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DEMOGRAPHIC  
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## **ABSTRACT**

Sexually transmitted infections (STIs) are a major reproductive and public health concern, especially in the era of HIV/AIDS. This study examined the relationship between sexual empowerment and STI status of women in union in Uganda, controlling for sexual behaviour, partner factors, and women's background characteristics.

The study, based on data from the 2011 Uganda Demographic and Health Survey (UDHS), analysed 1,307 weighted cases of women age 15-49 in union and selected for the domestic violence module. Chi-squared tests and multivariate logistic regressions were used to examine the predictors of STI status. Sexual empowerment was measured with three indicators: a woman's reported ability to refuse sex, ability to ask her partner to use a condom, and opinion regarding whether a woman is justified to refuse sex with her husband if he is unfaithful.

Results show that 28% of women in union reported STIs in the last 12 months. Sexual violence and number of lifetime partners were the strongest predictors of reporting STIs. Women's sexual empowerment was a significant predictor of their STI status, but, surprisingly, the odds of reporting STIs were greater among women who were sexually empowered. Reporting of STIs was negatively associated with a woman's participation in decision-making with respect to her own health, and was positively associated with experience of sexual violence, partner's controlling behaviour, and having more than one life partner.

Our findings suggest that, with respect to STIs, sexual empowerment as measured in the study does not protect women who have sexually violent and controlling partners. Interventions promoting sexual health must effectively address negative masculine attitudes and roles that perpetuate unhealthy sexual behaviours and gender relations within marriage. It is also important to promote marital fidelity and better communication within union and to encourage women to take charge of their health jointly with their partners.

**Keywords:** Sexual empowerment, partner behaviours, STIs, Uganda



## 1. INTRODUCTION

Sexually transmitted infections (STIs) are a key reproductive and public health concern, especially in the era of HIV/AIDS. The World Health Organization (WHO) estimates that approximately 448 million infections occur worldwide, and about 47% of them are among women (WHO 2013). In Uganda, the prevalence of STIs among women of reproductive age increased from 22% in 2006 to 27% in 2011 (UBOS and Macro International Inc. 2007; UBOS and ICF International 2012). The prevalence of STIs among women in union increased from 23% in 2006 to 27% in 2011. The Uganda AIDS Indicator Survey conducted in 2011 provided a higher estimate of women in union with STIs, at 37%, a number that highlights the gravity of the situation in Uganda (Ministry of Health [Uganda] and ICF International 2012). It is particularly important to note that in Uganda and elsewhere in sub-Saharan Africa, for instance in Zambia and Rwanda, the level of new HIV infections is higher among persons in union than in those not in union (UBOS and Macro International 2007; UBOS and ICF International 2012).

Gender relations and sexual behaviours are pivotal in influencing sexual and reproductive health, as well as the general well-being of individuals and communities (Garcia-Moreno et al. 2006; Salam, Alim, and Noguchi 2006). Gender-based inequities have been associated not only with inequities in health but also with increased exposure to STIs (Pederson, Greaves, and Poole 2014).

Women and their partners may engage in risky sexual behaviours that expose them to STIs. Contextual gender relations are important in influencing sexual behaviours, which include sexual and gender-based violence (SGBV), multiple sexual partnerships, transactional sex, and unprotected sex (Wandera, Ntozi, and Kwagala 2010; Antai 2011; Allen et al. 2003). Sexual behaviours are closely associated with a partner's controlling behaviours, alcohol consumption, and control over resources and household decision-making (Antai 2011; Garcia-Moreno et al. 2006; Dalal 2011; Abramsky et al. 2011; Tumwesigye et al. 2012; Kwagala et al. 2013). While fidelity is expected within marriage, marital partners may not be fully protected against STIs if either partner engages in risky sexual behaviours outside the union.

Contextual, sociocultural, gender-based prescriptions and expectations with respect to sexual activity are likely to affect married women. Analysis of the prevalence of STIs and the

determinants of STI status among married women is essential for a targeted response that will reduce STI infections. No publication in Uganda has analysed the determinants of STI status, taking into account gender relations, in particular women's empowerment, while adjusting for men's controlling behaviours, sexual behaviours, and women's background characteristics. This study, therefore, assessed the relationship between married women's empowerment and their reported STI status while controlling for sexual behaviours, partner factors, and women's background characteristics.

## **1.1 Literature Review**

Empowerment is a process through which people gain control over their own lives. It is usually associated with an improved quality of life (Wallerstein 1992, 1994). It is a multidimensional process through which persons lacking in certain resources or capabilities gain access to or control over those resources/capabilities. Empowerment relates to agency, whereby empowered persons are able to make strategic life choices (implying availability of alternatives) and can have the power to achieve their goals (Kabeer 2005; Kasturirangan 2008; Castro et al. 2008; Mahmud et al. 2011; Williams 2002). Sexual empowerment in this case primarily addresses issues associated with the individual woman and her interpersonal relationships with her partner. It mainly relates to “power within”—that is, self-confidence, a sense of self-worth and assertiveness, perception of the right to self-determination, and the confidence to act to attain the desired change in sexual relations. It also includes the “power to”—that is, having decision-making authority in sexual relations (Oxaal and Baden 1997; Crissman, Adanu, and Harlow 2012). In this paper sexual empowerment mainly addresses the “power within” in relation to a woman's perception of her ability to negotiate safer sex and the “power to” in relation to her participation in decision-making concerning her own health.

Individual empowerment does not occur in a vacuum. It is therefore important to consider contextual interpersonal and sociocultural factors (Mahmud, Shah, and Becker 2012). With respect to gender relations associated with reproductive health, the International Conference on Population and Development (ICPD), in 1994, recognized that men have significant power or influence in most spheres of women's lives. The ICPD also recognized the importance of improving communication between men and women in union on issues of sexuality and reproductive health and their joint responsibilities for better health outcomes (Johnson 2013).



Gender relations have a bearing on sexual behaviour, which in turn could determine one's STI status. Socially constructed gender-based expectations define power relations, roles, obligations, and relationships between men and women (Türmen 2003). Inequities in gender relations are often to the disadvantage of women, since women usually have a subordinate role in sexual relations (Sanchez et al. 2012). According to Part and colleagues (2011), adherence to traditional gender roles related to sexual activity is stronger among females than males. Negotiating safer sex in such relationships is a challenge. Outside union, having trust in a relationship reduces the likelihood of condom use (Marston and King 2006). Within union, condom use is often resisted or not seen as necessary and is therefore limited (UBOS and ICF International 2012; Chimbiri 2007). In most settings, faithfulness and trust are expected within marriage, and regular sexual activity is more or less deemed a right (Ahmed et al. 2001).

STI and HIV infections among women are attributed to both biological and gender-related social factors. Women are biologically more prone to STIs, including HIV (Chersich and Rees 2008). But women and adolescent girls also are disproportionately affected by STIs due to masculine ideals of risk taking, sexual conquest, and promiscuity (Türmen 2003; Carpenter et al. 1999). In Uganda, HIV prevalence is 8% for women compared with 6% for men (Ministry of Health [Uganda] and ICF International 2012).

It is assumed that addressing gender-based inequities in sexual relationships would mitigate effects on STIs (Türmen 2003). However, although gender inequities have been associated with sexual ill health, the dynamics of relationships are more complex (Jewkes et al. 2010). In Uganda, women's empowerment with respect to household decision-making and attitudes towards violence was not a significant predictor of intimate partner sexual violence (IPV) (Wandera et al. 2015). Additionally, results of the Uganda AIDS indicator survey show that the prevalence of HIV was higher among employed women (9%) than unemployed women (6%) (Ministry of Health [Uganda] and ICF International 2012).

A study in Oman established that, among other factors, women's empowerment (with respect to decision-making and mobility) was positively associated with both reproductive tract infections and urinary tract infections among married women of reproductive age (Mabry, Al-Riyami, and Morsi 2007). Lan and colleagues (2008) in a study of women in rural Vietnam found that higher economic status was a significant determinant of diagnosing chlamydia among women.

Similarly, a study in rural Shandong Province, China, found that married women of childbearing age with income higher than US\$200 were more likely to be infected with trichomoniasis (Xueqiang et al. 2007; Yutao and Huiqing 2007).

Patterns of sexual behaviour are major predictors of sexually transmitted infections, among other sexual health outcomes. Risky sexual behaviours, such as multiple sexual partnerships, transactional sex, and non-condom use increase the likelihood of STIs (Johnson et al. 2001; Luke and Kurz 2002; Aral 1999; Wandera, Ntozi, and Kwagala 2010). Within union in Uganda, men are twice as likely as women to be the source of HIV infection, most likely due to men's extramarital sexual behaviour (Carpenter et al. 1999). However, a study in South Africa showed that the likelihood of reporting STIs, including HIV, was higher among women with no history of casual relationships compared with women with a history of transactional sex (Onoya et al. 2012). Women with a history of transactional sex also had a higher rate of condom use (Onoya et al. 2012). A study in Brazil found that having three or more lifetime partners increased the likelihood of reporting chlamydial infections (de Lima et al. 2014).

Studies have established that sexual and gender-based violence is associated with poor reproductive health outcomes, including STIs (Jewkes et al. 2010; Blanc 2001, Stephenson et al. 2008, Stephenson, Koenig, and Ahmed 2006; Dude 2007; Koenig et al. 2004). The risk of contracting STIs is higher among women who experience sexual and gender-based violence (SGBV) (Johnson and Hellerstedt 2002). Gender power imbalance, which is usually accompanied by partner abuse, increases the risk of STIs, including HIV (Raiford, Seth, and DiClemente 2013; Pederson, Greaves, and Poole 2014; Türmen 2003). Intimate partner violence (IPV) limits the possibility of negotiating for safer sex (Swan and O'Connell 2012). Perpetrators of IPV tend to engage in risky sexual behaviours that increase their partners' risk of contracting STIs (Silverman et al. 2008). In Uganda, Koenig and colleagues (2004) found that young women who reported that their first sex was coerced were less likely to use condoms or other modern contraceptives and more likely to report unwanted pregnancy and STI symptoms. Coercive sex is usually unprotected, thus exposing the partners to the risk of STIs (Cates Jr. 1999; Johnson and Hellerstedt 2002; Teitelman et al. 2008). It is important to note that directions of influence are not always consistent. IPV, for instance, could be both a cause and an effect of STIs, pointing to the cycle of violence (Türmen 2003). A South African study found a positive association between a woman's experience

of domestic violence and her demand for condoms. The study also found that sexual control (empowerment) was not directly associated with condom use (Jewkes, Levin, and Penn-Kekana 2003; Teitelman et al. 2008).

Controlling behaviours of male partners have been associated with violence (Krantz and Vung 2009). As measured by demographic surveys, partners' controlling behaviours, in the form of extreme possessiveness, jealousy, and attempts to isolate the spouse from their family and friends (UBOS and ICF International 2012), were significant predictors of IPV in Uganda (Wandera et al. 2015; Kwagala et al. 2013) and of physical and sexual violence in Nigeria (Antai 2011).

Excessive alcohol consumption, whether by men or women, induces risky sexual behaviour (Leigh and Stall 1993). In Uganda and elsewhere, alcohol consumption has been associated not only with multiple sexual partnerships and non-use of condoms but also with STIs (Wandera, Ntozi, and Kwagala 2010; Seth et al. 2011; Asiki et al. 2011; Türmen 2003; Part et al. 2011). Other predictors of self-reported STIs among women are young age, high educational level, poverty, and concurrent, cross-generational or multiple sexual partnerships (La Ruche et al. 2014; Harling et al. 2014; Türmen 2003). A study in Uganda (Darj, Mirembe, and Råssjö 2010) found that marital status and having few sexual partners did not appear to protect young rural women from STIs, implying that male partners' sexual behaviour may have an important impact on women's risk of infection. Indeed, earlier studies of physical and sexual violence in Uganda highlighted the association between male partners' risky (sexual) behaviours and STIs among women (Wandera, Ntozi, and Kwagala 2010; Kwagala et al. 2013).

Male circumcision has proved protective against HIV (Gray et al. 2007). The prevalence of STIs has also been found to be lower among Muslims (Gray et al. 2007; Gray 2004), which may be due to the practice of circumcision among Muslims.

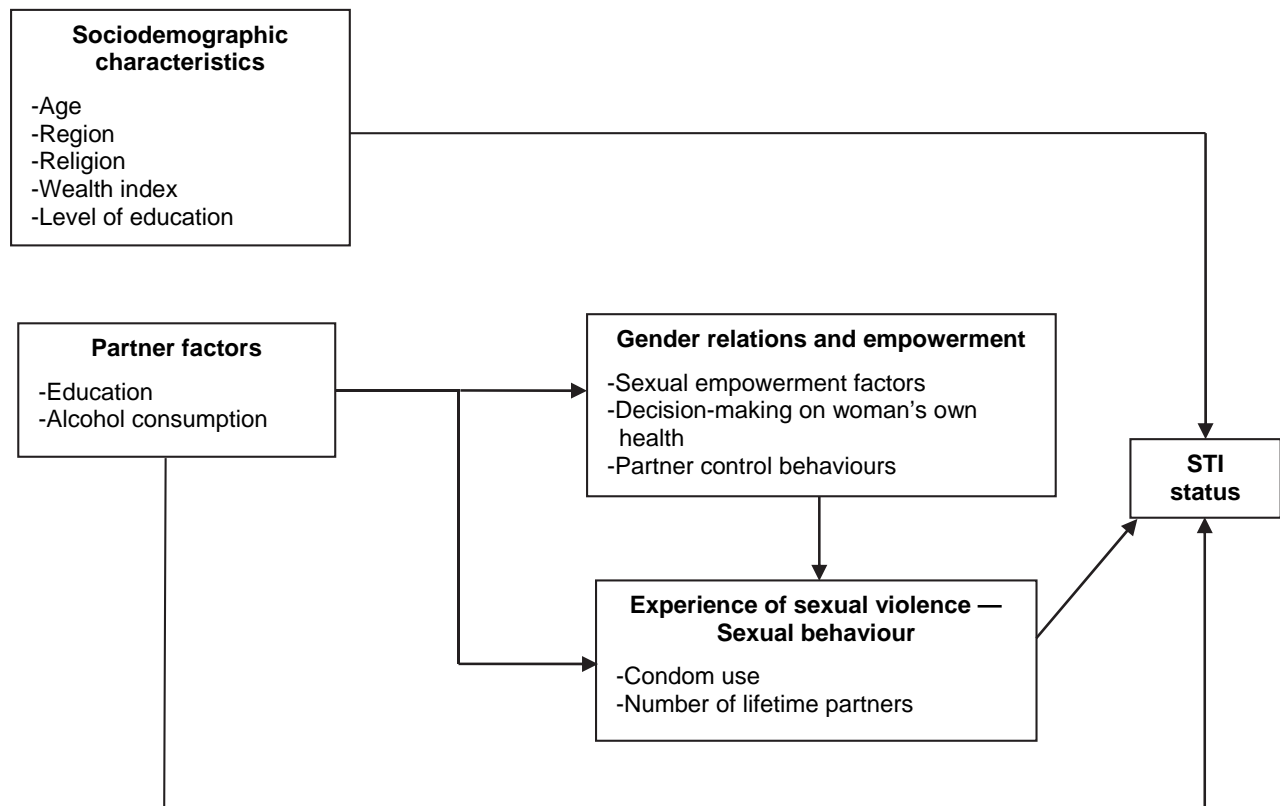
## **1.2 Conceptual Framework**

According to the literature, we expect that gender relations and women's empowerment act either independently or in relation to other factors to predispose women in union to STIs. Experience of sexual violence and sexual behaviours, such as condom use, and number of lifetime partners could act directly in different ways to influence women's STI status. Consistent and

correct condom use can protect persons in sexual relationships from contracting STIs, controlling for all other factors. The number of lifetime partners a woman has also can affect her risk of contracting STIs. Intimate partner sexual violence can directly expose a woman to STIs, even when other factors such as sexual empowerment are controlled for.

Sexually empowered women and women who participate in decision-making concerning their own health are expected to have lower odds of reporting STIs. These are the main independent factors examined in this study. We hypothesize that sexual empowerment would provide women with extra protection partly through the ability to insist on condom use or to refuse sex, particularly if their partners also have other sexual partners. Women’s empowerment is expected to work through sexual behaviours to influence the STI outcome. In addition to the above factors, partner factors and women’s socioeconomic characteristics were controlled for to estimate the net effect of empowerment on reporting of STIs, as demonstrated in Figure 1.

**Figure 1. Conceptual framework showing the relationships between sexual empowerment, partner factors, sexual behaviour, and STI status**



***Research question***

The question this study addresses is: Does women's sexual empowerment predict STI status?

***Hypothesis***

We hypothesize that empowered women are less likely to report an STI infection.



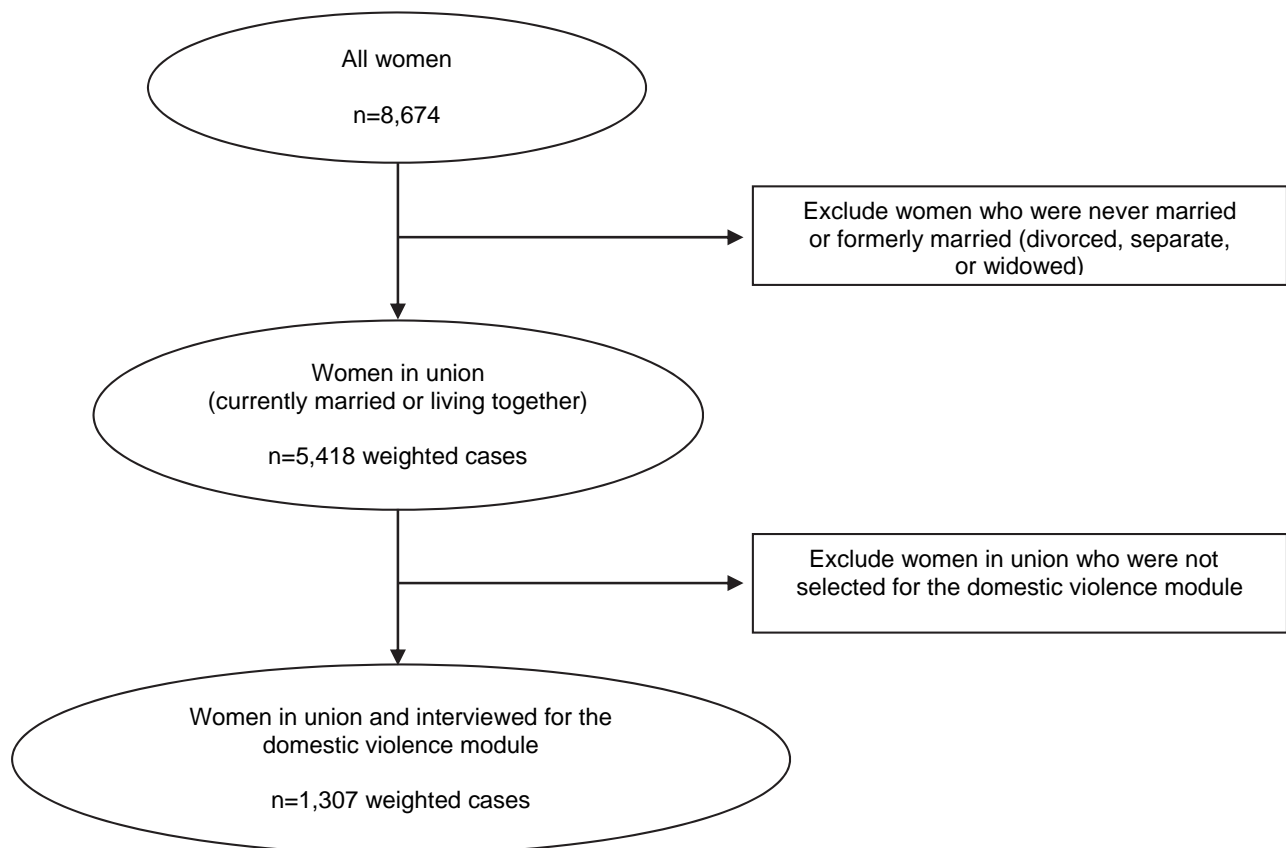
## 2. DATA AND METHODS

### 2.1 Data

This study used data from the 2011 Uganda Demographic and Health Survey (UDHS), which was conducted by the Uganda Bureau of Statistics and ICF Incorporation. The UDHS is a national population-based household survey and uses a two-stage cluster sampling procedure. It included questions on demographic and socioeconomic characteristics of individuals, their sexual behaviour, gender relations and whether they had suffered from an STI in the 12 months prior to the survey (UBOS and ICF International Inc. 2012).

The 2011 UDHS interviewed 8,674 women age 15-49. Out of these, only women in union who were selected for the domestic violence module were considered for this research, for 1,307 cases. Figure 2 shows the sample derivation.

**Figure 2. Analysis sample derivation**



## 2.2 Key Variables

The dependent variable “reported STI status” was captured using responses to any of the following three questions: whether respondents reported that in the last 12 months they (1) had a disease acquired through sexual contact; (2) had a bad-smelling abnormal genital discharge; or (3) had a genital sore or ulcer. Respondents who said yes to any or a combination of these three questions were recoded as having a reported STI, and a binary variable was constructed for this outcome (i.e., have STIs, or not).

The independent variables included responses to questions related to sexual behaviour; gender relations, which included sexual empowerment; partners’ behaviour; and background characteristics of women and their partners.

The variables concerning gender relations entailed analysis of women’s sexual empowerment and partners’ controlling behaviours. Indices were developed for each measure. Sexual empowerment included women’s responses to questions on the following: whether the woman can say no to a partner if she does not want to have sex; whether she can ask a partner to use a condom; and whether a woman is justified to refuse to have sex with her husband when she knows he has sex with other women. Women who responded yes to all the three questions were recoded as sexually empowered women.

The index for partners’ controlling behaviour included women’s responses to questions addressing whether her partner (1) is jealous or gets angry if she talks to other men; (2) frequently accuses her of being unfaithful; and (3) insists on knowing where she is at all times. This variable was recoded into a dichotomous variable representing male partners who exhibit any of the three controlling behaviours versus partners who did not exhibit any of the controlling behaviours.

Household decision-making with respect to women’s own health was considered for analysis because it is closely associated with health outcomes. Women’s participation in decision-making included their individual or joint participation (with their partners). All other responses where women did not participate, namely partner alone, or other household members, were grouped in a single category of women who did not participate in decision-making concerning their health.



Experience of sexual violence is a binary aggregate variable that combines questions that asked women in union whether they have ever been: (1) physically forced into unwanted sex by a husband/partner; (2) forced into other unwanted sexual acts by a husband/partner; and (3) physically forced to perform sexual acts when you did not want to. Owing to stigma and secrecy associated with sexual abuse and sexual activity in general in the Uganda cultural context, cases of refraining from response are expected. Hence, “don’t know” responses were recoded as “yes.” The sexual behaviour measures included condom use during last sex with the most recent sex partner and the number of lifetime partners. Condom use was coded as either used a condom during last sex or no condom use. Three categories were recoded for number of lifetime partners: women with one lifetime partner, women with two lifetime partners, and women with three or more lifetime partners. Women who could not recall the number of partners were assumed to have more than two lifetime partners and were recoded in the third category—three or more lifetime partners.<sup>1</sup>

Women’s sociodemographic factors considered were age, region, religion, household wealth quintile, and education. Spousal characteristics included age, education, occupation, and alcohol consumption. Age was grouped into four categories: 15-19, 20-29, 30-39, and 40-49. Region was coded as Central, East, North, or West; religion as Catholics, Protestants, Muslims, or Pentecostals/Others. The category “Others” comprised smaller religious groups such as Seventh Day Adventists (SDAs). Wealth status was coded in quintiles: poorest, poorer, middle, richer, and richest. Education for both the respondent and the partner was coded as no education, primary education, or secondary or more. Frequency of partner being drunk was grouped as never, often, or sometimes.

### **2.3 Statistical Analysis**

As mentioned, only women in union who were selected and interviewed for the domestic violence module were included in the analysis. Data were analysed at the univariate, bivariate, and multivariate levels using the Stata software version 13.1. The domestic violence weights were applied to the data to adjust for nonresponse and disproportionate selection.

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<sup>1</sup> The two missing cases for this question were dropped.

At the univariate level, descriptive statistics for the characteristics of the respondents and their spouses were presented, and, at the bivariate level, cross tabulations were used to determine the associations between the outcome variable (Jewkes et al. 2010) and background characteristics, sexual behaviour, spousal characteristics and behaviour, and sexual empowerment variables. Multiple logistic regression models were fitted to determine the relationship between predictors and the reported STI status. Adjusted odds ratios and 95% confidence intervals of predictors were reported.

### 3. RESULTS

#### 3.1 Distribution of Respondents by Background Characteristics

Table 1 presents descriptive results of the analysis. Out of the study sample of 1,307 women in union who were selected for the domestic violence module, 27% reported an STI or STI symptoms in the last 12 months. Over half (54%) were sexually empowered, and 59% were involved in decision-making concerning their own health. About one-quarter (27%) of the women reported experience of intimate partner sexual violence. Only 9% of the women used a condom with the most recent partner. Over half (53%) of the women reported more than one lifetime sexual partner. With respect to sociodemographic factors, the highest proportion of women were Catholic (40%); age 20-29 (46%), and with primary or no formal education (77%). About three-quarters of the women's partners (72%) exhibited controlling behaviours, while 60% never consumed alcohol.

**Table 1. Percentage distribution of respondents by gender relations, sexual behaviour, partner factors, and women's background characteristics**

| Variables   | Freq. | Percent |
|---|-------|---------|
| <b>Had STI in last 12 months</b>                            |       |         |
| No  | 949   | 72.6    |
| Yes   | 358   | 27.4    |
| <b>Sexual empowerment</b>                                   |       |         |
| Not empowered   | 601   | 46.0    |
| Sexually empowered  | 706   | 54.0    |
| <b>Involvement in decision on own health</b>                |       |         |
| Not involved  | 532   | 40.8    |
| Involved  | 774   | 59.2    |
| <b>Experience of any sexual violence</b>                    |       |         |
| No  | 950   | 72.8    |
| Yes   | 356   | 27.3    |
| <b>Condom used during last sex with most recent partner</b> |       |         |
| No  | 1189  | 91.0    |
| Yes   | 118   | 9.0     |
| <b>Number of lifetime partners</b>                          |       |         |
| One   | 612   | 46.8    |
| Two   | 378   | 29      |
| Three or more   | 316   | 24.2    |
| <b>Partner control behaviours</b>                           |       |         |
| Not controlled  | 364   | 27.9    |
| Controlled in one or more                                   | 942   | 72.1    |
| <b>Women's age group</b>                                    |       |         |
| 15-19   | 108   | 8.2     |
| 20-29   | 597   | 45.7    |
| 30-39   | 392   | 30.0    |
| 40-49   | 210   | 16.1    |

(Continued...)

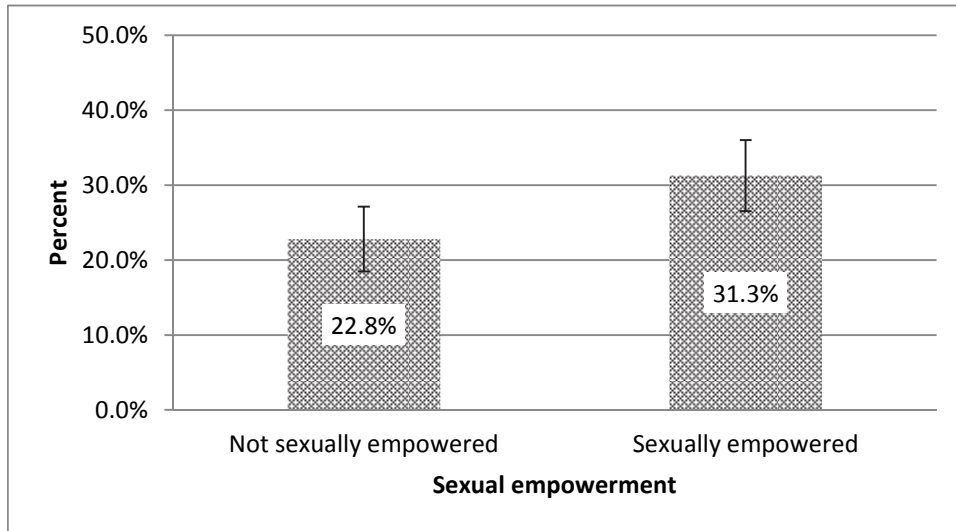
**Table 1. – Continued**

| <b>Variables</b>                     | <b>Freq.</b> | <b>Percent</b> |
|--------------------------------------|--------------|----------------|
| <b>Women's education</b>             |              |                |
| None                                 | 222          | 17.0           |
| Primary                              | 785          | 60.1           |
| Secondary +                          | 299          | 22.9           |
| <b>Wealth index</b>                  |              |                |
| Poorest                              | 243          | 18.6           |
| Poorer                               | 260          | 19.9           |
| Middle                               | 262          | 20.1           |
| Richer                               | 255          | 19.5           |
| Richest                              | 286          | 21.9           |
| <b>Religion</b>                      |              |                |
| Catholic                             | 527          | 40.4           |
| Protestant                           | 373          | 28.5           |
| Muslim                               | 176          | 13.5           |
| Pentecostal/others                   | 231          | 17.7           |
| <b>Region</b>                        |              |                |
| Central                              | 366          | 28.0           |
| East                                 | 344          | 26.3           |
| North                                | 251          | 19.2           |
| West                                 | 346          | 26.4           |
| <b>Partner's education level</b>     |              |                |
| None                                 | 132          | 10.1           |
| Primary                              | 706          | 54.0           |
| Secondary +                          | 469          | 35.9           |
| <b>Partner's alcohol consumption</b> |              |                |
| Never                                | 782          | 59.9           |
| Often                                | 199          | 15.2           |
| Sometimes                            | 326          | 24.9           |

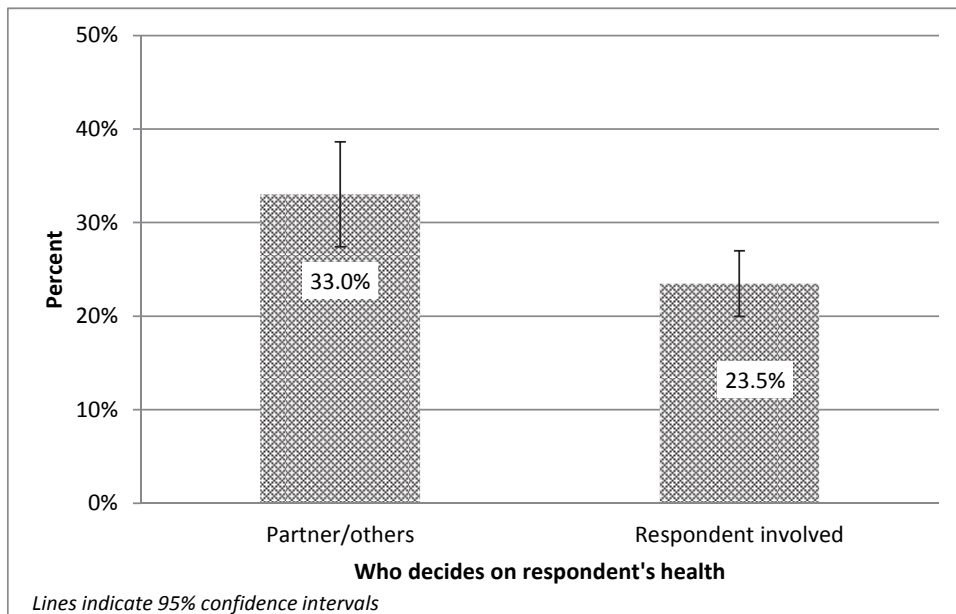
### 3.2 Association between STI Status and Independent Factors

Bivariate results show that the association between women's sexual empowerment and STI status is significant. Other indicators of women's status showing significant associations with STI status at the bivariate level include women's participation in decisions about their own health, experience of sexual violence, number of lifetime partners, and partner control behaviours (see Figures 3-7 and Table 2). Table 2 further shows that among other factors, wealth status, religion, and region were significantly associated with STI status.

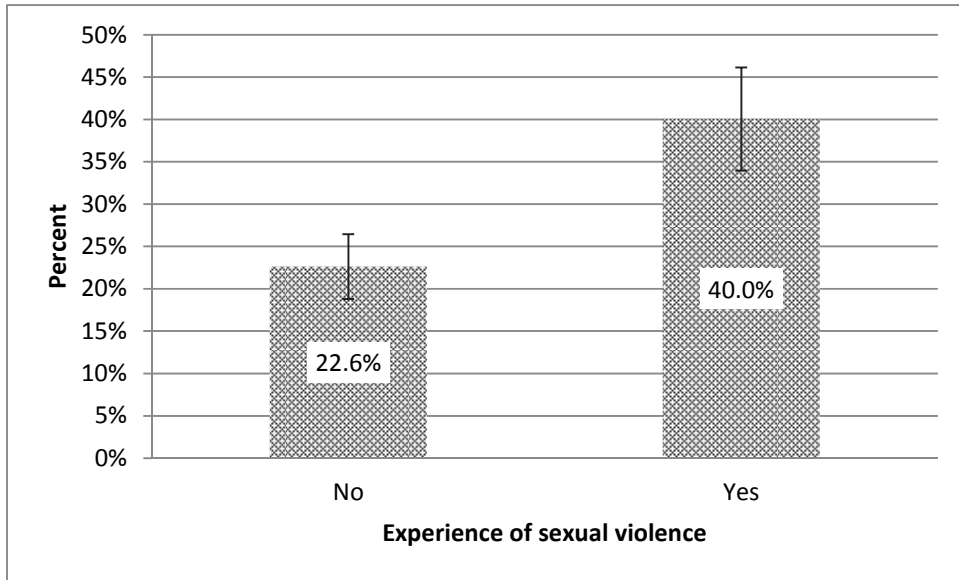
**Figure 3. Percent of women reporting STIs or STI symptoms by sexual empowerment**



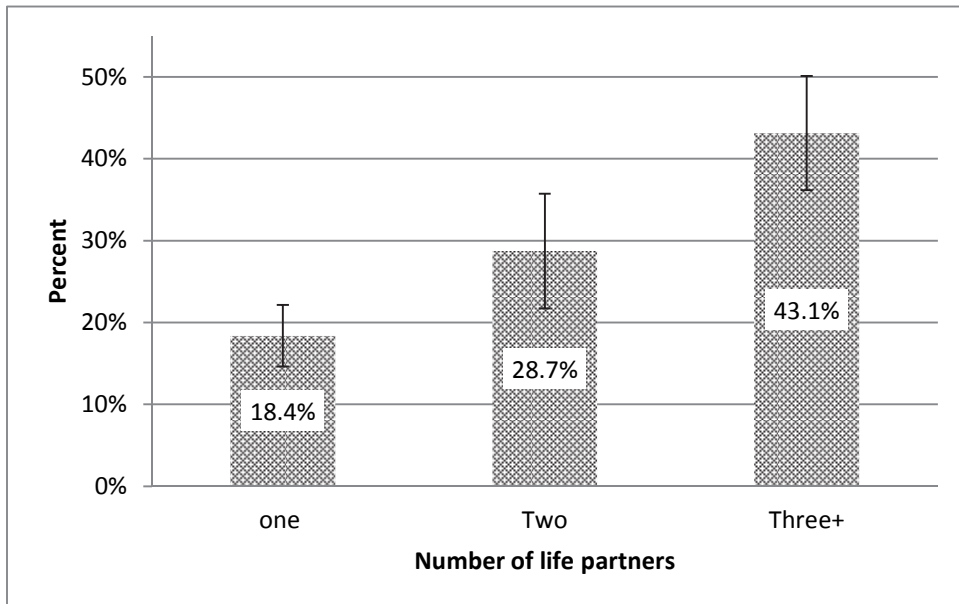
**Figure 4. Percent of women reporting STIs or STI symptoms by decision-making on own health**



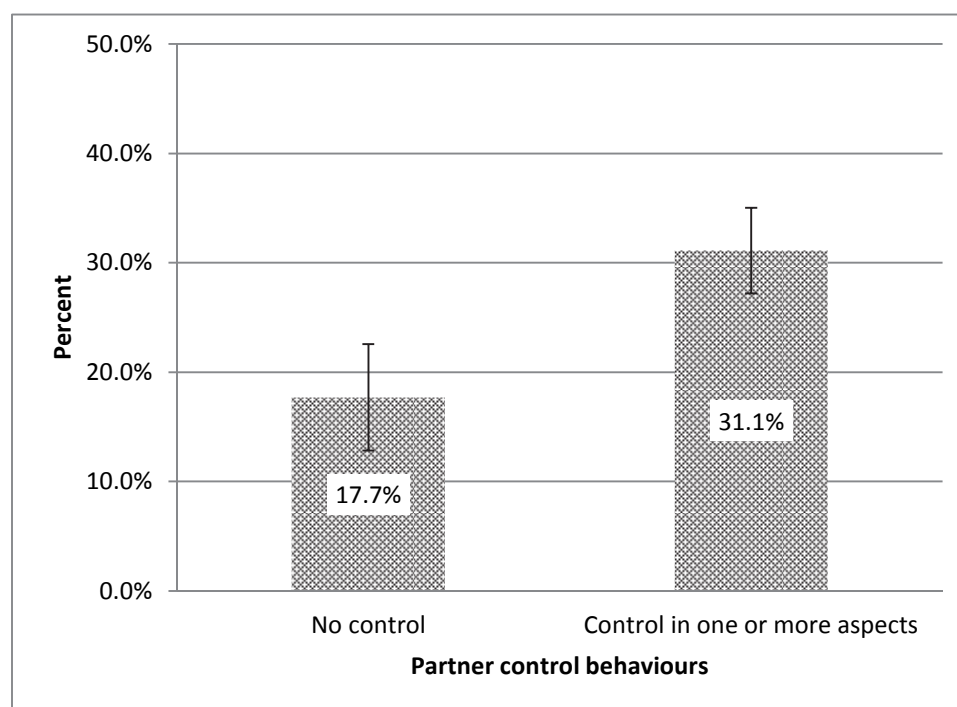
**Figure 5. Percentage of women reporting STIs or STI symptoms by experience of any sexual violence**



**Figure 6. Percentage of women reporting STIs or STI symptoms by number of lifetime partners**



**Figure 7. Percentage of women reporting STIs or STI symptoms by partner control behaviours**



**Table 2. Percentage of women who reported STIs or STI symptoms by selected gender relations, sexual behaviour, partner factors, and women's background characteristics**

| Variables                                    | Percent of women reporting STIs | 95% CI    | P value |
|--|---------------------------------|-----------|---------|
| <b>Sexual empowerment</b>                    |                                 |           | 0.008   |
| Not empowered                                | 22.8                            | 18.7-27.4 |         |
| Sexually empowered                           | 31.3                            | 26.8-36.2 |         |
| <b>Involvement in decision on own health</b> |                                 |           | 0.002   |
| Not involved                                 | 33.1                            | 27.7-38.8 |         |
| Involved                                     | 23.5                            | 20.2-27.2 |         |
| <b>Experience of any sexual violence</b>     |                                 |           |         |
| No   | 22.6                            | 19.0-26.7 |         |
| Yes  | 40.1                            | 34.1-46.3 |         |
| <b>Number of lifetime partners</b>           |                                 |           | 0.000   |
| One  | 18.4                            | 14.9-22.4 |         |
| Two  | 28.7                            | 22.3-36.2 |         |
| Three or more                                | 43.2                            | 36.4-50.2 |         |
| <b>Partner control behaviours</b>            |                                 |           | 0.000   |
| Not controlled                               | 17.7                            | 13.3-23.1 |         |
| Controlled in one or more                    | 31.1                            | 27.3-35.2 |         |
| <b>Condom used during last sex</b>           |                                 |           | 0.123   |
| No   | 26.2                            | 23.2-29.4 |         |
| Yes  | 39.5                            | 23.4-58.2 |         |

(Continued...)

**Table 2. – Continued**

| <b>Variables</b>                     | <b>Percent of women reporting STIs</b> | <b>95% CI</b> | <b>P value</b> |
|--------------------------------------|--|---------------|----------------|
| <b>Condom used during last sex</b>   |  |               | 0.123          |
| No                                   | 26.2                                   | 23.2-29.4     |                |
| Yes                                  | 39.5                                   | 23.4-58.2     |                |
| <b>Women's age</b>                   |  |               | 0.572          |
| 19-19                                | 23.0                                   | 15.3-33.1     |                |
| 20-29                                | 26.2                                   | 21.4-31.7     |                |
| 30-39                                | 30.2                                   | 24.8-36.2     |                |
| 40-49                                | 27.7                                   | 20.9-35.6     |                |
| <b>Women's education</b>             |  |               | 0.454          |
| None                                 | 21.2                                   | 16.2-29.5     |                |
| Primary                              | 28.7                                   | 25.0-32.7     |                |
| Secondary +                          | 27.8                                   | 18.8-39.2     |                |
| <b>Wealth index</b>                  |  |               | 0.007          |
| Poorest                              | 19.0                                   | 14.0-25.2     |                |
| Poorer                               | 22.2                                   | 17.4-27.8     |                |
| Middle                               | 35.3                                   | 26.3-45.5     |                |
| Richer                               | 33.1                                   | 26.0-41.1     |                |
| Richest                              | 26.8                                   | 21.1-33.5     |                |
| <b>Religion</b>                      |  |               | 0.014          |
| Catholic                             | 21.9                                   | 17.0-27.7     |                |
| Protestant                           | 27.3                                   | 22.3-32.9     |                |
| Muslim                               | 36.5                                   | 28.5-45.5     |                |
| Pentecostal/others                   | 33.0                                   | 24.7-42.4     |                |
| <b>Region</b>                        |  |               | 0.000          |
| Central                              | 31.9                                   | 26.7-37.5     |                |
| East                                 | 31.3                                   | 25.7-37.6     |                |
| North                                | 10.5                                   | 7.4-14.7      |                |
| West                                 | 31.0                                   | 23.1-40.2     |                |
| <b>Partner's alcohol consumption</b> |  |               | 0.556          |
| Never                                | 28.9                                   | 25.1-33.0     |                |
| Often                                | 24.2                                   | 18.3-31.4     |                |
| Sometimes                            | 25.6                                   | 17.6- 35.8    |                |
| <b>Partners education level</b>      |  |               | 0.206          |
| None                                 | 18.8                                   | 11.8-28.67    |                |
| Primary                              | 28.4                                   | 24.5-32.6     |                |
| Secondary +                          | 28.3                                   | 22.6-34.7     |                |

All the background factors analysed at the bivariate level were included in the final model with the exception of the respondent's education and her partner's education. Wealth status and partner's education highly correlated with women's education. Of the three variables, we opted to retain wealth status, which was significantly associated with sexual empowerment at the bivariate level of analysis.



### 3.3 Adjusted Associations between Women's Sexual Empowerment, Sexual Behaviour, and Partner Behavioural Factors and STI Status

Multiple logistic regression models were fitted to establish the association between women's sexual empowerment and reporting of STIs, controlling for sexual behaviour, partner characteristics and behaviour, and women's background characteristics. The logistic models were fitted in three steps: Model I contained only sexual empowerment; Model II added sexual behaviours, woman's involvement in decision-making concerning her own health, and partner control behaviours, and Model III added women's background characteristics, as presented in Table 3.

**Table 3. Adjusted odds ratios (AORs) for reporting STIs among women in union in Uganda**

|   | Model I    |           | Model II   |           | Model III  |           |
|---|------------|-----------|------------|-----------|------------|-----------|
|   | Odds Ratio | [95% CI]  | Odds Ratio | [95% CI]  | Odds Ratio | [95% CI]  |
| <b>Sexually empowered (ref: no)</b>                               |            |           |            |           |            |           |
| Yes   | 1.54**     | 1.12-2.13 | 1.38*      | 1.01-1.88 | 1.42*      | 1.01-1.92 |
| <b>Involvement in decisions on own health (ref: not involved)</b> |            |           |            |           |            |           |
| Involved  |            |           | 0.68*      | 0.50-0.93 | 0.70*      | 0.51-0.96 |
| <b>Condom use (ref: no)</b>                                       |            |           |            |           |            |           |
| Yes   |            |           | 1.66       | 0.77-3.56 | 1.71       | 0.86-3.38 |
| <b>Number of lifetime partners (ref: one)</b>                     |            |           |            |           |            |           |
| Two   |            |           | 1.52*      | 1.01-2.29 | 1.51*      | 1.02-2.21 |
| Three or more   |            |           | 2.77***    | 1.92-4.01 | 2.62***    | 1.73-3.99 |
| <b>Experience of any sexual violence (ref: no)</b>                |            |           |            |           |            |           |
| Yes   |            |           | 2.12***    | 1.52-2.96 | 2.11***    | 1.48-3.02 |
| <b>Partner control behaviour (ref: no control)</b>                |            |           |            |           |            |           |
| Yes   |            |           | 1.56*      | 1.08-2.26 | 1.69**     | 1.16-2.48 |
| <b>Partner's frequency of being drunk (ref: never)</b>            |            |           |            |           |            |           |
| Often   |            |           | 0.66       | 0.42-1.02 | 0.78       | 0.48-1.27 |
| Sometimes   |            |           | 0.86       | 0.54-1.36 | 0.91       | 0.58-1.44 |
| <b>Wealth Index of respondent (ref: poorest)</b>                  |            |           |            |           |            |           |
| Poorer  |            |           |            |           | 1.09       | 0.64-1.83 |
| Middle  |            |           |            |           | 1.64       | 0.93-2.89 |
| Richer  |            |           |            |           | 1.35       | 0.81-2.25 |
| Richest   |            |           |            |           | 0.84       | 0.48-1.49 |
| <b>Age of respondent (ref: 15-19)</b>                             |            |           |            |           |            |           |
| 20-29   |            |           |            |           | 0.84       | 0.58-2.08 |
| 30-39   |            |           |            |           | 1.10       | 0.72-2.65 |
| 40-49   |            |           |            |           | 1.38       | 0.62-2.39 |
| <b>Religion (ref: Catholic)</b>                                   |            |           |            |           |            |           |
| Protestant  |            |           |            |           | 1.41       | 0.92-2.14 |
| Muslim  |            |           |            |           | 1.80*      | 1.12-2.88 |
| Pentecostal & others  |            |           |            |           | 1.47       | 0.91-2.36 |
| <b>Region (ref: Central)</b>                                      |            |           |            |           |            |           |
| East  |            |           |            | 0.82      | 0.82       | 0.54-1.27 |
| North   |            |           |            | 0.37      | 0.37***    | 0.22-0.63 |
| West  |            |           |            | 1.25      | 1.25       | 0.75-2.10 |

CI = Confidence Interval; Ref = Reference Category; \*p < 0.05- \*\*p < 0.01- \*\*\*p < 0.001.

Sexual empowerment independently predicted STI status and remained significant after controlling for other independent variables in the subsequent two models, although the p-value in model III was marginal (p-value 0.044). On average, compared with women who are not sexually empowered, the odds of reporting STIs were higher among sexually empowered women (AOR = 1.42; CI 1.01-1.92). Women's involvement in decision-making concerning their own health was also significantly associated with STI status. On average, the odds of reporting STIs were lower among women who participated in decision-making (individually or jointly with their partners) concerning their own health (AOR = 0.69; 95% CI 0.50-0.96). Most of the sexual and partner behavioural factors, namely number of lifetime partners, experience of sexual violence and partners' controlling behaviours, significantly predicted STI status. On average, the odds of reporting STIs were higher among women with experience of sexual violence (AOR = 2.11; 95% CI 1.48-3.02), women with controlling partners (AOR = 1.69; 95% CI 1.16-2.48), and women with two, three, or more lifetime partners (AOR = 1.51; 95% CI 1.02-2.21 and AOR = 2.62; 95% CI 1.73-3.99, respectively).

The odds of reporting STIs were also higher among Muslim women compared with Catholic women (AOR = 1.80; 95% CI 1.12-2.88), and lower among women in the Northern region compared with those in the Central region (AOR = 0.37; 95% CI 0.22-0.63). Condom use, partner's alcohol consumption, women's level of education, and women's age were not significantly associated with STI status.

#### 4. DISCUSSION

Significant predictors of reporting STIs among women in union in Uganda were sexual empowerment, participation in decision-making on own health, experience of intimate partner sexual violence, partner's control behaviours, number of lifetime partners, religion, and region. Results on the association between sexual empowerment and STI status suggest an opposite relationship to what we expected. Women's sexual empowerment had marginal significance and does not appear to protect women in union from the risk of contracting STIs, controlling for sexual behaviour, experience of sexual violence, partner control behaviour, and background factors considered in the model.

It is evident that sexual empowerment, as measured by a woman's reports regarding her ability to say no to her partner if she does not want to have sex, whether she can ask her partner to use a condom, and whether she is justified to refuse sex with her husband when she knows he has sex with other women, does not necessarily translate into protection against STIs. Effecting one's desires in a marital relationship requires cooperation between partners. Additionally, couples rarely disclose their extramarital sexual activities to each other, which can expose them to greater risk of contracting STIs. As our findings show, this is particularly a challenge in the context of sexual violence perpetrated by women's partners. It is important to note that survey questions related to sexual empowerment addressed opinions and possibilities that may not always translate into practice, owing to spousal and contextual factors (Mahmud, Shah, and Becker 2012).

In contrast, women's participation in decision-making concerning their own health, either individually or jointly with their partners had a mitigating effect on STIs. The survey question addressing participation in decision-making asked about actual situations in which women could make choices (Kabeer 2005).

In our study of Uganda, as established elsewhere (Jewkes et al. 2010; Blanc 2001; Stephenson et al. 2008; Stephenson, Koenig, and Ahmed 2006; Dude 2007; Koenig et al. 2004), intimate partner violence (IPV) was the strongest predictor of STI status. IPV indicates poor conjugal relationships and lack of self-control, often accompanied by extramarital relations. It is also an indicator of lack of empowerment for women who are victims of this violence. As noted earlier, it is a challenge to negotiate for safer sex in the context of such violence. As Carpenter and

colleagues have noted (Carpenter et al. 1999), male partners were twice as likely to be the source of HIV infection compared with their female counterparts. The situation is compounded by gender roles that promote female subordination in sexual relationships (Sanchez et al. 2012).

Closely related to sexual violence against women are controlling behaviours by their partners. For this paper, these included partner's jealousies, accusations of unfaithfulness and knowing where the woman is at all times. These are important indicators of partners' insecurities, abusive and risky behaviours, and possible lack of empowerment for women (Krantz and Vung 2009; Kwagala et al. 2013; Antai 2011; Wandera et al. 2015). Such behaviours increase the risk of STIs (Silverman et al. 2008).

Among men, sexual activity with many partners increases the odds of STIs (Carpenter et al. 1999). This is also the case among women with more than one lifetime partner (de Lima et al. 2014). Closely related is religion, where our study found that Muslim women had increased odds of reporting STIs. Although Muslim women could be better protected, assuming that they are in union with Muslim men, where male circumcision should have mitigating effects on STIs (Gray 2004; Gray et al. 2007), it is evident that they are not fully protected. The increased odds of Muslim women reporting STIs compared with other religions in our study may be explained by the high practice of polygamy among Ugandan Muslims. Polygamy among Muslim women in Uganda stands at 42% compared with 28% nationally (UBOS and Macro International 2007; UBOS and ICF International 2012). This area requires further research.

Women in the Northern region had lower odds of reporting STIs compared with women in the Central region. The Central region, which is the most urbanized and developed part of the country, had the highest odds of reporting STIs. This was expected because the Central region's HIV prevalence is 7% to 11%, the highest in the country (Ministry of Health [Uganda] and ICF International 2012). Although excessive alcohol consumption has been associated with a host of sexual health ills (Wandera, Ntozi, and Kwagala 2010; Seth et al. 2011; Asiki et al. 2011; Türmen 2003; Part et al. 2011), in this study it was not significantly associated with STI status among women in union. Education is a social factor, as well as an empowerment factor, that is usually associated with positive health outcomes (Jewkes et al. 2010; Türmen 2003). In this case, education was not a significant predictor of STI status. Likewise, women's wealth status and age (Aral 1999; Türmen 2003) did not predict STI status.

This study was unable to exhaustively analyse the effect of women's risky sexual behaviours on their STI status because variables such as transactional sex were not captured. A better index of sexual empowerment would have been possible from survey questions addressing respondents' actual practices (Kabeer 2005; Oxaal and Baden 1997; Crissman, Adanu, and Harlow 2012; Mabry, Al-Riyami, and Morsi 2007) rather than possibilities or opinions. DHS data are limited in their ability to measure processes such as empowerment. Also, although they are nationally representative, DHS data are cross-sectional and thus cannot determine causal relationships. It was not possible to determine the source of STIs reported by women, although many studies associate STIs with male partner's risky sexual behaviour. Nevertheless, our study provides important insight into determinants of STIs among women in union that could be the basis for programmatic response. Our findings make a vital contribution to the understanding of the risks and benefits of empowerment within union.



## 5. CONCLUSIONS

Sexual empowerment was significantly associated with STI status, but odds of reporting STIs were higher among sexually empowered women, although with marginal statistical significance. Women's participation in decision-making concerning their own health reduced the odds of contracting STIs. The strongest predictors of reporting STIs, namely sexual violence and number of lifetime partners, are direct risk factors of STIs. Reporting of STIs was also positively associated with partners' controlling behaviours. With respect to STIs, sexual empowerment does not appear to protect women in union who have violent, controlling partners. Sexual empowerment is also not protective where a woman had more than one lifetime partner.

Interventions promoting sexual health must effectively address negative masculine and feminine attitudes and roles that perpetuate unhealthy sexual behaviours and relations within union. Persons in union are equally at risk of STIs if either partner engages in risky sexual behaviours. It is therefore important to promote fidelity and better communication between partners in union (Johnson 2013), and where necessary to encourage regular testing and treatment of STIs. Women need to take charge of their own health jointly with their partners.





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