Determinants of adherence to antiretroviral treatment among people living with HIV in Armenia

Master of Public Health Integrating Experience Project

Professional Publication Framework

By

Tatevik Balayan

Advising Team

Tsovinar Harutyunyan, MPH, PHD

Aida Giloyan, MPH

Gerald and Patricia Turpanjian School of Public Health
American University *of* Armenia

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Abbreviations

ABC: Abacavir

ACTG: AIDS Clinical Trial Group

AIDS: Acquired Immune Deficiency Syndrome

ART: Antiretroviral Treatment

ARV: Antiretroviral

ATZ: Atazanavir

AUA: American University of Armenia

CCR5: Chemokine Coreceptor Antagonists

CDC: Center for Disease Control and Prevention

CHSR: Centre for Health Services, Research and Development

CI: Confidence Interval

d4T : Stavudine

DRV: Darunavir

DTG: Dolutegravir

EFV: Efavirenz

FTC: Emtricitabine

GHO: Global Health Obesrvatory

HIV: Human Immunodeficiency Virus

INSTIs: Integrase Strand Transfer Inhibitors

MAS: Medication Adherence Scale

MOS: Medical Outcomes Study

MPH: Master of Public Health

NCAP: National Center for AIDS Prevention

NGO: Non-governmental Organization

NNRTIs: Non Nucleoside Reverse Transcriptase Inhibitors

NRTIs: Nucleoside Reverse Transcriptase Inhibitors

NVP: Nevirapine

OR: Odds Ratio

PCR: Polymerase Chain Reaction

PI: Protease Inhibitor

PLHIV: People living with HIV

RAND: Research and Development

RA: Republic of Armenia

SD: Standard Deviation

SPH: School of Public Health

SPSS: Statistical Package for Social Sciences

TDF: Tenofovir

UNAIDS: The Joint United Nations Programme on HIV/AIDS

WHO: World Health Organization

3TC: Lamivudine

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Abstract

Background: Infection caused by human immunodeficiency virus (HIV) is one of the most serious, life threatening diseases in human history. Early use of antiretroviral treatment (ART) keeps people living with HIV (PLHIV) healthier and reduces the risk of HIV transmission. Adherence to ART is crucial for the treatment success and is significantly associated with viral load and health related quality of life.

Objectives: To identify the level of adherence to ART and factors associated with it among PLHIV in Armenia.

Methods: The quantitative cross-sectional survey design with structured self-administered questionnaire was used for the study. The sample included 180 beneficiaries of the "Positive People Armenian Network" NGO, who were enrolled in the study by convenience sampling. The questionnaire was developed based on the questionnaires used in previous studies internationally: questions on socio-demographic data, care at the National Center for AIDS Prevention, knowledge on HIV/AIDS and ART, side effects of ART (ACTG questionnaire), adherence to ART (Morisky scale), and social support (MOS scale).

Results: The mean age of participants was 40.6. Males comprised 61.1% of the sample. About 67.8% of participants were married and 73.3% had secondary school education. Residents of Yerevan comprised 37.8% of the sample. The adherence to ART was 53.9%. In adjusted analysis marital status, residence place, gender, and knowledge on HIV/AIDS and ART score were significnatly associated with the outcome variable. Adjusted odds of adherence to ART were 2.05 times higher among married people as compared to those who were not married. Odds of adherence increased 1.43 times per one unit increase in knowledge score on HIV/AIDS and ART in adjusted analysis. Females had 1.84 times higher odds of adherence to ART compared to males. People living in urban areas were 1.88 times more likely to be adherent to ART than people living in rural areas.

Conclusion: This was the first study to explore adherence to ART among PLHIV in Armenia. The results suggest the need for educational programs to increase the knowledge on HIV/AIDS and antiretroviral treatment among PLHIV. Promotion of engagement in care and compliance to treatment should be particularly targeted towards males and residents of rural areas to enhance the adherence levels in these population groups. Further studies should be conducted to track the changes in the level of adherence to ART in Armenia and explore facilitators and barriers of adherence in depth.

Introduction/Literature review

HIV/AIDS and its global burden

Human Immunodeficiency Virus (HIV) is a virus that attacks the immune system and weakens the ability of the human organism to fight against infections and other diseases (Center for Disease Control and Prevention (CDC), HIV Transmission, 2016). Infection caused by HIV is one of the most serious, life threatening diseases in human history (CDC, HIV Transmission, 2016). The virus destroys white blood cells called T-helpers or CD4 cells and replicates inside them (Richman, 2000). CD4 cells are white blood cells that play an important role in the immune system. The higher number of CD4 indicates a stronger immune system (AIDSgov, Stages of HIV Infection, 2015).

Acquired immune deficiency (AIDS) is the stage of HIV infection that occurs when the immune system is badly damaged and the organism becomes vulnerable to opportunistic infections (AIDSgov, Stages of HIV Infection, 2015). A patient is considered to have progressed to AIDS when the number of his/her CD4 cells falls below 200 per cubic millimeter of blood (200 cells/mm3) (AIDSgov, Stages of HIV Infection, 2015). The progression to AIDS is also ascertained if one or more opportunistic illnesses develop regardless of CD4 count (AIDSgov, Stages of HIV Infection, 2015).

Almost 78 million people have been infected with HIV and about 39 million people have died from it since the beginning of the epidemic in 1981 (WHO Global Health Obesrvatory (GHO) data, 2016). The first cases were reported by the Center for Disease Control and Prevention among homosexual men in Los Angeles, who were diagnosed having Pneumocystis pneumonia (WHO GHO data, 2016). Currently it is estimated that 0.8% of adults aged 15–49 years are living with HIV worldwide (WHO GHO data, 2016). Although the number of HIV deaths decreased

from 1.7 million (3.2%) to 1.5 million (2.7%) from 2000 to 2012, HIV is still included in the top ten diseases causing death (WHO, The top ten causes of death, 2014).

HIV can be transmitted through sexual intercourse, drug injection, through blood, and from mother to child during the pregnancy, delivery, and breastfeeding (UNAIDS, Global AIDS Update, 2016). In Eastern Europe and central Asia the prevalence of HIV is the highest among people who inject drugs, with injecting drug use contributing to about 51% of all HIV cases (Avert, HIV and AIDS in Eastern Europe and Central Asia, 2016). The second most common mode of transmission is heterosexual (43%). Homosexual transmission contributes to about 6% of all cases (Avert, HIV and AIDS in Eastern Europe and Central Asia, 2016).

Antiretroviral treatment for HIV

Since HIV is a type of virus called a retrovirus, the drugs used for its treatment are called antiretrovirals (ARV) (CDC, HIV Treatment, 2016). Antiretroviral therapy (ART) consists of the combination of ARV drugs taken by the patient every day (AIDS info, HIV Treatment, 2016). The drugs are grouped into six classes, each helping to stop HIV at different points in the life cycle of the virus (CDC, HIV Treatment, 2016). The six drug classes are 1) Non-nucleoside reverse transcriptase inhibitors (NNRTIs), 2) Nucleoside reverse transcriptase inhibitors (NRTIs), 3) Protease inhibitors (PIs), 4) Fusion inhibitors, CCR5 antagonists (CCR5s) (also called entry inhibitors), and Integrase strand transfer inhibitors (INSTIs) (AIDSgov, Overview of HIV Treatment, 2017). These six classes of drugs include more than 25 HIV medicines (AIDSgov, Overview of HIV Treatment, 2017).

There are several ART regimens, but the choice of the best regimen for each patient depends on his/her individual needs (AIDSgov, Overview of HIV Treatment, 2017). The United States Department of Health and Human Services guidelines for adults and adolescents recommend starting antiretroviral treatment with a regimen that includes three HIV medicines from at least

two different drug classes (AIDS info, HIV Treatment, 2016). Other factors considered for the selection of the regimen include possible side effects of the drugs, possible interactions between antiretrovirals or between antiretrovirals and other medicines taken by the patient, possible drug-resistance, convenience of the regimen, the patient's schedule, and the medicines' cost (AIDS info, HIV Treatment, 2016). The detailed description of the first, second, and third line regimens is included in the Attachment 1.

According to World Health Organization (WHO) "treat-all" recommendation published in 2016, anyone, who is infected with HIV, should begin ART as soon as possible after diagnosis (WHO, Treat all people living with HIV, offer antiretrovirals as additional, 2015). The expanded use of ART is supported by recent findings from clinical trials, which confirm that early use of ART keeps PLHIV healthier and reduces the risk of HIV transmission (WHO, Consolidated guidelines on the use of ARV drugs, 2016). Provision of ART to all PLHIV and expansion of prevention choices can help to prevent 21 million AIDS-related deaths and 28 million new HIV infections by 2030 (WHO, HIV/AIDS Fact Sheet, 2016). Those PLHIV, who are treated successfully, have viral suppression and a CD4+ cell count of at least 350cells/μl within 1 year after initiating antiretroviral treatment, had a normal life expectancy. A person, who is 35-year-old and has HIV is estimated to live on average to 80 years. (May, 2014).

Countries are now trying to adapt and implement these recommendations within their epidemiological settings (Gay, 2011).

Adherence to antiretroviral treatment

Adherence to ART is the extent to which a patient acts in accordance with the prescribed interval and dose of a regimen, which is important for the treatment success (WHO, HIV/AIDS, treatment and care, 2016).

The shift to the use of highly active antiretroviral treatment has led to increasingly complex regimens, which present significant challenges to patients and health-care providers with respect to adherence (Chesney, 2000). Poor adherence to therapy and low potency of the antiretroviral regimens can lead to viral resistance to ART (AIDS info, Clinical Guidelines Portal, 2014). The transmission of the resistant viruses from person to person can present a substantial clinical and public health challenge (AIDS info, Clinical Guidelines Portal, 2014).

Adherence to ART can be influenced by different factors, including socio-demographic and psychological factors (Haubrich, 1999), drug and alcohol use (Altice, 2001; Oliveira, 2015), stressful life, self-efficacy for medication use, lack of social and family support (Ammassari, 2002), existence of medication side effects and trust in HIV medication (Altice, 2001). Satisfaction with the HIV care is central in the ART initiation and adherence process (Drachler, 2016).

Studies show that self-reported adherence is significantly associated with viral load (the level of HIV RNA) and CD4 cells in 1ml blood (Gokarn, 2012). Other studies found that even brief self-reported measures of antiretroviral adherence can be robust and provide accurate information on adherence (Sodergard, 2016).

Identification of risks for non-adherence to treatment can help to develop recommendations to increase the adherence to ART among PLHIV (AIDSgov, Overview of HIV Treatment, 2017).

Situation in Armenia

Armenia has a low-level HIV epidemic (NCAP, HIV/AIDS Epidemics in the RA, 2017). In low-level epidemics the prevalence of HIV infection is less than 1% in the general population nationally or less than 5% in any subpopulation (WHO, HIV/AIDS, Definition of key terms, 2013).

The estimated prevalence of HIV is about 0.2% (NCAP, HIV/AIDS Epidemics in the RA, 2017). From 1988 to April 2017, there were 2,660 registered HIV cases in Armenia, of whom 69% were males and 1.7% were children. HIV is mainly transmitted in Armenia through heterosexual practices (67%) and injecting drug use (24%) (NCAP, HIV/AIDS Epidemics in the RA, 2017). As of April 2017 the number of registered AIDS cases totaled to 1,383, including 351 women and 27 children.

From the beginning of the epidemic in 1988 till April 2017, the number of death cases registered among HIV/AIDS patients was 592, including 106 women and eight children. Almost all individuals, who were infected through injecting drug use were men (99%), while almost all women (97%) were infected through sexual contacts (NCAP, HIV/AIDS Epidemics in the RA, 2017).

By the end of 2014 the estimated number of PLHIV in Armenia was 4,000 (UNAIDS, Armenia. HIV/AIDS Estimates, 2014), 38.3% of them knew about their HIV status, 33.2% were linked to HIV care, 27.9% were retained in HIV care, about 18.5% of them received ART, and 15.9% had undetectable viral load (the number of virus in the blood that cannot be detected by Polymerase Chain Reaction) (NCAP, HIV epidemiological surveillance in the RA, 2014).

Since 2005 ART is provided free of charge in Armenia within the framework of ensuring universal access to HIV treatment, care and support (UNAIDS, AIDS Response Progress Report, RA, 2016). Prior to 2016 only those PLHIV who had CD4 count less than 350 cells/μl were eligible for receiving ART in Armenia. Following the WHO recommendations, the CD4 threshold for the ART initiation was increased to 500 cells/μl (WHO, Consolidated guidelines on the use of ARV drugs, 2016).

To date, no studies have explored adherence to ART and factors associated with it among PLHIV in Armenia.

Study aim and research questions

The aim of this study was to identify the level of adherence to ART among PLHIV aged 18 years and above in Armenia, and to find the factors associated with it.

The study answered the following research questions:

1. What is the level of adherence to ART among PLHIV aged 18 years and above in Armenia?
2. What are the risk factors associated with adherence to ART among PLHIV aged 18 years and above in Armenia?

Methods

Study design

The student investigator utilized quantitative cross-sectional survey study design with structured self-administered questionnaire.

Cross sectional studies are less time consuming than case control and cohort studies; they are also inexpensive (Mann, 2003). In self-administered surveys the respondents are assured of anonymity and are more inclined to provide honest answers (Burns, 2008). Self-administered mode helps to avoid interviewer bias (Burns, 2008). Also self-administered mode of questionnaire administration is considered less expensive because there is no cost of hiring, training, and employing skilled interviewers.

Study population and setting

The target population included people who live with HIV aged 18 years old and above, who were residing in Armenia and receiving antiretroviral treatment at the time of the study. The recruitment of the participants was done through the “Positive People Armenian Network” NGO.

The beneficiaries of the NGO are PLHIV. As of December 31, 2015 ART was being provided to 941 PLHIV in Armenia (UNAIDS, AIDS Response Progress Report, RA, 2016). The NGO provides the beneficiaries with free counseling by the professional counselors on HIV/AIDS. The beneficiaries attend self-help groups and seminars on topics related to HIV/AIDS and STIs and their prevention, including condom use, healthy behaviour, and drug abuse. Self-help groups and counseling in the organization take place once a week. On average 15 people attend each session (Positive People Armenian Network, personal communication, November 17, 2016).

Inclusion criteria: People living with HIV aged 18 years old and above living in Armenia, who gave their informed consent to participate in the study and who are currently on ART.

Exclusion criteria: Those who are not residents of Armenia.

The study was conducted in Yerevan, Armenia. A separate room in the office of the NGO was chosen for the interviews to ensure the confidentiality.

Sample size

Sample size was calculated using the formula for two equal groups to find a difference in proportions: $n = (Z_{\alpha/2}+Z_{\beta})^2 * (P_1 (1 - P_1) + P_2 (1 - P_2)) / (P_1 - P_2)^2$.

N=2n, and n is the required sample size for one group, z is the level of significance, P_1 is the predicted percentage of low adherence to ART among non-educated, and P_2 is the percentage of low adherence to ART among educated. The value for P_1 was taken from a study conducted in California among the people living with HIV and having a poor social-economic status, which can be comparable with Armenia (Becker, 1979). P_2 was considered equal to 0.3 to be able to detect the difference in 20%.

For a confidence level of 95%, when α is 0.05 (and the $Z_{1-\alpha/2}$ is 1.96), and the power (1- β) is 0.8 (and $Z_{1-\beta}$ is 0.84), $P_1 = 0.5$, $P_2 = 0.3$, the required sample size is:

$n = (Z_{\alpha/2}+Z_{\beta})^2 * (P_1 (1 - P_1) + P_2 (1 - P_2)) / (P_1 - P_2)^2$

$n = (1.96+0.84)^2 *(0.5(1-0.5) + 0.3(1-0.3)) / (0.5-0.3)^2 = 7.84* (0.25 + 0.21) /0.04=90.16$

N=2*90=180

Sampling strategy and data collection

The data collection started on February 27, 2017 and finished on April 28, 2017. Overall, 180 respondents were surveyed.

The student investigator used convenience sampling approach to recruit PLHIV in the survey. Prior to the study the permission from the corresponding official of the NGO was taken. Those beneficiaries of the NGO who were eligible and gave their oral consent completed self-administered questionnaire. Interviews were conducted after each councelling session and occasionally when the beneficiaries visited the NGO. Thus the student investigator conducted about 20 interviews each week.

The Screening form was used in the process of selection of the eligible study population. The journal form was used to track the enrollment of respondents in the survey.

Study instrument

The survey questionnaire was developed based on the questionnaires used in previous studies conducted on the topic of adherence internationally (Wouters, 2008; Mthembu, 2014; Phillips, 2016; Gokarn, 2012; Been, 2016).

The questionnaire had 6 sections (Attachment 4):

1. Socio-demographic data
2. Questions on care provided at the National Center for AIDS Prevention

3. Knowledge on HIV/AIDS and ART
4. Side effects of ART (ACTG questionnaire)
5. Adherence to antiretroviral treatment (Medication adherence scale (MAS))
6. Social support (RAND, MOS social support scale)

Face validity of the instrument was ensured by the careful selection of items of the questionnaire. Content validity of the instrument was ensured by doing a thorough literature review and having the questionnaire reviewed by the study supervisor and senior specialists in the field.

The adherence was measured using Medication Adherence Scale/ Morisky scale which contains 4 questions on adherence to medication (Morisky, 1986). Participants were asked whether they have ever forgotten to take ARV drugs, been careless at times about taking drugs, stopped taking drugs when felt better, and stopped taking drugs if they made felt worse. The adherence level was determined based on the total score obtained by the patient. If the total score was 4 (answered "no" to all the items/questions included in the scale), the participant was defined as adherent to ART. The participant was defined as non-adherent to ART, if the total score was less than 4. A correlation between the self-reported adherence level of the patients measured by Morisky scale and the treatment efficacy on viral load has been demonstrated previously (Gokarn, 2012; Sodergard, 2016).

Social support scale included eight questions about received social support (Shakespeare-Finch, 2011). The scoring was done according to the MOS RAND recommendations (Sherbourne, 1991). The score of received social support was ranged between 0 (minimum) and 100 (maximum). The score was calculated for received instrumental (based on the first 4 items/questions) and emotional (based on the last 4 items/questions) social support separately. To obtain mean score for each subscale the average of the scores for each item in the subscale was calculated. The higher scores indicate more social support (Xiao, 1999).

The study instrument was pretested among 4 beneficiaries prior to fieldwork by the student investigator. After the pretest the student investigator revised the questionnaire and corrected the inadequacies revealed during the pretest.

Variables, Entry and analysis

SPSS 16 software (SPSS Inc. Relased 2007. SPSS Statistics for Windows, Version 160. Chicago: SSS Inc.) was used for data entry and analysis. The database was cleaned by random spot-checks of questionnaires, as well as running frequencies and checking missing values. Descriptive statistics including mean, standard deviation, and frequency distribution were obtained. Simple and multiple logistic regressions were run for bivariate and multivariate analysis. The p-values at the level of 0.05 and below were considered as statistically significant (Hosmer, 2000).

The dependent variable was the adherence to ART (dichotomous).

The independent variables included age, gender, marital status, educational level, employment status, socio-economic status, care at the National Center for AIDS Prevention, knowledge on HIV/AIDS and ART, medication side effects, the presence of comorbidities, and received social support. The description of each variable is included in the Attachment 6.

Ethical considerations

Moral values related to the professional, social and legal obligations to the study participants were followed (Corti, 2000). The rights of the respondents were protected, which included aspects such as informed consent, anonymity, confidentiality and respect (American Psychological Association (APA), Five principles for research ethics, 2003). The Institutional Review Board (IRB) of the American University of Armenia approved the study protocol prior to implementation.

Results

Descriptive Statistics

Socio-demographic characteristics

Table 1 presents socio-demographic characteristics of study participants. The mean age of participants was 40.6 (SD 8.3). Males comprised 61.1% of the sample. About 67.8% of participants were married and 73.3% had secondary school education. Residents of Yerevan comprised 37.8% of the sample. Only 44.1% of participants were employed. Approximately 53.1% of participants reported having an average socio-economic status and 69.7% reported spending between 51,000-200,000 AMD (~USD 100-400) per month (Table 1).

Health characteristics

The mean duration of having been diagnosed with HIV and receiving ART among study participants were 5.2 years (SD 4.2) and 3.8 years (SD 3.0), respectively (Table 1).

Twenty five percent of respondents reported having at least one co-infection (hepatitis B, hepatitis C, or tuberculosis). About one third of the sample (33.7%) had at least one chronic condition. The most prevalent co-infection was hepatitis C (17.8%), while the most prevalent chronic condition was high blood pressure (9.4%) (Table 1).

Care in the National Center for AIDS Prevention

Table 2 shows the level of satisfaction of the participants with care received at the National Center for AIDS Prevention. About 82.0% of the respondents thought that NCAP is easily accessible geographically, while 74.4% thought that the transportation costs to the NCAP are affordable. Only 3.8% of the participants mentioned that they would prefer to receive the treatment for HIV infection in the regional polyclinic (Table 2). Most of the participants reported that waiting time to

meet the doctor at the Center was short (96.1%), the appointment dates for drug refills were convenient (98.3%), the staff in the clinic was nice with the patients (97.8%), the drugs for the treatment of HIV infection were always available (98.3%), the doctors answered all the questions (96.1%), and kept confidentiality (99.4%) (Table 2). The mean score of satisfaction with care at the NCAP was 2.9 (ranging from 1 to 3, SD 0.2).

Knowledge on HIV/AIDS and antiretroviral treatment

Table 3 shows the participants' knowledge on HIV/AIDS and ART. Only 53.3% of the respondents thought that HIV infection is a curable disease. About 40.6% knew that HIV/AIDS treatment has many side effects. The majority of the participants (85.6%) were aware that life expectancy of PLHIV improves once they receive the treatment for HIV infection. Approximately 81.7% thought that the treatment for HIV infection is not effective if medications are not taken regularly.

All correct answers to the knowledge questions were added to generate the knowledge score. The mean knowledge score was 2.3 (ranging from 1 to 4, SD 0.9).

Adherence to antiretroviral treatment

Table 4 shows the answers of study participants to the questions in Morisky Adherence Scale. Thirty six percent of study participants have ever forgotten to take prescription drugs, 20.0% was careless at times about taking drugs, 8.9% sometimes stopped taking drugs when feeling better and 6.7% stopped taking drugs when feeling worse.

Fifty four percent of study participants answered "no" to all four questions and were defined as adherent (Table 4).

Side effects

Patients were asked about several symptoms that they might have had as a consequence of treatment. Table 5 shows the main symptoms the respondents had during the past four weeks. The most prevalent symptom was headache, present in about 77.8% of respondents, followed by feeling nervous or anxious in the past four weeks (61.7%), having fatigue or loss of energy (59.4 %), difficulty falling or staying asleep (55.0%), feeling sad, down or depressed (54.4%), having fevers, chills or sweats (47.8%), nausea or vomiting (37.2%), loss of appetite or change in the taste of food (32.2%), and having diarrhea (28.4%) (Table 5).

The mean side effects' severity score was 0.67, ranging from 0 (having no symptoms) to 4 (having a symptom which bothered terribly), SD 0.37. The majority of the participants (92.8%) mentioned having at least one symptom.

Receiving social support

The respondents answered to eight questions on MOS-SS scale related to their perceived level of received social support. Mean score of received social support was 69.4 (SD 26.1).

The mean score of received instrumental social support was 71.1 (SD 30.2). It was calculated based on the answers to the four questions. The mean score of reporting having someone to help them if they were confined to bed was 68.9 (SD 33.9), to take them to the doctor if they needed was 68.6 (SD 34.0), to prepare meals if they were unable to do it themselves was 73.6 (SD 32.0), and to help with daily chores if they were sick was 73.8 (SD 31.2) (Table 6).

The mean score of received emotional social support was 67.7 (SD 31.2). It was calculated based on the answers to the four questions. The mean score of reporting having someone to have a good time with, if they needed was 67.5 (SD 32.6), having someone who turned to for suggestions

about how to deal with a personal problem was 65.8 (SD 32.9), who understands their problems was 67.2 (SD 33.2), and who loved and made them feel wanted was 70.3 (SD 33.7) (Table 6).

Simple Logistic Regression

In unadjusted analysis gender, marital status, place of residence, knowledge, and existence of co-infections were significantly associated with adherence to ART at the significance level of p-value 0.05 (Hosmer, 2000). Age, employment status, education, socio-economic status, monthly expenditure, presence of chronic conditions, presence of side effects, length of diagnosis, time being on ART, level of care at NCAP and received social support were not significantly associated with the adherence to ART in the unadjusted analysis.

In unadjusted analysis females had two times higher odds of being adherent to ART compared to males (odds ratio, OR 2.01, 95% CI: 1.09-3.72). The unadjusted odds of adherence to ART were 1.9 times higher among those who were married compared to those who were not married (OR =1.90, 95% CI: 1.01-3.58). In unadjusted analysis odds of being adherent to ART were 1.9 times higher among those who were residents of cities compared to those who were residents of villages (OR 1.89, 95% CI: 1.03-3.46). The unadjusted odds of adherence to ART were about 47% smaller among those who had any co-infection compared to those who did not have any co-infection (OR 0.47, 95% CI: 0.24-0.94). The odds of adherence increased by 46% in one unit change in knowledge score (OR 1.46, 95% CI: 1.04-2.05) in unadjusted analysis (Table 7).

Multiple Logistic Regression Analysis

All variables, which were significantly associated with the outcome variable in the unadjusted analysis, were included in the multivariate model. Knowledge on HIV/AIDS and ART, marital status, gender, and place of residence were identified as independent predictors of adherence to ART in multivariate analysis. Being married was associated with 2.05 times higher odds of being

adherent to ART (OR 2.05, 95% CI 1.04-4.04). The adjusted odds of being adherent to ART increased by 1.43 times with each unit change in knowledge score (OR 1.43, 95% CI 1.00-2.04). The adjusted odds of being adherent to ART were 1.88 times higher among urban population compared to rural population (OR 1.88, 95% CI 1.00-3.54). In adjusted analysis females had 1.84 times higher odds of being adherent to ART competed to males (OR 1.84, 95% CI 0.94-3.60) (Table 8).

Discussion

Main findings

This cross-sectional study investigated the level of adherence to ART and factors associated with it among PLHIV in Armenia.

We found that about 54% of respondents were adherent to ART, which is higher compared with the results of the study conducted in Georgia using rating task method (Chkhartishvili, 2014). The difference in rates could be partly explained by the differences in the measurements of adherence to ART. The rating task method includes questions on the patients' ability to take all medications as prescribed, categorizing responses into six levels of adherence: very poor (0%), poor (20%), good (60%), very good (80%) and excellent (100%) (Chkhartishvili, 2014).

A systematic review of 50 studies reporting data from 53 countries documented that the pooled prevalence of adherence to ART was 62.3% (95% CI 57.1-67.6; I^2 97.2%) (Kim, 2014). Relatively lower rates of adherence to ART were shown in Europe and North America (40–60%) (Kim, 2014; Mendito, 2014; Wójcik, 2016; Jonathan, 2016), while the studies from African and Asian countries claim more than 70% ART adherence among PLHIV (Kim, 2014; Gokam, 2012). The difference in rates is largely explained by the peculiarities of epidemics (focused versus

generalized epidemics) and access to healthcare in different countries (Kim, 2014). It is also attributed to difference in methods of measuring adherence (Feeleymer, 2016).

The mean score of knowledge on HIV/AIDS and antiretroviral treatment in our study sample was surprisingly low (2.3 out of 4 max.), with only 7.2% of the participants answering correctly all four questions on knowledge explored in this study and 42.8% answering correctly at least three questions. Since our sample included beneficiaries of "Positive People Armenian Network" NGO who are regularly exposed to trainings and counseling on HIV/AIDS prevention and treatment, the situation with knowledge on HIV/AIDS and ART treatment could be even worse among those who we were not able to reach.

Knowledge level in our study sample was lower compared to results obtained in other studies. Zvinavashe et al. found that 20% of the respondents in Zimbabwe had high knowledge on ART (Zvinavashe, 2012), while Sequera et al. showed that only 15% of the participants had very good knowledge in India (Sequera, 2015). However, due to differences in measurements of knowledge score, it is challenging to directly compare our study findings with other findings.

Satisfaction with care received at the National Center for AIDS Prevention was quite high, averaging 2.88 out of 3. The satisfaction with HIV care was higher compared to the studies in Mexico, Vietnam, South Africa (Perez-Salgado, 2015; Tran, 2012; Wouters, 2008), and consistent with the studies in Russia and India (Suvorova, 2015; Bhagat, 2011). However, direct comparison of our study findings with other findings is challenging, because different measurements of satisfaction were used.

Being dissatisfied with the waiting time at the clinic has been reported as the most troublesome issue in many studies (Wouters, 2008; Atnafu, 2015; Wanyenze, 2010), while in our study the majority of the participants reported short waiting times.

In our study, married people had two times higher odds of adherence compared to non-married people, which is consistent with the results from numerous other investigations (Uzochukwu, 2009, Alagaw, 2013). The poorer adherence among those who are not married is commonly explained by social vulnerability (Bailey, 2014), low ART-related self-efficacy (Bailey, 2014), and lack of received social support among non-married respondents (Alagaw, 2013). In our study, lack of received social support was not associated with poorer adherence.

We found independent association between knowledge score of HIV/AIDS and ART and adherence to ART. This finding is consistent with numerous other studies (Miller, 2003; Mbirimtengerenji, 2013, Oyore, 2013; Demessie, 2014, Suleiman, 2014; Ramadhani, 2016; Gollin, 2002; Olowookere, 2012).

Residence status was marginally significantly associated with adherence to ART in our study, with PLHIV from urban areas having higher odds of adherence compared to those who lived in rural areas. Other studies have also documented significant associations between residence status and level of adherence to ART (Mukui, 2012), which is largely explained by the fact that cities provide better access to peer support groups, friendly services, and NGOs to support people living with HIV, than rural areas (Mbonye, 2003). Stigma and discrimination might be other barriers to adherence amongst people living with HIV who reside in rural areas (Burungi, 2015; Atuyambe, 2009).

Gender was marginally significantly associated with adherence to ART in our study. Several authors have reported higher adherence among females similar to our findings (Shah, 2007; Sasaki, 2012; Mao, 2017). This difference between genders could be explained by the lack of long-term housing, lower likelihood of belonging to an HIV support group, higher drug (Berg, 2004) and alcohol use (Oliveira, 2015) among males. Also, in general, males are shown to have

poorer compliance/retention to therapy compared with women (Ferradini, 2006; Chen, 2008; Katie, 2010; Heestermans, 2016, Burungi, 2015).

Strengths of the Study

To our knowledge, this is the first study that explored the level of and determinants of adherence to ART among PLHIV in Armenia.

The sample of the study included participants from the capital Yerevan and other regions of Armenia, which means that the results are likely to reflect the situation across the country. The use of self-administered questionnaire helped to avoid interviewer bias. We used Morisky scale to explore the adherence level, which has been proven to be a reliable and accurate tool for estimating adherence in numerous studies internationally.

Limitations of the Study

The findings of this study should be interpreted taking into account several limitations. First, the cross sectional design of the study precluded exploring the dynamic nature of adherence, which can vary over time. Second, we used self-reported estimates of adherence level and associated factors.

Finally, since the study utilized convenience sampling method and included beneficiaries of the NGO "Positive People Armenian Network", the selection bias cannot be ruled out.

Implications for practice and future research

The low level of knowledge on HIV/AIDS and ART and the positive association between the level of knowledge and adherence to ART found in this study stress the need for educational programs among PLHIV in Armenia. Education could help address the gap in knowledge about

antiretroviral treatment, change the attitude of the PLHIV towards benefits and importance of antiretroviral therapy, and improve adherence to the medication

Promotion of engagement in care and compliance to treatment should be particularly focused on males and residents of rural areas to enhance the adherence levels in these population groups.

Future studies should explore adherence to ART using a larger and more representative sample. Also, we suggest investigating other factors mentioned in the literature which could possibly explain adherence, but were not included in our study due to the limitations in the chosen survey mode. Qualitative studies could help to explore facilitators and barriers of non-adherence in PLHIV in Armenia in depth.

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Tables

Table 1. Summary of study sample characteristics

		% (N)
Socio-demographics		
		Mean (SD)
Age, yr		40.6 (8.3)
Gender		
	Male	61.1 (110)
	Female	38.9 (70)
Place of residence		
	Yerevan city	37.8 (68)
	Other cities	22.2 (40)
	Villages	40.0 (72)
Education		
	Incomplete secondary education	1.7 (3)
	Secondary school	73.3 (132)
	Technical education	13.3 (24)
	Graduate (postgraduate)education	11.7 (21)
Marital status		
	Single	12.2 (22)
	Married	67.8 (122)
	Divorced	11.7 (21)
	Widowed	8.3 (15)
Socio-economic status		
	Lower than average	36.7 (65)
	Average	53.1 (94)
	Higher than average	10.2 (18)
Monthly family spending		
	Lower than 50 000 drams	23.4 (41)
	51 000 – 100 000 drams	45.7 (80)
	101 000 – 200 000 drams	24.0 (42)
	201 000 – 300 000 drams	4.6 (8)
	Higher than 301 000 drams	2.3 (4)
Employment status		
	Employed	44.1 (78)
	Unemployed	55.9 (99)
Health status		
		Mean (SD)
Years being diagnosed with HIV		5.2 (4.2)
Years receiving ART		3.8 (3.0)

Presence of co-infections	
Hepatitis C	13.9 (25)
Hepatitis B	1.1 (2)
Tuberculosis	6.1 (11)
Hepatitis C & Hepatitis B	2.2 (4)
Hepatitis C & Tuberculosis	1.7 (3)
No co-infections	75.0 (135)
Presence of chronic health problems	
High blood pressure	9.4 (17)
Heart disease	3.3 (6)
Lung disease (including asthma)	2.8 (5)
Stomach/intestine disease	7.2 (13)
Cancer	2.2 (4)
Kidney problem	2.8 (5)
Problems with joints/bones	7.2 (13)
Low blood pressure	1.1 (2)
Diabetes	1.1 (2)
Thrombosis of vessels	1.1 (2)
Severe Headache	1.1 (2)
Hyperthyroidism	1.1 (2)
No chronic health problems	66.7 (120)

Table 2. Assessment of care received in the National Center for AIDS Prevention

% (N)

	Agree	Neither agree nor disagree	Disagree
The NCAP is easily accessible geographically	82.2 (148)	5.6 (10)	12.2 (22)
Transport cost to the NCAP is affordable	74.4 (134)	9.4 (17)	16.2 (29)
I would prefer to receive the treatment for HIV infection in the regional polyclinic	3.8 (7)	5.6 (10)	90.6 (163)
The waiting time to meet the doctor is short	96.1 (172)	2.2 (4)	1.7 (4)
The appointment dates for drug refills are convenient	98.3 (177)	1.1 (2)	0.6 (1)
The staff in the NCAP is nice with the patients	97.8 (176)	0.6 (1)	1.7 (3)
The drugs for the treatment of HIV infection are always available	98.3 (177)	1.1 (2)	0.6 (1)
Doctors answer all the questions	96.1 (173)	0.6 (1)	3.3 (6)
Doctors keep the confidentiality	99.4 (179)	0.6 (1)	0.0
Care in NCAP score			Mean (SD) 2.88 (0.21)

Table 3. Knowledge on HIV/AIDS and ART

% (N)

	Yes	No	I don't know
HIV infection is a curable disease	53.3 (96)	25.6 (46)	21.1 (38)
HIV/AIDS treatment has many side effects	40.6 (73)	48.9 (88)	10.6 (19)
Life expectancy of PLHIV improves once they receive the treatment for HIV infection	85.6 (154)	6.7 (12)	7.8 (14)
The treatment for HIV infection is not effective when they are not taken regularly	81.7 (147)	13.3 (24)	5.0 (9)

Table 4. Adherence to ART based on MAS/Morisky scale

% (N)

	Yes	No
Ever forget to take prescription drugs	35.6 (64)	64.4 (116)
Being careless at times about taking drugs	20.0 (36)	80.0 (144)
Sometimes stop taking drugs when feel better	8.9 (16)	91.1 (164)
Sometimes stop taking drugs if they make feel worse	6.7 (12)	93.3 (168)

Table 5. Side effects the respondents had in the past four weeks

% (N)

	did not have this symptom	had this symptom			
		it did not bother	it bothered a little	it bothered a lot	it bothered terribly
Fatigue or loss of energy	40.6 (73)	18.9 (34)	26.1 (47)	12.8 (23)	1.7 (3)
Fevers, chills or sweats	52.2 (94)	17.2 (31)	21.7 (39)	7.8 (14)	1.1 (2)
Feeling dizzy or lightheaded	74.4 (134)	15.6 (28)	6.1 (11)	3.3 (6)	0.6 (1)
Pain, numbness or tingling	77.8 (140)	14.4 (26)	3.9 (7)	3.9 (7)	0.0 (0)
Trouble remembering	73.1 (131)	19.6 (35)	5.6 (10)	1.7 (3)	0.6 (1)
Nausea or vomiting	62.8 (113)	16.1 (29)	16.7 (30)	1.7 (3)	2.8 (5)
Diarrhea or loose bowel movements	71.6 (129)	6.1 (11)	10.6 (19)	7.7 (14)	3.9 (7)
Felt sad, down or depressed	45.6 (85)	18.3 (33)	17.8 (32)	7.2 (13)	9.4 (17)
Felt nervous or anxious	38.3 (69)	18.3 (33)	21.7 (39)	10.6 (19)	11.1 (20)

Difficulty falling or staying asleep	45.0 (81)	25.6 (46)	12.8 (23)	8.9 (16)	7.8 (14)
Skin problems, such as rash, dryness or itching	75.6 (136)	9.4 (17)	7.2 (13)	4.4 (8)	3.3 (6)
Cough or trouble catching your breath	73.3 (132)	21.7 (39)	2.8 (5)	0.6 (1)	1.7 (3)
Headache	22.2 (40)	31.7 (57)	32.2 (58)	9.4 (17)	4.4 (8)
Loss of appetite or a change in the taste of food	67.8 (122)	14.4 (26)	11.7 (21)	2.8 (5)	3.3 (6)
Bloating, pain or gas in your stomach	82.8 (149)	7.2 (13)	1.7 (3)	4.4 (8)	3.9 (7)
Muscle aches or joint pain	80.2 (142)	12.4 (22)	4.5 (8)	2.8 (5)	0.0 (0)
Problems with having sex, such as loss of interest or lack of satisfaction	93.6 (162)	8.2 (6)	0.6 (1)	1.2 (2)	1.2 (2)
Changes in the way your body looks, such as fat deposits or weight gain	75.6 (136)	11.1 (20)	5.6 (10)	6.1 (11)	1.7 (3)
Problems with weight loss or wasting	72.8 (131)	10.6 (19)	6.7 (12)	4.4 (8)	5.6 (10)
Hair loss or changes in the way your hair looks	80.0 (144)	7.2 (13)	2.8 (5)	6.1 (11)	3.9 (7)
Side effects' severity score					Mean (SD) 0.67 (0.37)

Table 6. Receiving social support

	Mean (SD)
If you needed a social support, how often was someone available	
Received Instrumental social support	**71.1 (30.2)**
to help you if you were confined to bed	68.9 (33.9)
to take you to the doctor if you need it	68.6 (34.0)
to prepare your meals if you are unable to do it yourself	73.6 (32.0)
to help with daily chores if you were sick	73.8 (31.2)
Received Emotional social support	**67.7 (31.2)**
to have a good time with	67.5 (32.6)
turn to for suggestions about how to deal with a personal problem	65.8 (32.9)
who understands your problems	67.2 (33.2)
to love and make you feel wanted	70.3 (33.7)

Table 7. Simple logistic regression analysis of factors determining adherence to ART

		OR	95% CI	P-value
Socio-demographic and other characteristics				
Age, yr		0.990	0.956-1.026	0.596
Gender				
	Male	1.0		
	Female	2.008	1.085-3.716	0.027
Place of residence				
	Village	1.0		
	City	1.890	1.033-3.456	0.039
Education				
	Secondary and technical education	1.0		
	graduate (postgraduate) education	2.348	0.867-6.359	0.093
Marital status				
	Not married (single, widowed and divorced)	1.0		
	Married	1.901	1.010-3.578	0.047
Socio-economic status				
	Lower than average	1.0		
	Average	0.681	0.360-1.289	0.238
	Higher than average	1.117	0.384-3.250	0.840
Monthly family spending				
	Lower than 50 000 drams	1.0		
	51 000 – 200 000 drams	0.660	0.323-1.350	0.255
	Higher than 201 000 drams	1.920	0.183-20.103	0.586
Employment status				
	No	1.0		
	Yes	0.768	0.423-1.393	0.385
Years being diagnosed with HIV		1.001	0.995-1.007	0.806
Years receiving ART		0.999	0.991-1.007	0.869
Presence of co-infections				
	No	1.0		
	Yes	0.473	0.238-0.940	0.033
Presence of chronic health problems				
	No	1.0		
	Yes	0.997	0.542-1.836	0.993
Side effects of medication		0.929	0.415-2.078	0.858
Care in National Center for AIDS Prevention		0.823	0.197-3.447	0.790
Knowledge on HIV/AIDS and ART		1.460	1.039-2.050	0.029
Received instrumental social support		0.997	0.998-1.007	0.596
Received emotional social support		1.001	0.991-1.010	0.877

Table 8. Multiple logistic regression for each main determinant adjusted for other factors

		OR	95% CI	P-value
Gender				
	Male	1.0		
	Female	1.839	0.941-3.595	0.075
Place of residence				
	Village	1.0		
	City	1.877	0.995-3.542	0.052
Marital status				
	Not married	1.0		
	Married	2.053	1.043-4.040	0.037
Presence of co-infections				
	No	1.0		
	Yes	0.662	0.315-1.394	0.278
Knowledge on HIV/AIDS and ART		1.434	1.004-2.048	0.047

Attachments

Attachment 1. Antiretroviral regimens

Antiretroviral regimens

First-line ART for adolescents consists of two Nucleoside reverse transcriptase inhibitors (NRTIs) plus a Non nucleoside reverse transcriptase inhibitor (NNRTI) or Integrase Strand Transfer inhibitors (INSTIs):

TDF (Tenofovir) + 3TC (Lamivudine) or FTC (Emtricitabine) + EFV (Efavirenz) as a fixed-dose combination is recommended as the preferred option to initiate ART (strong recommendation, low-quality evidence) (AIDS Info, HIV Treatment, 2016).

TDF (Tenofovir) + 3TC (Lamivudine) or FTC (Emtricitabine) + DTG (Dolutegravir) or TDF + 3TC (or FTC) + EFV (Efavirenz) $_{400mg/day}$ may be used as alternative options to initiate ART (conditional recommendation, low-quality evidence).

If preferred regimens are contraindicated or not available, one of the following alternative options is recommended (strong recommendation, moderate-quality evidence) (AIDS Info, HIV Treatment, 2016):

Abacavir (ABC) + Lamivudine (3TC) + Efavirenz (EFV)

ABC + 3TC + Nevirapine (NVP)

AZT (Atazanavir)+ 3TC + EFV

AZT + 3TC + NVP

Tenofovir (TDF) + 3TC (or Emtricitabine (FTC)) + NVP

Second-line ART in adults consists of two nucleoside reverse-transcriptase inhibitors (NRTIs) plus a ritonavir-boosted protease inhibitor (PI) (AIDS Info, HIV Treatment, 2016).

The following sequence of second-line NRTI options is recommended:

After failure on a TDF + 3TC (or FTC)-based first-line regimen, AZT + 3TC as the NRTI backbone in second-line regimens are used (AIDS Info, HIV Treatment, 2016).

After failure on an AZT or d4T (Stavudine) + 3TC-based first-line regimen, TDF + 3TC (or FTC) as the NRTI backbone in second-line regimens are used (AIDS Info, HIV Treatment, 2016).

Use of NRTI backbones as a fixed-dose combination is recommended as the preferred approach (strong recommendation, moderate-quality evidence) (AIDS Info, HIV Treatment, 2016).

Heat-stable fixed-dose combinations of ATV/r and LPV/r are the preferred boosted PI options for second-line ART (strong recommendation, moderate-quality evidence) (AIDS Info, HIV Treatment, 2016).

Third-line regimens should include new drugs with minimal risk of cross-resistance to previously used regimens, such as INSTIs and second-generation NNRTIs and PIs (conditional recommendation, low-quality evidence).

Patients on a failing second-line regimen with no new ARV options continue with a tolerated regimen (conditional recommendation, very low-quality evidence) (AIDS Info, HIV Treatment, 2016).

Suppression of the HIV virus halts the progression of the disease and decreases viral load, which prevents transmission of HIV (AIDS Info, HIV Treatment, 2016).

Attachment 2. Journal form (English version)

Journal Form

Interviewer _____

Respondent's ID _____

Date _____

At the end of each attempt/completed interview choose the result code from the list below and fill in the table

Number of attempts	**Result Code**
Attempt 1	1. Completed interview 2. The interviewee is younger than 18 years 3. Interviewee does not have HIV/AIDS 4. The interviewee does not receive ART 5. Refusal 6. Postponed interview* 7. Incomplete interview* 8. Other _____
Attempt 2	1. Completed interview 2. The interviewee is younger than 18 years 3. Interviewee does not have HIV/AIDS 4. The interviewee does not receive ART 5. Refusal 6. Postponed interview 7. Incomplete interview 8. Other _____

**These result codes may need a second attempt*

Attachment 3. Journal Form (Armenian version)

Ձև

Հարցման արդյունքը լրացնելու

Հարցազրուցավար _____

Հարցվողի նույնականացման համարը_____

Ամսաթիվը _____

Հարցման յուրաքանչյուր փորձի/ավարտուն հարցման վերջում ընտրեք աղյուսակում նշված տարբերակներից մեկը

Փորձերի թիվը	**Արդյունքի կոդը**
Փորձ 1	1. Ավարտված հարցազրույց 2. Հարցվողը 18 տարեկանից փոքր է 3. Հարցվողը չունի ՄԻԱՎ/ՁԻԱՀ 4. Հարցվողը չի ստանում հակառետրովիրուսային բուժում 5. Հրաժարվեց (նշել պատճառը_____) 6. Հետաձգված հարցազրույց* 7. Անավարտ հարցազրույց* 8. Այլ _____
Փորձ 2	1. Ավարտված հարցազրույց 2. Հարցվողը 18 տարեկանից փոքր է 3. Հարցվողը չունի ՄԻԱՎ/ՁԻԱՀ 4. Հարցվողը չի ստանում հակառետրովիրուսային բուժում 5. Հրաժարվեց (նշել պատճառը_____) 6. Հետաձգված հարցազրույց 7. Անավարտ հարցազրույց 8. Այլ _____

* *Այս արդյունքների դեպքում հնարավոր է կրկին փորձել իրականացնել հարցումը*

Attachment 4. Screening form (English version)

Screening Form

If you are below 18 years of age, or do not have HIV, or do not take antiretroviral treatment do not proceed to the main questionnaire.

Read the questions carefully and check the appropriate box.

1 How old are you? If less than 18 years old, then stop answering to the questions. _____

		Yes	No
2	Do you have HIV/AIDS? If no, stop answering to the questions.	☐ 1	☐ 2
3	Do you receive ART (treatment for HIV)? If no, stop answering to the questions.	☐ 1	☐ 2

Attachment 5. Screening form (Armenian version)

Ձև

Հետազոտության մասնակցության

համապատասխանության որոշման

Մինչև հիմնական հարցաշարին անցնելը, խնդրում եմ ուշադիր կարդալ և պատասխանել հետևյալ հարցերին:

1 Քանի՞ տարեկան եք: _____

Եթե 18 տարեկանից փոքր եք, ապա դադարեցրեք հարցումը:

		Այո	Ոչ
2	Դուք ունե՞ք ՄԻԱՎ/ ՁԻԱՀ ախտորոշումը: Եթե՝ոչ, ապա դադարեցրեք հարցումը:	☐ 1	☐ 2
3	Դուք ստանու՞մ եք ՄԻԱՎ վարակի բուժում: Եթե՝ ոչ, ապա դադարեցրեք հարցումը:	☐ 1	☐ 2

Attachment 6. Questionnaire (English version)

Determinants of adherence to antiretroviral treatment among people living with HIV in Armenia

Respondent's ID _____

Date and time _____

Instructions for Completing the Questionnaire

First, carefully read each question and the possible responses. Choose the option that best represents your response and check (√) the box next to the option number. Some questions should be answered by words or by a number. There are blank lines next to these questions for you to write your response.

Please follow the instructions in Italics. These instructions will help you to complete the questionnaire. Some questions may look like others, but each one is different. Please, take time to answer each of them.
Check the boxes with a pencil. If you make a mistake or change your mind, erase completely and check the correct box. Answer, please, ALL THE questions.

Example
In many questions, you will be asked to choose and check response options provided in tables. The following example shows how to check the responses in tables:

	Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**
1. People could die from hunger.	☐	☐	☐	☐	☑
2. Overfed people are healthier.	☐	☑	☐	☐	☐

Main questionnaire

Socio-demographic data

Read the questions carefully and check the appropriate box.

1. Date of birth (day/month/year) _____/_____/_____

2. Gender
   - ☐ 1. Male
   - ☐ 2. Female

3. Place of residence
   - ☐ 1. Yerevan city
   - ☐ 2. Other city
   - ☐ 3. Village

4. Education
   - ☐ 1. Incomplete Secondary Education
   - ☐ 2. Secondary School
   - ☐ 3. Technical Education
   - ☐ 4. Graduate/Postgraduate Education
   - ☐ 99. I refuse to answer

5. Family status
   - ☐ 1. Single
   - ☐ 2. Married
   - ☐ 3. Divorced
   - ☐ 4. Widowed
   - ☐ 99. I refuse to answer

6. How do you rate your social status
   - ☐ 1. Substantially below average
   - ☐ 2. Little below average
   - ☐ 3. Average
   - ☐ 4. Little above average
   - ☐ 5. Substantially above average
   - ☐ 99. Not sure/difficult to response

7. In an average how much money does your family spend monthly?

☐ 1. Less than 50 000 drams
☐ 2. 50 000 – 100 000 drams
☐ 3. 101 000 – 200 000 drams
☐ 4. 201 000 – 300 000 drams
☐ 5. More than 301 000 drams
☐ 99. I don't know/ I refuse to answer

8. Are you employed?

☐ 1. Yes
☐ 2. No
☐ 99. I refuse to answer

9. When were you diagnosed with HIV? Month/year_____

10. Since when are you taking ART? Month/year_____

11. Do you have any one of these co-infections?

☐ 1. Hepatitis C
☐ 2. Hepatitis B
☐ 3. Tuberculosis
☐ 4. Other (Specify)_____
☐ 5. No co-infections

12. Please, indicate any chronic health problem(s) that you presently have.

(Mention all that apply)

☐ 1. High blood pressure
☐ 2. Heart disease
☐ 3. Lung disease (including asthma)
☐ 4. Stomach/intestine disease
☐ 5. Cancer
☐ 6. Kidney problem
☐ 7. Problems with joints/bones
☐ 8. Other problems (describe)
_____
☐ 9. No chronic health problems

Care in the National Center for AIDS Prevention

This questionnaire asks questions about the National Center for AIDS Prevention. Please answer all the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response.

Please read each question, assess your feelings, and check the appropriate box that gives the best answer.

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
13	The National Center for AIDS Prevention is easily accessible geographically.	☐1	☐2	☐3	☐4	☐5
14	Transport cost to the National Center for AIDS Prevention is affordable.	☐1	☐2	☐3	☐4	☐5
15	I would prefer to receive the treatment for HIV infection in the regional polyclinic.	☐1	☐2	☐3	☐4	☐5
16	The waiting time to meet the doctor is short.	☐1	☐2	☐3	☐4	☐5
17	The appointment dates for drug refills are convenient.	☐1	☐2	☐3	☐4	☐5
18	The staff in the clinic is nice with the patients.	☐1	☐2	☐3	☐4	☐5
19	The drugs for the treatment of HIV infection are always available.	☐1	☐2	☐3	☐4	☐5
20	Doctors answer all the questions.	☐1	☐2	☐3	☐4	☐5
21	Doctors keep the confidentiality.	☐1	☐2	☐3	☐4	☐5

Knowledge on HIV/AIDS and treatment (ART)

Please read each question and check the appropriate box that gives the best answer.

		Yes	No	I don't know
22	HIV infection is a curable disease.	☐ 1	☐ 2	☐ 99
23	HIV/AIDS treatment has many side effects.	☐ 1	☐ 2	☐ 99
24	Life expectancy of PLHIV improves once they receive the treatment for HIV infection.	☐ 1	☐ 2	☐ 99
25	The treatment for HIV infection is not effective when they are not taken regularly.	☐ 1	☐ 2	☐ 99

Adherence to antiretroviral treatment

Read the questions carefully and check the appropriate box.

		Yes	**No**
26	Do you ever forget to take your prescription drugs?	☐ 1	☐ 0
27	Are you careless at times about taking your drugs?	☐ 1	☐ 0
28	Do you sometimes stop taking your drugs when you feel better?	☐ 1	☐ 0
29	Do you sometimes stop taking your drugs if they make you feel worse?	☐ 1	☐ 0

30. The following questions ask about symptoms you might have had during the past four weeks.

Please check the box that describes how much you have been bothered by each symptom.

		I did not have this symptom	I had this symptom			
			It didn't bother me	It bothered me a little	It bothered me a lot	It bothered me terribly
1	fatigue or loss of energy	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4

2	fevers, chills or sweats	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
3	feeling dizzy or lightheaded	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
4	pain, numbness or tingling	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
5	trouble remembering	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
6	nausea or vomiting	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
7	diarrhea or loose bowel movements	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
8	felt sad, down or depressed	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
9	felt nervous or anxious	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
10	difficulty falling or staying asleep	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
11	skin problems, such as rash, dryness or itching	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
12	cough or trouble catching your breath	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
13	headache	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
14	loss of appetite or a change in the taste of food	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
15	bloating, pain or gas in your stomach	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
16	muscle aches or joint pain	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
17	problems with having sex, such as loss of interest or lack of satisfaction	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
18	changes in the way your body looks, such as fat deposits or weight gain	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
19	problems with weight loss or wasting	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
20	hair loss or changes in the way your hair looks	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4

Receiving Social support

The following questions are about receiving social support.

31. If you needed a social support, how often is someone available

Please, check the appropriate box.

		None of the time	**A little of the time**	**Some of the time**	**Most of the time**	**All of the time**
1	to help you if you were confined to bed?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	to take you to the doctor if you need it?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	to prepare your meals if you are unable to do it yourself?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	to help with daily chores if you were sick?	☐1	☐ 2	☐ 3	☐ 4	☐ 5
5	to have a good time with?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6	turn to for suggestions about how to deal with a personal problem?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7	who understands your problems?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8	to love and make you feel wanted?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Thank you

Attachment 7. Questionnaire (Armenian version)

Հայաստանում ՄԻԱՎ-ով ապրող մարդկանց շրջանում հակառետրովիրուսային բուժման ընդունման վրա ազդող գործոնները

Հարցաթերթիկի լրացման ցուցումներ

Խնդրում ենք, ուշադիր կարդալ յուրաքանչյուր հարցը և առաջարկվող պատասխանները: Ընտրեք այն տարբերակը, որը բոլորից ճիշտն է ներկայացնում ձեր պատասխանը և նշեք (√) վանդակում, որը գտնվում է ընտրվող թվի մոտ: Որոշ հարցեր պետք է պատասխանել բառերով կամ թվերով: Այդպիսի հարցերի մոտ կան տողեր, որտեղ կարող եք գրել ձեր պատասխանները:

Խնդրում ենք, հետևել ցուցումներին, որոնք գրված են շեղատառերով: Այդ ցուցումները կօգնեն լրացնել հարցաշարը: Որոշ հարցեր կարող են նման լինել մյուսներին, սակայն յուրաքանչյուրը տարբեր է: Խնդրում ենք, ժամանակ տրամադրել և պատասխանել յուրաքանչյուր հարցին:

Հարցաթերթիկը ցանկալի է լրացնել մատիտով: Եթե հարցերին պատասխանելիս սխալվում եք կամ մտափոխվում եք, ջնջեք և նշեք ճիշտ պատասխանը: Խնդրում ենք պատասխանել բոլոր հարցերին:

<u>Օրինակ</u>

Շատ հարցերում, դուք պետք է ընտրեք և նշեք աղյուսակում տրված պատասխանները: Հետևյալ օրինակը ցույց է տալիս, թե աղյուսակում ինչպես պետք է նշեք պատասխանը:

	Խիստ անհամաձայն եմ	**Համաձայն չեմ**	**Ոչ համաձայն եմ, ոչ էլ անհամաձայն**	**Համաձայն եմ**	**Խիստ համաձայն եմ**
1.Մարդիկ սովից մահանում են:	☐	☐	☐	☐	☑
2. Շատ ուտող մարդիկ ավելի առողջ են:	☐	☑	☐	☐	☐

Հարցաթերթիկ

Տարբերակման համարը ՝ _____

Հարցազրույցի օրը՝ __ __ /__ __ /__ __ (*օր/ամիս/տարի*)

Սոցիալ-ժողովրդագրական տվյալներ

1. Ծննդյան տարեթիվը՝ __ __/__ __/__ __ (*օր/ամիս/տարի*)

2. Սեռը՝
   - ☐ 1. Արական
   - ☐ 2. Իգական

3. Բնակության վայրը՝
   - ☐ 1. Ք. Երևան
   - ☐ 2. Այլ քաղաք
   - ☐ 3. Գյուղ

4. Կրթությունը՝
   - ☐ 1. Թերի միջնակարգ կրթություն
   - ☐ 2. Միջնակարգ կրթություն
   - ☐ 3. Մասնագիտական կրթություն
   - ☐ 4. Բարձրագույն/ հետդիպլոմային կրթություն
   - ☐ 99. Հրաժարվում եմ պատասխանել

5. Ամուսնական կարգավիճակը՝
   - ☐ 1. Չամուսնացած
   - ☐ 2. Ամուսնացած
   - ☐ 3. Բաժանված
   - ☐ 4. Ամուսինը/կինը մահացած
   - ☐ 99. Հրաժարվում եմ պատասխանել

6. Ընդհանուր առմամբ, ինչպե՞ս կգնահատեիք Ձեր ընտանիքի նյութական վիճակը:

☐ 1. Միջինից բավականին ցածր

☐ 2. Միջինից մի փոքր ցածր

☐ 3. Միջին

☐ 4. Միջինից մի փոքր բարձր

☐ 5. Միջինից բավականին բարձր

☐ 99. Համոզված չեմ / դժվար է պատասխանել

7. Միջինում, ամսական որքա՞ն գումար է ծախսում Ձեր ընտանիքը:

☐ 1. 50 000 դրամից քիչ

☐ 2. 51 000 – 100 000 դրամ

☐ 3. 101 000 – 200 000 դրամ

☐ 4. 201 000 – 300 000 դրամ

☐ 5. 301 000 դրամից ավել

☐ 99. Չգիտեմ/ Հրաժարվում եմ պատասխանել

8. Դուք աշխատու՞մ եք:

☐ 1. Այո ☐ 2. Ոչ ☐ 99. Հրաժարվում եմ պատասխանել

9. Ե՞րբ է Ձեզ մոտ հայտնաբերվել ՄԻԱՎ վարակը:

/__ __/__ __ (*ամիս/տարի*)

10. Ե՞րբ եք սկսել ստանալ ՄԻԱՎ վարակի բուժումը:

/__ __/__ __ *ամիս/տարի*

11. Ունե՞ք ստորև նշված համավարակներից որևէ մեկը.

☐ 1. Հեպատիտ Բ

☐ 2. Հեպատիտ Ց

☐ 3. Տուբերկուլոզ

☐ 4. Այլ _____

☐ 5. Ոչ մի համավարակ

12. Խնդրում եմ նշեք այն քրոնիկ առողջական խնդիրները, որ Դուք ներկայումս ունեք:
(Նշել հնարավոր բոլոր տարբերակները)

☐ 1. Արյան բարձր ճնշում
☐ 2. Սրտի հիվանդություններ
☐ 3. Թոքերի հիվանդություն (ներառյալ ասթմա)
☐ 4. Ստամոքսաղիքային հիվանդություններ
☐ 5. Քաղցկեղ
☐ 6. Երիկամների հիվանդություններ
☐ 7. Հոդերի/ոսկրերի հիվանդություններ
☐ 8. Այլ խնդիրներ (նկարագրել) _____
☐ 9. Ոչ մի քրոնիկ հիվանդություն

Բուժումը և խնամքը ՁԻԱՀ-ի կանխարգելման հանրապետական կենտրոնում

Հետևյալ հարցերը վերաբերում են ՁԻԱՀ-ի կանխարգելման հանրապետական կենտրոնում իրականացվող խնամքին և բուժմանը: Խնդրում եմ պատասխանել բոլոր հարցերին և ընտրել այն պատասխանը, որ կարծում եք ամենահամապատասխանն է:

(յուրաքանչյուր տողում նշեք մեկ վանդակ)

		Խիստ համաձայն եմ	**Համաձայն եմ**	**Ոչ համաձայն եմ և ոչ էլ անհամաձայն**	**Համաձայն չեմ**	**Խիստ անհամաձայն եմ**
13	ՁԻԱՀ-ի կանխարգելման հանրապետական կենտրոնը տարածքային առումով հեշտ հասանելի է:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
14	Դեպի ՁԻԱՀ-ի կանխարգելման հանրապետական կենտրոն տրանսպորտի գինը մատչելի է:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

15	Կնախընտրեի ՄԻԱՎ վարակի բուժումը ստանալ տարածքային պոլիկլինիկայում:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
16	Բժշկին սպասելու ժամանակը կարճ է:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
17	Դեղերը ստանալու օրերը հարմար են:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
18	Բժշկական անձնակազմը լավ է վարվում հիվանդների հետ:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
19	Դեղորայքը միշտ առկա է:	☐1	☐ 2	☐ 3	☐ 4	☐ 5
20	Բժիշկները պատասխանում են բոլոր հարցերին:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
21	Բժիշկները պահպանում են հիվանդության գաղտնիությունը:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

ՄԻԱՎ/ՁԻԱՀ-ին և բուժմանը վերաբերող գիտելիքները

(յուրաքանչյուր տողում նշեք մեկ վանդակ)

		Այո	**Ոչ**	**Չգիտեմ**
22	ՄԻԱՎ վարակը բուժելի հիվանդություն է:	☐ 1	☐ 2	☐ 99
23	ՄԻԱՎ վարակի բուժումն ունի շատ կողմնակի ազդեցություններ:	☐ 1	☐ 2	☐ 99
24	ՄԻԱՎ-ով ապրող մարդկանց կյանքի որակը և տևողությունը լավանում է, երբ նրանք ստանում են ՄԻԱՎ վարակի բուժում:	☐ 1	☐ 2	☐ 99
25	ՄԻԱՎ վարակի բուժումն արդյունավետ չէ, եթե այն չի ընդունվում կանոնավոր կերպով:	☐ 1	☐ 2	☐ 99

ՄԻԱՎ վարակի (հակառետրովիրուսային) բուժման նկատմամբ հավատարմությունը

Կարդացեք ստորև ներկայացված հարցերը և ընտրեք Ձեր կարծիքով ամենահամապատասխան պատասխանը:

(յուրաքանչյուր տողում նշեք մեկ վանդակ)

		Այո	Ոչ
26	Դուք երբեև մոռացե՞լ եք ընդունել ՄԻԱՎ վարակի բուժման դեղերը:	☐ 1	☐ 0
27	Դուք երբևէ օգտագործե՞լ եք ՄԻԱՎ վարակի բուժման դեղերն անկանոն կերպով:	☐ 1	☐ 0
28	Դուք երբևէ դադարեցրե՞լ եք ՄԻԱՎ վարակի բուժման դեղերի ընդունումը, քանի որ Ձեր ինքնազգացողությունը լավացել է:	☐ 1	☐ 0
29	Դուք երբևէ դադարեցրե՞լ եք ՄԻԱՎ վարակի բուժման դեղերի ընդունումը, քանի որ Ձեր ինքնազգացողությունը վատացել է:	☐ 1	☐ 0

30. Ստորև ներկայացված են հարցեր՝ վերջին **4 շաբաթվա** ընթացքում Ձեր ունեցած զգացողության վերաբերյալ:

Խնդրում եմ, յուրաքանչյուր տողում նշեք մեկ թիվ, որը նկարագրում է Ձեր զգացողության աստիճանը:

		Ես չեմ ունեցել այս զգացող ությունը	Ես ունեցել եմ այս զգացողությունը			
			Այն ինձ չի անհանգս տացրել	Այն ինձ քիչ է անհանգս տացրել	Այն ինձ շատ է անհանգս տացրել	Այն սարսափելի ձևով ինձ անհանգստ ացրել է
1	հոգնածություն կամ էներգիայի կորուստ	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
2	տենդ, մրսածություն կամ քրտնարդադրություն	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
3	գլխապտույտ	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4

4	ցավ, ծակծկոցների կամ թմրության զգացում	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
5	հիշողության խանգարում	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
6	սրտխառնոց կամ փսխում	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
7	փորլուծություն կամ աղիների շարժունակության թուլացում	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
8	տխրություն կամ ընկճվածություն	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
9	անհանգստություն կամ նյարդային վիճակ	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
10	քնելու դժվարություն	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
11	մաշկային խնդիրներ, ցան, չորություն կամ քոր	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
12	հազ կամ շնչառության դժվարություն	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
13	գլխացավ	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
14	ախորժակի կորուստ կամ սննդի նկատմամբ հակումների փոփոխություն	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
15	փքվածություն, ցավ կամ գազերի առկայություն ստամոքսում	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
16	մկանացավ կամ հոդացավ	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
17	սեռական անբավարարվածություն, հետաքրքրության իջեցում	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
18	մարմնի կառուցվածքի փոփոխություն, Ճարպակալում կամ քաշի ավելացում	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
19	քաշի կորուստ, նիհարում	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
20	մազաթափություն, մազերի որակի փոփոխություն	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4

Սոցիալական աջակցության ընդունում

Հետևյալ հարցերը սոցիալական աջակցության ընդունման մասին են:

31. Երբ Դուք կարիք եք ունենում, որքա՞ն հաճախ է ինչ-որ մեկը

(յուրաքանչյուր տողում նշեք մեկ վանդակ)

		Երբեք	Հազվադեպ	Երբեմն	Հաճախ	Միշտ
1	օգնում Ձեզ, երբ հիվանդ պառկած եք անկողնում:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	տանում Ձեզ բժշկի, երբ դրա կարիքն ունեք:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	Ձեզ համար սնունդ պատրաստում, երբ Դուք ինքնուրույն չեք կարողանում դա անել:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	օգնում Ձեզ տնային գործերում, երբ հիվանդ եք:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	հաճելի ժամանակ անցկացնում Ձեզ հետ:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6	իր առաջարկներով օգնում Ձեզ լուծել Ձեր անձնական խնդիրները:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7	հասկանում Ձեր դժվարությունները:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8	սիրում Ձեզ և ստիպում Ձեզ զգալ, որ ցանկալի եք:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Շնորհակալություն

Attachment 8. Oral consent form (English Version)

American University of Armenia
Institutional Review Board #1
Consent form

Hello, my name is Tatevik Balayan I am a second year graduate student of the Gerald and Patricia Turpanjian School of Public Health (SPH) at the American University of Armenia. With the support of the faculty members from the Gerald and Patricia Turpanjian School of Public Health of the American University of Armenia and in collaboration with "Positive People Armenian Network" NGO, I am conducting research exploring determinants of adherence to treatment of HIV infection among the people living with HIV aged 18 years old and above in Armenia. You have been contacted because you are one of the beneficiaries of "Positive People Armenian Network". If you are willing to participate in this study I will ask you some questions concerning your health and the treatment of HIV infection. You will be out of the 180 people, who will participate in this survey. Your participation in the study is voluntary. There will be no risk if you accept to participate. You may skip any question you think is inappropriate and stop it at any moment you want. The interview will last no more than 20 minutes. The self-administered questionnaire will be used. There will be no direct benefits for you if you participate in this project, but the information provided by you will be very helpful for better understanding the needs of people living with HIV in Armenia. There is no penalty for refusing to participate. The information provided by you is fully confidential and will be used only for the study. Only aggregate data will be reported. If you have more questions about this study you can contact Dr. Tsovinar Harutyunyan, the Principal Investigator at (+37460) 612560. If you feel you have not been treated fairly or think you have been hurt by joining this study, please contact Dr. Kristina Akopyan, AUA Human Subject Protection Administrator at the American University of Armenia (+374 60) 61 25 61. If you agree to be involved in this study, could we continue?

Thank you

Attachment 9. Oral consent form (Armenian Version)

Հայաստանի ամերիկյան համալսարան
Գիտահետազոտական էթիկայի թիվ 1 հանձնաժողով
Իրազեկ համաձայնության ձև

Բարև Ձեզ, իմ անունը Տաթևիկ Բալայան է: Ես սովորում եմ Հայաստանի ամերիկյան համալսարանի (ՀԱՀ) Ջերալդ և Պատրիսիա Թուրփանջյան Հանրային առողջապահության ֆակուլտետի ավարտական կուրսում: ՀԱՀ Ջերալդ և Պատրիսիա Թուրփանջյան Հանրային առողջության ֆակուլտետի օգնությամբ և «Դրական մարդկանց հայկական ցանց» հասարակական կազմակերպության համագործակցությամբ՝ ես իրականացնում եմ հետազոտություն՝ բացահայտելու Հայաստանում բնակվող 18 տարեկանից մեծ ՄԻԱՎ-ով ապրող մարդկանց շրջանում ՄԻԱՎ վարակի բուժման ընդունման վրա ազդող գործոնները: Մենք դիմում ենք Ձեզ մասնակցելու հետազոտությանը, քանի որ դուք «Դրական մարդկանց հայկական ցանց» հասարակական կազմակերպության շահառու եք: Եթե դուք ցանկանում եք մասնակցել հետազոտությանը, ապա ես Ձեզ հարցեր կուղղեմ Ձեր առողջության և ՄԻԱՎ վարակի բուժման վերաբերյալ: Ձեզ վտանգ չի սպառնում, եթե մասնակցեք հարցմանը: Դուք լինելու եք 180 մարդկանցից մեկը, ով մասնակցելու է հարցմանը: Ձեր մասնակցությունը հետազոտությանը կամավոր է, դուք կարող եք չպատասխանել որևէ հարցի, որը կարծում եք անհարմար է, կամ ընդհատել հարցումը, երբ կցանկանաք: Հարցումը կտևի 20 րոպե, հարցաթերթիկը լրացնելու եք ինքնուրույն: Ուղղակի օգուտ հարցումից չեք ունենալու, սակայն Ձեր կողմից տրված տեղեկությունը կօգնի ավելի լավ հասկանալ Հայաստանում ՄԻԱՎ-ով ապրող մարդկանց կարիքները: Դուք չեք ստանա որևէ տույժ, եթե հրաժարվեք մասնակցությունից: Ձեր կողմից տրված տեղեկությունը լինելու է գաղտնի և կիրառվելու է միայն հետազոտության համար: Միայն ընդհանրացված տվյալները պետք է օգտագործվեն: Եթե հարցեր ունեք հետազատության վերաբերյալ կարող եք զանգահարել հետազոտության պատասխանատու Ծովինար Հարությունյանին (+37460) 612560 հեռախոսահամարով: Եթե դուք կարծում եք, որ այս հետազոտությանը մասնակցելու ընթացքում Ձեզ լավ չեն վերաբերվել կամ մասնակցությունը Ձեզ վնաս է պատճառել, կարող եք զանգահարել ՀԱՀ էթիկայի հանձնաժողովի քարտուղար՝ Քրիստինա Հակոբյանին՝ (+37460) 612561 հեռախոսահամարով: Եթե դուք համաձայն եք մասնակցել, կարող ենք սկսել հարցումը:

Շնորհակալություն

Attachment 10. Study variables

Study Variables

Dependent Variables	
Adherence to ART	Dichotomous

Independent Variables	
Age	Continuous
Gender	Categorical
Marital status	Categorical
Educational level	Ordinal
Place of residence	Nominal
Employment status	Dichotomous
Socio-economic status	Ordinal
Monthly spending of the family	Ordinal
Care in the NCAP	Continues
Years of being diagnosed with HIV/AIDS	Continues
Years of having been receiving ART	Continues
Knowledge on HIV/AIDS and ART	Continues
Co-infections	Dichotomous
Chronic conditions	Dichotomous
Side effects	Continues
Received social support	Continues

Attachment 11. Task scheduled (October-December, 2016)

Task scheduled (October-December, 2016)

Task scheduled	October 1-15	October 16-31	November 1-15	November 16-30	December 1-15	December 16-30
Literature review						
Sample size calculation and justification						
Development of the consent form and the questionnaire						
Finalizing the Protocol						
Translation of the questionnaire						

Attachment 12. Task scheduled (January-May, 2017)

Task scheduled (January-May, 2017)

Task scheduled	January 1-15	January 16-31	February 1-16	February 17-28	March 1-15	March 16-31	April 1-15	April 16-31	May 1-15
IRB application submission									
Inform NGO and Pretest the instrument									
Data collection									
Data entry, Data cleaning									
Data analysis									
Preparation of the final report									