

Multi-Level Analysis of Risk Factors for Intimate Partner Violence Against Males

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To cite this article:

Douglas Andabati Candia, Patrick Guge Oloo Weke, Moses Mwangi Manene. Multi-Level Analysis of Risk Factors for Intimate Partner Violence Against Males. *American Journal of Theoretical and Applied Statistics*. Vol. 12, No. 4, 2023, pp. 72-81.

doi: 10.11648/j.ajtas.20231204.12

Received: June 10, 2023; **Accepted:** June 30, 2023; **Published:** July 11, 2023

Abstract: Globally, there is a rise in reporting of intimate partner violence against men though limited attention has been directed toward addressing the practice problem. Therefore, this study aimed to identify the risk factors associated with intimate partner violence against males. This study used data from Demographic and Health Surveys. We compared the two-level mixed-effects and one-level regression models with logit, probit, and clog log link functions. The two-level mixed-effects regression model fitted the data best. From the study sample, 44.2 percent of males had experienced IPV. The factors that increased the likelihood of experiencing IPV included belonging to the Catholic or Pentecostal religious denominations; being divorced or separated; fathering children with multiple partners and one's partner exhibiting jealousy and other controlling behaviors. Males can also experience IPV with differences across regions of Uganda, hence a need for policies and interventions tailored specifically to the country's different regions. Additionally, there is a need to engage religious institutions and other stakeholders in sensitizing people on issues relating to IPV and multiple-partner fertility. The results showed that the multilevel models reported the lowest AIC values and fitted the data better than the ordinary regression models. Users of DHS datasets need to consider using multilevel models since the data is hierarchical in nature with respondents nested with geographical locations such as residence (rural/urban), districts, regions, etc., and the samples are obtained using multistage sampling which involves clustering of respondents.

Keywords: Intimate Partner Violence, Male, Uganda, Mixed-Effects, Probit, Multilevel

1. Introduction

Violence against men in intimate relationships is existent but has often been overlooked. This can be attributed first and foremost to the fact that research about intimate partner violence (IPV) has mainly focused on men as perpetrators and women as victims [1, 2]. Secondly, the tendency of men subjected to IPV to remain silent and live in denial for fear of being humiliated as well as the lack of support services specifically tailored to men increases the likelihood of this growing trend going unnoticed. Thirdly, women have been perceived to be violent towards men only in the context of defending themselves or their children from a violent partner [3]. Fourthly, there is a prevailing notion that women's

violence against men has much lesser effects compared to men's violence towards women [3]. Consequently, many male victims of IPV have not had their health and social needs addressed [4].

IPV refers to any behavior within an intimate relationship that causes physical, sexual, or psychological harm [5]. The proportion of women who experienced spousal violence in Uganda declined from 43 percent in 2011 to 39 percent in 2016 [6]. This could be attributed to the numerous funding initiatives and interventions channeled toward ending violence against women. However, the proportion of men who experienced spousal violence in Uganda increased from 33 percent in 2011 to 39 percent in 2016 [6]. This shows that women too can be perpetrators of IPV [7-9]. If not addressed, violence against men can lead to depression, stress, and

resorting to alcoholism and drug abuse as a coping strategy [3, 10], and in some cases, to death. In Uganda, 21 percent of the men sustained an injury due to physical or sexual violence from their partner [6].

Little or no attention has been given to addressing IPV against men [11] since all the national and global concern is predominantly directed toward addressing violence against women. Unless violence against men is handled with the same level of concern and seriousness as violence against women, gender equality can never be attained in the context of domestic violence, especially in intimate relationships. Still, there are hardly any empirical studies on the risk factors for IPV against men, especially in Sub-Saharan Africa with the majority of studies focusing on women. Therefore this study seeks to address the information gap about IPV against men in Sub-Saharan Africa using Demographic and Health Survey (DHS) data.

The study will factor in the secondary data's hierarchical nature, given that the samples are selected using multi-stage sampling with stratification done across geographical locations. This will be done by the use of multilevel models. These incorporate cluster-level random effects in models to cater to the hierarchical nature of the data [12-14]. This will help expose the plight of men subjected to IPV by their partners by identifying the factors that increase or reduce its likelihood and whether there are significant variations across geographical locations.

2. Methods

2.1. Data

The data used in the study was from the 2016 Uganda Demographic and Health Survey (UDHS). The sample was stratified and selected in two stages. Firstly, 697 enumeration areas were selected from the 2014 Uganda National Population and Housing Census (NPHC) frame [6]. Enumeration areas (EAs) were then chosen independently using probability proportional to size. Secondly, households were selected from the EAs. The survey had a domestic violence (DV) module administered in all sampled households. The module wasn't administered if the privacy of the respondent wasn't assured. In one-third of the households, one

male aged 15-54 years was randomly selected to receive the DV module as part of his interview [6]. Out of the 5,336 males selected for the UDHS survey, 4,011 were selected and interviewed for the DV module with the rest not being interviewed due to a lack of privacy or other reasons. This study focused specifically on violence committed by a male's current spouse/partner (for currently married men) and by the most recent spouse/partner (for formerly married men). Information regarding this was captured by asking all ever-married men if their spouse/partners ever subjected them to violent acts grouped under physical, sexual, and emotional spousal violence. However, 2,478 men had missing information regarding their experience of any of the forms of violence reducing the sample for this study to only 2,858 men.

Furthermore, DHS data sets for Kenya (2014), and Burundi (2016/17) were also used to test whether multilevel models provided a better fit compared to ordinary regression models for data that is hierarchical. The data for Kenya and Burundi were clustered by regions used for stratification when collecting their DHS data. These had 8 and 18 regions respectively. A Monte Carlo study [15] reported that multilevel models can be fitted for settings with as few as 5 clusters as long as the number of subjects per cluster was approximately higher than 30.

2.2. Statistical Analysis

The data were analyzed using STATA Version 14.2 [16] at three stages. Firstly, a descriptive summary of all the plausible individual and contextual variables was done. Secondly, using Pearson's chi-square test, the association was tested between the plausible independent variables and a male's experience of IPV. The variables that were found to have a significant association ($p \leq 0.05$) were considered for further analysis. Finally, given that the outcome variable had two possible outcomes i.e., a male experienced IPV or not, three possible link functions could be used to model the data. These included the logit, probit, and complementary log-log (clog log) link functions. The logit and probit link functions are symmetric i.e., they approach 0 at the same rate they approach 1 while the cloglog link function is asymmetrical i.e., it approaches 1 at a faster rate than it approaches 0 [17]. A summary of the proposed link functions is provided in Table 1 below.

Table 1. Description of the selected link functions.

Link	Link function	Distribution	Mean, Variance	Multilevel equation
Logit	$\ln(\pi_i/1 - \pi_i)$	Logistic	$0, \pi/3$	$\ln(\pi_i/1 - \pi_i) = \beta_0 + \beta_1 X_{ij} + u_j$
Probit	$\Phi^{-1}(\pi_i)$	Normal	$0, 1$	$\Phi^{-1}(\pi_i) = \beta_0 + \beta_1 X_{ij} + u_j$
Cloglog	$-\ln\{-\ln(1 - \pi_i)\}$	Extreme value	$0, \pi^2/6$	$-\ln\{-\ln(1 - \pi_i)\} = \beta_0 + \beta_1 X_{ij} + u_j$

Where γ is the Euler constant, Φ^{-1} is the inverse standard normal cumulative density function, CDF is the cumulative density function [18], u_j the random effects at level two, β_0 the intercept, β_1 the partial slope coefficient, X_{ij} independent variables for the i^{th} individual (level 1) from the j^{th} group (level 2).

Multilevel models were used given that the data collected was hierarchical with individuals nested within regions. Therefore, males within the same region were assumed to have more similar attributes compared to males in other regions. Since ordinary regression models would not be able to account for the hierarchical nature of the data coupled with

the possibility of underestimating standard errors corresponding to the regression coefficients, multilevel models were considered for analysis [19]. The plausible models included the multilevel mixed-effects logistic (melogit) regression model, multilevel mixed-effects probit (meprobit) regression model, and multilevel mixed-effects

complementary log-log (mecloglog) regression model. In total, four models were fitted at the multivariate analysis level corresponding to each link function. This included model 1 (null/empty model with no predictors), model 2 (adjusted for individual-level variables only), model 3 (adjusted for contextual-level variables only), model 4 (adjusted for both individual and contextual-level variables simultaneously), and the single-level (ordinary multiple regression ignoring the nesting or clustering in the data).

The Likelihood ratio (LR) test was used to test whether the regional level variance was significant or whether there was enough variability across regions to favor the use of multilevel models over ordinary regression models for all possible link functions. A caterpillar plot was also used to graphically display the estimates of the regional effects or residuals obtained from the null or empty model. Also, the variance partition coefficient (VPC) was presented to provide a summary of the degree of clustering or dependence in the data. The Akaike Information Criteria (AIC) was used to identify which of the plausible models best fit the data. The model with the lowest AIC value was considered the best-fitting model. In addition to the multilevel models, the AIC for their corresponding ordinary regression models (single level) was also obtained to identify which best fit the data.

3. Results

Table 2 provides information on the characteristics of the males as well as their partners. Males who reported to have experienced IPV were 44.2%. The highest proportion of males was aged 30-34 years (22.2%), Catholic (41.4%) and in the poorest wealth index category (22.9%). Majority of the males resided in rural areas (80.4%), were married (61.4%), had attained at most primary level education (58.9%), had biological children with only one partner (59.1%) and were employed all year (64.4%). Majority of the males reported not having ever hurt their partner when they weren't hurting them (77.8%). As regards partner control issues, the majority of the males reported that their partners were jealous when they talked to other women (64.3%) and insisted on knowing where they were (52.4%).

Table 2. Characteristics of respondents.

Variables	Frequency	Percentage
Experienced IPV		
No	1,594	55.8
Yes	1,264	44.2
Age		
Below 25	357	12.5
25-29	527	18.4
30-34	635	22.2
35-39	421	14.7
40-44	399	14.0
45+	519	18.2
Education level		
No education	160	5.6
Primary	1,683	58.9
Secondary	657	23.0
Higher	358	12.5

Variables	Frequency	Percentage
Religion		
Anglican	998	34.9
Catholic	1,183	41.4
Muslim	337	11.8
Pentecostal	258	9.0
Others	82	2.9
Marital status		
Married	1,756	61.4
Cohabiting	869	30.4
Widowed	21	0.7
Divorced/Separated	212	7.4
Partner Fertility Status		
Single partner fertility	1,689	59.1
Multiple partner fertility	1,169	40.9
Wealth index		
Poorest	655	22.9
Poorer	597	20.9
Middle	566	19.8
Richer	553	19.4
Richest	487	17.0
Employment status		
All year	1,841	64.4
Seasonal	822	28.8
Occasional	166	5.8
None	29	1.0
Ever hurt partner when not hurting him		
No	2,222	77.8
Yes	636	22.3
Partner drinks alcohol		
No	2,292	80.2
Yes	566	19.8
Partner jealous when he talks to other women		
No	1,021	35.7
Yes	1,837	64.3
Partner accuses him of unfaithfulness		
No	1,681	58.8
Yes	1,177	41.2
Partner doesn't permit him to meet male friends		
No	2,418	84.6
Yes	440	15.4
Partner tries to limit his contact with family		
No	2,572	90.0
Yes	286	10.0
Partner insists on knowing where he is		
No	1,360	47.6
Yes	1,498	52.4
Residence		
Urban	561	19.6
Rural	2,297	80.4
Region		
Kampala	128	4.48
Central 1	245	8.57
Central 2	248	8.68
Busoga	245	8.57
Bukedi	188	6.58
Bugisu	186	6.51
Teso	196	6.86
Karamoja	91	3.18
Lango	210	7.35
Acholi	199	6.96
West Nile	183	6.40
Bunyoro	203	7.10
Tooro	203	7.10
Ankole	210	7.35
Kigezi	123	4.30

Table 3 provides a summary of the results of associations between experience of IPV and the plausible independent variables. Apart from age, education level, wealth index and employment status, the rest of the variables had a significant association with a male's experience of IPV. Concerning religion, Catholic males had the highest proportion to have experienced IPV (48.5%). As for marital status, divorced/separated males (66%) had the highest proportion to have experienced IPV followed by those cohabiting (45.8%). For, partner fertility status, males who fathered children with

multiple women (48.2%) had the highest proportion to have experienced IPV. This was true also for males who had ever hurt their partner when she wasn't hurting them (71.5%) and those whose partner drank alcohol (62%). Concerning control issues, the highest proportion of males experiencing IPV was those whose partners were jealous when they talk to other women (53.6%), accused them of unfaithfulness (63.6%), didn't permit them meet male friends (67.3%), tried to limit their contact with family (73.4%) and insisted on knowing where they were (56.3%).

Table 3. Association between IPV experience and the plausible independent variables.

Characteristics	Experienced IPV		n	p-value
	No	Yes		
Age				
Below 25	56.3	43.7	357	0.778
25-29	56.7	43.3	527	
30-34	56.4	43.6	635	
35-39	53.9	46.1	421	
40-44	53.1	46.9	399	
45+	57.2	42.8	519	
Education level				
No education	56.9	43.1	160	0.302
Primary	54.3	45.7	1683	
Secondary	58.1	41.9	657	
Higher	57.8	42.2	358	
Religion				
Anglican	58.4	41.6	998	0.004
Catholic	51.5	48.5	1183	
Muslim	59.9	40.1	337	
Pentecostal	58.1	41.9	258	
Others	61.0	39.0	82	
Marital status				
Married	58.9	41.1	1756	0.000
Cohabiting	54.2	45.8	869	
Widowed	76.2	23.8	21	
Divorced/Separated	34.0	66.0	212	
Partner Fertility Status				
Single partner fertility	58.5	41.5	1689	0.000
Multiple partner fertility	51.8	48.2	1169	
Wealth index				
Poorest	58.2	41.8	655	0.237
Poorer	52.9	47.1	597	
Middle	54.4	45.6	566	
Richer	55.0	45.0	553	
Richest	58.5	41.5	487	
Employment status				
All year	56.5	43.5	1841	0.582
Seasonal	55.1	44.9	822	
Occasional	52.4	47.6	166	
None	48.3	51.7	29	
Ever hurt partner when not hurting him				
No	63.6	36.4	2222	0.000
Yes	28.5	71.5	636	
Partner drinks alcohol				
No	60.2	39.8	2292	0.000
Yes	38.0	62.0	566	
Partner jealous when he talks to other women				
No	72.7	27.3	1021	0.000
Yes	46.4	53.6	1837	
Partner accuses him of unfaithfulness				
No	69.4	30.6	1681	0.000
Yes	36.4	63.6	1177	
Partner doesn't permit him to meet male friends				
No	60.0	40.0	2418	0.000
Yes	32.7	67.3	440	
Partner tries to limit his contact with family				

Characteristics	Experienced IPV			n	p-value
	No	Yes			
Age					
No	59.0	41.0		2572	0.000
Yes	26.6	73.4		286	
Partner insists on knowing where he is					
No	69.1	30.9		1360	0.000
Yes	43.7	56.3		1498	

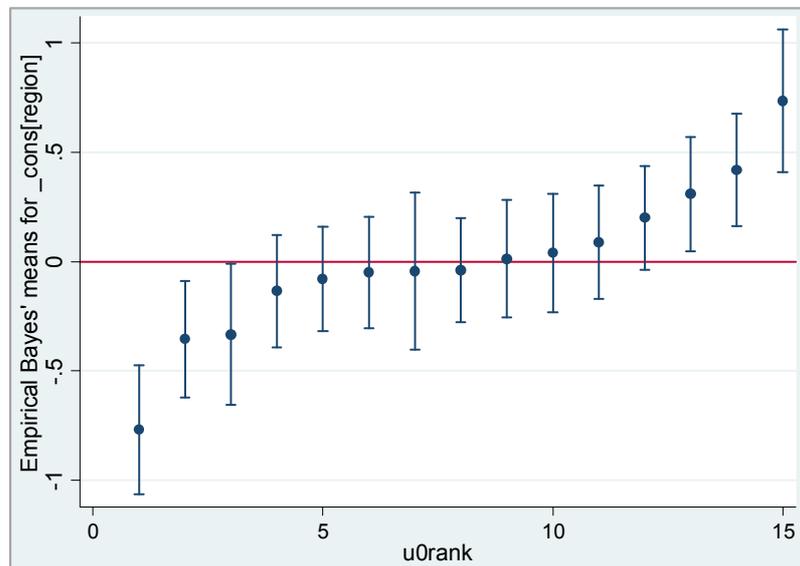


Figure 1. Caterpillar plot for estimates of region effects obtained from the null model.

The caterpillar plot (Figure 1) shows the estimated residuals for all 15 regions in the sample. For the first three regions, the 95% confidence interval is below the horizontal line at zero indicating that experience of IPV in these regions is significantly below average. For the last three regions, the 95% confidence interval is above the horizontal line at zero indicating that experience of IPV in these regions is significantly above average.

Table 4 provides a summary of the results of the VPC, AIC and LR tests. The multilevel probit regression model without residence as a contextual variable (model 2) had the lowest

AIC (3211.34) compared to the rest and hence fitted the data best. For the best fitting model (meprobit), the VPC was 0.04 which meant that 4 percent of the variation in males' experience of intimate partner violence lay between regions. All the likelihood ratio tests for the null hypotheses $\sigma_{u0}^2 = 0$ had p-values less than 0.05 and so there was evidence that variance between regions was not equal to zero. So, males from the same region were significantly more alike than males from different regions. Therefore, a multilevel approach to analyzing the data was favored by the likelihood ratio test compared to the single-level approach.

Table 4. Comparison of plausible mixed-effects models.

Model	Var	VPC	AIC	LR Test
Logit				
Single-level	-	-	3243.08	-
Model 1	0.13	0.039	3877.12	chibar2(01) = 50.72, p = 0.00
Model 2	0.12	0.035	3212.97	chibar2(01) = 32.11, p = 0.00
Model 3	0.14	0.041	3878.45	chibar2(01) = 51.35, p = 0.00
Model 4	0.12	0.036	3214.52	chibar2(01) = 32.53, p = 0.00
probit				
Single-level	-	-	3241.75	-
Model 1	0.05	0.049	3877.08	chibar2(01) = 50.76, p = 0.00
Model 2	0.04	0.040	3211.34	chibar2(01) = 32.41, p = 0.00
Model 3	0.05	0.051	3878.42	chibar2(01) = 51.38, p = 0.00
Model 4	0.04	0.041	3212.99	chibar2(01) = 32.70, p = 0.00
cloglog				
Single-level	-	-	3241.75	-
Model 1	0.08	0.044	3877.21	chibar2(01) = 50.63, p = 0.00
Model 2	0.06	0.037	3227.35	chibar2(01) = 35.62, p = 0.00
Model 3	0.08	0.073	3878.58	chibar2(01) = 51.22, p = 0.00
Model 4	0.07	0.038	3228.86	chibar2(01) = 36.12, p = 0.00

VPC - Variance Partition Coefficient, LR - Likelihood Ratio Test, Var - Variance

Table 5 reports the fixed effects corresponding to the meprobit regression model. The reported likelihood-ratio test ($\chi^2(01) = 32.41, p = 0.00$) showed that there is enough variability between males across regions to favor a mixed-effects probit regression model over an ordinary probit regression model.

From Table 5, the predicted probability of experiencing IPV increased significantly by 0.14 among Catholic males compared to their Anglican counterparts. Also, the predicted probability of experiencing IPV increased significantly by 0.20 among Pentecostal males compared to their Anglican counterparts. Pertaining to marital status, the predicted probability of experiencing IPV increased significantly by 0.45 among divorced/separated males compared to their married counterparts. As regards partner fertility status, the predicted probability of experiencing IPV increased significantly by 0.13 among males who fathered children with multiple women compared to their counterparts who fathered children with a single partner. For males whose partners/spouses drank alcohol, the predicted probability of experiencing IPV increased significantly by 0.31 compared to those whose partners never drank alcohol. For males whose partners were jealous when

they talked to other women, the predicted probability of experiencing IPV increased significantly by 0.26 compared to those whose partners weren't jealous when they talked to other women. Similarly, for males accused of unfaithfulness by their partners, the predicted probability of experiencing IPV increased significantly by 0.48 compared to those not accused by their partners. Likewise, males who weren't permitted to meet male friends by their partners had a 0.26 significant increase in their predicted probability of experiencing IPV compared to their male counterparts whose partners permitted to meet male friends. Also, males whose partners limited their contact with family had a 0.43 significant increase in the predicted probability of experiencing IPV compared to those whose partners didn't limit them. Similarly, for males whose partners insisted on knowing where they were, the predicted probability of experiencing IPV significantly increased by 0.36 compared to those whose partners never insisted to know where they were. For males who had ever hurt their partners when they weren't hurting them, the predicted probability of experiencing IPV significantly increased by 0.77 compared to males who never hurt their partners when they weren't hurting them.

Table 5. Mixed-effects probit regression of risk factors for IPV among males.

Variables	Coeff.	z	P>z	[95% CI]	
Religion					
Anglican (ref.)					
Catholic	0.14	2.31	0.02	0.02	0.26
Muslim	0.07	0.81	0.42	-0.10	0.25
Pentecostal	0.20	2.01	0.05	0.00	0.39
Others	0.01	0.08	0.94	-0.30	0.33
Marital status					
Married (ref.)					
Cohabiting	0.05	0.81	0.42	-0.07	0.17
Widowed	-0.46	-1.43	0.15	-1.09	0.17
Divorced/separated	0.45	4.28	0.00	0.24	0.66
Partner fertility status					
Single partner fertility (ref.)					
Multiple partner fertility	0.13	2.36	0.02	0.02	0.23
Partner drinks alcohol					
No (ref.)					
Yes	0.31	4.52	0.00	0.18	0.44
Partner jealous when he talk to other women					
No (ref.)					
Yes	0.26	4.14	0.00	0.14	0.38
Partner accuses him of unfaithfulness					
No (ref.)					
Yes	0.48	7.90	0.00	0.36	0.60
Partner doesn't permit him to meet male friends					
No (ref.)					
Yes	0.26	3.27	0.00	0.10	0.42
Partner tries to limit his contact with family					
No (ref.)					
Yes	0.43	4.39	0.00	0.24	0.62
Partner insists on knowing where he is					
No (ref.)					
Yes	0.36	6.51	0.00	0.25	0.47
Ever hurt partner when not hurting him					
No (ref.)					
Yes	0.77	11.87	0.00	0.65	0.90
Constant	-1.21	-13.75	0.00	-1.38	-1.03

(ref.) – reference category, Coeff. – Coefficient, CI – Confidence Interval

Table 6 presents a summary of the AIC results for both multilevel regression models and ordinary regression models (single level) for the logit, probit, and cloglog link functions. For the Kenya DHS data, the melogit regression model fitted the data best since it had the lowest AIC. For the Burundi DHS data, the meprobit regression model fitted the data best since it had the lowest AIC.

Table 6. Summary of AIC and BIC from included DHS datasets.

Characteristics	Kenya	Burundi
melogit	2761.73	1620.74
meprobit	2762.13	1619.34
mecloglog	2776.23	1643.03
logit	2781.33	1645.41
probit	2780.16	1644.61
cloglog	2796.36	1666.08

4. Discussion

The study focused on identifying risk factors for intimate partner violence against males in Uganda. The significance of religion is consistent with findings by (Al-Tawil, 2012; Takyi & Lampitey, 2020; Feseha & Gerbaba, 2012; Ellison & Anderson, 2001) [20-23]. Some studies have reported religion as a protective factor and others as a risk factor for experiencing IPV by directly or indirectly influencing or interacting with other factors that affect one's likelihood of experiencing IPV [24]. This could be attributed to religion having an influence on people's behaviors e.g. alcohol consumption [25] which is condoned by some Christian groups such as Catholics who have been reported to be tolerant towards a range of drinking habits [26-28]. This may increase the likelihood of drunkenness and reckless behavior such as IPV since one's reasoning and judgment may be impaired by alcohol. A study in Ethiopia reported a higher likelihood of physical IPV among Catholics and Muslims compared to the Orthodox [22] and another reported that some perpetrators consider their actions acceptable biblically or based on their religious beliefs [29, 30]. The increased likelihood of IPV among the divorced/separated compared to married is not consistent with findings by (Kinyanda, 2016) [31] among males, but is consistent with findings from a study conducted among women respondents by (Rezey, 2020) [32]. The study findings could be attributed to anger and other negative sentiments towards a former partner especially just after a recent separation/divorce which may mostly manifest in the form of emotional violence and less severe physical violence. This is consistent with the 2016 UDHS which reported that 54.4 percent of divorced/separated/widowed men experienced emotional violence with 61 percent experiencing either physical or emotional or sexual spousal violence compared to 34.2 percent and 42.3 percent among the married males respectively [6]. Also, a study found that IPV by ex-partners can continue through the use of their children to control and hurt them [33-35] and post-separation assault and stalking [36]. The increased likelihood of IPV among men who fathered children with multiple women can be attributed

to the increased tension within relationships [37]. This can be due to divided parental affection, engagement, and resources by the men towards children and partners from their present relationships and those from previous relationships [37, 38]. The significance of alcohol consumption by a male partner is consistent with findings by several studies [39-44]. This can be attributed to the fact that alcohol negatively affects one's cognitive and physical performance resulting in a reduction in one's ability to control their actions and emotions in turn resulting in violent acts [45]. Increased likelihood of IPV when one's partner is jealous has been reported by studies focusing on women (Wandera et al., 2015 & Semahegn et al., 2019) [46, 47] just as was the case for this study among males. This wasn't any different from other controlling behaviors exhibited by a male victim's partner [48-50] including accusing him of unfaithfulness, not permitting him to meet friends, limiting his contact with family, and insisting on knowing where he is. This could be attributed to distrust in one's partner based on their conduct in the relationship or even the conduct of previous partners. This may result in anxious attachment or feelings of insecurity which in turn stimulate jealousy plus other controlling behaviors and eventually IPV [51, 52]. The increased likelihood of experiencing IPV by males who have ever hurt their partner when not being hurt could be due to women defending themselves or retaliating in response to the violence they have been subjected to [41, 53].

5. Conclusion

This study aimed to identify risk factors for IPV against males in Uganda. There were significant regional variations in males' exposure to IPV to justify using mixed effects regression models as opposed to ordinary regression models. At the individual level, being of the Catholic or Pentecostal religious denominations, being divorced or separated, fathering children with multiple partners and one's partner being jealous increased a male's likelihood of experiencing IPV. Furthermore, if one's partner exhibited any of the controlling behaviors considered in this study, they had an increased possibility of experiencing IPV. Therefore, in order to address IPV among men, policies, and interventions should be tailored specifically to the different geographical regions of the country. Furthermore, there is a need to engage religious institutions and other stakeholders so as to help sensitize people about the dangers of IPV and multiple-partner fertility. This study's findings contribute to a relatively small but growing body of research regarding IPV where males are considered victims as opposed to the majority of IPV research where they have been regarded only as perpetrators and females as the victims. There is still a need for further research on risk factors for IPV in males in other countries within Sub-Saharan Africa with emphasis not only on some of the potential risk factors identified in this study but also explore others e.g. mental health of both victims and perpetrators of IPV.

The AIC was used to find out whether the use of multilevel models in multivariate analysis of datasets with nesting or that

are hierarchical in nature gives better-fitting models compared to ordinary regression models. The results showed that the multilevel models reported the lowest AIC values and fitted the data better than the ordinary regression models. Users of DHS datasets therefore need to consider using multilevel models since the data is hierarchical in nature with respondents nested with geographical locations such as residence (rural/urban), districts, regions, etc., and the samples are obtained using multistage sampling which involves clustering of respondents.

Acknowledgements

The authors acknowledge the support of Valerie Golaz, Stephanie Condon, Arnaud Bringe, and Ined - Institut national d'études démographiques for the support rendered in carrying out the research.

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