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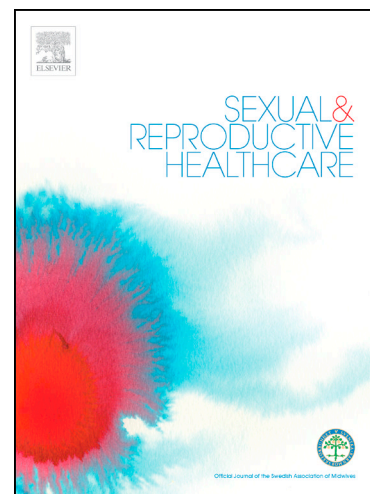
Partner violence against women and sexually transmitted infections among married women in post-revolution Egypt

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TITLE: Partner violence against women and sexually transmitted infections among married women in post-revolution Egypt

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ABSTRACT

Objectives: To explore the relationship between past year physical or sexual partner violence against women and women's self-report of sexually transmitted infection (STI) symptoms in post-conflict Egypt; and to examine the effects of men's and women's risky sexual behavioural characteristics and structural dimensions of poverty and gender inequality on this relationship.

Study design: This study uses the nationally representative cross-sectional demographic and health survey data conducted in 2014. Multivariate logistic regression was used to assess the relationship between past year partner violence and self-report of STI symptoms among currently married women.

Main outcome measures: women's self-report of STI was based on their responses to three questions; whether in the past year they had: got a disease through sexual contact?, a genital sore or ulcer?, or a bad smelling abnormal genital discharge? Women who gave an affirmative response to one or more of these questions were assumed to self-report STI.

Results: Almost one-third of women self-reported symptoms of STI. Fourteen percent of women reported they had experienced physical or sexual violence by a male partner in the past 12 months. Abused women had a 2.76 times higher odds of self-reported STI symptoms (95% CI 2.25-3.38). The significant relationship between self-reported STI and past year partner violence against women did not alter when adjusting for men's and women's behavioural characteristics and factors related to poverty and gender inequality.

Conclusions: Public health interventions that address women's sexual and reproductive health need to consider violence response and prevention strategies.

KEYWORDS: Sexually transmitted infections; partner violence; Egypt

Introduction

Partner violence against women is associated with wide-ranging physical, mental and sexual and reproductive health problems in women (1-3). Among the myriad of adverse sexual health outcomes, abused women are at increased risk of sexually transmitted infections (STI) when compared with non-abused women (1-3). Moreover, violence against women (VAW) serves as a barrier to women's sexual and reproductive health rights, a barrier that is elevated during conflicts and crises (4). This is because such settings are typically characterised by political unrest and a worsening economic situation that disadvantage women, thus hindering their access to legal, social and economic protection (4). For example, in Liberia, its history of conflict and scarce resources shaped an environment for high rates of physical or sexual partner violence and STI (5).

Pathways to STI risk

Several pathways have been proposed where physical or sexual partner violence is hypothesised to increase women's risk of STI. Direct pathways highlight STI transmission through sexual activity, including coercive or physically forced sex, that exposes women to sexual infections (2,3). VAW is also hypothesised to elevate risk of sexual infection if induced stress from repeated abuse lowers STI exposed women's immunity (1,3,6).

Indirect pathways tie partner violence with sexual risk taking behaviours (both men's and women's) that are further mediated by structural dimensions of gender inequality and poverty (7,8).

Studies have found that among women high-risk behaviours include having sex with 'high-risk' male partners (men who are living with HIV, who inject drugs or who are non-monogamous); having multiple sexual partners; alcohol abuse; and trading sex for money, drugs and housing or other support (1,7,9,10,11). Women's age at first sexual intercourse has also been found to be associated with STI. The younger the age at sexual initiation the greater the risk of STI, because younger age is a marker for more lifetime sexual partners and because of women's longer exposure to STI (9,14).

Abusive men are more likely to engage in high-risk behaviours that increase not only the likelihood of their acquisition of STI, but also that they infect their female partners (1,13,15,16). A study among 428 men reporting multiple sexual partners, in Cape Town, South Africa, found men's report of STI symptoms and engagement in transactional sex were associated with their perpetration of physical and sexual partner violence, and alcohol consumption or substance abuse and inconsistent condom use were associated with their perpetration of physical partner violence (15).

A second set of pathways link structural factors with partner violence and STI risk. Fear instilled by partner violence impairs women's ability to assess risk and interacts with their sexual decision making processes (2,6,9,17,18). Violence reduces women's ability to engage in safe sexual practices such as being able to refuse sex or to negotiate condom use, and this is particularly so in societies where high gender inequalities and social disadvantage exist

(5,7,8,19,20). Further, factors such as poverty and barriers to education and employment opportunities, both reinforce and are reinforced by gender inequalities and serve to keep women and girls dependent upon their male partners (8,20). For example, a population-based study from Liberia used attitudes towards gender roles as a marker of men's dominant position within society and found women possessing attitudes tolerant of wife beating were significantly more likely to report STI symptoms; a relationship that persisted even when controlling for physical or sexual partner violence (5).

VAW in Egypt

Egypt was one of several countries to experience a political uprising that swept the Arab region in 2011. Eighteen days of protests and demonstrations led to the eventual deposition of the then government. The demonstrations, particularly in Tahrir square, that symbolised the Egyptian revolution were, however, marred by reports of increased incidents of sexual harassment against women—a consequence that continues to feature in many women's lives (21,22). While this form of VAW has received much public attention, other forms remain endemic. The vast majority (over 90%) of women, ages 15-49, have undergone some form of female genital mutilation (FGM); and slightly over one-in-four ever-married women have experienced physical or sexual partner violence by a male partner in their lifetime (in 2014) (23).

Very few studies on the sexual and reproductive health effects of partner violence exist from Egypt or even the Arab region. An early study (in 1995) from Egypt explored the reproductive health effects of women's lifetime exposure to physical partner violence. The study found that ever-beaten women were less likely to use a female contraceptive method or to have received ante-natal care for their most recent child (24). Although Egypt ranks as a low HIV prevalence country (less than <0.1% of the adult population, ages 15-49, are estimated to be living with HIV) (25), awareness on how infection can be reduced is low (23). Against a backdrop of poor access to health services, including sexual and reproductive health care (21,26), understanding the factors associated with STI is important.

The aims of this study are firstly, to explore the relationship between women's self-report of STI and partner violence against women, and secondly, to assess whether any relationship (between STI and partner violence) holds when controlling for women's and men's behavioural characteristics and structural dimensions of gender inequality and poverty.

METHODS

The nationally representative 2014 Egypt Demographic and Health Survey (DHS) data were used for this study. Sampling took place in 25 of the country's 27 governorates (North and South Sinai were excluded) and each governorate was stratified by urban and rural areas (except Cairo; Port Said and Suez which are entirely urban) (23).

A multi-stage sampling strategy was used with shiakhass/towns (in urban areas) and villages (in rural areas) as the primary sampling units (PSU). A total of 481 shiakhass/towns and 445 villages were selected in the initial stage with sampling proportional to population size. Each PSU was sub-divided into equal size "parts" of 5000 population, with 3 parts selected from towns or villages with a population of 100,000 or more, 2 parts selected from towns or villages with populations between 20,000–100,000, and 1 part selected in towns/villages with fewer than 20,000 people. Each part was further divided into segments, and within each PSU 2-3 segments were selected for sampling. Within each selected segment a complete household listing was obtained and households were randomly selected for interview. A total of 29,471 households were selected for inclusion in the study from which interviews were completed in 28,175 households (23).

A household questionnaire was first administered with the purpose to document the sex, ages and educational attainment of all residing household members. Household characteristics such as asset ownership and type of infrastructure were also recorded.

An individual woman's questionnaire was then administered to all ever-married women, ages 15-49, considered resident in the household, yielding a sample of 21,762 women. Informed consent was obtained from all individual participants included in the study.¹ A module on domestic violence was administered in a sub-sample of 6,693 households, and in order to adhere to ethical and safety guidelines on researching VAW, only one randomly selected woman received the module (27). Guidelines used by DHS were adapted from the World Health Organization's ethical and safety recommendations that aim to ensure respondent confidentiality and safety, and to maximise violence disclosure (28). Recommendations followed for all DHS implementing the domestic violence module include: special interviewer training to ensure interviews are conducted in private; dealing with crisis situations/stopping interviews if privacy is compromised; reiterating informed consent; and offering support/referral information to any woman who requests it (27).

Presence/symptoms of STI

Self-reported STI in the past year was measured using information from the following questions: in the past 12 months have you had a 1) disease which you got through sexual contact?, 2) genital sore or ulcer? and 3) bad smelling abnormal genital discharge? Participants who responded 'yes' to one or more question were considered to self-report STI within the past year.

¹ <http://dhsprogram.com/What-We-Do/Protecting-the-Privacy-of-DHS-Survey-Respondents.cfm>.

Past year physical or sexual partner violence

Respondents were asked seven questions on physical violence and three questions on sexual violence: does/did your (last) husband/partner ever a) push you, shake you, or throw something at you?; b) slap you?; c) twist your arm or pull your hair?; d) punch you with his fist or with something that could hurt you?; e) kick you or drag you or beat you up?; f) try to choke you or burn you on purpose?; g) threaten or attack you with a knife, gun, or other weapon?; h) physically force you to have sexual intercourse with him even when you did not want to?; i) physically force you to perform any other sexual acts you did not want to?; and j) force you with threats or in any other way to perform sexual acts you did not want to? Women reporting experience of any of these acts were asked whether it occurred “often”, “sometimes” or “not at all” in the past 12 months. Current physical or sexual partner violence was identified if a woman indicated experience of one or more act of physical or sexual violence in the past 12 months. This study also included violence committed by a former spouse (which resulted in an additional one case for past year violence).

Additional covariates

Four behavioural characteristics, assumed to proxy sexual risk taking, were examined. *Age at first intercourse*—the Egypt DHS records women’s age at first intercourse as the same as women’s age when they first started to live with their husband. This information was coded less than 16 years/16 or 17 years/18 years or more. *Number of times married*—respondents were asked how many times they had been married and responses were coded into a binary variable, married only once/married more than once. *Partner has other wives*—women were asked if their husbands had other wives and if so, how many. This data was coded no other wives/partner has more than one wife. *Partner substance use*—information on whether or not the respondents’ husbands drank alcohol or used drugs was collected and recorded as a no/yes binary variable.

Attitude towards wife-beating—was included in the analysis as an indicator of gender inequality. This measure was based on women’s acceptance of wife beating under at least one out of five circumstances: if she goes out without telling him, she neglects the children, she argues with him, she refuses to have sex with him, and if she burns the food. Information from all five responses were combined into a binary variable coded no reason to hit/at least one reason to hit.

Four indicators of structural factors that enable (or prevent) women from leaving abusive relationships were included in the analysis. *Women’s educational attainment*—was based on the DHS’s grouping of respondents’ years of education and recorded none/incomplete primary/complete primary/incomplete secondary/complete secondary/higher. *Women’s employment*—a binary no/yes variable was created from information on whether the respondent had worked in the past 12 months. *Parity*—women were asked how many children they had ever given birth to from which a categorical variable was created coded 0/1/2/3/4/5 or more children. *Household socioeconomic status (SES)*—this index was derived by DHS using information on household assets ownership and infrastructure characteristics to first estimate a socioeconomic score for each household. Households were

then ranked on this score and divided into quintiles labelled poorest/poorer/middle/richer/richest.

Other covariates

Three control variables were included in the analysis. *Women's age* coded into the following age categories: 15-24 years/25-34 years/35-44 years/45 years or more. *Partner age* coded the same as for women. *Partner educational attainment*—coded the same as for women. Finally, a regional variable, that disaggregated governorates into urban and rural, was included to reflect area-level heterogeneity in the country. *Region* was recorded urban governorates (Cairo, Alexandria, Port Said and Suez)/lower Egypt urban/lower Egypt rural/upper Egypt urban/upper Egypt rural/frontiers governorate.

Data analysis

Analysis sample

Of the 6,693 to whom the module on domestic violence was administered, 399 women were excluded from the analysis because they were not currently married. This is because divorced, separated or widowed women are likely to have different baseline risks of STI or partner violence compared to currently married women (27). An additional 19 respondents did not provide complete responses to questions on STI or STI symptoms. Therefore, the descriptive analysis was conducted using data from 6274 currently married women.

Multivariate logistic regression, to assess the factors associated with self-reported STI, was conducted using the sample of never-abused women and women who had experienced physical or sexual partner violence in the past 12 months yielding a sub-sample of 5637 women. This sub-sample was used in order to obtain “cleaner” comparisons between the current abused and never-abused group of women.

Analysis strategy

Bivariate logistic regression was conducted to estimate the crude associations between partner violence and each covariate and STI. Multivariate logistic regression was then used to model factors associated with women's self-report of STI in the past 12 months, firstly including women's and household characteristics and then secondly including men's characteristics. This chronological approach was used to enable an assessment of whether women's or their partners' characteristics were greater predictors of women's risk of STI. Data were analysed using STATA version 13 and all analyses adjusted for clusters (PSU) and sample weights.

RESULTS

Prevalence of presence or symptoms of STI

Among currently married women, 32.7% self-reported presence or symptoms of STI in the past 12 months. By indicator of STI, 2.8% reported they had a disease they had got through sexual contact; 25.2% had a genital sore or ulcer; and slightly under one-quarter (23.1%) had an abnormal genital discharge. Among women self-reporting presence or symptoms of STI, two-thirds sought advice or treatment most commonly from a private doctor (43.9%) or from a private pharmacy (8.7%).

Prevalence of physical or sexual partner violence

One-quarter (24.8%) reported they had experienced physical or sexual partner violence in their lifetime—21.1% had experience physical violence only; 3.3% had experienced both physical and sexual violence; and few 0.4% had experienced sexual violence only. Almost 14% reported they had experienced physical or sexual partner violence in the 12 months to interview—11.3% had experienced physical partner violence only; 2.1% physical and sexual partner violence; and 0.5% had experienced sexual partner violence only.

When stratified by experience of current physical or sexual partner violence, 29.5% of women who had not been abused in the past 12 months self-reported past year STI compared with 52.4% of abused women ($p<0.001$).

Sample characteristics

Table 1 describes the sample characteristics and presents prevalence of STI by characteristic. Almost one in five women were in the youngest age group (15-24).² Almost one-quarter (23%) had no schooling and slightly over one-half (53.8%) had completed secondary schooling or higher. Women's participation in the labour force was low with only 15% reporting they had worked in the past 12 months—the majority of whom worked in the professional/service sector. The distribution of number of children women reported they had given birth to was split across the categories—the most common number of children was two (25.9%) and the least common were no children 8.0%. Over one-third agreed with at least one reason a husband is justified beating his wife; 27.5% reported their age at first intercourse to be less than 18 years (10% reported they had been less than 16 years); and few women (2.2%) reported they had been married more than once. Of the partner socio-demographic characteristics, few were below the age of 25 (3.3%), almost 30% of women's partners had primary schooling or lower and 57.9% had completed secondary of higher. Prevalence of men's behavioural characteristics known to influence STI risk was low. Few women (2.9%) reported their husbands had other wives, and 2% reported their partner ever used alcohol or drugs.

² Few women (n=52) were under the age of 18—6 were 15 years; 14 were 16 years and 32 were 17 years.

The prevalence of self-reported STI decreased by women's age categories—39.9% in the youngest age group (15-24) compared with 25.4% in the highest age group (45 years or more). Women with primary or secondary schooling were more likely to self-report presence of STI compared with women with either no schooling or with higher educational attainment. Higher rates of self-reported STI were also found among women who had never given birth or had given birth to 1 or 2 children. There were no significant differences in women's self-report of STI by working status or household SES. Significantly higher rates of self-reported STI were found among women reporting attitudes tolerant of wife beating, and among women reporting age of first sex to be 16 or 17 (but not among women reporting age at first sex below the age of 16). There was no significant difference in self-reported STI among women reporting they had married more than once compared with women who had been married only once. Women whose partners were in the youngest age group (<25 years) were most likely to self-report STI as were women whose partners attained primary or secondary schooling. Self-reported STI was also significantly higher among women reporting partner alcohol/substance use ($p=0.005$). There were no significant differences in presence of STI by partner polygamy or region.

Table 2 presents the findings from the logistic regression. In the unadjusted model, the odds of self-reported STI were almost 3 times higher among women who had experienced physical or sexual partner violence in the past year compared with never-abused women (OR 2.87; 95% CI 2.37-3.47). The odds of self-reported STI were significantly lower among women in all three higher age groups compared with those aged between 15-24 years, as were the odds of self-reported STI among women with either completed or incomplete secondary schooling (compared with no schooling). There were no significant differences in self-reported STI by employment status or household SES. Women with attitudes more tolerant of wife-abuse had a 1.34 times higher odds of self-reported STI (95% CI 1.15-1.56) and women reporting age at first intercourse was 16-17 years had 1.61 times higher odds of self-reported STI (95% CI 1.20-2.16). Women whose partners were in the oldest age category (45 years or more) were significantly less likely to self-report STI compared with women whose partners were in the lowest age category (OR 0.53; 95% CI 0.37-0.77). There were no statistical differences between partner polygamy and women's self-report of STI, however the odds of self-reported STI was almost two times higher among women whose partner used alcohol or drugs (OR 1.93; 95% CI 1.17-3.36).

Model 1 includes women's characteristics and inclusion of these characteristics yield little difference to the odds of self-reported STI by experience of partner violence (OR 2.73; 95% CI 2.24-3.32). Women in the oldest age category (45 years or more) were significantly less likely to self-report STI compared to women ages 15-24 (OR 0.61; 95% CI 0.54-0.95). Women possessing attitudes tolerant towards wife abuse and women whose age at first intercourse was 16-17 years had significantly higher odds of self-reported STI. Model 1 also includes regional variables and women in upper Egypt (rural) governorates had significantly higher odds of self-reported STI (compared with women residing in urban governorates).

Model 2 includes women's partner characteristics. Among women who experienced physical or sexual partner violence in the past 12 months, the odds of self-reported STI remains unchanged from model 2 (OR 2.76; 95% CI 2.26-3.38). No partner characteristic was

significantly associated with self-reported STI. While there is little change in the odds of self-reported STI for women's educational attainment, attitudes towards wife-beating and age at first sex, the significant relationship between women's age and STI risk (found in model 1) is no longer significant.

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DISCUSSION

This study sought to explore the relationship between partner violence against women and women's self-report of STI in post-revolution Egypt using a nationally representative population-based sample. Almost one-third of women reported STI or symptoms of STI—a figure that is on the higher range when compared to prevalence rates in other countries that analysed DHS data and used a comparable measure of STI—3.5% in Kenya; 3.9% in Rwanda and 4.9% in Zambia (7,29); approximately 15% in Nepal (30); and 36% in Liberia (7). In this study, one-quarter of currently married women experienced physical or sexual partner in their lifetime, and past year prevalence was almost 14%. An interesting finding to emerge from the distribution of types of violence is that physical partner violence is more likely to cease (at least temporarily) and sexual violence is more likely to be a continuing form of violence. For example, 45% fewer women reported physical violence in the past year compared to 30% fewer women reporting past year sexual violence.

While it is documented that sexual violence against women is the type of violence most closely associated with women's acquisition of STI, studies have highlighted that physical partner violence also bears a risk (1,7,14). This study suggests that partner violence against women in Egypt (that includes physical partner violence) is an independent risk factor for STI.

Limitations to this study, however, imply that the findings need to be considered with caution. The first limitation is that this study is reliant on self-reports of STI rather than a clinically verified measure; and it cannot be discounted that the high rate in this study's sample is because of misunderstanding of the questions (23). It may also be that other factors are responsible for the presence of abnormal discharge. For example a hospital-based study in Egypt found vaginal discharge to be more common among women who had undergone FGM (although the study did not distinguish between abnormal discharge) (31). In this study's sample, the vast majority (93%) of women have undergone FGM and there were no significant differences in rates of STI by women's FGM status (data not shown).

Although age group of women was not significantly associated with STI risk (in model 2), that prevalence of STI or STI symptoms was highest among younger (15-24) women cannot be ignored. This finding could imply that younger women are more likely to be economically dependent on their partners, and less likely to leave a sexually risky or abusive relationship (29,33), or that they are less likely to enquire about their husbands previous or current sexual partners leaving them more vulnerable to infection (29). Women's low economic status—as measured in this study by educational attainment; employment status; and household SES—is hypothesised to subordinate women and diminish their role in decision making, or to create an environment of dependency making it difficult to leave a violent relationship (34). In this study, while women's employment status had no association with STI, women with at least some secondary schooling displayed higher rates of STI compared with women with no schooling. Exactly why this relationship exists is not certain, although one possible explanation could be that women with lower levels of education are less likely to report symptoms. While poverty has been documented to increase women's risk of STI, no association between STI risk and household SES was found in this study.

Women who reported their age at first sex was 16-17 years were at significantly higher risk of STI compared with women who reported their age at first sex was 16 years or younger. Moreover, there was no statistical difference in risk of STI among women reporting their age at first sex was 18 years or higher when compared with the reference group. Spiwak et al. (15) explored the role of age at first intercourse on STI risk in India and the United States and found it to have different implications in different settings. For example, while younger age at first sex is a marker for promiscuity in some settings, it may be a marker for marriage at an early age in other settings.

Women's tolerant attitude towards wife beating was significantly associated with STI as also found in a study in Liberia that concluded efforts to reduce sexual risk should consider interventions to change societal norms (5). Women's prior relationships, measured by the number of times married, was not significantly associated with STI, although the percentage of women reporting they had been married more than once was low (2.2%).

Interestingly, in the multivariate model no factors related to the woman's partner was associated with women's risk of STI. Factors that are characteristically associated with men's risky sexual behaviours (alcohol/drug use and polygamy) were, however, very low in the sample. This finding was also highlighted in a six country study that suggested a possible explanation for the non- or weak associations was under-reporting of partners' behaviours (7). Less than 2% of women in this study reported their husband used alcohol or drugs and of these, slightly over one-third reported this use as "often". This leads to the second limitation of this study which is that, in addition to possible under-reporting, only a limited set of behavioural characteristics, for both men and women, were captured in the survey and included in this analysis. For example, men and women's extra-marital relationships; women's alcohol or substance use; and women's ability to negotiate condom use were not asked about. Therefore, other factors related to women's limited control over their bodies may also be responsible for STI (14). The third limitation of this study is that cross-sectional data makes establishing causality challenging. That is, while partner violence against women may lead to adverse sexual health outcomes, the presence of STI may be a risk factor for violence (3).

Despite these limitations, this study highlights the sexual and reproductive health concerns that Egyptian women face. FGM, although condemned, is widespread, and the growing concerns of sexual harassment in public places, with acts ranging from name calling, unwanted sexual touching to rape, place many women in a vulnerable situation. If partner violence, and VAW in general, adversely affects women's risk of acquiring STIs, then public health interventions that address women's sexual and reproductive health need to consider violence response and prevention strategies.

Ethical approval

This study analyses secondary data gathered as part of the DHS programme. The DHS ethical review states “Procedures and questionnaires for standard DHS surveys have been reviewed and approved by the ICF International Institutional Review Board (IRB). Additionally, country-specific DHS survey protocols are reviewed by the ICF IRB and typically by an IRB in the host country. The ICF International IRB ensures that the survey complies with the US Department of Health and Human Services regulations for the protection of human subjects (45 CFR 46), while the host country IRB ensures that the survey complies with laws and norms of the nation.”

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Table 1: Sample characteristics (currently married women N=6274)

		Currently married women		STI	p-value
		N	%	%	
Age	15-24	1,115	19.1	39.9	
	25-34	2,639	40.9	33.2	
	35-44	1,825	28.7	30.1	
	45+	695	11.4	25.4	<0.001
Education	No schooling	1,310	23.0	27.5	
	Incomplete primary	337	5.9	33.5	
	Complete primary	255	4.0	33.0	
	Incomplete secondary	851	13.4	40.6	
	Complete secondary	2,551	39.4	34.7	
	Higher	970	14.4	27.7	<0.001
Employed in past year	No	5,306	84.9	32.8	
	Yes	968	15.1	31.9	0.668
Number of children ever born	None	505	8.0	34.2	
	1	887	14.3	36.4	
	2	1,609	25.9	35.1	
	3	1,485	13.7	31.3	
	4	990	15.4	30.9	
	5 or more	798	12.8	27.6	0.010
SES	Poorest	1,031	17.3	32.0	
	Poorer	1,152	19.3	33.1	
	Middle	1,227	23.0	33.3	
	Richer	1,337	21.2	33.8	
	Richest	1,527	19.2	30.9	0.755
Attitudes tolerant towards wife abuse	No reason to hit	4,175	64.5	30.2	
	At least one reason	2,099	35.5	37.3	<0.001
Age at first intercourse	<16	589	10.0	28.1	
	16-17	1,029	17.5	37.6	
	18+	4,656	72.5	32.1	0.002
Number of times married	Once	6,130	97.8	32.6	
	More than once	144	2.2	38.2	0.261
Partner age	15-24	180	3.3	40.1	
	25-34	2,119	34.4	36.2	
	35-44	2,023	31.4	32.7	
	45 years or more	1,952	30.7	27.9	<0.001
Partner education	No schooling	909	15.2	27.2	
	Incomplete primary	485	8.5	38.5	
	Complete primary	363	5.7	27.6	
	Incomplete secondary	717	12.7	35.8	
	Complete secondary	2,707	41.3	34.7	
	Higher	1,092	16.6	29.0	<0.001
Partner has other wives	No	6,081	97.1	32.9	
	Yes	185	2.9	27.8	0.236
Partner alcohol/	No alcohol/drug use	6,157	98.0	32.4	

substance use	Alcohol/drug use	117	2.0	47.5	0.005
Governorate	Urban	1,023	12.1	28.2	
	Lower Egypt Urban	718	10.8	32.0	
	Lower Egypt Rural	1,732	38.5	32.7	
	Upper Egypt Urban	767	11.4	35.0	
	Upper Egypt Rural	1,651	26.4	34.2	
	Frontier governorates	383	0.9	26.8	0.189

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Table 2: Unadjusted and adjusted Odds ratio (N=5637)

		OR	95% CI		Model 1			Model 2		
					AOR	95% CI		AOR	95% CI	
Physical or sexual violence	No	1			1			1		
	Yes	2.87	2.37	3.47	2.73	2.24	3.32	2.71	2.22	3.32
Age	15-24	1			1			1		
	25-34	0.71	0.59	0.85	0.82	0.65	1.03	0.82	0.64	1.04
	35-44	0.60	0.49	0.73	0.76	0.57	1.02	0.83	0.59	1.17
	45+	0.47	0.35	0.63	0.68	0.47	0.99	0.80	0.51	1.24
Education	No schooling	1			1			1		
	Incomplete primary	1.22	0.88	1.68	1.18	0.84	1.65	1.08	0.76	1.53
	Complete primary	1.32	0.92	1.90	1.19	0.82	1.73	1.16	0.80	1.68
	Incomplete secondary	1.83	1.46	2.28	1.60	1.25	2.05	1.53	1.18	1.96
	Complete secondary	1.42	1.17	1.73	1.43	1.13	1.81	1.37	1.07	1.77
	Higher	0.96	0.75	1.23	1.08	0.80	1.46	1.07	0.77	1.50
Worked in past year	No	1			1			1		
	Yes	0.89	0.74	1.08	1.05	0.85	1.29	1.05	0.85	1.29
Number of children ever born	None	1			1			1		
	1	1.13	0.86	1.48	1.10	0.83	1.46	1.09	0.82	1.46
	2	1.02	0.78	1.33	1.13	0.85	1.51	1.09	0.82	1.46
	3	0.87	0.67	1.13	1.04	0.77	1.42	1.01	0.73	1.38
	4	0.84	0.49	1.12	0.99	0.71	1.40	0.96	0.67	1.36
	5 or more	0.67	0.49	0.91	0.86	0.59	1.27	0.85	0.57	1.25
SES	Poorest	1			1			1		
	Poorer	1.14	0.90	1.44	1.11	0.87	1.43	1.10	0.85	1.40
	Middle	1.10	0.87	1.40	1.01	0.77	1.32	1.00	0.77	1.31
	Richer	1.17	0.92	1.48	1.19	0.89	1.61	1.20	0.89	1.61
	Richest	0.96	0.75	1.24	1.19	0.82	1.72	1.19	0.81	1.73
Attitudes to wife abuse	No reason to hit	1			1			1		
	At least one reason	1.34	1.15	1.56	1.23	1.04	1.45	1.24	1.05	1.46
Age at first intercourse	<16	1			1			1		
	16-17	1.61	1.20	2.16	1.46	1.07	2.00	1.46	1.06	2.00
	18+	1.21	0.94	1.56	1.15	0.85	1.55	1.13	0.83	1.53
Number of times married	Once	1			1			1		
	More than once	1.18	0.69	2.03	1.05	0.56	1.96	1.16	0.60	2.23
Partner age	15-24	1						1		
	25-34	0.86	0.60	1.24				1.10	0.75	1.60
	35-44	0.72	0.49	1.06				1.12	0.73	1.72
	45 years or more	0.53	0.37	0.77				0.93	0.59	1.46
Partner education	No schooling	1						1		
	Incomplete primary	1.61	1.21	2.16				1.49	1.08	2.06
	Complete primary	1.01	0.71	1.45				0.94	0.65	1.38
	Incomplete secondary	1.43	1.09	1.88				1.21	0.90	1.64
	Complete secondary	1.37	1.11	1.69				1.15	0.90	1.47
Higher	1.01	0.79	1.31				1.08	0.79	1.46	
Partner has other wives	No	1						1		
	Yes	0.84	0.54	1.28				0.83	0.51	1.35

Partner substance use	No alcohol/drug use	1						1		
	Alcohol/drug use	1.93	1.17	3.16				1.04	0.59	1.82
Governorate	Urban	1			1			1		
	Lower Egypt Urban	1.13	0.85	1.52	1.11	0.82	1.49	1.10	0.82	1.49
	Lower Egypt Rural	1.23	0.97	1.57	1.24	0.91	1.68	1.24	0.91	1.68
	Upper Egypt Urban	1.40	1.06	1.85	1.42	1.06	1.89	1.43	1.07	1.92
	Upper Egypt Rural	1.27	1.00	1.61	1.25	0.90	1.74	1.26	0.90	1.75
	Frontier governorates	0.98	0.57	1.68	1.05	0.61	1.80	1.07	0.62	1.83

HIGHLIGHTS

- Almost one-third of currently married women, ages 15-49, self-reported STI
- 14% of women experienced physical or sexual partner violence in the past year
- Abused women have a 2.76 higher odds of self-reporting STI