

The impact of violence against women on reproductive health and child mortality in Timor-Leste

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The World Health Organization (WHO) 2013 report on global and regional estimates of violence against women found that, worldwide, compared to women who are not abused, women who are physically or sexually abused by their partners have a 16% greater likelihood of having a low birth weight baby and are twice as likely to have an abortion, 1½ times more likely to contract human immunodeficiency virus and twice as likely to experience depression.¹

Women who experience violence use health services more than other women.² Health care providers are one of the most common sources of formal support for women who experience violence.³ They are therefore in a unique position to identify abused women and to either provide support or refer women to appropriate medical and psychosocial support services. The WHO has published clinical and policy guidelines for health sector responses to violence against women (VAW), which note the growing consensus about incorporating measures of VAW into health and demographic surveys.⁴

The Democratic Republic of Timor-Leste, which gained independence in 2002, is one of Australia's closest neighbours. Australia is a major source of aid to Timor-Leste and Australian health care providers, researchers and agencies collaborate with the growing health infrastructure in Timor-Leste.

Surviving pregnancy and childbirth and reducing childhood illness have been recognised as health research priorities for Timor-Leste.⁵ The 2009/10 Timor-Leste Demographic and Health Survey (TLDHS) carried out by the National Statistics Directorate of the Ministry of Finance (Timor-

Abstract

Objectives: To determine differences in reproductive health and infant and child mortality and health between abused and non-abused ever-married women in Timor-Leste.

Methods: Secondary data analysis of Timor-Leste Demographic Health Survey (1,959 ever-married women aged 15–49 years). Associations with violence estimated using multinomial logistic regression adjusted for sociodemographic variables and age of first intercourse.

Results: Overall, 45% of ever-married women experienced violence: 34% reported physical only and 11% reported combined physical, sexual and/or emotional violence. Compared to non-abused women, women reporting physical violence only were more likely to use traditional contraception (AdjOR 2.35, 95%CI 1.05-5.26) or report a sexually transmitted infection (AdjOR 4.46, 95%CI 3.27-6.08); a pregnancy termination (AdjOR 1.42, 95%CI 1.03-1.96); a child who had died (AdjOR 1.30, 95%CI 1.05-1.60), a low birth weight infant (AdjOR 2.08, 95%CI 1.64-2.64); and partially vaccinated children (AdjOR 1.35, 95%CI 1.05-1.74). Women who reported combined abuse were more likely to report a sexually transmitted infection (AdjOR 3.51, 95%CI 2.26-5.44); a pregnancy termination (AdjOR 1.95, 95%CI 1.27-3.01); few antenatal visits (AdjOR 1.76 95%CI 1.21-2.55); and a child who had died (AdjOR 1.45, 95%CI 1.06-2.00).

Conclusions: Violence exposes women to poor reproductive health, infant and child mortality and poor infant and child health.

Implications: Preventing and reducing violence against women should improve women and children's health outcomes in Timor-Leste.

Key words: intimate partner violence, maternal health, infant health, Timor-Leste

Leste) measured a range of demographic and health variables and details of the methods are outlined in the report.⁶ One significant finding was that the Maternal Mortality Ratio (MMR) for the six previous years was 557 per 100,000 live births.^{6(p112)} This is one of the highest rates in the world. By contrast, the most recently published reliable Australian MMR (2004/05) was 8.4 per 100,000 live births.⁷

The TLDHS included a sub-study about women's experiences of physical, sexual and other forms of domestic and interpersonal violence (DV Sub-study).^{6(p225)} Just over one-third of women (38%) reported experiencing physical violence since the age 15.⁶ The

rates of violence were significantly higher for women who were married or had been married at least once (ever-married): 53% of divorced, separated or widowed women and 42% of women who were married or living with their partner reported experiencing physical violence since the age of 15, compared to 29% of women who had never been married (never-married).

We undertook a secondary analysis of TLDHS data to estimate the impact of VAW on women's reproductive health and infant and child mortality and health in Timor-Leste.

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Methods

The TLDHS included interviews with 13,137 women aged 15 to 49 years (TLDHS Sample) from 11,463 households. The report states that, for ethical reasons, only one woman per household was interviewed. This resulted in the DV Sub-study being carried out in one-third of eligible households. The specific safety strategies implemented by the DHS staff included: only one eligible woman per household; obtaining informed consent with affirmed confidentiality; offering information about available services to assist if women disclosed; and only asking questions if privacy could be obtained (which extended to not asking questions from the DV sub-study if a translator was needed).^{6(p229)} Of the overall women, 3,022 were eligible for the DV sub-study with 65 excluded because of lack of privacy and six women choosing not to participate. This left 2,951 respondents (DV Sample) representing 22.5% of all women surveyed.^{6(p228)} Of the DV Sample, 1,959 were ever-married and 992 were never-married.

All women in the TLDHS Sample were asked a series of socio-demographic questions (age, region, residence, education, religion, wealth, number of living children and marital status). Comparing characteristics, the DV Sample was shown to be representative of the TLDHS.^{6(p228)} In one-third of households, blood samples were taken from women and children to test for anaemia.

Only ever-married women were asked all questions related to reproductive health and child health, so our analysis is limited to the ever-married women in the DV Sample.

Women in the DV Sample were asked about their experiences of physical, sexual and emotional violence, based on the revised Conflict Tactic Scale,⁸ including:

Does/did your (last) husband/partner ever do any of the following things to you?

1. Push you, shake you or throw something at you?
2. Slap you?
3. Twist your arm or pull your hair?
4. Punch you with his fist or with something that could hurt you?
5. Kick you, drag you, or beat you up?
6. Try to choke or burn you on purpose?
7. Threaten or attack you with a knife, gun or any other weapon?
8. Physically force you to have sexual intercourse with him even when you did not want to?

9. Force you to perform any sexual acts you did not want to?
10. Say or do something to you to humiliate you in front of others?
11. Threaten to hurt or harm you or someone else close to you?
12. Insult you or make you feel bad about yourself?

Questions 1 to 7 measured physical violence, 8 and 9 measured sexual violence and 10 to 12 measured emotional violence. Violence committed by persons other than the current or most recent spouse was also investigated.

Further details on the TLDHS and DV Sub-study methodology are set out elsewhere.^{6,9}

As outcomes are thought to be worse for women who experience combined forms of physical and/or sexual and/or emotional violence,¹⁰ we created mutually exclusive categories for physical violence only and combined forms of violence. Sexual violence was examined separately but, because the numbers and proportions were very low, the impact of sexual violence was only able to be estimated when combined with physical and/or emotional violence.

Our study investigated the association between VAW and women's reproductive health, including: current contraceptive use (no contraception, modern method or traditional method); sexually transmitted infections (STIs); number of unplanned pregnancies; number of pregnancy terminations; number of antenatal visits; number of children who had died; and estimated birth weights of children (average or below average).⁹ We also examined the association between VAW and children's heights and weights (to determine nutritional status), anaemia and immunisation status.

Data are presented as frequencies and percentages, adjusted by sampling weights to account for the non-proportional allocation of the sample to the different Timor-Leste districts,^{6(p257)} odds ratios with 95% confidence intervals, and p-values. We undertook multinomial logistic regression and adjusted for the socio-demographic factors of age, marital status, occupation, urban or rural residence, wealth, age at first intercourse and number of children.^{2(pp11-17)} The analysis was undertaken using Stata.¹¹

Ethics approval was granted by the La Trobe University Faculty of Health Sciences Human Ethics Committee.

Results

Ever-married women and experiences of violence

Overall, 45% of ever-married women experienced violence: 34% reported physical violence only and a further 11% reported combined forms of violence. Of those who reported combined forms of violence, three-quarters reported physical violence plus sexual and/or emotional violence, 13% reported physical, sexual and emotional violence, and a small number reported sexual and/or emotional violence but not physical violence. There were higher rates of any violence (58%) and combined forms of violence (30%) among women who were divorced, separated or widowed compared to women who were currently married (44% reported any violence and 10% reported combined forms of violence).

Health effects of VAW

Table 1 presents associations between VAW and aspects of reproductive health, infant and child mortality and health for ever-married women.

Current contraception use

The majority of women (78%) did not use contraception.

Compared to women who had not experienced violence, women who had experienced physical violence only were more likely to use contraception overall, but were also more likely to use a traditional method of contraception (AdjOR 2.35, 95%CI 1.05-5.26) than a modern method of contraception (AdjOR 1.52, 95%CI 1.20-1.91).

We found no significant associations with contraceptive use for women who had experienced combined forms of violence.

Sexually transmitted infections

Women who had experienced either physical or combined forms of violence were three to four times more likely to have an STI or its symptoms (physical: AdjOR 4.46, 95%CI 3.27-6.08; combined: AdjOR 3.51, 95%CI 2.26-5.44).

Unplanned pregnancy

Women who had experienced violence were not more likely to have an unplanned pregnancy in the previous five years than women who had not experienced violence.

Pregnancy termination

Compared with women who had not

experienced violence, women who had experienced physical violence were more likely to have had a termination (AdjOR 1.42 95%CI 1.03-1.96) and women who had experienced combined forms of violence were nearly twice as likely to have had one (AdjOR 1.95 95%CI 1.27-3.01).

Number of antenatal visits

Most women (55%) had four or more antenatal visits during their pregnancies. However, women who had experienced combined forms of violence were more likely

to have had only two or three antenatal visits (AdjOR 1.76, 95%CI 1.21-2.55) compared with women who had not experienced violence.

Child and infant mortality

Women who had experienced physical violence were 30% more likely to have had one or more children die (AdjOR 1.30, 95%CI 1.05-1.60) and women who had experienced combined forms of violence were 45% more likely to have one or more children die (AdjOR 1.45, 95%CI 1.06-2.00) compared with women who had not experienced violence.

There was also an increased likelihood for women who had experienced violence to have had a child die aged less than five years.

Low birth weight

Women who had experienced physical violence were more than twice as likely to have had an underweight infant (AdjOR 2.08, 95%CI 1.64-2.64) and those who had experienced combined forms of violence were also more likely to have had an underweight infant (AdjOR 1.46, 95%CI 1.01-2.10) than women who had not experienced violence.

Table 1: Impact of violence against Timorese women on women's reproductive health, infant mortality and child health.

		Violence			Physical violence only			Combined violence			
		None	PO	PSE	AdjOR	95%CI	p-value	AdjOR	95%CI	p-value	
		Row%									
Current contraception use											
non-user	1527	77.9	56.6	31.0	12.3	Ref			Ref		
modern method	393	20.0	50.2	44.0	5.9	1.52	1.20-1.91	<0.001	0.70	0.47-1.05	0.09
traditional method	40	2.0	47.6	37.4	15.1	2.35	1.05-5.26	0.04	1.85	0.60-5.65	0.3
total	1959	100.0	55.2	33.8	11.1						
Sexually transmitted infections or indications thereof											
no	1769	90.3	58.3	31.1	10.5	Ref			Ref		
yes	190	9.7	25.6	58.1	16.3	4.46	3.27-6.08	<0.001	3.51	2.26-5.44	<0.001
total	1959	100.0	55.2	33.8	11.1						
Ever unplanned pregnancy in the last 5 years											
no	1249	84.3	55.7	33.8	10.5	Ref			Ref		
yes	232	15.7	43.7	43.0	13.3	1.14	0.86-1.51	0.4	1.08	0.70-1.66	0.7
total	1482	100.0	53.9	35.3	10.9						
Ever had termination											
no	1785	91.1	55.9	33.6	10.5	Ref			Ref		
yes	174	8.9	47.9	35.6	16.6	1.42	1.03-1.96	0.03	1.95	1.27-3.01	0.002
total	1959	100.0	55.2	33.8	11.1						
Number of children died											
no	1350	68.9	55.9	33.9	10.2	Ref			Ref		
yes (1 or more)	609	31.1	53.5	33.4	13.2	1.30	1.05-1.60	0.02	1.45	1.06-2.00	0.02
total	1959	100.0	55.2	33.8	11.1						
Ever infant mortality at <5 years of age											
no	1374	70.1	55.7	34.1	10.2	Ref			Ref		
yes	585	29.9	53.8	32.9	13.2	1.26	1.02-1.56	0.03	1.40	1.02-1.93	0.04
total	1959	100.0	55.2	33.8	11.1						
Number of antenatal visits for births in the last 5 years											
no antenatal care	178	12.5	61.5	27.0	11.6	0.97	0.68-1.37	0.8	1.35	0.80-2.30	0.3
1 visit	49	3.4	52.2	30.6	17.1	0.84	0.47-1.51	0.6	1.61	0.72-3.59	0.2
2-3 visits	418	29.4	47.2	37.5	15.3	1.08	0.84-1.39	0.5	1.76	1.21-2.55	0.003
4+ visits	777	54.7	55.7	36.4	7.9	Ref			Ref		
total	1421	100.0									
Birthweight of at least one child born in last 5 years, who is less than average weight											
no	1095	73.9	57.7	31.9	10.4	Ref			Ref		
yes	386	26.1	42.9	44.7	12.4	2.08	1.64-2.64	<0.001	1.46	1.01-2.10	0.04
total	1482	100.0	53.9	35.3	10.9						
Vaccinated ever (best vaccination)											
none	286	20.3	63.5	26.6	9.9	0.74	0.55-0.99	0.04	0.70	0.45-1.10	0.1
partial	432	30.8	48.8	40.8	10.4	1.35	1.05-1.74	0.02	1.09	0.74-1.59	0.7
complete	687	48.9	53.2	35.2	11.6	Ref			Ref		
total	1405	100.0	55.2	33.8	11.1						

Note: totals may vary due to missing data

Nutritional status of children

There were no significant differences in height or weight for age or height for weight (all of which are indicative of nutritional status for children under five years old) for the children of women who had experienced violence. Equally, the results show no significant difference in infant anaemia.

Vaccination status of children

Fewer than half of all women's children were fully vaccinated. The children of women experiencing violence are less likely to have no vaccinations at all (AdjOR 0.74, 95%CI 0.55-0.99). The children of women who had experienced physical violence were more likely to be only partially vaccinated (AdjOR 1.35, 95%CI 1.05-1.74) compared with the children of non-abused women. There were no significant differences for women experiencing combined forms of violence in relation to vaccinations.

Discussion and conclusions

This secondary analysis of the TLDHS is the first to describe the associated health effects of VAW in a population level study in Timor-Leste. It points to the potential for the Timor-Leste government and non-government organisations to reduce the potential effect of VAW on maternal reproductive health, infant and child mortality and child health.

The DHS authors acknowledge that "collecting valid, reliable, and ethical data on intimate partner violence poses particular challenges because: 1) what constitutes violence or abuse varies across cultures and individuals; 2) a culture of silence usually surrounds domestic violence and can affect reporting; and 3) the topic is a sensitive one."^{5(p226)} They added that, of the DV sub-sample, "It is noteworthy that the age, marital status, and residential, regional, educational, and wealth index distributions of the sub-sample of respondents selected for the violence module are virtually identical to the entire TLDHS sample of respondents and therefore representative of the reporting domains selected for the TLDHS."^{5(p228)}

Nevertheless, we caution that these findings are associative and not causal and some especially sensitive issues such as sexual partner violence may be under-reported. We also caution that as we did not conduct the study, despite the considerable time spent on training interpreters, there may be misunderstandings of which we are

unaware that could have affected the results. This includes potential confusion and stigma about the terms for abortion,¹² which may have been interpreted as either spontaneous or induced. However, the results are consistent with associations with all outcomes, including abortion and miscarriage from studies conducted in other low and middle income countries.¹

In the TLDHS, 38% of Timorese women reported experiencing violence. This is higher than the global average (35%) but just lower than the average rate for the South-East Asian region.¹ Our analysis recognised that ever-married women are at greater risk of violence than never-married women and that some ever-married women are at risk of physical abuse and others are at risk of combined forms of violence. While we found in Timor-Leste, as we did in Australia,¹⁰ that abused women have worse reproductive health and children's health outcomes compared to non-abused women, overall we did not find that combined forms of violence are associated with greater harm than physical abuse only. This may be due to under-reporting of and sensitivity about other forms of harm such as sexual violence.

Our analysis confirms the significant associations between VAW and women's reproductive health, infant and child

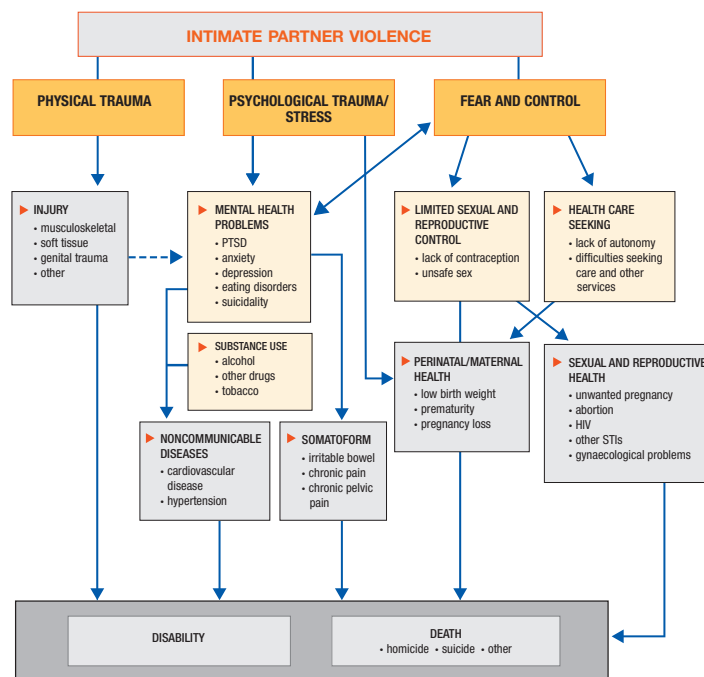
mortality, and infant and child health found in other studies in low and middle income countries. We found higher rates of STIs,¹³ lower rates of antenatal visits and child vaccinations, higher rates of pregnancy termination (difficult to access in Timor-Leste where it is illegal)^{12,14} and higher rates of child and infant mortality.¹⁵ The MMR in Timor-Leste is very high, and these findings shed some light on why this may be so and one way to potentially reduce it.

The WHO recently published an analysis of the pathways through which VAW is hypothesised to affect women's reproductive and mental health.^{1(p8)}

Applying this framework to our results, victimised Timorese women are associated with higher rates of STIs and more use of traditional than modern contraceptive methods, if they are using contraception at all. The doubly victimised group of women is likely to receive lower rates of antenatal care visits and this, combined with the high rates of STIs, may have an impact on the safety of their pregnancies and the health of their infants. The fewer antenatal visits of women who have experienced combined violence is an area requiring greater attention.

Like abused women in equivalent countries,¹⁴ abused Timorese women are more likely to

Figure 1: Pathways and health effects on intimate partner violence.



There are multiple pathways through which intimate partner violence can lead to adverse health outcomes. This figure highlights three key mechanisms and pathways that can explain many of these outcomes. Mental health problems and substance use might result directly from any of the three mechanisms, which might, in turn, increase health risks. However, mental health problems and substance use are not necessarily a precondition for subsequent health effects, and will not always lie in the pathway to adverse health.

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have terminated a pregnancy (or experienced a miscarriage if terms were confused). Abortion is culturally shameful in Timor-Leste and methods are likely to be unsafe. This may be one pathway to maternal mortality, although we were unable to properly investigate the relationship between termination and maternal mortality with this data-set.

Another area which deserves fuller investigation is the proportion (4%) in the TLDSHS who reported that they had been physically abused while they were pregnant.^{6(p234)} Not only does this provide a risk to their pregnancy, but it is regarded as a marker for severe violence and a risk factor for femicide.^{16,17}

There are also serious indicators for infant health associated with violence against Timorese women. Children of abused women are more likely to have a birth weight lower than average. Although there were no further associations for poor infant health found in other countries, such as anaemia¹⁸ or stunting,¹⁹ this may be because poor infant health is widespread in Timor-Leste. Women who experience violence are more likely to have lost infants and children. One explanation for this may be that children of women experiencing physical violence are more likely to have partial rather than completed vaccinations, leaving them more vulnerable to infectious diseases.¹⁵ The lower rates of vaccination of children associated with VAW requires further attention.

The WHO has recently published guidelines for health services and clinicians, highlighting the role of health services in the identification and care for women experiencing violence and the potential impact on children and families.^{4(p68)} Maternity and other reproductive and sexual health services require support, and personnel require training to be alert to victimisation when providing care for women of reproductive age, especially in the presence of an STI, pregnancy or when women have unwanted pregnancies.

Health care workers need a context of political support and funding in which to undertake this work. The Government of Timor-Leste has made significant progress by implementing a stronger legislative base with the 2010 Law against Domestic Violence supplemented by the 2012 National Action Plan on Gender-Based Violence, which focuses on a multi-sectoral approach.

Hopefully, this will result in more support and training for health care workers.

Implications

Our findings highlight the substantial health burden suffered by a large minority of Timorese women, their children and the communities in which they live. Women in Timor-Leste report significant rates of violence, leaving women and their families at risk of morbidity and mortality. The implications of this situation are serious for current and future generations.²⁰ While the health effects of VAW may also limit the ability of Timor-Leste to achieve the Millennium Development Goals, especially those for maternal health and child mortality,²¹ the government has provided a strategic framework with new legislation and policy and resources to tackle violence against women.

Given the links made between VAW, poor reproductive health, and infant and child mortality and health in Timor-Leste, our analysis also highlights the opportunities to develop interventions to prevent VAW and reduce the resultant health burden. It is important to call for increased support, resources and ongoing training for health care providers in Timor-Leste, to improve the health of Timorese women and children.

All health services staff in Timor-Leste who work with women should be thoroughly trained, supported and resourced to identify abused women and to respond sensitively, discuss safety for women and their children, and to identify local services they can refer women to for help. Timor-Leste is a close neighbour and friend to Australia. Australia and Australian health care professionals have an important role to play in collaborating with the Timorese Government and other relevant organisations to reduce VAW and children in Timor-Leste.

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