PHYSICAL ACTIVITY PREVALENCE AND BARRIERS TO PHYSICAL ACTIVITY AMONG YEREVAN ADULT POPULATION

Master of Public Health Thesis Project Utilizing Professional Publication Framework

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Acronyms and Abbreviations

CVD   Cardiovascular Disease

HEPA   Health Enhancing Physical Activity

IPAQ   International Physical Activity Questionnaire

MET   Metabolic Equivalent

PA   Physical Activity

RDD   Random Digit Dialing

WHO   World Health Organization

Abstract

Although scientific evidence and experience show that regular physical activity provides people, both male and female, of all ages and conditions with a wide range of physical, social and mental health benefits, most of the world continues to live in a sedentary society.

Of great and growing concern to the public and this survey is the prevention of severe diseases directly related to physical inactivity, such as corona ry heart disease, type 2 diabetes mellitus, obesity, colon and breast cancer.

This cross-sectional RDD survey was conducted to estimate the prevalence of physical activity in the adult population of Yerevan; to identify groups with escalated health risks due to sedentary life-style, i.e. to highlight the relationship between physical activity and sociodemographic indicators; and to understand the major barriers to physical activity.

The surveyed sample consisted of 74 Armenian-speaking men and women, residents of Yerevan, Armenia, all between the ages of 18 and 65. Consistent throughout the modified version of International Physical Activity questionnaire, was the categorization of participants ranging from physically inactive to minimally active and health enhancing physical activity level.

This survey resulted in a 73% prevalence of sedentary lifestyle. After stepwise logistic regression analysis no statistically significant associations were found between physical activity level and sociodemographic indicators, such as age, gender, education, occupation, income level and marital status.

Overall, 55% of the participants considered themselves as physically active people. From those 54 people reported no activity/minimal activity, almost 50% are satisfied by their level of physical activity. The most frequently reported barriers were lack of time and lack of energy.

The Yerevan population suffers from a high rate of physical inactivity even more than western world. Since physical inactivity is a modifiable risk factor for many diseases, there is an opportunity to reduce future health expenditures and to improve population health and quality of life through increasing the level of activity and the proportion of active population.

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1. Introduction

A number of unprecedented global changes occurred in human society during the recent century (urbanization, development of information technologies, etc.), many of which had their impact on public health by affecting the underlying determinants of diseases, the risk factors which lead to a specific disease. Technology, which made people's lives easier, also made them more sedentary. People became the "slaves" of convenience, especially automobiles. Thus, compared with the average human being of the 19th century, a 21-century-man gets much less physical activity.

Meanwhile, scientific evidence and experience show that regular physical activity (PA) provides people, both male and female, of all ages and conditions with a wide range of physical, social and mental health benefits (1, 2, 3).

2. Background/Literature Review

The term *"physical activity"* needs to be distinguished from the terms *"exercise"* and *"physical fitness"*. *Physical activity* is defined as bodily movement that is produced by the contraction of skeletal muscles and that substantially increases energy expenditure; *exercise* is a repetitive bodily movement done to improve or maintain the components of physical fitness; and *physical fitness* is a set of attributes people have or achieve that relates to the ability to perform physical activity (4). The term *physical activity* also carries the added benefit of being less intimidating to the inactive person than the terms *exercise* or *physical fitness* (4).

Physical activity has been recognized as one of the leading health indicators; and inactivity is among the major public health concerns all over the world (1,2,3,5).

Regular physical activity reduces the risk of cardiovascular disease (CVD), obesity, type II diabetes mellitus, and certain types of cancer (colon cancer, breast cancer) (1,2,3,4,10,11).

Worldwide, cardiovascular disease is the leading cause of death and is responsible for nearly 20% of all deaths (11). The risk of CVD increases 1.5 times in people who do not follow minimum physical activity recommendations (5).

Arterial hypertension is the most common CVD and a major public health problem in both developed and developing countries (3). It produces a marked effect on patients, their relatives and society either because of hypertension itself or through its complications (stroke, heart attack, ischemic heart disease, renal dysfunction, and heart failure) (9, 11). Regular physical activity is a modifiable factor for prevention and treatment of hypertension (11). It reduces the risk of prematurely death from heart disease and other complications through its effect on such biomarkers of CVD and obesity risks as blood lipids, insulin sensitivity, and thrombogenic factors (12). Meanwhile, sedentary individuals have 20-50% greater risk of developing hypertension during follow-up than their more active peers (1, 3, 4).

Malignant neoplasms are the second leading cause of death worldwide following CVD (11). Colon cancer is one of the most common types of cancer (11). In the US, 107,000 people are newly diagnosed with colon cancer each year (15). Physical activity reduces the risk of colon cancer by its effect on prostaglandins, reduced intestinal transit time and higher antioxidant levels (5).

The second cause of female deaths from cancer after the lung cancer is a cancer of breast (11). Several epidemiological studies suggest that moderate physical activity may have hormonal effects that lengthe n the menstrual cycle, resulting in lower levels of estrogen and progesterone which reduce the risk of breast cancer (5, 16, 17).

Approximately 150 million adults in the world had diabetes in 2000 of which type II diabetes constituted about 85-95% (15). The increase of diabetes prevalence is projected to occur because of population aging, unhealthy diet, obesity and a sedentary lifestyle (15). Physical activity improves glucose metabolism thus reducing the risk of occurrence of diabetes (5).

As a result of lifestyle and dietary changes, overweightness and obesity have reached epidemic proportions all over the world. Approximately 61% of the adult population is either obese or overweight in the USA (9). With the increase of body mass index the risk of premature death also increases (13). Overweightness and obesity themselves are associated with an increased risk of developing various diseases, the most hazardous of which are CVD, certain cancers (endometrial, colon, breast, and kidney), high blood pressure, and type II diabetes (11).

The San-Antonio Heart study found that weight gain was associated with an unfavorable shift in the CVD risk factor variables, whereas CVD risk could be reduced with weight loss (14). Weight reduction is among main benefits of physical activity (5).

A study conducted in Norfolk revealed that interventions to promote participation in high impact activities help preserve bone density and reduce the risk of fracture. Physical activity also helps to prevent osteoporosis and it is important for muscles, bones and joints (20).

Mental health disorders are also significant public health problems all over the world (19). Regular physical activity reduces morbidity and mortality from mental health disorders (18). A Canadian Study of Health and Aging showed that regular physical activity is a potential preventive strategy against Alzheimer's disease (19). In addition, animal research suggests that exercise may stimulate the growth of new brain cells that increase memory and learning (13).

Among other benefits of PA are reduced feelings of stress, improved psychological well-being and physical function, and enhanced self-esteem (5, 13).

Meanwhile, physical inactivity, along with other key risk factors, is a significant contributor to the global burden of chronic disease (1, 2, 3, 5, 10, 11). According to the World Health Organization, physical inactivity is estimated to cause 2 million deaths worldwide annually (5). It is also related to a less healthy pattern of eating behavior, characterized by a greater consumption of fat among the inactive, as defined by the Canada Food Guide (2).

The economic cost of physical inactivity on patients, their family, society and health care systems includes higher health care costs, more absentee ism and less productivity as well as the value of future earnings lost by premature death (5, 10). Persons who exercise less use 30% more hospital days and are 41% more likely to have annual claims over $5000 than whose who are more physically active (18). A study conducted in the US estimated that increasing physical activity potentially saved about twice as much as that for a non-smoker (approximately US$ 1 990 per person) (10).

Researches showed that the elimination of physical inactivity would result in 15-39% less coronary heart disease, 33% less stroke, 12% less hypertension, 12-35% less diabetes, 22-33% less colon cancer, 5-12% less breast cancer and 18% less osteoporotic fractures (1).

Recent research evidence on the health benefits of physical activity has provided new view on the dose-response characteristics of activity and health. While previous recommendations emphasized vigorous aerobic exercise, newer data indicate that health benefits are also accrued through intermittent daily activity of moderate intensity (1, 4). Based on the intervention and epidemiological evidence, the Center for Disease Control and Prevention and the American College of Sports Medicine have jointly published the new recommendations that health-related benefits could accrue from a minimum of 30 minutes of

moderate-intensity activity, such as carrying light loads, brisk walk, pushing a vacuum cleaner or bicycling at a regular pace, on most, preferably all, days of the week (4). Certainly, additional benefits can be gained through greater amounts and/or intensity of physical activity (4).

Although the past years have strongly proven the health benefits of physical activity, most of the world continues to live in a sedentary society (3). According to the World Health Organization, at least 60% of the global population fails to achieve the minimum recommendation of 30 minutes of daily moderate intensity physical activity (5). Moreover, physical activity declines significantly with age, it is generally higher among females, and the overall inactivity trend is worse in poor urban areas (5).

According to the data from the National Center for Chronic Disease Prevention and Health Promotion, more than one half of American adults do not get enough physical activity to provide health benefits, while 25% of adults are not active at all in their leisure-time (7).

Recent estimates in Canada indicate that 14 to 17 million adults face the risk of an early death, acute health problems and chronic health conditions due to sedentary living. This figure is double that estimated for the 7 million Canadians facing health problems because of smoking (2).

A study conducted to document the prevalence of PA during leisure-time in the European region showed that while in Finland (Northern Europe) 91.9% of population practiced regular physical activity, in Portugal (Southern Europe) this figure was only 40.7%. In the pooled European data, women were found to be less physically active than men. In both genders, the PA level was higher in nonsmokers and participants with higher level of education (1).

In many studies individuals report that certain conditions and situations impede their ability to be physically active. Barriers to physical activity are diverse and include issues of environment, psychological factors, health, etc. (8, 25,38)

Socio-environmental factors, such as lack of encouragement or companionship from family and friends can affect the physical activity practice. Environmental barriers include air pollution, automobile traffic, lack of parks or safe and pleasant walking paths (38).

Among the above mentioned physiological, behavioral and psychological factors which may affect people's physical activity are lack of self-motivation, lack of confidence in the ability to be physically active, fear of being injured, lack of self-management skills (ability to set personal goals and monitor progress) (38).

For example, a study conducted in Israel showed that only 10% of the population met the national recommendations for physical activity and the most common barriers for physical activity mentioned by the participants were lack of time and/or energy as well as smoking habits (8). Research conducted by the European Center on Health of Societies in Transition revealed that in Baltic countries almost half of the responders (Lithuania: 60%, Latvia: 52%, Estonia: 43%) participated only in sedentary activities during their leisure-time. Most prominent barriers to physical activity were reported to be lack of time (54% of the sample) and laziness (46.7% of the sample) (25).

Armenia is now in a phase of epidemiological transition and faces the double burden of communicable and non-communicable diseases. While the infectious and parasitic diseases still remain a problem, the prevalence of chronic diseases among adults is increasing which is mostly the result of unhealthy lifestyle (23).

Three leading causes of morbidity in Armenia are CVD, malignant neoplasm, and injuries (23). Mortality rate from acute myocardial infarction in Armenia was 54/per 100 000 in 1994 and increased to 72/per 100 000 in 2002 comprising 54% of general mortality (24).

Mortality rate from hypertension in 1985 was 52.8 per 100, 000 population, increased to 75.4 per 100,000 in 1999, and reached 81 per 100 000 in 2002 (24).

Armenia is one of countries in the European region with the highest mortality rates from diabetes. These numbers increased nearly four-fold from 1981-1998 (23).

The prevalence of psychiatric disorders in Armenia accounts for 4.8 per 1000 population (22).

Data regarding the prevalence of physical activity and its association with various characteristics of Armenian men and women are lacking. The only found data are on the case-control study of injuries arising from the earthquake in Armenia (1988) conducted by H. K. Armenian et al., which studied the population of the city of Leninakan, where 43.3% of cases and 70% of controls reported practicing regular exercise (39). Another study conducted in the same region aimed to assess the relation of increased mortality and morbidity to personal loss and damage following the 1988 earthquake revealed that 87% of study subjects did not practice regular exercise (40).

This study has been proposed due to lack of data on the prevalence of physical activity in Yerevan, Armenia. Estimation of the prevalence is necessary for planning a public health response and select preventive measures appropriate for local conditions.

3. Study Objectives/ Research Questions/ Variables

The **aim** of this study is the prevention of severe diseases directly related to physical inactivity, such as coronary heart disease, type 2 diabetes mellitus, obesity, colon and breast cancer.

The **objectives** of this survey were the following:

- To determine the prevalence of physical activity among 18-65 years-old adults in Yerevan, Armenia

- To identify groups with escalated health risks due to sedentary life-style, i.e. to highlight the association between physical activity and sociodemographic indicators (age, gender, education, income)
- To understand the major barriers to physical activity

The main **research questions** of the study are:

1. What is the prevalence of *physical activity* among the 18-65-year-old population of Yerevan?

2,3,4,5. Is there an association between the *age, gender, education* and *income* of Yerevan adults and their level of *physical activity*?

6. What are the *barriers* to physical activity perceived by target population?

Therefore, the **dependent variable** of the study is the level of physical activity

(inactive/minimally active) and the **independent variables** are age, gender, education,

income, marital status, and occupation. The variables, modes of their measurement as well as

scales of measurement are presented on the Tables 1 and 2.

4. Methods

4.1 Study Design

To have systematically collected data and conduct the appropriate statistical analysis

that would provide an assessment of the need for the future intervention strategies, a cross-

sectional population-based telephone survey of Yerevan adult population was conducted.

This study design was chosen because of objectives desired to achieve, as well as efficiency

in time and expenses (27). The limitation of the cross-sectional design is that it cannot

provide causal relationship, but only test association between variables (27).

4.2 Sampling

To generate an appropriate sample for the proposed survey, probability sampling by Random Digit Dialing (RDD) technique was used. This method allows drawing the study sample from the Yerevan general population randomly and because of randomization, the sample is representative of the Yerevan general population and the collected data are reliable and generalizable (27). There are 350.000 telephone lines located in Yerevan, from which 90.3% are located in households (36). From 277,194 households of Yerevan 219,209 have telephones at home, i.e. the coverage of Yerevan households by phones is 79% (44).

Phone numbers were generated by means of Microsoft Excel program (see appendix 1, *Sample* part). In comparison with a list-assisted RDD, the chosen methodology is unrestricted by the problem of missing people with unlisted or new numbers (28).

Different codes used in RDD identify people from different geographic locations within the city, i.e. different Quarter Communities (*Hamaynks*) (27). The first two digits are corresponding to the area codes (for example 54, 53, 56, 58-*Kentron Hamaynk*)**,** and the remaining four digits are randomly generated. Phone numbers were assigned according to the number of people living in each *Hamaynk* (see Table 3). Thus, the sample represents the households from different areas of Yerevan.

4.3 Study Population

The *target population* was the general population of Yerevan.

The *survey population* was the Yerevan adult population. Subjects for the study were chosen based on the following inclusion criteria: residency in Yerevan, age between 18-65 years old at the start of the survey, willingness to participate, and ability to speak Armenian.

The *sample frame* was constituted of all telephone households in Yerevan.

Sample units were selected by Random Digit Dialing. Considering the possibility, that there can be more than one eligible respondent in the household, random selection was used to determine who should be interviewed. The simplification of Kish technique (called after the inventor, Leslie Kish), the "next birthday" technique was used, according to which the selected respondent must be the one, whose birthday is coming up next (30).

4.4 Sample Size Calculation

To calculate the sample size for the proposed one group descriptive study, the formula for estimate-proportion was utilized (30). The *sample size* was defined by using $\mathbf{n=z^2*pq/d^2}$ formula, where *p* is the proportion of those individuals who have the desired characteristic (proportion of people with enough activity level for a healthy lifestyle), *q* (1-p) is the proportion of those individuals who do not have the desired characteristic (proportion of inactive and minimally active people) and *d* is desired level of precision (30).

For 95% desired Confidence Interval type I error will be a =0.05. Thus, the Za= 1.96 (two-sided). Maximum percent difference that we are willing to accept between the true population rate and the sample rate is 10%. Therefore, d is equal to 0.1.

Since there was no information on the studies conducted in Yerevan on this topic, no available data on the prevalence of physical activity were found. To estimate sample size for this particular study data from the Moscow Behavior Risk Factor Survey were used. In Moscow, Russia the age-adjusted prevalence of low level of physical activity is 74.8% for both males and females (see Table 4, (26)). The rationale for choosing Russian data is that the Armenian population can be defined as more similar to Russian population than to other countries' population.

Therefore, it was assumed that 25.2 % (p=0.252) of Yerevan population are practicing enough activity for a healthy lifestyle and 74.8% (q=1-p=0.748) are inactive or minimally

active. Taking into consideration all above mentioned factors, the sample size was estimated as n= $1.96^2*0.252*0.748/0.1^2$= ~ 72

Taking into account the possibility of non-responses and assuming non-response to be 20% (from the previous RDD survey conduced in Yerevan in 1999) it was suggested to increase the sample size to 88 ~ **90** (72*0.2+72) (31).

4.5 Data Collection

Data were collected from June 20 to July 30 2005 in telephone interviews by the student investigator using a structured questionnaire. Time frame of the study is presented in the Table 5. Interviews were conducted in Armenian since 96% of the population speaks the language (37). The information about the procedures maintained to maximize response rate (procedures for gaining cooperation and establishing rapport with respondents) as well as general information about the survey (purpose, sponsor) is introduced in the Interviewer Manual (Appendix 1).

4.6 Survey instrument

The study instrument was an interviewer – administered questionnaire, which was developed on the basis of the short-form of International Physical Activity Questionnaire (IPAQ) (32).

The IPAQ instrument was developed as a core instrument for the International Prevalence Study that aimed to collect nationally comparable prevalence estimates on physical activity from a diverse set of countries from around the world. The above mentioned study involved 19 countries and it used the telephone or self-administered short-form of IPAQ to determine the national prevalence of physical activity. This study is now completed and will be reported soon (32).

The investigators from 12 countries collected reliability and validity data on the IPAQ instrument and they concluded that the IPAQ instrument had reasonable measurement properties for monitoring population levels of physical activity among 18- to 69-year-old adults in diverse settings (Spearman's *Rho* clustered around 0.8 indicating reliable responses between repeat administrations; criterion validity had a median *rho* of about 0.3 against the Computer Science Applications accelerometer for minutes of moderate, vigorous, walking and sedentary behaviors, which was comparable to most other self-report validation studies) (33).

Therefore, IPAQ instrument provides valid and internationally comparable measures of physical activity within and between countries. Moreover, it was designed for phone surveys particularly (32). Moscow Behavior Risk Factor Survey in Russia also used this questionnaire (32, 26).

A study conducted in Belgium revealed that overreporting of physical activity in population samples is a serious problem. It was suggested, however, that this problem could be reduced by implementing procedure changes without changing the IPAQ items themselves (34).

The IPAQ instrument was translated into Armenian, modified and adapted to Armenian culture. Pilot testing of the translated instrument was done with 20 people from a broad range of backgrounds, educational level and socioeconomic status.

The study was not restricted to leisure-time activities since this might overestimate the prevalence of sedentary lifestyle in the population. IPAQ assess physical activity undertaken across a comprehensive set of domains including leisure-time, domestic and yard activities, work-related and transport-related activities. The IPAQ short-form asks about three specific types of activity undertaken in the domains introduced above (walking, moderate-intensity

activities and vigorous-intensity activities) as well as sitting. Frequency (measured in days per week) and duration (time per day) are collected separately for each type of activity.

In addition to the physical activity status, the study's questionnaire included demographic characteristics like age, gender, family status (single, married, divorced, widowed), financial status (average monthly household expenditures at the time of the survey were used as a proxi for income assessment), educational level, occupational status, smoking status (current smoking defined as those who smoked at least one cigarette per day), subjective health and weight, as well as questions to assess knowledge on benefits of physical activity and barriers to physical activity. Both English and Armenian versions of the study instrument are presented on the Appendix 3.

4.61 Data Coding

Data were coded according to three degrees of physical activity – inactive, minimally active and Health Enhancing physical activity level. The level of physical activity was assigned according to the algorithm provided in *www.ipaq.ki.se* website (32). For the statistical analysis data were recoded according to two degrees of physical activity – inactive/minimally active and HEPA active. This was done because only HEPA level of activity is considered as "enough" physical activity for healthy lifestyle. Although minimally active category is more than the minimum level of activity recommended for adults in current public health recommendations, it is not enough for "total physical activity" when all domains are considered. IPAQ measures total physical activity, whereas the recommendations are based on activity (usually leisure-time or recreational) over and above usual daily activities.

Metabolic equivalents were assigned to each activity in order to classify participants to categories of physical activity. Metabolic equivalent is the amount of oxygen used by body as person sit quietly, for example, while talking on the phone or reading a book (32).

Metabolic equivalents were calculated as it is described on the table below .

Type of Activity	MET amount
Walking	3.3 METs
Moderate intensity activity	4.0 METs
Vigorous intensity activity	8.0 METs
Total MET-min/week= (Walk METs*min*days)+ (Mod METs*min*days)+ (Vig METs*min*days)	

4.6 Statistical analysis

The guideline for data processing and analysis of the short-form of the IPAQ instrument available in the www.ipaq.ki.se was used (32).

Descriptive statistical analysis was performed for all variables. Categorical variables are presented as absolute frequencies and percentages, while continuous variables are presented as mean values ± standard deviation.

Since the outcome was measured on dichotomous scale (inactive or minimally active versus HEPA active), stepwise logistic regression analysis was done to assess the association between physical activity level and age, gender, educational level, occupation, marital status and income (monthly household expenditures). In addition, chi-square was performed to assess the association between physical activity level and satisfaction by the level of activity.

All reported P-values are based on two-sided tests and compared to a significance level of 5%.

All statistical analyses were performed by means of the SPSS 11.0 software package.

5. Ethical Considerations

The proposed study possessed no risk for participants. The topic of the survey was not sensitive. It took on the average 15 minutes to the respondent to be interviewed. Prior to starting each interview the consent form in Armenian was read to each informant (see

appendix 3). This document includes information about the main objectives of the study, its importance, risk/benefit and voluntary nature of the study. Participants were aware that their responses were coded and the anonymity of all provided information was insured. Names of the participants were not registered. The only identifiers were phone numbers, which were not written on the questionnaires. ID numbers were given to each phone number and they were not linked to the phone numbers since they were registered in a separate form: Interviewer Report Form (see Appendix 2). The results of the survey were displayed in an aggregate form. At the end of the study the data on personal identifiers (phone numbers) were destroyed.

The study was approved by the Institutional Review Board Committee on Human Research of the American University of Armenia.

6. Results

6.1 Response Rate Calculation

There were 74 interviews conducted out of 90 making response rate 80% (see Table 6). Two types of the response rate were calculated: response rate based on known eligible respondents and response rate based on known and unknown (estimated) eligible respondents. The latter was 75%.

1) *Response rate based on known eligible*

Response rate=# of completed interviews/ eligible= # of completed interviews/ completed interviews+ partial interviews+ unavailable for duration + refused to

participate=72/72+2+5+11=72/90=**80%**

2) *Response rate based on known and unknown (estimated) eligible respondents*

In order to calculate response rate based on unknown eligible people, we had to estimate the proportion of known eligible people among all answered calls. This proportion is used for

approximating the number of cases with unknown status (unanswered calls, refused to screen, etc.)

Proportion of eligible respondents

Proportion of eligible=eligible/ all screene d = completed interviews +partial interviews+ unavailable for duration +refused interview +other screened/ completed interviews +partial interviews+ unavailable for duration + refused interview +other screened + ineligible+ business number + refused screening =72+2+5+11+0/72+2+5+11+0+10+5+2=90/107= 0.84

Response rate=# of completed interviews/ eligible=# of completed interviews/ completed interviews+ partial interviews+ unavailable for duration + refused to participate+ other screened +refused to screen (es timate) + busy number (estimate)+no answer (estimate).

Response rate= 72/72 +2 +5+11+0 +2*0.84 +3*0.84 +2*0.84 = 72/72 +2 +5+11+1.68+2.52+1.68=72/ 95.88=**75%**

6.2 Sociodemographic Data

Gender distribution: from the 74 interviewed people 31 % are males and 69 % are females. According to the results of 2001 population census (figures of Yerevan city), 18-65 year-old females comprised only 50% of general population of Yerevan (44).

Age of the sample: of the entire approached sample, the majority of the participants (40%) are 45-59 years old, 25 % are 18- 29 years old, 31% are 30-44 years old, and only 4% are 60-65 years old.

The mean age of the participants was 40 years old and standard deviation was 13 years old.

Education: of the entire approached sample, 43 % have university education, 33 %- secondary school education and 24% are college graduates. According to the 2001 Census data, only 27% of Yerevan population has higher education (44).

Occupation: the majority of the sample consists of unoccupie d individuals (60 %). Only 40% of individuals are occupied. In Yerevan 52% of people were occupied (2001).

Household monthly expenditures: the majority of the sample (68 %) reported monthly household expenses from 50,001 to 200,000 AMD, 21% spend from 25,000 to 50,000 AMD per month, 9 %- more than 200, 001 AMD monthly and only 2 % of sample spent less than 25,000 AMD per month.

Table 7 presents sociodemographic and behavioral characteristics of the participants.

6.3 Physical activity related findings

Physical activity level: 20% of the surveyed population is inactive, 53 % meet minimum recommendation physical activity level, and only 27% have health enhancing physical activity level.

Time spent sitting: 46% of the surveyed population spend sitting from 1 to 3 hours daily; 24%- form 4 to 6 hours daily and 13% - from 7 to 10 hours daily. Mean time spent sitting is 4 hours and standard deviation is 2 hours daily.

Knowledge on benefits of physical activity: from the entire approached sample, 41% were strongly agree that physical activity is beneficial for their health, 53% were agree of the same statement and only 4% of study subjects were uncertain of this statement.

The satisfaction of study participants by their level of physical activity was assessed. Overall, 55% of the participants consider themselves to be physically active people. From those 54 people reported no activity or minimal activity, almost 50% are satisfied by their level of physical activity. Meanwhile 43% out of 20 people who practice health enhancing physical activity level considers themselves as physically inactive persons (OR=0.231; 95% CI 0.068,0.787; Chi square 6.0, *P* value .019).

Category of activity	Percent satisfied by their level of activity
Inactive/Minimally active	**~50%**
HEPA active	57%
Chi-square 6.0　　　*P* value .019	Logistic regression OR 0.231, 95% CI (0.068,0.787)

Therefore, those who satisfied by their level of physical activity, in reality are less active persons.

Since the majority of the participants considered themselves as physically active people, only 20% reported barriers to their physical activity. The most frequently reported barriers are: lack of time, reported by 16% of the study subjects; poor health, mentioned by 12%; lack of energy, mentioned by 10% of the participants; bad mood, reported by 4% of them and lack of money, mentioned by only 4% of the participants.

Some people mentioned other barriers, such as laziness (1.4%) and unemployment (4%). No statistically significant associations were found between physical activity level and sociodemographic indicators, such as age, gender, education, income level occupation and marital status.

7. Discussion

In this study, 27% of participants were classified as physically active; 53% of survey subjects reported minimal activity level; and 20% reported no activity at all (Table 7). Therefore, only 27% of participants practice physical activity enough for healthy lifestyle. Another 73% can be considered as sedentary. This is quite high percentage in comparison with the data from other countries, despite we aimed to assess all life domains and not only leisure-time physical activity. In the US overall 58% of respondents were classified as sedentary (7). The same figure for Brazil is 41% and for Greece is 48% for females and 53% for males (41, 42). In France approximately 50-70% of population is sedentary during their leisure-time (43). Data on the countries of European region showed that while in Northern Europe (Finland) 91.9% of population practiced regular physical activity, in Southern Europe (Portugal) only 40.7% of population is physically active (1). From the former Soviet countries there are data on Baltic countries and Russia. In Baltic countries approximately half

of the population (Lithuania: 60%, Latvia: 52%, Estonia: 43%) participated only in sedentary activities during their leisure-time (25). According to the data from the Moscow Behavior Risk Factor Survey, in Moscow, Russia the age-adjusted prevalence of low level of physical activity is 74.8% for both males and females. The prevalence of sedentary lifestyle is even higher for other Russian regions (Table 4).

Different studies showed that physical activity level is associated with age. For example, a study conducted in France showed that meeting the recommended physical activity levels was more likely in subjects aged 60 years and older (43). A direct relationship between PA and age was found also in Israel (8). On the contrary, in the US and Brazil the association between physical activity and age was negative (7, 41). This study did not found any statistically significant association between physical activity level and age. This could be due to the fact that little percentage of each age group representatives participated in the study.

In many studies women tend to be less active than men (European countries, Greece) (1, 42). On the contrary, in France, females tend to be more active than males (43). No significant association was found between gender and physical activity in Russia (26). This study also did not found any statistically significant association between physical activity level and gender.

Physical activity was inversely related to educational level in the US, Israel, Baltic countries, whereas positive relationship was found between physical activity and education in the pooled European data (7, 8, 25, 1). This study also did not found any statistically significant association between physical activity level and education.

Physical activity was inversely related to income level in the US, Israel, and Brazil, whereas positive relationship was found between physical activity and income in Baltic

countries (7,8,25, 41). This study also did not found any statistically significant association between physical activity level and income.

A description of the profile of the participants of a study conducted in Greece showed that physically active people had higher occupation skills, were more likely to be unmarried and to be non-smokers, as compared to sedentary, irrespective of age ad gender (42). However, in a population-based study of men and women from the US the investigators observed that the change from a married to a single state did not affect PA relative to remaining married, while the transition from a single to a married state resulted in significant positive changes in PA relative to remaining single (9). This study did not found association between physical activity level and marital status as well as between physical activity level and being occupied. Family, work and other social responsibilities, as well as cultural differences may be responsible for the difference of the results between the present and other studies.

Study conducted in the US revealed that approximately 87% of Americans know that exercise is beneficial for their health (6). This study revealed that in spite of the fact that even more, 94% of the surveyed subjects were aware that physical activity is beneficial for health, the majority of the subjects were inactive.

The same study in the US showed that, although over half (52%) of the respondents were generally satisfied with the amount of exercise they get, 58% of them were classified as sedentary (6). Another study in Israel revealed that 17.5% of the sample that considered themselves physically active persons in reality was sedentary according to sport intensity calculations (8). This survey revealed that overall 55% out of the 74 participants consider themselves to be physically active people. Essentially, from those inactive people, almost half are satisfied by their level of physical activity (P value 0.012). On the contrary, 43% out of 20 people who practice health enhancing physical activity level considers themselves as

physically inactive persons. Two possible explanations for this unexpected result are as follows: first, such a question may have sounded slightly unclear to the participants; and second, this 43% of the sample may underestimate their overall health in regards to regular physical activity. The important message to be considered is that people are not aware of the concept of "enough" amount of physical activity.

The most frequently reported barriers to physical activity in this study are lack of time and lack of energy. Approximately the same barriers for physical activity were mentioned in a study conducted in Israel (lack of time and/or energy as well as smoking habits) (8). In Baltic countries also the most prominent barriers to physical activity were reported to be lack of time (54% of the sample) and laziness (46.7% of the sample) (25). Therefore, participants of studies in different countries mentioned types of physiological and behavioral barriers. These types of barriers should be considered in future health promotion programs.

The strengths of our study are high generalizability (79% coverage of population by phones), high response rate; randomized design (RDD and using of the "next birthday" technique ensures randomization at all stages of the survey); using of internationally valid and reliable instrument, which is designed for telephone interviews particularly and which provides comparable data across countries. Also this study was not restricted to leisure-time: it assessed all life-domains activities.

The study is a subject of at least four limitations. Firstly, misreporting of physical activity status due to self-reports may bias the results of the study. Secondly, income level was assessed by using only monthly household expenditures as a proxi. The study is a subject of recall bias, since last seven days recall was assessed. Subjectivity of health and weigh data is another limitation of the study. This study results cannot be generalized to the whole population of Armenia, especially to the population of rural areas.

Further research is recommended in this area to assess leisure-time, labor, and other life-domains separately. For this purposes it is recommended to use long-form IPAQ instrument.

8. Conclusions and Recommendations

Physical inactivity is a <u>modifiable</u> risk factor for many diseases, such as CVD, diabetes, certain types of cancers, etc. Therefore, there is an opportunity to reduce future health expenditures and to improve population health and quality of life through increasing the level of activity and the proportion of active population.

Our study is the first study conducted in Yerevan to assess the prevalence of sedentary living and barriers to physical activity. Despite the limitations of the present study, our findings carry an important public health message, i.e. that our community is mainly sedentary and is not aware of the concept of enough physical activity for healthy life-style. The results of this survey highlighted that all groups of population, regardless of age, gender, education and income, should be targeted in the future health promotion programs in different settings (health care settings, worksites, community, etc.). Achievement of this goal will require intensified efforts by health care providers as well as public health professionals, especially health educators. Improvement of physicians counseling practices, i. e. development of counseling protocols should be done. Also monitoring should be realized in order to supervise the compliance to protocols. Booklets, pamphlets and posters should be typed to target broad range of population. For the same reason Mass Media campaigns will also be very useful.

Establishment of special environments where people can be physically active, i.e. health clubs, will be another useful strategy to promote physically active lifestyle of population. The government should support all these programs.

The promotion of physical activity will bring additional benefits, since many studies confirmed that behaviors tend to cluster. Therefore, improvements in one behavior undoubtedly will lead to the improvements in other behaviors, i. e. improving physical activity practice will bring with it compliance to more healthy dietary patterns and in general to more healthy behavioral patterns.

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List of journals where this paper can be published

- *Medicine & Science in Sports & Exercise*
- *American Journal of Epidemiology*
- *American Journal of Public Health*
- *American Journal of Health Promotion*
- *Physician and Sport medicine*

APPENDIX 1 - Interviewer Manual

American University of Armenia
MPH PROGRAM

Survey on Physical Activity Prevalence and Barriers to Physical Activity among Yerevan Adult Population

Purpose

This is a telephone survey of adults in the general population of Yerevan to determine the prevalence of physical activity; to identify groups with escalated health risks due to sedentary life-style, i.e. to highlight the association between physical activity and sociodemographic indicators and to understand the major barriers to physical activity. This Random Digit Dialing (RDD), non-CATI survey aims to estimate the physical activity across various life domains. This information is required to plan a public health response and select prevention measures appropriate for local conditions. This survey does not include questions about sensitive topics.

Sponsor

Department of Public Health of the American University of Armenia sponsors the study. The second year MPH student at AUA Liana Hakobyan carries out the study as a Master thesis project. The principal investigators for this survey are Dr. George Jakab, PhD and Dr. Haroutune K. Armenian, MD, DrPH.

Assistance

If respondents have any questions about the survey, they should contact the teaching associate at the Department of Public Health of the American University of Armenia Dr. Yelena Amirkhanyan, MD, MPH.

(374-10) 51-25-68
9:00 a.m.-5:00 p.m.
Monday through Friday

Sample

The sampling unit for this survey is the telephone number.
The four-digit random numbers are generated by the means of Microsoft Excel program. (Insert-Function: =RANDBETWEEN (999, 9999)). Then the code of Hamaynk is assigned to each number. Therefore, the first two digits are correspond to the existing telephone exchanges, i.e area codes (for example 54-Kentron Hamaink), and the remaining four digits are randomly generated.

For each telephone number, it should be first determined whether it is a household number or business number. Then screening questions should be asked to select the eligible respondent within a household.
The sample size for the survey is estimated to be 90. Then the numbers are proportionately divided according to the number of people living in each Hamaynk **(Table 1).**

Eligible Telephone Number

An eligible telephone number for this survey is the telephone number that is provided to an interviewer on an Interviewer Report form (IRF), and that is residential phone number (not business).

Telephone number on IRF

Only telephone numbers given to you on IRF-s are eligible to be called. If you misdial a number, no one at that number should be interviewed. If you dial a number on IRF and learn that the number has been changed, you should not call the new number, since that number is still eligible.

Telephone number for residence

Only residential telephones are eligible for this survey. A residential phone is a telephone located in a residence and used primarily for private, non-business purposes. Usually business phone is answered in different way, by identification of the person's name or name of an office, etc. If you are not sure that you have reached residential phone number, than you should probe to be sure.

Eligible Respondent

The eligible respondent in a household is the adult household member (male or female) age between 18 and 65 years whose birthday is coming to be celebrated soon. To determine which adult had the next birthday in a household screening questions are asked. If the adult household member having the next birthday is then determined to be over 65, no interview will be conducted.

Gaining Cooperation and Establishing Rapport

An RDD sample means that respondents receive your initial call without advance letter; therefore these are "cold" contacts. Although this survey does not touch sensitive issues, your ability to gain respondent's trust and cooperation will be critical to successfully administer the survey. If you feel that respondent is uncomfortable, tell him/her, that all answers will be kept confidential, and his/her opinion is very important for the study.

Answering Respondents Questions

It is very important that you are familiar with this manual before starting interviews. If respondent asks a general question about the study, refer him/her to the Dr. Yelena Amirkhanyan. Generally, be sure to listen carefully and understand what person is asking, then answer briefly, but directly to the point.

Some common questions that might be asked and how to answer them

1. How did you get my phone number? *I selected your number randomly from all the possible Yerevan numbers by dialing random digits.*

2. Why don't you call someone else? Your *opinion is very important for us, because once we selected randomly a phone number and a household member, than we must talk to that person.*

3. How long it will take*? On the average, this interview takes about 10-15 minutes.*

Procedures for recontacts, data collection forms, and disposition codes

Procedures for recontacts

1 .We will make a maximum number of attempts to reach a number. If the number is not still reached prior to week the data collection ends it is considered as non- reached.

2. We will not let the phone ring more than six times. If after six times there is no answer, we will treat this call as no response (see item 4 and 5).

3. On busy numbers, we will call the number a maximum number of times until we reach it. If the number is not reached prior to week the data collection ends it is considered as non- reached.

4. For no response calls, we will call back next day until we reach it.

5. If prior to week the data collection ends the line is still busy or there is no answer, we will replace the phone number changing the place of third and fourth digits. In a case when third and fourth digits are the same, the place of fifth and sixth digits will be changed.

6. If there is no eligible person in the household, we will replace the number (see point 5).

7. If the number is out of service, temporarily does not connected to the phone station, or business phone number, we will replace the number (see point 5).

8. If the call has been interrupted during the interview, we will call back and continue the interview.

Data collection forms

All call attempts and their outcomes will be registered on an Interviewer Report Form (IRF) according to disposition codes mentioned on IRF. Description of deposition codes IS provided below. Interviewer Report Form is provided on Appendix 2.

Disposition Codes

Pre-respondent selection

Non-residential (code # 22)
We will assign this code when the telephone number reaches no residence, i.e. business, professional office, etc. This is a final disposition. In this case, we will replace telephone number changing the third and fourth numbers.

Temporary disconnect (code # 23)
We will assign this code when the number dialed is temporarily disconnected. It is pending disposition or final after if it is not reached prior to the week of data collection period. In this case, we will replace telephone number swapping third and fourth digits.

Other nonworking number (code # 24)
This disposition includes all other nonworking numbers, such as not in service, permanently disconnected ("the number you are dialing does not exist"), or not yet connected. This is a final disposition. In this case, we will replace telephone number swapping third and fourth digits.

Refused screening (code # 33)
No one in the household is willing to give the information to select a respondent. This is a final disposition. In this case, we will replace telephone number swapping third and fourth digits.

No answer (code # 34)
Use this code if no answer (NA when no one picks up the phone: do not keep more than six hooters). This is a pending disposition or final after if it is not reached prior to the week of data collection period. In this case, we will replace telephone number swapping third and fourth digits.

Busy number (code # 35)
We will use this code when phone shows busy after ten attempts with one day interval. This disposition becomes final after if it is not reached prior to the week of data collection period.

Non - Armenian speaking households (code #36)
If no one in this household speaks Armenian, then this is a final disposition, and we will replace telephone number swapping third and fourth digits.

Other not screened (code #30)
We will use this code in some other situation that is not covered above. It can be pending or final disposition.

Post-respondent-selection

Partial interview (code #11)
Respondent terminated the interview part-way through it. In this case, we will replace telephone number swapping third and fourth digits.

Completed interview (code#12)
We have completed an interview with selected respondent. This is final disposition. It requires no replacement.

Refused interview (code #3)
Selected respondent refuses to be interviewed or refuses to finish the entire interview. This is a final disposition. We will not replace this number.

Unavailable on duration (code #13)
Respondent is selected but is sick or on vacation, deaf or cannot speak Armenian Therefore, he/she is unavailable for the interview for the duration of this study. This is final disposition. In this case, we will replace telephone number swapping third and fourth digits.

Ineligible (code #14)
We will choose this disposition when there is no one currently living in the household who meets selection criteria. This is a final disposition. In this case, we will replace telephone number swapping third and fourth digits.

Other screened (code # 15)
Some other situation that is not covered by the above codes is assigned here. It is pending or final disposition.

APPENDIX 2 - Interviewer Report Form # ------

Number to dial _____

Pre -respondent selection

Disposition	Code	Replaced 77
Nonresidential (business)	22	
Temporary disconnect	23	
Other nonworking number	24	
Refused screening	33	
No answer	34	
Busy number	35	
Non-Armenian speaking household	36	
Other not screened	30	

Post-respondent selection

Disposition	Code	Replaced 77
Partial interview	11	
Completed interview	12	---------------
Refused interview	3	---------------
Unavailable for duration	13	
Ineligible	14	
Other screened	15	

APPENDIX 3 - English and Armenian versions of Survey Questionnaire

Questionnaire : English Version

Part 1
Screening questions (SQ)

Good evening (Good afternoon)

*SQ*1:* Is this a   --------- (phone #)? *[If **yes**, continue]   [If **no**, see protocol]*

SQ2: Is this a home number?   *[If **yes**, continue]   [If **no**, see protocol]*

 I am (student name), a student of Public Health Department of the American University of Armenia. The American University of Armenia is conducting a study concerning health topic.

SQ3: I am looking to the person between 18 and 65 years of age. Are there such persons currently living in your household?

*[If **yes**, continue]*

SQ4: May I talk to the person whose birthday is coming soon?
[If eligible person called to the phone, read consent form and begin interview]

*[If the informant's answer is: **Don't know any birthdays other than my own**, ask the name, read consent form and begin interview if meets inclusion criteria]*

Part 2
Oral consent form

 As I already said, I am Liana Hakobyan, a student of Public Health Department of the American University of Armenia. As a part of my course requirements The American University of Armenia is conducting a study concerning physical activity patterns of Yerevan population. You are chosen to participate in this study since your telephone number was randomly selected from all the possible Yerevan numbers. I would be very thankful to you if you answer some questions about your physical activity that I am going to ask. The interview will take you approximately 20 minutes.

Any information that you provide will be coded, held anonymous and will not be linked to your phone number. There is no risk to you.
You will not receive any financial or other benefits for participation in this study.
Your participation is very important and valuable for the investigation and hopefully it will help to promote physical activity among Yerevan population.
Your participation is voluntary. You can refuse to participate as well as you can refuse to answer any question you do not want to answer. Also you can interrupt the conversation whenever you want and there will be no negative consequences for you.
Thank you in advance. Do you have any questions?
So, would you like to participate?

*[If **yes**, continue]* Let us begin
*[If **no**, do not continue]* Thank you anywhere, goodbye

Respondent ID # ------------
Questionnaire # --------------

Part 3
Physical Activity Questions

READ: I am going to ask you about the time you spent being physically active in the last 7 days. Please answer each question even if you do not consider yourself to be an active person. Think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

READ: Now, think about all the *vigorous* activities which take *hard physical effort* that you did in the last 7 days.
**Vigorous activities make you breathe much harder than normal and may include *heavy lifting, digging, shoveling snow, chopping wood, heavy construction work, climbing up stairs, participating in strenuous sports, such as aerobics, fast bicycling and fast swimming.*
Think only about those physical activities that you did for *at least 10 minutes* at a time.**

1.   During the **last 7 days**, on how many days did you do **vigorous** physical activities?
         _____ Days per week
              88.   Don't Know/Not Sure
              99.   Refused

2.   How much time did you usually spend doing **vigorous** physical activities on one of those

days?

         __ __ Hours per day

         __ __ __ Minutes per day

              98.   Don't Know/Not Sure
              99.   Refused

READ: Now think about activities which take *moderate physical effort* that you did in the last 7 days.
Moderate physical activities make you breathe somewhat harder than normal and may include *carrying light loads, pushing a vacuum cleaner, sweeping, washing windows, scrubbing floors, bicycling at a regular pace, swimming at a regular pace, etc*. Do not include walking. Again, think about only those physical activities that you did for *at least 10 minutes* at a time.

3.   During the **last 7 days**, on how many days did you do **moderate** physical activities?
         _____ Days per week
              88.   Don't Know/Not Sure
              99.   Refused

4.   How much time did you usually spend doing **moderate** physical activities on one of those days?
    __ __ Hours per day
    __ __ __ Minutes per day
    98.   Don't Know/Not Sure
        99.   Refused

READ: Now think about the time you *spent walking* in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you might do solely for recreation, sport, exercise, or leisure.

5.   During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time?
    _____ Days per week
    88.   Don't Know/Not Sure
        99.   Refused

6.   How much time did you usually spend **walking** on one of those days?
    __ __ Hours per day
    __ __ Minutes per day
    98.   Don't Know/Not Sure
        99.   Refused

READ: Now think about the time you *spent sitting* on week days during the last 7 days. Include time spent at work, at home, while doing course work, and during leisure time. This may include time spent sitting at a desk, visiting friends, reading or sitting or lying down to watch television. Include also time spent lying but when not asleep.

7.   During the last 7 days, how much time did you usually spend *sitting* on a **week day**?
            __ __ Hours per weekday

    __ __ __ Minutes per weekday
    98.   Don't Know/Not Sure
    99.   Refused

Part 4
General Questions

8. **Please indicate if you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree with the following statement:**
    Physical activity is beneficial for health

    1. Strongly agree
    2. Agree
    3. Neither agree nor disagree
    4. Disagree
    5. Strongly disagree
    98.   Don't Know/Not Sure
    99.   Refused

9. Please, tell me, do you think that you get as much physical activity as you should?

1. Yes (go to question 11)

2. No
98.   Don't Know/Not Sure
99.   Refused

10. Tell me, please, what are the barriers for getting enough physical activity? *(Do not read, circle all that apply)*

1. Lack of time	6. Feeling of shame
2. Lack of energy	7. Fear to be injured
3. Tiredness	8. Difficult to answer
4. Lack of money	9. Other ----- (specify)
5. Lack of companionship	99. Refused to answer

----
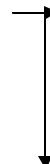
11. Do you currently smoke?

1. Yes
0. No (go to question 13)
99. Refused to answer

12. How many cigarettes do you smoke during a day?

   ------------- (number of cigarettes)
98.   Don't Know/Not Sure
99.   Refused

13. Which of the following best describes your health today?

   1. Excellent
   2. Very good
   3. Good
   4. Fair
   5. Poor
   98. Don't Know/Not Sure
   99. Refused to answer

14. Which of the following bets describes your weight today?

   1. Too skinny
   2. Normal
   3. Slightly overweight
   4. Fat
   5. Very fat
   98. Don't Know/Not Sure
   99. Refused

 Part 5
Socio-demographic Questions

Now I am going to ask you some questions regarding your age, etc.

15. What was your age on your last birthday?   -----------
99. Refused to answer

16. What is your level of education?

1. Incomplete secondary (up to 8 years)
2. Complete secondary (up to 10 years)
3. College (2 years)
4. Institute/ university (5-6)
5. Postgraduate
6. Other (please, specify) ---------
    98. Don't know
    99. Refused to answer

17. Are you occupied?

1. Yes
0. No (go to question 19)
99. Refused to answer

18. What is your occupation?

    ----
    99. Refused to answer

19. What is your marital status?

1. Single
2. Married
3. Divorced
4. Widowed
99. Refused to answer

20. On average how much money does your household spend monthly?

1. Below 25 000 dram
2. 25 001 to 50 000 dram
3. 50 001 to 200 000 dram
4. More than 200 001 dram
98. Don't know
99. Refused to answer

21. Circle gender of respondent (Ask only if unable to identify.)

0. Male
1. Female

This is the end of our conversation.
Thank you very much for your participation
Do you want to add something? ------------

If you have questions regarding to this study or if you are interested in the results of this study as well as if you think that during the interview you were treated unfairly you are free to contact Dr. Yelena Amirkhanyan at the American University of Armenia, Marshal Bagramyan, 40 tel: (37410)
 512568.

Questionnaire: Armenian Version

Ð³ ñó³ Ã» ñÃÇÏ   --------

? ? ? 1

? ??????????? ?????? (? ?)

? ? ? ? ????? (???? ??)

? ? 1: ? ? ? ?? ------------ ??????± (??? ? ?? ?????????, ? ? ? ????? áõÕ·óáõÕ·Á)
? ? 2: ? ? ???????? ? ??? ?? ? ? ? ± (??? ? ?? ?? ??????, ? ? ? ??? ?? áõÕ·óáõÕ·Á)

? ? ????? ?? ?????? ? »ÙÐ³ Ûë ëï³ÝÇ ²Ù»ñÇÏ ³ÛÙ³ Ù³Ïáñ³ÝÇ Ð³Ýñ³ÛÇÝ
² éáÕç³ ù³ Ñáõ³Ý Ý´³ ³ÅÝÇ áõë»ÛáÕ Ð³Ýñ³ ÛÇÝ ²éáÕç³ ³Ñáõ³Ñ Ý´´³ ³ÅÝÃ³Ûó ¿ Ï³ óÝóÙ
Ñ»ï³½áï áõÃáõÝÝ? éáÕç³ ³ Ñ. ?³ Ý ? ? ? ? ? ???:

? ? 3: ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? 18- 65? ? ? ? ? ? ? ? ? ? ? ? ? »? : ? ? ? ? ? ? ? ?? ? ?? ? ?? ?
? ? ? ? ? ? ? ? ? ? ? ? ??:
(? ? ? ? ??, ? ? ? ? ? ? ? ???)

? ? 4: ????? ±?? ?? ???????? ?? ? ??? ??? ??? ?????? ? ??? ?????? ???????? ?:
(? ? ? ????? ???????? Ñ»³ Ë á? ??? ? ? ? ? ? ? ? ? ? ? ? ? ?? ?????, ?? ????????)
(? ? ? ???? ? ? ? ? ?????? ?? ? ?? ???? ? ????? ?????? ? ???, µ³óÇ Çñ?????????Çó, ? ?????? ? ? ? ? ? ?? ????? ¨????????????? ? ? ? ? ? ? ? ? ? ? ? ? ?? ? ÁÝ ñÙ³ Ý³³ ÷³ ÝÇ ÇßÝ»ñÇ Ý)

? ? ? 2

Ð³ Ù³ Ó³ ÛÝ · Çñ

ÇÝ㳻뻳 ñ¹ Ý³ ë³ óÇ, ºë ÈÇ Ý³ Ð³ ÏáµÍ³ ÝÝ»Ù, ²Ù»ñÇÏÛ³ Ý Ð³ Ù³ É·ñ³ ÝÇ Ð³ Ýñ³ ÛÇÝ
²éáÕç³ à³ ÑáõÐ³ Ý ´ ³ ÅÝÇ áõ·³ Ý³ ÛÇÝ: Ð³ Ýñ³ ÛÇÝ ²éáÕç³ à³ Ñ´ ´ ³ ÅÝ Ï¹ ¹ ³ ñáÙ¿
Ñ»ï³½áï áõÃáõ÷ áñ·³ ÝÇ µ»ñ Ì³óÃ³ Ýçç¾Ï¹Ï¹ Ý³ Ïï Çï³óÃ³ Ý í»ñ³ µ»ñÛ³ É
¸ áõ»ÙÁÝ ñí·É»·ù Ù³ ëÝ³ Ïó»É³ û Ñ³ ñóÙÁ ÝÁ, ù Ý½Ç Ó»ñ ¿ Èáë³ Ñ Ù³ ñÝ ¿ñ¿ ÛÝÁ í»ñ¿ É
à³ ï³ Ñ³ Ï¹ Ý»ñ»Ý °ñ·³ ÝÇ µ¿Ïñ³ é Èáẳ Ñ Ù³ ñÝ¿çó:
ºë ß³ ï ¿Ý¹ñ³ Ï ÈÏ¿ÇÝ»Ã³ ¹áõ ³ ï ³ ë¿³ Ý»ù ÙÇ ù· ÝÇ Ñ³ ñóÓ ó-ñ ýÇ½Ï¹³ Ý
³ Ïï Çï³óÃ³ Ý í»ñ³ µ»ñ É Ð³ ñó ½ñáôÁ Ïï ¨Ç Ù³Û ´ í³ Ý³ ³»ë15 ñ³ à»:
Ò»ñ ÏáÕÙçó ï ñ³ Ù ¹ñí³ É µ¿ÉÏ³ ï »Õ Ï³ôÃ³ ÛÛ»ñ³ · ³ Õï ÝÇ Ç³ ³ Ñ³ Ýï »Ý¿:
Ø³ ëÝ³ Ïó»á ¿ »àùóÙ Ý¿ Ï¹ ¿ »ëí³ Í á»Ý¨ ¹ñ³ Ù³ Ï¹ Ï¹ Ù³ Ûà³ ñ· ¨¨Ý»ñ:
Ø»Ýµ³ ñÓÝ»Ûù · Ý³ ï áÙÓ Ó»ñ³ Ï¹óáõÃÃ³ ÛÁ, ¨ Óóñ à³ ï ³ ë¿³ ÝÝÁ ËÇ ëï
³ ñ³ µ»ù³ ÝÁ ÝÁ ³ ÝÝ³ ïÝ¿Ù¹½Ñ³ Ù³ Ý ¨ ÝÝ³ ï áñ¿ áñ Ó»ñ Ù³ ë¿³ Ï¹óáõÃ³ ÛÁ ÇûÝµ³ ñ»ç³ í í»É
°ñ·³ ÝÇ µ¿Ý ³ÛÃ³ Ý ý¹ÇÇ½Ï¹³ Ý ³ Ïï Çï³óÃ³ Ý ÙÝ³ Ï¹ñ±³ Ï¹:

¸ ³ Ó»ñáõá³ÓáõÝ · Ù³ ëÝ³ Ïç÷¹ ³ ½³ ïï áõÃ³ ÛÝÁ, Ã³ ³' à:°Ã» ¹ áùù ã»ù·³ ÝÏ³ Ý³
à³ ï ³ ë¿³ Ý»Ïáù ¨Ç ÛÇÝ ¿ ñó¹ ï »Ñ¿³ óñ»ù ÇÝ, ¨ Ù»Ýù Ï³ÝóÝù Ù¿²»ë Ñ³ ñó»ÝÁ, Ï³ Ù
ÏÇÝ¹³ ï »ÝÁ Ñ³ ñó³ ½ñáôÁ: °Ã» ½³à÷»Ý³ ù ßñ³àÝ¿³ Ï¿Ñ³ ñó³ ½ñáôÁ á³ ÝÏ³ ó³ Í
Å³ Ù³ Ý³ Ï ³ »ùÇÝ, ¨ Ù»Ýù ÏÇÝ¹³ ï »Ýù ³ Ý: Ð³ï ³ ½áà áõÃ³ ÛÁ Ù³ ë¿³ Ï¹»ñõ
Ññ³ Å³ ñí»Ïáù³ ½áôÙ ¹³ ½³ ïï Ç»ñà³ ôù ï áìÇ:

Ù³ Ëà à»ë ßÝáñÑ³ Ï¹ ÉÙ: à³îÃ»ù Ñ³ ñó»ñ:
ò³ ÏÏ³ Ýáõ »ù ³ ñ¹ Û³ôù Ù³ ëÝ³ Ïó»É:

(»Ã» ³ ´ ³, ß³ ñáÝ¿³ Ï»É)
(»Ã» áã - ³ Ù»Ý ¹»àùóÙ ßÝáñÑ³ Ï¹ ÉáõÃáõó, óÇ »ëáõÃáõó)

? ? ? 3

üÆ¼Æî ² Î ² Ü ² Î î Æ àôÂÚàôÜ

²ë³ó»ùËÝ¹ñ»Ù¸Ã» áñù³ÝÅ³Ù³Ý³Ï »ù¸áõ»ÕÆçÇ¼çÏ³`à»ë ³Ïï Çí í»ñçÇÝ7ûñí³ ÁÝÃ³óùáõÙ Ê Ý³óÙ»Ù`à³ï³ëË³Ý»ùµáÉñÑ³ñó»ñÇÝ³ Ý·³Ù»Ã» ¸áõ㻵ùÑ³Ù»Ùñ³óÙ³Ò»½ ýÇ¼çÏ³`à»ë³Ïï ÇÇ³ ³ÝÓñ³í áñ³óÃ¼ãÙ Øï³Í»ù³ÙÛ·áñ³Ã³oÃ¼ãYY»ñÇÙ»çÇÝ áñ¸áõ Ï³ï³ ñáõù³ù¹ ßÆ³ï³ÝÛùÇí³ûñáÙ¹ï³ÝÝÂ¹ÙaÕ³Ù»áõÝùÏï³ ÝçÕÜ¼ãÝí³ Ûñ ï»Õ³÷áÆi»Ë¸ Î³ÜÒ»ñÑ Ý³ëÇ¨ Å³Ù ÚóÁ³Ù³Ý³Ï:

² ÜÄÙ Ûí³Í`»ù µáÉÙ³ñ³ÙÑ³Ý³Ïç³Ýç³Ý·³Ý¸Ýá³Õ½Ù¼ãÙï³ Ý·³Ý·³Ûù¸áõÙ¼Ù³Ù¼ãÙÝÍ³ÏáÙ»ñÑ Ý³ïá¹ÝÝ³ÙÝ³ Ý³Ùû»ïí³Í ³Ý¹Ý³ ³Ý¸Ý¹ÙÙ¼ãáõ Ý³ÕÙÙ¼ÙÝÍ³ÏáÙ»ñÑ¼ãÝÝ³Ûù¹ÝÃ Ý³áõ³ÝÑ¹ ³Õ½ÃÝÝ Ûù³ Ûåáù³ 10 ñáõ ¨ ³Ý»ÉÇÝ.

1. í»ñçÇÝ7ûñí³ ÁÝÃ³óùáõÙ³ ÝÇñÙ»ùÏï³ ³ ñ»Í³ Ýñç³ Ûùà³ ³ Ò»ÝÕÙ¼çÏ³ Ï³ Ý³ ÝÍ³ÏáÃáÕ Ûù»ñ

_____

úñ ß³µ³Ãí³ ÁÝÃ³óùáõÙ---------

88. â· Çï »Ù/ ¹Åí³ñ³Ý³ÝáÙ»Ùà³ï³ ³ ëË³ Ý»É
99. Ðñ³Å³ ñíáõ»Ùà³ ï³ ³ ëË³ Ý»É

º Â° ä² î ² êÊ² ÜÀ 0¾â¶Æ°Ø, Î ² Ø¸Ài ² ð² ÜàôØ°ØÏ² êÊ² Ü°È, ²Üò°øÐ²ðò 3-ÆÜ:

2 àñùùÝ±Ý³Ï³Ù³Ý³Ï »ù¸áõ¹ ³áõ ëáí áñ³Ù³Ý³ñÑ Í³ËëÍÏÏ³ Ýç³ Ûù³ ÝÍ³ÏÕ¼ãÝç³Ù Í³ Ûù³ ³ Ûå³ ÇçÕÝÑ¼ãÝ.

— —

Ä³ÙÙ»Ï ûñáõÙ-------

— — —

ðáÏ» ÙÏ ûñáõÙ--------

88. â· Çï »Ù/ ¹Åí³ñ³Ý³ÝáÙ»Ùà³ï³ ³ ëË³ Ý»É
99. Ðñ³Å³ ñíáõ»Ùà³ ï³ ³ ëË³ Ý»É

² ÜÄÙÙÙ³Í`»ù ÙÇçÇçÏ ç³Ûù³ ³ ÝÍ³ÏÕ¼ãÝÍ³ Ýç³Ûù³ ³ Ý ÝÍ³ÏáÃÍ³Ã¼ãÝÍÙ»ÍÝ, áñ¸ áõÙ³ï³ ³ ñ»É »ùí»ñçÇÝ7ûñí³ ÁÝÃ³óáùáõÙÙ ØÍÇçÇç ç³ Ûù³ ³ ÝÍ³Ï Õ¼ãÝÍ³ÝÝ³ Ûññ Ûû»Ý áñ³Ýñ³Ûù¹áõïí³Í ÇÏ³ Ûóëûõ÷áõ³ÝÙ Ý³Íñ³ Ý³³ Õ¹Ný³Í³ÕÝ³ÏÕ¼ãÝÍ³Ûñ³ Ï³ ³ Ï³Í Ò»Ã¼Ã¼ãÝÍÙ»ÇÝ¸Ã¼ãÙÝ³Ã¼ãáõ³ÎÃÙÍ áñÍ Ýâï»É»Í ÝÝ±Ï ¹Ý³ÍÇ¹ Ãí³Í Í»Ý Ûù ¹Ý³ Ï¸Ý±ñ»ñ¹ÙÙÙ³ÍÙµÆ³Ý»í³Í ¼¹Ý³ÏÏ»¹ÆÝ Ù³Ûù¹Ý³³ ·³ÃÙ±ùÇ³Ñ¹Ï»ñÑ³Ý³ ·áÆ³Ùû»É¹Ý»Ã¼ã»ùÝÃ¼ã áñ³ Ûñ³Ûù¸ÝÛù¹³ÕÏ¼ãÕÙ»ÍÝÍ³ÕÝÕÙ»ÍÇ»ù¹áÑ¹Ý¹Ù³ á¼¹ÝÍ»ÍÝ³ Ï³Í ³¹ÝÃ³ Ûù¹áõÝ¹ï³ ÝÑÇ³³õ³í»ÕÆ³ÏÍ»¹Æ»ñ Ý³Õ¼ãÝÍ³ÛùÇ¸ÝÝ Ûù³ Õ¼ãç³Ûù¹¹Ûçç³ Ûù³ ³ Û³ ÛÙ¹Ý¹Ý³ Ùáõ ¼åáÛ³ÏÍ»¹¹ Ûùàûïí³Í¹ Ûññ¸Ý³ Ûù³ 10 ñáõ¹ ÛûÓ³Ý¹Ý³ Ûûå¹Ûùûïí³ ÝÍ³ÏáÃÍ³Ã¼ãÝÍÙ»ÍÝÛù³ Ûù¹Ûù :

3 í»ñçÇÝ7ûñí³ ÁÝÃ³óùáõÙùÝÍ³Ýç³Ûù³ ³ Ý ÝÍ³Ï Ý³Ûù³ ³ ÝÍ³ÏÕ¼ãÝÍ³ Ýç³Ûù³ ³ Ý ÝÍ³Ïõ

____ úñ ß³µ³Ãí³ ÁÝÃ³óùáõÙ----------

88. â· Çï »Ù/ ¹Åí³ñ³Ý³ÝáÙ»Ùà³ï³ ³ ëË³ Ý»É
99. Ðñ³Å³ ñíáõ»Ùà³ ï³ ³ ëË³ Ý»É

º Â° ä² î ² êÊ² ÜÀ 0¾â¶Æ°Ø, Î ² Ø¸Ài ² ð² ÜàôØ°ØÏ² êÊ² Ü°È, ²Üò°øÐ²ðò 5-ÆÜ:

4. àñù³±Ý Å³Ù³Ý³Ï »ù ̧áõ ëáí áñ³ µ³ñ Í ³Ëëáô×ÛÇÇÝ ç³Ýù à³ Ñ³ ÝçáÕýÇ½Çï ³ Ï³ Ý
· áñÍáÔáõÃLãõÝÝ»ñÇí ñ̃ ³ Û ûñ»ñÇÝ:

‾ ‾Ä³ÙÙ»Ï ûññáõÙ------

‾ ‾ ‾ðáà» Ù»Ï ûññáõÙ------

88. â· Çï »Ù/¹Åí ³ ñ³ ÝáõÙ »Ùà³ï ³ ëË³ Ý»É
99. Ðñ̃Å³ ñíáõÙ»Ùà ³ ï ³ ëË³ Ý»É

² ÛÅÙÙ Ûû ³ Í »ù ³ ÙÝÅÅ Ù³ Ý³ÏÇ Ù³ ëÇ Ç, áñ ̧áõ Í ³Ëë Í» É»ù·ù ½/páë³ ÝÙÇÇCñ/äï ùáí ù³ ÕÅ»Åãõíñ̃ í»ñÇÇ 7ûññ̃ ³ ÁÝÃ³ óùáõÅÇ ²ÛÝÝ³ Ýñ̃ éáõÒ¿ ï³ ÝÅ, ³ ßÆ³ï ³ ÝùÇ í ³ ÛÃÇÍÙ ³ Û³ Ý³ÏÇÝ³ Û ÑÇ³ Ý³ Û. ëï Ç, Å³ Ù³ÝóÇ ³ ÙÝ³½»Åáõ Ý³³ ï ³ Ïáí Ù³ Ý³ÏÇí ÛÏÙ Å³ Ûõ á ½/páë³ ÝÙÁ:

5 ì »ñçÇÝ 7 ûññ̃ ³ ÁÝÃ³ óùáõÅÙù³ Ýó± ûñ »ù ̧áõ ½/páëËÝ»É/áï ùáí ù³ Ù»É: Ù»Ý³ùÇÃÁ 10 ñáô »Ý·ñç ÁÝÃ³ óùáõÅ

____ úñ̃ ß³ µ³ Ãí ³ ÁÝÃ³ óùáõÅ---------
88. â· Çï »Ù/¹Åí ³ ñ³ ÝáõÙ »Ùà³ï ³ ëË³ Ý»É
99. Ðñ̃Å³ ñíáõÙ»Ùà ³ ï ³ ëË³ Ý»É

º Â° ä² î ² ê Ê² ÜÀ 0¾â¶ÆÏ °Ø, Î ² Ø ̧ Äì ² ð² Ü àôØ° ° Øä² î ² ê Ê² Üº È, ² Üò° ø Ð² ðò 7-ÆÜ:

6 àñù³±Ý Å³Ù³Ý³Ï »ù ̧áõ Í ³Ëë»É/páëËÝ»Åáõ/áï ùáí ù³ Ù»Åãõíñ̃ ³ Û ûñ»ñÇÝ:

‾ ‾Ä³ÙÙ»Ï ûññáõÙ----

‾ ‾ ‾ðáà» Ù»Ï ûññáõÙ------
88. â· Çï »Ù/¹Åí³ ñ³ ÝáõÙ »Ùà³ï ³ ëË³ Ý»É
99. Ðñ̃Å³ñíáõÙ»Ùà ³ ï ³ ëË³ Ý»É

² ÛÅÙÙ ³ Í »ù ³ ÙÝÅÅ Ù³ Ý³ÏÇ Ù³ ëÇ ³ñ, áñ ̧áõ³ Ûó»ù ̧áõ Ï ³ óñ̃»ÅÛ³ Í Ù í »ñçÇÝ 7ûññ̃ ³ ÁÝÃ³ óùáõáõ Ù»ñ̃é»ù ̧áõ³ Û Å³ Ý³ÏÇ Å, áñ ̧áõ³ ûó»ù ̧áõ ³ ÁÝÃ³ ï ³ ÛÙÝçÇ ³ Ý³ÏÇ ï ³ Ý³, Å³ Ý³Û. ëï Ç Å³ ÙÇ² ÛÝÇ³ ñáÒ¿ Û»ñ̃é»Å³ ë»Ã× ÛÇÇ Å»ï »Ã, Ï³ ññ¹ ³ ÝÉ, Ýáô »ÉÍ Ï Ù³ é»Ï »É, Ï»éáññ̃ ³ óáÒñ̃ Û ÙÑÏÁ µ³ññ̃ Ï³ Ù»ñ̃ÇÏ³ ÝÁÝ»ñ̃ÅÇ Ûéï »Å³ »É³ ³ ÙÑÏ: Ù»ñ̃é»»ù ̃³ ³ Ûõ Å³ Ù³ Ý³ÏÇ Å, áñ ̧áõ³ Ûó»ù ̧áõ ³ áññ̃é³ éï ³ Í, µ³ ÙÑ³ñÝáÕÝÇ Ç×³ ÝáõÙ

7. ì »ñçÇÝ 7 ûññ̃ ³ ÁÝÃ³ óùáõÅ àñù³±Ý Å³ Ù³ Ý³Ï »ù ̧áõ³ Ûó Ï³ óñ̃»ÅÛ³ Í Ù³ »ÝÇÛ»ï ³ Í ³ ßÃ³ ï ³ ÛÙáõ³ÇÇÝ ûññ̃ ³ ÁÝÃ³ óùáõÅ

_ _ _ Ä³ Ù³ ßË³ ï ³ Ýù³ ÙÇÇÝ ûñÁ--------

‾ ‾ ‾ ðáà»' µ³ßË³ ï ³ Ýù³ ÙÇÇÝ ûñÁ--------

88. â· Çï »Ù/¹Åí ³ ñ³ ÝáõÙ »Ùà³ï ³ ëË³ Ý»É
99. Ðñ̃Å³ ñíáõÙ »Ùà ³ ï ³ ëË³ Ý»É

? ? ? 4

ÀÝ¹Ñ³ Ýáõñ Ñ³ ñó»ñ

8 Ê Ý ñáõÙ»ÙÝß»ù ³ ñ¹Ûáù¸ áõ ÉÇáí ÇÝÑ³ Ù³ Ó³ ÛÝ»ù Ñ³ Ù³ Ó³ ÛÝ»ù áã Ñ³ Ù³ Ó³ ÛÝ»ù áã¿É³ áã Ñ³ Ù³ Ó³ Ûã»ù Ã³ ³Ù»Ý· ÇÝ³ Ù³ Ó³ Ûã»ùÑ»¹ ¨Û³ É áÝ¹³ Ý¹Ñ»ñ ªü Ç½¹Ï³ Ï³ Ýí³ ñÅáõ ÃÉáõ ÝÝ»ñÀÇ³ éáÇ ³áÃ³ Ý³Ñ Ù³ ·³éÀÛÝ³ û· ñ¹Ï³ Ñ³ »Ý ÇÙ³ éáÇ áÃ³ÛÑ³ Ý³ Ñ³ ñ:

1. ÈÇái ÇÝÑ³ Ù³ Ó³ ÛÝ»Ù
2. Ð³ Ù³ Ó³ ÛÝ»Ù
3. à ã Ñ³ Ù³ Ó³ ÛÝ»Ù áã¿É³ áã
4. Ð³ Ù³ Ó³ Ûã»Ù
5. ²Ù»Ý· ÇÝÑ³ Ù³ Ó³ Ûã»Ù
88 â· ÇÝ»Ù¹Åí ³ ñ³ Ýáõ»Ùá ³ ï ³ ëË³ Ý»É
99. Ðñ³ Å³ ñí áõ»Ùá ³ ï ³ ëË³ Ý»É

9. ²ë³ Ó»ù, ËÝ¹ñ»Ù ³ ñ¹Ûáù¹áõ ¹áõñ Ñ³ ñ ñáõ»ñ, áñ½ï³ Õ³ éáõ»ñ µ³ í ³ ñ³ ñ ýÇ½Ç³ ï³ Ý ³ Ïï ÇáÃ³Û Ù:

1. ³ Ûá (³ Ýó»ñ 11 Ñ³ ñóÇÝ)
2. áã
88 â· Ç»ÝÙ¹Åí³ ñ³ ÝÝ³ Ý»Ùá ³ ï ³ ëË³ Ý»É
99. Ðñ³ Å³ ñí áõÙ» Ùá³ ï ³ ëË³ Ý»É

10. Ê Ý ñáõÙ»ù ³ ë³ ó»ù, áñÝÑÝ»Û áñ³ ÛÝ³ ÛáõÛ»ñ³Ñ³ Ó»ñ³ áñ áñ ³ Ñ ³ ýÇ½Ç³ ÛÃ³ÛÃÇ ³ Ï ³ï áñ áÃ³Ù³ Ý Ñ³ Ù³ ñ (³Ï³ ñ¹³ É ³ Û»ÉÙ³ïÝ³í)

1. Å³ Ù³ Ý³ Ï Ç ³ ³ Ë ³ ëáñÃÅïáÝ
2. ????????? ? ? ??????????
3. Ñ¹Ý³ ÛÏ áñ³ÛÃ³ÛÏ
4. ÷ áñ³ ³ ³ Ë ³ ësÃ³ÛÏ
5. ³ Ïï ÇÇ Ññ³ ³ ³ ï Ç³ ³ Ë ³ ësÃ³ÛÏ
6. ³ Ùáñ¹Ã ½³ óáõÙ
7. íÝ³ ë³ É»Éáõ ³ Ë
8. ¹Åí ³ ñ³ ÝÝ³ ³ ï ³ ëË³ Ý»É
9. ³ ³ Û·----------

11. ¸áõ Í Ë áñÝ»ù Ý»ñ³ ³áõÙ:

1. ²Ûá
2. àã (³ Ýó»ñ 13 Ñ³ ñóÇÝ)
88 â· ÇÝ»Ù¹Åí³ ñ³ ÝÝ³ Ý»Ùá³ ï ³ ëË³ Ý»É
99. Ðñ³ Å³ ñí áõÙ» Ùá³ ï ³ ëË³ Ý»É

12. ø³ ÝÇ±ëÇ ³ ñ»ÕÝ»ù áõ ÍË³Ù ûñ³ Ï³Ý ÁÛ³ Ýõ³Ûõ áõ³ õÙ

ê Ç³ ÝÛáõ --------

88 â· ÇÝ»Ù¹Åí³ ñ³ ³Ý»ùÙ³ ³ ï ³ ëË³ Ý»ù
99. Ðñ³ Å³ ñí áõÙ»Ùá³ ï ³ ³ ëË³ Ý»É

13. Ê Ý¹ñáõÙ»Ù³ë³ó»ù, Ç????? ???? ?? ??? ?? ??? ????????? **?** éáÕç³ Ï³Ý í Ç×³Ï Á ????? ?????:

1.????????

2.?? ? ?? ?

3.?? ?

4.?????

5.? ? ?

88 â· Çï»Ù/¹Åí³ñ³ÝáõÙ»Ùà³ï³ëË³Ý»É

99. Ðñ³Å³ñí áõÙ»Ùà³ï³³ëË³Ý»É

14. ÊÝ¹ñáõÙ»Ù³ë³ó»ù, Ç??? ? ? ???? ????? ?? ??? ?????? ??? ?????? ????? ????? ?????:

1. ?? ? ?? ????? ???? ?

2. ??????

3. ? ?????????

4. ???

5. ?? ? ???

88 â· Çï»Ù/¹Åí³ñ³ÝáõÙ»Ùà³ï³³ëË³Ý»É

99. Ðñ³Å³ñí áõÙ»Ùà³ï³³ëË³Ý»É

? ??? ÃáÕÊï í»ù ÇÝÝ? ? ? ? ? ? ???? ï³ É? ?? ??????? , Ï ñÃáõÃÛ³Ý? ? ? ? ¨³ ÛÊÝ:

? ? ? 5

Ä áÕáí ñ¹³ ñ³Ï³ ÝÑ³ñó»ñ

15. ÅÝ³ù³Ý¿ Ò»ñ ³ ñÇùÁ ----------

88 â· Çï»Ù/¹Åí³ñ³ÝáõÙ»Ùà³ï³ï ³ëË³Ý»É

99. Ðñ³Å³ñí áõÙ»Ùà³ ï³³ ëË³Ý»É

16. ÅÝ³ Ï ñÃáõÃÛ³Ü³õÝáÕáÝ»±ù

1. ¸àñáó (8 ï³ñÇ)
2. ¸àñáó (10 ï³ñÇ)
3. øáÉ»ç/áõëáõÙ³ ³ñ³ ÝÝ³ ³ñÇ »ëÝáÏÏ áõ
4. ÅÝëï Çï áõ Ñ³ Ù³ É³ ³ ñ³ Ý
5. Ð»ï ¹ ÇÏ³ëÏ³Ý³Ý
6. ²ÛÉ(ÜÞ ° ø)

_____

88. â·Çï»Ù/¹Åí³ñ³ÝáõÙ»Ùá³ï³ëË³Ý»É
99. Ðñ³Å³ñí áõÙ»Ùá³ï³ëË³Ý»É

17. ÆÝã³ßË³ï³Ýù»ùÏ³ï³ñ³ñáõÙ

1. ----------
0. ã»Ù³ßË³ï³áõÙ

88. â·Çï»Ù/¹Åí³ñ³ÝáõÙ»Ùá³ï³ï³ëË³Ý»É
99. Ðñ³Å³ñí áõÙ»Ùá³ï³ï³ëË³Ý»É

18. Üï³ñ··ù»ùÒ»ñ³ÍÏí³ñ³Íñåáõí³ÍÏ³åÝÓ³õÝÝÉ³Ý³ù³ÍÏ³õÝÝ³õ
1.ØÇ³�Ûñ³Ï (³Ùáõëë»³µ³³ÍÏ³õ)
2.²Ùáõë»Û³óñ³Ï
3.²ÙáõëÝ³Û³Í³áÍí³³Ï
4.²ÛñÇ
88. â·Çï»Ù/¹Åí³ñ³ÝáõÙ»Ùá³ï³ï³ëË³Ý»É
99. Ðñ³Å³ñíáõÙ»Ùá³ï³ï³ëË³Ý»É

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TABLE 1 Dependent Variable Used in the Model

Variable	Mode of Measurement	Scale
Physical activity level	**1=Health Enhancing Physical activity level** *Any of the following two criteria:* - Vigorous-intensity activity on at least 3 days and accumulating at least 1500 MET-minutes/ week **OR** - 7 or more days of any combination of walking, moderate-intensity or vigorous-intensity activities achieving a minimum of at least 3000 MET-minutes/week. **0= Inactive/Minimally active** - No activity is reported **OR** - Some activity is reported but not enough to meet category 1	**Dichotomous** 1=Health Enhancing Physical activity level 0=Inactive/Minimally active

TABLE 2 Independent Variables Used in the Model

Variable	Mode of Measurement	Scale
Gender		**Dichotomous** 1=Female, 0=Male
Age	*What was your age on your last birthday?*	**Continuous ----**
Educational level	*What is your level of education?*	**Ordinal** 1= Incomplete / Complete secondary 2= College (2 years) 3= Institute/ university/Postgraduate
Income level (proxi- monthly household expenditures)	*On average how much money does your household spend monthly?*	**Ordinal** 1= Below 25 000 drams 2= 25,001 to 50,000 drams 3= 50 001 to 200 000 drams 4= More than 200 001 drams
Occupational status	*Are you occupied?*	**Dichotomous** 1=Yes, 0=No
Marital status	*What is your marital status?*	**Nominal** 1= Single 2= Married 3= Divorced 4=Widowed
Knowledge of physical activity benefit	*Please indicate if you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree with the following statement:* *Physical activity is beneficial for health*	**Ordinal (*Likert scale*)** 1=Strongly agree 2= Agree 3= Neither agree nor disagree 4=Disagree 5= Strongly disagree
Satisfaction with the level of physical activity	*Please, tell me, do you think that you get as much physical activity as you should?*	**Dichotomous** 1=Yes, 0= No
Time spent sitting	During the last 7 days, how much time did you usually spend *sitting* on a **week day**?	**Continuous** Hours per weekday -----Minutes per weekday ----
Smoking status	*Do you currently smoke?*	**Dichotomous** 1=Yes, 0=No
Weight (subjective)	*Which of the following bets describes your weight today?*	**Ordinal** From 1= Too skinny To 5= Very fat
Health status (subjective)	*Which of the following best describes your health today?*	**Ordinal** From 1= Excellent To 5= Poor

TABLE 3 Distibution of 18-65 year-old People by Yerevan Quarter Communities (*Hamaynks*)

#	Quarter Community (*Hamaynk*)	# of people aged 18-65 year-old living in *Hamanynk*	# of people aged 18-65 year-old according to sample size
1	Malatia-Sebastia	93,041	12
2	Nor-Nork	90,848	12
3	Shengavit	87,646	11
4	Arabkir	84,330	10
5	Kentron	82,651	10
6	Erebuni	75,326	9
7	Achapnyak	67,517	8
8	Kanaker-Zeytun	49,567	6
9	Avan	31,403	5
10	Davidashen	26,026	4
11	Nork-Marash	7,078	2
12	Nubarashen	5,783	1
	Total	701,216	**90**

Source: The Results of 2001 Population Census of the Republic of Armenia 2001 (Figures of Yerevan City) *De Jure Population by Administartive Territorial Distribution, Age Table 2.1.1* (44)

TABLE 4 Prevalence of low-level physical activity in Russian population 2000-2002

Region	Males				Females			
	N	**n**	**%**	**% st**	**N**	**n**	**%**	**% st**
Moscow (telephone survey)	266	339	78,5	**74.8**	594	720	82,5	**74.8**
St. Petersburg (telephone survey)	536	704	73,9	75,7	572	754	74,8	75,4
Tver (telephone survey)	227	278	81,7	81,2	658	763	86,2	86,1
Tver (personal survey)	455	575	79,1	79,4	507	641	79,1	79,1
Vologda (personal survey)	412	530	77,7	78,0	506	666	76,0	76,2
Orenburg (personal survey)	566	696	81,3	81,4	492	677	72,7	72,8
V. Salda (personal survey)	485	662	73,3	73,1	582	730	79,7	80,2

N – Number of the persons having risk factor

n – Number of the persons responded to the question

% – Prevalence of risk factor

% st – Prevalence risk factor age adjusted

[2]Engaging in physical exercise for at least 20-30 minutes which makes person at least mildly short of breath or perspire in leisure time at less then 5 days a week

Retrieved from: http://www.cin di.ru/mr2-t7-eng.htm

TABLE 5   Timeframe of the Study (2005)

	March April	May June	July	August	September
Study design	*				
Questionnaire modification, translation, culturale adaptation. pilot testing	*	*			
Sample size calculation		*			
Data collection			*	*	
Data entry				*	
Data analysis				*	*
Report preparation				*	*

TABLE 6 Response to the Telephone Interview Survey

	Number	Percent
Persons Interviewed (Completed interviews)	72	80
Persons Interviewed (Partial interviews)	2	2
Persons Refused	11	12
Non-reached*	5	6
Total	90	100

* people of unknown eligibility who theoretically could be reached during the period of the survey

TABLE 7 Distribution of Sample Characteristics

Characteristics	Category	Percentage of sample representatives having characteristics
Physical activity level	Non-active	20%
	Minimum recommendation physical activity level	53%
	HEPA active	27%
Age	Mean age: 40 yrs-old Standard deviation: 13 years	
Gender	Male	31 %
	Female	69 %
Education	Secondary (incomplete/complete)	33 %
	College	24 %
	University / Postgraduate	43 %
Occupation	Unoccupied	60 %
	Occupied	40 %
Income level	< 25,000	2 %
	25,000-50,000	21 %
	50,001-200,000	68 %
	>200,001	9 %
Marital status	Single	16 %
	Married	78 %
	Divorced	3 %
	Widowed	3 %
Health status	Excellent	8 %
	Very good	19 %
	Good	49 %
	Fair	21 %
	Poor	3 %
Weight	Too skinny	8 %
	Normal	69 %
	Slightly overweight	13 %
	Overweight	10 %
Smoking status	Smoking	25 %
	No smoking	75 %