

**Nutritional Knowledge, Attitude and Practices among
people living with HIV in Armenia: a cross-sectional
survey**

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LIST OF ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
ART	Antiretroviral therapy
BMI	Body mass index
HAART	Highly active antiretroviral therapy
HIV	Human immunodeficiency virus
IRB	Institutional review board
KAP	Knowledge attitude practices
NAM	National AIDS manual
NGO	Non-governmental organization
PLHIV	People living with HIV
RDA	Recommended daily allowance
RWRP	Real world real people NGO
UN	United Nations
WHO	World Health Organization

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ABSTRACT

Background

Human immunodeficiency virus (HIV) is one of the most significant health and development challenges of the millennium. As of 2013 approximately 35 million people were living with HIV worldwide. The final stage of the disease is AIDS: acquired immune deficiency syndrome, which takes from 2 to 15 years to develop. It is acknowledged that there is a strong relationship between HIV and nutrition. Malnutrition can be caused by reduced appetite, depression, and some common opportunistic infections among people living with HIV (PLHIV), such as oral thrush. Malnutrition in its turn contributes to immunosuppression and results in a quicker progression to the stage of AIDS.

Aim of the study

This study aims to explore nutrition-related knowledge, attitudes, and practices (KAP) of people living with HIV in Armenia. The specific research questions are the following: What is the level of nutrition-related KAP among PLHIV in Armenia? Is there an association between nutrition-related knowledge, attitudes, and actual practice among PLHIV in Armenia?

Methodology

The student investigator utilized quantitative cross-sectional survey study design with interviewer administered questionnaire. The surveyed population included PLHIV who were beneficiaries of the “Real World, Real People” NGO, “Armenian network of positive people” NGO and “Day Care Center” of Armenian Apostolic church. The student investigator used convenience sampling approach to recruit PLHIV in the survey. The survey questionnaire has been developed based on the questionnaires used in previous studies conducted on the topic of nutrition internationally and in Armenia.

Results

During the period of data collection 111 beneficiaries were surveyed, out of which 77 beneficiaries were from RWRP, 30 from daycare center and four from Armenian network of positive people. The mean percent knowledge score of nutrition was 68.76%, while the mean percent attitude score was 71.20%. Adjusted linear regression showed statistically significant association between practice and attitude scores ($p=0.043$).

Conclusion

This was the first study to explore nutritional knowledge, attitude and practices of people living with HIV in Armenia. The study found high level of knowledge and positive attitude, but inadequate consumption of certain food groups among people living with HIV. Larger-scale investigations should be conducted to explore the nutrition-related KAP and nutritional status of people living with HIV in Armenia with the focus on barriers to healthy nutrition in this population.

INTRODUCTION/LITERATURE REVIEW

HIV/AIDS and its global burden

Human immunodeficiency virus (HIV) is one of the most significant health and development challenges of the millennium. It affects human immune system causing the organism to be more susceptible to illnesses and opportunistic infections. As of 2013 approximately 35 million people were living with HIV worldwide ¹. The final stage of the disease is AIDS: acquired immune deficiency syndrome, which takes from 2 to 15 years to develop. In the stage of AIDS the immune system becomes weaker and opportunistic infections may develop. Among other symptoms are weight loss, diarrhea, fever and cough ¹. About 39 million people died from AIDS related causes since 1981, when the first case was reported ¹.

The standard treatment for HIV includes the administration of three or more antiretroviral drugs which halt the replication of HIV, known as the highly active antiretroviral therapy (HAART) ². In 2013 the antiretroviral treatment was available for 12.9 million people ². The treatment substantially improves the life expectancy and health related quality of life². According to World Health Organization (WHO) guidelines antiretroviral treatment has to be initiated when CD4 cell count reaches 350-500 cells/mm³³. Treatment ensures higher CD4 cell count in 2 years follow-up, and even in the most severe cases of HIV, about 80% of people have a chance of survival ³. The treatment also decreases the probability of clinical event by 27% and the probability of contracting tuberculosis by half (51%) ³.

HIV and nutrition

It is acknowledged that there is a strong relationship between HIV and nutrition⁴. Malnutrition can be caused by reduced appetite, depression, and some common opportunistic infections among people living with HIV (PLHIV), such as oral thrush. Malnutrition in its turn contributes to immunosuppression and results in a quicker progression to the stage of AIDS. On the other hand, good nutrition leads to stronger resistance to the disease, promotes higher quality of life, increases compliance to and effectiveness of antiretroviral treatment, protects the organism from immunosuppression, and delays the stage of AIDS^{5,4}. That is why it is of vital importance for people living with HIV to maintain proper nutrient intake. Since HAART influences the normal metabolic processes, therefore affecting nutritional intake of patients, nutrition and diet are particularly important for those who are undergoing the therapy⁶.

In 2001 UN special assembly and in 2006 the political declaration on HIV/AIDS both recognized the significance of nutrition in HIV/AIDS. In 2003 WHO defined nutrient requirements for PLHIV⁷. The WHO document specified energy requirements, which should be 10-30% higher compared to those of healthy people in order to maintain growth and development of patients with HIV. In the asymptomatic stage of HIV the energy requirements are 10% higher than those of healthy people, while during the symptomatic stage and also in the phase of AIDS energy requirements get 20-30% higher than in healthy individuals. For children and infants with HIV there is a requirement for 50-100% higher energy intake⁷. For the daily intake of macro- and micronutrients WHO recommended to have intake of protein equivalent to 12-15% of total energy intake. There is no substantial evidence to suggest that fat intake should be increased in people living with HIV. Concerning micronutrient intake there is a strong recommendation for iron-folate

supplementation, which is needed to ensure prevention and treatment of anemia. Intake of the rest of micronutrients, such as vitamin A or zinc should not exceed recommended daily allowance (RDA) levels⁷. Other micronutrients such as vitamins C, E and B complex are quite beneficial, as they improve immune system, prevent diarrhea among children with HIV and improve pregnancy outcomes.

Another guide, published recently in July 2014 by UNAIDS summarized and gave more specific details of the above-mentioned guidelines for nutrition of PLHIV. It stated that patients in asymptomatic stage need 10% increase in their energy intake. However, it also mentioned that if physical activity is reduced, there is no need for the energy increase, as it is compensated. It also mentioned that in the symptomatic stage, as well as for pregnant and lactating women the energy requirements are 20-30% higher. The guide also specified that children in asymptomatic stage of HIV also need 10% increase in energy intake, while in the symptomatic stage energy requirements are 50-100% higher. The guide also stated that as the energy requirements rise, the protein and fat intake should also be increased. The guide did not include specific portion sizes for daily intake of micro- and macro- nutrients⁸.

According to Canada food guide of 2007 HIV patients must ensure daily nutrient intake of fruit and vegetables (at least 7 servings), 6-8 servings of grain products, 2-3 servings of dairy and 2-3 servings of meat products⁹ (1 serving is equal to ½ cup or 8 table spoons). The above-mentioned recommendations are similar to the guidelines on healthy eating for general population that have been published by Health Canada organization in 2011.¹⁰

Carter et al. provided the most recent healthy eating guide for people living with HIV through the National AIDS manual (NAM)¹¹. Authors acknowledged the importance of healthy nutrition among PLHIV both before treatment initiation and during the therapy in

terms of supporting body's immune system and treatment outcomes¹¹. NAM proposes a balanced diet which would ensure proper nutrient intake¹¹. According to these guidelines the diet should include starchy food, such as bread, pasta, potatoes, rice, etc, which should comprise one third of food intake each day so as to have proper intake of carbohydrates, minerals, vitamins and fibre ¹¹. It also recommends to include fruit and vegetables in the diet with a portion size of 80g each day ¹¹ and milk and dairy products. For those who cannot tolerate milk other sources of calcium such as apricots, dark green leafy vegetables, nuts, etc., are recommended. The guide also recommends high intake of fish, meat and eggs, as they are valuable sources of proteins. At least 15% of food intake each day should include proteins. Also, it is of importance to include food that is high in unsaturated fats. In general, food and drinks that are high in fat or sugar should be consumed in the smallest portions¹¹.

Nutrition-related knowledge, attitude and practice among PLHIV

The appropriate level of knowledge and attitude towards nutrition among PLHIV is an important factor that might influence the actual nutrient intake. Several studies explored the level of knowledge about and attitude towards nutrition, and actual food intake in PLHIV ¹². The study conducted in San Paulo, Brazil measured the prevalence of consumption of main food ingredients among PLHIV on highly active antiretroviral therapy (HAART)¹³. The researchers interviewed 540 participants by applying 24 hour food recall. The questionnaire included questions concerning both macronutrient intake (protein, total fat, saturated fat, carbohydrate and dietary fiber) and micronutrient intake (sodium, calcium and cholesterol) ¹³. They found that there was inappropriate intake of saturated fat, cholesterol, calcium, dietary fiber and sodium. The study also revealed high prevalence of obesity(34%), which could lead to the development of other non-communicable diseases ¹³.

A study conducted by Anand et al, measured nutrition related knowledge, attitude and practices (KAP) in the population of HIV-positive people in India ¹⁴. The researchers showed that the level of knowledge on nutritional aspects of the disease was moderate with the 80% of participants answering 4 out of 7 knowledge questions correctly¹⁴. More specifically, respondents' knowledge was classified poor if out of 15 questions 0-5 answers were correct (12%), average if 6-10 answers were correct (71.2%) and good if 11-15 answers were correct (16.8%). The authors suggested that the relatively low percent of respondents with poor knowledge could be explained by their frequent exposure to counseling sessions on the matters of nutrition in the treatment centers¹⁴. The overall attitude towards nutrition and HIV was positive¹⁴. On the other hand, the application of knowledge to actual food practices was low¹⁴.

Another study conducted by Bukusuba et al. among women living with HIV in Eastern Uganda explored nutritional knowledge, attitude, and practices, and revealed that about 62% of study participants had inadequate dietary quality ¹². Most of the participants in the study understood the importance of nutrition in health¹², yet only 21.8% of them had 3 or more meals per day, 39.8% had a dietary diversity of 6 and more food groups in the last 24 hours¹², and 60.2% of study participant reported consumption of less than 6 food groups. The latter indicates poor dietary quality ¹².

Situation in Armenia

From 1988 up to 2014 December, 1,953 HIV cases have been registered among citizens of Armenia. The number of new cases registered in 2014 was 334, exceeding the number of annually registered cases in previous years ¹⁵. The HIV/AIDS situation assessment showed that there were about 4,000 people living with HIV in Armenia in 2015 ¹⁶. To decrease the transmission of HIV and to reduce HIV/AIDS related morbidity and

mortality in Armenia the National center for AIDS prevention (NCAP) established a program of response to AIDS epidemic in 1989¹⁷, which included the provision of antiretroviral treatment to patients with HIV¹⁷. NCAP acts on a national level, with people from all marzes (provinces) of Armenia getting treatment and counseling at the center. After diagnosis, the decision to enroll PLHIV into treatment is made based on the CD4 cell count. The treatment is initiated, when it reaches the level of 350-500 cells/mm³. Throughout the treatment the patients regularly attend NCAP to get the prescribed medicine and continue monitoring their CD4 cell count.

After diagnosis, people with HIV get the psychosocial and legal support, as well as up-to-date information on HIV, including information on the disease course and advice on their nutrition. In addition, they are advised to visit any of the following organizations: “Real World, Real People” NGO, “Armenian network of positive people” NGO and “Day Care Center” of Armenian Apostolic church. These organizations provide an opportunity to receive free counseling from professional counselors and attend self-help groups and seminars on topics related to HIV/AIDS such as drug abuse, condom use, and healthy lifestyle, including proper nutrition. In 2014, 1,150 people visited national AIDS center seeking counseling and treatment at least once, while 850 of them attended and took part in the self-help groups and professional counseling organized by these organizations at least once. The counseling organizations in Yerevan provide services to PLHIV both from Yerevan (472 people) and marzes (456 people), Self-help groups and counseling in these organizations take place once a week, with 10-12 people on average attending each session.

No studies have explored the level of knowledge on and attitude towards nutrition, and actual nutrient intake among PLHIV in Armenia. The proposed investigation will help to fill this gap and develop evidence base for programs supporting PLHIV in Armenia.

The aim and objectives of the study

This study aims to explore nutrition-related knowledge, attitudes, and practices of people living with HIV in Armenia. The specific research questions are the following:

- What is the level of nutrition-related KAP among PLHIV in Armenia?
- Is there an association between nutrition-related knowledge, attitudes, and actual practice among PLHIV in Armenia?

METHODS AND MATERIALS

Study Design

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

Study Population and Setting

The study population included 650 PLHIV who are beneficiaries of the “Real World, Real People” NGO, Armenian network of positive people NGO and “Day Care Center” of Armenian Apostolic church in Yerevan. Patients who were below 18 years of age, or at the time of the survey were receiving hospital treatment were excluded from the study because they might have had different nutrient requirements and/or have little control over their nutrition.

Sampling strategy and data collection

The student investigator used convenience sampling approach to recruit PLHIV in the study. The participants were enrolled during counseling sessions and other activities of the “Real World, Real People” NGO, the “Day care center” of Armenian Apostolic church, and “Armenian network of positive people” such as weekly meetings of self-help groups, pottery classes, distribution of social packages, collective prayers, and movie screenings.

In RWRP 49 beneficiaries were surveyed during self-help groups and counseling sessions. There was no specific schedule for counseling sessions. It was based on beneficiaries' attendance. Up to 12 people attended self-help groups every Friday. Twenty-eight people were recruited from regional branches in Lori (10), Nagorno-Karabagh (4) and Shirak (14).

Out of 30 recruited patients in "Day care center" 17 were surveyed during the distribution of social packages, while 13 were surveyed during counseling sessions, pottery classes, collective prayers and provision of social packages.

As the overall number of recruited PLHIV was quite low, the third organization "Armenian network of positive people" was also included in data collection, although it was not planned previously. The student-investigator was able to recruit four beneficiaries once during movie-screening occasion.

Overall 8 counselors from RWRP and two social workers from "Day care center" were trained by the student investigator before data collection.

Study Instruments

Two types of instruments were developed: Screening/Journal form and survey questionnaire. The Screening/Journal form guides interviewers for selection of the eligible study population and helps to assess response and refusal rates. The survey questionnaire has been developed based on the questionnaires used in previous studies conducted on the topic of nutrition internationally^{18 14}, and in Armenia¹⁹ and included five sections measuring study participants' 1) socio-demographic characteristics, 2) a quick nutrition scan which provides basic information on the respondents' nutritional and health status, food access/uptake, and HAART status²⁰; 3) knowledge of PLHIV about the role of nutrition in coping with HIV, as well as knowledge about nutrition and healthy diet; 4) attitude of

PLHIV toward healthy nutrition; and 5) practice of food intake in the last month to show the dietary diversity and number of servings consumed by participants last month before the survey.

The study instruments were pretested among eight beneficiaries prior to fieldwork by seven trained interviewers and the student investigator. For the pretest each interviewer conducted one interview. After the pretest the student investigator and the interviewers met to discuss potential challenges and mistakes revealed during the pretest, and since there was no need for revisions, they proceeded to data collection.

Data Entry and Analysis

The data was entered into and analyzed by BMI SPSS 20 software. The database was cleaned by random spot-checks of questionnaires, as well as running frequencies and checking missing values. Data was analyzed using descriptive, simple linear and multiple linear regression analyses. The p-values at the level of 0.05 and less were considered as statistically significant and p-values between at the level of 0.1 and 0.06 were considered as marginally statistically significant and the values above that level were statistically insignificant.

The dependent variable was the practice score of participants. The independent variables included socio-demographic characteristics, including age, gender, marital status, educational level, employment status, number of family members in the household, monthly expenditures, as well as proportion of expenditures spent on food, symptoms related to digestive disorders, knowledge and attitude scores. The list of all variables is provided in Table 1.

The knowledge score was computed by giving one point for each right answer and zero for the wrong one, and adding the responses to all knowledge questions, with a

maximum of 21 points. Attitude score was obtained by summing up the responses to five statements on a Likert scale showing the degree of agreement among participants. According to the degree of agreement the most positive response was given a point of five, while the most negative response was given a point of zero. The practice part of the questionnaire was analyzed by summing up the frequency of use of each item in each food group²¹. For the servings used less frequently than once per day (i.e. 5-6 times per week, 2-4 times per week, etc.), the number of servings per day was computed by dividing the total amount by the number of days in a specified period. The standard deviations from the mean were used to define cut-off points for grouping the summative score into three practice groups: low, moderate, and high. The practice was classified as low if the calculated score was at minus one and a half of the standard deviation and below, moderate, if it was in the range of minus and plus half of the standard deviation, and high if it was at plus one and a half of the standard deviation and above.

Ethical Considerations

The student investigator submitted the application to the Institutional Review Board (IRB) at the American University of Armenia prior to implementing the study and received approval. Participants were informed on the risks and benefits of participating in the study. An oral consent form was administered to participants before completing the questionnaire.

The data was collected without identifying participants' names. The data was entered with a special ID system. The collected information was accessible only for the student investigator. Only summarized results were reported by the student investigator.

RESULTS

Administrative results

The data collection started on March 5, 2015 and finished on April 25, 2015. Overall, 111 respondents were surveyed, out of which 77 were beneficiaries of RWRP, 30 of the "Daycare center" and four of "Armenian network of positive people". The response rate was 92%.

Socio-demographic characteristics

The mean age of study participants was 40.5 (SD=9.01) (Table 2). The recruited patients were predominantly female (60%). The mean number of respondents' family members was 3.77 (SD=1.67). The majority of participants were married (63%), and had 10 years education (49%) or technical education (24%) (Table 2). Fifty-eight percent of study participants were unemployed. The overwhelming majority of respondents (43.2%) had been spending 50,000-150,000 AMD per month (Table 2). The mean monthly share of food in total expenditures was approximately 55%. Almost 28% of participants had half of their all expenditures spent on food.

Counseling

Seventy four percent of the study participants had received information on healthy nutrition among HIV positive people, with the predominant source of information being health providers (53%), followed by social workers (53%), leaflets (14%), internet (11%), TV (8%), newspapers (2%), and radio (1%). The most frequently mentioned topics covered by those sources included nutrition as part of a healthy lifestyle (53%) and importance of nutrition for health (20%).

Health status

Patients were asked about several symptoms that they might have had as a consequence of treatment or opportunistic infections, such as diarrhea (21%), nausea (17%),

heartburn (39%), bloating (27%), vomiting (7%), fatigue (60%) and tooth and/or mouth problems (36%). The mean number of symptoms was about five with a minimum of no symptoms to maximum of seven.

The mean BMI of respondents was 22.81. At the time of the survey 80% of participants were on antiretroviral treatment. The mean duration of undertaking HAART was about 53 months.

Nine percent of the study participants had hepatitis C (n=10).

Nutritional knowledge

Table 5 presents the study participants' knowledge about nutrition. When asked if health experts recommend that people should be eating more or less of specific food categories, the proportion of those participants who gave correct answers was 81% for fruits, 77% for greens, 79% for vegetables, 52% for fatty food, 58% for salty food, and 27% for sugary food. About 27% of participants thought the amount of grains should be increased and only 4.5% thought that the amount of meat should be decreased (Table 6). Also, 85% reported that decreasing the amount of animal fat in the diet would be useful. About 85% of respondents did not know that the amount of daily servings of fruit and vegetables should be more than 6 servings per day. The respondents' mean knowledge score was 14.44 (SD=1.56). The minimum score achieved was six and the maximum score achieved was nineteen. The mean percent knowledge score was 68.76%.

Bivariate analysis

The simple linear regression analysis showed marginally statistically significant associations between knowledge score and wealth status (p=0.086), the attendance to counseling sessions (p=0.120), and age (p=0.136).

Attitude toward healthy eating

All (100%) respondents agreed that maintaining a healthy diet is beneficial for PLHIV, 92% believed that it is their responsibility and 59% confessed that it was difficult for them to keep a healthy diet. Sixty one percent of the respondents were confident that they do not need to make changes to diet as they perceived it is healthy enough, and 92% believed that receiving more information on healthy diet for HIV positive people would be beneficial.

The mean attitude score of participants was 17.8 (from lowest 12 to highest 21, SD=1.56) out of maximum 25. The mean percent attitude score was 71.2%.

Bivariate analysis

The simple linear regression analysis showed statistically significant associations of attitude with gender ($p=0.046$) and marital status ($p=0.046$) of the study participants and marginally statistically significant associations with age ($p=0.132$). Females and married people more likely to have more positive attitude compared to males and not married people.

Nutritional practice

The 66 item section measured the consumption of five food groups during the last month. The items in the practice section were adapted for Armenian culture²¹. The mean score for the consumption of dairy products was 3.5 (ranging from 0 to 15.80, SD=3.11); for fruits 4.4 (ranging from 0 to 25.7, SD=4.94), for vegetables 4.1 (ranging from 0.5 to 26.0, SD=4.13), for grains 3.2 (ranging from 0.1 to 10.1, SD=1.74), and for meats, eggs and fish 3.76 (ranging from 0.2 to 10.3, SD=2.06). The mean score for fat consumption was 0.73 (ranging from 0.00 to 5.00 SD=0.98), while for sweets it was 5.38 (ranging from 0.00 to 22.07, SD=3.98). The mean cumulative practice score for servings in all five categories of food (dairy, vegetables, fruits, grains, and meats, eggs and fish) was 18.8 (ranging from 3.3 to 66.7, SD=11.59). Based on the categorization of the cumulative score according to standard

deviations from the mean, approximately 44% of study participants had low practice scores, 37% moderate and 18% high practice scores among the participants. Table 17 shows the responses of study participants to questions about the consumption of food items in the practice section of the questionnaire.

Bivariate analysis

Simple linear regression analysis showed statistically significant associations between the mean cumulative practice score and the mean cumulative attitude score ($p=0.028$) and spending on food ($p=0.036$). For every point increase in the mean cumulative attitude score, a 0.2 point increase is expected in the mean cumulative practice score. Similarly, every point increase in the proportion of spending on food, a 0.2 point increase is expected in the mean cumulative practice score. The analysis also showed marginally significant association between the mean cumulative practice score and the employment status of the study participants ($p=0.098$), with employed participants being more likely to have higher cumulative practice score than unemployed ones. No statistically significant associations between the mean cumulative practice score and the patient's age, gender, marital status, education, HAART, counseling about nutrition, knowledge, and digestive problems were detected ($p>0.1$).

Multivariate analysis

The variables that were shown to be significantly associated with the practice score in the bivariate analysis were entered into multivariate model. In the adjusted analysis only attitude has sustained statistically significantly associated with the practice score ($p=0.043$). The proportion of spending on food ($p=0.111$) and employment status ($p=0.152$) were marginally significantly associated with practice score. Each unit of positive change in the

mean cumulative attitude score was associated with 0.2 increase in the mean cumulative practice score (Table 19).

DISCUSSION

Main findings

This study explored nutritional knowledge, attitude and practice of HIV positive people who were beneficiaries of either one of three non-governmental organizations which provide counseling and support to PLHIV in Armenia. The mean knowledge score among respondents was 14.44 out of 21, with the mean percent score reaching 68.76%, indicating relatively high level of knowledge among our study participants. In the similar study conducted by Anand et al. in India most of the respondents had moderate knowledge levels (between 40-67% percent score according to our calculation which was done using their classification cut-off points described in the article) ¹⁴. The authors explained relatively good knowledge levels in their study by the participation of respondents in counseling sessions about healthy nutrition. In our study only a marginal association was found between the knowledge score and the participation in counseling sessions ($p=0.120$).

The mean percent attitude score of respondents was 71.2%, which indicates a positive attitude towards healthy eating in this population. The majority (92%) of participants agreed that maintaining healthy diet is their own responsibility, which means that they could take a responsibility for a positive change in their diet. Yet the positive change in diet could be associated with some barriers in this population as almost 59% of participants acknowledged that it was difficult for them to keep a healthier diet. Further research is necessary to specifically determine those barriers.

Our analysis of the consumption of specific food items and further comparison with the recommendations of Canada Food Guide for HIV patients ²² indicated that Armenian

PLHIV either over consumed or under consumed several food types . For example, according to Canada Food Guide dairy products should be consumed at a level of two to three servings per day. The mean number of daily servings used in our study sample was about 3.5, which slightly exceeds the recommended consumption level. On the other hand, PLHIV in our sample consumed four servings of fruits and vegetables per day on average, while the recommended amount is at least seven servings per day. Since about 81% of participants knew that fruits should be consumed more often as indicated by their responses in the knowledge section, we explain this mismatch between knowledge and practice by the timeline of data collection. The survey was conducted in late winter/early spring when many local seasonal fruits and vegetables could have been unavailable for respondents in Armenia. The consumption of meats, eggs and fish was largely adequate (four servings per day on average) and even above the recommended amount of two to three servings per day. The food group that has been substantially under consumed by Armenian PHLIV was grain products, which should be consumed at a level of six to eight servings per day. Our study participants reported having three servings of grain products per day.

Interestingly, there was a high level of consumption of sweets and deserts in our sample, with the mean number of servings per day reaching 5.38; yet according to Food Guide Pyramid²³, sweets should be consumed most sparingly.

This study found statistically significant independent association between attitude and actual practice of the participants ($p=0.043$), which is in line with findings reported by other authors^{24,12,18,25}. In a similar study conducted in Swaziland among people living with HIV, positive correlation was also found between attitude and practice scores¹⁸. Yet the same study found associations between the level of education, employment status, monthly income of participants and their nutritional practices, which was not found in our study. Another

finding from their study which we were not able to confirm was the positive association between educational status and knowledge score.

Several studies have shown positive correlation between nutrition related knowledge and attitude^{24,26,18,27}. In our study there was no statistically significant association between attitude and knowledge scores ($p>0.1$). Larger scale studies are necessary to confirm and explain the absence of such link in Armenian PLHIV.

A study conducted among healthy Malay pregnant women in antenatal clinic found statistically significant relationship between level of knowledge and practices²⁷. Our study did not find statistically significant association between knowledge and practice, which could be explained by different barriers towards healthy nutrition even among knowledgeable participants. This hypothesis should be explored further. The possible barriers that were investigated in our study (e.g. wealth status, educational level, HAART and symptoms which could be due to opportunistic infections and/or treatment) were not associated with practice.

Strengths and limitations

To our knowledge, this is the first study that provides evidence about the nutrition related knowledge, attitude and practice of people living with HIV in Armenia. Since the sample included PLHIV from both Yerevan and several regions of Armenia, it provides an insight into the situation across the country. Yet the major limitation of the study is that it was based on non-probability convenience sampling due to the hard-to-reach nature of the study population. The study included only those PLHIV who were beneficiaries of three NGOs, who could potentially be different from other patients registered in NCAP who are not using the services of these organizations.

Since there was a high proportion of people co-infected with HIV and Hepatitis C in the study population, the student investigator included these people in the sample. This factor

was controlled during the analysis stage to avoid any bias that this might have introduced in the study results.

Some questions in the questionnaire might have posed a recall bias. In particular, the “practice” part of the questionnaire asked to recall the types of food used in the last month, which might have been difficult for the respondents.

CONCLUSIONS

Current study assessed nutritional KAP of people living with HIV in Armenia. The study found high level of knowledge and positive attitude, but inappropriate level of consumption of certain food groups among the study population. The nutritional practice in this study was shown to be significantly associated with attitude towards healthy nutrition.

RECOMMENDATIONS

The national response to HIV epidemic in Armenia should include interventions focusing on the nutritional aspects of care for PLHIV, which might help to improve health related quality of life and treatment outcomes in people living with HIV. In particular, such interventions should focus on improving the attitude of respondents towards healthy nutrition, since it has been shown to affect the nutritional habits of PLHIV in our study. While the knowledge levels in this population are relatively high, the interventions should aim at sustaining and further improving the knowledge of PLHIV. Larger-scale investigations should be conducted to explore the nutrition-related KAP and nutritional status of people living with HIV in Armenia to shape such interventions and to ensure that they are focusing on the most important aspects of the nutrition domain. Our study suggests that such investigations should specifically explore the barriers to healthy nutrition in this population.

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Tables and appendices

Table 1: Study variables

Variables	Type
<i>Dependent Variables</i>	
Nutritional knowledge score	Continuous
Nutritional attitude score	Continuous
Nutritional practice score	Continuous
<i>Independent Variables</i>	
Body mass index (BMI)	Continuous
HAART treatment	Dichotomous
Diarrhea	Dichotomous
Nausea	Dichotomous
Tooth-mouth problems	Dichotomous
Age	Continuous
Gender	Categorical
Marital status	Categorical
Educational level	Ordinal
Place of residence	Nominal
Employment status	Categorical
Number of family members	Continuous
Monthly expenditures	Ordinal
Spending on food	Continuous

Table 2: Socio-demographic characteristics of respondents

Variables	Measures
	Mean (SD)
Age (N=111)	40.49 (9.012)
	Mean (SD)
Number of family members (N=111)	3.77 (1.674)
Gender (N=111)	% (n)
Male	40.5 (45)
Female	59.5 (66)
Marital status (N=111)	% (n)
Single	8.1 (9)
Married	63.1 (70)
Divorced	9.9 (11)
Widowed	18.9 (21)
Education (N=111)	% (n)
No education	0.1 (1)
School (less than 10 year)	8.1 (9)
School (10 year)	48.6 (54)
Professional technical Institute/University/Postgraduate	24.3 (27) 18 (20)
Employment (N=111)	% (n)
Employed	30.6 (34)
Pregnancy leave	
Unemployed	57.7 (64)
Self-employed	
Seasonal worker or farmer	9 (10)

Student	0.9(1)
Retired	1.8 (2)
Monthly expenditures (N=111)	% (n)
Less than 50,000 AMD	2.7 (3)
50000-100000 AMD	43.2 (48)
101000-150000 AMD	40.5 (45)
151,000-300,000 AMD	11.7 (13)
More than 300,000AMD	0.9 (1)
	Mean (SD)
Spending on food (N=110)	54.77 (18.884)

Table 3: HAART information

Variables (N=111)	Measures
	% (n)
Currently on HAART	80.2 (89)
	Mean (SD)
Duration of taking HAART (in months)	52.67 (41.124)

Table 4: BMI status of respondents

Variables (N=111)	Measures
BMI	Mean (SD)
	22.8131 (3.52928)

Table 5: Symptoms among respondents

Variables	Measures (%(n))
Diarrhea	20.7(23)
Nausea	17.1(19)
Heartburn	38.7(43)
Bloating	27(30)

Vomiting	7.2(8)
Fatigue	59.5(66)
Tooth/Mouth problems	36(40)

Table 6: Nutritional knowledge

Food item intake recommendations (%)

Food items	Increase	Decrease	Not sure
Vegetables	79.3	1.8	3.6
Sugary foods	11.7	27.0	7.2
Meat	49.5	4.5	4.5
Grains	27.0	11.7	5.4
Fatty food	9.0	52.3	1.8
Green	76.6	0.9	3.6
Fruits	81.1	3.6	2.7
Salty food	7.2	57.7	4.5

Table 7. Attitudes toward healthy nutrition

Variables	Agree % (n)	Neither agree nor disagree % (n)	Disagree % (n)
It is beneficial to maintain a healthy diet for a person with HIV	100(111)		
no need to make changes to diet as it is healthy enough	61.3(68)	14.4(16)	24.3(27)

Maintaining a healthy diet is responsibility	91.9(102)	3.6(4)	4.5(5)
benefit from receiving more information on healthy diet for HIV positive people	91.9(102)	2.7(3)	5.4(6)
difficult to keep a healthy diet	58.5(65)	11.7(13)	29.7(33)

Table 8. Practice score of food groups and food items

Food groups and food items	Mean (SD)
Dairy	3.49 (3.11)
Fats	0.73 (0.98)
Fruit	4.40 (4.96)
Vegetables	3.97 (4.13)
Meat eggs and fish	3.76 (2.06)
Grains	3.21 (1.74)
Sweets	5.38 (3.98)
Overall practice score	18.82 (11.59)

Table 9: Unadjusted associations between the mean cumulative practice score, symptoms and the socio-demographic characteristics of the study participants

Variables	Regression coefficient	p-value	95% Confidence intervals
Attitude	0.210	0.028	0.174 – 2.950
Spending on food	0.201	0.036	0.008 – 0.238
Employment (employed vs. unemployed)	0.159	0.098	-0.696 – 8.174
Knowledge	-0.120	0.213	-1.313– 0.296
Gender	-0.104	0.282	-6.881 – 2.023
Marital status (married vs. not married)	-0.104	0.282	-6.881 – 2.023
Hepatitis C	0.055	0.571	-5.453 – 9.835
Education (low (10 years and less) vs. high (technical and institute))	-0.047	0.625	-5.543 – 3.344
HAART	-0.035	0.716	-6.511 – 4.486
Age	-0.027	0.779	-0.279 – 0.209
Symptoms	0.025	0.799	-1.343 – 1.740
Wealth status	-0.015	0.880	-3.125 – 2.682
Counseling	-0.005	0.955	-5.195 – 4.909

Table 10: Adjusted associations between cumulative mean practice score, knowledge, attitude, and socio-demographic characteristics

Variables	Regression coefficient	p-value	95% Confidence intervals
Attitude	0.191	0.043	0.043 – 2.800

Spending on food	0.152	0.111	-0.022 – 0.209
Employment	0.135	0.152	-1.195 – 7.577

QUESTIONNAIRE IN ARMENIAN AND ENGLISH

A. 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 attempt	Result Code
Attempt 1	<ol style="list-style-type: none"> 1. Completed interview 2. The interviewee is younger than 18 years 3. Interviewee does not have HIV/AIDS 4. The interviewee is not a beneficiary of selected organizations 5. The interviewee has diabetes mellitus 6. The interviewee has hepatitis (A, B, C, D) 7. The interviewee was not at home* 8. Refusal 9. Postponed interview* 10. Incomplete interview* 11. Other _____
Attempt 2	<ol style="list-style-type: none"> 1. Completed interview 2. The interviewee is younger than 18 years 3. Interviewee does not have HIV/AIDS 4. The interviewee is not a beneficiary of selected organizations 5. The interviewee has diabetes mellitus 6. The interviewee has hepatitis (A, B, C, D) 7. The interviewee was not at home 8. Refusal 9. Postponed interview 10. Incomplete interview 11. Other _____

**These result codes may need a second attempt*

B. Screening form

Ask the following questions to the interviewee. If the patient is below 18 years of age, or does not have HIV, or is not registered in RWRP or Day care center, or has diabetes or hepatitis, do not proceed to the main questionnaire, thank the person for the time, and leave the place politely.

1.	How old are you?	_____	
2.	Do you have HIV/AIDS?	1. Yes	2. No
3.	Which of these three organizations are you registered in? <i>Circle all that apply</i>	1. Real World Real People NGO 2. Armenian Network of Positive People NGO 3. Day Care center of Armenian Apostolic church 4. None of the above	
4.	Do you have diabetes mellitus?	1. Yes	2. No
5.	Do you have hepatitis (A/ B/ C/ D)?	1. Yes	2. No

C. Survey Instrument: Nutritional knowledge, attitude and practices among people living with HIV

ID# _____	Date _____ Place _____	Interview start time _____:_____
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Directions for interviewer to complete the questionnaire. Please read questions attentively the way they are written. Read all the options of the questions (except don't know) and instructions for the interviewee, then check the preferred answer.

Socio-demographic data

1.	Date of birth (day/month/year)	____/____/____
2.	Gender	1. Male 2. Female
3.	Marital Status	1. Single 2. Married 3. Divorced 4. Widowed

4.	What is the highest level of education you have completed?	<ol style="list-style-type: none"> 1. No education 2. School (less than 10 years) 3. School (10 years) 4. Professional technical education (10-13 years) 5. Institute/University 		
5.	Interviewee's place of permanent living	<p>_____</p> <p>marz _____ city/village</p>		
6.	Are you employed?	<ol style="list-style-type: none"> 1. Yes 2. Yes, but on maternity/pregnancy leave 3. No 4. Self-employed 5. Seasonal worker or farmer 6. Student 7. Retired 8. Other (<i>specify</i>)_____ 		
<u>Information on counseling</u>				
7.	Are you currently on antiretroviral therapy (ART)?	<ol style="list-style-type: none"> 1. Yes 2. No → go to question 9 		
8.	How long have you been on ART?	_____/month/		
9.	<p>What are the main sources of information on nutrition in HIV-positive people that you have ever received?</p> <p><i>Circle all that apply</i></p>	<ol style="list-style-type: none"> 1. Health workers (doctors, nurses, etc) 2. Social workers/NGO staff 3. Leaflets, brochures, other printed materials 4. Television 5. Radio 6. Newspapers 7. No sources → go to question 11 8. Other_____ 		
10.	<p>What were the topics covered by those sources?</p> <p>Please list the topics from all sources</p>	<p>_____</p>		
<u>Quick Nutrition Scan</u>				
<p>Please, specify, whether you agree or disagree with each statement below</p> <p><i>For each statement below, circle the YES column for those that apply to the interviewee and the NO column for those that do not.</i></p>				
11.	I have lost 5kg or more in the last 6 months	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">1. Yes</td> <td style="width: 50%; text-align: center;">2. No</td> </tr> </table>	1. Yes	2. No
1. Yes	2. No			

12.	I have problems eating because of my current health status	1. Yes	2. No
13.	I eat less than 3 times a day	1. Yes	2. No
14.	I eat meat or other proteins like poultry, nuts, beans, etc. less than 3 times a day	1. Yes	2. No
15.	I eat bread, cereals, rice, pasta, etc. less than 4 times a day	1. Yes	2. No
16.	I eat fruits or vegetables or drink juice less than 3 times a day	1. Yes	2. No
17.	I drink/eat milk products like milk, cheese, yogurt etc. less than 2 times a day	1. Yes	2. No
18.	I have 3 or more drinks of beer, liquor or wine almost every day	1. Yes	2. No
19.	I don't always have enough money to buy the food I need	1. Yes	2. No
20.	I do not have any place to cook or to keep my foods cold	1. Yes	2. No
21.	I do not take any vitamin and mineral supplements	1. Yes	2. No
22.	I often have one or more of the following: diarrhea, nausea, heartburn, bloating, vomiting, feel too tired	1. Yes	2. No
23.	I smoke cigarettes	1. Yes	2. No
24.	I often don't have appetite	1. Yes	2. No
25.	I have problems when I eat or drink milk products (cramping)	1. Yes	2. No
26.	I have problems with my stomach when I eat high fat foods	1. Yes	2. No
27.	I have tooth, swallowing, or mouth problems (like thrush) that make it hard for me to eat	1. Yes	2. No
28.	<i>Ask only women:</i> I am pregnant or breast feeding	1. Yes	2. No
29.	I have gained extra weight	1. Yes	2. No
30.	Sometimes I feel too weak to do the things I want (cook, shop, clean-up, etc.)	1. Yes	2. No
31.	My mood is low more often these days	1 Yes	2. No
32.	I don't feel able to change my diet to make it better	1. Yes	2. No

Knowledge

<p>33.</p>	<p>Do you think health experts recommend that people should be eating more, the same amount, or less of these foods?</p> <p><i>(tick one box per food)</i></p>	<p>Frequency</p> <p>Food groups</p>	<p>More 1</p>	<p>Same 2</p>	<p>Less 3</p>	<p>Not sure 4</p>
		<p>1. Vegetables</p>				
		<p>2. Sugary foods</p>				
		<p>3. Meat</p>				
		<p>4. Grains</p>				
		<p>5. Fatty foods</p>				
		<p>6. Green</p>				
		<p>7. Fruit</p>				
		<p>8. Salty foods</p>				
<p>34.</p>	<p>How many servings of fruit and vegetables a day do you think experts are advising people to eat?</p> <p><i>(One serving could be, for example, an apple or a handful of chopped carrots)</i></p> <p>_____</p>					
<p>35.</p>	<p>Are people living with HIV likely to lose weight?</p>	<p>1. Yes 2. No 3. Don't know</p>				
<p>36.</p>	<p>Can undernutrition deteriorate the health status of HIV-positive person?</p>	<p>1. Yes 2. No 3. Don't know</p>				
<p>37.</p>	<p>In your opinion, which of the mentioned food items are good sources of proteins?</p> <p><i>Check all that apply</i></p>	<p>1. Chicken 2. Greens 3. Cheese 4. Fruit 5. Beans 6. Potato 7. Margarine 8. None of the above</p>				

		9. Don't know
38.	Which type of fat do experts say is more important for people to cut down on? <i>Check only one answer</i>	1. Vegetable oil 2. Animal fat 3. Not sure

Attitude

To what extent do you agree or disagree with these statements?	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
	1	2	3	4	5
39. It is beneficial to maintain a healthy diet for a person with HIV					
40. I do not need to make changes to my diet as it is healthy enough					
41. Maintaining a healthy diet is my responsibility					
42. I would benefit from receiving more information on healthy diet for HIV positive people					
43. It is difficult for me to keep a healthy diet					

Practices

44. For each food item listed, check the box indicating how often, on average, you have used the amount specified during the last month.

To quickly estimate portion size, use these visual comparisons:

85 grams of meat, poultry, or fish are about the size of one deck of playing cards or the palm of woman’s hand.

1/2cup of fruit, vegetables, pasta, or rice is about the size of small fist.

1cup of milk, yogurt, or chopped, fresh greens is about the size of a small hand holding a tennis ball.

28 grams of cheese is about the size of your thumb.

1tbsp (tablespoon) = 3tsp (teaspoon) 8tbsp =1/2 cup

Average use in one month

FOOD AND AMOUNTS	6 + per day	4-6 per day	2-3 per day	1 per day	5-6 per week	2-4 per week	1 per week	1-3 per month	Almost Never
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Dairy Foods

1.	Skim or low fat milk (1 cup)								
2.	Whole milk (1 cup)								
3.	Matsuni (1 cup)								
4.	Sour Cream (1/2 cup)								
5.	Yogurt (1cup)								
6.	Ice cream (1/2 cup)								
7.	Cottage cheese (1/2 cup)								
8.	Hard cheese, plain or as part of a dish (28 gr.)								
9.	Margarine (2tsp)								

10	Butter (2tsp)										
Fruits											
11	Apples (1)										
12	Pears (1)										
13	Oranges (1)										
14	Grapefruit (1/2)										
15	Orange or grapefruit juice (3/4 cup)										
16	Peaches apricots or plums (1)										
17	Bananas (1)										
18	Watermelon (slice)										
19	Strawberries (2/3 cup)										
20	Lemon (1/2)										
21	Tangerine (1)										
22	Red-pulp (1)										
23	Berries (1/2 cup)										
24	Other fruits(fresh, or 1/2 cup canned or 1/4 cup dried)										
Vegetables											
25	Cabbage, cauliflower (1/2 cup)										
26	Carrots (whole or cooked) (1/2 cup)										
27	Spinach or other greens (1/2 cup)										
28	Peas (1/2 cup)										
29	Squash (1/2 cup)										
30	Potatoes (1)										
31	Beans (1/2 cup)										

32	Lentils (1/2 cup)																		
33	Tomatoes (1) or tomato juice (3/4cup)																		
34	Beet (1/2 cup)																		
35	Aubergine (1/2 cup)																		
36	Pepper (1)																		
37	Cucumber (1)																		
Meats, eggs and fish																			
38	Chicken (85 gr.)																		
39	Hamburgers (85 gr.)																		
40	Hot dogs (85gr.)																		
41	Processed meats (sausage, salami, bologna, ham)(85gr.)																		
42	Beef, pork or lamb as a sandwich or mixed dish (85gr.)																		
43	Beef, pork or lamb as a main dish (85gr)																		
44	Fish (85gr.)																		
45	Eggs (1)																		
46	Organ Meats (85gr.)																		
Sweets, Baked goods, cereals																			
47	Chocolate (28gr.)																		
48	Candy without chocolate (28gr)																		
49	Cake (slice)																		
50	Sugar in coffee or tea (1tsp)																		
51	Honey (1tsp)																		
52	Jam (1tsp)																		
53	Cookies (1)																		

54	White Bread (slice- 40gr)												
55	Dark or whole grain bread (slice- 40gr.)												
56	Cooked rice or buckwheat (1/2 cup)												
57	Cooked pasta (1/2 cup)												
Miscellaneous													
58	Potato chips (small bag)												
59	Nuts (1/3 cup)												
60	Potatoes, mashed (1/2 cup)												
61	Pizza (2slices)												
62	Tea (1 cup)												
63	Coffee (1 cup)												
64	Coca Cola, Pepsi etc. (1 bottle)												
65	Beer (1 bottle)												
66	Milk in coffee or tea (1tbsp)												
45.	On average how many meals did you have per day during last month?	_____											
<u>General Information</u>													
46.	Body weight	_____ /kg/											
47.	Height	_____ /cm/											
48.	How many people live at your house? (include children and yourself)	_____ /number of people/											
49.	Did you receive social packages during the last month?	1. Yes				2. No							
50.	On average, how much money does your family spend monthly?	1. Less than 50,000 AMD 2. 50000-100000 AMD 3. 101000-150000 AMD 4. 151,000-300,000 AMD											

		5. More than 300,000AMD 88. Don't know/ I refuse to respond
51.	On average what portion of the spending does your family spend on food monthly?	_____/percentage/

Interview end time ____:____ Thank you for participating in our survey.

Մատյանի ձև

Ամսաթիվ _____/օր/ամիս/տարի/
 Հարցազրուցավար _____ Հարցվողի ՏՀ# _____

*Յուրաքանչյուր փորձից կամ ավարտած հարցազրույցից հետո լրացրեք այս աղյուսակը՝ ընտրելով համապատասխան **արդյունքի կողը** աջ կողմի ցուցակից:*

Փորձի թիվը	Արդյունքի կողեր
Փորձ 1	12. Ավարտված հարցազրույց 13. Հարցվողը 18 տարեկանից փոքր է 14. Հարցվողը չունի ՄԻԱՎ/ՁԻԱՀ 15. Հարցվողն ընտրված կազմակերպությունների շահառուն չէ 16. Հարցվողն ունի շաքարային դիաբետ 17. Հարցվողը ունի հեպատիտ (A, B, C, D) 18. Հարցվողը տանը չէր* 19. Հետաձգված հարցում* 20. Մերժում 21. Անավարտ հարցազրույց* 22. Այլ _____
Փորձ 2	1. Ավարտված հարցազրույց 2. Հարցվողը 18 տարեկանից փոքր է 3. Հարցվողը չունի ՄԻԱՎ/ՁԻԱՀ 4. Հարցվողն ընտրված կազմակերպությունների շահառուն չէ 5. Հարցվողն ունի շաքարային դիաբետ 6. Հարցվողը ունի հեպատիտ (A, B, C, D) 7. Հարցվողը տանը չէր 8. Հետաձգված հարցում 9. Մերժում 10. Անավարտ հարցազրույց 11. Այլ _____

**Այս արդյունքի կողերը կարող են ենթադրել երկրորդ փորձի անհրաժեշտություն*

Ընտրության ձև

Տվեք հետևյալ հարցերը հարցվողին: Եթե անձը 18 տարեկանից փոքր է, չունի ՄԻԱՎ կամ գրանցված չէ Իրական աշխարհ, Իրական մարդիկ ՀԿ-ում կամ Ցերեկային կենտրոնում, ունի դիաբետ կամ հեպատիտ, դադարեցրեք հարցումը, շնորհակալություն հայտնեք և հեռացեք:

6. Քանի՞ տարեկան եք	_____
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7.	Դուք ունե՞ք ՄԻԱՎ/ՁԻԱՀ	3. Այո	4. Ոչ
8.	Այս երեք կազմակերպություններից որոնցու՞մ եք գրանցված Նշեք բոլոր հնարավոր պատասխանները	5. Իրական աշխարհ, իրական մարդիկ ՀԿ 6. Դրական մարդկանց հայկական ցանց ՀԿ 7. Հայ առաքելական եկեղեցու ցերեկային կենտրոն 8. Նշվածից ոչ մեկը	
9.	Դուք ունե՞ք շաքարային դիաբետ	1. Այո	2. Ոչ
10.	Դուք ունե՞ք հեպատիտ (A, B, C, D)	3. Այո	4. Ոչ

Մնուցման վերաբերյալ ՄԻԱՎ-ով ապրող մարդկանց ԳՄՎ հարցում

SZ# _____ Ամսաթիվը _____ Վայրը _____ Հարցումը սկսելու ժամը ____:____

Ուղեցույց հարցազրուցավարի համար. *Կարդացեք հարցերը այնպես, ինչպես գրված են: Կարդացեք պատասխանների բոլոր տարբերակները (բացի <չգիտեմ> տարբերակից) և ցուցումները հարցվողի համար, հետո նշեք նախընտրած պատասխանը:*

Ժողովրդագրական տվյալներ

52	Ծննդյան ամսաթիվ	____/____/____ (օր/ամիս/տարի)
53	Սեռը	3. Արական 4. Իգական
54	Ամուսնական կարգավիճակ	5. Ամուսնացած չեմ 6. Ամուսնացած եմ 7. Ամուսնալուծված 8. Այրի
55	Ի՞նչ կրթություն ունեք	6. Կրթություն չունեմ 7. Թերի միջնակարգ (10 տարուց քիչ) 8. Դպրոց (10 տարի) 9. Ուսումնարան/տեխնիկում (10-13 տարի) 10. Բարձրագույն
56	Հիմնական բնակության վայր	_____ մարզ _____ քաղաք/գյուղ _____
57	Դուք աշխատո՞ւմ եք	9. Այո 10. Այո, բայց ֆիզ.արձակուրդում 11. Ոչ 12. Տանն են աշխատում 13. Սեզոնային աշխատող եմ կամ հողագործ 14. Ուսանող 15. Թոշակատու եմ 16. Այլ (նշեք) _____

Տեղեկատվություն խորհրդատվության մասին

7.	Ներկայումս դուք ստանո՞ւմ եք հակառետրովիրուսային բուժում	3. Այո 4. Ոչ → <i>անցեք հարց 9-ին</i>
8.	Որքա՞ն ժամանակ է, ինչ ստանում եք հակառետրովիրուսային բուժում	_____/ամիս/

17.	<p>Ո՞ր աղբյուրներից եք տեղեկացել ՄԻԱՎ-ով ապրող մարդկանց սննդակարգի մասին</p> <p><i>Նշեք բոլոր հնարավոր տարբերակները</i></p>	<p>9. Բուժաշխատողներից (բժիշկ, բուժքույր, և այլն) 10. Սոցիալական աշխատողներ/ ՀԿ-ի անձնակազմ 11. Թոուցիկներ, գրքույկներ և այլ տպագիր նյութեր 12. Հեռուստացույց 13. Ռադիո 14. Թերթեր 15. Ոչ մի աղբյուր → <i>անցեք հարց 11-ին</i> 16. Այլ _____</p>
18.	<p>Այդ աղբյուրներից ո՞ր թեմաների մասին եք տեղեկություն ստացել Խնդրում եմ նշեք բոլոր թեմաները</p>	<p>_____</p>

Մնուցման արագ ստուգում

Խնդրում եմ նշեք, համաձայն եք թե ոչ ստորև նշված ամեն առանձին մտքի հետ

Նշեք ԱՅՈ պատասխանը հարցվողի համաձայնության դեպքում և ՈՉ՝ անհամաձայնության

19.	Վերջին 6 ամիսների ընթացքում ես կորցրել եմ 5կգ կամ ավելի քաշ	1. Այո	2. Ոչ
20.	Իմ առողջական վիճակի պատճառով ես ուտելու հետ կապված խնդիրներ ունեմ	1. Այո	2. Ոչ
21.	Ես օրը 3 անգամից քիչ եմ ուտում	1. Այո	2. Ոչ
22.	Ես օրը 3 անգամից քիչ եմ ուտում միս կամ այլ սպիտակուցային սնունդ՝ հավ, ընկուզեղեն, լոբի և այլն	1. Այո	2. Ոչ
23.	Ես օրը 4 անգամից քիչ եմ ուտում հաց, շիլաներ, բրինձ, մակարոնեղեն	1. Այո	2. Ոչ
24.	Ես օրը 3 անգամից քիչ եմ ուտում մրգեր կամ բանջարեղեն կամ խմում հյութեր	1. Այո	2. Ոչ
25.	Ես օրը 2 անգամից քիչ եմ խմում կամ ուտում կաթնամթերք (կաթ, պանիր, մածուն և այլն)	1. Այո	2. Ոչ
26.	Ես համարյա ամեն օր խմում եմ 3 կամ ավելի չափաբաժին գարեջուր, օղի կամ գինի	1. Այո	2. Ոչ
27.	Ես միշտ չեմ, որ ունենում եմ բավական գումար ինձ անհրաժեշտ սնունդ գնելու համար	1. Այո	2. Ոչ
28.	Ես եփելու կամ իմ սնունդը սառը պահելու համար տեղ չունեմ	1. Այո	2. Ոչ
29.	Ես վիտամինային կամ հանքային հավելումներ չեմ օգտագործում	1. Այո	2. Ոչ
30.	Ես հաճախ ունենում եմ հետևյալ ախտանիշներից մեկը կամ մի քանիսը՝ (<i>Կարդացեք և նշեք բոլոր հնարավոր տարբերակները</i>) լուծ, սրտխառնոց, ստամոքսի այրոց (изжога), վքնածություն, փսխում, գերհոգնածություն	1. Այո	2. Ոչ
31.	Ես ծխում եմ	1. Այո	2. Ոչ

32.	Ես հաճախ ախորժակ չեմ ունենում	1. Այո	2. Ոչ
33.	Ես ունենում եմ խնդիրներ, երբ ուտում կամ խմում եմ կաթնամթերք	1. Այո	2. Ոչ
34.	Ես ունենում եմ ստամոքսի հետ խնդիրներ, երբ ուտում եմ յուղոտ սնունդ	1. Այո	2. Ոչ
35.	Ես ունեմ ատամների, բերանի և/կամ կուլ տալու հետ կապված խնդիր/ներ, որը դժվարացնում է ուտելս	1. Այո	2. Ոչ
36.	<i>Հարցրեք միայն կանանց:</i> Ես հղի եմ կամ կրծքով եմ կերակրում	1. Այո	2. Ոչ
37.	Ես գիրացել եմ	1. Այո	2. Ոչ
38.	Երբեմն իմ ուզած գործերն անելու համար (օրինակ՝ եփել, խսանութ գնալ, մաքրել և այլն) ես ինձ շատ թույլ եմ զգում	1. Այո	2. Ոչ
39.	Ես հաճախ տրամադրության անկում եմ ունենում	1. Այո	2. Ոչ
40.	Ես զգում եմ, որ չեմ կարող լավացնել իմ սննդակարգը	1. Այո	2. Ոչ

Գիտելիքներ

	Հաճախություն	Ավելաց-	Թողնել	Պակաս-	Վստահ
		նել	նույնը	սեցնել	չեմ
	Սննդային խմբեր	1	2	3	4
41.	Ձեր կարծիքով մասնագետները խորհուրդ են տալիս հետևյալ սննդամթերքների քանակությունը սննդի մեջ ավելացնել, թողնել նույնը, թե պակասեցնել				
	<i>(նշել մեկ պատասխան ամեն սննդատեսակի վերաբերյալ)</i>				
	9. Բանջարեղեն				
	10. Քաղցրավենիք				
	11. Միս				
	12. Չավարեղեն				
	13. Յուղոտ սնունդ				
14. Կանաչեղեն					
15. Մրգեր					
16. Աղի կերակուրներ					
42.	Օրեկան քանի՞ բաժին միրգ և բանջարեղեն են մասնագետները խորհուրդ տալիս օգտագործել (որպես մեկ բաժին կարող էք համարել օրինակ՝ մեկ խնձորը կամ մեկ գազարը)	_____			
43.	Ի՞նչ էք կարծում, ՄԻԱՎ-ով ապրող մարդիկ կարող են ունենալ քաշի կորուստ	4. Այո 5. Ոչ 6. Չգիտեմ			
44.	Ըստ ձեզ, թերսնուցումը կարո՞ղ է վատացնել ՄԻԱՎ-դրական մարդու առողջությունը	4. Այո 5. Ոչ 6. Չգիտեմ			

45.	<p>Ձեր կարծիքով նշված սննդատեսակներից որո՞նք են համարվում սպիտակուցի լավ աղբյուր</p> <p><i>Նշեք բոլոր հնարավոր տարբերակները</i></p>	<p>10. հավ 11. կանաչի 12. պանիր 13. միրգ 14. լոբի 15. կարտոֆիլ 16. մարգարին 17. նշվածից ոչ մեկը 18. Չգիտեմ</p>				
46.	<p>Սննդի մեջ ճարպի ո՞ր տեսակի պակասեցնելն են մասնագետները համարում կարևոր</p> <p><i>(Նշեք միայն մեկ պատասխան)</i></p>	<p>4. Ձեթ (բուսական յուղ) 5. Յուղ, կարագ (կենդանական ճարպեր) 6. Վստահ չեմ</p>				
<p>Մտտեցումներ. Ինչքանո՞վ եք համաձայն կամ անհամաձայն հետևյալ պնդումների հետ</p>		<p>Լիովին համաձայն եմ 1</p>	<p>Համաձայն եմ 2</p>	<p>Ոչ համաձայն եմ, ոչ համաձայն չեմ 3</p>	<p>Համաձայն չեմ 4</p>	<p>Բոլորովին համաձայն չեմ 5</p>
47.	<p>Առողջ սնունդ օգտագործելը ՄԻԱՎ-ով ապրող մարդու համար օգտակար է</p>					
48.	<p>Ես իմ սննդակարգը փոփոխելու կարիք չունեմ, քանի որ այն բավարար չափով առողջարար է</p>					
49.	<p>Ես եմ կրում իմ առողջ սնվելու պատասխանատվությունը</p>					
50.	<p>ՄԻԱՎ-ով ապրող մարդկանց առողջ սնվելու մասին ավելի շատ տեղեկություն ստանալն ինձ համար օգտակար կլիներ</p>					
51.	<p>Պահպանել առողջ սննդակարգն ինձ համար դժվար է</p>					

Վարվելակերպ

52. Նշված յուրաքանչյուր սննդամթերքի համար ընտրեք այն վանդակը, որը ցույց է տալիս, թե միջինում ինչ հաճախականությամբ եք Դուք օգտագործել այդ սննդամթերքի տրված չափաբաժինը անցած ամսվա ընթացքում:

Գրված չափաբաժինը արագ մոտավոր գնահատելու համար օգտվեք հետևյալ համեմատություններից.

- Մսի, ընտանի թռչունների կամ ձկան 85գրամը (85գր) մոտավորապես խաղաթղթերի մեկ կապուկի չափի է
- Մրգի, բանջարեղենի, մակարոնեղենի կամ բրնձի 1/2 բաժակը մոտավորապես փոքր բռունցքի չափի է:
- Կաթի, յոգուրտի կամ կտրտված, թարմ կանաչեղենի 1բաժակը մոտավորապես մեծ թեյի բաժակի չափի է կամ թենիսի խաղագնդակ բռնած ձեռքի չափի է:
- Պանրի 28 գրամը (28 գր.) մոտավորապես 2եր բթամատի չափի է:
- 1 ճգ. (ճաշի գդալը) = 3թգ. (թեյի գդալ) 8 թեյի գդալը = 1/2 բաժակի

Անցած ամսվա ընթացքում օգտագործած սննդի միջին չափերը

Սննդամթերքը և Չափերը	օրը 6 և >	օրը 4-6	օրը 2-3	օրը 1	շաբ. 5- 6	շաբ. 2-4	շաբ. 1	ամիսը 1-3	համար յա երբեք
Կաթնամթերք									
1. Քիչ յուղային կաթ (1 բաժակ)									
2. Ամբողջական կաթ (1 բաժակ)									
3. Մածուն (1 բաժակ)									
4. Թթվասեր (1/2 բաժակ)									
5. Յոգուրտ (1 բաժակ)									
6. Պաղպաղակ (1/2 բաժակ)									
7. Կաթնաշոռ (1/2 բաժակ)									
8. Պանիր (28 գր.)									
9. Մարգարին (2 թգ.)									
10. Կարագ (2 թգ.)									
Մրգեր									
11. Խնձոր (1 հատ)									
12. Տանձ (1 հատ)									
13. Նարինջ (1 հատ)									
14. Գրեյպֆրուտ (1/2 հատ)									
15. (Նարնջի կամ գրեյպֆրուտի հյութ 3/4 բաժակ)									
16. Դեղձ, ծիրան, կամ սալոր (1 հատ)									
17. Բանան (1 հատ)									
18. Ձմերուկ (1 կտոր)									
19. Ելակ (2/3 բաժակ)									

20.	Կիտրոն (1/2 հատ)																			
21.	Մանդարին (1 հատ)																			
22.	Արքայանարինջ (1 հատ)																			
23.	Հատապտուղ (1/2 բաժակ)																			
24.	Այլ մրգեր (թարմ 1 բաժակ կամ 1/2 բաժակ պահածո կամ 1/4 բաժակ չոր)																			
Բանջարեղեն																				
25.	Կաղամբ, ծաղկակաղամբ (1/2 բաժակ)																			
26.	Գագար (թարմ կամ եփված)(1/2 բաժակ)																			
27.	Սպանախ կամ այլ կանաչեղեն (1/2բաժ.)																			
28.	Ոլոռ (1/2 բաժակ)																			
29.	Դդմազգիներ (1/2 բաժակ)																			
30.	Կարտոֆիլ (1 հատ)																			
31.	Լոբի (1/2 բաժակ)																			
32.	Ոսպ (1/2 բաժակ)																			
33.	Պոմիդոր(1հատ) կամ պոմիդորի հյուս (3/4 բաժակ)																			
34.	Բազուկ (1/2 բաժակ)																			
35.	Բադրիջան (1/2 բաժակ)																			
36.	Պղպեղ (1 հատ)																			
37.	Վարունգ (1 հատ)																			
Միս, Ձու և Ձուկ																				
38.	Հավ (85 գր.)																			
39.	Համբուրգեր (85 գր.)																			
40.	Նրբերշիկ (հոթ դոզ) (85 գր.)																			
41.	Մշակված մսեր (սալամի, ապխտած երշիկ, վետչինա) (85 գր.)																			
42.	Տավարի,խոզի, ոչխարի մսով բուտերբրոդ (85 գր.)																			
43.	Տավարի/խոզի/ոչխարի մսով ճաշ (85գր)																			
44.	Ձուկ (85 գր.)																			
45.	Ձու (1 հատ)																			
46.	Օրգանային մսեր (լյարդ, թոք) (85գ)																			
Քաղցրավենիքներ, խմորեղեն, հաց																				

47.	Շոկոլադե կոնֆետներ (28 գր.)									
48.	Ոչ շոկոլադե կոնֆետներ (28 գր.)									
49.	Թխվածք (1 կտոր)									
50.	Շաքար թելի կամ սուրճի մեջ (1 թգ.)									
51.	Մեղր (1 թգ.)									
52.	Մուրաբա, ջեմ (1 թգ.)									
53.	Բուլկի (1 հատ)									
54.	Սպիտակ հաց (1 կտոր- 40գ.)									
55.	Գորշ հաց (1 կտոր- 40գ.)									
56.	Եփված բրինձ կամ գրեչկա (1/2 բաժակ)									
57.	Եփված մակարոններ (1/2 բաժակ)									
Այլ										
58.	Կարտոֆիլի չիփսեր (1 փոքր սուփ)									
59.	Ընկույզներ (1/3 բաժակ)									
60.	Կարտոֆիլի պյուրե (1/2 բաժակ)									
61.	Պիցցա (2 կտոր)									
62.	Թեյ (1 բաժակ)									
63.	Սուրճ (1 բաժակ)									
64.	Կոկա-կոլա, Պեպսի և այլն (1 ապակե շիշ)									
65.	Գարեջուր (1 ապակե շիշ)									
66.	Կաթ սուրճի կամ թելի մեջ (1 ճգ.)									
53.	Անցյալ ամսվա ընթացքում, միջինում, օրը քանի անգամ եք ճաշել									_____

Ընդհանուր տեղեկատվություն

54.	Քաշ	_____ /կգ/									
55.	Հասակ	_____ /սմ/									
56.	Քանի հոգի է ապրում Ձեր տանը (հաշվեք նաև Ձեզ և երեխաներին)	_____ /մարդկանց թիվը/									
57.	Անցյալ ամսվա ընթացքում Դուք ստացե՞լ եք սոցիալական փաթեթներ	1. Այո			2. Ոչ						
58.	Միջինում, ամսական ամեն ինչի վրա ինչքա՞ն գումար է ծախսում Ձեր ընտանիքը:	3.	50,000 դրամից քիչ	4.	50000-100000 դրամ	5.	101000-150000 դրամ	6.	151,000-300,000 դրամ	7.	Ավելի քան 300,000 դրամ

		88. Չգիտեմ/ հրաժարվում եմ պատասխանել
59.	Միջինում, ամսական ծախսերից որ մասն է ձեր ընտանիքը հատկացնում սննդին	_____/տոկոս/

Հարցազրույցն ավարտելու ժամը _____:

Շնորհակալություն մեր հարցմանը մասնակցելու համար:

CONSENT FORMS IN ARMENIAN AND ENGLISH

American University of Armenia

Institutional Review Board #1

Consent form for people living with HIV

Title of research project: Nutritional Knowledge, Attitude and Practices among people living with HIV: a cross-sectional survey among beneficiaries of “Real World, Real People” NGO and “Day Care Center” of Armenian Apostolic church in Yerevan, Armenia

Hello, my name is *Seda Abgaryan*/(name of the interviewer). I am a *second year graduate student of the School of Public Health at the American University of Armenia/* social worker/counselor from the _____ (name of the organization). With the support of the faculty members from the School of Public Health of the American University of Armenia and in collaboration with “Real World, Real People” NGO and “Day Care Center” of Armenian Apostolic church, I am *conducting/* helping Seda Abgaryan, the second year graduate student of the School of Public Health to conduct a study exploring nutrition-related knowledge, attitudes, and practices of people living with HIV in Armenia. You have been contacted because you are one of the 306 beneficiaries of “Real World, Real People” NGO and/or beneficiaries of “Day Care Center”, whom we are going to contact.

If you are willing to participate in this study I will ask you some questions concerning your health and nutrition. Your participation in the study is voluntary. You may skip any question you think is inappropriate and stop it at any moment you want with no further negative consequences. The interview will take place at this time and will last no more than 15 minutes.

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.

Contact information will be destroyed upon completion of the research. If you have more questions about this study you can contact Seda Abgaryan, the member of the research team at (+37455) 325773, 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?

Հայաստանի Ամերիկյան Համալսարան

Գիտահետազոտական էթիկայի հանձնաժողով

Իրազեկ համաձայնության ձև ՄԻԱՎ-ով ապրող մարդկանց համար

Հետազոտության վերնագիրը. Մնուցման վերաբերյալ ՄԻԱՎ-ով ապրող մարդկանց գիտելիքները, մոտեցումները և վարվելակերպը: հարցում <Իրական Աշխարհ, Իրական Մարդիկ> ՀԿ-ի և Հայ Առաքելական Եկեղեցու ցերեկային կենտրոնի շահառուների շրջանում Երևան, Հայաստան

Բարև Ձեզ, իմ անունը *Սեդա Աբգարյան* (հարցազրուցավարի անունը) է: Ես *Հայաստանի Ամերիկյան համալսարանի Հանրային Առողջապահության բաժնի մագիստրատուրայի երկրորդ տարվա ուսանող/* _____ (կազմակերպության անունը)-ի սոցիալական աշխատող/խորհրդատու եմ: Ես, հետազոտական խմբի անդամ դասախոսների աջակցությամբ եմ <Իրական Աշխարհ, Իրական Մարդիկ> ՀԿ-ի և Հայ Առաքելական Եկեղեցու ցերեկային կենտրոնի հետ համատեղ, *իրականացնում եմ հարցում/*օգնում եմ Առողջապահության դպրոցի մագիստրատուրայի երկրորդ կուրսի ուսանող Սեդա Աբգարյանին, ուսումնասիրելու մնուցման վերաբերյալ ՄԻԱՎ-ով ապրող մարդկանց գիտելիքները, մոտեցումները և վարվելակերպը: Դուք ընտրվել եք, որովհետև հանդիսանում եք <Իրական Աշխարհ, Իրական Մարդիկ> ՀԿ-ի և/կամ Հայ Առաքելական Եկեղեցու ցերեկային կենտրոնի 306 շահառուներից մեկը, որոնց հետ մենք կապվելու ենք:

Եթե Դուք համաձայն եք մասնակցել հարցմանը, ապա ես Ձեզ կտամ որոշ հարցեր Ձեր առողջության և սննդակարգի վերաբերյալ: Ձեր մասնակցությունը կամավոր է: Դուք իրավունք ունեք չպատասխանել այն հարցերին, որոնք Ձեզ կարող են տհաճություն պատճառել կամ դադարեցնել հարցազրույցը ցանկացած պահին՝ առանց որևէ հետագա բացասական հետևանքների: Հարցազրույցը տեղի կունենա հիմա, և կտևի ոչ ավելի քան 15 րոպե:

Հարցմանը մասնակցելու դեպքում ոչ մի դրամական եկամուտ կամ անձնական շահ Դուք չեք ունենա, սակայն Ձեր կողմից տրամադրված տվյալները օգտակար կլինեն Հայաստանում ՄԻԱՎ-ով ապրող մարդկանց կարիքները հասկանալու համար: Ձեզ ոչինչ չի սպառնում եթե Դուք հրաժարվեք մասնակցել հարցմանը: Ձեր կողմից տրամադրված ողջ տեղեկությունները գաղտնի կպահվեն և միայն ընդհանրացված արդյունքները կներկայացվեն զեկույցում:

Ձեր անձնական տվյալները անմիջապես կոչնչացվեն հարցման ավարտից հետո: Հետազոտության հետ կապված հետագա հարցերի համար կարող եք զանգահարել հետազոտական թիմի անդամ՝ Սեդա Աբգարյանին, (+37455) 325773 , հետազոտության գլխավոր ղեկավարին՝ պրոֆեսոր Ծովինար Հարությունյանին, (+37460) 612560: Ինչպես նաև եթե դուք կարծում եք, որ հետազոտության ընթացքում Ձեզ հետ լավ չեն վերաբերվել և/կամ հետազոտությունը Ձեզ վնաս է հասցրել, կարող եք զանգահարել ՀԱՀ-ի Էթիկայի հանձնաժողովի քարտուղար՝ Քրիստինա Հակոբյանին, հետևյալ հեռախոսահամարով (+374 60) 61 25 61:

Եթե համաձայն եք մասնակցել հարցմանը, կարո՞ղ ենք շարունակել: