

# Socio-demographic predictors of gender inequality among heterosexual couples expecting a child in south-central Uganda

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## Abstract:

**Background:** Gender inequality is a pervasive problem in sub-Saharan Africa, and has negative effects on health and development.

**Objective:** Here, we sought to identify socioeconomic predictors of gender inequality (measured by low decision-making power and high acceptance of intimate partner violence) within heterosexual couples expecting a child in south-central Uganda.

**Method:** We used data from a two-arm cluster randomized controlled HIV self-testing intervention trial conducted in three antenatal clinics in south-central Uganda among 1,618 enrolled women and 1,198 male partners. Analysis included Cochran Mantel-Haenzel, proportional odds models, logistic regression, and generalized linear mixed model framework to account for site-level clustering.

**Results:** Overall, we found that 31.1% of men had high acceptance of IPV, and 15.9% of women had low decision-making power. We found religion, education, HIV status, age, and marital status to significantly predict gender equality. Specifically, we observed lower gender equality among Catholics, those with lower education, those who were married, HIV positive women, and older women.

**Conclusion:** By better understanding the prevalence and predictors of gender inequality, this knowledge will allow us to better target interventions (increasing education, reducing HIV prevalence in women, targeting interventions different religions and married couples) to decrease inequalities and improve health care delivery to underserved populations in Uganda.

**Keywords:** Gender inequality, Pregnancy, HIV/AIDS, Prenatal Care, Uganda.

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## Introduction

Gender equality refers to the equal rights, responsibilities and opportunities of women and men, and equality between women and men is both a human rights issue and is necessary for sustainable development<sup>1</sup>.

However, in most sub-Saharan African societies, men have substantial power over women, and many national achievements in reproductive health, empowerment, and labor market participation have been diminished by gender inequality<sup>2,3</sup>.

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There have been many studies in sub-Saharan Africa assessing sociodemographic factors and gender inequality, which have shown that low educational, occupational, and economic opportunities, and food insecurity have been associated with gender inequality, although with differing measures of gender inequality<sup>4-13</sup>.

Pregnant women are especially important to study, as they are considered a vulnerable population, and gender inequality affects the ability of pregnant women to attain reproductive health services, and maternal and child health outcomes. There has been previous work showing the associations between women's decision-making power and autonomy, and how high decision-making autonomy and lack of intimate partner violence is associated with beneficial maternal and child health outcomes<sup>14-18</sup>. However, there has been a relative lack of studies assessing sociodemographic variables associated with gender inequality within the context of a pregnancy. We recently performed an analysis of social and economic variables and gender inequality among heterosexual couples expecting a child in central Kenya, which had some promising results and areas to target for improvement of these gender inequality measures<sup>19</sup>. Therefore, we attempted to identify potential associations between social and economic variables and gender inequality (which in this case were measured as high acceptance of intimate partner violence and low women's decision-making power), within the context of heterosexual couples expecting a child in south-central Uganda.

## Methods

### Design and Study Population

These data stem from a two-arm cluster randomized HIV self-testing intervention trial conducted in three clinics in south-central Uganda, with study information collected at baseline, and both a one-month and three-month follow-up visit. Briefly, women were eligible to participate in the study if they were currently pregnant, at least 14 years old (pregnant women between 14 and 18 years old are considered emancipated minors in Uganda), and attending an antenatal clinic (ANC) for this pregnancy. Furthermore, the women were eligible if they had reported contact (either sexual or otherwise) with their male partner at least once per week, if their male partner was either HIV negative or their status unknown at the time of the woman's recruitment, and that their male partner was at least 18 years of age and had not tested for HIV in the past six months. After the women provided informed consent, they were randomized by clinic day into one of two arms: Arm 1, the standard of care for antenatal clinics in Uganda, and Arm 2: standard of care plus the provision of OraQuick HIV self-testing (HST) kits with instructions for testing at home. The women also then completed a baseline questionnaire. Both one month and three months after enrollment, the women were interviewed

to ascertain whether or not their male partner tested for HIV, and the method of testing. The male partners were also contacted at one month and three months, and those consenting for an interview were administered a questionnaire on socio-demographics and HIV testing history.

### Measurements

Socio-demographic variables included age of both the man and woman (categorized from a continuous variable based on distributional balance), woman's education level, religion, woman's employment status, marital status, and woman's report on the male partner's additional sexual partners. Further variables included partner's education level, food insecurity, partner's employment status, woman's HIV status, and equality in earnings (the proportion of household expenses met by the woman's earnings: none, less than half, half, more than half, or all).

The two primary outcome variables used in this study are measures of gender equality – namely attitudes towards IPV and decision-making power. Attitudes towards IPV was measured by the male's report at month 1 for the validated Violence Domain of the Gender Equitable Scale, a 5 question scale regarding hypothetical violence towards women, with available answers on a 3-point scale, where 1=agree, 2=partially agree, and 3=disagree. Scores across all questions were summed, and categorized into three levels: high acceptance of IPV (score of 5-11), medium acceptance of IPV (score of 12-13), and low acceptance of IPV (score of 14-15), where the higher the score, the lower acceptance of IPV (i.e. higher support for gender norms)<sup>20</sup>. Decision-making power was measured by the woman's report on decision making for: the woman's earnings, the woman's healthcare, major household purchases, daily household needs, and visiting family or relatives, with available answers of: 1) Myself, 2) My partner, 3) Jointly, or 4) Others. Each response to the five questions was dichotomized, with a value of 1 if the woman reports that a decision was made by either herself or jointly, and 0 if the decision was made by her male partner or someone else. We then created an index by summing the five dichotomized responses, with a value of 0 if the woman made none or only 1 decision (low decision-making power), 1 if she made two or three decisions by herself or jointly (medium decision-making power), and 2 if she made either four or all five decisions by herself or jointly (high decision-making power).

## Data analysis

We summarized data using descriptive statistics where mean/SD were reported for continuous variables and proportions were reported for categorical variables. To make comparisons between groups, we used the Cochran Mantel-Haenszel statistic. We checked the proportional odds assumption using the score test for proportional odds given in logistic regression<sup>21</sup>. For the first set of analysis, we analyzed gender equality as measured by attitudes towards IPV from the man's report (with an ordinal outcome) and we used a logistic regression framework with a cumulative logit to estimate the odds ratios (OR) and corresponding 95% CI, due to not enough variability in the site-level clustering for a generalized linear mixed model approach. The second set of analyses was gender equality as measured by decision-making power from the woman's report (with an ordinal outcome), with modeling performed with cumulative logit in a generalized linear mixed models (GLMMs) framework to account for site-level clustering<sup>22</sup>. We chose our final model for each analysis based on a combination of factors including conceptual plausibility, individual variable significance in the model, confounding, and two measures of model fit (Akaike's Information Criterion and -2 Log Likelihood, when appropriate). A two-sided p-value of <0.05 for specific variables was used to assess significance of specific variables, as well as 95% CI not including 1. Proc GLIMMIX and Proc LOGISTIC in SAS 9.4 (SAS Institute, Cary, NC) was used for the modeling analyses.

## Ethical approval

The original trial was approved by both the institutional review board of the Medical University of South Carolina and Makerere University School of Public Health in Kampala, Uganda. Written informed consent was

obtained from all participants. The current data analysis was performed on completely de-identified data.

## Results

Table 1 shows the sociodemographic characteristics of the women and their male partners. Overall, 1,618 women were enrolled and randomized into the study (47.7% in the standard of care arm and 52.3% in the intervention arm), 1,347 women and 1,198 of their male partners were interviewed at their one-month follow-up visit, and 1,299 women and 1,123 of their male partners were interviewed at their three-month follow-up visit. For the woman, they were on average 25.2 years old, and the majority had a secondary or higher education (57.7%), were currently not married (83.4%), were currently not aware of their male partner having any other sexual partners (79.7%), always had enough food and the types of food they wanted (55.5%), had less than half or none of the household expenses met by their own earnings (76.8%), and were HIV negative (89.7%). For decision-making power, 15.9% of the women had low decision-making power, 43.8% of the women had medium decision-making power, and 40.4% had high decision-making power. For the men, they were on average 32.2 years old, and the majority had a secondary or higher education (55.0%), were currently not married (84.5%), were mostly Catholic or Other/Not Christian (28.1% and 21.6%, respectively), were either employed for wages or self-employed (21.1% and 35.8%, respectively), and the vast majority were HIV negative (97.1%). Overall, 31.1% of the men showed high acceptance of hypothetical IPV, 28.9% had moderate acceptance of IPV, and 40.0% had low acceptance of IPV. For decision-making power, 15.9% of the women had low decision-making power, 43.8% of the women had medium decision-making power, and 40.4% had high decision-making power.

**Table 1:** Characteristics of women attending antenatal care at baseline and characteristics of male partners at month 1 in south-central Uganda<sup>a</sup>

Characteristic	Women (n=1,618) n (%)	Male partners (n=1,198) n (%)
Age (years), mean $\pm$ SD	25.2 $\pm$ 5.5	32.2 $\pm$ 8.1
	<i>Missing</i>	21 (1.3)
		19 (1.6)
Age categories		
15-19 (women), 18-24 (men)	225 (14.1)	183 (15.5)
20-24 (women), 25-34 (men)	611 (38.3)	603 (51.1)
25-29 (women), 35-44 (men)	425 (26.6)	294 (25.0)
30-49 (women), 45-68 (men)	336 (21.0)	99 (8.4)
	<i>Missing</i>	21 (1.3)
		19 (1.6)
Level of education		
Primary or Lower	673 (42.3)	535 (45.0)
Secondary or Higher	918 (57.7)	655 (55.0)
	<i>Missing</i>	27 (1.7)
		8 (0.7)
Religion		
Catholic	181 (11.2)	337 (28.1)
Protestant/other Christian	104 (6.4)	219 (18.3)
Other	152 (9.4)	259 (21.6)
	<i>Missing</i>	1181 (73.0)
		383 (32.0)
Employment status		
Employed for wages	55 (3.4)	253 (21.1)
Self-employed	112 (6.9)	429 (35.8)
Other (business partnership, unemployed, student, housewife, retired, other)	272 (16.8)	129 (10.8)
	<i>Missing</i>	1179 (72.9)
		387 (32.3)
Marital status		
Currently married	263 (16.6)	185 (15.5)
Not Married	1325 (83.4)	1005 (84.5)
	<i>Missing</i>	30 (1.9)
		8 (0.7)
Male Partner has other sexual partners		
Yes	324 (20.3)	-
No/Don't Know	1269 (79.7)	-
	<i>Missing</i>	25 (1.5)
Food Insecurity		
Always have enough food and the kinds we want	884 (55.5)	-
Have enough food, but not always the kinds we want	608 (38.2)	-
Sometimes don't have enough to eat	67 (4.2)	-
Often don't have enough to eat	34 (2.1)	-
	<i>Missing</i>	25 (1.5)
Proportion of expenses met by woman's earnings		
None	729 (45.8)	-
Less than half	501 (31.5)	-
Half	179 (11.3)	-
More than half	135 (8.5)	-
All	47 (3.0)	-
	<i>Missing</i>	27 (1.7)
	<i>Missing</i>	
HIV Status		
Positive	161 (10.4)	29 (2.9)
Negative/Indeterminate/Didn't receive results	1395 (89.7)	983 (97.1)
	<i>Missing</i>	62 (3.8)
Intervention Arm		
Standard of Care	771 (47.7)	559 (46.7)
HIV self-testing kits	847 (52.3)	639 (53.3)
Health Facility		
Nakaseke	333 (20.6)	299 (25.0)
Mpigi	559 (34.6)	433 (36.1)
Entebbe	726 (44.9)	466 (38.9)

Abbreviations: SD, standard deviation  
<sup>a</sup> Columns may not total to 100 due to missing values.

Table 2 shows the bivariate analyses between the sociodemographic characteristics and gender equality. We found that acceptance of IPV (based on the Gender Equitable Men scale) was significantly associated with education, religion, and marital status. Specifically, lower scores on the scale (i.e. high acceptance of IPV) were observed among men with primary or lower education, participants reporting Protestant or other Christian re-

ligion or Catholics, and participants who were currently not married. On the other hand, decision-making power was associated with age, education, and income equality: specifically, we observed lower decision-making power to be significantly associated with lower woman's age, primary or lower woman's education, primary or lower man's education, and higher proportion of expenses met by the woman's earnings.

**Table 2:** Bivariate analysis of sociodemographic characteristics of women and male partners and gender equality (attitudes towards IPV and decision-making power)

	Attitudes towards IPV			Decision-Making Power		
	High support for IPV	Medium support for IPV	Low support for IPV	Low decision-making power	Medium decision-making power	High decision-making power
<b>Sociodemographics, n (%)</b>						
Women age categories^^						
15-19	54 (33.5)	50 (31.1)	57 (35.4)	64 (29.5)	101 (46.5)	52 (24.0)
20-24	139 (30.8)	129 (28.5)	184 (40.7)	106 (17.5)	288 (47.6)	211 (34.9)
25-29	90 (29.6)	95 (31.3)	119 (39.4)	45 (10.7)	173 (41.2)	202 (48.1)
30-49	78 (31.3)	65 (26.1)	106 (42.6)	35 (10.5)	128 (38.2)	172 (51.3)
Men age categories						
18-24	64 (35.8)	52 (29.1)	63 (35.2)	38 (21.8)	85 (48.9)	51 (29.3)
25-34	175 (29.5)	183 (30.8)	236 (39.7)	89 (15.1)	256 (43.5)	244 (41.4)
35-44	93 (31.9)	78 (26.7)	121 (41.4)	46 (15.9)	112 (38.8)	131 (45.3)
45-68	31 (32.0)	26 (26.8)	40 (41.2)	19 (19.2)	45 (45.5)	35 (35.6)
Women Level of education^^						
Primary or Lower	181 (34.4)	143 (27.2)	202 (38.4)	125 (18.7)	309 (46.3)	233 (34.9)
Secondary or Higher	178 (28.0)	195 (30.7)	262 (41.3)	124 (13.7)	379 (41.9)	401 (44.4)
Man Level of Education***						
Primary or Lower	187 (35.4)	145 (27.5)	196 (37.1)	106 (20.2)	241 (46.0)	177 (33.8)
Secondary or Higher	178 (27.6)	195 (30.3)	271 (42.1)	89 (14.0)	260 (40.8)	289 (45.3)
Woman's Religion						
Catholic	46 (36.8)	38 (30.4)	41 (32.8)	28 (15.8)	79 (44.6)	70 (39.6)
Protestant/other Christian	24 (32.9)	19 (26.0)	30 (41.1)	17 (16.3)	56 (53.8)	31 (29.8)
Other	34 (35.8)	30 (31.6)	31 (32.6)	26 (17.5)	56 (37.6)	67 (45.0)
Man's Religion**						
Catholic	113 (34.4)	88 (26.8)	128 (38.9)	63 (19.0)	142 (42.9)	126 (38.1)
Protestant/other Christian	79 (36.2)	56 (25.7)	83 (38.1)	28 (13.2)	102 (48.1)	82 (38.7)
Other	56 (21.8)	84 (32.7)	117 (45.5)	44 (17.0)	102 (39.5)	112 (43.4)
Women Employment^^						
Employed for wages	14 (38.9)	11 (30.6)	11 (30.6)	9 (16.3)	14 (25.5)	32 (58.2)
Self-employed	29 (35.4)	23 (28.1)	30 (36.6)	16 (14.5)	44 (40.0)	50 (45.5)
Other	63 (35.4)	53 (29.8)	62 (34.8)	49 (18.4)	132 (49.4)	86 (32.2)
Men Employment						
Employed for wages	77 (30.9)	60 (24.1)	112 (45.0)	39 (15.6)	101 (40.4)	110 (44.0)
Self-employed	133 (31.4)	124 (29.3)	166 (39.2)	68 (16.2)	187 (44.4)	166 (39.4)
Other	37 (28.9)	41 (32.0)	50 (39.1)	27 (21.4)	55 (43.6)	44 (34.9)
Marital status*						
Currently married	51 (25.4)	57 (28.4)	93 (46.3)	42 (16.2)	124 (47.7)	94 (36.2)
Not Married	307 (32.1)	281 (29.3)	370 (38.6)	206 (15.7)	562 (42.9)	541 (41.3)
Male Partner has other sexual partners						
Yes	80 (33.1)	76 (31.4)	86 (35.5)	52 (16.3)	136 (42.6)	131 (41.1)
No/Don't Know	281 (30.5)	261 (28.4)	387 (41.1)	197 (15.7)	552 (44.0)	506 (40.3)
Food Insecurity						
Always have enough food and the kinds they want	205 (32.2)	186 (29.3)	245 (38.5)	147 (16.8)	375 (43.0)	351 (40.2)
Have enough food, but not always the kinds we want/Sometimes don't have enough/Often don't have enough	155 (29.4)	152 (28.8)	221 (41.9)	101 (14.4)	313 (44.7)	286 (40.9)
Proportion of expenses met by woman's earnings^^						
None	153 (29.8)	145 (28.2)	216 (42.0)	3 (6.4)	18 (38.3)	26 (55.3)
Less than half	117 (31.2)	124 (33.1)	134 (35.7)	17 (12.8)	45 (33.8)	71 (53.4)
Half	48 (33.3)	36 (25.0)	60 (41.7)	18 (10.3)	71 (40.8)	85 (48.8)
More than half	29 (32.2)	19 (21.1)	42 (46.7)	57 (11.5)	218 (43.8)	223 (44.8)
All	12 (31.6)	13 (34.2)	13 (34.2)	152 (21.1)	336 (46.7)	231 (32.1)
Woman HIV status						
Positive	48 (40.0)	31 (25.8)	41 (34.2)	17 (10.6)	70 (43.5)	74 (46.0)
Negative/Indeterminate/Didn't receive results	308 (30.3)	298 (29.4)	409 (40.3)	223 (16.2)	600 (43.5)	555 (40.3)

Attitudes towards IPV\*: p<0.05, \*\*: p<0.01, Decision-Making Power ^: p<0.05, ^^: p<0.01

Table 3 shows the modeling of the two gender equality variables by sociodemographics. The significant socio-demographic variables for attitudes towards intimate partner violence included partner's religion, women's education, and woman's baseline HIV status. Specifically, compared to those who were Catholic, men who reported an "Other/Not Christian" religion were less likely to have higher acceptance of IPV (OR 0.65, 95%

CI 0.47-0.89). Women with a secondary or higher education were less likely to have their partner report increasing acceptance of IPV compared to women with a primary or lower education (OR 0.75, 95% CI 0.56-0.996). Women who were HIV positive at baseline were more likely to have partner report higher acceptance of IPV compared to women who were HIV negative or unknown HIV status (OR 1.77, 95% CI 1.19-2.63).

**Table 3:** Multivariate modeling for the ordinal outcomes of gender inequality (as measured by attitudes towards IPV and Decision-Making Power)

	<b>Attitudes Towards Intimate Partner Violence</b> <b>OR (95% CI)</b>	<b>Decision-Making Power</b> <b>OR (95% CI)</b>
<b>Woman's Age (Ref=18-22)</b>		
23-26	0.99 (0.63-1.55)	0.67 (0.43-1.04)
27-30	1.17 (0.71-1.92)	0.44 (0.26-0.72)*
31-45	0.92 (0.53-1.59)	0.28 (0.16-0.49)*
<b>Partner's Age (Ref 18-28)</b>		
29-31	0.74 (0.48-1.13)	0.88 (0.58-1.35)
32-35	0.73 (0.44-1.20)	1.09 (0.66-1.80)
36-64	0.56 (0.29-1.09)	1.58 (0.81-3.07)
<b>Male Partner has other sexual partners (Ref=No/Don't Know)</b>		
Yes	1.23 (0.87-1.72)	-
<b>Marital Status (Ref=Currently Married)</b>		
Not Married		0.65 (0.44-0.95)*
<b>Partner Religion (Ref=Catholic)</b>		
Protestant/Other Christian	0.97 (0.69-1.36)	0.78 (0.55-1.10)
Other	0.65 (0.47-0.89)*	0.75 (0.54-1.05)
<b>Woman's Education (Ref=Primary or lower)</b>		
Secondary or Higher	0.75 (0.56-0.996)*	-
<b>Partner's Education (Ref=Primary or lower)</b>		
Secondary or Higher	0.83 (0.63-1.10)	0.69 (0.52-0.92)*
<b>Food Insecurity (Ref=Always have enough food and the kinds they want)</b>		
Have enough food, but not always the kinds we want/Sometimes don't have enough/Often don't have enough	0.82 (0.62-1.08)	0.76 (0.57-1.005)
<b>Proportion of expenses met by woman's earnings (Ref=None)</b>		
Less than half	-	1.39 (0.51-3.79)
Half	-	1.43 (0.55-3.71)
More than half	-	1.22 (0.50-2.99)
All	-	2.31 (0.94-5.65)
<b>Woman Baseline HIV Status (Ref=Negative/Indeterminate/Don't Know)</b>		
Positive	1.77 (1.19-2.63)*	-
<b>Facility (Ref=Nakaseke)</b>		
Entebbe	0.75 (0.53-1.06)	-
Mpigi	1.11 (0.76-1.64)	-

\* 95% CI does not include 1

The significant sociodemographic variables for decision-making power included woman's age, marital status, and partner's education. Women who were 27-30 or 31-45 were much less likely to have lower decision-making power compared to women who were 18-22 (OR 0.44, 95% CI 0.26-0.72 and OR 0.28, 95% CI 0.16-0.49, respectively). Those who were not married were less likely to have lower decision-making power compared to those who were currently married (OR 0.65, 95% CI 0.44-0.95). Partners with a secondary or higher education were less likely to have lower decision-making power compared to partners with a primary or lower education (OR 0.69, 95% CI 0.52-0.92).

## Discussion

This analysis was conducted in order to determine the social and economic variables that were associated with gender inequality (as measured by attitudes towards intimate partner violence and decision-making power) among heterosexual couples expecting a child within the context of an HIV self-testing intervention trial in south-central Uganda. We found that Catholic religion, lower woman's education, and women with known HIV at baseline were associated with higher acceptance of intimate partner violence by the male partner. We also found that younger age of the woman, marital status of currently married, and lower partner's education was associated with lower decision-making power reported by the female partner.

Lower education was found to be associated with both higher acceptance of intimate partner violence and lower woman's decision-making power in our results. Similar results regarding education have been reported and shown not only for support for gender equality<sup>8,9,23,24</sup>, reproductive autonomy<sup>25</sup>, but also perpetration of intimate partner violence<sup>26-28</sup>, and we found similar results in our study in central Kenya among heterosexual couples expecting a child<sup>19</sup>.

In our analysis, we found that those reporting "Other/Not Christian" religion were less likely to have high acceptance of intimate partner violence compared to those who reported as being Catholic. These results are in the opposite direction from a study in Ghana that reported women who were Muslim and "Traditional" believers were more likely to approve domestic physical violence compared to women who were Christian<sup>11</sup>, and another study showing that compared to Catholic women, Muslims in Mali and Benin and followers of

other religions in Zimbabwe were more likely to justify domestic abuse<sup>10</sup>. The male partner of women with a known history of HIV had significantly higher acceptance of intimate partner violence. This is in line from a study among married and cohabitating women in Zimbabwe that found that women had experienced any form of intimate partner violence were more likely to be HIV positive<sup>29</sup>, HIV positive women reported<sup>30</sup>, and in India, HIV positive women were three times more likely to experience sexual violence compared to HIV negative women<sup>31</sup>.

We found that currently married couples had lower decision-making power reported by the woman compared to couples who were cohabitating but unmarried. This is consistent with research in the Democratic Republic of the Congo, where they found that men who were unmarried or separated had higher support for gender equality than those who were married<sup>8</sup>. Younger women had lower decision-making power compared to older women in our analysis. This is in line with studies in Ghana, Ethiopia, and a literature review showing a negative association of women's age with both perpetration and justification of intimate partner violence (another measure of gender equality)<sup>11,26,32</sup>.

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This analysis was conducted in order to determine the social and economic variables that were associated with gender inequality (as measured by attitudes towards intimate partner violence and decision-making power) among heterosexual couples expecting a child within the context of an HIV self-testing intervention trial in south-central Uganda. We found that Catholic religion, lower woman's education, and women with known HIV at baseline were associated with higher acceptance of intimate partner violence by the male partner. We also found that younger age of the woman, marital status of currently married, and lower partner's education was associated with lower decision-making power reported by the female partner.

Lower education was found to be associated with both higher acceptance of intimate partner violence and lower woman's decision-making power in our results. Similar results regarding education have been reported and shown not only for support for gender equality<sup>8,9,23,24</sup>, reproductive autonomy<sup>25</sup>, but also perpetration of intimate partner violence<sup>26-28</sup>, and we found similar results in our study in central Kenya among heterosexual couples expecting a child<sup>19</sup>.

In our analysis, we found that those reporting “Other/Not Christian” religion were less likely to have high acceptance of intimate partner violence compared to those who reported as being Catholic. These results are in the opposite direction from a study in Ghana that reported women who were Muslim and “Traditional” believers were more likely to approve domestic physical violence compared to women who were Christian<sup>11</sup>, and another study showing that compared to Catholic women, Muslims in Mali and Benin and followers of other religions in Zimbabwe were more likely to justify domestic abuse<sup>10</sup>. The male partner of women with a known history of HIV had significantly higher acceptance of intimate partner violence. This is in line from a study among married and cohabitating women in Zimbabwe that found that women had experienced any form of intimate partner violence were more likely to be HIV positive<sup>29</sup>, HIV positive women reported<sup>30</sup>, and in India, HIV positive women were three times more likely to experience sexual violence compared to HIV negative women<sup>31</sup>.

We found that currently married couples had lower decision-making power reported by the woman compared to couples who were cohabitating but unmarried. This is consistent with research in the Democratic Republic of the Congo, where they found that men who were unmarried or separated had higher support for gender equality than those who were married<sup>8</sup>. Younger women had lower decision-making power compared to older women in our analysis. This is in line with studies in Ghana, Ethiopia, and a literature review showing a negative association of women’s age with both perpetration and justification of intimate partner violence (another measure of gender equality)<sup>11,26,32</sup>.

### Limitations

There are a few notable limitations to this data. First, there were large proportions of missing data for the women’s self-report of religion and employment status. This prevented us from using these variables in our multivariate analysis, and therefore we could have missed potential associations that we simply did not have the power to detect. Second, this data was analyzed in the context of an HIV self-testing intervention trial, so the population that was enrolled in this trial will not be generalizable to the general population of heterosexual couples expecting a child in this area due to the specific inclusion and exclusion criteria. Furthermore, gender inequality can only be interpreted in how it was

measured (in this case, attitudes towards intimate partner violence and decision-making power), so we can only make interpretations within this context.

### Conclusion

In summary, we found that lower women’s age, lower man’s and woman’s education, being married, being Catholic, and the woman being HIV positive were associated with lower gender equality. This study helps to contribute to the body of literature regarding socio-demographic factors and gender inequality, especially in Uganda and in an HIV-related context in the setting of pregnancy. These results show some promising areas to target to potentially improve relationship gender equality (especially to increase education levels among both men and women, and attempt to reduce the HIV prevalence among women). These areas could also help create targeted interventions (specifically targeted in language and materials towards different religions or married couples) to improve gender equality in heterosexual couples expecting a child in Uganda.

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