

## THE INFLUENCE OF WOMEN'S INVOLVEMENT IN DECISION MAKING ON HIV TESTING IN TANZANIA

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### ABSTRACT

The study on the role of women's involvement in decision making and HIV testing in Tanzania was conducted using data from the 2010 Tanzania Demographic and Health Survey. The study analyzed the influence of women's involvement in decision making on HIV testing. Specifically, an indicator of women's involvement in decision making was linked to women's socioeconomic characteristics and HIV testing. The study involved 6,406 women age 15-49 and currently married and living together. Descriptive analysis was used to determine the women's socioeconomic characteristics. Bivariate and multivariate (logistic regression) analyses were used to determine the association between socioeconomic characteristics and the role of women's decision making in influencing HIV testing. Out of the 6,406 women, 4,246 had been tested for HIV. The odds of being tested were higher (30%) for women who participated in household decision-making. Both for women without recent birth and for women who gave birth in the past five years and who used ANC services, decision making was associated with higher likelihood of HIV testing. Women with secondary education who did not give birth for the last five years were more than 400% likelihood to test for HIV. Moreover, rich and rural were significant at  $p < 0.001$  in all three models. The study also concludes that HIV testing is still a challenge in Tanzania, as 34% of married women age 15-49 had never tested for HIV. Interventions should target rural women through improving the agriculture sector. Integrate HIV testing in women's groups by making it a continuous agenda in their social and economic development activities. The government and other development agents should find the mechanism of empowering women to enable them to go for HIV testing voluntarily. Analysis should be done on women's economic empowerment, and the likelihood to influence HIV testing and collection of HIV test results.

**Key Words:** Women's involvement, decision making, HIV testing, birth in past five years, Tanzania

## Introduction

Women's participation in decision making is important for addressing the HIV epidemic. It builds women's confidence to test for HIV and thus to know their HIV status and to be able to prevent transmission from mother to child, as well as to prevent new infections to their partners. It is believed that a woman who participate in decision making in cultural or political or professional has confidence to decide to go for HIV testing, as she does not depend on her husband or partner to make decision for her on whether to test for HIV or not. Tanzania, like other countries in sub-Saharan Africa, more women are affected with HIV than men, at 6% and 4%, respectively (TACAIDS et al., 2013). Similarly, a study on VCT Clinics in Dar-es-Salaam, found that HIV prevalence among young women and men age 15-24 was higher for women than men (Maman et al., 2002"a").

Women are being more infected than men due to culture which limits women from participation in decision making. Miller (2011) reported that "Increased female vulnerability to HIV stems from limited access to health care and lack of autonomy to make decisions regarding sexual health and education". Maman et al (2002"b") found that "lack of financial autonomy, control of household income, women's inability to negotiate for condom use and lower education of both partners" are factors which prevent women to take decision of using HIV voluntary counseling and testing services. Karamagi and colleagues (2006) in rural eastern Uganda, found that "HIV testing was significantly lower in multipara women as they had lower perceived risk of HIV" in Tanzania. Moreover, Maman et al (2002"c") found gender differences in decision-making concerning the use of HIV VCT services. "While men made the decision to seek voluntary counseling and testing independent of others, women felt compelled to discuss testing with their partners before accessing the service, thereby creating a potential barrier to accessing VCT services." In order to address HIV/AIDS, URT, (2001) adopted an HIV/AIDS policy aiming at " promoting early diagnosis of HIV infection through voluntary testing with pre - and post-test counseling and to reassure and encourage the 85%-90% of the population who were HIV negative to take definitive steps not to be infected, and those who were HIV positive to receive the necessary support in counseling and care to cope with their status, prolong their lives and not to infect others" (URT, 2001).

## Theory of HIV Counseling and Testing

Some theories underlying HIV testing discuss factors that motivate and discourage testing at the same time. Client Motivation Theory underlies on factors motivating individuals to get tested for HIV. For example Kamengaa and colleagues (2001) observe that the decision to undergo HIV testing remains difficult for many people. This difficulty is compounded by factors such as stigma and discrimination, distance to services and cost of services. Various motivations have been reported for those who choose to be tested for HIV, including fear of having been exposed to HIV, feeling sick, an important life commitment (e.g., marriage, new partner), and requirement for a benefit (e.g., visa, scholarship and promotion). Kamengaa and colleagues (2001) reported that the core components of HIV counseling and testing include pretest counseling, HIV testing, and post-test counseling. HIV counseling and testing interventions are promoted as voluntary and confidential. It is based on the belief that knowledge of HIV sero-status helps in decision-making (e.g., changes in sexual behavior, prevention of mother-to-child transmission [PMTCT] uptake) and that access to treatment, care and support services from the government and other stakeholders follow from HIV testing.

Greig and Koopman (2003) in their study on the explored relationships between women's empowerment and HIV prevention at the national and individual levels, with a focus on Botswana, asserts that among sub-Saharan African countries, HIV prevalence was positively correlated with indirect indicators of women's empowerment relating to their education, but not to their economic

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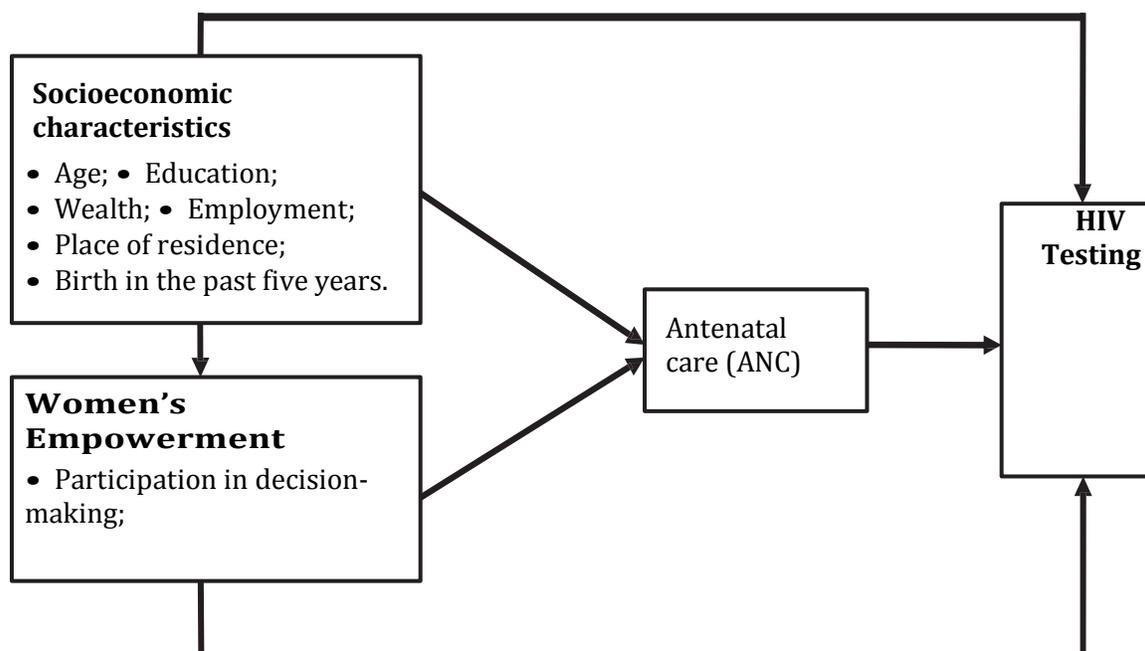
status or political. Economic independence was found to be the strongest factor likely to influence women's negotiating power. Socio-demographic factors, such as marital status, area of residence, religion and ethnicity influenced VCT completion among males and females in different ways, while self-perceived risk of HIV, prior knowledge of VCT, and sex with a high-risk partner emerged as important predictors of VCT completion among both sexes. This contributed to a higher proportion of HIV-positive males knowing their status compared with HIV-positive females. TDHS 2010 and THMIS 2013 indicate, respectively, that 41% and 33% of women age 15-49 had never tested for HIV. The effort to combat HIV includes ensuring that gender perspectives are incorporated into efforts to combat HIV/AIDS (Germain, 2009).

Kominami and colleagues (2007) found that 68% of the participants had already had HIV testing. The study hypothesized that women's empowerment influences HIV testing. Therefore, this study describes the relationship between socioeconomic characteristics, women's participation in decision making, given and not given birth in the past five years and HIV testing.

### Conceptual Framework

Behal (2011"a") has defined empowerment as "increasing the spiritual, political, social or economic strength of individuals and communities. It often involves the empowered developing confidence in their own capacities". Empowerment is a process or an outcome/goal and can take place at different levels. Moreover, it is a process through which women currently most discriminated against can achieve gender equity (Behal, 2011"b"). The conceptual framework in Figure 1 shows the relationship between three predictor variables thought to affect the explanatory variable, HIV testing. The predictor variables were classified into two parts.

Figure 1: Conceptual Framework



Women's socioeconomic characteristics include age, level of education, wealth index, employment, and place of residence and given birth for the past five years. Women's empowerment includes participation in decision-making. The first assumption is that women age 15-49 who are empowered decide to go for testing voluntarily, not just if they attend antenatal care (ANC). The determinants under this assumption are women taking major decisions at the household level, having the ability to refuse unsafe sex and not approving of wife beating. The second assumption is that there are some clients (women age 15-49) whose testing for HIV is initiated when they are pregnant, provided as part of ANC.

In Tanzania pregnant women are eligible to attend ANC. However, not all pregnant women are able to attend ANC due to one reason or another, such as distance from a clinic, especially for the rural population, while some women fear to receive HIV-positive results, due to stigmatization from community members (Yang et al., 2005). Moreover, the Tanzania National Policy on HIV/AIDS (URT, 2001) reported that "stigma leads to secrecy and denial that tends to hinder openness about the HIV and prevents people from seeking counseling and testing for HIV." ANC was considered in the conceptual framework because it is obligatory for all pregnant women in Tanzania to attend ANC, and through ANC attendance they get tested for HIV. In health facilities where there are no HIV testing services, pregnant women are referred to the health facilities for HIV testing. Therefore, the hypothesis that women's involvement in decision making influences HIV testing was considered to compare women who have given birth in the five years preceding the 2010 TDHS with women who did not give birth in the last five years. In order to attain the general objective of this study on the role of women's decision making in HIV testing, this study has to explore the relationship between women's socioeconomic characteristics and HIV testing. It is assumed that involvement in decision making stimulates women's desire for HIV testing, despite the fact that all pregnant women should test for HIV.

As Staveteig and colleagues (2013) have observed, "HIV testing is an essential part in providing medical care to persons living with HIV and key to preventing HIV transmission. For people who test HIV- positive, testing is the starting point for care and management of the disease. It is also an entry point for efforts to prevent infection of their sexual partners and their children. Even for people who test HIV-negative, the testing process is an opportunity for counseling about HIV transmission that may strengthen prevention efforts and reduce stigma."

## 2. Data and Methods

The 2010 Tanzania Demographic Health Survey (TDHS) was the source of data for this study (NBS and ICF Macro, 2011). The survey was the fifth in a series of DHS surveys conducted in Tanzania since 1991-92. In addition, three AIDS Indicator Surveys (AIS) have also been conducted.

### Sample Design

The sample design included women age 15-49 because "pregnant women who are HIV- positive are at risk of transmitting the virus to their infants during pregnancy, delivery, or while breastfeeding (Staveteig et al., 2013). The total sample comprised 10,139 women, while only married women living together with their husbands (n=6,412) were included in the present study because of the study's focus on decision making on HIV testing.

Sub samples included women who had given birth in the five years preceding the survey (n=4,537) and women who had not given birth in this period (n=1,869). Kabeer (1999) defines empowerment

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as “a process by which those who have been denied ability/power to make strategic life choices acquire the ability to do so. For women, strategic life choices may include capacity to choose a marriage partner, a livelihood, whether or not to have children”. This definition views women’s empowerment as both a process and an end result. The author further argues that, for this power to come about, three interrelated dimensions are needed.

They include access to and control of resources; agency (the ability to use these resources to bring about new opportunities); and achievements (the attainment of new social outcomes). To measure women’s empowerment, three variables have been developed: women’s participation in household decision-making. The first variable (either 0 or 1) corresponds with whether a woman is involved or not involved in household decision-making, an area that affects women’s lives and environment. A high score on this variable indicates a high level of empowerment (NBS and ICF Macro, 2011).

A low score on variable two is interpreted as reflecting greater sense of self worth and higher status of women (NBS and ICF Macro, 2011”a”). The third variable reflects perceptions of sexual roles, women’s right over their bodies and related women’s sense of self and empowerment (NBS and ICF Macro, 2011”b”). Ever given birth in the past five years was considered in order to differentiate women who tested for HIV on a voluntary basis (women who had not given birth) from women with a recent birth, as in Tanzania women during pregnancy are obliged to test for HIV as part of ANC. The distribution of these variables was linked to women’s socioeconomic characteristics and HIV testing. The rationale of employing these variables is based on the assumption that women who make decisions at the household level are more likely to have unrestricted beliefs about gender and are likely to participate in decision making.

### **Analytical Framework**

Descriptive statistics were used to examine levels of HIV testing, women’s participation in decision making, given birth in last five years and socioeconomic variables. Bivariate analysis was used to identify the factors associated with the outcome variable, HIV testing. Logistic regression analysis was used to build multivariate model for identifying the factors that were independently associated with HIV testing outcome. A model was developed to study the relationship between women’s involvement in decision-making and HIV testing.

Moreover, a combination of three models was established to determine the effects on HIV testing of women’s decision-making, of the model was controlled for having had a birth in the past five years and a number of background variables, including level of education, age, wealth, employment and place of residence. Having given birth and not given birth were considered in the model in order to investigate the influence of women’s participation in decision making on HIV testing for women eligible to attend ANC and thus have exposure to provider-initiated (opt-out) HIV Test, and for those who are not obliged to attend ANC. Each model is a logistic regression of the form  $HIV\ testing = \beta x_{ij} + \varepsilon_{ij}$  with a vector of covariates, and odds ratios reported. This study addressed three categories of variables: women’s participation in decision making, given birth and not given birth in the last five years and socioeconomic characteristics. Given birth in the last five years was considered to be important, as pregnant women in Tanzania are obliged to attend ANC, where they get the opportunity for provider-initiated testing for HIV. Comparing this group with women who have not recently been pregnant disaggregates women whose HIV test was obligatory from women who tested voluntarily for HIV Karamagi and colleagues (2006) in rural eastern Uganda, which found that “HIV testing was significantly lower in

multipara women as they had lower perceived risk of HIV”.

## RESULTS

### Socioeconomic Characteristics

Most women studied were between the ages of 20 and 39. Just 6% were age 15-19 and 20% were age 40 or older. The majority (69%) had a primary education, while 24% had no education and 8% had secondary and above education. About two-thirds (65%) were involved in agriculture and 24% in non-agricultural work, while 11% were not working. By level of household wealth, 40% of women were in the rich group, 39% poor, and 22% in the middle group. Three-fourths of women lived in rural areas.

### Women’s involvement in decision making and HIV Testing

The results showed that 69% of women who were involved in decision making reported that they had ever tested for HIV as mentioned, the study examined given birth in the last five years to assess HIV testing among women who have had the opportunity for provider-initiated HIV tests through ANC, and among women who make their own decision to test for HIV outside of ANC. Moreover, indicated that 47% of women who did not give birth in the last five years reported that they had ever tested for HIV, compared with 74% of women who gave birth in the last five years (and thus were likely to have attended ANC).

### Women’s Socioeconomic Characteristics and HIV Testing

Women’s socioeconomic characteristics also are associated with HIV testing. Table 2 shows that the uptake of HIV testing is much higher among women age 20-39 than among other age groups. Women with secondary education and above were more likely than women with lower levels of education to have been tested for HIV. Women who were not working and women who worked in non-agriculture were more likely to have been tested for HIV than women working in agriculture. Levels of HIV testing were higher among women from rich households and those living in urban areas. All characteristics were significant.

**Table 1: Bivariate analysis on socioeconomic characteristics and HIV testing (N=4,246)**

Socioeconomic indicators	Frequency (weighted)	%	$\chi^2$
<b>Age</b>			$\chi^2=301.7^{***}$
15-19	216	54.2	
20-24	914	75.6	
25-29	974	72.8	
30-34	831	73.3	
35-39	655	63.3	
40-44	430	58.1	
45-49	225	41.0	
<b>Education</b>			$\chi^2=187.8^{***}$
No Education	827	54.2	
Primary	2,997	68.3	
Secondary	423	85.8	
<b>Occupation</b>			$\chi^2=193.6^{***}$
Not working	546	74.8	
Non-Agriculture	1,199	78.7	
Agriculture	2,501	60.2	
<b>Wealth</b>			$\chi^2=191.1^{***}$
Poor	1,447	57.7	
Middle	851	63.9	
Rich	1,948	76.0	
<b>Residence</b>			$\chi^2=187.1^{***}$
Urban	1,273	80.5	
Rural	2,973	61.6	
<b>Total</b>	<b>4246</b>	<b>66.3</b>	

### Multivariate Analysis on Women's Participation in decision making and HIV Testing

Logistic regression was used to examine the relationship of the indicators of women's participation in decision making and of socioeconomic characteristics with HIV testing. Also, as in the bivariate analysis, given birth in the last five years was considered as a proxy indicator attending ANC. For the multivariate analysis three models were constructed. The first model was analyzed to assess the direction of relationship between decision-making and HIV testing, when considered independently. Models 2 and 3 were considered to compare the direction of relationship between women who gave birth and those who did not gave birth in last five years and HIV testing. Table 4 indicates the level of significance for each individual indicator's association with HIV testing.

Thus the module addressed women's participation in decision making variable independently while controlling for other variables (level of education, age, wealth, employment and residence) was run to examine the association with HIV testing. As Table 2 shows in model 1, women who were involved in decision- making were 1.3 times more likely to be tested for HIV than those who were not involved in decision-making.

### **Gave Birth in the Past Five Years and HIV Testing**

Giving birth in the five years preceding the survey turns out to be a prominent variable and is robust (consistent) across models. For example, in all models 1-3, women who had given birth in last five years were nearly four times more likely to have tested for HIV compared with women who had not given birth. The likelihood of having tested for HIV increases incrementally with education and with wealth. Compared with the youngest age group, age 15-19, women age 20-34 were significantly more likely to have tested for HIV, while women age 35 and older were neither more nor less likely to test than women age 15-19. Compared with urban women, rural women were nearly 40% less likely to test for HIV.

These results are consistent, with small fluctuations to the odds ratio, across models for the various empowerment variables, and largely in the same direction as suggested by the bivariate results in Table 2. This section also assess whether women's involvement in decision making influences HIV testing when women attend ANC, or otherwise. Results for the multivariate regression among women who had a birth in the last five years (model 2) are similar. Women who made household decisions had 30% higher odds, for having tested for HIV. In contrast to the case for women who gave birth in the last five years, socioeconomic variables are more prominent in determining HIV testing for women who did not have a birth in the past five years (model 3)

The role of education in determining HIV testing is similar for both samples of women, but the magnitude of education's effect is larger for women who had not given birth. Among women who had a recent gave birth, as shown in Model 1, women with primary or secondary education have higher odds of having tested for HIV compared with women with no education. Among women without a birth in the last five years, as shown in model 3, these odds are 1.6 for primary education and 4.1for secondary education.

**Table 2: Multivariate analysis on women's participation in Decision making and HIV testing, women who gave birth and who did not give birth in last five years**

	M.1: Decision making		M.2: Given Birth		M.3: Did not gave birth	
	OR Sig	CI 95%	OR Sig	CI 95%	OR Sig	CI 95%
Decision-making	1.3***	1.1 – 1.5	1.3**	1.1– 1.6	1.1	0.8 – 1.5
Education						
No Education	1.0		1.0		1.0	
Primary	1.5***	1.3 – 1.8	1.4***	1.2 – 1.8	1.6**	1.2 – 2.3
Secondary +	3.1***	2.1 – 4.5	2.1**	1.2 – 3.7	4.1***	2.5 – 7.0
Age						
15 – 19 (RC)	1.0		1.0		1.0	
20 – 24	1.7**	1.2 – 2.5	1.5	0.9 – 2.4	2.4**	1.3 – 4.5
25 – 29	1.4	1.0 – 2.0	1.3	0.8 – 2.0	1.7	1.0 – 3.1
30 – 34	1.5*	1.0 – 2.2	1.3	0.8 – 2.1	2.1**	1.3 – 3.4
35 – 39	1.2	0.8 – 1.8	1.1	0.7 – 2.0	1.2	0.7 – 2.1
40 – 44	1.2	0.8 – 1.7	1.0	0.5 – 1.6	1.5	0.9 – 2.5
45 – 49	0.9	0.6 – 1.3	0.7	0.4 – 1.4	1.1	0.7 – 1.7
Wealth						
Poor (RC)	1.0		1.0		1.0	
Middle	1.2*	1.0 – 1.5	1.1	0.9– 1.4	1.5*	1.1– 2.1
Rich	1.5***	1.2 – 1.8	1.4*	1.0 – 1.8	1.8**	1.3 – 2.5
Employment						
Not employed (RC)	1.0		1.0		1.0	
Non-agriculture	1.1	0.8 – 1.5	1.1	0.7 – 1.8	1.0	0.7 – 1.6
Agriculture	0.7*	0.5 – 0.9	0.6*	0.4 – 0.9	0.8	0.5 – 1.2
Residence						
Urban (RC)	1.0		1.0		1.0	
Rural	0.6***	0.5 – 0.8	0.5 **	0.3 – 0.7	0.8	0.5 – 1.1
Const	<u>0.6*</u>	<u>0.3 – 0.9</u>	2.3*	1.1 – 4.6	0.3**	0.1 – 0.7

**Key:** \* =  $p < 0.05$ , \*\* =  $p < 0.01$ , and \*\*\* =  $p < 0.001$

Women age 20-24 who had given birth had 50% greater odds of HIV testing compared with the reference category, while among women who had not given birth, women age 20-24 were at more than 200% increased odds. No other age categories are significant. Both middle and rich wealth categories have 50-80% increased relative odds among women who have not given birth in the last five years, whereas only the richest category is significantly more likely to have tested for HIV among women who have given birth. In contrast, employment and place of residence have no effect on odds

of HIV testing among women without a recent birth, although women engaged in agriculture and rural areas have lower odds for HIV testing compared with women who had given birth in the last five years.

## DISCUSSION

The study results confirm the hypothesis that participation in decision making influences HIV testing, as does potential exposure to ANC. Women who participate in decision-making, are more likely to be tested for HIV than women who do not participate in decision making. Moreover, decision-making was found to be the strongest variable in the models. The findings of multivariate analysis on women's participation in decision making and HIV testing show that women's education, place of residence and wealth index were associated with HIV testing. Primary and secondary and above education levels were significantly associated with HIV testing. These results are consistent with findings from a study conducted in Ethiopia by Behal, and Miller (2011). In contrast, a study in Ghana by Holmes et al (2008) found that women with secondary education were less likely to accept testing for HIV than those with no formal or primary education. Concerning the wealth index, rich was significantly associated with HIV testing and woman's participation in decision making. By place of residence, rural was associated with HIV testing and women's participation in decision making. The results are consistent with a study conducted by Karamagi and colleagues (2006). Our hypothesis was that participation in decision making would be more influential in HIV testing for women who did not have a recent birth and, therefore, may have not had opportunity for provider-initiated, opt-out testing through ANC. It was our belief that participation in decision making would not determine testing among women who gave birth in the last five years because testing in this context may be more routine and require less motivation, while testing outside of ANC may require more initiative and will. This was not the case, however.

## CONCLUSION

This study provides nationally representative statistics related to women's participation in decision making and HIV testing among married women age 15-49 in Tanzania. The role of women's participation in decision making in influencing HIV testing identified in this study will be a guide for future interventions and policies aiming at empowering women and encouraging HIV testing in the country. HIV testing is associated with women's participation in decision-making, and giving birth in past five years (receiving ANC). Among women's socioeconomic characteristics, education, age 20-34 and wealth index were associated with HIV testing. In contrast, rural residence, age 15-19 and age 44-49 and employment in agriculture had no association with HIV testing. HIV testing is still a challenge in Tanzania, as 34% of married women age 15-49 in the TDHS had never tested for HIV. Therefore, more efforts should aim at raising awareness on HIV testing among women, especially women involved in agriculture and women residing in the rural areas. Moreover, the government in collaboration with other development agents should find the mechanism of empowering women to enable them to go for HIV testing on a voluntary basis. Further analysis should be done on women's economic empowerment, such as resource ownership, income and the way they are likely to influence HIV testing and receipt of HIV test results. More data analysis should be done on availability of and access to ANC services in rural areas. Further, more research on the extent to which women's empowerment is influencing HIV testing across the regions of Tanzania is also needed to enable the availability of information on the variation among regions.

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