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Categories and health impacts of intimate partner
violence in the World Health Organization (WHO)
multi-country study on women's health and domestic
violence

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Abstract

Background

Intimate partner violence (IPV) damages health and is costly to families and society. Individuals experience different forms and combinations of IPV; better understanding of the respective health effects of these can help develop differentiated responses. This study explores the associations of different categories of IPV on women's mental and physical health.

Methods

Using data from the World Health Organization (WHO) Multi-Country Study on Women's Health and Domestic Violence, multilevel mixed effects logistic regression modelling was used to analyse associations between categories of abuse (physical IPV alone, psychological IPV alone, sexual IPV alone, combined physical and psychological IPV, and combined sexual with psychological and/ or physical IPV) with measures of physical and mental health, including self-reported symptoms, suicidal thoughts and attempts, and nights in hospital.

Results

Countries varied in prevalence of different categories of IPV. All categories of IPV were associated with poorer health outcomes; the two combined abuse categories were the most damaging. The most common category was combined abuse involving sexual IPV, which was associated with the poorest health, (attempted suicide OR: 10.78 [95% CI 8.37-13.89], thoughts of suicide: 8.47[7.03-10.02], memory loss 2.93[2.41-3.56]). Combined psychological and physical IPV was associated with the next poorest outcomes, (attempted suicide 5.67[4.23-7.60], thoughts of suicide 4.41[3.63-5.37], memory loss 2.33[1.88-2.87]).

Conclusions

Understanding the prevalence and health impact of different forms and categories of IPV is crucial to risk assessment, tailoring responses to individuals, and planning services. Previous analyses that focused on singular forms of IPV likely under-estimated the more harmful impacts of combined forms of abuse.

Keywords

Intimate partner violence (IPV), psychological abuse/ violence, emotional abuse/ violence, physical abuse/ violence, sexual abuse/ violence, combined abuse/ violence, measurement, health

Box: Key Messages

- This study tests the associations of different categories of IPV (psychological, physical and sexual abuse and combinations of these) on women's mental and physical health using a large international sample.
- All categories of IPV are detrimental to women's physical and mental health and this persists after the abuse ends.
- Combined categories of abuse cause the greatest physical and mental health damage, particularly with regards to suicidal behaviours. They are also more prevalent than singular forms of IPV.
- Psychological IPV is at least as harmful to women's physical and mental health as physical IPV.
- Prevention policies and professional response to IPV should appreciate the persistent health detriment of experiencing IPV, and the greater damage to health of combined abuse categories in the design of their programs.

Introduction

Globally, 30% of women have experienced physical or sexual intimate partner violence (IPV) (1).

Violence against women is a violation of women's human rights that damages their and their children's physical and mental health, with substantial health care and societal costs. It is an important cause of morbidity for women and a global public health problem (2) and an indicator for Goal 5 (Gender Equality and Women and Girls' Empowerment) of the Sustainable Development Goals (SDGs).

The World Health Organization (WHO) Multi-Country Study on Women's Health and Domestic Violence found significant associations between experience of physical and/or sexual IPV and self-reported ill-health, symptoms, suicidal behaviours, unintended pregnancy and abortion (3–5). Our analysis of the WHO multi-country data aimed to understand better the relationship between different categories of intimate partner violence and women's health.

There are different forms of partner violence and these can be experienced as singular forms or different combinations of forms of IPV (6). It is not yet clear how best to categorise the spectrum of behaviours, frequency and chronicity of IPV in relation to its impact on health. Someone who experiences a single episode of physical abuse has a different experience than someone who experiences severe and frequent combined psychological, physical and sexual abuse (7,8).

Intimate partner violence has been found to increase healthcare utilisation and costs in high-income country settings (9), but this had not yet been rigorously assessed in low- and middle-income countries. It is also important to better understand how the recency of different categories of abuse is associated with health status.

Previous analyses of this large, international dataset defined a woman exposed to domestic violence if she had ever experienced *any* physical and/ or sexual violence by a partner, without inclusion of exposure to psychological abuse. There is theoretical and methodological debate about the boundary

between abusive behaviours in a relationship and psychological abuse or violence (10-12). Different intimate partner violence scales, based on diverse underlying theories, have produced a range of population prevalence estimates (13). The main measures and underlying theories have been described and critiqued elsewhere (14,15). We know that psychological abuse contributes to ill health (16); we wanted to understand this better.

For the first time we are analysing different categories of intimate partner violence, including psychological abuse, both within and greater than a year since the abuse, and its associations with women's physical and mental health, and number of nights in hospital. This is to improve understanding of how different profiles of abuse may impact health over time and inform the development of interventions for these.

Methods

Our analysis was based on data from 21,221 ever-partnered women from 16 different sites in 11 different countries collected as part of the WHO Multi-Country Study on Women's Health and Domestic Violence (17).

The WHO Multi-country study methods, sampling, response rates and prevalence of intimate partner violence of this dataset have been described in detail elsewhere (17). Briefly, standardised household surveys were conducted by trained female interviewers, between 2000 and 2004, in 15 sites in ten countries (Bangladesh, Brazil, Ethiopia, Japan, Namibia, Peru, Samoa, Serbia and Montenegro, Thailand, United Republic of Tanzania), among women aged 15-49. Two contrasting sites (a large city and a provincial, mostly rural site) were used in all countries except Ethiopia (a rural setting was used); Japan, Namibia, and Serbia and Montenegro (a large city was used) and Samoa where the whole country was sampled; . A two-stage cluster sampling design was used to select households and within each household one woman between the ages of 15 and 49 (18 and 49 in the case of Japan) was selected. Since the first report, national surveys using the same methodology have been

conducted. For the purposes of this analysis, data were included from all the countries in the original study, except for Ethiopia (as a different instrument for measuring health outcomes was used and therefore not available in the dataset for this study), as well as from studies replicating the WHO Multi-country study in Cambodia and Maldives.

The research team developed a robust ethical and safety framework (18). The study received ethical clearance from the WHO Ethics Review Committee as well as from relevant national bodies.

Women who had ever had an intimate male partner (referred to as 'ever-partnered' women) were asked in private whether they had ever experienced specific acts of psychological, physical, or sexual abuse (see table 1); whether this happened once, few or many times; and whether it had happened in the last 12 months.

Categories of abuse

We tested five categories of intimate partner violence: physical IPV alone, psychological IPV alone, sexual IPV alone, combined psychological and physical IPV, and combined sexual and psychological and/ or physical IPV; and analysed the association with physical and mental health outcomes. The categories used in this analysis were agreed upon by the authors based on our expert knowledge and clinical experience and building on previous IPV categorisation work. This included latent class analysis of data from six sites in the WHO multi-country study, articulating four or five categories of IPV (psychological only, sexual dominant, mixed (less severe), physical, systematic) depending on the setting (19) and the Composite Abuse Scale dimensions (CAS), severe combined abuse, physical and psychological abuse, physical abuse alone, psychological abuse alone) (20). The cut-off scores for psychological IPV used in this work were consistent with those used in the recent analysis on psychological IPV and health (16) (see Table 1).

Table 1- Category definitions used for different types of IPV

Physical and mental health

We selected the same health measures as those analysed in the original WHO Multi-country study (3), with the addition of number of nights spent in hospital (other than for child-birth).

Women were asked a series of questions about their physical health based on the Short Form-12 questionnaire (21). This included whether they considered their health to be excellent, good, fair, poor, or very poor; and whether they had spent nights in hospital in the last year (other than to give birth). They were asked whether they had experienced physical symptoms in the last four weeks: difficulty walking, difficulty with daily activities, pain, memory loss. Each of these were asked on a five-point scale and for analysis women scored as positive if they responded with the highest three categories (some problems, many problems or unable/ extreme). They were also asked if they experienced dizziness and vaginal discharge in the last 4 weeks (yes or no) (3).

Mental health was assessed using the Self-Reporting Questionnaire 20 (SRQ-20), a validated WHO questionnaire for mental distress (22), consisting of 20 questions about experience of various markers of distress in the last 4 weeks (e.g. crying, loss of interest, feeling nervous, tense or worried).

Medication usage was assessed by asking if in the past four weeks they had taken medication for sleep, sadness or pain. Participants were also asked whether they ever had thoughts of suicide and whether they had ever attempted suicide.

Analysis

We used bivariate analysis to estimate the associations between experience of different categories of IPV and self-reported measures of physical and mental health, which we dichotomised as described above, so that logistic regression suitable for binary outcomes could be carried out.

Adjusted and non-adjusted odds ratios (OR) with 95% confidence intervals (CIs) were calculated for the odds of health problems in ever-partnered women experiencing different categories of IPV compared to those who had not experienced any IPV. For the SRQ-20 score outcome which counts the number of symptoms out of 20, we analysed this with negative binomial regression model which produced rate ratios associated with IPV categories: these showed the multiplicative effect on the number of symptoms from each category of IPV. We found variation among sites both in the outcome measures themselves and in the impact of IPV on those outcomes; therefore we used multilevel mixed effects logistic regression, adjusting for age, education and partnership status, as well as site, to allow data to be pooled from all sites. The variable *taken medication for sadness in the past 4 weeks* was not included in this model, because data for this variable were incomplete for Bangladesh province and Tanzania province.

To assess whether different categories of IPV had different strengths of association, we compared models which regarded IPV as a binary variable (any vs none) with models regarding IPV as a six-level factor, using a likelihood ratio test.

We conducted sensitivity analyses to explore the intimate partner violence case definitions we used. In this case, the threshold exclusions mentioned for physical and psychological abuse in table 1 were not applied, leading to a higher prevalence of physical and psychological abuse. Data were analysed with STATA version 14.

Results

The original survey achieved a high response rate (97% of all eligible women). Response rates from each setting varied from 60.2% in Japan to 99.7% in Samoa, with all except Japan above 85% and has been described in detail elsewhere (17). Table 2 gives the socio-demographic characteristics of ever-partnered women, which vary across countries and between urban and rural sites. Women in cities had higher levels of education, socio-economic status and lower parity than women from rural areas.

1

2 *Table 2- Socio-demographic characteristics of ever-partnered women by study site.*

3 Table 3 reports the proportion of ever-partnered women in each site that have experienced different
4 types of IPV. The lifetime prevalence of experiencing physical IPV alone ranged from 2% in Japan city
5 to 15% in Samoa, psychological IPV alone ranged from 1% in Samoa to 14% in Brazil province, sexual
6 IPV alone ranged from 0% in Brazil city to 20% in Bangladesh province, combined psychological and
7 physical IPV ranged from 3% in Bangladesh province to 12% in Brazil province, and combined sexual
8 and psychological and/ or physical IPV ranged from 4% in Japan city to 39% in Peru province.

9 *Table 3- Prevalence of lifetime experience of different types of intimate partner violence (IPV) for ever-partnered women, by site*

10

11

12

13 Table 4 shows the adjusted odds ratios for the associations between different categories of IPV and
14 selected health conditions, symptoms or nights in hospital from pooled data across all the countries.
15 All self-reported symptoms were associated with experience of all the categories of IPV.
16 Combinations of different forms of violence (psychological and physical, or sexual and psychological
17 and/or physical) were associated with markedly higher odds ratios of symptoms than singular abuse
18 categories. The highest odds ratios were for suicide attempts, particularly in women exposed to
19 combined sexual and psychological and/ or physical IPV (OR: 6.49[95% CI 5.41-7.79]), followed by
20 combined psychological and physical IPV (4.48[3.57-5.62]). The odds ratios for physical, psychological
21 or sexual violence alone are comparable. The odds of spending a night in hospital were higher with
22 exposure to physical violence alone, sexual violence alone, and both combined abuse categories, but
23 not with psychological abuse alone. Likelihood ratio tests showed that models regarding IPV as a six
24 level factor fitted the data significantly better than a 2 category model : $p < 0.001$ for all outcomes
25 except nights in hospital ($p = 0.0016$), medication for sleep ($p = 0.061$) and medication for pain ($p > 0.5$).

26 *Table 4- Multilevel mixed effects logistic regression models for the associations between any lifetime experience of different types of intimate partner violence and selected health conditions,*
27 *symptoms or nights in hospital. Adjusted odds ratios are reported with 95% confidence intervals, to compare odds of the health problem for those who have experienced each type of intimate*
28 *partner violence (IPV), with respondents who don't meet the criteria for IPV as defined in table 1.*

29

30

31

32 Table 5 displays the association of each type of intimate partner violence with SRQ-20 score. Combined psychological and physical IPV and combined sexual
33 and psychological and/ or physical IPV have the strongest association with mental distress, although the 95% confidence intervals of relative risk overlap for
34 all categories.

35 *Table 5- Association between experience of different categories of partner violence and self-reported questionnaire 20 (SRQ-20) score*

36

37

38

39 Table 6 displays the association between health markers and experience of IPV within the last 12 months compared with experience of IPV over 12 months
40 ago. For all types there is no difference in health markers between the women who experienced IPV within the last year compared to women who
41 experienced IPV more than a year ago, except for combined sexual and psychological and/ or physical IPV and suicidal thoughts and attempts. This suggests
42 that within 12 months of experiencing the most severe category of IPV women have an even higher risk of suicidal behaviours, compared with experiencing
43 this over 12 months previously; this temporal change is not evident for other categories of IPV or other health markers.

44

45 *Table 6- Multilevel mixed effects logistic regression models for the associations between recent and historical experience of different types of intimate partner violence and selected health*
46 *conditions, symptoms or nights in hospital.*

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52 We investigated whether removing the threshold exclusions of physical and psychological IPV (outlined in Table 1) would change our results. The number of
53 participants experiencing psychological abuse almost doubled, with a more modest increase in those reporting physical abuse. However the associations
54 with health outcomes remained, albeit with a slightly weaker association for variables listed in table 4. For the SRQ-20 score, associations remained very
55 similar to those reported in table 5 (see Supplementary Table S1).

56 Discussion

57 In this paper we have reported for the first time the differential association of categories of partner
58 violence with markers of physical and mental health problems, and (non-birth-related) nights in
59 hospital, both within and over a year since the abuse, using a large international data set. Based on
60 the WHO Multi-Country Study on Women's Health and Domestic Violence (3), we have found that
61 while all types of partner violence are associated with poorer physical and mental health, combined
62 abuse categories are associated with the poorest health markers, particularly with suicidal thoughts
63 and behaviours. These associations persist over a year after the abuse ends.

64 Previous analysis of the associations between partner violence and health in the WHO Multi-Country
65 Study (3) only included data on physical and sexual violence from ten countries. We have extended
66 the scope to the prevalence and impact of combined forms of abuse, including psychological abuse,
67 and sexual violence on its own or combined with any other type of abuse across eleven countries.

68

69 Combined abuse

70 Women's experience of intimate partner violence often involves more than one form of violence. We
71 found that combined abuse involving sexual and psychological and/ or physical IPV is the most
72 prevalent pattern of IPV and is associated with the poorest health outcomes; experience of this in
73 the last year is associated with 10 times the odds of attempted suicide compared to those not
74 exposed to IPV. The strength of the association of combined categories of abuse has not emerged in
75 previous analyses, which have not looked at different categories of exposure compared to exposure
76 to singular forms of violence. The greater health impact of combined abuse should inform the clinical
77 and policy response to intimate partner violence.

78

79 Psychological abuse

80 While recognising that psychological abuse can be just as damaging as physical abuse (23,24) it was
81 considered necessary to look more in depth at the severity and frequency of psychologically abusive
82 acts measured before determining what constituted psychological abuse. This gap has been
83 addressed in a recent study which categorised psychological abuse into high-intensity, moderate-
84 intensity and little or no exposure, based on act and frequency. Testing these categories for
85 association with health behaviours demonstrated a dose response relationship with psychological
86 abuse to all the health behaviours except physical pain (16). The omission of psychological abuse
87 from any analysis of the health impact of IPV, gives an incomplete picture of the epidemiology of
88 intimate partner violence.

89 Our findings support including psychological abuse within the definition of IPV when examined from
90 the perspective of health impact, given that the association between psychological abuse and
91 symptoms is of a similar magnitude to the association between physical violence and these
92 symptoms. The experience of psychological abuse from an intimate partner is associated with poorer
93 self-reported health symptoms, suicidality and increased self-reported emotional distress scores
94 (self-reported questionnaire 20, SRQ-20). Self-reported health symptom scoring used in this study
95 has been found to be closely associated with actual morbidity (25). Our findings are consistent with
96 the recent analysis of psychological abuse from the WHO Multi-Country Study (16) as well as smaller,
97 single country studies measuring the impact of psychological abuse (26,27). While psychological
98 violence has been recognised as an important component of partner violence for some time,
99 challenges to measurement cross-culturally have meant that it is a relatively recent addition to
100 partner violence epidemiology, particularly in low and middle-income countries. This analysis
101 confirms the association between psychological abuse and physical and mental health symptoms
102 that has previously been reported in high-income countries and now also more globally (16).

103

104 Nights in hospital

105 All types of IPV, except psychological abuse alone, were associated with a greater number of nights
106 in hospital. The increased healthcare utilisation and costs from intimate partner violence have been
107 mostly reported in high-income countries (27), this increase may also be present in low- and middle-
108 income countries.

109

110 Recency of abuse

111 There was no difference in the association with poor health between recent (within one year) and
112 historical (more than one year ago) abuse, with the exception of combined abuse involving sexual
113 and psychological and/ or physical IPV and suicidal thoughts and attempts, which is consistent with
114 the chronicity of effects of partner violence reported in studies in high-income countries (28). The
115 persistence of poor health means that, in addition to responding to the needs of women currently
116 experiencing IPV, survivors of historical IPV also need empathetic, supportive responses in health
117 care settings (29).

118

119 Limitations of our analysis include the cross-sectional design of the study which means that we
120 cannot assume a causal association between exposure to abuse from a partner and health symptoms
121 (except for injuries which are not included in this analysis). However, the stronger association with
122 poorer health found with increasing combinations of IPV compared with singular exposure
123 indicates a dose-response relationship (30). Additionally a few longitudinal studies investigating the
124 association between IPV and health have found evidence of causality to physical, sexual and
125 reproductive, and mental health problems, as well as some evidence of bi-directionality (1,31,32).

126 Data collection for the WHO Multi-Country Study on Women's Health and Domestic Violence started
127 in 2000. It is a large and robust global dataset, albeit no longer contemporary, although it is unlikely
128 that the relationship between categories of abuse and health impact have changed substantially. We
129 adjusted for site, age group, current partner status and education; further potential confounders
130 such as alcohol abuse or experience of child abuse could also be explored (33). This study is also

131 limited by its focus on women aged 15- 49 years old. Women over 50 also experience intimate
132 partner violence, and women can experience abuse from female partners (34,35). The study however
133 provided comparable data across a range of geographically and culturally different countries,
134 involved a thorough training of interviewers and others in the research team, had a high response
135 rate and was implemented adhering to strict ethical and safety criteria, including ensuring total
136 privacy and confidentiality during the interview and ability to refer those in need to the relevant
137 services (17).

138

139 Conclusion

140 Our study provides evidence that women experiencing all categories of IPV suffer poorer physical
141 and mental health; but that those experiencing combined forms of IPV suffer the greatest health
142 detriment, particularly with regards to suicidal thoughts and attempts. When professionals ask about
143 intimate partner violence, it is important to ask about different forms of violence, and tailor support
144 accordingly. This should include responding to the considerably increased risk of suicidal thoughts
145 and behaviours in those who have experienced combined abuse in the last year. Research on
146 violence in intimate relationships must include measurement of physical, sexual and psychological
147 abuse and explore combinations of these. These findings can contribute to the development of more
148 tailored responses to women who are or have been experiencing violence from a partner, and to
149 formulation of partner violence prevention policies that address violence in a comprehensive way.

150 Ethics approval

151 Ethics permission for the WHO study multi-country study on women's health and domestic violence
152 was obtained from the WHO Secretariat Committee for Research in Human Subjects, from the local
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158 Data availability statement

159 The data underlying this article were provided by the World Health Organization by permission. Data
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161 Author contributions

162 Study concept and design: L.C.P., R.M., K.H., C.G-M., G.F. Analysis and interpretation of data: L.C.P.,
163 R.M., G.F. Writing (original draft preparation): L.C.P. Writing (review and editing): L.C.P., R.M., K.H.,
164 C.G-M., G.F. authors were involved in drafting the article or revising it, and all authors approved the
165 final version to be published.

166 Conflict of interest

167 None declared.

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