HIV/AIDS is still a severe worldwide public health concern having killed around 40 million people to date and continuing to spread throughout all nations. Approximately 39 million individuals were predicted to be HIV positive by the end of 2022, with two thirds of them residing in the African Region. The adult HIV prevalence in Tanzania is estimated at 5 percent, with regional HIV prevalence ranging from 0.5% in Zanzibar to 11.4% in Njombe.

HIV can be transmitted through exchange of body fluids with persons who are HIV positive, including blood, breast milk, semen, and vaginal secretions. HIV can be transmitted to the unborn child throughout pregnancy and birth process as well. HIV can be diagnosed through rapid diagnostic tests that provide same-day results.

According to TDHS 2022, the statistics was 37% and 31% of women and men aged 15–49 who tested for HIV and received the results of their last test in the 12 month preceding the survey. The percentage of respondents on knowledge of HIV self-test kits was small among women (18%) and men (31%) respectively; similarly, it was observed that only 3% and 5% of women and men have ever used the HIV self-test kits. Thus the current study determines the social demographic and sexual behaviour factors affecting the knowledge of HIV self –test kit, a case of Tanzania Demographic and health Survey of 2022.

The data for this study were collected in the year 2022. The sample design for the 2022 TDHS-MIS provides estimates at the national level, for urban and rural areas, for the nine zones, and for each of Tanzania's 31 regions including 26 regions from Tanzania Mainland and 5 regions from Zanzibar provinces. The survey includes women and men with age 15–49.

Variables

The dependent or outcome variable for this study was the knowledge of HIV self-test kit. The outcome variable was derived from the question "have you heard of test kits people can use to test themselves for HIV?" Respondent who never heard of HIV test kits was regarded as not knowledgeable on HIV self-test kits and was assigned a value "0", while those ever tested using HIV self-test kit and those who declared to know the HIV test kit but never tested were regarded as being knowledgeable on HIV self-test kit and they were assigned a value of "1". The variable was thus binary, with two categories as "knowledgeable" and "not knowledgeable" on HIV self-test kit. This is presented mathematically as follows;

$$Knowledge\ of\ HIV\ Selftest\ kit \square \begin{cases} 0 & Not\ knowledgeable \\ 1 & knowledgeable. \end{cases}$$

Independent (predictor/explanatory) variables included were Age (in groups), education (No education, Primary education, secondary and higher), residence (Urban, Rural), marital status (Single, Married, Ever Married), wealth (Poorer, Middle, Richer), sex (Male, Female), recent sexual activity (Never had sex, ever had sex), ever heard of a sexually transmitted infection (sti) (No, Yes), condom used during last sex with the most recent partner (No, Yes), wife justified refusing sex because husband has other women (No, Yes).

Results

Variable characteristics

Table 1 presents variable characteristics of the 5,763 male respondent aged 15 to 49 years with mean age = 28.63 and SD =10.03. Majority (83.5%) of the household head were male and the rest were female household head. Those with primary education constituted more than half (51.7%) followed by respondent with secondary education and higher (38.0%), the rest were respondent with no education. With regard to marital status, the majority (50.1%) were married and only 5.0% were ever married. In terms of wealth status, 45.9% were found to be richer and 32.1% were poorer while the rest were at the middle class of wealth status. More than one third (77.8%) of respondent reported to have ever had sexual intercourse and around 22% of those interviewed reported to have never had sexual intercourse. The percentage was found to be 60.5% of female respondent declared refusing sexual intercourse because their husband has other women. In terms of district of residence, 67.3% were living in rural areas and the rest were found residing in urban areas. Moreover, the percentage of respondent reported to use condom were only16.2% while 83.8% reported having the last sexual intercourse without condom. With regard to bivariate analysis, all independent variable were statistically significant to the dependent variable except sex of household head.

Table 1: Univariate and Bivariate characteristics on Social demographic and sexual behaviour factors affecting Knowledge of HIV self-test kit (n = 5,763)

Variables	Categories	Univariate Analysis of variables	Bivariate analysis		P-Value
			Percent on Knowledge of HIV self-test kit		
		n (%)	No, n (%)	Yes, n (%)	
Knowledge of HIV self-test kit			4,170 (72.4)	1,593 (27.6)	-
Sex of household head	Male	4,812 (83.5)	3479 (72.3)	1,333 (27.7)	0.820
	Female	951 (16.5)	691 (72.7)	260 (27.3)	
Education	No education	597 (10.4)	514 (86.1)	83 (13.9)	<0.001
	Primary education	2,978 (51.7)	2,236 (75.1)	742 (24.9)	
	Secondary and higher	2,188 (38.0)	1,420 (64.9)	768 (35.1)	
Marital status	Single	2,573 (44.6)	2,028 (78.8)	545 (21.2)	<0.001
	Married	2,885 (50.1)	1,939 (67.2)	946 (32.8)	
	Ever married	305 (5.3)	203 (66.6)	102 (33.4)	
Wealth status	Poorer	1,850 (32.1)	1,507 (81.5)	343 (18.5)	<0.001
	Middle	1,266 (22.0)	1,005 (79.4)	261 (20.6)	
	Richer	2,647 (45.9)	1,658 (62.6)	989 (37.4)	
Recent sexual activities	Never had sex	1,278 (22.2)	1,139 (89.1)	139 (10.9)	<0.001
	Ever had sex	4,485 (77.8)	3,031 (67.6)	1454 (32.4)	
Wife justified refusing sex because husband has other women	No	2,277 (39.5)	1,835 (80.6)	442 (19.4)	<0.001
	Yes	3,486 (60.5)	2,335 (67.0)	1151 (33.0)	
Age in 5 - year groups	15 – 19	1,459 (25.3)	1273 (87.4)	184 (12.6)	<0.001
	20 – 24	959 (16.6)	678 (70.7)	281 (29.3)	
	25 – 29	846 (14.7)	531 (62.8)	315 (37.2)	
	30 – 34	722 (12.5)	471 (65.2)	251 (34.8)	
	35 – 39	686 (11.9)	438 (63.8)	248 (36.2)	
	40 – 44	621 (10.8)	442 (71.2)	179 (28.8)	
	45 – 49	472 (8.2)	337 (71.4)	135 (28.6)	
	Mean = 28.63, SD=10.03, Min=15, Max=49				
Type of place of residence	Urban	1,883 (32.7)	1,164 (61.8)	719 (38.2)	<0.001
	Rural	3,880 (67.3)	3,006 (77.5)	874 (22.5)	
Ever heard of a sexually transmitted infection	No	1,428 (24.8)	1,281 (89.7)	147 (10.3)	<0.001
	Yes	4,335 (75.2)	2,889 (66.6)	1,446 (33.4)	
Condom used during last sex with most recent partner.	No	3,484 (83.8)	2,385 (68.5)	1,099 (31.5)	<0.001
	Yes	675 (16.2)	385 (57.0)	290 (43.0)	

Multivariate logistic regression results

Adjusted factors associated with knowledge of HIV self-test kit among 15–49 year-old men in 31 regions of Tanzania mainland and 5 regions from Zanzibar provinces is presented in Table 2. in terms of education, as the level of education increases from those with primary education to those with secondary and higher, the odds of being knowledgeable on HIV self-test kit increases too. Thus the odds was 1.65 and 2.5 times more likely to be knowledgeable on HIV self-test kit to respondent with primary and those with secondary and higher as compared to those with no education, respectively (OR=1.65, 95%CI=1.26 – 2.17) and (OR=2.50 95%CI 1.86 – 3.36). The odds of richer respondent were significantly 1.88 times more likely to be knowledgeable on HIV self-test kit as compared to poorer respondent (OR=1.88, 95%CI 1.54 – 2.30). The odds of wife who justified refusing sex because his husband has other women was 1.48 times more likely to be knowledgeable on HIV self-test kit as compared their counterparts (OR = 1.48 95%CI=1.27 – 1.72). In terms of respondent age, the odds ratio were 2.09, 2.59, 2.25, 2.71, 1.91 and 1.88 times more likely to be knowledgeable on HIV self-test kit as compared to those with age group 15 – 19. Type of residence were also found to be significant attribute to knowledge of HIV self-test kit, such that those residing in rural areas of Tanzania were found to be 22% less likely to be knowledgeable on HIV self-test kit as compared to those residing in urban areas (OR = 0.78, 95%CI 0.66 – 0.93). The odds of Respondent declared to have ever sexually transmitted infection was 2.33 times higher as compared to their counterparts on having knowledge of HIV self-test kit (OR 2.33, 95%CI 1.87 – 2.90). With regard to respondents who used condom during their last sexual intercourse, the odds of being knowledgeable on HIV self-test kit was 1.35 times more likely as compared to those who had their last sexual intercourse without condom (OR=1.35, 95%CI 1.10 – 1.64).

Table 2: Multinomial logistic regression model on social demographic and sexual behaviour factors affecting knowledge of HIV self-test kit (n = 4,159)

Knowledge of HIV self-test kit	Category	OR	P > | Z |	95% CI
Education	No education (ref)	1.00	-	-
	Primary education	1.65	<0.001	1.26 - 2.17
	Secondary and higher	2.50	<0.001	1.86 - 3.36
Marital status	Single (ref)	1.00	-	-
	Married	0.99	0.947	0.79 - 1.25
	Ever married	1.02	0.923	0.73 - 1.42
Wealth status	Poorer (ref)	1.00	-	-
	Middle	1.04	0.712	0.85 - 1.28
	Richer	1.88	<0.001	1.54 - 2.30
Recent sexual activities	Never had sex (ref)	1.00	-	-
	Ever had sex	omitted		
Wife justified refusing sex because husband has other women	No (ref)	1.00	-	-
	Yes	1.48	<0.001	1.27 - 1.72
Age in 5 - year groups	15 – 19 (ref)	1.00	-	-
	20 – 24	2.09	<0.001	1.50 - 2.91
	25 – 29	2.59	<0.001	1.82 - 3.69
	30 – 34	2.25	<0.001	1.55 - 3.26
	35 – 39	2.71	<0.001	1.85 - 3.96
	40 – 44	1.91	0.001	1.29 - 2.82
	45 – 49	1.88	0.002	1.25 - 2.82
Type of place of residence	Urban (ref)	1.00	-	-
	Rural	0.78	0.005	0.66 - 0.93
Ever heard of a sexually transmitted infection	No (ref)	1.00	-	-
	Yes	2.33	<0.001	1.87 - 2.90
Condom used during last sex with most recent partner	No (ref)	1.00	-	-
	Yes	1.35	0.003	1.10 - 1.64

Discussion

The current study sought to assess the social demographic and sexual behaviour factors affecting knowledge of HIV self-test kit among 15 – 49 year old men in Tanzania mainland and Zanzibar using TDHS data collected in 2022. The data show high (72.4%) percentage of respondent were not knowledgeable on HIV self-test kit. Knowledge of HIV self-test kit was significantly associated with level of education, respondent wealth status, age of respondent, type of residence, ever had sexually transmitted infections and the use of condom at the last sexual intercourse.

Regarding education attainment, respondent with at least a secondary education were twice as much as those without education to have knowledge of HIV self-test kit. The evidence of education to respondents with secondary and higher education is likely due to an imperative role that education plays on societal transformation. This underscores a need to promote education to all as a prerequisite for change in all knowledge aspects of life. The current result was found to be contrary to those found by (the Madrid HIV self-testing group et al., 2016) Different in results may have been occurred due to several reason including the unit of analysis and nature of respondent. Respondent's age was also found to influence knowledge of HIV self-test kit. Respondent of older ages were significantly more likely to have knowledge of HIV self-test kit than those aged 15 – 19 years. It is possible that having knowledge of HIV self-test kit to respondent over age 20 is due to their experience on usage prior to sexual intercourse. Knowing sexual partner's HIV status can influence safer-sex strategies and sexual decisions (Bird et al., 2017).

Conclusion

More than two third of respondent were observed to have no knowledge on HIV self-test kit. Education level of respondent, wealth status, age of respondent, place of residence, ever heard sexual transmission infection and the use of condom during the last sexual intercourse were significantly associated with knowledge of HIV self-test kits. Promoting education for all and providing education to rural areas on the use of HIV self-test kit is urgently required to enhance the knowledge and usage of HIV self-test kit and consequently improve health outcomes through HIV self-diagnosis in Tanzania.

References