Willingness to take Antiretroviral Drugs in a high HIV prevalence Setting: the case of Adults living in Chawama, Lusaka, Zambia

Munthali C Sharon[1,2], Charles Michelo[1]

[1]*Department of community medicine, University of Zambia, Lusaka, Zambia*
[2]*Cancer Diseases Hospital, P. O Box 51337RW Lusaka, Zambia*

ABSTRACT

Background: The willingness to take antiretrovirals drugs (ARVs) has been found to be associated with several factors. We investigated the level of willingness to take antiretroviral drugs and factors likely to be associated with willingness among adults living in Chawama

Materials and methods: This was a cross sectional study of 409 adult respondents aged 18 years and above recruited by a simple random sampling method. A structured questionnaire was used to collect socio-demographic data and other factors likely to influence willingness. Determinants of willingness and association between variables of interest were examined using multivariate analysis.

Results: 52.8% females and 46.9% males participated in the study. The mean age of participants was 31 years (SD±11.60) The response rate was 99%. A high level of willingness was observed with more than 50% of participants willing to take ARVs if they were found legible for ART. Some of the key factors that were found significantly associated with willingness were, the aspect of being male or female with females being more likely to be willing than males, the perceived effectiveness of ARVs, the need for consent to begin ARV treatment with females being more likely to needing consent than men, and fear of discrimination.

Conclusion: There is a high willingness to take antiretroviral drugs among community members suggesting high potential to influence individual acceptability and general uptake of ARVs. Furthermore stigmatizing attitudes and socio-cultural influences towards people taking ARVs still persist and interventions to reduce these influences are needed.

INTRODUCTION

HIV/AIDS has continued to be a global pandemic disease affecting millions of lives. The burden of disease has seen a decrease in recent years due to Antiretroviral Therapy (ART), Prevention of Mother to Child Transmission (PMTCT) and other intervention programmes. However, despite the deployment of free ART in most settings, there is still resistance to taking ARVs, adherence and HIV testing (11).

Prevention of the development of HIV into full blown AIDS and death by use of ARVs is the cornerstone of HIV/AIDS management. Considerable expansion of ART programme which has occurred rapidly in Zambia needs to be accompanied by community awareness campaigns and education if acceptance, uptake and adherence are to be enhanced. Perceived unwillingness to take ARVs may influence future unwillingness to take up ART. This study therefore explored factors influencing community willingness to participate in ART. There are limited literature or study findings on willingness to take ARVs among adults in the Zambian general community

With the rapid scale up of HIV care and treatment, there is need to find out why certain patients do not want to go on treatment and why others drop out of treatment. Amongst the various factors influencing willingness to take ARVs are; competing remedies to ARVs such as traditional medicine, religious and socio-cultural influences, economic challenges and service related factors (32). Community perception and acceptability of ARVs greatly influence uptake and enrollment onto ART programme. In a study conducted in South Africa on critical barriers to community participation in HIV and antiretroviral services, poverty, socio-economic factors and stigma were found to be significant barriers to accessing HIV and AIDS care and treatment services in the public health sector (23).

METHODS

Population and sampling procedures

The study population comprised of one adult 18 years and above at each selected household in the area. The target age group was 18 years and above. The size of the population from which the sample was calculated was 1200 households. The sample size (409) was calculated using the statistical package

***Correspondence author:**
Sharon Chongo Munthali;
Department of Community Medicine, University of Zambia
Post Office Box 50110, Lusaka, Zambia
Tel: +260-977-872483
E-mail: scmunthali@yahoo.com

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EP Info version 6. According to the Lusaka city council mapping, Chawama was divided into 21 household zones. All the 21 zones were purposively selected followed by a probability proportional to size selection of a representative number of households in each zone. The households were simple randomly selected. Only one eligible adult was selected at each particular selected household. At selected households were there were more than one consenting adults, a simple random selection was employed.

Data collection and analysis

A structured questionnaire was used to collect information in a face to face interview with only one eligible and willing household member living in the area. Information on socio-cultural, demographics, knowledge on ARVs, perceptions on ARVs was obtained. The Statistical Package for the Social Sciences (SPSS) version 17 for Windows was used for overall analysis.

Multivariate logistic regression analysis was used to determine adjusted odds ratios for all independent factors associated with willingness to take ARVs. The logistic regression results were only adjusted for sex giving results on two key variables, the need for consent and fear of discrimination by both sexes. The Chi square test was used to determine association between variables of interest.

Ethical consideration

Ethical clearance was granted by the University of Zambia Research and Ethics committee and written permission to conduct the study was also granted by the Lusaka City Council Chawama Site Office. All participants gave a written consent for participation. Client names were not included on questionnaires and information submitted was treated with strict confidentiality except for the purpose of the study.

MAIN STUDY FINDINGS

Participation and distribution

Of the total participants (n=409), 216 (52.8%) were females and [192(46.9%)] were males. The age range was 18 years to above 50years with the majority of participants [156 (38.1%)] being in the range of 18-24. The mean age was 31 years (SD±11.60) with the majority having gone up to secondary school [217(53.1%)].

Few participants had attained tertiary education [23(5.6%)] and the unemployed comprised the majority of participants [287 (70%)]. None of the demographic factors were associated with willingness (Pv >0.5). The rest of the demographic findings are described in table 1.

Other key findings were that 33.3% of respondents expressed that they would need consent or permission from their partners

Table 1: Participants descriptive characteristics

Factor		Frequency
Age:	=40	79(19.3%)
	35 -39	45(11.0%)
	25 -34	129(31.5%)
	15 -24	156(38.1%)
	Total	409(100%)
	Male	193(47.2%)
Sex:	Female	216(52.8%)
	Total	409(100%)
	Single	204(49.9%)
Marital Status:	Married	205(50.1%)
	Total	409(100%)
	Unemployed	287(7 0.2%)
Occupation:	Employed	122(29.8%)
	Total	409(100%)
	Non	13(3.2%)
Education:	Primary	156(38.1%)
	Secondary	217(53.1%)
	Tertiary	23(5.6%)
	Total	409(100%)
Perceived acceptance of lifelong treatment:	No	53 (13.0%)
	Yes	354 (86.6)
	Total	407 (99.5%)
Perceived effectiveness of ARVs:	Non effective	105 (25.7%)
	Effective	302 (73.8%)
	Total	407 (99.5%)
Preferred place of HIV/AIDS treatment:	Other	54 (13.2%)
	Clinic	354 (86.6%)
	Total	408 (99.8%)
Religion:	Other	8 (2.0%)
	Christians	398 (97.3%)
	Total	406 (99.3%)
Denomin ation:	Catholic	79 (19.3%)
	Other	317 (77.5%)
	Total	396 (96.8%)
Needing consent to begin ARV treatment:	No	271 (66.3%)
	Yes	136 (33.3%)
	Total	407 (99.5%)
Fear of discrimination:	Yes	196 (47.9%)
	No	211 (51.6%)
	Total	407 (99.5%)
Knowledge	Inadequate	212(51.4%)
	Adequate	194(47.4%)

or family members before beginning ARV treatment. While 51.6% (211) expressed fear of discrimination or sigma by their family members if they were found taking ARVs. 73.8% (302) believed that ARVs were effective. Other descriptive findings of the study are illustrated in Table 1. Table 2 in the annex shows the associations observed between the various factors and willingness. An association was observed between a belief in ARVs effectiveness and willingness to take ARVs, P<0.0001. Participants willing to take ARVs because they perceived ARVs were effective were 265 (65%) and were more than those who perceived ARVs to be non effective. An association also existed between those who perceived they could manage to take ARVs for life with willingness, (p<0.0001). The place of preference for treatment was observed to have an association with willingness (p<0.0001) with 317(77.4%) willing to access treatment from the clinic and not any other place. The need to get consent from family or partner had an association with willingness, p<0.0001 with those needing no consent but willing being the majority [212 (52.1%)]. The fear of being discriminated by partner or family when one opted to take ARVs had an association with willingness to take ARVs (p<0.0001).

Table 2: Association of factors with willingness using Chi-square test

Factor		Participants willing to take ARVS	Total Participants (n)	P value
Age:	<21 21-30 31-40 40-51 >50	16.9% 35.8% 17.6% 7.8% 4.9%	79 174 87 40 28	
Sex:	Male Female	40.0% 43.1%	192 216	0.22
Marital status:	Single Married	40.0% 43.1%	203 205	0.86
Education:	Not educated Educated	35.5% 47.5%	169 239	0.14
Occupation	Unemployed Employed	59.6% 23.5%	286 122	0.08
Perceived effectiveness of ARVs:	Non effective Effective	18.0% 65.3%	104 302	<0.0001
Perceived acceptance of lifelong treatment:	No Yes	7.9% 78.1	53 354	<0.0001
Preferred place of treatment:	Other Clinic	5.9% 77.4%	54 353	<0.0001
Religion:	Other Christians	1.5% 81.5%	8 397	0.41
Denomination:	Catholic Other	16.2% 66.8%	79 316	0.35
Needing consent to begin ARV:	No Yes	52.1% 31.2%	271 136	<0.0001
Discrimination:	Yes No	36.4% 46.9%	196 211	<0.0001
Knowledge:	Inadequate Adequate	44.2% 39.0%	212 193	0.50

Determinants of willingness using regression analysis

Sex was the only demographic factor that was observed significantly influencing willingness with females [176(43.1%)] being 2.27 more likely to be willing to take ARVs than males [AOR: 2.27(95%CI, 1.10 -4.70)]

Participants [265 (65.3%)] who perceived that ARVs were effective were 3.50 more likely to be willing to take ARVs than those who said they were not effective [AOR: 3.50(1.71 - 7.82))].

Other factors that were included in the model are illustrated in table 3a

When the regression analysis was adjusted for sex, males that believed needed no consent were 77% less likely to be willing than those that believed needed consent. The females that believed needed no consent were 1.22 more likely to be willing to take ARVs than those that believed needed consent. Findings for males on discrimination were not significant [AOR: 1.47, (95% CI, 1.15-1.89)] but was significantly high for females with those that lacked fear of discrimination being 2.70 more likely to be willing than those that believed would be discriminated (Table 3b).

DISCUSSION

The key findings to be discussed in this section are; high level of willingness, high level of perceived effectiveness of ARVs, the need of consent to begin ARV treatment and fear of discrimination.

The study revealed that more than 50% (83%) of participants were willing to take ARVs with females being more likely to be willing to take ARVs than males. This result was not surprising especially in the African setup where the HIV/AIDS disease burden weighs more on women than males (37) It was not also surprising to observe the presence of many females than males at the time of the study as this could be attributed to the observed social-cultural influences in the country such as early marriages and that women should be keepers of the home (4). High willingness could also be attributed to a high turn up of participants due to high unemployment levels.

The study revealed that the perception on effectiveness of ARVs had a significant contribution to willingness of

Table 3a: Logistic regression results on willingness to take ARVs

Independent Factors		Prevalence (total %)	Univariate OR(95%CI)	Multivariate OR(95%CI)
Age	18-20	64(15.7%)	1.32(0.67-2.6)	1.44(0.56-3.69)
	20-35	186(45.6%)	1.20(0.50-2.88)	0.50(0.15-1.72)
	36-45	51(12.5%)	0.81(0.34-1.94)	0.54(0.17-1.70)
	46>	38(9.3%)	1	1
Sex*	Male	163(40%)	1	1
	Female	176(43.1%)	0.78(0.46-1.32)	2.27(1.10- 4.70)
Marital Status	Single	163(40%)	1	1
	Married	1764(43.1)	1.49(0.88-2.51)	0.70(0.34- 1.42)
Education	Not educated	145(35.5%)	1	1
	Educated	194(47.%)	0.71(0.42-1.23)	1.11(0.54- 2.32)
Occupation	Unemployed	243(59.6%)	1	1
	Employed	96(23.5%)	1.53(0.89-2.63)	1.98(0.93 - 4.20)
Perceived ARV Effectiveness*	Non effective	73(18%)	1	1
	Effective	265(65.3%)	3.04(1.77-5.24)	3.50(1.71 - 7.82)
Preferred Place of treatment*	Other	24(5.9%)	1	1
	Clinic	315(77.4%)	10.36(5.50-19.52)	5.37(2.37-12.01)
Perceived acceptance of Lifelong treatment*	No	21(5.2%)	1	1
	Yes	318(78.1%)	13.46(7.03-25.77)	8.16(3.51-18.97)
Needing consent to begin ARV treatment*	Yes	212(52.1%)	1	1
	No	127(31.2%)	3.92(1.88-8.19)	1.30(1.20 – 2.72)
Fear of Discrimination *	Yes	148(36.4%)	1	1
	No	191(46.9%)	3.10(1.762-5.444)	2.47(1.22- 5.00)
Knowledge on ARVs *	Inadequate	179(44.2%)	1	1
	Adequate	158(39.0%)	0.83(0.49 – 1.40)	2.23(1.07 – 4.64)

Table 3: Showing regression analysis on needing consent and fear of discrimination adjusted for sex

	Males			Females	
		Prevalence (%n)	AOR(95%CI)	Prevalence (%n)	AOR(95%CI)
Needing consent to begin ARV treatment:	Yes	30.9%(n=62)	1	50.0%(n=142)	1
	No	54.5%(n=129)	0.23(0.48-0.82)	31.5%(n=74)	1.22(1.88-2.50)
Fear of discrimination:	Yes	36.6%(n=90)	1	36.1%(n=106)	1
	No	48.7%(n=101)	1.47(1.15-1.89)	45.4%(n=110)	2.70(1.05-6.97)

participants to take ARVs. Those who had a belief that ARVs were effective were more likely to be willing to take ARVs than those who said they were not. The high level of willingness due to believing that ARVs were effective could be attributed to the longevity, a new life and hope these drugs have provided for people living with HIV/AIDS within the community (4). Therefore, knowing that ARVs were effective had a positive influence on willingness.

The study demonstrated that despite high levels of HIV awareness, stigma and discrimination were still being perpetuated in the community. Discrimination was found to significantly influence females' willingness to take ARVS more than did influence the males. These findings are consistent with other research findings that have also shown that discrimination is common especially against women in most African settings. Reports have shown that other persons particularly women may be beaten by their partners if they disclosed their HIV status and may be refused to seek treatment (13).

The study findings revealed that females were more likely to needing consent to begin ARV treatment than males. Reports have also shown that in most households, females tend to seek consent much more than males for various reasons for decision making. Many cultural factors such as religious stigma; domestic violence; socioeconomic constraints, including literacy, living conditions, nutrition, presence or absence of family etc, have been found to affect treatment and individual acceptability of treatment with ARVs (34)

The high level of unemployment (70%) observed among participants, reflected the typical situation in Zambia where the majority of people (>70%) are unemployed. (3) Despite high levels of unemployment, majority of participants were willing to take ARVs. There was also overwhelming acceptance of ARVs as a long life treatment and that the clinic was the preferred place of treatment

CONCLUSION

The willingness to take ARVs was found to be quite high among adults living in Chawama an urban community. Willingness to take ARVs is a very essential element to getting more people on ART and thereby contributes to the reduction of morbidity and mortality due to HIV/AIDS. However, some of the findings presented in this study raise many policy issues and research challenges. As revealed by the study, stigma or discrimination is still being perpetuated in some communities; increased sensitization programmes are required on the reality of ARVs and HIV/AIDs.

Although the HIV/AIDS burden weighs more on women than males in Africa, community programs involving both males and females should be encouraged to promote willingness and a positive attitude towards ARVs especially among males who showed a less likelihood for willingness in this study.

ARVs perceived effectiveness should be reinforced by effectively monitoring the processes of manufacturing and supply of these drugs. Poor quality ARVs should not be supplied in the country as this promotes inefficiencies as far as management of HIV/AIDS with ARVs is concerned. Poor quality ARVs have been associated with unknown side effects and low efficacy that leads to poor management of the patient consequently low level of willingness to taking of ARVs. Illiteracy levels are high in the country and thus, a deliberate move to provide educational materials on ARVs in local languages should be made. This may improve knowledge on ARVs. A good understanding of what drugs or medications one is taking increases the likelihood of taking such medications.

Notwithstanding the fact that HIV/AIDs has been in existence for the past 20/30 years now discrimination against PLWHA is still being perpetuated in many communities. There is therefore a challenge to ascertain the level of this discrimination.

STUDY LIMITATIONS

The study design used (cross sectional) does not provide cause and effect of findings. The study findings were therefore limited to Chawama only. Acceptability could have been well measured over a large population coverage but due to limited time a small area was considered and also a small sample size was selected that is, one adult per household. Focus groups and individual discussions were not conducted in this study due to limited resources and time

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