowest income group (< 2 million IDR/month), among whom domestic violence scores were high across marital duration categories. In this group, severity remains elevated from early marriage (e.g., 1–5.9 years) through mid (e.g., 21–25.9 years) and long-term marriage (e.g., 31–35.9 years), illustrating a persistently high level of violence severity over the marital life course.

Figure 4

Conceptual illustration of the interaction between income and marital duration in relation to domestic violence severity.

The lower panel represents women in the highest income group (≥ 9 million IDR/month), who showed a non-linear pattern of domestic violence severity across marital duration. In this group, severity scores were comparatively lower in early and mid-marriage. Still, they increased again in long-term marriages (e.g., 31–35.9 years), indicating higher severity in later marital stages despite higher income. Intermediate income categories (2–9 million IDR/month) are not displayed in this schematic for clarity, but were included in the original two-way ANOVA. The illustration is conceptual and is intended to highlight the observed interaction between income level and marital duration rather than provide exact numeric estimates.

The findings of this study should be interpreted with several important limitations in mind. First, the sample was limited to women who self-identified as victims of domestic violence, creating a strong selection bias. This self-selection, coupled with the non-probability online sampling approach, means that the results cannot be generalized to all married women in Indonesia. The sample may not represent women who do not self-identify as victims, who lack internet access, or who are unwilling to disclose violence in an online format. Additionally, while the study aimed to obtain variation across income and marital duration categories, the self-reported nature of the data introduces potential recall and reporting biases. Although general safety instructions and information on support services were provided, the online format may have posed risks, such as partner monitoring of devices, which were not fully mitigated due to resource constraints. Second, the study used unadjusted associations; although several socioeconomic variables (e.g., age, education, occupation) were collected, they were not included in the analysis, making the results susceptible to confounding. The cross-sectional design also precluded examination of temporal relationships, limiting the ability to draw

causal inferences. Third, the small cell sizes in some income × marital-duration combinations (especially in high-income, long-duration groups) and missing data may have affected the precision and stability of some ANOVA estimates, particularly for the interaction term. These issues are acknowledged as limitations in the analysis. Lastly, the sample size calculation was based on Cochran's formula for proportions. It was not optimized to detect interaction effects, meaning that the power to detect significant interactions may have been lower than expected for some categories.

Generalisation of the findings should be done with caution. Although the sample covered participants from multiple regions in Indonesia, it may not fully represent rural populations, women without digital access, or cultural groups with different norms of marriage and gender roles. Nevertheless, because income-related patterns of domestic violence are consistently reported across diverse low- and middle-income countries (Gunarathne et al., 2023; Reyal et al., 2024), the core findings likely hold relevance beyond the study population.

Despite these limitations, the study contributed several important insights. First, it demonstrated that income level and marital duration were independently and jointly associated with domestic violence, emphasizing the need to consider both economic and relational factors simultaneously. Second, it identified a previously underexplored pattern, an increase in violence among high-income women in long-term marriages, suggesting that domestic violence prevention should not focus solely on low-income populations. Finally, the study leveraged Rasch modeling to generate interval-level estimates of violence severity, strengthening measurement precision and enabling robust comparison across groups.

Future research should employ longitudinal designs to clarify causal pathways and examine how income shocks, employment changes, and marital transitions affect violence over time. Qualitative exploration may also help explain the mechanisms underlying violence in long-term high-income marriages. Including additional socioeconomic variables such as education, wealth index, and partner characteristics could further strengthen analytical depth. Policy-oriented studies evaluating economic empowerment interventions would also be valuable in addressing the structural roots of violence.

This study demonstrates that domestic violence severity is associated with both income level and marital duration, with specific marital stages and income groups experiencing distinct patterns of violence severity. Women in lower-income categories exhibited consistently higher violence scores across marital stages, supporting the idea that economic vulnerability is associated with increased risk of abuse. However, the significant interaction between income and marital duration indicates that higher income does not guarantee protection from violence. In fact, high-income women in long-term marriages showed elevated levels of violence, which could be attributed to shifting power dynamics or life-stage stressors, such as the "sunk cost" effect or gray divorce dynamics.

These findings highlight that domestic violence emerges from the complex interaction between economic stressors and relational dynamics across different marital stages. Although economic empowerment and life-course counseling are plausible interventions for women in low-income marriages, these findings suggest that interventions must also address the specific challenges faced by women in higher-income, long-term marriages. Given the study's cross-sectional design and self-identified victim sample, future longitudinal research is needed to confirm the causal pathways and explore how marital transitions and economic shocks influence the risk of violence over time. Additionally, research incorporating other socioeconomic variables (e.g., education, employment) will provide a more comprehensive understanding of the structural factors driving domestic violence in diverse contexts.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Declaration of Helsinki, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

MH, FHS, and I were involved in concepting and planning the research; MH and FHS performed the data acquisition/collection, and calculated the experimental data; MH and I performed the analysis, drafted the manuscript, designed the figures, and interpreted the results. All authors participated in the critical revision of the manuscript.

References

Ali, Z., Ismail, N., & Ahmad, K. (2023). Impact of Domestic Violence in Malaysia During the COVID-19 Pandemic and Alternative Solutions from al-Ghazali's Theory of Hisbah. *Environment-Behaviour Proceedings Journal*, *8*(SI14), 121-126. https://doi.org/10.21834/e-bpj.v8iSI14.5049

Ani, J. I., & Katende-Kyenda, L. N. (2025). Predictors of intimate partner violence and associated marital disruption among ever-married women in sub-Saharan Africa: a multi-country analysis for policy and intervention priorities. *Frontiers in Sociology*, *10*, 1658603. https://doi.org/10.3389/fsoc.2025.1658603

Bhalotra, S., Kambhampati, U., Rawlings, S., & Siddique, Z. (2021). Intimate partner violence: The influence of job opportunities for men and women. *The World Bank Economic Review*, *35*(2), 461-479. https://doi.org/10.1093/wber/lhz030

Bolkan, C., Teaster, P. B., & Ramsey-Klawsnik, H. (2023). The context of elder maltreatment: an opportunity for prevention

science. *Prevention science*, *24*(5), 911-925. https://doi.org/10.1007/s11121-022-01470-5

Bond, T. G., & Fox, C. M. (2013). *Applying the Rasch model: Fundamental measurement in the human sciences*. Psychology Press. https://doi.org/10.4324/9781315814698

Bourgault, S., Peterman, A., & O'Donnell, M. (2021). Violence against women and children during COVID-19—one year on and 100 papers in. *Center for Global Development*. https://www.jstor.org/stable/pdf/resrep30898.pdf

Cochran, W. G. (1977). *Sampling techniques*. john wiley & sons. https://www.scirp.org/reference/ReferencesPapers?ReferenceID=1390266

Coll, C. V., Wendt, A., Santos, T. M., Bhatia, A., & Barros, A. J. (2023). Cross-national associations between age at marriage and intimate partner violence among young women: An analysis of demographic and health surveys from 48 countries. *International journal of environmental research and public health*, *20*(4), 3218. https://doi.org/10.3390/ijerph20043218

Dabaghi, N., Amini-Rarani, M., & Nosratabadi, M. (2023). Investigating the relationship between socioeconomic status and domestic violence against women in Isfahan, Iran, in 2021: A cross-sectional study. *Health science reports*, *6*(5), e1277. https://doi.org/10.1002/hsr2.1277

Eggers del Campo, I., & Steinert, J. I. (2022). The effect of female economic empowerment interventions on the risk of intimate partner violence: A systematic review and meta-analysis. *Trauma, Violence, & Abuse*, *23*(3), 810-826. https://doi.org/10.1177/1524838020976088

Einiö, E., Metsä-Simola, N., Aaltonen, M., Hiltunen, E., & Martikainen, P. (2023). Partner violence surrounding divorce: A record-linkage study of wives and their husbands. *Journal of marriage and family*, *85*(1), 33-54. https://doi.org/10.1111/jomf.12881

Ghazanfarpour, M., Dolatabadi, Z., Saeedi, M., Shojania, S., Kiani, M. A., Mohsen, A. M., & Babakhanian, M. (2022). On the relationship between intimate partner violence and quality of life among menopausal women. *J Arch Mil Med*, *9*, e116322. https://doi.org/10.5812/jamm.116322

Ghorbani, S. S., Ghaffari, M., Halimi, A., Babadi, K. F., & Nazari, S. S. H. (2025). Prevalence of Intimate Partner Violence Against Women and Its Contributing Factors in Tehran, Iran. *Medical Journal of the Islamic Republic of Iran*, *39*, 73. doi: 10.47176/mjiri.39.73

Gibbs, A., Corboz, J., Chirwa, E., Mann, C., Karim, F., Shafiq, M., Mecagni, A., Maxwell-Jones, C., Noble, E., & Jewkes, R. (2020). The impacts of combined social and economic empowerment training on intimate partner violence, depression, gender norms and livelihoods among women: an individually randomised controlled trial and qualitative study in Afghanistan. *BMJ Global Health*, *5*(3). https://doi.org/10.1136/bmjgh-2019-001946

Gunarathne, L., Apputhurai, P., Nedeljkovic, M., & Bhowmik, J. (2025). Factors associated with married women's attitude toward intimate partner violence: A study on 20 low-and middle-income countries. *Health care for women international*, *46*(3), 296-316. https://doi.org/10.1080/07399332.2024.2319214

Gunarathne, L., Bhowmik, J., Apputhurai, P., & Nedeljkovic, M. (2023). Factors and consequences associated with intimate partner violence against women in low-and middle-income countries: A systematic review. *PloS one*, *18*(11), e0293295. https://doi.org/10.1371/journal.pone.0293295

Ikuteyijo, O. O., Zepro, N., Akinyemi, A. I., Probst-Hensch, N., & Merten, S. (2025). Socio-Economic Factors Influencing Intimate Partner Violence Among Adolescents and Young Women in Sub-Saharan Africa: A Scoping Review. *Public*

health reviews, *45*, 1607041. https://doi.org/10.3389/phrs.2024.1607041

Jetelina, K. K., Knell, G., & Molsberry, R. J. (2021). Changes in intimate partner violence during the early stages of the COVID-19 pandemic in the USA. *Injury prevention*, *27*(1), 93-97. https://doi.org/10.1136/injuryprev-2020-043831

Jima Bedaso, F. (2025). Her job, her safety? Domestic violence and women's economic empowerment in Ethiopia. *Journal of Applied Economics*, *28*(1), 2465100. https://doi.org/10.1080/15140326.2025.2465100

Karney, B. R. (2021). Socioeconomic status and intimate relationships. *Annual review of psychology*, *72*(1), 391-414. https://doi.org/10.1146/annurev-psych-051920-013658

Laksono, A. D., Wulandari, R. D., & Matahari, R. (2023). Socioeconomic differences of intimate partner violence among married women in Indonesia: Does poverty matter? *Indian journal of community medicine*, *48*(2), 304-309. https://doi.org/10.4103/ijcm.ijcm_254_22

Lin, I.-F., & Brown, S. L. (2021). The economic consequences of gray divorce for women and men. *The Journals of Gerontology: Series B*, *76*(10), 2073-2085. https://doi.org/10.1093/geronb/gbaa157

Liu, C., & Olamijuwon, E. (2024). The link between intimate partner violence and spousal resource inequality in lower-and middle-income countries. *Social Science & Medicine*, *345*, 116688. https://doi.org/10.1016/j.socscimed.2024.116688

Lohmann, S., Cowlishaw, S., Ney, L., O'Donnell, M., & Felmingham, K. (2024). The trauma and mental health impacts of coercive control: A systematic review and meta-analysis. *Trauma, Violence, & Abuse*, *25*(1), 630-647. https://doi.org/10.1177/15248380231162972

McKelway, M. (2022). Women's Employment and Empowerment: Descriptive Evidence. AEA Papers and Proceedings, https://doi.org/10.1257/pandp.20221051

Mellar, B. M., Fanslow, J. L., Gulliver, P. J., & McIntosh, T. K. (2024). Economic abuse by an intimate partner and its associations with women's socioeconomic status and mental health. *Journal of Interpersonal Violence*, *39*(21-22), 4415-4437. https://doi.org/10.1177/08862605241235140

Munir, L. Z. (2005). Domestic violence in Indonesia. *Muslim World J. Hum. Rts.*, *2*, i. https://doi.org/10.2202/1554-4419.1031

Organization, W. H. (2021). *Violence against women prevalence estimates, 2018: global, regional and national prevalence estimates for intimate partner violence against women and global and regional prevalence estimates for non-partner sexual violence against women*. World Health Organization. https://iris.who.int/handle/10665/341337

Potter, L. C., Morris, R., Hegarty, K., García-Moreno, C., & Feder, G. (2021). Categories and health impacts of intimate partner violence in the World Health Organization multi-country study on women's health and domestic violence. *International journal of epidemiology*, *50*(2), 652-662. https://doi.org/10.1093/ije/dyaa220

Puno-Balagosa, A., Bhatia, A., Jeong, J., & Kim, R. (2025). Co-occurrence of maternal intimate partner violence and violent discipline and its associations with child morbidity in the Philippines. *Child abuse & neglect*, *163*, 107363. https://doi.org/10.1016/j.chiabu.2025.107363

Reyal, H. P., Dissanayake, N., Gunarathna, H., Soysa, D., Fernando, M. S., & Senarathna, L. (2024). Association between individual-level socioeconomic factors and intimate partner violence victimisation in women: a systematic review protocol. *BMJ open*, *14*(3), e080117. https://doi.org/10.1136/bmjopen-2023-080117

Sardinha, L., Maheu-Giroux, M., Stöckl, H., Meyer, S. R., & García-Moreno, C. (2022). Global, regional, and national prevalence estimates of physical or sexual, or both, intimate partner violence against women in 2018. *The Lancet*, *399*(10327), 803-813. https://doi.org/10.1016/S0140-6736(21)02664-7

Sasseville, N., Maurice, P., Montminy, L., Hassan, G., & St-Pierre, É. (2022). Cumulative contexts of vulnerability to intimate partner violence among women with disabilities, elderly women, and immigrant women: Prevalence, risk factors, explanatory theories, and prevention. *Trauma, Violence, & Abuse*, *23*(1), 88-100. https://doi.org/10.1177/1524838020925773

Schreiber, E., & Salivar, E. G. (2021). Using a vulnerability-stress-adaptation framework to model intimate partner violence risk factors in late life: A systematic review. *Aggression and Violent Behavior*, *57*, 101493. https://doi.org/10.1016/j.avb.2020.101493

Shaikh, M. A. (2024). Prevalence, correlates, and trends of intimate partner violence against women in Cambodia: findings from 2014 and 2021-22 cross-sectional demographic and health surveys. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *61*, 00469580241246465. https://doi.org/10.1177/00469580241246465

Stöckl, H., & Sorenson, S. B. (2024). Violence against women as a global public health issue. *Annual review of public health*, *45*(1), 277-294. https://doi.org/10.1146/annurev-publhealth-060722-025138

Stubbs, A., & Szoeke, C. (2022). The effect of intimate partner violence on the physical health and health-related behaviors of women: A systematic review of the literature. *Trauma, Violence, & Abuse*, *23*(4), 1157-1172. https://doi.org/10.1177/1524838020985541

Thawley, C., Crystallin, M., & Verico, K. (2024). Towards a higher growth path for Indonesia. *Bulletin of Indonesian Economic Studies*, *60*(3), 247-282. https://doi.org/10.1080/00074918.2024.2432035

White, S. J., Sin, J., Sweeney, A., Salisbury, T., Wahlich, C., Montesinos Guevara, C. M., Gillard, S., Brett, E., Allwright, L., & Iqbal, N. (2024). Global prevalence and mental health outcomes of intimate partner violence among women: a systematic review and meta-analysis. *Trauma, Violence, & Abuse*, *25*(1), 494-511. https://doi.org/10.1177/15248380231155529

Wickrama, K. A., Klopack, E. T., O'Neal, C. W., & Neppl, T. (2020). Patterning of midlife marital trajectories in enduring marriages in a dyadic context: Physical and mental health outcomes in later years. *Journal of Social and Personal Relationships*, *37*(5), 1472-1493. https://doi.org/10.1177/0265407519899726

Women, U. (2025). The gender snapshot 2025. In: UN Women and the United Nations Department of Economic and Social Affairs. http://ngfrepository.org.ng:8080/jspui/handle/123456789/7122