Understanding the Combined Effect of the Knowledge of HIV/AIDS Prevention Methods on Condom use in Njombe and Tanga Regions, Tanzania

Background

The necessary behaviour change required to prevent the spread of sexually transmitted infections (STIs) including the Human Immunodeficiency Virus (HIV), needs beforehand the knowledge that people can reduce their chances of being infected through abstinence (A), being faithful to one uninfected partner who has no other partners (B), using condom during sexual intercourse (C), and early HIV detection (D).The A, B and C focuses on preventing new HIV infection, while the D focuses on the way of knowing one's HIV status.

Although, the relationship between STI detection and knowledge of ABCD in isolation have been identified, the literature pauses on the existence of a combined knowledge of ABCD on HIV prevention through condom use among women and men aged 15 – 49 years in high and low HIV prevalence regions of mainland Tanzania. Thus, the current study addressed the role of combined knowledge of ABCD of HIV prevention on condom use in Njombe and Tanga Regions of Tanzania.

Methods

The study was cross–sectional in design. Data were collected in a household survey conducted in 2017 in Tanga and Njombe Regions of Tanzania using a structured questionnaire. The dependent variable was condom use at the last sexual intercourse. The main independent variable was knowledge of HIV prevention methods referred to in this study as "knowledge of ABCD of HIV/AIDS prevention". A respondent with knowledge of three or more of the knowledge of ABCD was classified as of good knowledge of HIV prevention. Those with knowledge of two, one, and none of the ABCD were classified as of average, fair, and poor knowledge of HIV prevention respectively. Finally, a variable representing the knowledge of the 'ABCD' of HIV prevention methods was constructed with four categories as mathematically shown below:

$$\text{Knowledge of the ABCD of HIV prevention methods} = \begin{cases} \text{Good if} \geq 3 \text{ methods are known} \\ \text{Average if } 2 \text{ methods are known} \\ \text{Fair if only } 1 \text{ method is known} \\ \text{Poor if } 0 (\text{none}) \text{ of the methods known} \end{cases}$$

Data analysis included frequency distributions, bivariate analysis and multivariate logistic regression analysis.

Results

The study included 660 respondents aged 15 or more years. The majority (52.2%) of the respondents had average knowledge of the HIV prevention methods – that is, they were knowledgeable of any two of the A, B, C, and D of HIV prevention methods, (Table 1).

Table 1 Distribution of the study participants and knowledge of ABCD among male and female with at least 15 years in Lushoto and Makete Districts of Tanzania

Variables		Frequency (n)	Percentage (%)
Age group (years)	15 – 24	222	33.6
	25 – 34	194	29.4
	35 – 44	124	18.8
	45 – 54	71	10.8
	55 +	49	7.4
Knowledge of ABCD	Poor knowledge	78	12.0
	Fair knowledge	59	9.1
	Average knowledge	340	52.2
	Good knowledge	174	26.7

The observation in (Chart 1) shows the overall condom use at last sexual intercourse was amounting to 46.5%, while it was highest (47.6%) in Makete District and lowest (44.0%) in Lushoto District.

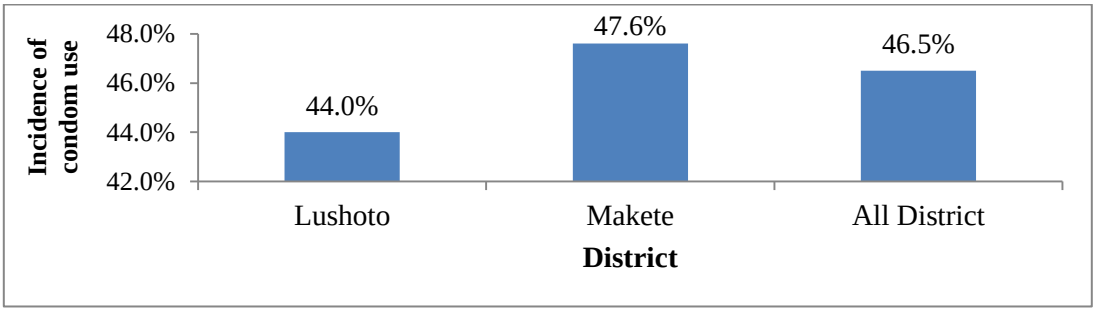

Chart 1 Incidence of condom use at the last sexual intercourse by District of residence in Tanzania, 2017

There was a significant association between the knowledge level of the ABCD of HIV prevention methods and condom use at the last sexual intercourse (p = 0.037). The proportion of respondents who reported to use condom during the last sexual intercourse was 56.3% and 37.9% among those with good and poor knowledge of ABCD, respectively (Table 2).

Table 2 Bivariate analysis of factors associated with condom use

Variable	Responses	For the most recent time having sexual intercourse did you use condom?		P-Value
		Yes n (%)	No n (%)	
Knowledge of ABCD	Poor Knowledge	25 (37.9)	41 (62.1)	
	Fair Knowledge	24 (47.1)	27 (52.9)	0.037
	Average knowledge	134 (44.1)	170 (55.9)	
	Good knowledge	85 (56.3)	66 (43.7)	
	Total	**268 (46.5)**	**304 (53.5)**	

Multivariate analysis showed that condom use was 1.48 times more likely among respondents with good knowledge of ABCD of HIV/AIDS prevention than those with poor knowledge of ABCD of HIV prevention (OR = 1.48, 95%CI 1.25 – 1.91, p-value = 0.026), (Table 3).

Table 3 Multivariate logistic regression of the effect of independent variable on condom use

Fixed Effect Parameter	Responses	OR	P-Value	[95% C I]
Knowledge of ABCD	Poor Knowledge *(ref.)*	1.00	----	----
	Fair Knowledge	0.73	0.453	[0.33 1.64]
	Average Knowledge	0.77	0.397	[0.42 1.40]
	Good Knowledge	1.48	**0.026**	**[1.25 1.91]**
Age	15 – 24 *(ref.)*	1.00	---	---
	25 – 34	0.63	0.095	[0.36 1.09]
	35 – 44	0.58	0.100	[0.30 1.11]
	45 – 54	0.58	0.140	[0.28 1.20]
	55+	1.94	0.214	[0.68 5.49]
Marital status	Married/Cohabiting *(ref.)*	1.00	---	---
	Ever married	0.56	**0.041**	**[0.32 0.98]**
	Never married	1.36	**<0.001**	**[1.21 1.63]**

Discussion

The independent effect of the knowledge of the ABCD of HIV/AIDS prevention was examined in the multivariate logistic regression analysis. A key finding in this was that the

higher the knowledge of ABCD of HIV prevention methods the higher the odds of condom use at the last sexual intercourse. Specifically, respondents with good knowledge of ABCD of HIV prevention methods were significantly 1.48 times more likely as those with poor knowledge to have used a condom at the last sexual intercourse. This could be that as people become knowledgeable of the HIV/AIDS, its transmission modes, and ways to mitigate its spread, there is a bigger chance that they feel the urge to be careful in their sexual relationships by taking protective measures such as condom use among others.

Although we are aware of some evidence of negative association between knowledge of HIV transmission pathways and behaviour change, we cannot overlook the importance of promoting the knowledge on ABCD of HIV prevention methods as one of the key mechanisms towards behavior change for greater HIV risk aversion.

Conclusion

Knowledge of the ABCD of HIV prevention methods is key among individuals in order to enhance condom use for HIV prevention in the study area. Given that formal education attainment improves condom use, it is crucial that programs spearheading the war against HIV/AIDS, greatly promote comprehensive knowledge of the HIV transmission pathways along with attainment of formal education.