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Women empowerment to negotiate safer sex

Findings from Burkina Faso 2010 Demographic Health Survey

Mémoire réalisé par
Sarah Ruiz-Lopez

Promoteur(s)
Sékou Samadoulougou
Fati Kirakoya

Année académique 2017-2018
Master en sciences de la santé publique
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LE PLAGIAT

Je déclare sur l'honneur que ce mémoire a été décrit de ma plume, sans avoir sollicité d'aide extérieure illicite, qu'il n'est pas la reprise d'un travail présenté dans une autre institution pour évaluation, et qu'il n'a jamais été publié, en tout ou en partie. Toutes les informations (idées, phrases, graphes, cartes, tableaux...) empruntées ou faisant référence à des sources primaires ou secondaires sont référencées adéquatement selon la méthode universitaire en vigueur. Je déclare avoir pris connaissance et adhérer au Code de déontologie pour les étudiants en matière d'emprunts, de citations et d'exploitation de sources diverses et savoir que le plagiat constitue une faute grave sanctionnée par l'Université catholique de Louvain.

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ABSTRACT

Title: « Women empowerment to negotiate safer sex: Findings from Burkina Faso 2010 Demographic Health Survey ».

Introduction: HIV is still a worldwide health issue but more especially amongst young women and married women in Sub-Saharan Africa. Women with greater empowerment have higher HIV-related knowledge and condom use. Lack of safer sex negotiation may lead to an increase in HIV infection. The aim of this research is to evaluate the association between married women's empowerment and their ability to negotiate safer sex practices in Burkina Faso. We hypothesized that women's empowerment influences safer sex behaviour.

Methods: The 2010 Burkina Faso DHS datasets were used. The data was collected by a two-stage stratified cluster sampling and face-to-face interviews. This study involved 12,502 married women between the ages of 15 and 49. Safer sex negotiation was measured by women's ability to refuse sexual intercourse and women's ability to ask their husband for condom use. Women's empowerment was measured using two dimensions: decision-making participation and attitude towards wife beating. Bivariate and multivariate logistic regression analyses were performed to determine the association between women's empowerment and safer sex negotiation.

Results: In Burkina Faso, participation in decision-making is relatively weak but the majority of women believe that a husband is not justified in beating his wife if she refuses to have sexual intercourse. Concerning safer sex negotiation, 47% of married women admitted they could not refuse sexual intercourse with their husband and 62.9% of them could not ask their husband to use a condom. Women with more empowerment in decision-making (more specifically decisions related to household purchases) were more able to negotiate safer sex practices globally. Women with more empowerment regarding wife beating were more prone to ask for a condom. Women's education, general media exposure, religion and salary type appeared to influence both outcomes.

Conclusion: The results point out the importance of women's empowerment on safer sex negotiation. These findings highlight the need in Burkina Faso for initiatives to improve women's empowerment for ending the HIV epidemic but also to increase global health.

Key Words: HIV, Women's Empowerment, gender-inequalities, safer sex negotiation, Africa, Burkina Faso, Demographic and Health Survey, population survey.

FOREWORD

This research paper is part of a major project initiated by Dr Fati Kirakoya, with the aim of understanding the factors associated with HIV infection and risky sexual behaviour in Burkina Faso. The first research [1] was intended to « investigate trends in HIV prevalence and changes in reported sexual behaviour between 1998 and 2014 ». The second research [2] focused on « the influence on both individual and community-level determinants of HIV testing uptake ». The purpose of this current research is to evaluate women's ability to negotiate safer sex practices and to assess the influence of empowerment and socio-demographics factors on this ability.

INTRODUCTION

HIV is still a major global issue in public health nowaday [3]. A lot of progress has been made throughout the years: between 2000 and 2017, new infections have dropped by 36% worldwide and 11.4 million lives were saved due to antiretroviral therapy [4]. Despite a decreasing incidence since 2001 [5], Sub-Saharan Africa counts for two-thirds of new infections in the world and supports the main burden of the disease [6]. The progress made in therapy availability and the decline in infections both hide a worrying truth: young African women and teenagers are particularly vulnerable to HIV [7]. In 2015, 34 young women were infected every hour and AIDS remains the major cause of death within this sector of the population [7]. UNAIDS discovered that young women were the most vulnerable to HIV because of « gender inequalities, violence between partners and lack of empowerment » [7]. Women in particular are considered at risk of disempowerment [8]. This explains why an efficient prevention program must aim for the root cause of gender inequality [7].

Married women are particularly at risk for several reasons: those who marry at a young age can have difficulties negotiating when to have sex with their partner or asking to use a condom because they do not have the knowledge or the empowerment [7]. Condom use in marriage is often associated with extramarital relations and mistrust [9-11] and refusing sexual relations is almost inconceivable for married women in Sub-Saharan Africa [9, 10, 12]. It is also proven that it is more challenging to consistently use a condom in long-term relationships. This explains why in Southern Africa, long-term relationships are the ones where HIV transmission occurs more frequently [6]. Being in a stable relationship could create major obstacles for women to negotiate safer sex with their partner [13]. Besides those reasons, a sociocultural context that supports polygamous relationships can increase HIV vulnerability for married women [14]. Promoting safer sex behaviours is one of the essential measures to be taken against the HIV epidemic [15].

According to UNAIDS [7], empowering women can help accelerate the end of the HIV epidemic in Africa. Kabeer, quoted by Bashemera [16], defines empowerment as « a process by which those who have been denied the ability/power to make strategic life choices acquire the ability to do so. For women, strategic life choices may include the capacity to choose a marriage partner, a livelihood, whether or not to have children ». According to

Kabeer, this process requires 3 aspects: access to and control of resources, agency (the ability to use these resources) and achievements [16]. Empowerment is considered as a process and as a result. According to an analysis from WHO on empowerment effectiveness [8], empowerment strategies are effective in improving long-term health and to reduce health disparities. In fact, multi-level empowerment strategies for HIV prevention which target gender inequities are useful in reducing the infection rate. In general, interventions on women's empowerment (including economic, educational and political dimensions) can greatly improve women's quality of life and autonomy as well as child and family health. Another fundamental reason to analyse and promote empowerment is that not empowering women to reach their full potential is a violation of their basic human rights [16].

In our literature review, a range of different variables are linked to the use of contraception : women's control over their choice of spouse and access to cash [17], freedom of mobility and household decision-making [18], gender role [19], credit participation [20] and level of education. Urban residence and education are associated with the ability to negotiate sex with their partner [21]. Education decreases fertility by increasing autonomy [22].

A study in Nepal [23] has shown that women with greater autonomy have higher HIV-related knowledge and condom use. Researchers found that women with greater autonomy in participating in decision-making and those who own assets were more likely to negotiate safer sex and to ask for condom use. Other studies reported that educated and wealthy women were more capable of negotiating safer sex practices than poorer women with less education [14, 21, 24, 25]. In Ghana [14] and in Bangladesh [26], married women are more likely to ask for a condom to be used or to refuse sex when they are aware that these are useful strategies to protect themselves from HIV infection.

Those results highlight the importance of women's empowerment on sexual health and encourage an empowerment-based approach to decrease HIV in developing countries. Also, community-level programs that aim at empowering women through support groups can be effective in reducing the HIV risk [27]. It is important to understand how a woman in her own context can be encouraged, assisted and empowered to use a safer form of protection. [28]. Furthermore, a lack of sexual empowerment has an effect on women's well-being and could result in compromising economic and political empowerment [29].

From 2006 to 2010 (the year of the DHS used in this analysis), Burkina Faso has implemented a HIV strategic framework with an increase in condom promotion campaigns, an increase in sites for mother and child prevention and an increase in health facilities with counseling and voluntary testing possibilities [1].

In 2010, HIV prevalence in Burkina Faso was estimated at 1.2 % among women and at 0.8 % among men [15]. The HIV prevalence is three times higher for men in rural areas and four times higher for women in rural areas than in urban areas. Surprisingly, the prevalence is higher amongst educated men and women (secondary level or higher) than amongst those without an education. However, the level of instruction appears as the most determining factor regarding contraception.

According to the Burkina DHS final report [15], the best known form of contraception is the male condom (93% of women in a relationship report knowing this method). However, only 15% of women use a contraceptive method. This prevalence is three times higher in urban areas than in rural areas. Major regional differences are observed (31% in the Centre and 7% in the Sahel Region, for example). The use of modern contraception amongst women in a relationship has increased from 9% in 2003 to 15% in 2010. Forty-two percent of women in a relationship are in a polygamous relationship.

To our knowledge, no research has been conducted in Burkina Faso on women's empowerment using the national demographic health survey. In this study, we aim to examine the association between women's empowerment and their ability to negotiate safer sex practices. Referring to the literature review, we hypothesized that women's empowerment influences safer sex behaviour.

METHODS

Study design

This is a cross-sectional study using data from the Burkina Faso Demographic and Health Survey (DHS) from 2010, which represents the most recent data at the time of this research. It is part of a larger project *Measure DHS* which collects, analyses and disseminates data about population and family health in over 90 countries. The DHS program is funded by the US Agency for International Development (UNAID) as well as other donors and funds from participating countries. The project is implemented by the ICF. The 2010 Burkina Faso DHS was executed by the Institut National de la Statistique et de la Démographie (INSD) (National Institute of Statistics and Demography) from the Ministry of Economics and Finances and by different partners.

This is a nationally representative survey: it is designed to provide representative estimates of demographic and health indicators for the whole country. Data was collected from May 2010 to January 2011. The methodology protocol is detailed elsewhere [15]. To consider the complex reality, this survey used a specific sample design where the population had been distributed into different strata (urban and rural strata) before the sample was retrieved. An inclusion probability was assigned to every sample participant by giving them a specific weight. This probability could differ from one participant to another and the weighing allows a different importance to be assigned to each observation. Concisely, it is a two-stage cluster sample design, stratified into rural and urban areas. In the first stage, 574 clusters were selected (176 in urban areas and 398 in rural areas) with a probability proportional to systematic size sampling. The second stage included the systematic sampling of households from the selected clusters. A national sample of around 15,000 households was selected and 14,424 of those were successfully interviewed. Three questionnaires were used for data collection (household, men and women) but we only used the women's questionnaire answers for this secondary analysis purpose.

Setting

Burkina Faso is an enclosed country of 272,967 km2 with no access to the sea. It is located in the Sudan area and is surrounded by Mali to the north, Niger to the north-east,

Benin to the south-east, Togo, Ghana and the Ivory Coast to the south. It is an agricultural and low-income country. This situation of poverty leads to difficulty accessing social services, unemployment, illiteracy, makeshift housing, low status for women and high levels of malnutrition [15].

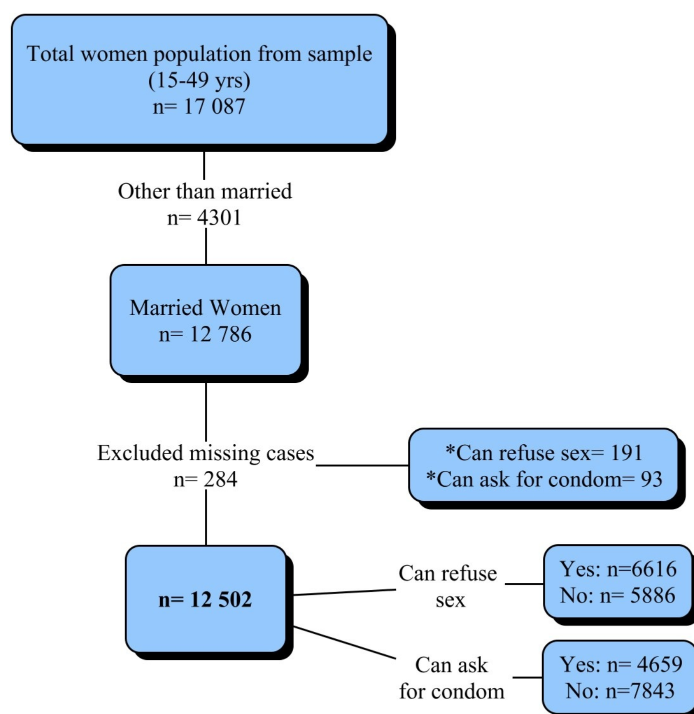

Figure 1. Flow chart: characteristics of the sample.

Participants

All women aged 15 to 49 met the appropriate requirements to be interviewed. Out of these 17,363 eligible women, 17,087 were effectively questioned. The sample used for this study included women who were aged 15-49 and currently married for a total population of 12,502, excluding 284 missing cases for our outcomes (figure 1).

Availability of data and materials

The dataset supporting the conclusions of this article is available in the DHS repository, https://dhsprogram.com/data/dataset/Burkina-Faso_Standard-DHS_2010.cfm?flag=0. We received prior authorization from Measure DHS before using the dataset: all datasets are available after a short registration on the DHS program website.

Ethical approval

In all DHS surveys, strict standards are applied to make sure privacy is protected. These standards are detailed on the DHS website (https://dhsprogram.com/What-We-Do/Protecting-the-Privacy-of-DHS-Survey-Respondents.cfm). Before the interview, every respondent received an informant consent statement and may decline their participation. Each interview is performed as privately as possible and an eligible person cannot be interviewed in the presence of another respondent. Data is provided without the participants' identification.

Measurements

A. Dependent variables

We chose two variables that show women's ability to negotiate safer sex. Sexual autonomy is measured here using 2 indicators: the woman can refuse to have sex and she can ask her husband to use a condom. These two questions are included in the DHS (appendix 1), *Can you say no to your (husband/partner) if you do not want to have sexual intercourse?* and *Could you ask your (husband/partner) to use a condom if you wanted him to?*, coded as *0* for no, *1* for yes, *8* for don't know. We dropped participants who answered *don't know* given their small numbers (1.56 % for refusal of sex and 1.30 % for asking for a condom). These variables give perceptions of sexual roles and women's rights over their own bodies [16].

B. Independent variables

Independent variables were structured into two main blocks: empowerment indicators and socio-demographic factors.

Empowerment indicators

The empowerment indicators most frequently used in the literature are: domestic decision-making, finances and spending, child related issues, access to or control over resources (cash, household income, assets, ...), freedom of movement. Freedom of violence is also used but less frequently [30]. To measure women's empowerment in this research, five

variables have been chosen: four variables for decision-making and one for attitude towards wife beating.

Decision-making

We selected 5 variables to indicate power over decisions. Women's participation in decision-making is widely accepted in the literature as an indicator of empowerment. The answers to these 4 questions; *Who usually makes decisions about health care for yourself? Who usually makes decisions about making major household purchases? Who usually makes decisions about visits to your family or relatives?* and *Who usually decides how your (husband's/partner's) earnings will be used?* were coded *0* for a woman not involved in the decision-making (decisions would be made by the husband alone or someone else) and *1* for a woman involved in the decision-making, whether she would make the decision alone or jointly with her husband. The more the woman is implicated in the decision-making, the more we can consider her empowerment level to be high [15].

Attitude towards wife beating

To evaluate married women's personal beliefs about domestic violence, we chose this question from the DHS: *In your opinion, is a husband justified in hitting or beating his wife if she refuses to have sex with him?* coded as *0* for no, *1* for yes and *8* for don't know. *Don't know* answers were regrouped with missing data due to their small numbers. Acceptance of domestic violence has been associated with low self esteem and lack of empowerment [26]. The more the woman accepts some forms of violence, the less conscious she is of her own rights [15]. On the contrary, if she answers *no*, it reflects a greater sense of self-respect [16].

Socio-demographic variables

Those included: age of participants, education, place of residence, ethnicity, religion, wealth index, salary type and general media exposure. Data is provided for participants aged between 15 and 49. Ages were regrouped into 4 categories: 15-19, 20-29, 30-39 and 40-49 years old. We regrouped education levels into 2 categories: no education, coded *0* and education, coded *1* (primary, secondary or higher regrouped). Type of place of residence was coded *0* for urban and *1* for rural. Religion was coded *0* for Muslims, *1* for Christians (including Catholics and Protestants) and *2* for other (Traditional, animist, other religion or no religion). The wealth index is a « composite measure of a household's cumulative living standard. The wealth index is calculated using easy-to-collect data on a household's

ownership of selected assets, such as televisions and bicycles; materials used for housing construction; and types of water access and sanitation facilities » [31]. We recoded this wealth index into 3 categories: poor (=0), middle (=1) and rich (=2). The salary type was grouped into 3 possibilities: no salary (=0), in-kind salary (=1), in cash (=2). Employment, particularly for cash, could empower women by supporting financial independence [32]. Three variables assessing media exposure were selected: frequency of listening to the radio, frequency of watching television and frequency of reading the newspaper. Each question was coded *0* for no access to this medium and *1* for being exposed to this medium (less than once a week and at least once a week regrouped). We constructed an index for general media exposure that shows: no exposure at all, exposure to at least one of those three media and exposure to more than one medium type. Education and media exposure can help empower women by giving them the information and means to function effectively [32].

Data analysis

Statistical analysis was performed using the Stata 14 software program. Firstly, a descriptive analysis was undertaken to described the distribution of married women according to their background characteristics. We described the characteristics of the study population and cross-tabulated our dependent variables with the explanatory variables. Rao Scott's chi-square test analysis was performed to explore the relationship between independent variables (empowerment indicators and socio-demographic factors) and safe sex behaviour (refusal of sex and request for condom use). This showed how safer sex negotiation may vary by each control variable. Secondly, simple logistic regression analysis was conducted to evaluate the association of the outcome variables with each explanatory variable. Variables were further included in the multi-variate analysis based on the association on the bivariate level. Thirdly, multiple logistic regression analysis was executed to assess how an explanatory variable relationship with outcome variables may vary when all explanatory variables are included in models. There are two models: model 1 with the empowerment indicators only and model 2 with empowerment and socio-demographic variables. Statistical tests were executed at the 5% level of significance. We applied the *SYV command* in Stata to take the sample design (weighting, stratification and cluster effect) into account. The Stata codes we used for this analysis are presented in appendix 9.

RESULTS

Descriptive analysis

The first column in table 1 (appendix 2) shows the characteristics of the sample. The vast majority of married women had no education at all (83.9%) and lived in rural areas (81.2%). The poor group of women accounted for 40.3%, 21.2 % were middle class and 38.5 were considered as rich. Amongst workers, 46.4% received cash, 44.3 % were not paid and only 9.3% received an in-kind salary. The majority of women were Muslim (61.4%), followed by Christians (27.7%). At least 51.3% of women had access to one type of media regularly but 26% reported no media exposure at all.

Participation in decision-making is relatively weak (figure 2): 22.5% participated in personal healthcare decisions, 20.8% in household purchases and 6.7% in the husband's money spending. The percentage is better regarding family visits or decisions regarding relatives: 52.2% of participants made decisions by themselves or jointly. The majority of women (81.1%) believed that beating is not justified if the wife refuses to have sex with her husband. It indicates a high overall acceptance of equal gender roles.

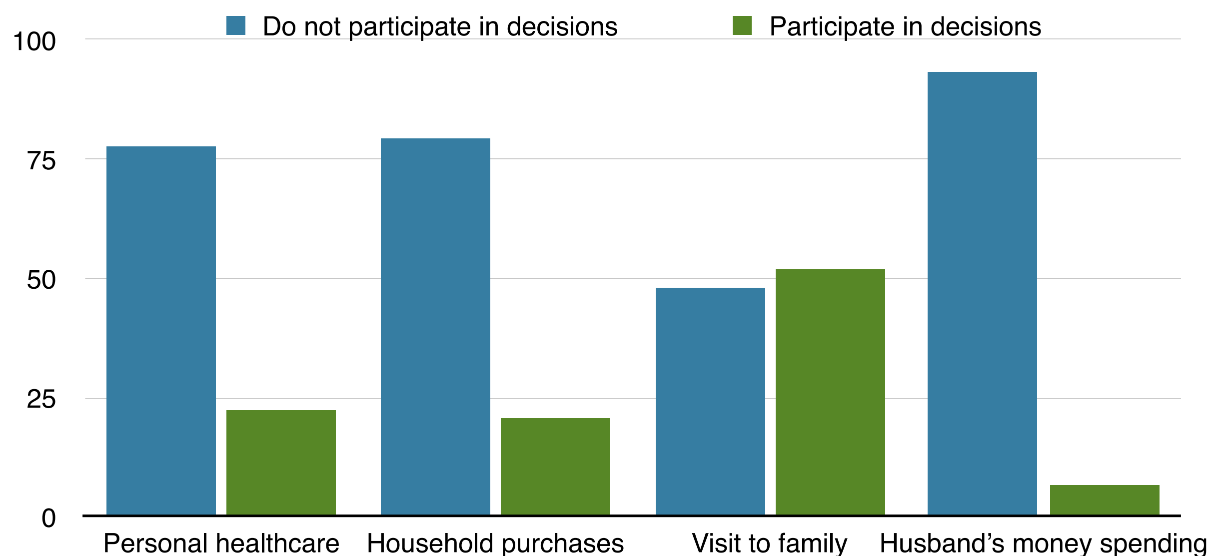

Figure 2: Frequency (%) of decision-making participation amongst married women in Burkina Faso in 2010

Concerning safer sex negotiation (figure 3), 47% of married women admitted they could not refuse sexual intercourse with their husband and 62.9% of them could not ask their husband to use a condom.

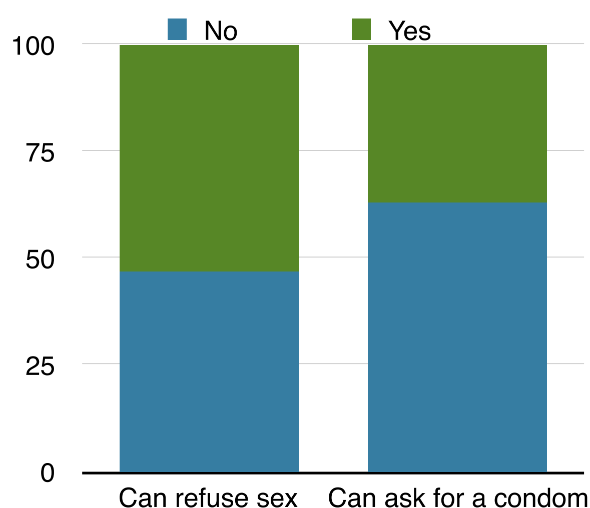

Figure 3: Frequency (%) of the ability to refuse sex and the ability to ask for a condom amongst our sample of married women in Burkina Faso in 2010

Tables 2 and 3 (appendix 3 and 4) show how safer sex negotiation may vary by each control variable (see appendix 10 for figures).

Tables 4 and 5 (appendix 5 and 6) show the bivariate relationships of dependent variables (whether women can refuse sexual intercourse or ask for a condom) with selected independent variables. Odds ratio offer to measure the link between the exposure and the outcome. It shows that almost all socio-demographic factors and empowerment indicators are significantly associated with the dependent variables . Only the *decisions related to family visits* is not associated with the outcome *asking for condom*.

Multivariate analysis

Table 6 (appendix 7) shows the results of the logistic regression analysis of women's ability to refuse sexual intercourse. In the first model, which contains only the empowerment indicators, three of those indicators -women's participation in household purchases decisions, participating in decisions regarding family visits and attitude toward domestic violence- were

significantly associated with the ability to refuse sex. The probability of being able to refuse sex was higher amongst women who participate in household decision-making (OR: 1.59, CI: 1.31-1.91), in decision-making related to family visits (OR:1.25,CI:1.06-1.48) and those who disapprove of domestic violence (OR:2.50,CI:2.08-3.02) compared to those who do not. On the contrary, participation in personal healthcare decisions and in the husband's money spending decisions were not significantly associated with the refusal of sex.

In the second model, socio-demographic variables were controlled. Two of these empowerment indicators remained significant in the multivariate model containing socio-demographic variables: participating in decisions related to household purchases (OR:1.49, CI:1.24-1.79) and attitude towards domestic violence (OR:2.33,CI:1.92-2.81). Participating in decisions related to family visits was not significant in the full model. Almost all socio-demographic factors, except for the place of residence, showed a significant connection with the ability to refuse a sexual relation. The probability of refusing sex was higher for women aged 20-29 (OR:1.19,CI:1.04-1.36) (compared to those aged 40-49), for women with some education (OR:1.36, CI:1.16-1.59), for women who are exposed to one medium (OR:1.17,CI: 1.02-1.35) or more than one medium (OR:1.40,CI:1.15-1.70), for women who receive a cash salary (OR:2.07,CI:1.56-2.74) or no salary (OR:1.48,CI:1.09-2.00) (compared to those who receive an in-kind salary) and for women of Christian (OR:1.67,CI:1.42-1.95) or animist/ other belief (OR:1.58, CI:1.22-2.06) (compared to Muslim women). Surprisingly, poor women were more prone (OR:1.18,CI:1.02-1.37) to say they can refuse sexual relationships than middle class ones.

Table 7 (appendix 8) shows the results of the logistic regression analysis of women's ability to ask for a condom. In the first model, which contains only the empowerment indicators, two indicators- women's participation in decisions related to household purchases (OR:2.05,CI:1.74-2.42) and in the husband's money spending decisions (OR:1.64,CI: 1.31-2.05)- were significantly associated with the ability to ask for condom use. Only one indicator was significant after controlling the socio-demographic variables in the second model. The probability of asking for condoms to be used was higher amongst women who participate in decisions related to household purchases (OR:1.94,CI:1.62-2.32) compared to those who do not. In the full model, all the socio-demographic variables appeared as strong

predictors of the ability to ask for a condom. The probability of asking for a condom decreased as age increased: women aged 15-19 were 84% more likely to admit that they could ask for a condom (OR:1.84,CI:1.46-2.32), women aged 20-29 were 65% more likely to ask (OR:1.65, CI:1.43-1.90) and women aged 30-39 were 25% more likely to ask (OR: 1.25,CI:1.09-1.42), compared to those aged 40-49. The probability of asking for a condom was higher for educated married women (OR:2.03,CI:1.73-2.38) than uneducated women, for women from a wealthy household (OR:1.38,CI:1.18-1.63) than those from a middle class household, for women from an urban residence (OR:1.58,CI:1.26-1.99) than those from a rural residence, for women who receive a cash salary (OR:1.64,CI:1.23-2.17) or no salary (OR:2.00,CI:1.46-2.73) than those who receive an in-kind salary and for women with exposure to one medium (OR:1.24,CI:1.05-1.46) and more than one medium (OR:1.73,CI: 1.43-2.10) compared to those without media exposure.

DISCUSSION

In this study, we assessed the effects of women's empowerment on safer sex negotiation. Two measures of safer sex negotiation were considered: the ability to refuse sexual intercourse and the ability to ask for condom use. We measured women's empowerment with five variables: four variables for the decision-making participation - personal healthcare decisions, decisions related to household purchases, decisions related to family visits and the husband's money spending decisions - and one variable for the attitude towards wife beating. Results showed that only a minority of women could ask their husband to use a condom (37.1%) and only half of women could refuse sex (47.0%). Moreover, reporting the ability to ask for a condom is different from reporting the actual use of condoms. In fact, only 15% of women (married and unmarried) reported using some form of contraception in Burkina Faso [15].

In this study, we found a significant and positive relationship between some indicators of empowerment and safer sex negotiation amongst married women in Burkina Faso. Results showed that married women with greater decision-making participation (here in decisions related to household purchases) were more likely to negotiate safer sex practices, whether refusing sex or asking for a condom, even after controlling socio-demographic factors. These findings are consistent with other studies in that decision-making has a positive impact on health and well-being, including safer sex negotiation [18, 23]. However, the participation in decision-making was relatively weak amongst married women in Burkina Faso: only 20.8% of women could participate (alone or jointly with their husband) in decisions related to household purchases.

Though the attitude towards domestic violence was not associated with the ability to ask for a condom, it was strongly associated with the ability to refuse sexual intercourse, which is also consistent with the literature findings [23]. Fortunately, in Burkina Faso, the percentage of women who think domestic violence is not justified was very high (81.1%) which could mean that a majority of women know their own rights and have a sense of self-worth [16], even if the percentage (18.9%) of women who believe that being beaten by their husband if they refuse to have sex is justified still seems too high.

Empowerment strategies are effective in improving long-term health, reducing health disparities and accelerating the end of the HIV epidemic in Africa [7, 8]. Sexuality is an essential component in women's political and economic empowerment [29]. The key message to policies is that empowerment is « a complex strategy that sits within complex environments » [8]. WHO recommends, generally speaking, to integrate empowerment in overall health strategies (including increasing citizens' skills, access to information and resources, using small groups to build a supportive environment,..) and to support partnerships that work with successful strategies for vulnerable populations such as women (including supporting participation which promotes decision-making authority) [8]. However, participation alone is insufficient if strategies do not also build decision-making ability. Successful empowering interventions cannot be standardized and applied as it is across multiple populations, but must be adapted to local contexts [30].

Socio-economic status is directly linked to asking for protection against HIV in the literature [14, 21]. In this research, we found that education and general media exposure seemed to be strong predictors of safer sex negotiation. This supports other study findings about education creating a positive impact on health-related outcomes such as HIV knowledge and condom use [23, 33, 34]. However, the vast majority of married women had no education at all and a quarter of women reported no media exposure at all. Major efforts must made in those two areas to empower women in Burkina Faso. Knowing how to protect themselves against HIV can empower women to negotiate safer sex [14]. Amnesty International calls for « ensuring that all women know their reproductive health rights. It must undertake information and education campaigns aimed at both women and men to provide accurate, evidence−based, and comprehensive information about contraceptives. The authorities should also take steps to ensure confidential access to such services and information for all women, including adolescents » [35]. Increasing media exposure seems fundamental for those purposes. As an example, UNESCO organises a *world radio day* campaign to put the focus on gender equality and women's empowerment in radio. The radio medium is mobile, inexpensive and accessible, especially in rural communities, according to UN Women [36] and we know that more than 80% of married women In Burkina Faso live in rural areas. In our study, women living in rural areas were less inclined to say they could ask their husband to use a condom than women living in urban areas, which

is supported by previous studies [22]. It is also supported by the fact that the HIV infection rate is higher in rural areas of Burkina Faso [15]. « Urban residence, with its increased opportunities for exposure to new ideas and wealth, with its potential for increased access to all types of resources can also be considered variables that capture aspects of the setting for empowerment » [32]. Along with education and media exposure, salary type is significantly associated with safer sex negotiation and wealth is a major factor regarding the ability to ask for a condom. Women who receive cash for their work are more able to negotiate safer sex practices than those who receive an in-kind salary. Women from richer households are more likely to ask for protection against HIV. These findings support previous studies (cited by Tenkorang) that claim that social and economic empowerment are relevant for the sexual empowerment of women [14]. With both outcomes, Muslim women seemed less likely to report that they could negotiate safer sex with their husband. The majority of married women in Burkina Faso are Muslim (61.4%), followed by Christians (27.7%). A previous study suggested that, in Bangladesh, Islamic beliefs could still have a strong grip on gender roles [37]. Every prevention program must be specifically adapted to the target population and religious beliefs have to be taken into account. The age factor was significantly associated with the ability to ask for a condom. Surprisingly, the probability decreases with age: younger women seem more able to ask their husband to use a condom than older women. In a previous study in Bangladesh [26] with the same findings, the explanation they give is that a higher age is associated with both greater freedom and empowerment in general but greater conservatism when it comes to sexual attitude and behaviour. In parallel, HIV prevalence increases with age until its climax at 30-39 years old (2,4%) amongst women in Burkina Faso [15].

Some unexpected results were found. The place of residence is not significantly associated with the ability to refuse sex, contrary to the findings of a previous study in Uganda [21]. The probability of refusing sex was higher amongst poor women than amongst middle class women. We assume that poor women may be more independent due to their need to fight to survive than middle class or richer class women. Women who received cash as a salary were more able to adopt safer sex practices than those who received an in-kind salary. Unexpectedly, married women who are not paid for their work seemed to have better abilities to negotiate safer sex: they were more likely to report that they could refuse sex and

more likely to say they could ask for a condom than those who received an in-kind salary. We presume that women who work for no salary are not the poorest women as they don't need to work but they might work to meet their social needs and/or to help the family. On the contrary, we assume that those who are ready to work for an in-kind salary are more in need and could represent the poorest women. We suggest verifying those assumptions in a further research. An other surprising observation is that, according to the Burkina Faso DHS Final Report, the HIV prevalence was higher amongst educated and wealthy women than amongst uneducated and poor women [15]. On the other hand, in this study, we found that education was positively associated with safer sex negotiation and wealth was positively associated with the ability to ask for condoms. We recommend additional research to understand why educated and wealthy women, who have better abilities to adopt safer sex behaviours, have higher HIV prevalence.

The protection of women's rights is a major international and national concern. That is why Burkina Faso approved the UN CEDAW (Convention of the Elimination of All forms of Discrimination Against Women) and the Maputo's Protocol [15]. According to Amnesty International, women in Burkina Faso « suffer discrimination in many areas of their lives, with unequal access to education, health care and employment. Particularly in rural areas, women have little or no say in key domestic decisions. They are primarily valued as wives and mothers, and if they do not have children they risk abandonment and rejection, sometimes even domestic violence » [35]. Amnesty International encourages the progressive and equal distribution of health services throughout the country. A focus on variables that increase women's access to resources and knowledge such as their educational achievement, employment for cash, and media exposure are supported by this analysis.

Strengths and limitations

The main strength of this study relies on the data: the DHS datasets used are nationally representative and the DHS surveys follow the same structure and contain the same questions for every country, making them possible to compare. The other strength is the social purpose of the research, as we know that working on gender inequalities is strongly necessary nowadays, for fighting against diseases but also to increase global health by empowering populations.

As for its limitations, there might be a social desirability bias: women will report that they can negotiate safer sex when in fact, they cannot. The cross-sectional design can also be considered as a limitation because it doesn't allow to identify a causal association between the dependent and the independent variables. An other limitation is that the process and result of empowerment may be more complex than what has been captured here. It would be interesting to analyse the association between safer sex negotiation and other indicators of empowerment like freedom of movement and access and control over ressources.« Most studies capture some possible slice of empowerment rather than empowerment itself » [30]. Women's reality is also far more complex and diverse than the answers to some DHS questions. It may seem too reductive to base policies on these answers. However, it reflects a part of their reality and should be taken into consideration. Moreover, we could consider the individual level of this research as a limitation. Further analysis with community variables included should be considered.

Despite those limitations, our findings are globally consistent with the literature and highlight some policy directions needed for empowering women and decreasing HIV infection rate amongst married women in Burkina Faso.

CONCLUSION

We hypothesized that women's empowerment influences their safer sex behaviour. In Burkina Faso, the percentage of married women who can negotiate safer sex practices is relatively low, which does not help when it comes to HIV epidemic ending. Our results showed a significant and positive association between some empowerment indicators and safer sex negotiation. The current research points out the importance of women's empowerment in decision-making participation and attitude toward domestic violence regarding safer sex negotiation. However, the percentage of married women reporting decision-making participation is considerably weak. The information collected in this study can be used to analyse and adjust the IEC campaigns (Information, Education and Communication campaigns) that exist in the country [15] and to develop new ones. To help end the HIV epidemic, we encourage gender-based and participating approaches to empower women as well as increasing resources for women such as educational attainment, employment for cash and general media exposure, especially in rural areas. We recommend additional research with qualitative data to have a better understanding of the complex reality of these women.

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APPENDIX

Appendix 1: Abstract of the DHS Women questionnaire

Appendix 2: Table 1-Characteristics of married women who have participated in the Burkin Faso DHS

Appendix 3: Table 2-Chi-square test on outcome *refusal of sex* and independent variables

Appendix 4: Table 3-Chi-square test on outcome *asking for condom* and independent variables

Appendix 5: Table 4-Simple logistic regression of socio-demographic and empowerment indicators of *refusing sex*

Appendix 6: Table 5-Simple logistic regression of socio-demographic and empowerment indicators of *asking for condom*

Appendix 7: Table 6-Multivariate logistic regression of empowerment and socio-demographic indicators of *refusing sex*

Appendix 8: Table 7-Multivariate logistic regression of empowerment and socio-demographic indicators of *asking for condom*

Appendix 9: Do-File of the Stata analysis

Appendix 10: Figures

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