

SPOUSAL VIOLENCE AND SPOUSAL EDUCATION DIFFERENCE IN ZAMBIA: A CROSS-SECTIONAL COMPARATIVE ANALYSIS OF THREE DEMOGRAPHIC HEALTH SURVEY CYCLES

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ABSTRACT

The study aimed to establish the association between spousal education difference and spousal violence among married women in Zambia. The article invokes individual women's datasets from the 2007, 2013-14 and 2018 Zambia Demographic and Health Surveys (ZDHSs). Currently married women 15-49 years of age who had responded to the domestic violence module formed the core of the sample (2007: 3,216; 2013-14: 7,069; 2018:5,338). Multivariate binary logistic regression was performed to establish the association between spousal violence and spousal education differences and other factors. Adjusting for if a woman's father "ever beat her mother" and for the notion that "wife beating is justifiable", in survey years 2013-14 and 2018, women who had equally high education level as their husbands were less likely to have experienced spousal violence (aOR=0.81, $p<0.05$ and aOR=0.75, $p<0.01$ respectively) compared with those equally low educated. Other factors that associated with experience of spousal violence include if a woman is/was working, living in urban area, witnessing father beat mother, and acceptance of wife beating for any reason. Increasing education level attained by men and women is not a sufficient intervention to reducing spousal violence. Thus, addressing acceptance of beliefs that wife beating is justified under certain circumstances and parental physical violence which often are subtle and silent in perpetuating spousal violence in Zambia is critical.

Keywords: *Spousal Violence, Spousal Education Difference, Demographic and*

BACKGROUND

Intimate partner violence (IPV), is one of the most common forms of violence against women in intimate relationships. IPV is defined as “any behaviour within an intimate relationship that causes physical, psychological or sexual harm to those in the relationship” (WHO, 2012). Mental trauma, injuries, unintended pregnancies, induced abortions, and sexually transmitted illnesses (STIs), including HIV are all possible outcomes of spousal violence (Brownridge *et al.*, 2017; Christofides *et al.*, 2014).

Monahan, (2018) argues that at least thirty-eight million women report experiencing IPV during the course of their lifetime regardless of their status or location. In 2018, the World Health Organisation (WHO) estimated that 30 per cent of women worldwide who have been in a relationship experienced physical and/ or sexual violence from an intimate partner at some point in their lives. By regions, Southern Asia and Sub-Saharan Africa (SSA) have the second highest prevalence rates at 35 per cent and 33 per cent respectively of lifetime intimate partner violence among women age 15-49 years (WHO, 2021).

The focus of our study is on the experience of violence by married women perpetrated by their husband/partner, we refer to it as spousal violence (physical, sexual, and emotional violence). Prevalence of spousal violence is common in Zambia. In 2007, about 54 per cent of ever-married women 15-49 years experienced physical, sexual, or emotional violence by their current or previous husband/ partner; the situation was not too different in 2018 although there was a reduction noted from 54 per cent to 47 per cent (CSO *et al* 2009, Zambia Statistics Agency *et al*, 2019). The Government of the Republic of Zambia is dedicated to promoting Gender Based Violence (GBV) prevention programmes, resulting in the revision of the National Gender Policy in 2014 and the enactment of the Anti-Gender Based Violence Act No. 1 of 2011.

A variety of factors are associated with spousal violence among women, and they include among others level of education. The level of education of women can influence exposure to spousal violence among women. However, research has yielded conflicting results. Women with primary and secondary education have been found to be more likely than uneducated women to have experienced any form of intimate partner violence (Chernet and Cherie 2020, Loembe 2020). Moreover, education level of a woman’s husband has been found to also play an important role in whether a woman could be a victim of spousal violence or not (Ahinkorah *et al.*, 2018). Furthermore, women who have either the same education level as their husbands or where a wife or husband is more educated than the other, is linked with occurrence of spousal violence (Bonnes., 2016). However, this has also been contradictory in some spaces; for example, some studies have found that women with lower educational status than their husbands/partners are more likely to be at risk of violence (Garcia-Moreno *et al.* 2005), while others have established that women with higher educational status than their husbands/partners are also more likely to be at risk of violence (Jewkes *et al.* 2002; Taillieu and Brownridge 2010, Masaiti *et al*, 2022). The discourse and interplay between the two or more ideas on how education level is linked to spousal violence continues to receive active attention within the research fraternity, and this study was designed to further show such significance.

To add to the body of knowledge on the forgoing, this study aimed to establish association between spousal education difference and spousal violence among married women in Zambia

using three DHS cycles, 2007, 2013-14 and 2018. The research had two questions: Firstly, is there an association between spousal education difference (SED) and spousal violence against married women in Zambia? And secondly, are there differences in spousal violence experiences between married women who have a higher, lower, or equal level of education as their partners in Zambia?

With so many cases of spousal violence and deaths reported in Zambia by such authorities as Zambia Police's Victim Support Unit as well as through print and online media (Mushibwe *et al.*, 2021). This study could be a "game changer" in the development of appropriate interventions with concrete recommendations on how to strengthen existing programmes aimed at addressing spousal violence against women and avoid unwanted outcomes such as injury and death. This is also in line with Sustainable Development Goal (SDG) 5 – Gender Equality has Target 5.2.1, which aims to "Eliminate violence against women and girls by 2030." This requires "elimination of all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation."

Results of this study are also expected to add to the body of knowledge on the role of spousal education differences in understanding spousal violence experiences among married women in Zambia. Sometimes, in Zambia like the rest of the world, gender violence is mostly attributed to men aggressors and ignoring the emerging female perpetrators. For instance, Morgan & Wells (2016) focused on male victims' experiences of female-perpetrated IPV. Four essential themes emerged: Participants identified themselves as victims of abuse, they felt they were victims of controlling abuse, respondents also experienced manipulation through gendered stereotypes of abuse and finally and interesting they felt it was different because they were men. The only issue in this study is that education attainment of different partners was not given consideration.

Methods Data Source

This manuscript used secondary data from the Zambia Demographic Health Survey (ZDHS) conducted in 2007, 2013-14, and 2018. The ZDHSs use nationally representative samples to obtain national and provincial estimates, as well as rural and urban area estimates (exception of 2007). These surveys are implemented by the Zambia Statistics Agency (ZamStats), in partnership with the Ministry of Health (MoH) and with technical assistance from ICF under the DHS Program, financed by the United States Agency for International Development (USAID). The current study was based on women respondents 15-49 years of age who responded to the domestic violence module in the last three DHS cycles. Women recode files were used for data analysis (ZMIR51FL, ZMIR61FL, and ZMIR71FL). These recodes generate the most accurate estimates of domestic violence countrywide including possible or likely factors related to the violence.

Sample Design and Sampling Procedure

Each ZDHS uses a sampling frame based on Enumeration Areas (EAs) from the most recent Census of Population and Housing (CPH) for Zambia. The 2013-14 and 2018 ZDHS used the 2010 CPH while the 2007 ZDHS used the 2000 CPH sampling frames respectively. A stratified two-stage sample design is used in DHS where the first stage entails selecting of EA clusters; within each sampling stratum, EAs are chosen with a probability proportionate to their size. In the second stage, a systematic sample of households listed in each of the clusters are then chosen. Women 15-49 years of age who are regular members of the selected households or who spent the night before the survey in selected houses were eligible for the woman's questionnaires at the household level. Corresponding ZDHS publications available on the DHS Program website provide a full detail of the survey methodology.

In the 2018 ZDHS, 545 clusters were chosen with each cluster having an average of 133 households, and from which 25 households were chosen. A sample size of 13,625 households was obtained, from which 13,683 women 15-49 years of age were interviewed. The 2013-14 ZDHS had 722 standard enumeration areas (SEAs) from the 20 strata, where 18,050 households were selected with 16,411 women 15 - 49 years were interviewed from each of these households. In the first stage of 2007 ZDHS sample selection, 320 SEAs were chosen and in the second stage, an 8,000-person representative sample was chosen from which 7,146 women 15-49 years of age were interviewed.

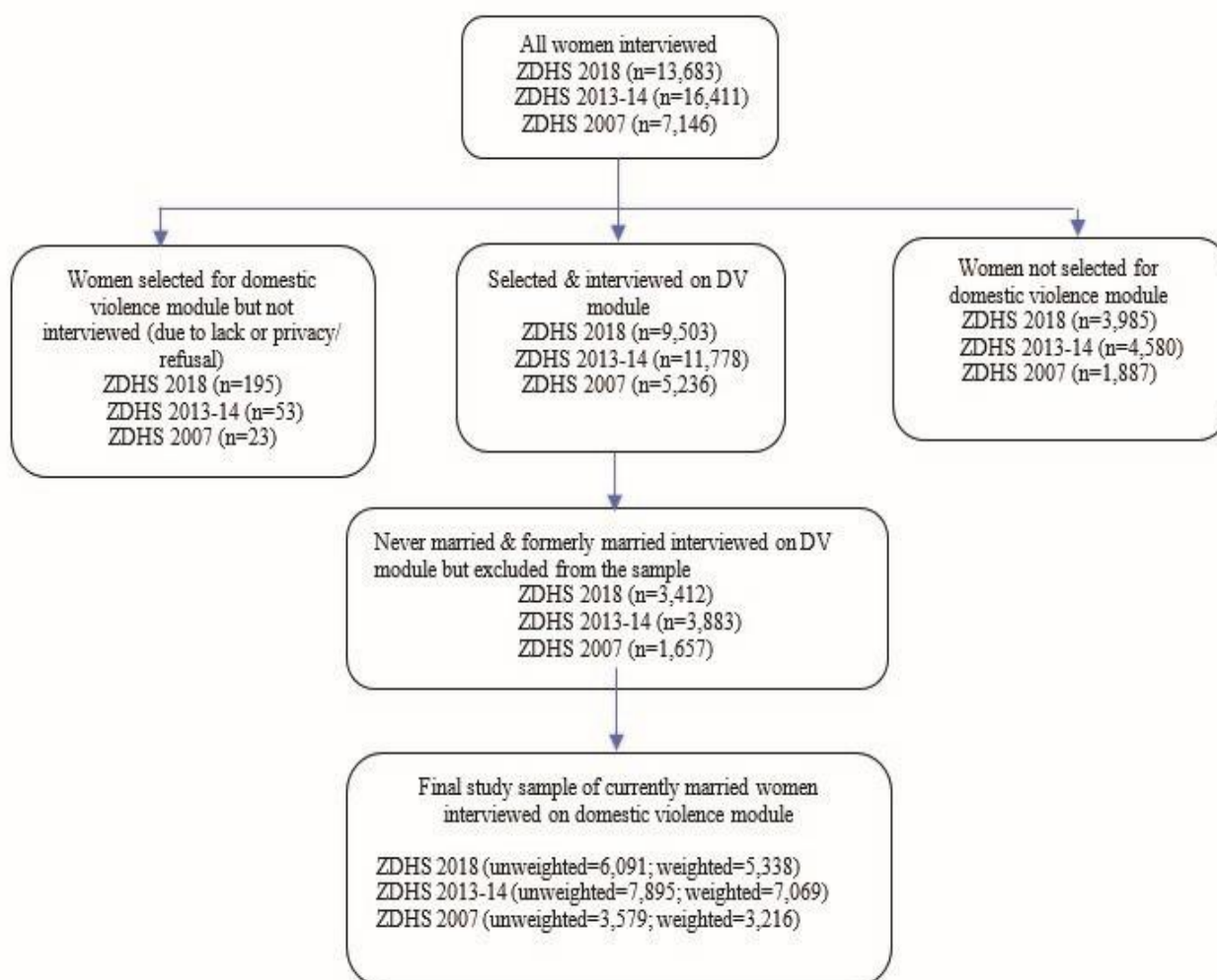
Consent and Ethical Considerations

Measure DHS authorises the use of datasets for further analysis. The authors made no attempt to identify any of the survey respondents and results have been narrated and interpreted as objectively as possible. Prior to data collection, national and international ethics review boards approved the survey methodology and instruments. Furthermore, during data collection, informed consent was sought from all identified eligible women. This consent was sought at a number of levels, which included: consent to participate in the survey on all other topics; and also following WHO guidelines on ethical collection of data on domestic violence, one identified for administering of this module provided consent. Therefore, no consent to participate was sought by us as this was already done during data collection.

Target Population and Sample Size

The DHS selects a sub-sample of one only eligible woman per household for administration of the domestic violence module, based on informed agreement to participate and the assurance of privacy during the interview. In 2018, ZDHS successfully interviewed 9,503 women for the domestic violence module, and 5,338 met criteria for inclusion in our analysis. From the 2013-14 ZDHS, 11,778 women were administered the domestic violence module but only 7,069 married women were included in the analysis for this manuscript. In the 2007 ZDHS, 5,236 women were interviewed on the domestic violence module but a weighted sample size of 3,216 married women was used in this study. In addition, because the focus of this study was on currently married women's experiences of domestic violence perpetrated by their husbands, the sample eliminated women who had never married, were divorced, widowed, or were separated. Figure 1 demonstrates actual visuals of these processes:

Figure 1: Inclusion and exclusion of women in the study



Study Variables Outcome Variable

The outcome or dependent variable, “spousal violence” was generated from a number of proxy variables detecting the presence of spousal violence experiences. The DHS (ZDHS 2018) questionnaire has several questions about acts of physical, emotional and sexual violence, which this study classified as violence towards a female partner. Physical violence included questions on: Ever been pushed, shook or had something thrown at a woman by husband/partner; Ever been slapped by husband/partner; Ever been punched with fist or hit by something harmful by husband/partner; Ever been kicked or dragged by husband/partner; Ever been strangled or burnt by husband/partner; Ever been threatened with knife/gun or other weapon by husband/partner. Emotional violence included questions on: whether a woman has Ever been humiliated by husband/partner; Ever been threatened with harm by husband/partner while Sexual violence included questions on whether a woman has Ever been physically forced into unwanted sex by husband/partner; Ever been forced into other unwanted sexual acts by husband/partner among others? The spousal violence variable was coded 1 for “yes” for women who reported ever experiencing any/and or all of the three forms of violence, otherwise coded 0 “no” for women who had never experienced any form of violence.

Predictor Variables

The main predictor variable was Spousal Education Difference (SED) generated using a woman's and husband's education level. Instead of using suggested methods of deducting the wife's education from the husband's education, the variable was generated with four categories namely: "wife better educated", "husband better educated", "equally low educated" and "equally high educated". For these categories, the woman's education level and that of her partner were re-categorised as "lower education", combining no education and primary level education and "high education", combining secondary and higher education. Women with lower education were matched with their partners to create "equally low educated" category; women whose education matched their partners at higher level, were categorised as "equally high educated"; women with low education but higher their husband/partners had higher level were categorised as "husband more educated"; and women with higher education than their husband/ partners were categorised as "wife more educated".

Other variables included women's age, categorised as 15-19, 20-24, 25-29, 30-34, 35-39, 40-44 and 45-49; Household wealth quintiles recoded from the original five categories to three thereby consisting of poor, middle and rich wealth status; Place of residence by rural or urban areas; Employment status categorised as working and not working; children ever born originally a count variable but categorised as 0, 1-2, 3-4 and 5+ number of children; age at first marriage, originally a count variable but was categorised into three age groups namely; <18, 18-19 and 20+.

The variable "woman's father ever beat mother", was used as originally set with "no", "yes" and "don't know" as response. Another important predictor variable was acceptance of violence. Respondents were asked if they agreed with statements that justified a husband to hit or beat his wife under any of the following five circumstances: she burns the food; she argues with him; she goes out without telling him; she neglects the children; and she refuses to have sex with him. Two response categories were created namely "No", if woman said beating was not justified under any circumstances, and "Yes" if woman justified violence for any reasons.

Statistical Analysis

For purposes of guaranteeing the domestic violence subsample to be nationally representative, a data weighting technique was used prior to actual analysis by utilising domestic violence weights to account for the selection of only one woman per household. Weighting was also done to account for the complex DHS sampling design with multistage processes, as well as the sample's non-proportional allocation to different provinces by urban and rural allocations as well as response rate disparities.

Data analysis included univariate analysis, chi square test and multivariate binary logistic regression. The association between spousal violence experiences among married women and each independent variable was investigated using the Chi square test of independence. Binary logistic regression was also used since the outcome variable "spousal violence" had two outcomes (No and Yes). The net effects of each independent variable and the odds of women experiencing spousal violence were investigated using multivariate binary logistic regression where three models were performed: Model I was unadjusted odds ratio (uOR) of spousal violence and SED; Model II was adjusted odds ratio (aOR) of spousal violence which included adjustments on SED, witnessing father beat mother and acceptance of wife beating; Model III was aOR of spousal

violence adjusted for SED, witnessing father beat mother and acceptance of wife beating and all other independent variables.

Results Characteristics of women

Table 1 shows characteristics of women in the study. In each cycle of the ZDHS, most of the women were in the age group 25-29 years (24 per cent in 2007, 22 per cent in 2013-14 and 20 per cent in 2018) and residing in rural areas (66 per cent in 2007, 60 per cent in 2013-14 and 60 per cent in 2018). Slightly above half of the women were working (51 per cent in 2007, 56 per cent in 2013-14 and 52 per cent in 2018). On SED, most of the couples were equally lowly educated (50 per cent in 2007, 41 per cent in 2013-14 and 36 per cent in 2018).

Results in table 1 further show that most women were less than 18 years at their first marriage (54 per cent in 2007, 51 per cent in 2013-14 and 47 per cent in 2018). Regarding parity, many women had 5+ more children (38 per cent in 2007, 39 per cent in 2013-14 and 35 per cent in 2018 per cent). Concerning exposure to domestic violence involving their parents, 37 per cent of women in the 2007 and 2013-14 DHS cycle and 29 per cent of women in the 2018 DHS cycle reported that their father had ever beat their mother. Results further show that 64 per cent in 2007, 49 per cent in 2013-14 and 48 per cent in 2018 of women respondents accepted wife beating under any circumstance.

Table 1: Characteristics of Women in 2007, 2013-14 and 2018 Cycles of Zambia DHS

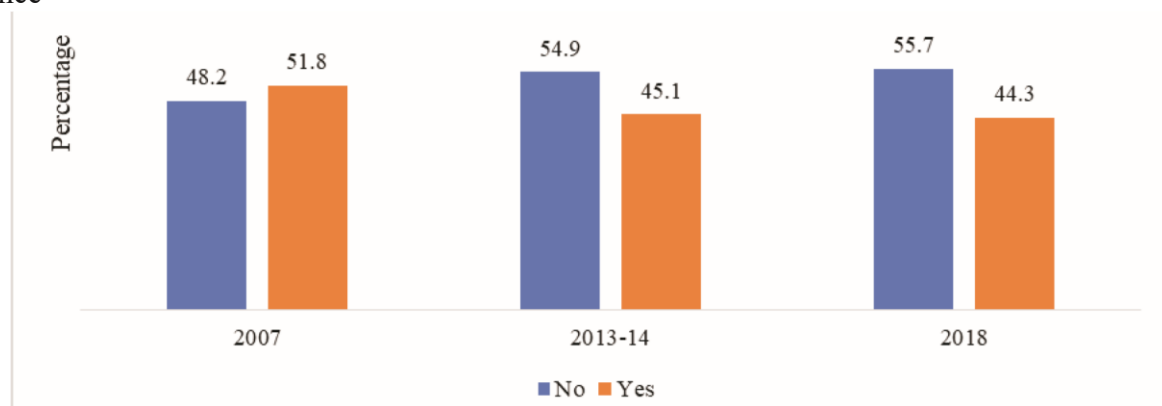
Characteristic	2007	2013-14	2018
	%	%	%
Age 5-year groups 15-19			
19	5.9	6.1	5.5
20-24	20.9	17.5	18.7
25-29	23.9	21.9	20.3
30-34	18.8	20.2	18.1
35-39	13.3	16.2	17.2
40-44	8.9	10.6	11.9
45-49	8.4	7.5	8.3
Type of place of residence			
Urban	34.2	40.0	39.9
Rural	65.8	60.0	60.1
Respondent currently working			
No	48.6	43.7	48.4
Yes	51.3	56.3	51.6
Spousal education difference			
Equally low educated	49.7	41.4	36.2
Equally high educated	21.3	27.7	33.5
Wife more educated	5.1	5.5	6.9
Husband more educated	23.9	25.4	23.4
Wealth status			
Poor	41.2	40.0	40.1
Middle	20.0	19.8	19.2
Rich	38.8	40.3	40.7
Age at first marriage			
<18	54.2	50.5	46.8
18-19	22.3	23.8	22.4

20+	23.6	25.7	30.8
Parity			
0	5.2	3.8	3.6
1-2	28.9	28.8	32.3
3-4	28.1	28.8	28.8
5+	37.7	38.6	35.3
Did her father ever beat her mother			
No	53.6	54.4	64.4
Yes	36.8	36.8	28.7
Don't know	9.5	8.8	6.9
Acceptance of wife beating			
No	35.7	51.5	52.4
Yes	64.3	48.5	47.6
n	3,216	7,069	5,338

Currently married women who have experienced spousal violence

Figure 2 shows percentage of currently married women who had ever experienced spousal violence by the three ZDHS years. The percentage of currently married women who experienced spousal violence decreased from 52 per cent in 2007 to 44 per cent in 2018. The major drop was observed between 2007 and 2013-14 (52 per cent to 45 per cent respectively) while that between 2013-14 and 2018 was extremely minimal with only about a per cent difference (45 to 44 per cent respectively)

Figure 2: Percentage Distribution of Currently Married Women who have Experienced Spousal Violence



Characteristics of Women who have Experienced Spousal Violence

The Chi-square test in Table 2 shows that spousal violence experiences differed by women's background characteristics. In the 2013-14 and 2018 ZDHS cycles, a significant relationship between SED and spousal violence ($p=0.000$) was observed. In 2013-14, experiences of spousal violence were highest among women with equally low education and greater education (at 48 per cent each) as their husbands respectively but lowest (39 per cent) among women with equally high education as their husbands. In 2018, experiences of spousal violence were highest (49 per cent) among women with equally low education as their husbands but lowest (37 per cent) among women with equally high education as their husbands.

Table 2 further shows that for the 2007 ZDHS, results show a significant relationship between a woman's age and experiences of spousal violence ($p=0.031$); this was not the case in 2013-14

and 2018. Similarly, there was a significant relationship ($p=0.000$) between a woman's type of place of residence and experiences of spousal violence in 2007 ZDHS but not in 2013-14 or 2018 ZDHS. However, there was a significant relationship between women's current working status and spousal violence in 2007 and 2013-14 DHS cycles ($p=0.027$ and $p=0.000$). In all the three DHS cycles, there was significant relationships with the following combinations of variables: women's household wealth status and spousal violence; women's age at first marriage and spousal violence; parity and spousal violence; woman's father ever beat her mother and spousal violence; and acceptance of wife beating by women and spousal violence (Table 2).

Table 2: Experience of Spousal Violence among Women by Selected Characteristics in 2007, 2013-14 and 2018 Cycles of DHS, Zambia

Characteristic	2007			2013-14			2018		
	%	95% CI	P-value	%	95% CI	P-value	%	95% CI	P-value
Spousal education difference			0.282			0.000			0.000
Equally low educated	50.6	[47.6,53.5]		48.4	[45.8,51.0]		49.2	[45.9,52.5]	
Equally high educated	50.5	[45.6,55.4]		39.0	[35.8,42.3]		37.2	[33.6,40.9]	
Wife more educated	59.1	[50.5,67.1]		48.1	[42.0,54.2]		46.5	[40.4,52.7]	
Husband more educated	52.6	[48.6,56.6]		45.6	[42.5,48.7]		46.0	[42.6,49.3]	
Age 5-year groups			0.031			0.082			0.220
15-19	40.6	[33.5,48.0]		36.1	[30.4,42.2]		35.5	[29.1,42.5]	
20-24	51.6	[47.3,55.9]		45.3	[41.9,48.7]		43.9	[40.2,47.8]	
25-29	55.7	[51.7,59.5]		47.3	[44.5,50.2]		44.6	[40.5,48.7]	
30-34	53.7	[49.1,58.2]		45.3	[41.9,48.6]		43.7	[40.2,47.2]	
35-39	48.3	[42.5,54.1]		46.2	[42.0,50.5]		44.2	[39.0,49.6]	
40-44	52.2	[45.4,58.9]		44.2	[39.9,48.7]		46.3	[41.0,51.7]	
45-49	49.8	[42.6,57.0]		43.6	[37.6,49.7]		49.0	[42.1,55.9]	
Place of residence			0.000			0.055			0.166
Urban	58.3	[53.7,62.7]		42.9	[39.7,46.1]		42.3	[38.5,46.2]	
Rural	48.4	[46.0,50.8]		46.6	[44.6,48.5]		45.6	[43.0,48.2]	
Currently working			0.027			0.000			0.264
No	49.5	[46.5,52.4]		39.7	[37.3,42.0]		43.2	[40.4,46.1]	
Yes	54.0	[51.0,57.0]		49.3	[47.1,51.6]		45.3	[42.5,48.2]	
Wealth status			0.003			0.000			0.000
Poor	47.8	[44.7,51.0]		47.9	[45.7,50.2]		49.8	[46.9,52.7]	
Middle	51.5	[47.7,55.3]		49.1	[46.0,52.2]		43.2	[39.0,47.6]	
Rich	56.1	[51.9,60.3]		40.3	[37.2,43.5]		39.4	[35.9,43.0]	
Age at first marriage			0.000			0.000			0.000
<18	54.6	[51.8,57.5]		48.0	[45.7,50.4]		48.2	[45.3,51.1]	
18-19	53.4	[48.8,58.0]		45.9	[42.9,49.0]		44.6	[41.1,48.2]	
20+	43.6	[39.9,47.5]		38.5	[35.6,41.5]		38.2	[34.7,41.9]	
Children ever born			0.000			0.000			0.000
0	32.9	[25.8,41.0]		31.5	[25.1,38.6]		32.6	[24.9,41.4]	
1-2	50.4	[46.6,54.2]		39.6	[36.7,42.6]		38.5	[35.6,41.5]	
3-4	55.4	[52.0,58.8]		47.5	[44.6,50.5]		46.2	[43.0,49.5]	
5+	52.7	[49.2,56.2]		48.7	[46.2,51.1]		49.3	[45.8,52.7]	
Father ever beat her mother			0.000			0.000			0.000

No	46.1	[43.1,49.2]	39.1	[37.0,41.2]	36.8	[34.3,39.5]
Yes	59.0	[55.6,62.4]	52.0	[49.4,54.6]	59.4	[56.2,62.6]
Don't know	55.3	[48.2,62.2]	52.7	[47.9,57.6]	51.0	[45.2,56.8]
Acceptance of wife beating			0.000		0.000	0.000
No	45.9	[42.3,49.5]	36.4	[34.1,38.7]	34.3	[31.6,37.0]
Total						
	55.0	[52.4,57.6]	54.3	[52.1,56.5]	55.4	[52.7,58.0]
Yes	51.8	[49.5,54.1]	45.1	[43.3,46.8]	44.3	[42.1,46.5]

Spousal violence and spousal education difference

In this section, unadjusted odds ratio (uORs) on spousal violence and spousal education differences are presented. In the 2007 ZDHS, results show no significant difference in the odds of experiencing spousal violence by SED (Table 3). For both 2013-14 and 2018 DHS cycles, women who were as equally high educated as their husbands were significantly less likely to experience spousal violence (uOR: 0.68, CI:

0.57 - 0.81 and uOR: 0.61, CI: 0.50 - 0.74 respectively).

Table 3: The uORs for spousal violence by SED in 2007, 2013-14 and 2018 Cycles of DHS, Zambia

Characteristic	2007		2013-14		2018	
	OR	95% CI	OR	95% CI	OR	95% CI
Spousal education difference						
Equally low educated (RC)	1.00	1.01	1.02	1.03	1.04	1.05
Equally high educated	1.00	0.80 - 1.24	0.68***	0.57 - 0.81	0.61***	0.50 - 0.74
Wife more educated	1.41	0.98 - 2.02	0.99	0.76 - 1.28	0.90	0.69 - 1.16
Husband more educated	1.08	0.90 - 1.30	0.89	0.77 - 1.04	0.88	0.74 - 1.04
Constant	1.02	0.91 - 1.15	0.94	0.85 - 1.04	0.97	0.85 - 1.10

*** p<0.001

Spousal violence, SED, Witnessing Parental Physical Abuse and Acceptance of Wife Beating

Table 4 presents adjusted odds ratio for spousal violence experiences with SED, witnessing father ever beating her mother and acceptance of wife beating as predictor variables. Results show no significant difference in the odds of experiencing spousal violence by SED in 2007. In both the 2013-14 and 2018 DHS cycles, results show that women who were as equally high educated as their husbands were significantly less likely to experience spousal violence (aOR: 0.80, CI: 0.67-0.95 and aOR: 0.75, CI: 0.61-0.91 respectively).

Table 4 further shows that in all the three ZDHS cycles, women who affirmed that their fathers ever beat their mothers and those who didn't know were more likely to experience spousal violence than those who said they never witnessed. Women with accepting attitudes towards wife

beating for any reason were more likely to have experienced spousal violence than those who did not (1.42 times in 2007, 1.94 times in 2013-14 and 2.16 times in 2018).

Table 4: The aORs for Spousal Violence by Selected Predictors in 2007, 2013-14 and 2018 Cycles of DHS, Zambia

Characteristic	2007		2013-14		2018	
	aOR	95% CI	aOR	95% CI	aOR	95% CI
Spousal education difference						
Equally low educated (RC)	1.00		1.00		1.00	
Equally high educated	1.11	0.89 - 1.38	0.80*	0.67 - 0.95	0.75**	0.61 - 0.91
Wife more educated	1.39	0.97 - 2.00	1.00	0.76 - 1.31	0.94	0.72 - 1.23
Husband more educated	1.09	0.90 - 1.31	0.93	0.79 - 1.08	0.91	0.77 - 1.09
Woman's father ever beat her mother						
No (RC)	1.00		1.00		1.00	
Yes	1.64***	1.37 - 1.96	1.58***	1.39 - 1.79	2.28***	1.93 - 2.70
Don't know	1.48*	1.09 - 2.00	1.68***	1.35 - 2.09	1.76***	1.35 - 2.29
Acceptance of wife beating						
No (RC)	1.00		1.00		1.00	
Yes	1.42***	1.19 - 1.68	1.94***	1.70 - 2.21	2.16***	1.86 - 2.51
Constant	0.64***	0.54 - 0.77	0.52***	0.45 - 0.60	0.47***	0.40 - 0.55

*** p<0.001, ** p<0.01, * p<0.05

Determinants of spousal violence

Table 5 presents determinants of women spousal violence experiences adjusted for SED, witnessing father ever beat mother, accepting attitude towards wife beating for any reason and other background characteristics of women. In all the three ZDHS cycles, adjusted ratios show no statistically significant differences in the odds of experiencing spousal violence by SED; in the 2007 ZDHS, no statistically significant difference in the odds of experiencing spousal violence by age of women. In the 2013-14 DHS however, women in the age group 20-24 were 1.38 times more likely to have experienced spousal violence compared with women aged (15-19). Similarly, in the 2018 ZDHS, women in age groups 20-24 and 25-29 were 1.57 times and 1.45 times respectively more likely to have experienced spousal violence than women 15-19 years of age. As for residence, all ZDHS cycles show that women in rural areas were less likely to have experienced spousal violence than those in urban areas.

In the 2007 and 2013-14 ZDHSs, women who reported currently working were 1.2 and 1.37 times more likely to experience spousal violence respectively than those who were not working. Table 5 also shows that for the 2018 ZDHS, women with middle or rich wealth quintiles were less likely to have experienced spousal violence than those with poor wealth quintile. In all ZDHS cycles, women with 20+ years of age at first marriage were less likely to experience spousal violence than those whose age at marriage was less than 18 years. Further, in all DHS cycles,

women with one or more children ever born were more likely to experience spousal violence than those who had zero children ever born.

Results further show that women who witnessed their father ever beat their mother were more likely to experience spousal violence than those who did not (aORs of 1.62 in 2007, 1.61 in 2013-14 and 2.28 in 2018). Women who did not know whether their fathers ever beat their mothers were more likely to have experienced spousal violence than those who did not witness such occurrences (aORs of 1.44 in 2007, 1.70 in 2013-14 and 1.80 in 2018). Furthermore, women with positive attitude towards wife beating for any reason were more likely to experience spousal violence than those who did not (aOR of 1.44 in 2007, 1.86 in 2013-14 and 2.16 in 2018).

Table 5: The aORs for spousal violence by predictors in 2007, 2013-14 and 2018 Cycles of DHS, Zambia

Characteristic	2007		2013-14		2018	
	aOR	95% CI	aOR	95% CI	aOR	95% CI
Spousal education difference						
Equally low educated (RC)	1.00		1.00		1.00	
Equally high educated	0.93	0.72 - 1.22	0.89	0.72 - 1.10	0.89	0.72 - 1.10
Wife more educated	1.35	0.93 - 1.96	1.06	0.80 - 1.41	1.03	0.78 - 1.36
Husband more educated	0.92	0.75 - 1.13	0.96	0.81 - 1.12	0.97	0.81 - 1.16
Age 5-year groups						
15-19 (RC)	1.00		1.00		1.00	
20-24	1.33	0.92 - 1.92	1.38*	1.03 - 1.86	1.57*	1.09 - 2.25
25-29	1.44	0.99 - 2.10	1.31	0.95 - 1.81	1.45*	1.01 - 2.07
30-34	1.36	0.90 - 2.05	1.11	0.77 - 1.59	1.30	0.87 - 1.93
35-39	1.08	0.68 - 1.70	1.11	0.76 - 1.60	1.20	0.78 - 1.84
40-44	1.20	0.76 - 1.90	0.94	0.64 - 1.37	1.22	0.78 - 1.93
45-49	1.08	0.65 - 1.80	0.87	0.57 - 1.33	1.30	0.82 - 2.05
Type of place of residence						
Urban (RC)	1.00		1.00		1.00	
Rural	0.58***	0.42 - 0.80	0.78*	0.63 - 0.96	0.66**	0.51 - 0.86
Currently working						
No (RC)	1.00		1.00		1.00	
Yes	1.20*	1.03 - 1.40	1.37***	1.20 - 1.56	1.12	0.96 - 1.32
Wealth index						
Poor (RC)	1.00		1.00		1.00	
Middle	1.13	0.92 - 1.40	1.08	0.92 - 1.26	0.75**	0.62 - 0.93
Rich	1.09	0.79 - 1.50	0.88	0.71 - 1.09	0.66**	0.50 - 0.88
Age at first marriage						
<18 (RC)	1.00		1.00		1.00	
18-19	0.91	0.74 - 1.12	0.94	0.80 - 1.10	0.98	0.82 - 1.16
20+	0.61***	0.49 - 0.75	0.83*	0.69 - 1.00	0.82*	0.68 - 0.99
Total children ever born						
0 (RC)	1.00					
1-2	1.90**	1.26 - 2.84				
3-4	2.25***	1.45 - 3.51	1.80**	1.24 - 2.61	1.71*	1.11 - 2.64
5+	2.17**	1.36 - 3.45	1.96**	1.30 - 2.94	1.87**	1.18 - 2.95

Woman's father ever beat her mother No (RC)						
	1.00		1.00		1.00	
Yes	1.62***	1.34 - 1.95	1.61***	1.42 - 1.83	2.28***	1.92 - 2.70
Don't know	1.44*	1.07 - 1.94	1.70***	1.37 - 2.12	1.80***	1.41 - 2.31
Acceptance of wife beating						
No (RC)	1.00		1.00		1.00	
Yes	1.44***	1.21 - 1.71	1.86***	1.63 - 2.12	2.16***	1.86 - 2.52
Constant	0.38***	0.22 - 0.66	0.28***	0.18 - 0.44	0.34***	0.20 - 0.57
n	3,514		7,599		5,857	

*** p<0.001, ** p<0.01, * p<0.05

Discussion

Our manuscript establishes the link between spousal education difference and spousal violence among married women in Zambia using three DHS cycles of 2007, 2013-14 and 2018. The article further intended to establish differences in spousal violence experiences between married women who have a greater, lower, or equal level of education as their husbands in Zambia. Spousal violence is common and remains high in Zambia. The percentage of married women who have experienced spousal violence decreased from 52 per cent in 2007 to 44 per cent in 2018. However, compared with other countries in Africa, this result reduction is quite substantial. For example, Gubi *et al.*, (2020) reports that there were over half (56 per cent) of married women in Uganda who reported experiencing some form of IPV of one kind or another.

The uOR for the 2013-14 and 2018 ZDHS cycles showed that married women who were as equally high educated as their husbands were significantly less likely to have experienced spousal violence compared with those who were equally low-educated. Adjusted ORs of spousal violence experiences controlled such variables as spousal education difference, woman's father ever beat her mother and acceptance of any reasons under which wife beating is justified showed similar results with the bivariate results. In the same way, in both the 2013-14 and 2018 DHS cycles, women who were as equally highly educated as their husbands were significantly less likely to have experienced spousal violence compared with those who were equally low-educated.

Nonetheless, after controlling for all other factors, this statistically significant association was nonexistent. Compared with other studies, this result was contradictory. For instance, a study in Bangladesh found that wives with higher education than their husbands were less likely to experience less severe and severe domestic violence whilst equally high-educated couples had the lowest likelihood of experiencing less severe and severe domestic violence compared with equally low-educated spouses (Rapp *et al.*, 2012, Odimegwu *et al.*, 2015). Such a finding had its own reasons but suffice to say it maybe a result of variations in the measurement of SED and time difference between the two studies. Similarly, findings in this study are also quite different from others which were also based particularly on the 2013-14 ZDHS, where it was found that women who were equally high educated as their husband were less likely to have experienced spousal violence than those equally low educated (Masaiti *et al.*, 2022). These differences however were more around inclusion and/or exclusion criteria for variables in the two multivariate models.

Unlike other studies, our multivariate logistic regression model results show no significant association between age of a woman and the odds of experiencing spousal violence (Gubi *et al.*, 2020). There have been contradictory results between the age of a woman and experiences of spousal violence. In some studies, results show that younger women were less likely to have experienced spousal violence where as others have found that being an older woman (age 20-44 years) determined experiences of spousal violence among married women. It is not so clear why this so, however, one such reason could be that older women ideally report cumulative lifetime experiences of spousal violence compared with younger women (Tiruye *et al.*, 2020). Furthermore, older women are likely to be more dependent on the spouse for their material and financial needs, thereby increasing susceptibility to experiencing IPV and continuous stay in marriage where violence is perpetrated (Bolarinwa *et al.*, 2022; Pathak *et al.*, 2019).

In the 2018 ZDHS, women classified as middle and/or rich by wealth status were less likely to experience spousal violence than those who were poor. This corroborates with findings from a study in Nigeria, where women in the richest wealth index were less likely to experience IPV compared with those in poorest category (Bolarinwa *et al.*, 2021). However, the results from this paper did also contradict other results with similar settings in Africa; for example, a study in Zimbabwe found no significant relationship between wealth status and of spousal violence (Lasong *et al.*, 2020). These studies demonstrate the unclear link between wealth level and spousal violence in the literature. Women from middle and rich households are more likely to have a higher level of education, which increases the awareness of their rights, improves their communication abilities, and allows them to confront gender stereotypes that support violence, making them less likely to experience it (Bolarinwa *et al.*, 2021).

In all the three ZDHS cycles, it was found that women in rural areas were less likely to experience spousal violence compared with those in urban areas. This result was at variance with what our neighbouring country's study found. In Zimbabwe, a study by Lasong *et al.*, 2020 found no significant relationship between place of residence and experiences of spousal domestic violence. It again is not clear why this picture is as such; however, it is possible to suggest that that women in rural areas could more culturally inclined and therefore more likely to avoid violence by being eagerly submissive; it may also be explained that women in rural areas may as well have no avenue to report spousal violence, especially where such violence is also culturally or traditionally accepted (Benebo *et al.*, 2018).

In terms of work experiences, results in this study show that for the period 2007 and 2013-14, women who currently were working were more likely to experience spousal violence than those who were not working. These results are consistent with those of (Ahinkorah *et al.*, 2018, Bolarinwa *et al.*, 2021). It is assumed that working women are likely more financially independent and therefore more expressive of their human and other rights thereby engendering them to increased risks of abuse from partners who may be intimidated by such freedoms.

In terms of children ever born as factors of violence against women, this study found that for all ZDHS cycles under review, women with one or more children ever born were more likely to have experienced spousal violence than those who had zero children ever born. These findings are similar to a study from Uganda (Gubi *et al.*, 2020), but at variance with that in Nigeria where women with parity of four and above were more likely to experience IPV (Bolarinwa *et al.*, 2021). Contrary to popular belief, women without children do not have a high risk of experiencing domestic violence in Zambia, where marriage is almost universal and childbirth as expected

quickly after. There may be a number of factors that increase a woman's risk of experiencing domestic violence if she has had one or more children in the past. A couple may have additional financial and emotional strain as a result of having several children. If a woman is largely in charge of child care, she can be more financially reliant on the partner, which could result in a power imbalance that raises the risk of domestic violence (Bolarinwa *et al.*, 2021). Financial problems have been connected to greater incidence of spousal violence because they can exacerbate relationship tension and disagreements, which increases the chance of violence (Benson & Fox., 2004).

Witnessing violence as factor of violence against women was also reviewed in this study. Results show that in all the ZDHS cycles, women whose father ever beat their mother and those who did not know whether their father ever beat their mother were more likely to have experienced spousal violence than those who did not. These findings are similar to a study in Liberia, where women who had witnessed their father beat their mother were 1.52 times more likely to experience IPV, compared with those who had not witnessed or did not know whether their fathers bat their mothers (Shaikh., 2022). Studies have shown that female victims of domestic violence come from homes where violence between their parents was apparent and therefore such women may likely also tolerate violence by their husbands for the sake of keeping the family together (WHO, 2005; UNICEF, 2006; McKee & Payne., 2014, WHO/LSHTM 2010). Such behaviour is also assumed to have been learned thereby making women more accepting towards violence against them since witnessing it at young ages developed into normalcy (Gubi *et al.*, 2020). Furthermore, these women may regard violence by a husband as acceptable behaviour because such husbands (perpetrator) alternate between violent, abusive, and apologetic behaviour to change, frequently sorry after such incidents and are generally quite pleasant (Rakovec-Felser *et al.*, 2014).

This paper also delved into beliefs or customs exhibited by acceptance for any reason for which wife beating is justified. Results show that women who accepted the notion that wife beating was justified for whatever reason were also more likely to experience spousal violence than those who did not. Women who accepted that wife beating is justified were 1.4 times in 2007, 1.8 times in 2013-14 and 2.1 times in 2018 respectively more likely to experience spousal violence than those who did not agree to any circumstance under which wife beating was or is justified. Our findings corroborate with a study in Liberia, where women who believed that IPV was justified were 1.8 times likely to experience IPV, compared to those who did not (Shaikh, 2022).

Part of problem around women spousal abuse lies in exacerbated cultural teachings, norms, and beliefs where women in general have been accustomed to tolerate and endure all forms of violence, including the idea that "a man has a right to physically discipline a woman for what is referred to as "incorrect behaviour" and that "there are occasions when a woman deserves to be beaten" (WHO/ LSHTM 2010, Ajayi *et al.*, 2022). Occasions when women think that their behaviour, such as when they argue with a man or leaves without notifying him or neglects the children or indeed declines to have sex with him, justifies violent action from a male partner or husband need to be revisited if this practice is to be eliminated (WHO/LSHTM 2010). Moreover, traditional and religious teachings dictate that a decent wife should submit to her husband in all situations and as a result, women tolerate abuse to preserve their economic standing, marriage and family unit. From the forgoing, community sensitisation is key to address acceptance that wife beating is justified. Society needs to be more open to talk about violence in all its forms.

Limitations and strengths of the study

The use of quantitative data from the ZDHS limits any conclusion on causation but association between the dependent and predictor variables. Spousal violence (measured through physical, sexual and emotional violence) is a sensitive topic and as such, even though measures are taken to ensure that interviews are conducted after informed consent and in private, it is possible that underreporting may exist especially that some of the perpetrators are current husbands. Furthermore, qualitative data providing reasons as to why some women agree that wife beating is justified under some circumstances are unavailable as the DHS provides only quantitative data. Strengths of the study include: being based on nationally representative samples, data collected using tools which have been tested both at national and international levels and data produced are of high quality due to well-trained interviewers and data collection well supervised.

Conclusion

Multivariate level modelling in this study suggested non-significant association between odds of experiencing spousal violence and SED. Factors that predict marital violence against women in Zambia include if a woman is/was working, living in urban area, witnessing father beat mother, and acceptance of wife beating for any reason. On the other hand, factors protective of the experience of spousal violence among women included residing in rural areas, belonging to middle and rich households and women's age at first marriage of 20+ years. The article has shown that increased education level attainment by both men and women is insufficient to reduce spousal violence against women. In order to appreciate details of how and why spousal violence happens, qualitative research could be undertaken. In order to reduce and eradicate spousal violence against women, there is urgent need to address beliefs and norms such as acceptance that wife beating is justified under certain circumstances and parental physical violence, which contribute to perpetuate spousal violence. These beliefs and norms also undermine extensively the significant role education attainment has in reducing the risk of spousal violence.

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