Prevalence of intimate partner violence: findings from the WHO multi-country study on women's health and domestic violence

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Summary

Background Violence against women is a serious human rights abuse and public health issue. Despite growing evidence of the size of the problem, current evidence comes largely from industrialised settings, and methodological differences limit the extent to which comparisons can be made between studies. We aimed to estimate the extent of physical and sexual intimate partner violence against women in 15 sites in ten countries: Bangladesh, Brazil, Ethiopia, Japan, Namibia, Peru, Samoa, Serbia and Montenegro, Thailand, and the United Republic of Tanzania.

Methods Standardised population-based household surveys were done between 2000 and 2003. Women aged 15–49 years were interviewed and those who had ever had a male partner were asked in private about their experiences of physically and sexually violent and emotionally abusive acts.

Findings 24 097 women completed interviews, with around 1500 interviews per site. The reported lifetime prevalence of physical or sexual partner violence, or both, varied from 15% to 71%, with two sites having a prevalence of less than 25%, seven between 25% and 50%, and six between 50% and 75%. Between 4% and 54% of respondents reported physical or sexual partner violence, or both, in the past year. Men who were more controlling were more likely to be violent against their partners. In all but one setting women were at far greater risk of physical or sexual violence by a partner than from violence by other people.

Interpretation The findings confirm that physical and sexual partner violence against women is widespread. The variation in prevalence within and between settings highlights that this violence in not inevitable, and must be addressed.

Introduction

Violence against women is now widely recognised as a serious human rights abuse, and increasingly as an important public health problem with substantial consequences for women's physical, mental, sexual, and reproductive health.[1–4] This recognition was strengthened by agreements at key international conferences during the 1990s, including the Fourth World Conference on Women (Beijing, 1995).[5] Its Platform for Action identified the scarcity of adequate information on the prevalence, nature, causes, and consequences of violence worldwide, as a serious obstacle to the wider recognition of the magnitude and seriousness of the issue, and the development of effective intervention strategies.

Since then, international research has provided increasing evidence of the prevalence of violence against women, particularly physical violence perpetrated by intimate male partners. A review of over 50 population-based studies in 35 countries before 1999 indicated that between 10% and 52% of women from around the world report that they had been physically abused by an intimate partner at some point in their lives, and between 10% and 30% that they had experienced sexual violence by an intimate partner.[6,7]

However, because of discrepancies in research design and methods, comparison of data was not possible between settings. In response, the WHO multi-country study on women's health and domestic violence against women was developed. This population based study has as its main objectives to estimate the prevalence of different forms of violence against women, with particular emphasis on physical, sexual, and emotional violence by intimate partners; assess the association of partner violence with a range of health outcomes; identify factors that could either protect or put women at risk of partner violence; and document the strategies and services that women use to cope with this violence.

This paper presents findings on the extent of physical and sexual intimate partner violence against women from fifteen diverse sites in ten countries: Bangladesh, Brazil, Ethiopia, Japan, Namibia, Peru, Samoa, Serbia and Montenegro, Thailand, and the United Republic of Tanzania.[8]

Methods

The study was an international collaboration between WHO, the London School of Hygiene and Tropical Medicine (LSHTM), the Program for Appropriate Technology in Health (PATH), and research teams in each country. These country teams consisted of an established research institution or government agency with experience in doing population surveys, and an organisation experienced in providing services to abused women.[9] To support the implementation and dissemination of the

	Capital or large city	Provincial site
Bangladesh	**Dhaka** Country's capital, largest city and commercial centre, situated in the middle of the country in the delta region of the Ganges and Brahmaputra rivers. Population of over 10 million and growing rapidly, includes areas of extreme poverty. Although overall literacy rate is still low, positive change has been noticed in the recent years. Almost 90% Muslim.	**Matlab** Densely populated rural district, dominated by subsistence agriculture and widespread landlessness; site of demographic and health surveillance project operated by ICDDR,B, Centre for Health and Population Research.
Brazil	**São Paulo** Largest city in Brazil, with a population of 14 million (2000), dynamic commerce and trade. Base for major political parties and social movements.	**Zona da Mata de Pernambuco** Northeastern province, largely rural, with small villages and towns. Sampling excluded major city of Recife. Mostly agricultural—with emphasis on sugar cane production—and has a considerable service industry sector.
Ethiopia		**Butajira** Densely populated, largely rural district characterized by subsistence agriculture; majority Muslim. Principal town, Butajira, is 130 km south of the capital Addis Ababa; site of demographic and health surveillance project.
Japan	**Yokohama** Second largest city in Japan, highly urban, population 3·3 million. About 70% of women have post-secondary education.	
Namibia	**Windhoek** Capital and seat of Government; administrative, commercial and industrial centre. Population 250 000 (2002 census). Melting pot of cultures: African, European and others. Official language English; other commonly heard languages: Afrikaans, German, Oshiwambo, Otjiherero, Nama-Damara.	
Peru	**Lima** Peru's capital and largest city, situated on the Pacific coast; estimated 7·5 million inhabitants (2000), nearly half living in large periurban settlements, characterised by self-built or inadequate housing, with few green areas and insufficient basic services. Language Spanish.	**Department of Cusco** In the southeast region of the Peruvian Andes. Historically the seat of great Inca civilisations. Cusco city, at 3350 m above sea level, is a centre for tourism. Most of the rest of department consists of largely rural communities and isolated and remote settlements. Languages Spanish and Quechua.
Samoa	**Samoa–whole country** Fertile, volcanic islands halfway between Hawaii and Australia. Largely rural communities located mainly on the coast, engaged in subsistence agriculture, although tourism is also important. Predominantly Polynesian and Christian.	
Serbia and Montenegro	**Belgrade** Capital city; economic, political and administrative centre. 1·7 million residents, mainly Serbs; 22 nationalities. One of the oldest towns in Europe, with extensive cultural tradition. Aerial bombing in 1999 caused substantial damage. After elections in 2000, major demonstrations led to democratic changes.	
Thailand	**Bangkok** Thailand's capital and by far its largest city. Major metropolitan centre in the heart of the major commercial rice-growing region. 93% Buddhist.	**Nakornsawan** 70% rural province, 266 km north of Bangkok. Largely Buddhist.
United Republic of Tanzania	**Dar-es-Salaam** Main seaport, largest city and seat of government. Population 2·5 million (2002). It is a metropolitan city with a mixed population.	**Mbeya district** In the south of the country. Mountainous, agricultural area with a population of 521 000 (2002). The region's rural population is largely indigenous.

Table 1: **WHO study survey sites by country**

study, countries also established an advisory group—generally including key decision-makers, representatives of women's organisations, and policymakers.[9]

Ethical and safety guidelines for the conduct of this research were developed and were adhered to in each country.[10,11] These emphasised individual informed consent and the importance of ensuring confidentiality and privacy, both as a means to protect the safety of respondents and field staff, and to improve the quality of the data.[10,12] Ethics permission for the study was obtained from the WHO Secretariat Committee for Research in Human Subjects, from the local institutions and, where necessary, national ethics review boards.

Sample design

Building on formative qualitative research in each country, standardised population-based household surveys on women's health and experiences of different forms of violence were done between 2000 and 2003 in 15 sites in the ten study countries. Since in most countries a national sample was logistically not feasible, the study focused on obtaining data from two contrasting settings, to enable within-country comparisons. In Bangladesh, Brazil, Peru, Thailand, and the United Republic of Tanzania surveys were done in the capital (or other large city) and one representative province with both rural and urban characteristics. A rural setting was used in Ethiopia, and a large city was used in Japan, Namibia, and Serbia and Montenegro. In Samoa, the whole country was sampled. Table 1 provides a short description of the study sites.

In most sites, a representative sample of women was obtained with a two-stage cluster-sampling scheme to select households. Clusters were selected systematically with implicit stratification for socioeconomic level.

Households within a cluster were selected in a way that ensured that the sample was self-weighting with respect to the household (ie, either the clusters or the households were selected with a probability proportionate to size; webtable). To ensure the safety and confidentiality of respondents, only one woman was randomly selected per household for interview. In Japan and Ethiopia, eligible women were sampled directly, thus ensuring that the samples were self-weighted at the level of the individual woman.

See Online for webtable

In most sites, around 1500 women between 15 and 49 years old were interviewed. In Ethiopia twice as many women were interviewed. In Japan, for legal reasons eligible women were between 18 and 49 years of age. The sample size was established on the basis of required levels of statistical power to meet the primary study objectives.[8,11]

The survey used carefully selected female interviewers and supervisors trained using standardised 3-week training, covering issues of gender, violence, ethical and safety issues, as well as interview techniques.[13] The WHO ethics guidelines required that all interviews take place in complete privacy except for infants younger than 2 years. Interviewers were trained in several strategies to ensure such privacy, including use of dummy questions in case someone entered the room, and use of decoy interviewers to ask questions of mother-in-laws or husbands if this was the only way to ensure privacy with the respondent.[10] All interviews were done in the local language, and information about available local services was provided to all respondents. Follow-up support was provided where needed.[9,10] Between 65% and 92% of interviews lasted less than 1 hour and all but 1% lasted less than 2 hours.[13]

To ensure data comparability and quality, the study used a standardised structured questionnaire. This questionnaire was initially developed by the core research team, reviewed and revised by country research team members, pre-tested in five countries, and piloted in all countries. The implementation of the study included the translation of the questionnaire into 14 languages. In each case the questionnaire was translated and independently back-translated and discussed to establish accuracy, cognitive understanding, and cultural acceptability.

The study's approach to measuring violence built on the tradition of the Conflict Tactics Scale,[14,15] in that respondents were asked questions about their experience of specific acts of physical and sexual violence by a current or former intimate male partner. Asking behaviourally specific questions encourages greater disclosure than requiring respondents to identify themselves as abused or battered.[15,16] Importantly, the WHO instrument framed questions in terms of how partner's treat each other rather than so-called conflict negotiation, because much abuse in the developing world is conceptualised as discipline or chastisement.[7]

The questions on physical partner violence were divided into those related to moderate violence, and those related to severe violence, as described in the panel. The distinction between moderate and severe violence was based on the likelihood of an act causing physical injury, a convention that has been used in other international studies.[16]

The questions on sexual violence focused mainly on forced or coerced sexual intercourse. Additionally, the study looked at partners' controlling behaviours, including acts to constrain a woman's mobility or her access to friends and relatives.

For each act of physical or sexual violence, the respondent was asked whether it had happened ever or in the past 12 months, and with what frequency (once or twice, a few times, or many times). The lifetime prevalence of partner violence was then defined as the proportion of ever-partnered women who reported having experienced one or more acts of physical or sexual violence by a current or former partner at any point in their lives. Current prevalence is the proportion of ever-partnered women reporting at least one act of physical or sexual violence during the 12 months before the interview.

Psychometric analysis was done on results to these questions to ascertain the appropriateness of behavioural

***Panel:* Questions used in the WHO study to document physical and sexual violence and controlling behaviours by an intimate partner**

Physical violence by an intimate partner

Moderate violence:

- Was slapped or had something thrown at her that could hurt her
- Was pushed or shoved

Severe violence:

- Was hit with fist or something else that could hurt
- Was kicked, dragged, or beaten up
- Was choked or burnt on purpose
- Perpetrator threatened to use or actually used a gun, knife, or other weapon against her

Sexual violence by an intimate partner

- Was physically forced to have sexual intercourse when she did not want to
- Had sexual intercourse when she did not want to because she was afraid of what partner might do
- Was forced to do something sexual that she found degrading or humiliating

Controlling behaviours by an intimate partner

- Tried to keep her from seeing friends
- Tried to restrict contact with her family of birth
- Insisted on knowing where she was at all times
- Ignored her and treated her indifferently
- Got angry if she spoke with another man
- Was often suspicious that she was unfaithful
- Expected her to ask permission before seeking health care for herself

items included in the different measures of physical and sexual violence and controlling behaviours. In general, there was good internal consistency among the items for each measure, indicating that the instrument provided a reliable and valid measure for each of the types of violence. For all sites combined, the Cronbach alphas for above measures were 0·81, 0·66, and 0·73, respectively.

The definition of ever-partnered women included women who had ever been married or lived with a partner (and therefore have been at risk of intimate partner violence). In practice, the definition varied slightly between countries, in accordance with the local conditions and notions of partners. Former non-cohabiting sexual partners were not included, except in Japan, Namibia, and Peru, where women who have children with sexual partners that they never live with are not uncommon. Additionally, all respondents were asked about their experience of physical and sexual violence before and after 15 years of age by perpetrators other than intimate partners.

Data entry and analysis

All data was double entered with Epi-Info, version 6.04d,[17] using data entry screens with extensive interactive error, range, and consistency checking. After data cleaning, bivariate and multivariate analysis was done with SPSS. Stata was used to establish design effect due to cluster sampling.

Role of the funding source

The sponsors of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding author had full access to all data in the study and had final responsibility for the decision to submit for publication.

Results

In general, the study achieved a high response rate in every setting (table 2). Across the 15 different sites in ten countries, 24 097 women completed interviews about their experiences of violence, with between 1172 and 1837 interviews per site, except for Ethiopia province, where 3016 women completed the interview. In 12 of the 13 sites that sampled households, between 91·3% and 99·6% of inhabited households completed the initial household interview. The only outlier was Serbia and Montenegro city, where the household response rate was 60%. Although this rate was low in comparison to the other sites, it was better than that usually obtained in surveys done in Serbia and Montenegro city sites (Dragisa Bjeloglav, Strategic Marketing, Belgrade, personal communication, 2003). The response rate could have been negatively influenced by the assassination of the Serbian Prime Minister as the fieldwork was starting.

The individual response rate was calculated as the number of completed women's questionnaires divided by the number of households in which either eligible women had been identified or the presence of eligible women could not be ascertained. Although erring towards underestimation, the response rate at the individual level among eligible women was generally high. Despite the sensitivity of the study topic, in all but one of the sites, over 85% of selected women completed the interview (with participation rates in rural areas generally higher than in cities). The exception was Japan city, where a direct sample of women was used (hence no household response rate was available) and where the individual response rate was 60%. Although this rate is considerably lower than that in the other sites, it compares favourably to other face-to-face interview studies in Japan. For example, the interview rate for the six largest cities in Japan, including Yokohama, was 49% in a study of Japanese national character.[18]

For all sites, the age structure of the sample obtained matched that of the women in the general population (usually census data). Table 3 shows selected sociodemographic characteristics of the ever-partnered women in the sample to illustrate differences in age structure and educational level between sites.

	Households		Individuals	
	Total number of true households	Household response rate* (%)	Total number of eligible households	Individual response rate† (%)
Bangladesh city	1888	1773 (93·9%)	1671	1603 (95·9%)
Bangladesh province	1743	1732 (99·4%)	1594	1527 (95·8%)
Brazil city	1816	1715 (94·4%)	1303	1172 (89·9%)
Brazil province	1956	1940 (99·2%)	1539	1473 (95·7%)
Ethiopia province ‡	N/A	N/A	3083	3016 (97·8%)
Japan city ‡	N/A	N/A	2279	1371 (60·2%)
Namibia city	1964	1925 (98·0%)	1543	1500 (97·2%)
Peru city	1843	1710 (92·8%)	1541	1414 (91·8%)
Peru province	1977	1955 (98·9%)	1897	1837 (96·8%)
Samoa¶	(1646–1995)	1646 (83–100%)	1645	1640 (99·7%)
Serbia and Montenegro city	4631	2769 (59·8%)	1638	1456 (88·9%)
Thailand city	2334	2131 (91·3%)	1807	1536 (85·0%)
Thailand province	1856	1836 (98·9%)	1366	1282 (93·9%)
United Republic of Tanzania city	2064	2042 (98·9%)	1892	1820 (96·2%)
United Republic of Tanzania province	1957	1950 (99·6%)	1498	1450 (96·8%)

N/A=not available. *Household response rate=the number of completed household interviews as a percentage of the total number of true households (ie, all houses in sample minus those that were empty or destroyed). †Number of completed interviews as a percentage of the number of households with eligible women and those where it could not be ascertained whether they contained eligible women or not. ‡In Japan and Ethiopia, no household response rate was calculated because a direct sample of women (not of households) was used. Individual response rate in Japan differs from other sites because denominator might include households where the interviewer was not able to establish whether or not the selected woman was actually living in that household. The calculated rate might therefore underestimate the real response rate. ¶Household response rate for Samoa not precisely known because the data set consists of completed household interviews (1646) only, and how many houses in the original sample (1995) were empty or destroyed or how many households refused the interview is not known. Rate cannot be lower than 83%, and according to information on household and individual participation, real rate is likely to be closer to 100%.

Table 2: **Household and individual sample obtained and response rates, by site**

	Total number of ever–partnered women	Age		Education			
		Age, mean	SD	No education (%)	Primary (%)	Secondary (%)	Higher (%)
Bangladesh city	1373	29·9	8·1	275 (20·1%)	267 (19·5%)	618 (45·1%)	209 (15·3%)
Bangladesh province	1329	31·2	8·4	540 (40·9%)	419 (31·8%)	342 (25·9%)	18 (1·4%)
Brazil city	940	33·1	8·8	24 (2·6%)	436 (46·3%)	292 (31·1%)	188 (20·0%)
Brazil province	1188	31·8	8·6	116 (9·8%)	775 (65·2%)	243 (20·5%)	54 (4·5%)
Ethiopia province	2261	32·4	8·1	1775 (84·8%)	271 (12·9%)	30 (1·4%)	18 (0·9%)
Japan city	1277	35·4	8·3	0	0	473 (38·8%)	803 (61·2%)
Namibia city	1369	31·5	8·2	57 (4·1%)	245 (18·0%)	823 (59·7%)	241 (18·1%)
Peru city	1086	33·0	8·7	9 (0·9%)	152 (14·2%)	447 (41·6%)	478 (43·3%)
Peru province	1535	32·7	8·4	191 (12·9%)	762 (50·4%)	343 (22·1%)	238 (14·6%)
Samoa	1204	33·3	7·9	5 (0·4%)	170 (14·1%)	961 (79·9%)	68 (5·6%)
Serbia and Montenegro city	1191	35·0	9·0	0	21 (1·8%)	549 (46·1%)	619 (52·1%)
Thailand city	1049	34·4	7·9	21 (2·0%)	445 (42·4%)	331 (31·6%)	251 (24·0%)
Thailand province	1024	35·9	8·3	46 (4·5%)	705 (68·9%)	161 (15·7%)	110 (10·9%)
United Republic of Tanzania city	1442	30·4	8·5	190 (13·1%)	921 (63·7%)	286 (20·2%)	45 (3·1%)
United Republic of Tanzania province	1256	29·7	8·0	306 (24·3%)	852 (67·9%)	96 (7·6%)	3 (0·2%)

Table 3: **Demographic characteristics of ever-partnered women, by site**

Table 4 presents the proportion of ever-partnered women who reported having experienced physical or sexual violence, or both, by male partners or ex-partners in their lifetime or currently, for each site. The lifetime prevalence of physical partner violence ranged from 13% (Japan city) to 61% (Peru province), with most sites falling between 23% and 49%. The range of lifetime prevalence of sexual partner violence ranged from 6% (city sites in Japan and Serbia and Montenegro) to 59% (Ethiopia province), with most sites falling between 10% and 50%.

The proportion of women reporting either sexual or physical partner violence, or both, ranged from 15% (Japan city) to 71% (Ethiopia province), with most sites falling between 29% and 62%. Japan city consistently reported the lowest prevalence of all forms of violence, whereas the provinces of Bangladesh, Ethiopia, Peru, and the United

	Total number of ever–partnered women	Physical violence				Sexual violence				Physical or sexual violence, or both			
		Ever		Current*		Ever		Current*		Ever		Current*	
		%	95% CI†	%	95% CI†	%	95% CI†	%	95% CI†	%	95% CI†	%	95% CI†
Bangladesh city	1373	39·7	35·3–44·0	19·0	15·3–22·7	37·4	32·3–42·4	20·2	16·4–23·9	53·4	49·3–57·4	30·2	26·5–33·9
Bangladesh province	1329	41·7	37·7–45·6	15·8	13·5–18·1	49·7	46·3–53·2	24·2	20·5–28·0	61·7	58·6–64·8	31·9	28·6–35·2
Brazil city	940	27·2	23·9–30·6	8·3	6·4–10·2	10·1	8·0–12·2	2·8	1·6–3·9	28·9	25·5–32·4	9·3	7·1–11·4
Brazil province	1188	33·8	30·8–36·7	12·9	11·1–14·7	14·3	12·2–16·4	5·6	4·3–6·8	36·9	33·9–39·8	14·8	12·9–16·7
Ethiopia province	2261	48·7	46·6–50·8	29·0	27·1–30·9	58·6	56·5–60·6	44·4	42·4–46·5	70·9	69·0–72·7	53·7	51·6–55·8
Japan city	1276	12·9	11·1–14·7	3·1	2·1–4·1	6·2	4·7–7·7	1·3	0·7–2·0	15·4	13·4–17·4	3·8	2·7–4·9
Namibia city	1367	30·6	27·6–33·7	15·9	13·6–18·2	16·5	14·2–18·7	9·1	7·3–10·7	35·9	32·7–39·1	19·5	16·7–21·9
Peru city	1086	48·6	45·2–52·0	16·9	14·5–19·2	22·5	20·0–25·1	7·1	5·6–8·5	51·2	47·8–54·6	19·2	16·7–21·6
Peru province	1534	61·0	57·5–64·4	24·8	22·2–27·4	46·7	44·1–49·3	22·9	20·7–25·2	69·0	66·2–71·9	34·2	31·5–36·9
Samoa	1204	40·5	37·3–43·8	17·9	15·7–20·1	19·5	17·1–22·0	11·5	9·5–13·4	46·1	42·8–49·4	22·4	19·9–24·9
Serbia and Montenegro city	1189	22·8	19·9–25·6	3·2	2·2–4·2	6·3	4·8–7·8	1·1	0·4–1·8	23·7	20·7–26·7	3·7	2·6–4·8
Thailand city	1048	22·9	19·8–25·9	7·9	6·1–9·7	29·9	27·1–32·6	17·1	14·7–19·4	41·1	37·9–44·3	21·3	18·7–23·8
Thailand province	1024	33·8	30·0–37·6	13·4	10·4–16·2	28·9	26·0–31·9	15·6	13·4–17·8	47·4	43·6–51·1	22·9	19·8–26·0
United Republic of Tanzania city	1442	32·9	30·4–35·3	14·8	12·4–16·9	23·0	20·7–25·2	12·8	10·7–14·7	41·3	38·7–44·0	21·5	19·0–23·6
United Republic of Tanzania province	1256	46·7	42·7–50·6	18·7	15·6–21·8	30·7	27·9–33·6	18·3	15·8–20·9	55·9	52·3–59·4	29·1	26·0–32·1

*At least one act of physical or sexual violence during the 12 months before interview. †Corrected for cluster sampling for all sites except Ethiopia where a simple random sample of women was used.

Table 4: **Lifetime and current prevalence of physical and sexual violence against women by an intimate partner among ever-partnered women, by site**

Republic of Tanzania reported the highest figures. Analysis showed the effect of the cluster design on the precision of the prevalence rates to be minimal. In all sites but one, the design effect ranged between 1 and 2 for all prevalence rates (in Bangladesh city it ranged between 2 and 3).

In most sites, sexual violence by the partner was considerably less prevalent than physical violence, except in Ethiopia province, Bangladesh province, and Thailand city, where women reported more sexual than physical partner violence.

There were also substantial differences between sites in the proportion of ever-partnered women reporting violence within the previous 12 months. For example, in Ethiopia province, 54% of women reported physical or sexual violence, or both, in the past year, compared with less than 10% in Brazil city, Serbia and Montenegro city, and Japan city. In the other sites, between 15% and 34% of respondents reported physical or sexual violence, or both, in the past year.

Pooled multivariate logistic regression analysis controlling for site, age, partnership status, and educational attainment confirmed that the variation in prevalence estimates between and within countries is not explained by differences in age structure, partnership status, or educational level between study sites.

The percentage of ever-partnered women in the population who had experienced severe physical violence ranged from 4% in Japan city to 49% of women in Peru province. In most settings, the proportion of women who experienced severe physical violence was greater than the proportion that experienced only moderate violence (figure 1). Most women experienced each act of physical violence not once, but a few or many times in the 12 months before the interview. Rather than being an isolated event, most acts of physical partner violence were part of a pattern of continuing abuse.

In most sites, there was a substantial overlap between physical and sexual violence by intimate partners. In all sites, more than half the women who reported partner violence reported either physical violence only or physical violence accompanied by sexual violence. In most sites, between 30% and 56% of women who had ever experienced any violence reported both physical and sexual violence, whereas in the cities in Brazil, Japan, Thailand, and Serbia and Montenegro, the overlap was less than 30%. Thailand city was an exception, in that a substantial proportion of women (44%) who experienced violence by an intimate partner reported sexual violence only (figure 2); the corresponding statistic in Thailand province is 29%. Similarly high proportions of sexual violence only were reported by abused women in Bangladesh province (33%) and Ethiopia province (31%).

The percentage of women reporting one or more acts of controlling behaviours by their intimate partner varied from 21% in Japan city to almost 90% of ever-partnered women in the United Republic of Tanzania city, which suggests that the level of male control over female

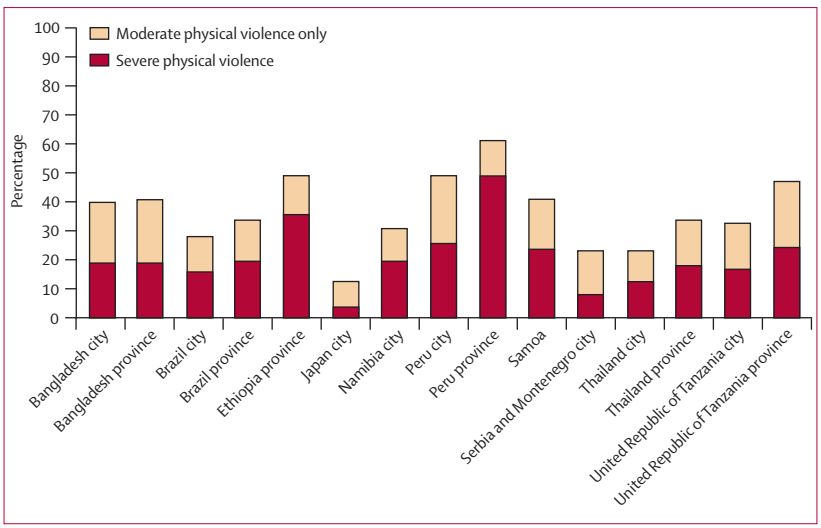

Figure 1: **Prevalence of lifetime physical violence by an intimate partner according to severity of violence for ever-partnered women, by site**

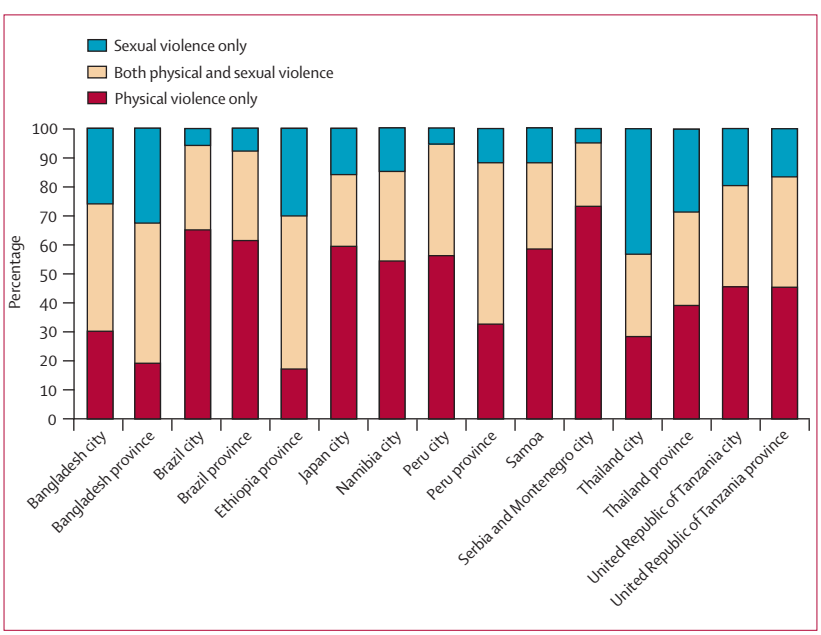

Figure 2: **Frequency distribution of types of violence against women by an intimate partner for ever-abused women, by site**

behaviour is normative to different degrees in the various settings included in the study. Irrespective of the overall levels of controlling behaviour, women who suffered physical or sexual partner violence were substantially more likely to have severe constraints placed on their physical and social mobility: they reported significantly more acts of controlling behaviours by their partners then women who had not suffered partner violence. This pattern holds true for all of the sites (table 5).

Data for violence by partners and non-partners were combined to compare the relative proportions of women experiencing violence by different types of perpetrators. Of the women who had reported physical or sexual violence,

	Total number of ever-partnered women	Experience of violence	Acts of controlling behaviour				p*	Number of acts, mean	p†
			None (%)	1 (%)	2 or 3 (%)	4–7 (%)			
Bangladesh city	640	Never	65·6	23·9	9·2	1·3		0·5	
	733	Ever	35·1	25·1	24·3	15·6	<0·0001	1·6	<0·0001
Bangladesh province	509	Never	37·1	34·8	21·4	6·7		1·2	
	820	Ever	24·3	29·3	31·3	15·1	<0·0001	1·8	<0·0001
Brazil city	668	Never	51·5	19·0	22·9	6·6		1·0	
	272	Ever	23·2	17·6	26·1	33·1	<0·0001	2·4	<0·0001
Brazil province	750	Never	50·9	22·0	19·2	7·9		1·0	
	438	Ever	22·1	19·4	22·6	35·8	<0·0001	2·6	<0·0001
Ethiopia province	659	Never	51·6	19·4	26·1	2·9		0·9	
	1602	Ever	37·2	21·8	31·8	9·2	<0·0001	1·4	<0·0001
Japan city	1080	Never	82·5	12·2	4·7	0·6		0·3	
	196	Ever	56·6	20·4	15·3	7·7	<0·0001	0·9	<0·0001
Namibia city	876	Never	59·0	19·3	15·3	6·4		0·8	
	491	Ever	30·3	14·9	27·3	27·5	<0·0001	2·2	<0·0001
Peru city	530	Never	44·0	29·4	20·9	5·7		1·0	
	556	Ever	18·2	21·6	30·2	30·0	<0·0001	2·5	<0·0001
Peru province	475	Never	36·8	25·3	30·7	7·2		1·3	
	1059	Ever	16·9	12·4	30·8	39·9	<0·0001	3·1	<0·0001
Samoa	649	Never	31·4	27·3	31·0	10·3		1·4	
	555	Ever	16·6	20·2	34·8	28·5	<0·0001	2·5	<0·0001
Serbia and Montenegro city	907	Never	76·3	15·5	6·6	1·5		0·4	
	282	Ever	45·0	25·9	14·9	14·2	<0·0001	1·3	<0·0001
Thailand city	617	Never	53·3	26·1	15·9	4·7		0·8	
	431	Ever	25·1	22·0	34·6	18·3	<0·0001	1·9	<0·0001
Thailand province	539	Never	47·7	25·4	21·9	5·0		1·0	
	485	Ever	26·0	21·0	31·3	21·6	<0·0001	2·0	<0·0001
United Republic of Tanzania	846	Never	13·0	22·5	47·9	16·7		2·2	
city	596	Ever	5·2	11·1	46·5	37·2	<0·0001	3·2	<0·0001
United Republic of Tanzania	554	Never	29·1	23·8	41·0	6·1		1·5	
province	702	Ever	14·5	16·0	44·6	24·9	<0·0001	2·5	<0·0001

Frequency distribution of number of acts or controlling behaviours reported by ever-partnered women, according to their experience of physical or sexual violence, or both, by site. Controlling behaviours that were asked about: keeps her from seeing friends; restricts her contact with family; insists on knowing where she is at all times; ignores her or treats her indifferently; is suspicious that she is unfaithful; gets angry if she speaks with others; and controls her access to health care. *Pearson χ^2 2x4 table. †ANOVA.

Table 5: **Controlling behaviours by an intimate partner, by site**

or both, by anyone since the age of 15 years, at least 60% had been abused by a partner in all sites except Samoa, with the proportion almost 80% or more in most sites. Furthermore, in all sites except Brazil city, the United Republic of Tanzania city, and Samoa, less than a third of women abused since the age of 15 years had been abused only by someone other than an intimate partner (figure 3). Because these prevalence estimates are calculated for all women and not only ever-partnered women, the prevalence figures for partner violence are slightly lower than presented in table 2.

Discussion

Across the study sites in the WHO study, between 15% and 71% of ever-partnered women reported physical or sexual violence, or both, by an intimate partner at some point in their lives. Most sites reported prevalence rates between 30% and 60%. Between 4% and 54% of women reported physical or sexual violence, or both, by a partner within the 12 months before the study, with most estimates falling between 15% and 30%. With the exception of Samoa, these rates represent site-specific estimates, and are not nationally representative.

These results add to the existing body of research, which is mainly from industrialised countries,[6,19–22] and confirm that violence by an intimate partner is a common experience worldwide. In all settings except one, women were more at risk of violence by an intimate partner than from any other perpetrator. The findings show, moreover, that a large proportion of the violence is severe, and happens frequently. Indeed, the proportion of violence that qualifies as severe seems

higher in the more traditional rural settings than in the city settings of Japan and Serbia and Montenegro. Similar findings have been documented in Nicaragua[23] and elsewhere, and suggest that the pattern of violence might be different in settings of high violence and low empowerment of women, compared with more industrialised settings.[24] Although the system of assigning severity based on the injury potential of an act could misclassify some cases, frequency and severity of violence were highly correlated in our sample. Moreover, for the combined data for all women, 86% of those reporting injuries through physical partner violence reported at least one act of severe violence (and thus only 14% of ever-injured women reported that they had experienced moderate violence only). The association between injuries and severity was consistent and highly significant for all individual sites.

Generally, the prevalence of partner violence was much lower in more industrialised settings, ie, Japan and Serbia and Montenegro, than in the other study sites. The lower response rates and slight variations in methods used in these settings (self-report booklets for questions on violence in Japan and professional interviewers with less extensive training in both settings) might partly account for these differences, but they are unlikely to fully explain the large variations seen (eg, 12-month prevalence estimates of physical or sexual partner abuse of 3·8% in Japan and 3·7% in Serbia and Montenegro compared with 19–34% in most other settings). A New Zealand study that used the same WHO study method also recorded considerably lower 12-month prevalence levels of physical or sexual partner violence—5·7% in the city and 5·4% in the province.[25] The estimates documented in the WHO study for Japan (Yokohama) and Serbia and Montenegro (Belgrade) are consistent with 12-month estimates of partner violence seen in other industrialised settings, including 1·5% in the USA,[20] 4% in the UK,[26] and 4% in Canada,[27] which suggests that women in these settings might have more options for leaving abusive relationships.

The study findings highlight the wide variability in levels of violence within and among settings. Although some differences were noted in the prevalence of violence according to women's education, age, and marital status, in pooled multivariate analysis these factors alone did not account for the differences between sites. These differences will be further explored in a more detailed multilevel analysis of risk and protective factors.

Physical violence was often accompanied by sexual violence, although in a few sites (Bangladesh province, Ethiopia province, and Thailand city) a large proportion of abused women reported sexual violence only. Before this study, available evidence from Latin America and the USA[20,28,29] suggested that most women experienced either a combination of physical and sexual partner violence or physical violence alone, rather than sexual violence only. However, the WHO study findings suggest that, although this pattern is true for many countries, in a few sites there is a significant departure, with only sexual violence being more prevalent than physical violence. A study in Indonesia which used the WHO methods also produced similar findings.[30] One explanation could be cultural differences in what are considered acceptable means for husbands to control or chastise their wives.

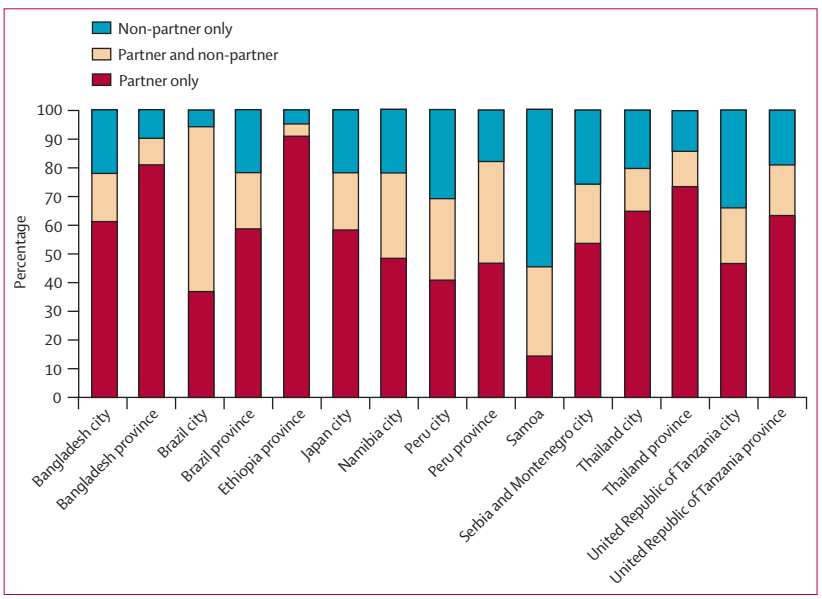

Figure 3: **Frequency distribution of partner and non-partner physical or sexual violence, or both, for women reporting such abuse since the age of 15 years, by site**

Since women are commonly stigmatised and blamed for the abuse they receive, over-reporting of violence is unlikely. In practice, the main potential form of bias is likely to indicate respondents' willingness to disclose their experiences of violence, which might differ between different age groups, between different geographical settings, and between different cultures and countries.

This study did not obtain information from men on their experiences of violence, either as victims or perpetrators. Whereas women are sometimes the perpetrators of violence as well as victims, the study results show that the proportion of women who reported instigating violence against their partner was small. The issue of women's use of violence has drawn increasing attention since the publication in 2000 of a meta-analysis showing that women perpetrate physical aggression in relationships as frequently as men, although the consequences for women are more severe.[31] The meta-analysis drew almost exclusively from studies in the industrialised world, with a heavy bias toward the USA and young dating couples. Although admittedly sparse, the evidence from developing countries suggests that men are the dominant perpetrators in these settings.[7,24] As John Archer, author of the much-cited meta-analysis states: "The findings of high levels of men's victimization from countries such as the United States, United Kingdom and New Zealand are not typical of the majority of collectivist, low gender empowerment nations."[24]

Amounts of controlling behaviour by male partners varied considerably between sites, but were significantly associated in all sites with physical or sexual violence, or both. The association seen between levels of control by a partner and intimate partner violence is consistent with previous findings from a wide range of countries, including Cambodia, Colombia, Dominican Republic, Haiti, Nicaragua, and the USA[22,32] showing that men who are physically violent towards their wives also exhibit higher rates of controlling behaviours than men who are not. Indeed, many argue that power and control is a defining element of the broader phenomenon known as battering.[33] Future analyses will explore whether conceptualising controlling behaviour as a risk factor for physical or sexual violence, or as a constituent element of the phenomenon being studied, is more appropriate.

Like any study based on self-reporting, there might be recall bias on some issues, as well as cultural biases in disclosure. The WHO study nevertheless took several measures to ensure strict comparability in samples, operational definitions (of violence, eligible women, and partnership status), questions used, denominators, and methods. The decision to select only one woman per household could introduce bias by under-representing women from households with more than one. However, additional weighted analysis of the data did not reveal any important bias due to selection criteria.

Another limitation was the complexity around the measurement of emotional violence across cultures. The study obtained information on a number of emotionally abusive acts, but to report emotional abuse as an aggregate prevalence measure is premature without further exploratory analysis. The development of a valid measurement for emotional abuse is hampered by the relative scarcity of research on emotional abuse in comparison with studies on physical or sexual violence. Despite the importance that women place on this form of violence, to date there has been little methodological work to explore the best means to elicit and measure such experiences.

Strengths of the study methodology include the use of standardised instruments, careful pre-testing of the study questionnaire, rigorous interviewer training, which has been shown to contribute to disclosure, the involvement of women's organisations in the research teams, and the emphasis on ethical and safety considerations.[13] We believe that these measures contributed to minimising bias, maximising disclosure, and reducing the potential for inter-site variability. Nevertheless, remaining disclosure-related bias would probably lead to an underestimation of the amount of violence. Thus the prevalence figures presented here should be thought of as minimum estimates of the true prevalence of violence in each setting.

The WHO study findings confirm the pervasiveness and high prevalence of violence against women in a wide range of cultural and geographical contexts. These data should serve to generate action nationally and globally and contribute to an understanding of the role that public health can have in preventing and responding to this important problem.

The findings show empirically, across a wide range of settings, that women are more at risk of violence from an intimate partner than from any other type of perpetrator, which makes the epidemiology and the consequences of violence distinctly different for women and men. Men are most at risk from strangers or acquaintances rather than intimates.[34] This differing profile has important implications for how best to focus anti-violence programmes aimed at women and men. Traditional criminal justice, for example, might be restricted for dealing with partner violence against women because of the emotional and economic ties between victim and perpetrator.

The findings also provide participating countries with vital information for initiating change and assessing future public-health interventions. They also raise additional research questions as to what factors at an individual and macro level have the greatest effect on establishing overall levels of violence. Addressing this issue will contribute to more effective policies and programmes.

Conflict of interest statement
We declare that we have no conflict of interest.

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