Full Title:

Effect of justification of wife-beating on experiences of intimate-partner violence among men and women in Uganda: A propensity matched scores approach

Short Title:

Justification of wife-beating on experiences of intimate-partner violence

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Abstract

In some communities, rationalization of men's controlling attitudes are associated with justification of gender norms such as wife-beating as a method of correcting spouse behaviour. In this quasi-experimental study, we investigate the causal effects of acceptability of gender norms justifying wife-beating on experiences of sexual, emotional and physical intimate partner violence (IPV) among Ugandan men and women. We analysed the 2016 Uganda Demographic and Health Survey data using propensity-score matching. The exposure variable is acceptability of gender norms justifying wife-beating measured on binary scale and the outcomes are respondent's life-time experiences of sexual, physical, and emotional IPV. We matched respondents who accepted gender norms justifying wife-beating with those that do not using 1:1 nearest neighbor matching with a caliper to achieve comparability on selected covariates. We then estimated the causal effects of acceptability of gender norms justifying wife-beating on the study outcomes using a logistic regression model. Results showed that of the 4,821 (46.5%) out 10,394 respondents who reported that a husband is justified in beating his wife for specific reasons, the majority (3,774; 78.3%) were women compared to men (1,047; 21.7%). We found that at population level, men and women who accept gender norms justifying wife-beating are about 1.5 times more likely to experience each of the three forms of IPV. In the sub-group analysis, men who justify wife-beating were more likely to experience emotional and physical IPV but not sexual IPV. However, women who justify wife-beating were more likely to report experiences all of the three forms of IPV. In conclusion, acceptability of gender norms justifying wife-beating has a positive effect on experiences of different forms of IPV by men and women in Uganda. Government should tackle the drivers of acceptability of gender norms justifying wife-beating at the societal level.

Keywords: Intimate partner violence; gender norms; wife-beating, physical violence; sexual violence; emotional violence.

Introduction

Intimate partner violence (IPV) which harms the victim's physical, sexual or psychological health, is an issue of grand proportion that reflects the unequal power dynamics created within the binary gender system and is often perpetrated by those with more physical, cultural, or social power and inflicted upon those without [1–3]. The 2018 global estimates based on data from 2000–2018 indicate that, the lifetime prevalence of physical and/or sexual IPV among ever-married/partnered women aged 15–49 years was highest among the least developed countries with Oceania at 37%, Southern Asia, 35% and Sub-Saharan Africa at 33% [4]. Although estimates for men are rarely reported in the literature, a recent analysis of data from six East African countries shows that the prevalence of physical, sexual, emotional IPV against men is about half that of women [5].

Strong evidence exists that social norms about the roles and behavior of men and women contribute to an increased level of IPV in various low- and middle-income countries [3,6–8]. Given the importance of social norms such as male masculinity and female subordination in shaping acceptable behavior within communities, several programmes aimed at shifting norms and behavior around IPV have been implemented across Africa. In Uganda, the SASA! Project, a community mobilization project was designed and trialed between 2007 and 2012, to transform gender relations, power dynamics and reduced social acceptability of IPV [9,10]. This is in addition to a favorable policy environment including the introduction of the Domestic Violence Act of 2010, which aims to protect both men and women against gender-based violence.

Yet, the 2016 Uganda Demographic Health Survey (UDHS) shows that IPV prevalence remains very high, with 56% of ever-married women and 44% of ever-married men reporting to have ever experienced physical, sexual, or emotional violence by their current or most recent spouse/partner. Furthermore, about four in 10 women and men (both 39%) experienced IPV in

the 12 months preceding the survey [11]. In general, prevalence of the different forms of IPV (physical, sexual, or emotional) has generally remained high in Uganda over the last decade. Notably, there has been a stable and an unacceptably high prevalence of lifetime sexual IPV among ever-married Ugandan women, with estimates of 24.8% in 2006, 28% in 2011 and 22% in 2016 [11–13]. This could be a consequence of women's perceived low status in many societies and men's dominance over women which is enforced through sexual and physical violence [14]. The close association of violence with masculinity has created a dangerous and unjust power dynamic that manifests in forms of violent physical, emotional, or psychological aggression and affects an alarming proportion of the population [2]. In some communities rationalization of men's controlling attitudes are associated with justification of gender norms such as wife-beating [15], which may increase the risk of experiencing IPV [16,17].

In this paper, we investigate the causal effects of acceptability of gender norms justifying wife-beating on the experiences of sexual, emotional, or physical violence among Ugandan men and women using a quasi-experimental design with propensity-score matched (PSM) analysis. We use data from the 2016 Uganda Demographic and Health Survey (UDHS) data.

Methods and Materials

Data source and study population

We analyzed data from a nationally representative population-based household survey, the 2016 UDHS [11]. Data collection took place from 20 June to 16 December 2016. Inner City Fund provided technical assistance through the DHS Program, which is funded by the United States Agency for International Development (USAID) and offers financial support and technical assistance for population and health surveys in different countries worldwide.

The survey sample was stratified and selected in two stages. The first stage consisted of the selection of 697 enumeration areas: 162 urban and 535 rural. Due to land disputes, one cluster from the Acholi sub-region was excluded to ensure safety of enumerators. The second stage involved sampling of households within the clusters. This was achieved through a listing of all households within each of the 696 accessible selected enumeration areas between April and October 2016, with some listings overlapping with fieldwork. The survey drew maps for each of the sampled clusters and then listed all the households but institutional living arrangements, namely army barracks, hospitals, police camps, and boarding schools were all excluded.

To minimize the task of household listing, each large enumeration area yielding more than 300 households selected for the survey was segmented, and one segment was selected for the survey with probability proportional to segment size, and the household listing was conducted within the segment. The implication is that a cluster suggests an enumeration area or a segment of an enumeration area. Overall, a representative sample that consisted of 20,880 households corresponding to 30 per enumeration area or a segment of enumeration area was randomly selected for the survey. All women aged 15-49 who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey were eligible to be interviewed. In one-third of the sampled households, all men aged 15-54, including

both usual residents and visitors who stayed in the household the night before the interview, were eligible for individual interviews. Data were collected using four questionnaires: the household, women, men, and the biomarker questionnaires. Detailed procedures on sampling and methodology are available in the 2016 UDHS report [11].

The 2016 UDHS included a domestic violence module in all sampled households. Following the World Health Organization's (WHO) guidelines on the ethical collection of information on domestic violence, only one eligible person per household was randomly selected for the module which was implemented in privacy. In two-thirds of households, one woman aged 15-49 was randomly selected to receive the domestic violence module as part of her interview. In the remaining one-third of the households, one man aged 15-54 was randomly selected to receive the domestic violence module as part of his interview. In total, 9,232 women aged 15-49 and 4,011 men aged 15-54 (3,758 men aged 15-49) responded to the domestic violence questions. One percent of eligible women and men could not be successfully interviewed with the module because of lack of privacy or other reasons.

Study design

We employed a quasi-experimental design with propensity score matched (PSM) analysis using data from all respondents in the 2016 UDHS who responded to the domestic violence module. The rationale behind the use of PSM analysis is to achieve balance in participant characteristics between two groups [18], a group that reported gender norms justifying wife-beating is acceptable (exposed) versus a group that reported it as not acceptable (non-exposed group). Balancing of participant characteristics controls for selection bias and the confounding of the association between the exposure and the outcome [19], thus mimicking a randomized controlled trial (RCT) [20].

Variables and measurements

Exposure

The exposure of interest was acceptance of gender norms justifying wife-beating, with the exposed group being respondents reporting that is acceptable and the non-exposed group reporting that it is not acceptable. During the 2016 UDHS, both women and men were asked to report whether or not beating one's wife was justified under the following five circumstances: 1) Wife goes out without telling husband; 2) Wife neglects the children; 3) Wife argues with husband; 4) Wife refuses to have sex with husband; and, 5) Wife burns the food. The justification of wife-beating was computed as the percentage of all women and men aged 15-49 who agree that a husband is justified in beating his wife under the above five circumstances.

Outcomes

The study outcomes included life-time experiences of sexual, physical, and emotional violence with the most recent intimate partner. Respondents who answered 'yes' to any of the provided questions were considered to have experienced IPV. More specifically, violence committed by the current spouse/partner (for currently married women and men) and by the most recent spouse/partner (for formerly married women and men) was measured by asking all ever-married women and men if their spouse/partner ever did the following to them:

- Physical IPV: Push you, shake you, or throw something at you; slap you; twist your arm or pull your hair; punch you with his/her fist or with something that could hurt you; kick you, drag you, or beat you up; try to choke you or burn you on purpose; or threaten or attack you with a knife, gun, or any other weapon.
- Sexual IPV: Physically force you to have sexual intercourse with him/her even when you did not want to, physically force you to perform any other sexual acts you did not want to,

or force you with threats or in any other way to perform sexual acts you did not want to.

- Emotional IPV: Say or do something to humiliate you in front of others or threaten to hurt you.

Covariates

We extracted background characteristics of each respondent to be included in the statistical analyses as covariates, namely sex (male or female), age group (15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, and 50-54), level of education (none/no education, primary, secondary, and higher), marital status (never in union, currently in union, and formerly in union), number of living children, wealth index (poorest, poorer, middle, richer, and richest), religion (no religion, Anglican, Catholic, Muslim, Seventh Day Adventist, Pentecostal, and others), and the 15 regions in Uganda (Kampala, Central 1, Central 2, Busoga, Bukedi, Bugishu, Teso, Karamoja, Lango, Acholi, West Nile, Bunyoro, Tooro, Ankole, and Kigezi). These covariates are known to either influence the outcome or the exposure of interest and were selected as potential confounders as appropriate for the assumptions of strong ignorability of treatment assignment or unconfoundedness [21].

Data analysis

All data management and analysis was done in Stata version 15 [22]. To measure the effect of acceptability of gender norms justifying wife-beating on experiences of sexual, physical, and emotional violence, we used PSM analysis to create a counterfactual, a comparison group that was identical to the comparison group [21]. We used a logit model to generate propensity scores by regressing the exposure on the matching covariates and assessed the initial balance in propensity scores and covariates between the exposed and non-exposed groups by splitting the sample into equally spaced intervals [18]. We used the Student's t-test within each interval to assess statistically significant differences in the average propensity scores between the groups.

The intervals were divided further in instances where we observed statistically significant differences and then re-tested until such differences were removed. The degree of overlap of propensity scores and balance in covariates was checked using a propensity score graph.

We then matched the exposed and non-exposed respondents on similar propensity scores using several approaches: pair matching with and without replacement, nearest neighbor matching with and without a caliper, and kernel matching in order to select the most appropriate approach with balance [23]. In pair matching, we matched respondents in the exposed group with that in the non-exposed group regardless of the quality of the matches. In nearest neighbor matching without a caliper, the respondents were matched based on similar propensity scores regardless of the distance/width within which the matching was implemented. However, in nearest neighbor matching within a caliper, the respondents were matched within a distance/width known as a caliper computed as 20% of the standard deviation of the propensity score in a 1:1 ratio to prevent bias from distant matches [18]. In Kernel matching, the weighted average of all the respondents in the non-exposed group was used to construct the missing counterfactual outcome to enable the use of more data and produce fewer differences. Of all these approaches, we selected the most appropriate one based on the balance of all covariates across the exposed and non-exposed groups and significant reduction in propensity score pseudo R-square value. We assessed covariate balance after matching and considered covariates with a standardized mean difference (SMD) of less than 0.25 as balanced.

We saved the matched dataset and used it for outcome analysis, where we fitted a conditional logistic regression analysis for the outcomes taking into consideration the matched pairs. We reported the results odds ratios with a 95% confidence interval.

We checked the robustness of the results to unmeasured confounders and the analytic approach using the Mantel-Haenszel (MH) bounds approach proposed by Rosenbaum, with

158 distant gamma values to achieve statistical significance or insignificance considered indicative of
159 robust findings [24], using the Stata command "*mhbound*".

160 Ethics statement

161 We conducted secondary data analysis using the 2016 Uganda Demographic Health
162 Survey de-identified data that is publicly available and requires no ethical approvals. However,
163 permission to use these data was obtained from the Demographic and Health Surveys division at
164 ICF International through completion of an online request form that is available on the DHS
165 website (http://www.dhsprogram.com) from where the data was downloaded. As such, no ethical
166 reviews and approvals were required before or during the preparation of the present manuscript.
167 Further, informed consent was not required during preparation of this paper because there was
168 no interaction with human subjects during preparation of this manuscript. The 2016 UDHS was
169 implemented by the Uganda Bureau of Statistics [11].

170 Results

171 Distribution of participant characteristics

172 Table 1 shows the distribution of covariates across the exposure of interest namely, a
173 husband is justified in beating his wife for specific reasons. Of the 10,394 respondents, 46.5 %
174 (4, 821) reported that a husband is justified in beating his wife for specific reasons. The majority
175 of those who justified wife-beating were females (78.3%), those aged 20-24 years (20.9%), those
176 with a primary level of education (65.8%), and those who were currently in union or living with a
177 partner (86.4%). Further, there were statistically significant differences in sex, age, level of
178 education, wealth index, religion, and controlling behaviour.

179 **Table 1. Distribution of participant characteristics**

Variable	Overall (n=10,363)	Wife-beating is justified		p-value
		No (n=5,542)	Yes (n = 4,821)	
Sex				
Male	2,846 (27.5)	1,799 (32.5)	1,047 (21.7)	<0.001
Female	7,517 (72.5)	3,743 (67.5)	3,774 (78.3)	
Age group				
15-19	557 (5.4)	228 (4.1)	329 (6.8)	<0.001
20-24	1,945 (18.8)	939 (16.9)	1,006 (20.9)	
25-29	2,077 (20.0)	1,126 (20.3)	951 (19.7)	
30-34	2,068 (20.0)	1,155 (20.8)	913 (18.9)	
35-39	1,475 (14.2)	800 (14.4)	675 (14.0)	
40-44	1,161 (11.2)	679 (12.3)	482 (10.0)	
45-49	855 (8.3)	469 (8.5)	386 (8.0)	
50-54	225 (2.2)	146 (2.6)	79 (1.6)	
Mean (SD)	31.8 (8.7)	32.4 (8.7)	31.1 (8.8)	<0.001
Level of education				
No education	1,242 (12.)	547 (9.9)	695 (14.4)	<0.001
Primary	6,260 (60.4)	3,086 (55.7)	3,174 (65.8)	
Secondary	2,049 (19.8)	1,270 (22.9)	779 (16.2)	
Higher	812 (7.8)	639 (11.5)	173 (3.6)	
Marital status				
Currently in union	8,999 (86.8)	4,833 (87.2)	4,166 (86.4)	0.230
Formerly in union	1,364 (13.2)	709 (12.8)	655 (13.6)	
Number of living children				
≤2	3,800 (36.7)	2,088 (37.7)	1,712 (35.5)	0.074
3-5	4,130 (39.9)	2,176 (39.3)	1,954 (40.5)	
≥6	2,433 (23.5)	1,278 (23.1)	1,155 (24.0)	
Mean (SD)	3.8 (2.7)	3.8 (2.7)	3.8 (2.6)	0.84
Wealth index				
Poorest	2,469 (23.8)	1,075 (19.4)	1,394 (28.9)	<0.001
Poorer	2,214 (21.4)	1,077 (19.4)	1,137 (23.6)	
Middle	2,002 (19.3)	1,054 (19.0)	948 (19.7)	
Richer	1,866 (18.0)	1,108 (20.0)	758 (15.7)	
Richest	1,812 (17.5)	1,228 (22.2)	584 (12.1)	
Religion				
No religion	24 (0.2)	14 (0.3)	10 (0.2)	<0.001
Anglican	3,316 (32.0)	1,854 (33.5)	1,462 (30.3)	
Catholic	4,324 (41.7)	2,139 (38.6)	2,185 (45.3)	
Muslim	1,222 (11.8)	668 (12.1)	554 (11.5)	
Seventh Day Adventist	145 (1.4)	104 (1.9)	41 (0.9)	
Pentecostal	1,200 (11.6)	673 (12.1)	527 (10.9)	

Variable	Overall	Wife-beating is justified		p-value
Others	132 (1.3)	90 (1.6)	42 (0.9)	
Place of residence				
Urban	2,106 (20.3)	1,326 (23.9)	780 (16.2)	<0.001
Rural	8,257 (79.7)	4,216 (76.1)	4,041 (83.8)	
Partner has a controlling behavior				
No	2,822 (27.2)	1,782 (32.2)	1,040 (21.6)	<0.001
Yes	7,541 (72.8)	3,760 (67.8)	3,781 (78.4)	
Region				
Kampala	527 (5.1)	373 (6.7)	154 (3.2)	<0.001
Central1	863 (8.3)	500 (9.0)	363 (7.5)	
Central2	850 (8.2)	449 (8.1)	401 (8.3)	
Busoga	889 (8.6)	544 (9.8)	345 (7.2)	
Bukedi	662 (6.4)	280 (5.1)	382 (7.9)	
Bugishu	596 (5.8)	300 5.4)	296 (6.1)	
Teso	668 (6.4)	266 (4.8)	402 (8.3)	
Karamoja	427 (4.1)	134 (2.4)	293 (6.1)	
Lango	734 (7.1)	333 (6.0)	401 (8.3)	
Acholi	654 (6.3)	300 (5.4)	354 (7.3)	
West Nile	727 (7.0)	313 (5.6)	414 (8.6)	
Bunyoro	675 (6.5)	472 (8.5)	203 (4.2)	
Tooro	722 (7.0)	424 (7.7)	298 (6.2)	
Ankole	802 (7.7)	456 (8.2)	346 (7.2)	
Kigezi	567 (5.5)	398 (7.2)	169 (3.5)	

Covariate balance before and after PSM

Overall, we matched 8,284 respondents in the ratio of 1:1, and Table 2 shows the distribution in covariates after PSM. Before matching, systematic differences in the justification of wife-beating were observed in all the covariates (standardized percentage bias before matching >5%), except the number of living children, wealth index, and religion. After PSM, all the covariates demonstrated no systematic difference across justification of wife-beating. Since all the standardized percentage biases for the covariates were <5%, this signifies a good covariate balance. We also observed at least a 75% drop in pseudo-R-square value (0.057 to 0.014), which is a large decline suggesting a good covariate balance was achieved.

Distribution of outcomes before and after matching PSM

In Table 3, we summarized the distribution of respondents' experiences of different forms of IPV (outcomes) by the justification of wife-beating (exposure). Overall, there was a statistically significant difference in the study outcomes, namely life-time experiences of sexual, physical, and emotional IPV by the justification of wife-beating. Before PSM, 1,156 (24.0%) respondents who justified wife-beating had experienced sexual IPV; 2,126 (44.1%) had experienced physical IPV, and 2,262 (46.9%) had experienced emotional IPV. After PSM, the data show that 978 (23.6) respondents experienced sexual IPV, 1,767 (42.7) had experienced physical IPV and 1,934 (46.7) had experienced emotional IPV. This indicates that there are no major differences in the overall proportions of respondents' experiences of different forms of IPV before and after PSM.

199 **Table 2. Covariate balance before and after PSM**

Variable		Mean		SPB*
		Treated	Control	
Sex				
	Unmatched	0.78	0.68	24.4
	Matched	0.75	0.75	-0.1
Age in 5-year groups				
	Unmatched	3.83	4.08	-14.6
	Matched	3.94	3.91	2.1
Level of education				
	Unmatched	31.13	32.40	-14.6
	Matched	31.71	31.53	2.1
Marital status				
	Unmatched	1.09	1.36	-36.7
	Matched	1.18	1.16	3.5
Number of living children				
	Unmatched	1.14	1.13	2.3
	Matched	1.14	1.13	0.9
Wealth index				
	Unmatched	1.88	1.85	4
	Matched	1.88	1.87	1.7
Religious affiliation				
	Unmatched	3.81	3.80	0.4
	Matched	3.84	3.79	1.9
Place of residence				
	Unmatched	2.59	3.06	-34
	Matched	2.79	2.74	3.8
Region				
	Unmatched	2.31	2.39	-5
	Matched	2.37	2.35	1.1
Partner has a controlling behavior				
	Unmatched	1.84	1.76	19.4
	Matched	1.82	1.83	-1.9

200 **Note**: Standardized percentage bias (SPB) <5% signifies balance in covariate.

201 **Table 3. Number of respondents (%) reporting experiences of IPV before and after matching PSM**

Experiences of IPV	Before PSM				After PSM			
	Overall (n=10,363)	Justify wife-beating			Overall (n=8,284)	Justify wife-beating		
		No (n=5,542)	Yes (n=4,821)	P-value		No (n=4,142)	Yes (n=4,142)	P-value
Sexual IPV								
No	8,422 (81.3)	4,757 (85.8)	3,665 (76.0)	<0.001	6,667 (80.5)	3,501 (84.5)	3,164 (76.4)	<0.001
Yes	1,941 (18.7)	785 (14.2)	1,156 (24.0)		1,617 (19.5)	641 (15.5)	978 (23.6)	
Physical IPV								
No	6,655 (64.2)	3,960 (71.5)	2,695 (55.9)	<0.001	5,222 (63.0)	2,856 (69.0)	2,375 (57.3)	<0.001
Yes	3,708 (35.8)	1,582 (28.5)	2,126 (44.1)		3,062 (37.0)	1,286 (31.0)	1,767 (42.7)	
Emotional IPV								
No	6,182 (59.7)	3,623 (65.4)	2,559 (53.1)	<0.001	4,883 (58.9)	2,687 (64.9)	2,208 (53.3)	<0.001
Yes	4,181 (40.3)	1,919 (34.6)	2,262 (46.9)		3,401 (41.1)	1,455 (35.1)	1,934 (46.7)	

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Effect of justification of wife-beating on experiences of IPV

Logistic regression estimates after PSM in Table 4 show that, justification of wife-beating is associated with higher chances of experiencing different forms of IPV both for men and women. Specifically, both men and women respondents combined, are about 1.6 times more likely to experience sexual IPV (OR, 1.67; 95% CI, 1.49-1.87), emotional IPV (OR, 1.63; 95% CI, 1.49-1.78), and physical IPV (OR, 1.69; 95% CI, 1.54-1.86) for those who justify wife-beating compared to those who do not.

Findings of sub-group analysis are also presented in Table 4. Men who justified wife-beating were about twice as more likely to experience emotional (OR, 2.27; 95% CI, 1.69-3.04), and physical (OR, 1.92; 95% CI, 1.35-2.72) IPV when compared to those who did not justify wife-beating. Further, men who justify wife-beating are about 1.5 times more likely to experience sexual IPV (OR, 1.45; 95% CI, 0.92-2.29) compared to those who do not justify wife-beating. Similarly, women who justify wife-beating were about 1.5 times more likely to experience all the three forms of IPV: sexual (OR, 1.67; 95% CI, 1.46-1.91), emotional (OR, 1.42; 95% CI, 1.27-1.60), and physical (OR, 1.65; 95% CI, 1.46-1.85), when compared to those who did not justify wife-beating.

Sensitivity analysis

The Mantel-Haenzel bounds analysis showed that a Gamma value of 1.55 was required for a shift from a statistically significant value to a statistically non-significant value. Since a large Gamma value was required to attain statistical non-significance in the Mantel-Haenzel bounds, the implication is that the findings are robust to unmeasured confounders and analytic approaches.

226 **Table 4. Odds ratio estimates of the effect of justification of wife-beating on experiences**

227 **of different forms of IPV**

Experiences of IPV	Odds Ratio (95% CI)
Both men and women combined	
Sexual violence (ref = No)	1.67 (1.49-1.87)** *
Emotional violence (ref = No)	1.63 (1.49-1.78)***
Physical violence (ref = No)	1.69 (1.54-1.86)***
Sub group analysis	
Sexual violence(ref = No)	
Males	1.45 (0.92-2.29)
Females	1.67 (1.46-1.91)***
Emotional violence (ref = No)	
Males	2.27(1.69-3.04)***
Females	1.42(1.27-1.60)***
Physical violence(ref = No)	
Males	1.92(1.35-2.72)***
Females	1.65(1.46-1.85)***

228 **Note**: Statistical significance: * p<0.05, ** p<0.01, *** p<0.001

Conclusions and Discussions

Gender-based violence (GBV) of any form perpetrated against a woman or girl, man or boy harms their physical, sexual or psychological health [4,25]. In this paper, we investigated the causal effects of acceptability of gender norms justifying wife-beating on the life-time experiences of sexual, emotional, or physical intimate partner violence (IPV) among Ugandan men and women using a quasi-experimental design with propensity-score matched (PSM) analysis. We analyzed data from the 2016 Uganda Demographic and Health Survey (UDHS) data.

Results show that the acceptance of gender norms justifying wife-beating increases the likelihood of experiencing sexual, emotional, and physical IPV in the general population – both form men and women. In the sub-group analysis, women who accepted gender norms justifying wife-beating experienced all the three forms of IPV: sexual, emotional, and physical violence when compared to those women who did not justify justifying wife-beating. For men, justification of wife-beating was associated with an increased likelihood of experiencing emotional and physical violence when compared to those men who did not justify wife-beating. However, whereas the odds of experiencing sexual IPV was higher among men justifying wife-beating compared to those who did not justify, the difference was not statistically significant. The finding of an increased odds of experiencing of sexual, emotional, and physical IPV among people who accept gender norms justifying wife-beating might be explained by two plausible reasons. First, gender norms are acquired through socialization during the transition from childhood to adulthood. Recent studies conducted in Uganda show that tendencies to have inequitable gender attitudes including justification of wife-beating can be traced in early adolescence [26] and tend to increase with age [27]. Studies have also report that people who experience violence in childhood find it normal to accept violence as a disciplinary measure and tend to become either victims or perpetrators of gender based violence, or both. The effects of childhood experiences of gender-based violence suffices in adulthood especially in marriage [28,29]. Second, cultural beliefs or

societal justification of gender-based violence even exacerbates the problem. For instance, certain cultures justify dating and marital rape while in other cultural settings, intimate love is intricately linked to legitimization of IPV [30,31]. In addition, certain women feel loved if they are either abused or beaten by their spouses as a corrective measure for their faults. In addition, patriarchal norms that support male dominance and power control may further drive IPV [32].

Results further showed that women who justify wife-beating experience all the three forms of violence compared to those who do not justify wife-beating. Conversely, men who justify wife-beating experience merely physical and emotional violence but not sexual violence compared to those who do not justify wife-beating. This finding is in agreement with earlier studies in SSA that report IPV is more prevalent in women than men for various reasons, namely neglect of family responsibilities such as childcare, travelling away from home without informing a husband, or being disrespectful towards the spouse. Another likely explanation could be since sexual violence is largely perpetrated by men, in instances where it is perpetrated by women through for example denial of sex or forced sex, the men generally tend to not report for fear of shame and disempowerment or emasculation [33,34].

Generally in most settings, being a man means being tough, brave, aggressive, and invulnerable, consequently, the need to appear invulnerable reduces men's willingness to seek help or treatment for physical or mental health problems, and in turn this contributes to lower rates of safer sex and health-seeking behaviour [1]. Although evidence for the effectiveness of programs like SASA! to shift gendered norms, attitudes, and beliefs related to IPV is growing [9,10], their potential to significantly impact the occurrence of IPV in a general population still requires rigorous evaluation for several reasons. Firstly, findings from these IPV prevention trials/programs primarily rely on self-reported changes in gendered social beliefs and norms among members of neighborhoods where the programs are being implemented. This measure can be strongly influenced by social desirability bias. Second, rates of justifying wife-beating have

been used as indicators for the prevalence of IPV at the community level. However, changes in this measure at a community level do not inform the extent to which it translates to a reduction of IPV at the population level [3]. Understanding these facets is important to inform future interventions, national policy, and development partners about whether the investment is worthwhile or not, and whether such changes can translate to real reductions in IPV.

Some limitations in this study include reliance of the analytic technique on observed covariates and the lack of qualitative data to contextualize the findings. Further, the exposure and outcomes were assessed by self-reports implying that the possibility of social desirability bias cannot be excluded. However, a key strength from our study is that we analyzed a large and nationally representative dataset, implying that the findings are generalizable to the entire country and other similar settings. Secondly, we applied a robust study design and analytic approach to measure unbiased cause-effect relationships using observational data, implying that results are robust to unmeasured confounders and analytic technique.

In conclusion, findings from this study show that the risk of experiencing IPV is high among both women and men who accept gender norms justifying wife-beating than among those who do not. There is, therefore, a need to tackle the drivers of gender norms justifying wife-beating at the societal level.

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