



A Review of knowledge, attitudes and socio-demographic factors associated with non-adherence to antiretroviral therapy among people living with HIV/AIDS

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Abstract

Antiretroviral therapy has improved the health of many human immunodeficiency virus (HIV) positive individuals who otherwise would have died. Treatment efficacy relies, however, on sustained adherence, which constitutes a serious challenge to those receiving antiretroviral therapy, the regimens are often complicated and can include varying dosing schedules, dietary restrictions, and adverse effects. Adherence to ART results in successful HIV outcomes, which ensures optimal viral and CD4 control and prevention of further complications. However, adherence to ART often poses a special challenge and requires commitment from the patient and the health care team. Therefore, efforts should be made to intensify the dissemination of HIV and AIDS information and to fight stigma and discrimination in society. Since cultural background plays an important role in the individual response to HIV-related stigma, counseling and health education of patients should be adapted to cultural characteristics.

Keywords: HIV, AIDS, antiretroviral therapy, CD4

Introduction

Antiretroviral therapy has improved the health of many human immunodeficiency virus (HIV) positive individuals who otherwise would have died [1-2]. Treatment efficacy relies, however, on sustained adherence, which constitutes a serious challenge to those receiving antiretroviral therapy,

the regimens are often complicated and can include varying dosing schedules, dietary restrictions, and adverse effects [3-8]. Adherence to ART results in successful HIV outcomes, which ensures optimal viral and CD4 control and prevention of further complications [9-12]. However, adherence to ART often poses a special challenge and requires commitment from the

patient and the health care team. Due to rapid replication and mutation of HIV, poor adherence results in the development of drug-resistant strains of HIV [13-17].

In 2016, the Joint United Nations Programme on HIV/ AIDS (UNAIDS) estimated that 36.7 million people were living with HIV/AIDS including 19.5 million who were accessing antiretroviral therapy (ART) [18]. The global coverage of antiretroviral therapy reached 46% (43-50%) at the end of 2015. Gains were greatest in the world's most affected region, eastern and southern Africa, where coverage increased from 24% (22-25%) in 2010 to 54% (50-58%) in 2015, reaching a total of 10.3 million people [19].

The African region remains the most affected region with 19.4 million people living with HIV/AIDS (PLHIV) including 11.4 million PLHIV accessing ART [20-24]. Although the burden of HIV continues to vary significantly across countries, Sub-Saharan Africa remains the most affected with almost 1 in every 25 adults (4.4%) living with it, accounting for nearly 70% of the global burden [25-30].

In South Africa, 3.4 million people had access to treatment, followed by Kenya with nearly 900,000. Botswana, Eritrea, Kenya, Malawi, Mozambique, Rwanda, South Africa, Swaziland, Uganda, the United Republic of Tanzania, Zambia and Zimbabwe all increased treatment coverage by more than 25% points between 2010 and 2015 [18].

According to the 2014 estimate the national HIV prevalence in Ethiopia was 1.14%, and the number of people living with HIV is 769, 600 with 15, 700 new HIV infections and 35, 600 AIDS-related deaths each year (Molla et al., 2018). Nigeria, with the 2016 population and housing census figure of 140,431,790, has the tenth largest population in the world and is the most populous country in Africa. It has been estimated that approximately 70% of Nigeria's population is poor, and 55% is literate [31-36].

The Level of Knowledge on Effects of Non-Adherence among PLHIV

In South Africa, the results of a study done among adolescents and young adults in Soweto, revealed that even though participants had difficulties in explaining the biological rationale of why ARVs had to be taken as prescribed, they were aware that there were consequences of non-adherence. They showed awareness that non-adherence could cause viral resistance to ARVs. For instance, a 19-year-old female FGD participant stated "If they [HIV patients] won't be taking their medication they'll end up getting different kind of viruses and that will influence them..." Another participant stated "They [doctors] told me that if I miss a dose the virus will grow and end up showing itself" [37-42].

Seelinget *al.*[43] postulated that awareness about HIV and AIDS and the benefits of ART are regarded as crucial for accepting the offer to get tested. Therefore, efforts should be made to intensify the dissemination of HIV and AIDS information and to fight stigma and discrimination in society. Since cultural background plays an important role in the individual response to HIV-related stigma, counseling and health education of patients should be adapted to cultural characteristics. Kaposhiet *al.*[45] conducted a study in the Eastern Cape and recommended that an inaccuracy of the ART programme should be addressed; this should include improving knowledge translation during training of ART programme staff, ensuring the implementation of established data verification policies and procedures, rethinking the design of the programme to reduce the burden on health facilities and personnel, and standardizing information management procedures amongst the various governmental and non-governmental stakeholders [46-49].

A hospital based cross sectional study revealed that a total of 241 (75.8%) respondents stated correctly that ART consists of drugs that suppress the activity of HIV, whereas 68 (21.4%) respondents reported that they thought that ART

cured AIDS. However, a significant number of the respondents displayed a lack of understanding of technical terms, such as viral load and CD4 lymphocyte count. Over 34% of the respondents thought that taking antiretroviral drugs for their lifetime would lead to fatigue, whereas 22.6% reported that they felt that it was shameful to be on ARV. However, 83.6% of the respondents reported believing that ART helps to prolong life [31]. In contrast to the present study, the above study only investigated the awareness of PLHIV towards ART but did not go ahead to find out their awareness towards non-adherence to ART.

A study conducted in Nigeria looked into PLHIVs knowledge about ARVs; they found out that HIV/AIDS knowledge was remarkably high. In addition, it was found that knowledge of ARV drug combinations, the appropriate time to start ARV, the benefits of taking ARV regularly and the possible results of not adhering to one's ARV medication was high among all the participants [50]. However, the present study focused on awareness of non-adherence to ART among PLHIV. The results of a study done in a tertiary health facility in Nigeria revealed that most (65.9%) of the respondents knew that ARV drugs are used for reducing progression of HIV, 66.2% knew that ARV drugs can prevent mother to child transmission of HIV, 55.1% knew that ARV cannot cure HIV, while 75.1% believed that HIV positive patients placed on ART can give birth to a child without HIV infection, 84.2% mentioned percentages between 95 to 100% as required for optimal adherence in an open-ended question, while 75.6% believed that missing ARV can lead to disease progression. Respondents that were aware of CD4 and viral load tests were 78.1% and 79.8% respectively [51].

The Attitudes Towards Non-Adherence to ART Among People Living With HIV/AIDS.

Sellam & Flower (2014) indicate that the concept "attitude" is defined as a stable predisposition, a general and enduring positive or negative feeling about some person, object or issue. In addition, attitudes originate from human cognition and are closely linked and influenced by perceptions.

In a qualitative study done from South Africa, it was found that some study participants perceived suboptimal ARV adherence to decrease overall health and quality of life, as expressed by one 21-year-old male IDI participant: "It is important [being adherent to ARVs] because as you are seeing me today as strong as I am, it is because of those pills and if you don't take them, you go back to getting sick." A female FGD participant, aged 24 years, talked of the outcome of her experience being non-adherent to her ARVs as such "You'll pick up sickness, be in hospital in and out..." [37]. However, the study design of the present study differed in that it was cross-sectional using quantitative methods of data collection, therefore the in-depth opinions of the study participants towards non-adherence to ART were not captured as it was the case in the above study.

Raberahona *et al.*[20] in their study discovered that median score for attitude and perception was 5 (IQR: 5–6). Most of the participants had a positive attitude and perception (score 5) towards ART (n = 177, 75.6%). Fifty-seven participants (24.4%) had negative attitude and perception. Among the 25 participants who believed in more effective method than ART for treating HIV, 10 participants refused to reveal the method they believed to be more effective than ART, 6 participants believed that religion is more effective, 5 participants believed that herbal medicine is more effective.

In a six year follow up study on adherence to Antiretroviral therapy in Jinja, Uganda, they found that most of the participants had become less vigilant in managing their infection than they had been in 2009. For example, some mentioned that they did not observe any immediate consequences of not following the instructions they had been given for their drug-taking regime when they began ART 1 participant described one such incident [52].

A cross-sectional study conducted on 351 ART patients in the ART clinic of the University of Gondar referral hospital revealed that 232 (66.1%) strongly agreed that ART drug is

essential for their life, and 281 (80.1%) were comfortable, 42 (11.9%) neither comfortable nor uncomfortable, and 18 (8%) uncomfortable to take ART medications in the presence of others. Approximately 327 (93.2%) respondents disclosed their HIV sero status to family members, whereas 249 (70.9%) disclosed their HIV status to community. Seventy-nine (22.5%) respondents were active substance users (active substance is any of the substance of abuse including cigarette, khat, alcohol, or any other that could affect the adherence and treatment outcome of HAART) [53].

A facility-based study in Nigeria revealed that most respondents strongly agreed that ART had a positive effect on health (54.6%), had more benefits than harm (47.6%), reduces frequent sickness (46.8%) and assists in fulfilling family obligations (45.4%). Several agreed that ART causes fewer financial difficulties (34.1%), makes one feel forced to take medications (31.6%), prolongs life (45.2%), enhances quality of life (50.7%), and helps one to gain more weight/energy (46.8%). Overall, 98.1% had a positive attitude while 1.9% had a negative attitude towards ART (Balogun, 2019). However, the present study went deeper to investigate the attitudes of PLHIV towards non-adherence to ART.

The Social-Demographic Factors Associated with Knowledge On The Effects Of Non-Adherence To ART Among People Living With HIV/AIDS

A study done among people living with HIV/AIDS in Madagascar revealed that participants who were not single had a significantly higher knowledge of the name of their ART than those who were single (7% vs 1.5%, $p = 0.040$). A significantly higher proportion of women were unaware of the dose of their ART compared to men (6.9% vs 1.1%, $p = 0.035$). The knowledge of treatment schedule was significantly higher in participants who were members of PLHIV associations (48.4% vs 28.6%, $p = 0.027$) and in participants who were not on first line ART regimen (68.2% vs 27.4%, p

< 0.001). A significantly higher proportion of women were unaware of the history of their ART medication compared to men (29.3% vs 13.6%, $p = 0.006$) [20].

In a study done about knowledge and attitude towards antiretroviral therapy and adherence pattern of HIV patients in southwest Nigeria there was a statistically significant association between education and level of knowledge as higher proportions of respondents with at least a primary education had good knowledge of ART ($p = 0.032$) [51]. The multivariable logistic regression of data obtained from a multi-facility study in Ethiopia showed that there is no significant association between some socio-demographic variables and awareness to non-adherence to antiretroviral therapy at P-value of < 0.05 [3].

Conclusion

There is high level of knowledge on non-adherence to ART having attitude which is favorable in promoting adherence to ART. Having more than 4 family members and rural area of residence are independently associated with the level of knowledge.

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