An Exploratory Study of the Determinants of Adherence to Antiretroviral Therapy by Adolescents and Youths in the Eastern Cape, South Africa

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Abstract

It is important to understand the factors affecting willingness of adolescents and youths to adhere to antiretroviral therapy (ART) in order to ensure positive treatment outcomes. Drawing on the Health Belief Model (HBM) theory, this study investigated the influence of self-efficacy and perceived benefits on the adherence to ART medications among adolescents and youths in Buffalo City Metropolitan Municipality (BCMM) District, Eastern Cape, South Africa. A purposive sample of 206 HIV positive adolescents and youth between age 14 to 24 years receiving ART in Buffalo City Metropolitan Municipality were interviewed using a self- administered questionnaire covering treatment benefits and self-efficacy. The majority of the participants affirmed strict adherence to the treatment plan is essential for effective ARV treatment (69.4%). The participants always take their medication on schedule (88.8%). It was found that a significant relationship exists between self-efficacy and adherence to ART (p = 0.000). The results suggest that perceived benefits and self-efficacy are a predictor of adherence to ART by adolescents and youths, at least in this setting.

Keywords: adolescents and youths, antiretroviral therapy, adherence, Health Belief Model

1. Introduction

Global coverage of antiretroviral therapy reached 46% [43–50%] at the end of 2015 and South Africa alone had nearly 3.4 million people on treatment, more than any other country in the world amongst which the majority were adolescents and youths ((UNAIDS, 2016).

However, adhering to the treatment instructions for a long-term illness poses a great challenge to the client, especially adolescents (World Health Organization, 2006a). In public health centres it is observed that most adolescents and youths do not regularly attend the clinic to collect their ART. An increase loss to follow - up among the adolescents and youths is noticeable.

Antiretroviral adherence in young children and adolescents poses unique and formidable challenges (Rudy, Murphy, Harris, Muenz, & Ellen, 2009). The desire for autonomy and independence, risk-taking behaviours, preoccupation with self-image, and the need to fit in with their peers makes it difficult for adolescents and youths to adhere to ART. It is therefore challenging to attract and sustain adolescents' focus on maintaining their health, particularly for those with chronic illnesses (Tanner, Philbin, Duval, Ellen, Kapogiannis, & Fortenberr, 2014). Inconsistent adherence to ART may result in the development of resistant strains in a patient resistance

There are few studies on ART adherence among adolescents and youths in the South African context, applying the Health Belief Model as stated by various authors (Munro, Lewin, Swart, & Volmink, 2007; Barclay, Hinkin, Castellon, Mason, Reinhard, Marion, & Durvasula, 2007). Therefore, it is important to determine the HBM constructs and the psychosocial determinants of ART adherence in the South African context to guide interventions geared towards promoting ART adherence among adolescents and youths. The constructs of HBM address long-term medication adherence, and the influence of socio-psychological factors. Few of the many interventions developed to address this issue explicitly draw on theories of health behaviour in relation to adolescent health in South Africa. Such theories could contribute to the design of more effective interventions to promote treatment adherence by adolescents, and to improve assessments of the transferability of these

interventions across different health issues and settings. The HBM assumes that a person will take a health-related action if that person feels or believes (has a positive expectation) that a negative health condition can be avoided. (Glanz, Rimer, & Lewis, 2002). The major components of this model are perceived susceptibility (belief about getting a disease or condition), perceived severity (belief about the seriousness of the condition), perceived benefits(belief about the potential positive aspects of a health action) perceived barriers (belief about the potential negative aspects of a health action), cues to action (events, people or things that move people to change behaviour) and self-efficacy (belief that one can achieve the behaviour required to execute the outcome) (Hayden, 2009; Stanhope & Lancaster, 2005). This study investigated adherence to ART medications benefits and self-efficacy among adolescents and youths in Buffalo City Metropolitan Municipality (BCMM) District, Eastern Cape, South Africa.

2. Methodology

2.1 Research Design

This was a quantitative exploratory survey of HIV positive adolescents and youths between 14 to 24 years receiving ART in health facilities in BCMM. The BCMM population consists largely of isi-Xhosa speaking people. High unemployment and pregnancy rates are experienced by adolescents and youths and are mostly depending on child support rate for their livelihood (Mchunu, Peltzer, Tutshana, & Seutlwadi, 2012). The Buffalo City Metropolitan Health District is composed of 5 Community Health Centres, 72 Primary Health clinics, 2 provincial tertiary hospitals (namely Frere and Cecilia Makhiwane), and 2 District Hospitals (namely Bhisho and Grey) and 12 mobile services.

2.2 Sampling

A purposive sample of 206 adolescents and youths attending ARV clinics in 18 health facilities during the study period participated in the study. Purposive sampling was used to select participants who are receiving ARVs. Seven primary health clinics were selected from Mdantsane sub-district (peri-urban), 5 from East London sub-district (urban), 3 from rural clinics, Frere Hospital (urban), Cecilia Maikine Hospital (semi-urban), 3 Community Health Centres, namely Nontyatyambo, Duncan Day and at Empilweni. Data were collected from August -November 2017.

2.3 Research Instrument

The Adherence Determinants Questionnaire (ADQ) scale, previously developed and validated (Barclay et al., 2007; DiMatteo et al., 1993), was used to measure participants' adherence to ART and self-efficacy. The questionnaire was adapted to the South African context.

2.4 Ethical Considerations

Ethical approval was obtained from the University of Fort Hare Research and Ethics Committee (YAKO51SMAY01). Permission to conduct the study was obtained from the Research Coordinator of the Research and Epidemiological Unit, Department of Health, Bhisho. Permission to access the clients at the health care centre was requested and obtained from the BCMM sub-district managers. Informed consent was obtained from participants prior to data collection. Parents/guardians of participants less than 18 years signed informed consent forms on their behalf. In addition, assent was obtained from the minors before data collection. A psychologist was available to offer psychological support during interview sessions. The anonymity and confidentiality of all the research participants was ensured by concealing the identity of the participants.

2.5 Data Analysis

Descriptive statistics, including percentages, means, standard deviation, and frequency distributions were used to summarize the data. Chi-square statistic was applied to determine the relationship between self-efficacy and demographic characteristics. A p-value of 0.05 was considered statistically significant. The Statistical Package for Social Sciences (SPSS version 22.0) was used for statistical analyses.

3. Results

The demographic characteristics of the participants (Table 1) indicates that majority of the participants were females (79.6%), aged between 22 to 24 years (45.6%), Africans (88.3%), single (90.7%), living with other adults (92.7%), and attended high school but did not complete secondary schooling (40.8%). Most of the participants were students (49.5%) or were unemployed (42.7%). The majority of the participants were residing in urban settings (76.7%).

Table 1. Demographic characteristics of the participants

Variables	Frequency	Percentage
Gender		
Male	42	20.4
Female	164	79.6
Age (years)		
10-17	65	31.6
18-21	47	22.8
22-24	94	45.6
Race		
African	182	88.3
Coloured	24	11.7
Marital status		
Single	186	90.7
Widowed	4	2.0
Divorced	3	1.5
Married/living together	12	5.9
Living situation		
Live alone	7	3.4
Live with other adults	191	92.7
Live children and other adults	8	3.9
Highest level of education		
No formal education	4	1.9
Completed primary school	58	28.2
Attended high school but did not complete secondary	84	40.8
Completed secondary	60	29.1
Current work situation		
Employed	16	7.8
Student	102	49.5
Unemployed	88	42.7
Place residence		
Urban	158	76.7
Rural	48	23.3
First language		
Xhosa	200	97.1
Afrikaans	5	2.4
Isizulu	1	0.5
Other languages		
English	176	85
English and Afrikaans	13	6.5
English and Xhosa	3	1.5
English and Sesotho	2	1.0
English and Setswana	1	0.5
English and IsiZulu	9	4.5
Afrikaans	2	1.0

3.1 Perception About Treatment Benefits

Perceptions of the participants about treatment benefits (Table 2) indicates that the majority of the participants affirmed strict adherence to the treatment plan is essential for effective ARV (143; 69.4%). Regular taking of ARVs drugs was perceived to be critical for the drugs to be effective (116; 56.3%).

Table 2. Participants' perception concerning treatment benefits

Statements	SD n(%)	D n(%)	N n(%)	A n(%)	SA n(%)
Following my treatment plan will help me to be healthy	0(0.0)	1(0.5)	2(1.0)	114(55.6)	88(42.9)
I realised that strict adherence to the treatment plan is essential for ARV treatment to be effective	2(1.0)	5(2.4)	1(0.5)	143(69.4)	55(26.7)
ARV drugs will not be effective if I do not take them regularly	4(1.9)	13(6.3)	5(2.4)	116(56.3)	68(33.0)

SD = Strongly agree; D = Disagree; N = Neutral; A = Agree; SA = Strongly agree.

3.2 Self- Efficacy

The participants expressed the view that they are always determined to do anything to take their medication on schedule (183; 88.8%), including adhering to the treatment plan as a means of helping them to remember taking medication as prescribed (190; 92.2%), and being committed to taking their medication, without minding the taste (189; 92.2%) (Table 3).

Table 3. Participants' perceptions of self-efficacy in taking ART medications

Statements	N n (%)	S (n (%)	M n (%	A n (%)
I fear that I am not capable of taking my medications as I should	165(80.1)	30(14.6)	8 (3.9)	3 (1.5)
I worry that I will not be able to make the effort to take this medicine forever	155(75.2)	38(18.4)	9 (4.4)	4 (1.9)
No matter how hard I try, I don't think I will be able to follow my medications schedule	171(83.4)	23(11.2)	6 (2.9)	5 (2.4)
I am determined to do whatever it takes to take my medication on schedule	11 (5.3)	3 (1.5)	9 (4.4)	183(88.8)
I am determined to take my medications even if there is privacy	32 (15.5)	19 (9.2)	23(11.2)	132(64.1)
I am determined to stick with a plan to help me remember to take my medication as prescribed	4 (1.9)	4 (1.9)	8 (3.9)	190(92.2)
I learn as much as I can about my medications so I can take them as prescribed	41 (19.9)	10 (4.9)	14 (6.8)	141(68.4)
I am committed to taking my medication even if it tastes bad or is hard to swallow	4 (2.0)	4 (2.0)	8 (3.9)	189(92.2)

N = Never; S = Sometimes; M = Most of the times; A = Always.

Table 4. Relationship between self-efficacy and demographic characteristics

Variables	Mean score	SD	p-value
Gender			
Male	18.5	2.0	0.322
Female	18.9	2.2	
Age (years)			
10-17	18.5	2.3	0.233
18-21	18.8	2.3	
22-24	19.1	1.9	
Race			
African	18.9	2.0	0.014
Coloured	17.8	2.6	
Marital status			
Single	18.9	1.9	0.438
Widowed	18.3	1.5	
Divorced	18.7	2.3	
Married/living together	17.9	4.3	
Highest level of education			
No formal education	20.0	0.0	0.116
Completed primary	18.4	2.3	
Attended high school but did not complete matric	18.8	2.4	
Completed matric	19.3	1.4	
Current work situation			
Employed	19.4	1.2	0.172
Student	19.1	1.7	
Unemployed	18.6	2.4	
Place of residence			
Rural	18.9	1.9	0.438
Urban	18.6	2.7	

4. Discussion

The majority of the participants in this present study were females. Findings from studies conducted in South Africa and elsewhere have indicated that females are more likely to actively seek health care compared to their male counterparts (Eyassu et al., 2016; Mayeye, Mayeye, Lewis, & Oguntibeju, 2010; Nyambura, 2009; UNAIDS, 2016). For example, in South Africa, men who present for ART look sicker on the average than women, suggesting delays by men on being tested or care seeking once tested (Bekker, Myer, Orre, Lawn, & Wood, 2006). The authors further indicated that girls aged 15-24 years are more prone to HIV infection than boys of similar age category. Sexual abuse by older men has been identified as a common contributory factor to acquiring HIV infection in South Africa (Mchunu, Peltzer, Tutshana, & Seutlwadi, 2012).

The majority of the participants in this present study were between 22 to 24 years. These findings concur with several studies concerning ART adherence among adolescents and youths (Fick, Fairlie, Moultrie, Woollett, Pahad, Thomson, & Pleaner, 2015; Kagee et al., 2011; Kim et al., 2014). The increased number of youths in this age category of 22 to 24 years probably suggest that some of the youths had completed secondary education, and were unemployed while others dropped out before completing schooling. Some of the adolescents and youths within this age group drop out of schooling because of unplanned pregnancies, and the incidence of HIV is high because

of young people indulging in risky sexual behaviours (Dawood, 2015) These findings are concurrent with other studies (Eyassu et al., 2016; Semvua et al., 2017; Nachega, Morroni, Zuniga, Schechter, Rockstroh, Solomon, & Sherer, 2012). According to HBM, level of education, age, structural variables, and knowledge about HIV all have positive influence on compliance (Hayden, 2009).

Concerning participants' self-efficacy and adherence to ART, the findings revealed that the majority of the participants do not have a hard time remembering to take their dose of medication (80.6%). The participants maintained that they are always determined to do anything to take their medication on schedule, and as prescribed. Findings from this study concur with several studies conducted elsewhere (Rudy et al., 2009; Johnson et al., 2007; Adefolalu et al., 2014; Parsons, Rosof, & Mustanski, 2008; UNAIDS, 2016). According to HBM, the construct of self-efficacy, or confidence, hinges on a belief in oneself, a self-belief that one can accomplish even the most difficult tasks, such as taking the often-complex regimens of HAART (Bandura & Ramachaudran, 1994). Self-efficacy for treatment adherence has been identified as an important correlate of medication adherence in the treatment of HIV and other medical conditions (Johnson, Neilands, Dilworth, Morin, Remien, & Chesney, 2007).

In this study, there was no relationship between demographic variables and perceptions of treatment benefits. The HBM states that demographic variables such as age, gender, marital status, education level and ethnicity are the modifying factors influencing a person's perceptions about a disease. For example, an unmarried person may adhere better to treatment regiments than married people, because they are free to make their choices and decisions (Asare & Sharma, 2012). Consistent with Stanhope and Lancaster (2005), socio-demographic factors generally did not entirely predict ART adherence behaviour. However, other studies have shown that younger age (Eyassu et al., 2016; Williams et al., 2006), being female, under 35 years, single, and having higher educational status (Uzochukwu, Onwujekwe, Onoka, Okoli, Uguru, & Chukwuogo, 2009; Semvua et al., 2017; Kagee et al., 2011; Azia et al., 2016), significantly affect poorer adherence to ART. Contrastingly, Weiser, Wolfe and Bangsberg (2003) found no association between gender and adherence to ART.

Regarding perceived benefits and adherence to ART, participants agreed that following treatment plan will help them to be healthy and have realised that strict adherence to the treatment plan is essential for ARV treatment to be effective (143:69.4%) (Glanz, Lewis, & Rimer, 2002). The findings from this study are consistent with findings from other studies (Hudelson & Cluver, 2015; Ndou, Maputle, & Risenga, 2016; Tuhadeleni, Gary, Ashipala, & Nuuyoma, 2016).

5.1 Limitations

Most participants were recruited from two clinics that were known to be Youth Friendly Clinics, while others were from ordinary primary health clinics. This situation might have caused different opinions related to aspects of care related to clinic. The use of a convenience sampling method might have compromised the results; hence, results cannot be generalized to other adolescents and youths in other regions within the Eastern Cape Province. Nevertheless, the finding of the study provides baseline information on adherence to ART medications benefits and self-efficacy among adolescents and youths in the Eastern Cape Province, which could be useful to inform health interventions tailored to adolescents and youths concerning adherence to ART.

6. Conclusion

The study adds credence to Health Belief Model postulation that perception of benefits in intervention can result to better adherence to ART. Perceived benefits could be a predictor of an action, or can influence adherence to medications. Self-efficacy is a predictor of adherence to ART by adolescents and youths. The findings of this study confirm these assertions. Therefore, it is imperative for health providers to ensure client counselling for the facilitation of sustainable adherence to ART.

Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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