


BMJ Open Domestic violence victimisation and its association with mental distress: a cross-sectional study of the Yangon Region, Myanmar

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ABSTRACT

Objectives To estimate the prevalence of domestic violence, with subgroups of physical, sexual and emotional violence, among men and women and to assess the association between any lifetime domestic violence (DV) and mental distress among ever-married men and women.

Design We conducted a cross-sectional study from October to November 2016 using a multistage sampling design. DV questionnaire was adopted from the Demographic and Health Survey programme. Mental distress was estimated using the Hopkins Symptom Checklist-10 (HSCL-10). HSCL-score and DV were the outcome and exposure variables, respectively, in multiple linear regression. Prevalence estimates and associations were presented with a 95% CI and the Wald test.

Setting Urban and rural areas of the Yangon region, Myanmar.

Participants Men and women ages 18 to 49 years were included. Institutionalised people, monks, nuns and individuals deemed too ill physically and/or mentally to participate were excluded.

Results A random sample of 2383 people was included in the analyses. Among ever-married participants, lifetime (LT) and past-12-month (12M) prevalence of any domestic violence victimisation was higher in women compared with men: LT women: 61.8% (95% CI: 54.3 to 68.9) versus LT men: 42.4% (95% CI: 37.5 to 47.5) and 12M women: 51.2% (95% CI: 44.9 to 57.5) versus 12M men: 37.7% (95% CI: 32.9 to 42.7). Among never-married participants, lifetime physical and sexual violence victimisation rates was higher in men (34.3% and 7.9%) compared with women (19.1% and 6.4%). Mental distress was significantly associated with lifetime DV in women who were afraid of their husbands and men who had wives who exhibited controlling behaviours.

Conclusions Domestic violence is prevalent among both men and women and is associated with mental distress. The findings highlight an urgent need to prevent domestic violence in both sexes, including through legal and policy reform and improved mental health services for DV victims.

INTRODUCTION

Domestic violence (DV) is a significant global public health problem and a violation of

Strengths and limitations of this study

- This is the first population-based study conducted in Myanmar estimating the prevalence of domestic violence in men.
- Its high response rate and use of well-established measures of data and an analysis strategy based on a directed acyclic graph strengthen the external and internal validity of the study.
- Its cross-sectional design means that it is not possible to infer a causal relationship between domestic violence and mental distress.
- Recall bias could be present due to the retrospective nature of the questions.
- Under-reporting might have resulted due to the sensitive nature of questions about domestic violence.

human rights, with severe consequences for the physical and mental health of affected persons.¹ The WHO defines domestic violence as ‘any behaviour within an intimate relationship that causes physical, psychological or sexual harm, including acts of physical aggression, psychological abuse, forced intercourse and other forms of sexual coercion, and various controlling behaviours’.¹ The term Domestic Violence (DV) is used for those who have been exposed to physical, psychological or sexual harm by a spouse or among those ever-partnered while living together in an intimate relationship (also labelled as intimate partner violence (IPV)) and for those who are abused by a person in a non-partner relationship.¹

The Global Burden of Disease Study 2016 estimated that physical violence contributes to 41.2 million years lived with disability (YLDs), while sexual violence contributes 13.7 million YLDs.² Furthermore, a study conducted in Australia found that IPV accounted for 7.9% of the overall disease burden among 18 to 44-year-old women.³ Globally, IPV is

ubiquitous, with prevalence estimates varying widely within and between communities, countries and regions. A 2013 WHO report on global and regional estimates of violence against women approximates the global lifetime prevalence of physical and/or sexual IPV among all *ever-partnered* women at 30.0%.⁴ The lowest prevalence (23%) was found in high-income regions, whereas the highest prevalence was found in low- and middle-income countries (LMIC): Southeast Asia region (37.7%).⁴ The global lifetime prevalence of *non-partnered* sexual violence among women was 7.2%,⁴ with the highest prevalence found in high-income regions (12.6%) and the lowest prevalence in LMIC settings of the Southeast Asia region (4.9%).⁴ Based on the WHO multi-country domestic violence study, the lifetime prevalence rates of physical or sexual IPV in women varied from 15% (urban Japan) to 62% (rural Bangladesh), and the past-12-month prevalence ranged between 4% and 54%.⁵

A report from the Myanmar Demographic Health Survey (MDHS) 2015–2016 estimated that one in five (21%) women of reproductive age had experienced some form of IPV in their lifetimes.⁶ More specifically, 15% reported physical violence, 3% sexual violence, and 14% emotional violence. The prevalence of IPV occurring during the past 12 months (12M) was 15% for any form of IPV, 10% for 12M physical violence, 2% for 12M sexual violence, and 10% for 12M emotional violence.⁶ Among never-married women, 9 percent had experienced physical violence from any individual, including family members, from the age of 15 years, whereas none of the never-married women reported sexual violence. Although the prevalence data for women are documented in only one recent study, no prevalence data for IPV among men in Myanmar exists.

Although men are also victims of IPV,^{7–10} the vast majority of research globally has focussed on violence perpetrated against women by their male partners. According to a national cross-sectional study in England, 23.8% of women and 11.5% of men experienced IPV during their lifetimes.⁷ Based on a 2016 literature review on DV conducted in the USA, more than one in three women (35.6%) and one in four men (28.5%) age 18 and older reported a lifetime prevalence of physical violence, rape and/or stalking by an intimate partner.¹¹

DV affects victims' sexual, reproductive, physical and mental health. DV is associated with a wide range of mental health consequences, such as depression, anxiety, post-traumatic stress disorder, sleep difficulties and suicide attempts.⁵ In a study from Australia, poor mental health was attributed to 73% of the total IPV disease burden.³ A systematic review of longitudinal studies reported before 2013 revealed that IPV is a significant contributor to mental health problems, particularly depression, in both sexes.¹² A more recent prospective cohort study using the Self-Reporting Questionnaire-20 (SRQ-20) reported that women who experienced psychological, physical or sexual violence had three times the increased risk for common mental disorders compared with those with no experiences of violence.¹³

Under the military government from 1962 to 2011, Myanmar society faced a complex combination of vulnerability to natural disasters, violence, war, nutrition insecurity, human trafficking and migration.¹⁴ The country's sociopolitical difficulties were exacerbated during this period, poverty increased, the educational and health systems became fragmented and the criminal and justice systems became inequitable.¹⁴ Although domestic violence occurred in the everyday life of communities across the country, it was typically hidden.¹⁵ Many factors influence domestic violence in Myanmar, for instance, poverty, low-socioeconomic status, alcohol consumption among men, imbalances between power and authority, the influence of traditional and social norms and a lack of legal awareness and human rights.^{15 16} In Myanmar society, domestic violence is accepted as a private family matter. Women accept that sex with their husbands is their duty as a wife, and they feel ashamed or stigmatised regarding abuse; thus, domestic violence remains hidden.¹⁶ Additionally, marital rape is legal; there is no specific law in Myanmar that aims to help prevent marital rape and punish perpetrators. As a consequence, gender inequality and domestic violence persist legally. Myanmar's current rape law is based on a century-old penal code and is not in line with international human rights standards.¹⁷ Although legislation prohibiting violence against women was drafted in 2013, government approval is still pending.¹⁶ The aims of the present study among 18 to 49-year-old men and women in the Yangon region of Myanmar are as follows:

1. To estimate the lifetime and past-12-month prevalence of domestic violence (any violence, physical, sexual and emotional) among ever-married men and women;
2. To estimate the lifetime prevalence of domestic violence (physical and sexual) among never-married men and women; and
3. To investigate the association between lifetime domestic violence and mental distress among ever-married men and women.

POPULATION AND METHODS

Study design and setting

A household-based cross-sectional study in the northern and southern districts of the Yangon region of Myanmar was conducted among 18 to 49-year-old ever-married and never-married men and women from October to November 2016. The group of 'ever-married' included those who were previously married (ie, currently divorced, separated or widowed). Monks, nuns, soldiers and institutionalised persons were not invited to participate in the study. Exclusion criteria included persons deemed to be too ill physically or mentally to participate. The required sample size was calculated based on the prevalence of DV among married women (21%) reported by the Myanmar Demographic and Health Survey (DHS-2016)⁶ and was estimated to be 2400 persons including a 20% non-response rate.

We adopted a multistage sampling method. First, we purposively selected two districts (north and south) from four districts of the Yangon region. Those were the only districts with both urban and rural populations in the region; the east and west constitute urban areas only. Second, we listed urban wards (an urban subunit of a township) and rural villages from the selected districts. From a total of 125 wards and 235 villages in the northern district and 110 wards and 375 villages in southern district, we randomly selected 8 wards and 8 villages from each of the two districts. Lastly, households were randomly selected using proportional probability sampling from each ward and village based on the proportion of the population in urban and rural areas and the proportion of the population in the northern and southern districts of the Yangon region.

Households were selected from the 16 included wards and 16 included villages based on lists of households obtained from local authorities. We randomly selected 2950 households: 336 and 1034 households from urban wards of the southern and northern districts, respectively, and 686 and 894 corresponding households from rural villages. In each household, one person was asked to list the family members within the age range of 18 to 49 years. From this list, one person was randomly invited to participate in the study using a sealed enveloped method.¹⁸ One woman and one man were randomly selected from every other household; in 89 households, it was not possible to contact household members. From the remaining 2861 households, 2861 men and women were invited to participate in the study. A total of 130 declined to participate in the study, thus providing a response rate of 92.6% (2731 of 2950). During data collection, it was not possible to ensure privacy for 152 participants, and therefore, the interview was terminated. An additional 196 participants had incomplete questionnaires and, thus, were excluded from the analyses. The completion rate was 80.8% (2383 of 2950); the final sample included 2383 participants comprising 1200 men and 1183 women.

Data collection and measurement

Data were collected by the principal investigator and 12 well-trained field-workers. We applied the standard interviewer guide in the local language as recommended by the WHO.¹⁹ During the training of research assistants, we emphasised training regarding how to ask sensitive questions, ensure privacy and build trust between interviewer and respondent.

The domestic violence module was based on standard questions adapted from the Myanmar Demographic and Health Survey (DHS). The module had already been translated into the language used most in Myanmar. The WHO DHS domestic violence module is adapted from the Conflict Tactics Scale.^{20 21} Mental distress was measured using the Hopkins Symptom Checklist-10 (HSCL-10),²² which was modified from the 25-item version (HSCL-25).²³ The HSCL-10 is internationally accepted and is a

widely used screening tool for symptoms of anxiety and depression.

A pilot survey was conducted in a ward not included in the survey area. The interviews were conducted by interviewers of the same gender as the respondents. The objectives of the study and the potential risks and benefits of participating in it were explained to the participants, and written informed consent was given by all participants. They were also informed that their participation was voluntary. In case there was no privacy in the house, we conducted interviews in separate rooms or private areas outside the house. We informed participants that the questions could be sensitive, that their answers would remain completely confidential and that they could refrain from responding from any question while being interviewed. If the interviewer received information about DV, respondents were given information about where to seek health and psychosocial services.²⁴ If a respondent did not want to participate or if no one was in the household, this was considered as a non-response. The completeness of each questionnaire was further checked by the principal investigator.

Patient and public involvement

There was no involvement of patients or the public in designing, recruiting and conducting the study.

Study variables

Physical violence

If any one of the following conditions was present, it was considered an exposure to physical violence:⁵ being pushed or being shaken; having something thrown at one; being slapped, having an arm twisted or having one's hair pulled; being punched by a partner's fist or hit with something that could hurt; being kicked, dragged or beaten; having a partner choke or burn someone on purpose; being threatened or attacked with a knife, gun or any other weapon.

Sexual violence

If any one of the following conditions was present, it was considered an exposure to sexual violence:⁵ physically force you to have sexual intercourse with him/her even when you did not want to, physically force you to perform any other sexual acts you did not want to perform or force you with threats or in any other way to perform sexual acts you did not want to perform.

Emotional violence

If any one of the following conditions was present, it was considered an exposure to emotional violence:⁵ saying or doing something to humiliate you in front of others, threatening to hurt or harm you or someone close to you or insulting you or making you feel bad about yourself.

Lifetime and past-12-month prevalence of domestic violence

If a respondent gave a positive response to any of the questions on physical, sexual and/or emotional violence, it was considered as exposure to DV.⁵ Lifetime (LT)

prevalence domestic violence was defined as the proportion of ever-married men or women in intimate relationships who have experienced one or more acts of physical, sexual and/or emotional violence committed by their partners at any point in their life. If such acts occurred in the last 12 months, it was considered as past-12-month prevalence (12M).

In addition, information was obtained from never-married men or women about physical violence they had experienced since the age of 15 years committed by anyone by asking if anyone had hit, slapped, kicked or done something else to hurt them physically. Similarly, information was gathered from never-married men or women about experiences of sexual violence committed by anyone at any time in their life, as a child or as an adult, by asking if they were forced in any way to have sexual intercourse or perform any other sexual acts when they did not want to. We also asked ever-married women about physical violence committed by anyone including their husband while they were pregnant.

Mental distress

Mental distress was assessed using the HSCL-10,²² which comprises 10 items related to symptoms of anxiety and depression during the previous week on a 4-point scale ranging from 1 (not at all) to 4 (extremely). Values above the cut-off 1.85²² are significantly associated with increased risk of mental distress. The tool has high sensitivity and specificity in identifying distressed and non-distressed individuals among the general population.²² In the multivariable analysis, mental distress was used as a continuous variable.²²

Sociodemographic variables collected in the survey included age, gender, urban–rural location, family structure, the educational difference between partners, income, number of children and age at first marriage. Age (in years) of the respondents was categorised into three age groups, 18 to 29, 30 to 39 and 40 to 49 years. Age was also used as a continuous variable in multivariable analysis. The educational difference was the difference in the number of years of education between participants and their partner. If the participant and his/her partner had the same number of years of schooling, the code was ‘same education’. If the participant had more years of schooling than his/her partner, the code was ‘respondent higher education’, and if the participant had fewer years of schooling than his/her partner, the code was ‘respondent lower education’. Income was calculated as the total monthly household income divided by the number of residents regardless of age, generating a per capita monthly income. Daily individual income was operationalised as two groups based on the World Bank’s cut-off of poverty lines²⁵ of 1.90 US\$/day and 3.10 US\$/day, that is, low (<2 US\$/day) and high (≥ 2 US\$/day).

Behavioural indicators related to DV included the following: partner’s controlling behaviour, partner’s alcohol consumption, respondent’s fear of his/her partner, justifications for wife-beating, witnessing one

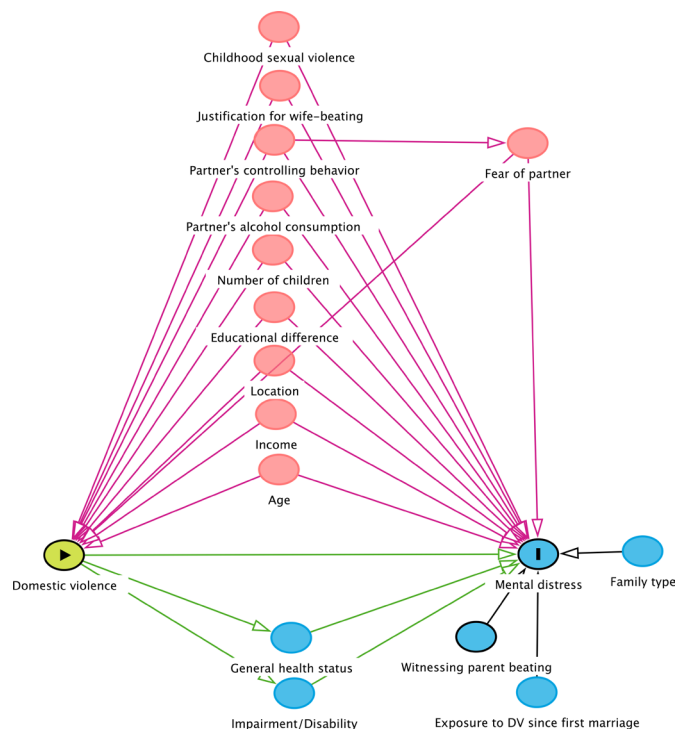


Figure 1 Directed acyclic graph for association between domestic violence and mental distress. DV, domestic violence.

parent beating the other and childhood abuse. Regarding partners’ controlling behaviours, the indicators included the following: prevents the respondent from seeing friends, restricts his or her contact with family members, insists on knowing where the respondent is at all times, becomes angry when the respondent talks with other women or men. If the partner committed at least one of the above-mentioned acts, he or she was referred to as a controlling husband or wife. Current health status was dichotomised as ‘poor health’ (poor, not very good) and ‘good health’ (good, very good). For the different impairments (mobility, vision, hearing, personal hygiene and memory or concentration), responses were categorised as ‘yes’ or ‘no’.

Statistical methods

EpiData software V.3.1 was used for double data entry, whereas data management and statistical analysis were performed using Stata/IC V.15.0. We declared complex survey data using ‘svyset’, and the survey prefix command ‘svy’ was used in the analysis. For descriptive analyses, we present prevalence estimates with a 95% CI. Statistical differences between two proportions were computed using a Wald test. The mean was expressed with SD. Multivariable linear regression was used to estimate the association between domestic violence and HSCL-10 score (mental distress), with separate analyses for men and women.

Based on a directed acyclic graph²⁶ (figure 1), age, education differences between partners, controlling behaviour, childhood abuse, number of children,

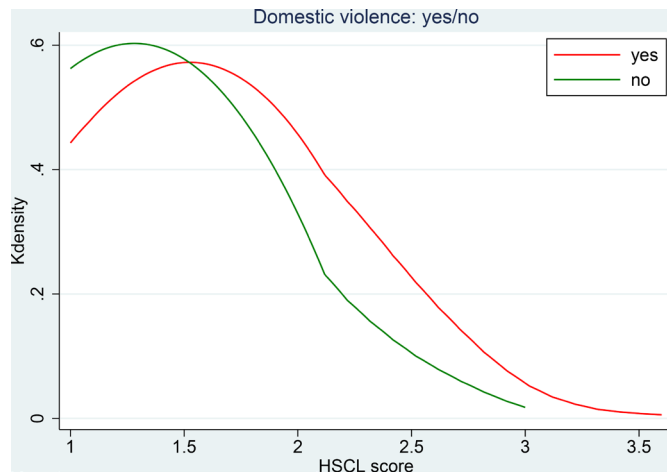


Figure 2 Distribution of HSCL-10 score (mental distress) among exposed and non-exposed to domestic violence in ever-married men and women ages 18 to 49 years in the Yangon Region, Myanmar. HSCL-10, Hopkins Symptom Checklist-10.

income, ‘fear of partner’, ‘justification for wife-beating’ and location were defined as confounders in both men and women. An additional confounder for women was ‘partner’s alcohol consumption’. We stratified on sex and adjusted for the confounders to estimate the total effect of domestic violence on HSCL score (mental distress). We identified an interaction between domestic violence and ‘controlling behaviour by partner’ in men and an interaction between domestic violence and ‘fear of partner’ in women. We conducted separate regression analyses for the ‘controlling behaviour’ group in men and ‘fear of partner’ group in women.

We checked the distribution of the HSCL-10 scores (mental distress) among the group exposed and unexposed to DV (figure 2), and we found that the distribution was similar but shifted towards higher HSCL scores among those exposed to DV. The assumptions of the linear model (linear effects and constant error variance) were tested by plotting residuals versus predicted values. We looked for observations with high influence by plotting delta-betas versus observation numbers (ID). The only outlier found was not removed from the final analyses as it did not change the estimates when it was removed. All significance tests were two-sided, and p values < 0.05 were considered to be statistically significant.

RESULTS

A total of 2383 participants were included in the analyses. Among them, 874 men and 934 women were ever-married, while 326 men and 249 women were never-married (figure 3).

Prevalence of DV in men and women

In both LT (table 1a) and 12M (table 1b) exposures to DV among the married participants, significantly more women than men were exposed to any form of domestic

violence: LT women: 61.8% (95% CI: 54.3 to 68.9) versus LT men: 42.4% (95% CI: 37.5 to 47.5) ; $p < 0.001$ and 12M women: 51.2% (95% CI: 44.9 to 57.5) versus 12M men: 37.7% (95% CI: 32.9 to 42.7) ; $p = 0.002$, respectively (table 1a and b). Emotional violence was the most common form, followed by physical and sexual violence in both sexes (table 1a and b). Moreover, the LT prevalence of emotional and physical violence was similar in women (44.3% vs 44.2%). We found that 6.7% (95% CI: 4.9 to 9.2) of married women had experienced physical violence by anyone including their husband during pregnancy (data not shown). In the never-married participants, the prevalence of both physical and sexual violence was higher in men compared with women (table 1a). Furthermore, unmarried men were more likely to experience sexual violence than married men (7.9% vs 1.8%). In married men, the perpetrator was their partner.

Overlap between different forms of DV

The different forms of domestic violence and their overlapping nature among victims of DV for ever-married and never-married groups are illustrated in figures 4 and 5, respectively. Among the 934 ever-married women, 563 (60.3%) were exposed to DV (physical, sexual and/or emotional). Among these victims, 118 (21%) were exposed to all three forms of DV (figure 4). Similarly, among the 874 ever-married men, 367 (42%) were exposed to DV. Among these victims, 10 (2.7%) were exposed to all three forms of DV (figure 4). Moreover, among the 249 never-married women, 46 (18.5%) were exposed to DV (physical and/or sexual). Among these victims, 3 (7%) were exposed to both forms of DV (figure 5). Likewise, among the 326 never-married men, 115 (35.3%) were exposed to DV. Among these victims, 13 (11%) were exposed to both forms of DV (figure 5).

Bivariate association between DV and selected sociodemographic, behavioural and health-related factors

In bivariate analysis, we found in both sexes that domestic violence was significantly higher among those having

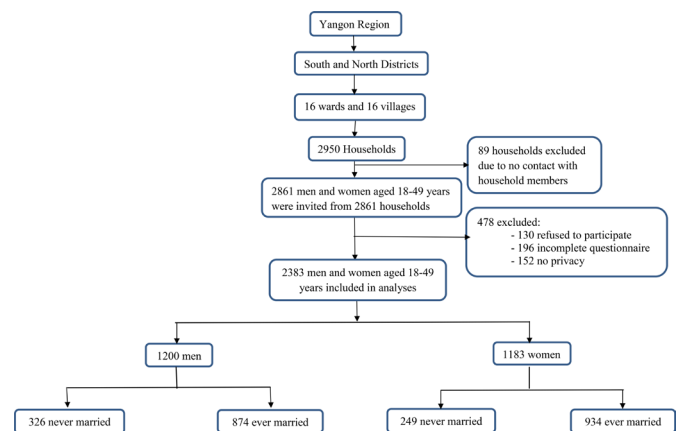


Figure 3 Sampling and analysis flow diagram.

Table 1a Lifetime prevalence of domestic violence among 18 to 49-year-old men and women in the Yangon region, Myanmar

Lifetime violence	Men (n=1200)				Women (n=1183)			
	Ever-married (n=874)		Never-married (n=326)		Ever-married (n=934)		Never-married (n=249)	
	n	Prevalence (95% CI)	n	Prevalence (95% CI)	n	Prevalence (95% CI)	n	Prevalence (95% CI)
Any domestic violence	367	42.4% (37.5 to 47.5)	–	–	563	61.8% (54.3 to 68.9)	–	–
Emotional violence	307	36.1% (31.3 to 41.1)	–	–	407	44.3% (37.9 to 50.9)	–	–
Physical violence	235	27.3% (22.5 to 32.8)	102	34.3% (25.6 to 44.2)	390	44.2% (36.1 to 52.7)	34	19.1% (13.4 to 26.5)
Sexual violence	13	1.8% (0.9 to 3.5)	26	7.9% (5.9 to 10.9)	221	24.3% (20.1 to 28.9)	15	6.4% (2.8 to 14.2)

Table 1b Past-12-month prevalence of domestic violence among 18 to 49-year-old ever-married men and women in the Yangon region, Myanmar

Past-12-month violence	Men (n=874)		Women (n=934)	
	n	Prevalence (95% CI)	n	Prevalence (95% CI)
Any domestic violence	323	37.7% (32.9 to 42.7)	468	51.2% (44.9 to 57.5)
Emotional violence	275	32.7% (27.8 to 37.9)	325	34.2% (28.8 to 40.0)
Physical violence	187	21.5% (17.1 to 26.7)	264	30.3% (23.8 to 37.6)
Sexual violence	7	0.8% (0.4 to 1.6)	191	20.7% (17.4 to 24.6)

more than two children as compared with having no children. Participants with the following traits: mental distress, poor self-reported health status and the presence of any impairments were significantly more likely to have experienced domestic violence when compared with those who did not have these traits. Moreover, participants whose partners drank alcohol or were controlling or instilled fear in them also reported a significantly higher prevalence of domestic violence compared with participants whose partner lacked these characteristics (table 2). However, among women, DV was not significantly associated with justification for wife-beating and witnessing a parent being beaten, as opposed to their male counterparts (table 2). Compared with ever-married participants, never-married participants were younger, had higher levels of education and lived with other family members ($p < 0.05$; table 3). No differences were found in regard to urban–rural location, income status, self-perceived health status and mental distress (table 3).

The association between DV and mental distress

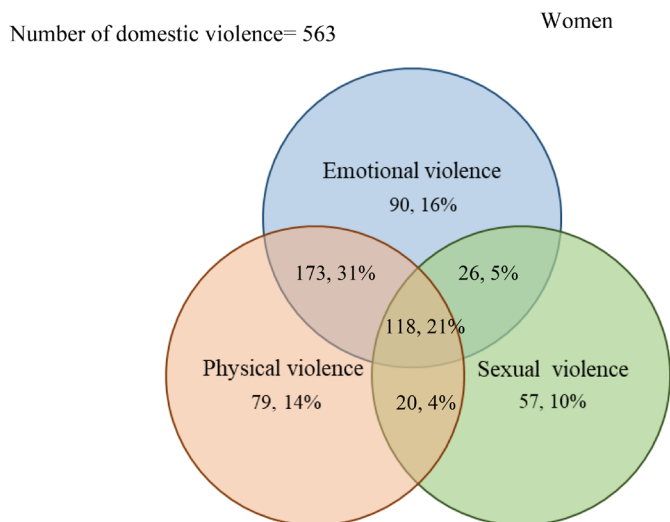
In multivariable linear regression, domestic violence (table 4: Model 2) was significantly associated with mental distress in both men and women after adjusting for confounders (age, income, number of children, location, education difference with partner, controlling behaviour of partner, childhood abuse, fear of partner and justification for wife-beating in men and women). For women, we added their partner's alcohol consumption as a confounder. Among the group that was exposed to domestic violence, the coefficient indicated a 0.18-point (95% CI: 0.12 to 0.24) increase in the HSCL score for men and a 0.21-point (95% CI: 0.15 to 0.26) increase in the HSCL score for women compared with the group not exposed to domestic violence (ie, the total effect of domestic violence on mental distress). A significant interaction between domestic violence and 'controlling

behaviour of partner' was observed in men, whereas domestic violence and 'fear of partner' showed an interaction for women. Men with controlling spouses had a 0.21-point (95% CI: 0.13 to 0.28) significant increase in the HSCL score compared with those without controlling spouses. Those without controlling spouses had only a 0.11 point (95% CI: 0.03 to 0.19) significant increase in that score (table 4: Model 4a, b). Women who feared their partners had a 0.39-point (95% CI: 0.28 to 0.49) significant increase in the HSCL score. Those who were not afraid of their partners had only a 0.18-point (95% CI: 0.12 to 0.24) significant increase in HSCL score (table 4: Model 4c, d). Only minor deviations from linearity were detected. The regression models showed somewhat increasing error variances. However, using robust variance estimations did not change the results.

DISCUSSION

This is the first study in Myanmar to explore the association between domestic violence and mental distress, and to estimate the prevalence of DV in men. More than 50% of the women and 42% of the men ages 18 to 49 years had experienced some form of lifetime domestic violence perpetrated by their partners. Half of the women and nearly two-fifths of the men had been exposed to domestic violence in the past 12 months. Emotional violence was the most common DV in both lifetime and past 12 months. More specifically, nearly one in two women and one-third of the men reported emotional and physical violence in their lifetime. Moreover, around one-fourth and one-fifth of the women experienced sexual violence in their lifetime and the past 12 months respectively. Among ever-partnered, a higher proportion of women were exposed to all forms of DV compared with ever-partnered men. Furthermore, in the non-partner

Different forms of Domestic Violence



Different forms of Domestic Violence

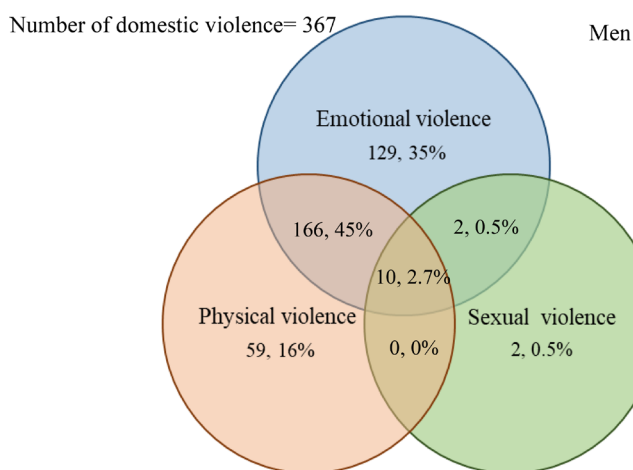


Figure 4 Overlap between lifetime physical, sexual and emotional violence experienced by ever-married women and men ages 18 to 49 years in the Yangon Region, Myanmar (n, %).

group, one in five women and one in three men had experienced physical violence by a relative, friend and stranger, from age 15. The rate of sexual violence did not differ between sexes. A significant association was found between lifetime domestic violence and mental distress among married men with controlling spouses and among women who were afraid of their partners.

Prevalence of any form of LT and 12M domestic violence in ever-married women

In the present study, both the lifetime and the past 12 months prevalence of any form of DV among 18 to 49-year-old married women was substantially higher than the findings reported in the Demography and Health Survey in Nepal 26% (NDHS 2016)²⁷; Ethiopia 34% (NDHS 2016)²⁸ and Myanmar 21% (MDHS 2015 to 2016).⁶ The methodology and domestic violence questions in our study were similar to the one used in

the DHS survey except for some difference in age. We included age groups 18 to 49 years, whereas the DHS studies included ages 15 to 49. The difference in years might have contributed to slightly higher estimates in the present study. Our prevalence estimates of both the LT and the 12M were prominently higher than the results from a recent study from Ghana: LT prevalence (50.9%) and 12M (34.1%).²⁹ The questionnaires and age range in this study were similar to our study. In contrast, LT and 12M prevalence in our study were lower than the rate of any DV in Bangladesh³⁰ and Western Ethiopia.³¹ These studies showed that LT and 12M prevalence of any DV were 87% and 77%, respectively, in Bangladesh and 76.5% and 72.5%, respectively, in Ethiopia. Moreover, our result of LT prevalence of any form of DV was not much different from the findings in several other countries. For example, a recent study conducted in six countries in the region of sub-Saharan Africa using DHS data estimated that the prevalence of DV in Zambia and Cameroon was 53.9% and 57.6%, respectively.³²

Prevalence of different types of DV in ever-married women

The present study demonstrated a higher prevalence of physical, sexual and emotional violence in women than the previous DHS studies.^{6 27 28} However, we found that the LT prevalence of physical violence in this study was significantly lower compared with data from the recent DHS in developing countries:³³ Bangladesh (71%) and Bolivia (52%). The LT prevalence of sexual violence in our study was also lower than in Bangladesh (26%).³³ The most common form of violence in our study is emotional violence, a finding differs from other demographic and health surveys that found physical violence to be the

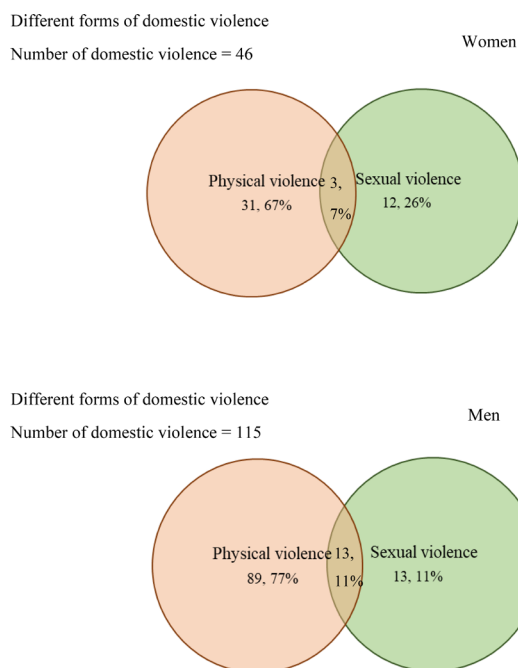


Figure 5 Overlap between physical and sexual violence experienced by never-married women and men ages 18 to 49 years in the Yangon region, Myanmar (n, %).

Table 2 The prevalence of domestic violence by selected sociodemographic, behavioural and health-related factors among 18 to 49-year-old ever-married men and women in the Yangon region, Myanmar

	Men (n=874)				Women (n=934)			
	N	Prevalence (%)	(95% CI)	P value	N	Prevalence (%)	(95% CI)	P value
Sociodemographic characteristics								
Age group				0.44				0.46
18–29 years	230	38.3	(29.2 to 48.2)		275	42.6	(33.2 to 52.6)	
30–39 years	334	42.6	(35.9 to 49.5)		355	64.5	(55.2 to 72.8)	
40–49 years	310	45.9	(37.2 to 54.7)		386	62.7	(52.8 to 71.7)	
Location				0.15				0.06
Rural	484	39.1	(33.4 to 44.9)		466	54.9	(47.7 to 61.9)	
Urban	390	46.7	(39.0 to 54.5)		468	69.6	(56.5 to 78.2)	
Education difference*				0.92				0.36
Same education	217	41.8	(35.1 to 48.7)		225	59.2	(52.5 to 65.5)	
Respondent higher education	354	41.7	(37.3 to 46.2)		288	58.4	(48.6 to 67.5)	
Respondent lower education	291	44.0	(34.1 to 54.5)		400	65.5	(54.1 to 75.4)	
†Income status*				0.05				0.40
≥2 US\$/day	309	37.4	(32.7 to 42.4)		432	59.7	(49.5 to 69.2)	
<2 US\$/day	565	45.5	(38.8 to 52.3)		502	63.6	(56.0 to 70.7)	
Type of family				<0.001				0.15
Nuclear	625	46.6	(41.6 to 51.6)		728	62.9	(55.1 to 70.3)	
Extended	244	30.8	(24.6 to 37.8)		206	57.3	(48.3 to 65.8)	
Number of children				<0.001				0.007
No children	162	30.6	(19.3 to 44.9)		111	43.4	(32.4 to 55.1)	
1–2 children	501	42.0	(33.2 to 51.3)		548	61.0	(52.9 to 68.6)	
≥3 children	211	52.6	(43.0 to 61.9)		275	70.5	(60.8 to 78.7)	
Behavioural characteristics								
Partner's controlling behaviour				<0.001				<0.001
No	440	31.3	(25.6 to 37.7)		560	51.3	(42.6 to 59.9)	
Yes	434	53.2	(47.3 to 59.1)		374	77.5	(69.2 to 84.1)	
Fear of partner				0.003				<0.001
No	773	38.1	(32.9 to 43.4)		696	53.6	(45.1 to 61.9)	
Yes	101	80.2	(66.4 to 89.3)		238	87.1	(82.6 to 90.6)	
Partner's alcohol consumption				0.002				<0.001
No	837	39.7	(35.1 to 44.4)		331	47.6	(38.9 to 56.8)	
Yes	37	85.3	(64.4 to 94.9)		731	69.9	(62.3 to 76.7)	
Justification for wife-beating				0.004				0.58
No	621	38.5	(33.7 to 43.6)		560	61.0	(52.5 to 68.9)	
Yes	253	52.1	(44.1 to 59.9)		439	63.1	(54.6 to 70.8)	
Witnessing parent beating				0.008				0.14
No	685	37.8	(32.6 to 43.2)		707	59.1	(50.6 to 67.2)	
Yes	189	58.1	(47.9 to 67.6)		227	69.2	(57.8 to 78.7)	
Exposure to DV since first marriage (mean±SD)	367	12.3±7.9	(11.4 to 13.2)	<0.001	558	14.4±8.0	(13.4,15.4)	<0.001

Continued

Table 2 Continued

	Men (n=874)			P value	Women (n=934)			P value
	N	Prevalence (%)	(95% CI)		N	Prevalence (%)	(95% CI)	
Childhood sexual violence				0.65				0.92
No	856	42.3	(37.2 to 47.6)		838	61.8	(54.0 to 68.9)	
Yes	18	48.1	(25.0 to 72.1)		96	62.4	(48.1 to 74.9)	
Health-related factors								
General health status				<0.001				0.02
Good	592	37.9	(32.7 to 43.4)		500	56.5	(48.0 to 64.5)	
Poor	275	51.6	(45.4 to 57.8)		434	68.2	(59.2 to 76.0)	
‡Impairment				0.001				0.03
No	478	35.6	(30.3 to 41.3)		392	57.1	(48.0 to 65.8)	
Yes	396	50.9	(44.2 to 57.5)		542	65.3	(57.2 to 71.9)	
§Mental distress				0.009				<0.001
No	723	39.1	(34.2 to 44.3)		720	56.3	(49.3 to 63.0)	
Yes	142	58.6	(47.9 to 68.6)		214	83.5	(74.5 to 89.7)	
Age at first marriage*				0.14				<0.001
Younger than 18 years	85	51.0	(39.9 to 62.1)		269	74.1	(65.1 to 81.4)	
18 years or older	787	41.6	(36.8 to 46.8)		655	56.6	(48.4 to 64.5)	

*Information missing for some respondents because they 'don't know'.

†Exchange rate: US\$1=1363 Myanmar Kyats as of 4 November 2018.

‡Impairment related to mobility/hearing/vision/personal hygiene/memory, concentration—a positive response for any symptom is noted as (Y).

§Mental distress (≥ 1.85 HSCL-10 score).

DV, domestic violence; HSCL-10, Hopkins Symptom Checklist-10.

most common form.^{6 27 28} Similar to our study results, data from a previous survey in Myanmar using different questionnaires, showed that there was a high prevalence of emotional violence and that the prevalence of physical violence was low. The previous survey was a community-based multistage sampling survey from Mandalay township (the second largest city of Myanmar). It estimated that 69% of women aged 18 to 59 years experienced emotional violence from their husband in the past 12 months, while 27% reported physical violence.³⁴

The overlapping nature of DV in ever-married women and men

Studies on the overlaps between different types of DV are limited. The overlap of all three forms of DV among married women in our study is in accordance with the previous population-based study in Sweden (22%),³⁵ which applied similar instrument with the present study. On the contrary, our overlap of all three types of violence is higher than the reported in Nepal (12.4%)³⁶ but lower than a Western Ethiopian study (56.9%).³¹ One possible explanation might be sociocultural difference and traditional norms. Women in the Myanmar society accept domestic violence as a private matter and are shameful to disclose domestic violence to other persons.¹⁶ Additionally, women feel they have responsibility to fulfil their husband's desire, thus they do not consider marital rape

as a violence.¹⁶ A 2014 qualitative study of violence against women in Myanmar reported that most women experienced more than one type of violence.¹⁶ Compared with the Swedish population-based study,³⁵ the concurrent exposure of all forms of violence reported by men in our study is low.

Prevalence of DV in ever-married men

Few studies have investigated DV among men. We report a higher lifetime prevalence of any domestic violence, as compared with population-based national, cross-sectional surveys in England (11.5%)⁷ and Sweden (15.3%),³⁵ and the National Violence Against Women Survey (NVAWS) in the USA (23.3%).³⁷ While comparing specific types of violence (physical, emotional and sexual), the current study reports a higher prevalence of emotional and physical violence than these studies from England, Sweden, and the USA. Moreover, our study's report of sexual violence was higher than these studies from England and USA except Sweden. A possible explanation is that there might be bi-directional violence between the partners, with both partners perpetrating acts of physical violence. Domestic violence is most commonly reciprocal,³⁸ and some women perpetrated the violence to defend themselves verbally and physically.¹⁶ Whitaker *et al* reported that women abuse men at similar rates as men abuse

Table 3 Sociodemographic and health-related factors by never-married and ever-married men and women ages 18 to 49 years in the Yangon region, Myanmar

	Never-married (n=575)			Ever-married (n=1808)			P value
	N	Prevalence (%)	(95% CI)	N	Prevalence (%)	(95% CI)	
Sociodemographic characteristics							
Age group							
18–29 years	393	45.0	(39.3 to 50.9)	505	54.9	(49.1 to 60.7)	<0.001
30–39 years	111	14.1	(11.3 to 17.4)	689	85.9	(82.7 to 88.7)	
40–49 years	71	9.1	(6.8 to 12.1)	614	90.9	(87.9 to 93.2)	
Location							
Rural	292	26.2	(21.2 to 31.9)	950	73.8	(68.1 to 78.8)	0.56
Urban	283	24.1	(20.1 to 28.7)	858	75.9	(71.3 to 79.9)	
Education							
≤5 years	124	13.4	(11.4 to 15.8)	750	86.6	(84.2 to 88.6)	0.001
6–11 years	293	29.1	(24.5 to 34.3)	835	70.9	(65.7 to 75.6)	
>11 years	158	41.8	(35.4 to 48.4)	223	58.2	(51.6 to 64.6)	
*Income status†							
≥2 US\$/day	246	26.8	(23.4 to 30.5)	741	73.2	(69.5 to 76.6)	0.23
<2 US\$/day	324	23.7	(19.1 to 29.1)	1067	76.3	(70.9 to 80.9)	
Type of family							
Nuclear	68	4.7	(3.1 to 7.2)	1353	95.3	(92.7 to 96.9)	<0.001
Extended	507	56.4	(50.4 to 62.3)	455	43.6	(37.7 to 49.7)	
Health-related factors							
General health status							
Good	391	27.0	(22.7 to 31.9)	1099	72.9	(68.1 to 77.3)	0.10
Poor	184	22.4	(18.6 to 26.7)	709	77.6	(73.3 to 81.4)	
‡Impairment							
No	334	28.7	(25.4 to 32.1)	870	71.4	(67.9 to 74.6)	0.002
Yes	241	21.7	(17.3 to 26.9)	938	78.3	(73.0 to 82.7)	
§Mental distress							
No	492	25.9	(22.9 to 29.1)	1452	74.1	(70.9 to 77.1)	0.36
Yes	83	22.4	(14.9 to 32.4)	356	77.6	(67.7 to 85.1)	

*Exchange rate: US\$1=1363 Myanmar Kyats as of 4 November 2018.

†Information missing for some respondents because they 'don't know'.

‡Impairment related to mobility/hearing/vision/personal hygiene/memory, concentration—a positive response for any symptom is noted as (Y).

§Mental distress (≥1.85 HSCL score).

HSCL, Hopkins Symptom Checklist.

women.³⁹ A review of 62 empirical studies on female perpetration of violence in intimate relationships between 1996 and 2006³⁹ indicated that emotional violence is the most common violence perpetrated by women, followed by physical and sexual violence which is in line with our study results.

Prevalence of DV in never-married women and men

Data for comparing the prevalence of physical and sexual violence in non-partnered (single) men are scarce. In

non-partnered women, we found that, in our study, the prevalence of non-partner physical and sexual violence from the age of 15 years perpetrated by anyone (friend, relative, stranger) was higher than the prevalence found in the DHS studies in Myanmar, Nepal and Ethiopia.^{6 27 28}

Prevalence of physical and sexual violence in these countries was 9% and 0% in Myanmar, 6% and 2% in Nepal, and 7% and 2% in Ethiopia, respectively. Moreover, the non-partner sexual violence rate in our study was higher than

Table 4 Association between domestic violence and mental distress (HSCL-10) among 18 to 49-year-old ever-married men and women citizens in the Yangon region, Myanmar

Model	Description	Men			Women		
		Coefficient*	95% CI	P value	Coefficient*	95% CI	P value
1	Crude	0.23	0.17 to 0.29	0.0001	0.27	0.23 to 0.32	0.0001
2†	Adjusted	0.18	0.12 to 0.24	0.0001	0.21	0.15 to 0.26	0.0001
3a	Interaction, controlling behaviour (yes)	0.21	0.13 to 0.28	0.0001	–	–	–
3b	Interaction, controlling behaviour (no)	0.11	0.03 to 0.19	0.005	–	–	–
3c	Interaction, fear of partner (yes)	–	–	–	0.39	0.28 to 0.49	0.0001
3d	Interaction, fear of partner (no)	–	–	–	0.18	0.12 to 0.24	0.0001

Confounders adjusted in women: age, education difference with partner, controlling behaviour, childhood abuse, number of children, income, justification for wife-beating, fear of partner, location and partner's alcohol consumption.

*Coefficients with 95% CI from linear regression.

†Confounders adjusted in men: age, education difference with partner, controlling behaviour, childhood abuse, number of children, income, justification for wife-beating, fear of partner and location.
HSCL-10, Hopkins Symptom Checklist-10.

in the Southeast Asia region and lower than in African and American regions.⁴ The variation in prevalence rates among different countries may be attributed to methodological complexities and sociocultural differences among women and men in these countries. Moreover, religious practices and economic and political conditions might create conditions that either increase or decrease the rate of domestic violence.^{5 40} A possible explanation for the higher prevalence rate of domestic violence in the present study may be our ability to build trust between the respondent and the interviewer. In particular, the interviewers were trained to create a conducive environment that facilitated the disclosure of domestic violence. Moreover, the majority of participants in this study agreed with statements in the questionnaires that domestic violence is an important issue for community safety. In comparison to Myanmar DHS (2015 to 2016), even though the response rate was similar, the prevalence of any form and different types of DV was much higher in our study. This difference may be attributed to the trust-building mentioned above and to the language barrier between interviewers and respondents because DHS sampled the entire country, which included more than 130 minority groups with even more different languages. The DHS survey questions were translated only into the Burmese language, excluding the various languages spoken by minority groups. Thus, it is possible that the language used in the Myanmar DHS survey was difficult to understand for some minority ethnic populations and, as such, negatively impacted the results. In the present study, we collected data in the Yangon region where all the respondents understood Burmese language.

Difference in the prevalence rate by sex

From a gender perspective, we report that the prevalence of DV is higher among women than men, a finding that has been reported in studies from England, the USA and Sweden.^{7 32 35} In Myanmar's culture, men are considered as the head of households and the main breadwinners

who make important decisions in the family.¹⁶ Moreover, factors such as cultural sensitivity, gender inequality, the subordination of women in the community setting and low levels of awareness of domestic violence increase women's vulnerability to violence.¹⁶ In the society of Myanmar, domestic violence has been normalised to some women, especially those from lower socioeconomic groups, who accept such violence as a part of their lives.¹⁶

Association between DV and mental health

Our findings of an association between DV and mental health support those of the WHO multi-country study,^{5 41} which reported that DV is associated with both poor physical and mental health.^{5 41} Similar findings have been reported elsewhere.^{13 42–45} A recent prospective cohort study in Brazil¹³ enumerated that women who experienced any form of DV during a 7-year period had a significantly increased risk of common mental disorders (depression and anxiety) compared with women who did not. Our study aligns with the Brazilian cohort study. Nearly all studies that examined the effect of IPV on mental health use the past-12-month IPV as exposure. An exception is the US NVAWS,³⁷ which examined the effect of lifetime IPV on mental health in both sexes. The survey, using the Beck Depression Inventory questionnaire, indicates that lifetime IPV (physical and emotional) are significantly associated with mental health problems (depressive symptoms), a result that is consistent with the findings of the present study, in which we report that a partner's controlling behaviour and ability to instil fear in the spouse make the association between DV and mental distress stronger. Several recent studies^{44 45} have revealed that women who mentioned controlling behaviours by their partner are more likely to be exposed to DV and to suffer from mental health problems than women who do not have partners with controlling behaviours. Although we adjusted for confounding variables in the association between DV and mental distress, residual confounding such as separate income of respondents and partners,



their parental backgrounds and parental roles may still exist. Moreover, a longitudinal study among Korean women reported that there was a reciprocal relationship between IPV and depression.⁴⁶

The main strength of this study is the exploration of different forms of domestic violence in both married and unmarried men and women. The high response rates minimise selection bias. We used internationally standardised questionnaires⁶ that were already translated into the Burmese language and back-translated to English, reducing potential information bias. A limitation of the study is a potential underestimation of the prevalence of domestic violence due to the sensitivity of the questions, as discussed in previous international studies.^{9 13 47} Such information bias may have arisen because domestic violence victims are sometimes reluctant to recall traumatic events or to reveal their partner's violent behaviour.⁴⁸ Violence might also be under-reported due to feelings of guilt, shame or fear. However, special training for the interviewers, conducting interviews with same-sex respondents, and building respondents' trust might have reduced the under-reporting and social desirability bias. Another limitation is that the HSCL-10 was not validated in this study population; however, it has previously been validated in the general population in Pakistan,⁴⁹ Norway²² and in an ethnic minority population.⁵⁰ In addition, the standard English version of the HSCL-10 was translated into the Burmese language by a psychiatrist and back-translated, and a pilot study was conducted, resulting in minor corrections. Nevertheless, we cannot rule out whether the symptoms of mental distress in the present study are overestimated or underestimated. Thus, the results should be interpreted with caution. Due to the exclusion of members of military, institutionalised people, monks and nuns, we may also have introduced selection bias. However, it is not possible to elucidate the direction of this potential bias. Another limitation is that we were unable to properly establish the direction of effect between lifetime domestic violence and mental distress due to the cross-sectional study design.

CONCLUSIONS

We report a high prevalence of various forms of domestic violence among 18 to 49-year-old married women and men. Furthermore, we report an association between lifetime exposure to domestic violence and mental distress. Despite government sectors and non-governmental organisations working together to eliminate gender inequality, the prevalence of domestic violence remains higher among married women than married men. Thus, it is recommended that policymakers emphasise culturally appropriate outreach programmes to increase the awareness of domestic violence and to provide guidance on how to access mental health services for domestic violence victims. The health system needs to ensure good coordination systems and to create a referral network for domestic violence victims. Additionally, the health

professional who treats domestic violence victims should screen for symptoms of mental health problems. In this study, we examined the association between all types of domestic violence and mental distress. There is a need for further research on how each type of domestic violence impacts mental health. Moreover, longitudinal studies are needed in order to identify cause and effect relationships between domestic violence and mental distress.

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