



## **Perceptions of Risk of Contracting HIV among Married Men and Women in Zambia**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. Author KT designed the study, wrote the protocol, managed the statistical analyses of the study and wrote the first draft of the manuscript. Authors SOCM and AJM managed the literature searches, wrote the discussion and edited the manuscript. All authors read and approved the final manuscript.*

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### **ABSTRACT**

This study explored the perceived risk of contracting HIV among the currently married men and women in Zambia. The analysis was carried out on data from the latest Zambia Demographic Health Survey (2014). Results indicated that 48% of the currently married women, and 61% of the currently married men reported low perceived risk for contracting HIV. The results also indicate that age, place of residence, wealth status, having had sex with three or more partners for the last 12 months, drinking alcohol and condom use were associated with high risk perception of contracting HIV for men. Women who had three or more sexual partners during the last 12 months were 1.5 times more likely to perceive high risk for contracting HIV than those who had less than three partners. Among the males, those who had sex with three or more sexual partners were 1.7 times more likely to perceive being at high risk for contracting HIV than those who had sex with less than three partners. Respondents from the higher socio-economic group were 1.3 times more likely to

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report low risk of contracting HIV as compared to those from middle and lower socio-economic group. These findings suggest that behaviour change campaigns encouraging married men and women to accurately assess their personal risk of contracting HIV should be complemented with targeted awareness messages emphasizing the positive attributes of using condom.

*Keywords: HIV; health risk; population; practice; Zambia.*

## 1. INTRODUCTION

The Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) are global public health issues having dire social and economic consequences on the lives of both young and older men and women. The epidemic has affected an estimated 78 million people worldwide and it is that estimated 36.7 million people are living with HIV, while 35 million people have died of AIDS-related illnesses in 2016 [1,2]. Zambia is one of the nine African countries hardest hit by the AIDS epidemic, where the prevalence rate among the 15 to 49-year-olds 13 per cent [3].

An individual's perception of risk to contract HIV largely influences their HIV related risk behavior such as condom use [4]. The levels of condom use among married people are very low in Zambia. An individual's perception of the risk of contracting HIV is a critical determinant of condom use. HIV awareness programs have been popular in Zambia for more than a decade and studies confirm increase in HIV knowledge as a result of this [5]. However, the perception of contracting HIV seems relatively low as indicated by high risk sexual behaviors among young people and adults in Zambia [6]. Another study by Chatterjee found that increased HIV knowledge contributed to higher risk perception of acquiring HIV when indulging in unsafe sexual practices. Most married women's risk perception was low which was linked to the notion of being faithful to their husbands hence they expected the same from their spouses [7]. Further studies found that perception levels of contracting HIV were also determined by the respondent's marital status, with condom use being relatively low among married men and women compared to unmarried respondents. The study also found out that condom use was more common among those involved in extra marital affairs [8].

A study carried out by Prata in Mozambique found that low perceptions of contracting HIV was associated with people engaged in high risk sexual behaviors making them vulnerable to

contracting HIV and/or being re-infected [9]. Married men and women generally perceived themselves to be at low risk due to the false or exaggerated sense of security they had in their partners and this was associated with factors such as religion and culture, number of sexual partners, fear of AIDS, HIV stigma, community perceptions of HIV and AIDS, knowing someone with HIV and discussing HIV related issues at home [9,10].

Knowledge gaps among married couples were further revealed in a large household survey conducted in Lagos in Nigeria [11]. Couples' large knowledge gap was as a result of the low risk perceptions of HIV contraction. However, discrepancies of the levels of perceptions were apparent among married men and women despite respondents having HIV knowledge. More than 80% of married respondents were found to have engaged in unprotected sex and regarded it not being risky behaviour. The aim of this paper is to examine the perceptions of risk of contracting HIV among married men and women in Zambia.

## 2. METHODOLOGY

We analyzed the data from 2014 Zambia Demographic Health Survey (ZDHS) to explore the perceived risk of contracting HIV among the currently married men and women in Zambia. The sample for ZDHS was chosen to be nationally representative and to provide the estimates of population and health indicators at the provincial and national levels. The survey was carried out by Central Statistical Office with technical assistance from the Demographic Healthy Surveys Programme at ICF International which was funded by the United States Agency for International Development (USAID). The survey used a two-stage stratified cluster sampling design. At the first stage, 722 Enumeration Areas (EA) were selected using systematic random sampling with probability proportional to size. At the second stage, 25 households per EA were selected again using systematic random sampling. Methods and data

collection procedures have been published elsewhere [3].

The ZDHS included a special module designed to collect information on various demographic and health indicators including individual characteristics, sexual activity, marriage, family planning knowledge and use, HIV and AIDS related risk perception, knowledge, attitudes and behavior. In this study, the analysis was restricted to currently married women and men. The DHS data is freely available to all researchers who wish to utilize them.

## 2.1 Data Analysis

The data analysis was carried out in two stages. Firstly, cross tabulations were used to examine the relationship between the independent (socio-economic and demographic) variables and dependent (high and low risk perceptions) variables. For the statistical analysis, chi-square tests were conducted at the bivariate level for independent variables at  $p < 0.01$  and  $p < 0.05$  significant level. Secondly, the logistic regression was used to identify factors influencing risk perceptions by considering socio-economic and demographic variables separately for those who were at high risk and low risk of contracting HIV. The result of the logistic regression models were converted into odds ratios, which represented the effect of a one-unit change in the explanatory variable on the indicator of high or low risk perception. Odds ratios larger than one indicates a greater likelihood of being at risk from the reference category; odds ratios smaller than one indicates a smaller likelihood compared to the reference category.

## 3. RESULTS

### 3.1 Characteristics of the Sample

The sample distribution of currently married men and women in Zambia is shown in Table 1. The majority of the participants in terms of age were between 30 to 39 years. Majority of the respondents were married for a period between one to four years. With regard to religion, the majority of the respondents were Protestants. The results also showed that more than half of the respondents were from urban areas (females, 58.4% and males 59.8%). The distribution of respondents by wealth quintile showed that 40.4% of women and 41% of men were categorized poor, 22.2% of the women and 21.7% of men were categorized middle and

37.4% of women and 37.3% of men were categorized rich. On the working status, 58.6% of women and 91.6 % of the men were employed in the formal sector. The education characteristics of the respondents showed that 33.8% of women and 48.4% of men had achieved secondary education or higher. Meanwhile, 66.2% of the women and 51.4% of the men had only acquired primary education. The data further indicated that 13.2% of females and 16.9% of males reported having had sex with three or more partners. On consistency of condom use with all partners, only 4.8% of females and 12.7% of males reported having used condoms consistently with all their partners and 9.4% of females and 46.5% of males reported drinking alcohol.

### 3.2 Perceived Risk of Contracting HIV

The percentage of currently married respondents who reported a high risk of contracting HIV is shown in Table 2. Overall, 19.5% of married women and 21% of married men perceived a high risk of contracting HIV. The results showed that women(21.8%) and men(18.3%) aged 40-49 were more likely to have reported a high perceived risk of contracting HIV compared to those in the 15-29 age group (women 16.5%, men 15.1%).

It was found that those who had been married for 15 years and above were more likely to report perceived high risk of contracting HIV than those who had been married for a period of 1-4 years. Protestant men and women were more likely to report perceived high risk of getting HIV as compared to the Catholics (women 17.5%, men, 15.8%). Interestingly, respondents from rural areas (women 21.5%, men 19.8%) were more likely to report a high perceived risk of contracting HIV as compared to those from urban areas (women 18%, men 16%). The wealth index shows that women from rich (20.9%) backgrounds were more likely to report a high perceived risk of contracting HIV as compared to those coming from poor backgrounds (17.5%). For the men, the wealth index showed slightly different results such that men from middle class backgrounds (19.7%) were more likely to report high perceived risk of contracting HIV as compared to those from poor backgrounds (15.7%). Furthermore, women who had secondary education (women 20.7%) were more likely to have reported high perceived risk of contracting HIV as compared to 18.9% of women who had primary education. Educational status was not a significant factor for men associated with HIV high risk perception.

**Table 1. Sample distribution of currently married men and women in Zambia**

| <b>Characteristics</b>                            | <b>Women (%)</b> | <b>n</b> | <b>Men (%)</b> | <b>n</b> |
|---|------------------|----------|----------------|----------|
| <b>Age</b>  |                  |          |                |          |
| 15-29   | 23.1             | 2202     | 21.9           | 1776     |
| 30-39   | 42.3             | 4038     | 38.2           | 3106     |
| 40-49   | 34.7             | 3312     | 39.9           | 3245     |
| <b>Marital duration</b>                           |                  |          |                |          |
| 1-4   | 21.2             | 2022     | 19.0           | 1547     |
| 5-9   | 20.5             | 1959     | 18.5           | 1503     |
| 10-14   | 19.3             | 1843     | 18.6           | 1514     |
| 15+   | 39.0             | 3728     | 43.8           | 3563     |
| <b>Religion</b>                                   |                  |          |                |          |
| Catholic  | 18.3             | 1744     | 21.0           | 1638     |
| Protestant  | 81.7             | 7782     | 79.0           | 6396     |
| <b>Place of residence</b>                         |                  |          |                |          |
| Rural   | 41.6             | 3977     | 40.2           | 3265     |
| Urban   | 58.4             | 5575     | 59.8           | 4862     |
| <b>Wealth Index</b>                               |                  |          |                |          |
| Poor  | 40.4             | 3859     | 41.0           | 3335     |
| Middle  | 22.2             | 2125     | 21.7           | 1760     |
| Rich  | 37.4             | 3568     | 37.3           | 3032     |
| <b>Work status</b>                                |                  |          |                |          |
| Not-employed                                      | 41.4             | 3936     | 8.4            | 686      |
| Employed  | 58.6             | 5577     | 91.6           | 7437     |
| <b>Educational level</b>                          |                  |          |                |          |
| Primary   | 66.2             | 6318     | 51.4           | 4172     |
| Secondary or higher                               | 33.8             | 3227     | 48.6           | 3951     |
| <b>Had sex with three or more partners</b>        |                  |          |                |          |
| No  | 86.8             | 8284     | 83.1           | 6749     |
| Yes   | 13.2             | 1258     | 16.9           | 1368     |
| <b>Used condom consistently with all partners</b> |                  |          |                |          |
| No  | 95.2             | 9096     | 87.3           | 7094     |
| Yes   | 4.8              | 456      | 12.7           | 1033     |
| <b>Drinks alcohol</b>                             |                  |          |                |          |
| No  | 90.6             | 8646     | 53.5           | 4344     |
| Yes   | 9.4              | 901      | 46.5           | 3781     |

It was further found that women who had sex with three or more partners (25.9%) were more likely to report a high risk of contracting HIV compared to those who did not (18.5%). For the men, the opposite was the case. Men who reported having had sex with two or more partners (48.8%) were more likely to report high perceived risk as compared to those who reported having had sex with two or more partners (40.5%). Furthermore, women who reported using condoms consistently with all partners (31.8%) were more likely to report high perceived risk of contracting HIV as compared to those that reported not using condoms consistently (women 18.9%). For the men, those who did not use condoms consistently with their partners were more likely to report high perceived risk of contracting HIV. Lastly, those

women who took alcohol (21.3%) were more likely to report high perceived risk of contracting HIV in comparison to those that did not take alcohol (19.3%). In the case of men, those that did not take alcohol (48.3%) were more likely to report high perceived risk of contracting HIV compared to those who took alcohol (41.2%).

The percentage of currently married respondents who reported low perceived risk of contracting HIV is shown in Table 2. Overall, about 47% of the married women and 61% of married men reported low perceived risk of contracting HIV. The results showed that respondents aged 15-29(54%) were more likely to reported low perceived risk of contracting HIV compared to age group 40-49 (women 44.9%,men 60.7%). Moreover, those women who had been

**Table 2. Percentage of married women and men who reported perceived risk of contracting HIV**

| Characteristics                                   | % who reported being at high risk of getting HIV |             | % who reported being at low risk of contracting HIV |             |
|---|--|-------------|---|-------------|
|   | Women  | Men         | Women   | Men         |
| <b>Age</b>  |  |             |   |             |
| 15-29   | 16.5**   | 15.1**      | 54.0**  | 64.9**      |
| 30-39   | 19.2   | 18.3        | 46.5  | 59.6        |
| 40-49   | 21.8   | 18.2        | 44.9  | 60.7        |
| <b>Marital duration</b>                           |  |             |   |             |
| 1-4   | 16.6**   | 17.6        | 53.7**  | 62.9        |
| 5-9   | 18.8   | 17.2        | 48.5  | 62.1        |
| 10-14   | 19.3   | 16.3        | 46.7  | 59.6        |
| 15+   | 21.5   | 18.2        | 44.5  | 60.8        |
| <b>Place of residence</b>                         |  |             |   |             |
| Rural   | 21.5**   | 19.8**      | 45.9**  | 60.2*       |
| Urban   | 18.0   | 16.0        | 49.0  | 61.9        |
| <b>Wealth Index</b>                               |  |             |   |             |
| Poor  | 17.5**   | 15.7**      | 49.3**  | 61.9**      |
| Middle  | 20.7   | 19.7        | 47.7  | 57.8        |
| Rich  | 20.9   | 18.3        | 46.0  | 62.4        |
| <b>Educational level</b>                          |  |             |   |             |
| Primary   | 18.9*  | 16.0**      | 47.5  | 61.6        |
| Secondary or higher                               | 20.7   | 19.1        | 48.1  | 60.8        |
| <b>Had sex with three or more partners</b>        |  |             |   |             |
| No  | 18.5**   | 18.1**      | 48.8**  | 60.9        |
| Yes   | 25.9   | 14.6        | 40.5  | 61.7        |
| <b>Used condom consistently with all partners</b> |  |             |   |             |
| No  | 18.9**   | 16.6**      | 48.3**  | 63.3**      |
| Yes   | 31.8   | 23.6        | 34.9  | 49.2        |
| <b>Drinks alcohol</b>                             |  |             |   |             |
| No  | 19.3*  | 17.5**      | 48.3**  | 60.4**      |
| Yes   | 21.3   | 17.6        | 41.2  | 65.1        |
| <b>Total</b>                                      | <b>19.5</b>                                      | <b>21.5</b> | <b>47.7</b>   | <b>61.2</b> |

\*\* Significant at  $p < 0.01$ ; \* Significant at  $p < 0.05$

married for 4 years or less (53.7%) were more likely to report low perceived risk of contracting HIV in comparison to those who had been married for a period of 15 years and above (44.5%). Furthermore, respondents from urban areas (women 49%, men 61.9%) were more likely to report low perceived risk of contracting HIVS as compared to rural areas (women 45.9%, men 60.1%). The wealth index showed that respondents from poor backgrounds were more likely to report low perceived risk of contracting HIV as compared to those from rich backgrounds (women 46%, men 62.4%). Moreover, women who having sex with three or more partners (48.8%) were more likely to report low perceived risk of contracting HIV compared to those that reported having had sex with three or more partners (40.5%). Respondents who reported not

using condoms consistently with all partners (women 48.3%, men 63.3%) were more likely to report low perceived risk of contracting HIV compared to those that reported that they used condoms consistently with all partners (women 34.9%, men 49.2%). Lastly, those women who did not take alcohol (women 48.3%, men 60.4%) were more likely to report low perceived risk of contracting HIV in comparison to those that did take alcohol (females 41.2%, males 65.1%).

### 3.3 Relationship between Perceived High Risk of Contracting HIV and Socio-economic Status

The Logistic Regression Analysis of socio-economic and demographic variables on currently married women who reported high

perceived risk of contracting HIV is shown in Table 3. The variable place of residence, having had sex with three or more partners and using condoms consistently reports on high perceived risk of contracting HIV. Results showed that place of residence particularly urban areas were negatively associated with respondents' likelihood of reporting high perceived risk of contracting HIV. Those who reported having had

sex with three or more partners were 1.5 times more likely to report high perceived risk of contracting HIV compared to those who did not have sex with three or more partners. Women who reported using condoms consistently with all partners were 1.9 times more likely to report high perceived risk of contracting HIV compared to those who did not use condoms consistently with all partners.

**Table 3. Logistic Regression Analysis of socio-economic and demographic variables on currently married women who reported risk of contracting HIV**

| Variables   | Perceived high risk of contracting HIV among married |         |            |         | Perceived low risk of contracting HIV among married |         |            |         |
|---|--|---------|------------|---------|---|---------|------------|---------|
|   | Women  |         | Men        |         | Women   |         | Men        |         |
|   | Odds Ratio   | P value | Odds Ratio | P value | Odds Ratio  | P value | Odds Ratio | P value |
| <b>Age</b>  |  |         |            |         |   |         |            |         |
| 15-29   | 0.0000   | 0.0000  | 0.0000     | 0.0000  | 0.0000  | 0.0000  | 0.0000     | 0.0000  |
| 30-39   | 1.0223   | 0.8128  | 1.4806     | 0.0001  | 0.0899  | 0.0352  | 0.7550     | 0.0005  |
| 40-49   | 1.1165   | 0.3670  | 1.1530     | 0.0012  | 0.9084  | 0.3205  | 0.7624     | 0.0059  |
| <b>Marital duration</b>                           |  |         |            |         |   |         |            |         |
| 1-4   | 0.0000   | 0.0000  | 0.0000     | 0.0000  | 0.0000  | 0.0000  | 0.0000     | 0.0000  |
| 5-9   | 1.1688   | 0.9660  | 0.8718     | 0.1832  | 0.8631  | 0.0408  | 1.0638     | 0.4422  |
| 10-14   | 1.1994   | 0.0990  | 0.7151     | 0.0045  | 0.8281  | 0.0274  | 1.0647     | 0.4980  |
| 15+   | 1.3182   | 0.0224  | 0.8218     | 0.1205  | 0.7299  | 0.0010  | 1.1013     | 0.3376  |
| <b>Religion</b>                                   |  |         |            |         |   |         |            |         |
| Catholic  | 0.0000   | 0.0000  | 0.0000     | 0.0000  | 0.0000  | 0.0000  | 0.0000     | 0.0000  |
| Protestant  | 1.7530   | 0.2100  | 1.1895     | 0.0210  | 0.9864  | 0.7983  | 0.9886     | 0.8410  |
| <b>Place of residence</b>                         |  |         |            |         |   |         |            |         |
| Rural   | 0.0000   | 0.0000  | 0.0000     | 0.0000  | 0.0000  | 0.0000  | 0.0000     | 0.0000  |
| Urban   | 0.8505   | 0.0218  | 0.7575     | 0.0005  | 1.1000  | 0.0926  | 1.1542     | 0.0224  |
| <b>Wealth Index</b>                               |  |         |            |         |   |         |            |         |
| Poor  | 0.0000   | 0.0000  | 0.0000     | 0.0000  | 0.0000  | 0.0000  | 0.0000     | 0.0000  |
| Middle  | 1.1138   | 0.1432  | 0.1411     | 0.1096  | 0.9940  | 0.7662  | 0.9024     | 0.1107  |
| Rich  | 1.0306   | 0.7224  | 0.8321     | 0.0547  | 0.9557  | 0.9169  | 1.2294     | 0.0054  |
| <b>Work status</b>                                |  |         |            |         |   |         |            |         |
| Not-working                                       | 0.0000   | 0.0000  | 0.0000     | 0.0000  | 0.0000  | 0.0000  | 0.0000     | 0.0000  |
| Working   | 1.0184   | 0.7371  | 0.9421     | 0.5776  | 1.1301  | 0.0045  | 0.8987     | 0.2055  |
| <b>Educational level</b>                          |  |         |            |         |   |         |            |         |
| Primary   | 0.0000   | 0.0000  | 0.0000     | 0.0000  | 0.0000  | 0.0000  | 0.0000     | 0.0000  |
| Secondary +                                       | 1.1118   | 0.1007  | 1.2050     | 0.0059  | 1.0210  | 0.6887  | 0.9403     | 0.2446  |
| <b>Had sex with three or more partners</b>        |  |         |            |         |   |         |            |         |
| No  | 0.0000   | 0.0000  | 0.0000     | 0.0000  | 0.0000  | 0.0000  | 0.0000     | 0.0000  |
| Yes   | 1.4727   | 0.0000  | 1.7736     | 0.0022  | 0.7294  | 0.0000  | 0.1204     | 0.0031  |
| <b>Used condom consistently with all partners</b> |  |         |            |         |   |         |            |         |
| No  | 0.0000   | 0.0000  | 0.0000     | 0.0000  | 0.0000  | 0.0000  | 0.0000     | 0.0000  |
| Yes   | 1.8728   | 0.0000  | 1.5389     | 0.0000  | 0.6017  | 0.0000  | 0.6338     | 0.0000  |
| <b>Drinks alcohol</b>                             |  |         |            |         |   |         |            |         |
| No  | 0.0000   | 0.0000  | 0.0000     | 0.0000  | 0.0000  | 0.0000  | 0.0000     | 0.0000  |
| Yes   | 1.0671   | 0.4591  | 1.0109     | 0.8572  | 0.8052  | 0.0028  | 0.8617     | 0.0015  |

The results from married men revealed that age, marital duration, place of residence, educational level, having had sex with three or more partners and using condoms consistently strongly influenced high perception of contracting HIV. Respondents who were aged 30-39 and 40-49 showed a strong likelihood of reporting high risk perception of contracting HIV. Men in the two age groups were 1.5 times and 1.2 times respectively, more likely to report high risk perception of contracting HIV compared to those aged 15-29. Regarding marital duration, men who were 10-14 years in marriage showed a negative association with reporting high risk of contracting HIV.

Interestingly, there was a significant association between religion and men's reports on high perceived risk of contracting HIV. Protestant men were 1.2 times more likely to report high perceived risk of contracting HIV as compared to those who were catholic. With regard to wealth status, respondents from rich backgrounds were negatively associated with the likelihood of reporting high risk of contracting HIV. Logistic regression also showed that place of residence particularly; urban residence was negatively associated with the likelihood of reporting high perceived risk of contracting HIV. Results on educational level showed that men who had secondary education had a strong likelihood of reporting high perceived risk of contracting HIV. Those with secondary education were 1.2 times more likely to report high perceived risk of getting HIV as compared to men who had primary education. Moreover, respondents who reported to have had sex with three or more partners were less likely to report high perceived risk of contracting HIV. Logistic regression analysis also revealed that men who reported using condoms consistently with all partners were 1.5 times more likely to report high perceived risk of contracting HIV compared to those who did not use condoms consistently with all partners.

### **3.4 Relationship between Perceived Low Risk of Contracting HIV and Socio-economic Status**

The Logistic Regression Analysis of socio-economic and demographic variables on currently married women who reported low risk of contracting HIV is shown in Table 3. For women, age, place of residence, wealth and work status, marital duration, has had three or more sexual partners, drinking alcohol and using condoms consistently strongly influenced respondent's

reports on low risk of contracting HIV. Married women who were in the age group 30-39 and 40-49 were more likely to report at low risk of contracting HIV. Moreover, marital durations 5-9 years, 10-14 years and also 15 years or longer were less likely to report low risk of contracting HIV. Regarding wealth status, respondents from rich and the middle class were negatively associated with strong likelihood of reporting low risk of contracting HIV. The place of residence particularly urban was strongly associated with the likelihood of respondents reporting low risk of contracting HIV. Women from urban residences were 1.1 times more likely to report low risk as compared to women from rural areas. Working respondents were 1.2 times more likely to report low risk as compared to those who were not working. Moreover, women who reported to have had sex with three or more partners were negatively associated with likelihood of reporting low risk of contracting HIV. Similarly, results revealed that men who reported using condoms consistently with all partners were negatively associated with the likelihood of reporting low risk of contracting HIV. Finally, those who drank alcohol were less likely to report low risk of contracting HIV compared to those that did not consume alcohol.

Socio-economic and demographic variables on currently married men who reported low risk of contracting HIV is shown in Table 3. Age, place of residence, wealth status, having had sex with three or more partners, drinking alcohol and using condoms consistently strongly influenced respondent's reports on high risk of contracting HIV. Respondents who were in the age group 30-39 and 40-49 were negatively associated with strong likelihood of reporting low risk. Regarding wealth status, respondents from rich background showed a strong likelihood of reporting low risk of contracting HIV. Respondents from rich backgrounds were 1.3 times more likely to report low risk of contracting HIV as compared to those from middle and poor backgrounds. Place of residence particularly, urban area, was strongly associated with the likelihood of respondents reporting low risk of contracting HIV. Respondents from urban residences were 1.2 times more likely to report low risk as compared to those from rural areas. Moreover, respondents who reported to have had sex with three or more partners were strongly associated with likelihood of reporting low risk of contracting HIV. They were 1.2 times more likely to report low risk of contracting HIV as compared to those who reported having fewer partners. Surprisingly,

results revealed that men who reported using condoms consistently with all partners were negatively associated with the likelihood of reporting low risk of contracting HIV.

#### 4. DISCUSSION

This paper examined perceived risk of contracting HIV across socio-economic, behavioral and demographic variables among married men and women in Zambia. The results suggest that gender, age, place of residence, wealth status, consistency of condom use, took alcohol and number of sexual partners were significant predictors of low risk perception.

It was found that proportionally, more men perceived themselves low risk of contracting HIV as compared to women. An explanation to this finding could be that married men were more likely to have multiple sexual partners and engage in risky sexual behaviors as compared to married women. Moreover, these results suggested that married men engaged in risky sexual behaviors more than married women because men most likely perceived themselves as being at low risk of contracting HIV as compared to women. This could be an indicative of gender differences in risk perception of contracting HIV.

Age was a predictor of risk perception of contracting HIV among the married people. Young married people were more likely to report low perceived risk of contracting HIV as compared to their older counterparts. These findings were similarly significant for both men and women. This was consistent with findings from previous studies that indicate that age-sex pattern of self-perceived risk of HIV infection may be due to risk assessment increasing with age as exposure to risk increases and young people may be at the peak of their sexual activity whereas the older generations may not perceive themselves at high risk due to avoidance strategies and reduced sexual activities [12].

The results of the current study also revealed that coming from an urban setting was significantly associated with low risk perception as compared to those from rural backgrounds among both men and women in Zambia. Interestingly, gender differentials became apparent in this study when risk perception was examined across the wealth index. For the men, low risk perception was associated with coming from a rich background. For the women, the

opposite was the case as low risk perception was more associated with women from poor backgrounds.

Studies in Botswana and Zimbabwe suggested that risky sexual behavior among married and cohabiting women occurs because of the belief that they are protected against STIs. Mixed results have been reported on association between marital status and HIV testing [13]. As expected, condom use was associated with such risk perception. Across either gender, not using condoms with all partners was strongly associated with low risk perception of contracting HIV [14].

The result suggests a relationship between alcohol usage and risk perception. Married men and women who did not take alcohol were more likely to report low risk perception as compared to those who took alcohol. These results suggested that the more sober married persons were, the less likely they were to perceive that they were at high risk as compared to those who drank alcohol. It is also worth noting that research in this area has reported mixed results as some studies have shown that alcohol consumption was more associated with low risk perception and elevated probability of engaging in sexually risky behaviors. This study alternatively suggested that the intake of alcohol increased risk perception and further encouraged protective measures among those who took alcohol. Furthermore, the number of years in marriage was a significant predictor of risk perception but only for the women.

Multiple sexual partnerships where condom use tends to be low are among the key drivers of HIV infection in Africa [15]. A Zambian study among University students suggested that having multiple sex partners increased with advancement in university years attained with more males likely to report having had more than one sexual partner [16]. As shown in this study, the number of sexual partners was found to be associated with risk perception. Although significant only for the women, not having multiple sexual partners was evident as low perceived risk of contracting HIV. One explanation for low perceived HIV risk could be that married people who did not have multiple sexual partners exercised optimistic biasness, tending to underestimate risks in general due to feelings of invulnerability because they only had one sexual partner and that was most likely the spouse [17]. The findings from this study suggest



that there is a need to integrate patriarchal culture and gender roles in the intervention programmes [18].

## 5. CONCLUSION

In conclusion, the current study examined the socioeconomic and demographic determinants of perceived risk of contracting HIV among married men and women in Zambia. This study simultaneously aimed at drawing the attention of researchers to the significance of examining determinants of low perceived risk of contracting HIV in married couples as a starting point of reducing post marital infections. The results revealed that gender, age, place of residence, wealth status, consistency of condom use, took alcohol, number of sexual partners and inconsistent condom use were significant predictors of low risk perception. The last two variables, however, were only significant for one gender but not the other. However, these findings suggest that target into risk perception in fighting HIV, should also consider socio-economic and demographic variables. The evidence from these findings indicates concern especially with regard to the larger proportion of men who perceived themselves to be at low risk. Low risk perception had the potential to encourage risky sexual behaviors and also to keep men insensitive to risk due to too much optimistic comfort.

It is on this account that it is recommended for health practitioners and different stakeholders to hold sexual reproductive health discussion and activities that would bring out socio-economic and cultural factors that influence couples sexual behaviors in communities. In addition, it is vital to encourage both partners to seek HIV testing and counseling in health facilities thus making them aware of the importance of couples undergoing Voluntary Counseling and Testing. Lastly, it is also important to make condoms widely available for both male and female and motivate them to use condoms consistently as an effective strategy for the prevention of HIV transmission.

## CONSENT

As per international standard or university standard written participant consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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