

A STUDY TO DETERMINE THE IMPACT OF A
NUTRITION COURSE ON DIETARY
PRACTICES AND NUTRITIONAL CONCERNS
AMONG MEDICAL COLLEGE STUDENTS IN
ARMENIA

Master of Public Health Thesis Project Utilizing Professional Publication Framework

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Abstract

Objectives: Attitudes towards healthy eating patterns have their roots in adolescence or young adulthood. The nutritional issues of Armenian adolescents and young adults have rarely been investigated. Even of greater importance is the need for assessment of medical students' dietary habits as indicators of appropriate alteration of dietary patterns due to nutritional knowledge. This study aimed to evaluate the impact of a nutritional course on dietary practices and nutritional concerns among medical college students in Yerevan marz of Armenia.

Methods: Study utilized nonequivalent control group design. Yerevan state medical university was chosen as a study setting. Sample size was calculated using a formula for two-group variance calculation. Classroom units were randomly chosen to yield the needed sample size. A self-administered questionnaire that measured dietary habits, nutritional concerns and socio-demographic characteristics was completed by 114 intervention and 114 comparison group students at pre- and post-tests. Post-measure was conducted six months after the pre-test. Independent samples *t* test and Chi-square analyses were used for between group analyses, and paired samples *t* test for within group analyses.

Results: There was significant decrease in consumption of chocolate, candy, cake and butter for participants in intervention group. Both intervention and comparison groups reported an increase in servings of fruit and vegetable groups defined by the Food Guide Pyramid. Significantly higher number of intervention students at post-test reported they have changed their dietary habits due to nutritional knowledge.

Conclusion: This study demonstrates that nutrition education appears to be predictive of dietary change. Absence of changes in nutritional concerns of participants suggests a need for further assessment of environmental and behavioral factors implicated in their dietary changes.

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1. Introduction

According to a study conducted by the United Nations World Food Program, a large number of households in Armenia have not been observed to eat a diverse diet and inadequate education has been identified as one of major causes of poor nutrition (1).

Several studies have shown the concurrent prevalence of chronic energy deficiency and obesity in developing countries (2). Moreover, the research shows increasing trends in average body mass index in developing world (3) and increase in the prevalence of obesity worldwide (4). It is reported that dietary factors are implicated in the etiology and the prevention of chronic diseases such as cardiovascular disease, diabetes and some forms of cancer (5).

Recently, there is an increasing concern among health professionals regarding the rise of diseases, such as diabetes, hypertension, coronary artery disease, and other functional disabilities due to harmful eating habits developed early in college years (5,6). Furthermore, the analyses of morbidity data regarding blood circulation diseases and neoplasms show increasing trends in developing Armenia (7). These data indicate that morbidity rate from blood circulation diseases has increased in Armenia from 17.5 in 1997 to 19.1 in 1998 and 19.9 in 2001 (Fig. 6.1). Furthermore, morbidity rate from neoplasms has increased from 4.9 in 1997 to 5.3 in 1998 (7) and 6.1 in 2001 (Fig 6.2).

It is reported that attitudes towards healthy eating patterns have their roots in adolescence or young adulthood (8) and the aspiration of the public to improve the quality of life through nutrition programs is obvious in recent times, the target being mostly youth (9). Moreover, to achieve full advantage of dietary recommendations it is suggested to start preventive nutrition in childhood and maintain it throughout adolescence and young adulthood (5).

In contrary, the nutritional issues of Armenian adolescents and young adults, who mainly acquire their knowledge while studying at higher educational institutions, have rarely been investigated. As a consequence insufficient resources and efforts have been allocated to the improvement of students' nutrition through enhanced awareness of healthy dietary habits.

1.1. Common dietary patterns of college/university students

College and university students comprise a group whose dietary patterns are of great concern to health professionals. These concerns are based on research that characterizes the diets of college students as “high in fat and low in fruits, vegetables, and variety” (10). Furthermore, several researchers have reported that college students frequently skip meals, consume large amounts of fast foods, avoid certain nutritious foods, and adopt various weight loss techniques (11).

Moreover, it is reported that college students make more food selection and food preparation decisions after moving away from home and adapting to a new environment.

1.2. Factors contributing to adoption of poor dietary practices

Several influential factors, including the availability of healthy food items, financial restrictions, insufficient food preparation skills, restricted food storage and cooking facilities, time management constraints, and nutritional misconceptions, contribute to the adoption of poor dietary practices after moving away from home (12).

College and university “food malls” are considered to provide a multitude of affordable and convenient fast-food variants to students (13). Furthermore, a rapid increase in local consumption of fast foods and snacks in Armenia has been registered recently, the services of this kind currently widely available in Yerevan marz of Armenia were the

universities and colleges are mainly located (14). These fast foods are often high in fat and offer high calorie choices contributing to an unbalanced diet (15).

Despite the concerns about the dietary practices and food choices of students, little research has been conducted to assess dietary habits and concerns of the student population in Armenia. Thus, it would be worthwhile to assess dietary practices and concerns of college and university students about healthful eating. Moreover, it is important to further identify specific areas that could be targeted with health education interventions.

1.3. Assessment of nutrition education interventions targeting students in Armenia

Currently, in Armenia predominantly medical students are targeted with nutritional education intervention across their educational curricula. Nutrition education programs for other types of universities/colleges are not developed and implemented (14).

Therefore, even of greater importance is the need for assessment of medical students' dietary habits and concerns as indicators of appropriate alteration of dietary patterns due to nutritional knowledge they obtain during medical course. Medical students who will be the future health workers need to be adequately targeted for health education programs related to an awareness of appropriate body weight, obesity control and healthy dietary habits.

Healthy practices adopted early in life will not only improve their health and physical fitness in the younger years, but would also enhance psychological readiness to participate in creation of environment of healthy behavior in their future practice of medical workers (8). However, no data is available on the assessment of dietary habits and concerns of medical students in Armenia. Moreover, the effectiveness of nutrition education programs in alteration of dietary habits of medical students is difficult to judge (14).

1.4. Predictors of dietary changes

It is reported that early exposure to nutritional messages, designed to promote food habits that are preventive of chronic illness later in life, are expected to lead young adults to adopt healthful food patterns (6). Classroom tests measure nutrition knowledge, but the practical application of nutrition knowledge is not as measurable. Ideally, increased nutrition knowledge allows students to apply information and to make healthful dietary alterations (6).

Several investigators have reported that increased knowledge about healthful food selection can lead to better food choices (12). Others have found that nutrition knowledge is not predictive of dietary practices (16). In this study, a pre-test/post-test procedure was used to examine changes in students' concerns and practices after a term of studying basic nutrition course offered at a medical university/college.

Assessment of nutrition concerns and practices of medical students can make the classes more effective in nutrition education (16). Furthermore, individual feedback and counseling can be provided to medical students on their request as a reinforcing factor to initiate healthful dietary alteration and as a benefit for their participation.

Determination of the dietary practices and nutritional concerns of medical students might help to approximate the nutrition concerns and practices of the general student population. Moreover, identification of what needs to be changed and adopted based on responses from medical students might aid in development of nutrition education for other types of colleges/universities.

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2. Methods and Materials

2.1. Research questions

The main aim of this study is to address the following questions:

- What are the dietary practices and nutritional concerns of medical students before the start of the nutrition course?
- How do dietary practices and nutritional concerns of medical students change six months after the start of the nutrition course?
- Are dietary practices and nutritional concerns of medical students completed the nutrition course different from those of medical students who did not complete the nutrition course?

2.2. Design and Setting

This study examines the impact of a nutritional course on dietary practices and nutritional concerns among medical students in medical university/college setting of Yerevan marz of Armenia, where state and private medical universities /colleges are located. Given the objectives of the study, also time, human and financial resources limitation this study utilized nonequivalent control group design according to the nomenclature of Campbell and Stanley.

This design (see Figure 2.1.) is appropriate to answer the research questions under the investigation, provides apparent validity and reliability and is quite feasible (17). In particular, though the study participants are not assigned randomly from a common medical student population to the intervention and control groups, but the addition of even a nonequivalent control group significantly reduces ambiguity of interpretations (17). Moreover, the effectiveness of the control group depends on the similarity of their recruitment, which can be well confirmed by the baseline scores on the pre-test (17).

Figure 2.1. Study Design

| | | | |
|--------------------------------------------------------------------|----------------|------------------|----------------|
| Intervention Group (third-year general medical students) | O ₁ | X | O ₂ |
| Comparison Group (second-year general medical students) | O ₁ | | O ₂ |
| Time Frame | March 2003 | March-April 2003 | September 2003 |

O₁- Assessment of dietary habits and nutritional concerns on pre-measure; X- Full basic nutritional course; O₂- Assessment of dietary habits and nutritional concerns on post-measure

Yerevan state medical university (YSMU) is the oldest medical university in Armenia (founded in year 1930) that provides basic nutrition course to its students. The standard program of medical curriculum of the YSMU includes prescribed general hygiene course that incorporates basic nutrition course. The prescribed basic nutrition course is taught to medical students involved in all medical departments- general medicine, pharmaceutical and dentistry. However, the **full** basic nutrition course is taught only to **general medicine** students. This prescribed course is taught during the second term of third year study at YSMU.

Therefore, involvement in general medicine department broad eligibility criteria for the participants was set for four reasons: (1) to assess the impact of full nutritional course that has longer duration; (2) to assess the alteration of dietary habits and nutritional concerns of students that are involved in creation of healthy environment during their future practice at a greater extent than other medical students; (3) in order to secure enough sample size and (4) to have greater similarity of participants across the medical curricula taught.

Based on the above-defined broad eligibility criteria, the inclusion criterion for the intervention group was defined: general medicine students studying during the second term of third year at YSMU. Overall, this department had 253 third-year general medicine students eligible for the intervention group.

Furthermore, the inclusion criteria was defined for the comparison group based on the broad eligibility criteria and for the reason to have greater similarity across the medical

curricula: general medicine students studying during the second term of second year at YSMU. Overall, this department had 257 second-year general medicine students eligible for the comparison group.

A pre-measure, which aimed to assess the dietary habits and nutritional concerns of medical students, was conducted in both groups before the beginning of the full basic nutrition course. The pre-measure was conducted during the first two weeks of March 2003. Six months after the start of the program (during second and third weeks of September) the post-measure to assess the dietary habits and nutritional concerns was conducted in both groups.

It is reported that one and half month duration of the full basic nutrition course and the post-intervention measurement after six-months is sufficient to observe and detect the possible alterations in dietary habits and nutritional concerns (16).

2.3. Intervention

The full basic nutrition course is part of prescribed general hygiene course taught to third-year general medicine students during the second term of their study. The duration of the course is one and a half month and it includes both general lectures taught in large groups of 120-130 students and practic classes taught in small groups of 10-15 students. The small group teaching involves micro lecture, discussion of readings assigned during the previous class/meeting and problem solving assignments.

Though the attendance of full basic nutrition course is required, but students are sometimes absent from both the lectures and small group meetings. However, the requirement for course completion is to take additional assignments for the omitted lecture and to answer the readings of the omitted small group classes. Overall, this requirement for

the course completion applied successfully ensuring dissemination of knowledge independent of the attendance rate.

2.4. Sample size

The number of participants using Fisher's Z transformation of correlation coefficients for

$\alpha = 0.05$ and $1-\beta = 0.80$ is approximately **112** in each group (18).

Furthermore, the sample size for one group was calculated using the following formula:

$$n = (Z_{\alpha/2} + Z_{\beta})^2 (\sigma_1^2 + \sigma_2^2) / d^2 = 114$$

Where $Z_{\alpha/2} = 1.96$ (is a cut-off for two sided test with 95 % CI),

$Z_{\beta} = 0.84$ (corresponding to 80% power),

$\sigma_1 = \sigma_2 = 2.7$ (estimates of population variances for total bread group servings),

and $d = 1$ (estimated detectable difference of 1 bread group serving in average outcome).

The values of σ where hypothesized based on published literature (6,19) and baseline unpublished data. The baseline data suggested that total bread group servings in diets of medical students do not meet the Food Guide Pyramid (FGP) Recommendations of six servings per day (20). Therefore, it was hypothesized to detect a difference of one bread group serving between intervention and comparison groups, each comprising 114 participants.

Since the method of data collection of the study required completion of a self-administered questionnaire during the small group class time, attendance rate and drop out rate on the post-measure were taken into consideration. Based on the hypothesized dropout rate of 15 % the necessary sample size in each group is calculated (16). Thus, in order to obtain the necessary sample size of 114 having the 85% response rate it is necessary to increase the sample size 1.18 times:

$$n = 114 * 1.18 = 135$$

The total sample size, which is necessary to select from medical students of YSMU includes 135 students from third-year general medicine department and 135 students from second-year general medicine department.

2.5. Sampling

All second and third-year general medicine students who were studying at YSMU and were eligible formed the sampling universe. The students in both intervention and comparison groups are clustered in classroom units in which their small group classes are held at YSMU. These classroom units include from 10 to 15 students. Classroom units have their distinguishing numbers (e.g. 201-221 are numbers of classroom units in comparison group- 2nd year general medicine students, 301-319 are numbers of classroom units in comparison group- 3rd year general medicine students). On average, classroom units of third-year students included more students than classroom units of second-year students.

The numbers of classroom units were obtained from the department of general medicine. The list of these numbers formed the sampling frame of the study. The simple random sampling was used to select the classroom units. Within intervention and comparison groups classroom units have been randomly chosen to yield approximately 135 students in each group. From a total of 19 classroom units in intervention group 12 have been chosen and 13 classroom units have been chosen from a total of 21 units in comparison group. The appropriate procedures were performed using the SPSS (statistical package for social sciences 11) computer program.

Finally, that yielded 141 students in intervention and 140 students in comparison groups (from the eligible 156 and 149, correspondingly) contacted on the pre-measure during

class time (Table 7.1.). Two subjects from those who were contacted (one from intervention and the other from comparison groups) refused to complete the questionnaire.

2.6. Instrument

The pre and post surveys were conducted using self-administered questionnaire (App. 8.1.). The questionnaire was completed in a classroom setting utilizing 30- 45 minutes of class time. The permission of deans of the general medicine departments was obtained for conducting the study (App. 8.2 and app. 8.3).

The questionnaire includes semi-quantitative food frequency questionnaire (FFQ) adapted from 1980 Nurses' Health Study Dietary Questionnaire (18) and Blocks FFQ (21). The validity and reliability of FFQs are described (18,20). The adapted FFQ has two main components: (a) a list of foods and (b) a set of frequency-of-use response categories. The list of foods contains food products more specific for Armenian population and is focused on groups of foods. Groups of food included several food items: dairy foods- 10 items, fruits- 14 items, vegetables- 13 items, meat group- 9 items, sweets- 6 items, baked goods and cereals- 5 items, miscellaneous- 9 items. Overall FFQ utilized in this survey included 66 food items.

Food groups and serving sizes are set to Food Guide Pyramid (FGP) definitions for each food category (20). Moreover, in order to quickly estimate usual serving sizes visual comparisons are included in the questionnaire (22).

It is reported that FFQ has several advantages over other techniques of gathering dietary information (21). These advantages include high response rate, low respondent burden, the technique is speedy and relatively inexpensive in assessing of usual food intake (21).

In addition to information about usual food consumption patterns the study questionnaire includes items on nutritional concerns of examinees (6, 16). Questions #11 and 12 assess the concerns of participants related to appropriate body weight and current dieting status. Questions # 13- #18 assess nutritional concerns of participants related to appropriate calorie, protein, carbohydrate, mineral and vitamin content of their diets.

To assess the consumption pattern of animal fat questions # 19-21 are included. The use of vitamin supplements is explored by question # 22. Questions # 23 and #24 assess self-rating of nutritional habits and knowledge of a participant with regards to expert recommendations and norms.

Evidence suggests that socioeconomic factors such as educational level and occupation (socioeconomic status) may be related to dietary patterns (6). Therefore, the questionnaire included questions on academic excellence- #10 and questions #25; #26 that are used to as indicators of socioeconomic status. Question #27 obtains information on food preparation skills, which is an enabling factor to initiate appropriate dietary change (23). Participants are also asked to give information on their recent (during the last four months) dietary change (Question #28), naming its reason (Question #29). Demographics related questions obtain information on age of participant- #1, self-reported body weight- #2 and height- #3, gender- #4, and residency status- #5; #6. The frequency of meal consumption is addressed by questions #7-#9.

Questions on dietary habits (including servings of 66 food items and questions #7-#9); and nutritional concerns (questions #11-#24; #28-#29) are measuring the dependent variable of the study. The independent variable of this study is the enrollment in the nutrition course. Questions on anthropometrical measures (Q#2-#3), gender status (Q#4), residence (Q#5-#6), academic excellence (Q#10), socioeconomic characteristics (Q#25-#26) and food preparation skills (Q#27) measure the intervening variables of the study.

The questionnaire was translated forward to Armenian, revised by an independent translator. Pilot testing of the questionnaires was conducted in the beginning of February 2003. Revisions were made to the layout and content, until the final version was developed (App. 8.4.)

2.7. Data entry and editing

The categorical data were coded before the entry: numerical codes were assigned to each of the answer categories. To verify that only valid ranges of numbers are used in coding data editing was performed by the procedure of range checking (24).

All study participants were asked to recheck the self-administered questionnaires, resulting in only 12 missing items on pre-measure (3 missing categorical data and 9 missing continuous data) and 8 missing items on post-measure (1 missing categorical data and 7 missing continuous data). For categorical data missing values were replaced with “don’t know” category and for the continuous data missing values were replaced with the mean score of all other participants for that variable (25).

Decision rules were set to distinguish between partially completed questionnaires (less than 25% of values are missing) and uncompleted (more than 25% of values are missing). Uncompleted questionnaires were obtained at the pre-measure only (one from intervention group and two from comparison group). Uncompleted questionnaires were excluded from the analysis, resulting in 139 complete responses for intervention and 137 complete responses for comparison groups at the pre-measure. The exclusion of uncompleted questionnaires could not introduce selection bias considering very small number of these cases.

2.8. Analytic Methods

Data were entered using the Statistical Package for the Social Sciences (SPSS, version 11.0, Chicago). All the frequency-of-use categories for the food items were converted to a daily basis with 6 and more times daily = 6; 4-6 times daily = 5; 2-3 times daily = 2.5; once in a day = 1; 5-6 times weekly = 0.8; 2-4 times weekly = 0.4; once a week 0.1; 1-3 times in a month = 0.07 and almost never = 0. These daily frequencies were multiplied by the FGP serving sizes to provide total number of servings in each food group (18).

At pre-measure, statistical significance of difference between groups for all study variables was assessed by independent sample *t* test for continuous variables, and *Chi-square* tests were performed for categorical variables (26). Servings of daily consumption of food items were used to derive total servings for groups of foods (milk, yogurt and cheese group; vegetable group; meat, poultry, fish, dry beans, eggs and nuts group; fruit group; bread, cereal, rice and pasta group; fats, oil and sweets group) according to FGP definitions (22). The serving sizes treated in a continuous scale became the dependant variables for each study participant. For within-group comparisons, statistical significance was determined by paired samples *t* test on the post-measure pre-measure difference (26).

Different categories of nutritional concerns (questions #11-18), fat and vitamin consumption patterns (questions #19-22), self-ratings of nutritional habits and knowledge (questions #23-24), recent changes in dietary habits and rankings of their reasons (questions #28-29), as well as frequencies of consumption of meals (questions #7-9) reflected the proportion of various categories and became dependent variable for each study participant.

All analyses are based on 114 participants in intervention and 114 participants in comparison groups, for whom complete data at pre and post-measures are available.

2.9. Human Subjects

The questionnaire posed some respondent burden, requiring on average 40 minutes to complete it. The questionnaire did not include questions on sensitive aspects of students' behavior (smoking, alcohol drinking, drug abuse, etc). The objectives of the study and the voluntary nature of participation were explained to each participant and an oral informed consent was established each time. Moreover, the consent form (App. 8.2 and app. 8.3.) was attached to the questionnaire when distributed to participants and was further detached and kept at the discretion of the participant. To create a motivated subject the scientific importance of the information was stated (18) and clear instructions with relevant examples were provided.

Furthermore, it was planned to provide individual feedback and counseling to medical students based on the observed dietary habits compared against FGP Recommendations. The individual feedback was given on the request of a participant as a benefit for their participation. Although the name of participant was required to further provide individual counseling, its confidentiality is assured. Five-digit ID numbers were utilized on the questionnaire (first three digits showing the number of the classroom unit and the second two digits showing the consecutive numbers of participants completed the questionnaire). The ID numbers appear on the questionnaire and its cover page, which in addition requires name of a participant on it. The cover pages are kept separately so that only the researcher and advisors from the university can have access to that information.

This study was approved by the departmental Institutional Review Board committee within the College of Health Sciences of the American University of Armenia on February 2003.

3. Results

3.1. Sample enrollment at pre-measure and coverage at post-measure

From 12 classroom units selected in intervention group (a total of 19 units) 140 participants were enrolled at the pre-measure. From 13 classroom units selected in comparison group (a total of 21 units) 139 participants were enrolled at the pre-measure. Thus on average 91 % of the eligible general medicine students participated at the pre-measure (Table 7.1). The response rate was similar in both groups. The reasons for non-response were: unable to contact/absent (8% on average) and refused to participate for whatever reason (1% on average). Of the completed 279 questionnaires three have been excluded (one from intervention and two from comparison group) because more than 25 percent of values were missing.

Of the 279 participants initially enrolled at the pre-measure 228 (82 %) participated at the post-measure six months later. Post-measure coverage rates by classroom units are presented in Table 7.1. On average coverage rates were similar in both groups. On the post-measure participants were difficult to contact, because dramatic shifts in composition of classroom units had occurred. These shifts are common when moving from one academic year to another. Moreover, non-response in post-measure was also attributable to usual absentee status. No single student who was involved in pre-measure refused to participate in post-test when contacted. Furthermore, students who were lost to follow up were not statistically different from the initial cohort on all variables.

3.2. Socio-demographic, anthropometrical characteristics of samples at pre-test

The demographic characteristics and indirect measures of socio-economic characteristics are presented in table 7.2. The mean age of participants was about 20, but groups varied by age significantly. About 34 percent of comparison group and 43 percent of

intervention group were male, but groups were homogeneous with respect to gender status. Furthermore, mean body weight of participants was about 61 kg, which did not vary between groups. Mean height of participants was 169 cm, and groups were similar in height. Body mass index ($BMI = kg/[m.sup.2]$) was calculated based on self-reported weight and height of participants. The mean BMI of participants was about $21.4 kg/m^2$, which did not vary significantly between groups ($P > 0.16$).

Furthermore, there was no difference between groups on following characteristics: residency in Yerevan, place of living, academic achievement, indirect measures of socioeconomic status (owning a car, having adequate money to buy food), as well as food preparation skills (Table 7.2). The similarities of data obtained on major intervening variables (demographic, socio-economic characteristics) demonstrate high comparability of intervention and comparison groups.

3.3. Impact of the nutritional course

The comparisons of between group differences were performed on nutritional concerns and dietary habits of participants at pre- and post measures. Moreover, the impact of the nutritional course was assessed by comparison of pre- and post measure within-group differences of food consumption patterns (including FGP servings of food groups).

3.3.1 Between-group comparisons

The between-group comparisons were performed using Chi-square analyses for categorical data and independent sample *t* test for continuous data. The analyses of nutritional concerns of participants (their ratings of adequateness of own diet regarding its caloric, protein, fat, carbohydrate, vitamin and mineral composition), and their rating of own body weight were independent of the group status in both pre- and post-measure (Table 7.3.). In both pre- and post-tests the groups did not vary on frequencies of having breakfast and

lunch. Moreover, the regimen of meal consumption (fixed and varying hours of having meal) was independent of group status in both measures (Table 7.3.). In both pre- and post-test the groups were also similar with respect to being on a special diet during this study period.

Furthermore, in both pre- and post-measures the groups were homogeneous with respect to their consumption of visible fat on the meat, types of fat consumed during baking and frying and vitamin consumption frequencies (Table 7.4.). Moreover, the ratings of participants of their own dietary habits and knowledge compared against expert expectations and frequencies of vitamin supplementation of their diets were independent of the group status in both pre- and post-measure. Groups were similar with respect to self-reported change in dietary habits of participants in both tests. However, statistically significant difference was recorded in post-test ratings of reasons for recent dietary change. Statistically significant more third-year general medicine students reported they have recently changed their dietary habits because they “learned something about nutrition”.

The between-group comparisons of servings of FGP food groups performed using independent sampled *t* test revealed that mean servings of milk, yogurt and cheese group did not differ significantly between intervention and comparison groups in both pre- and post-tests (Table 7.5). Furthermore, mean servings of vegetable group and meat group (meat, poultry, fish, dry beans, eggs and nuts group) did not vary significantly between intervention and comparison groups in both measures. Mean servings for fruit group, bread (bread, cereal and pasta group) and fats and sweets group (fats, oils and sweets group) did not differ significantly between intervention and comparison groups at pre-measure. However, statistical significant differences in mean servings for fruit group ($P < 0.033$), bread group ($P < 0.025$) and borderline significance for fats, oils and sweets group ($P < 0.093$) were observed between intervention and comparison groups at post-measure (Table 7.6.).

3.3.2 Within-group comparisons

For within-group comparisons, statistical significance was determined by paired samples *t* test on the post-measure pre-measure difference. The food group servings were analyzed using paired samples *t* test (Table 7.5).

The results showed statistical significant increase in consumption of vegetable group over six-month period in both intervention (3.5 servings) and comparison groups (4.2 servings). Moreover, statistical significant increase in consumption of fruit group over six-month period in both intervention (1.4 servings) and comparison groups (2.8 servings) was reported. Furthermore, borderline significance was recorded in increase of milk group servings in intervention (0.5 servings) and comparison groups (0.6 servings). A decrease in consumption of meat group was recorded, although that was not statistically significant. Weight and height, as well as BMI of participants did not vary significantly between pre and post measures ($P > 0.25$) in both study groups, indicating on the balance between energy intake and expenditures (15).

Statistically significant decrease in consumption of bread group was reported in comparison group (0.7 servings). Most important, statistical significant decrease was recorded in consumption of fats and sweets group in intervention group (2.5 servings). A decrease in consumption of fats and sweets group was recorded in comparison group (0.8 servings), though this was not statistically significant. Paired *t* tests were further performed on food items in this category to reveal items that constituted decrease in total fats and sweets group (Table 7.5).

The results showed statistical significant decrease in consumption of chocolates (0.9 servings), candy (0.4 servings), cake (0.3 servings) and butter (0.3 servings) in intervention group over six-month period. Furthermore, statistical significant decrease in consumption of sugar was reported in intervention (0.7 servings) and comparison (0.9 servings) groups. This

decrease in consumption of sugar in both groups correlated with the statistical significant decrease in consumption of tea ($P < 0.001$).

4. Discussion

4.1. Comment

The results of this study indicated that dietary habits of general medicine students have changed over the six-month period. The mean reported servings for the milk, fruit, vegetable and meat groups were fairly good compared to the FGP Recommendations. Mean reported intake of bread group servings, which are good sources of vitamin B (20) fell short of the FGP Recommendations in both study groups at pre- and post-tests.

Changes that were common for both the intervention and comparison groups were the increase in consumption of vegetable, fruit and milk groups. Research suggests that seasonal variations in terms of available food items may account for this change (27). Moreover, this study showed a significant decrease in consumption of sugar in both study groups. This decrease correlates with the decrease in tea consumption, which might be explained by a transition to hotter season.

Significant dietary alterations that were unique for the intervention group were: decrease in consumption of butter, chocolate, candy and cake over the six-month period. In fact, these changes might be one of the easier changes for the medical student population.

The obtained data show that study participants consume less bread group servings than what the FGP Recommendations are. Furthermore, the comparison group lowers its bread group servings over the six-month period. This might be explained by the fact that increased energy intake from added milk group, fruit and vegetable group servings should be compensated by decrease in consumption of bread group to finally balance energy expenditures (15). This assumption was approved by the results of the study that showed no

significant change in anthropometrical measures over the six- month period. However, this compensation is not healthful for an individual, since the bread group servings fell short of the FGP Recommendations early at the pre-measure. In contrary, compensatory decrease in energy intake is constituted by more healthful alterations (decrease in consumption of sugars and fats) in intervention group.

The nutritional concerns of participants did not show significant change over the study period. Moreover, the absence of changes in six months may indicate that the intervention students found their diets to be the similar to what they rated in the pre-measure. However, the actual improvements in their diets seemed not perceived to be beneficial. On the post-measure significantly more intervention students indicated they have changed their dietary habits, because they “learned something about nutrition”. This finding correlates well with the dietary improvements in intervention group. Absence of changes in nutritional concerns of medical students suggests a need to conduct a study that will explore environmental and behavioral factors influencing dietary changes.

4.2. Limitations of the study

This study has several limitations. The study participants were chosen from only one medical university, which might not be representative of the whole medical student population. Moreover, only general medicine students formed the sampling frame, which might not represent the medical student population at YSMU. Given time, financial and human resources limitations this study utilized non-equivalent control group design, which has several threats to internal and external validity (17). In particular, pre-and post-test difference in intervention group might be explained by interaction of specific events occurring between pre and post-tests, processes within the study participants taking place naturally (17). There remains the possibility that the observed dietary changes hold only for

that unique population from which the intervention and comparison groups were selected and specific selection differences distinguishing those groups. However, this possibility is less likely as we had no difficulty in getting participants for our study and non-response rates were within the range of accepted values (17).

Furthermore, it is quite likely that susceptibility of students to persuasion and their dietary practices are changed by the pre-test (17). The pre-test might have sensitized the students to the problem and it might have increased the educational effect of the nutritional course through a focusing of attention (17). This study could not use regular classroom examinations as pre-tests, because information was collected using unusual test procedures. Therefore, undesirable interaction of testing and intervention might have occurred in this study (17).

It is reported that one of the major sources of unrepresentativeness is the overt artificiality of the study setting (17). However, the intervention was the usual classroom event occurring in the curriculum calendar of the students and the questionnaires were administered during usual classes, which diminished the possibility of reactive arrangements (17). The nutrition course has been taught by means of general lectures and small group classes. Therefore, the results of the study should be cautiously interpreted considering the possibility of bias resulting from different exposure to knowledge in small group classes.

The choice of an appropriate control from medical students though desired to provide comparable controls in terms of common basic disciplines, but their access to medical literature may account for the large part of observed differences in pre and post-tests in comparison group. However, the effectiveness of the control group and its similarity to intervention group was well approved by the baseline characteristics.

Due to scarce financial, time and human resources, it was not possible to obtain a bigger sample size, resulting in non-significant associations. Issues of validity and reliability

of instruments are important concerns in any study. Though the adapted questionnaire was pilot tested but its initial validity and reliability are not assured. Moreover, only forward translation was performed so the equivalences to the original English may not have been met.

Losses to follow-up are an important source of bias in this types of studies, since those dropped out may differ in their nutritional habits and concerns from the post-test population. The coverage rate on post-test is within the range of accepted values. Moreover, intervention and control group coverage rates were well comparable, which means that comparison of groups was not influenced by losses to follow up.

4.3. Recommendations

Based on the results of this study I would like to make several recommendations. Because effective nutrition education involves educators as change agents (16):

1. It is recommended that the hygiene department of medical university plans appropriate healthful food choices in student cafeterias based on the revealed drawbacks.
2. It is recommended that the hygiene department of medical university applies changes to the nutritional curriculum of medical school emphasizing topics in the curricula that need to be addressed to make it more effective.
3. It is recommended that the Ministry of Health determines and implements educational programs that might approximate general student nutritional concerns and dietary behaviors.
4. It is recommended to conduct more research in order to observe environmental and behavioral factors that will further enhance health promotion efforts.
5. It is recommended to conduct an additional post-test at a later date (one year after the completion of the nutritional course) in order to observe sustainability of the observed dietary changes, and to reveal possible dietary changes that occur at later periods.

6. It is recommended that the donor agencies and NGOs coordinate their efforts to implement a countrywide educational campaign with broad involvement of mass media that targets mostly the youth and aims to improve their knowledge about the preventive role of diet.
7. It is recommended that the Ministry of Health develops an ongoing nutrition surveillance system that collects and interprets data to determine the effects of intervention strategies.
8. It is recommended that medical university extends hours of nutrition education providing classes in graduate studies to enhance psychological readiness of physicians in creation of healthy environment.

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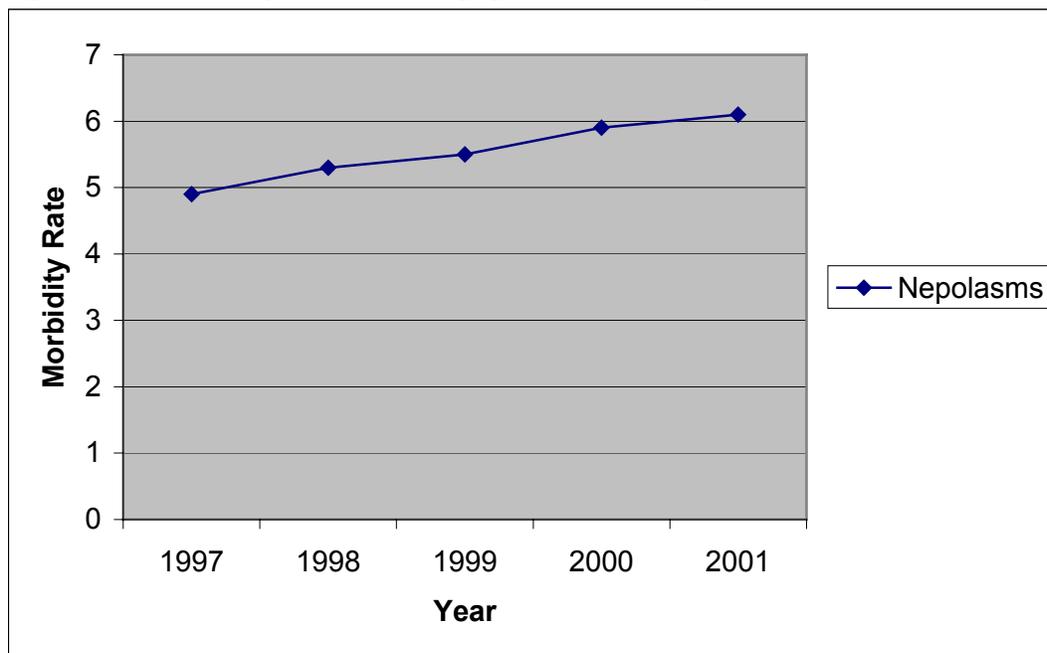
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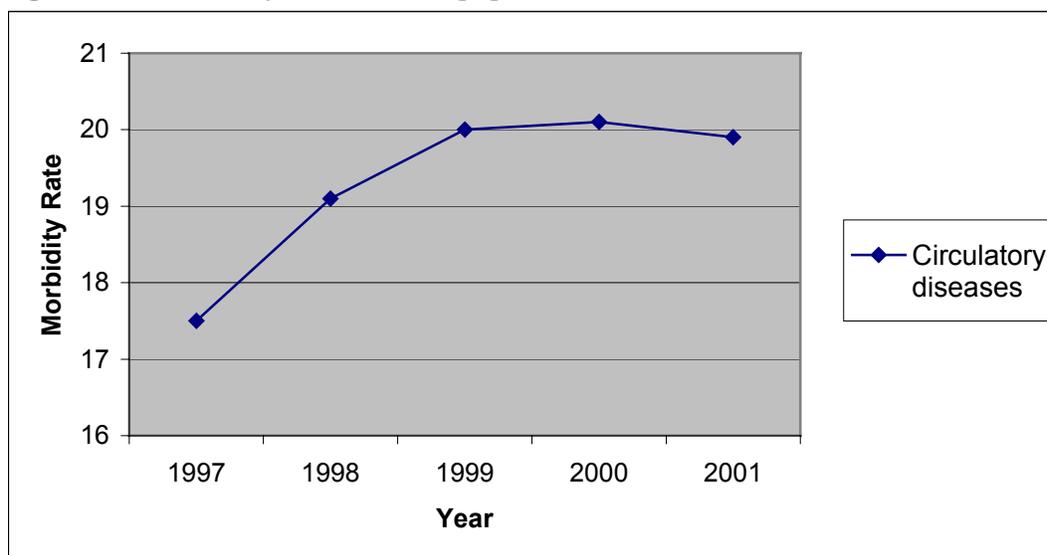
6. Figures

Figure 6.1. Morbidity of Armenian population from neplasms, 1997-2001



Data source: Statistical Yearbook of Armenia, National Statistical Service of the Republic of Armenia, 2002 [Serial online]. Available from URL: http://www.armstat.am/StatData/2002/Public_Health.pdf

Figure 6.2. Morbidity of Armenian population from blood circulation diseases, 1997-2001



Data source: Statistical Yearbook of Armenia, National Statistical Service of the Republic of Armenia, 2002 [Serial online]. Available from URL: http://www.armstat.am/StatData/2002/Public_Health.pdf

7. Tables

Table 7.1. Classroom units and number of general medicine students sampled

| Number of a classroom unit | Number of eligible students % (n) | Sample size at pre-measure % (n) | Response rate at pre-measure % | Sample size at post-measure % (n) | Post-measure coverage rate % |
|-----------------------------------|------------------------------------------|-----------------------------------------|---------------------------------------|------------------------------------------|-------------------------------------|
| # 201 | 7% (11) | 6% (9) | 82% | 6% (7) | 78% |
| # 202 | 8% (12) | 9% (12) | 100% | 10% (11) | 92% |
| # 203 | 7% (11) | 8% (11) | 100% | 6% (7) | 64% |
| # 205 | 9% (13) | 9% (13) | 100% | 8% (9) | 69% |
| # 209 | 9% (13) | 9% (13) | 100% | 10% (11) | 85% |
| # 212 | 7% (11) | 6% (9) | 82% | 6% (7) | 78% |
| # 213 | 8% (12) | 8% (11) | 92% | 6% (7) | 64% |
| # 214 | 7% (11) | 6% (9) | 82% | 5% (6) | 67% |
| # 215 | 7% (11) | 7% (10) | 91% | 9% (10) | 100% |
| # 216 | 7% (11) | 7% (10) | 91% | 9% (10) | 100% |
| # 217 | 7% (11) | 8% (11) | 100% | 10% (11) | 100% |
| # 218 | 7% (11) | 7% (10) | 91% | 6% (7) | 70% |
| # 219 | 7% (11) | 8% (11) | 100% | 10% (11) | 100% |
| Comparison group | 100% (149) | 100% (139) | 93% | 100% (114) | 82% |
| # 301 | 8% (13) | 9% (13) | 100% | 10% (11) | 85% |
| # 302 | 8% (13) | 9% (13) | 100% | 10% (11) | 85% |
| # 303 | 10% (15) | 11% (15) | 100% | 12% (14) | 93% |
| # 304 | 8% (13) | 9% (13) | 100% | 11% (12) | 92% |
| # 305 | 8% (13) | 8% (11) | 85% | 8% (9) | 82% |
| # 306 | 7% (11) | 4% (5) | 45% | 4% (4) | 80% |
| # 307 | 8% (13) | 9% (13) | 100% | 8% (9) | 69% |
| # 309 | 9% (14) | 10% (14) | 100% | 9% (10) | 71% |
| # 310 | 8% (12) | 6% (9) | 75% | 7% (8) | 89% |
| # 313 | 9% (14) | 10% (14) | 100% | 10% (11) | 79% |
| # 314 | 8% (13) | 9% (12) | 92% | 7% (8) | 67% |
| # 317 | 8% (12) | 6% (8) | 67% | 6% (7) | 88% |
| Intervention group | 100% (156) | 100% (140) | 90% | 100% (114) | 81% |
| Total | 100% (305) | 100% (279) | 91% | 100% (228) | 82% |

Table 7.2. Socio-demographic, anthropometrical characteristics, dieting and food preparation habits of study participants by groups at the pre-measure

| Variable | Comparison group % (n) | Intervention Group % (n) |
|----------------------------------------|-----------------------------------|-------------------------------------|
| Age, mean (n)* | 19.51 (114) | 20.37 (114) |
| Body weight, kg (n) | 60.4 (114) | 62.5 (114) |
| Body height, cm (n) | 168.6 (114) | 169.3 (114) |
| BMI, kg/m ² (n) | 21.1 (114) | 21.6 (114) |
| Gender: | | |
| Male | 34.2% (39) | 43% (49) |
| Female | 65.8% (75) | 57% (65) |
| City of permanent living: | | |
| Yerevan | 50.9% (58) | 55.3% (63) |
| Other | 49.1% (56) | 44.7% (51) |
| Place of living: | | |
| Dormitory | 6.1% (7) | 0.9% (1) |
| Home (rented) | 17.5% (20) | 15.8% (18) |
| Home | 75.4% (86) | 79.8% (91) |
| Other | 0.9% (1) | 3.5% (4) |
| Overall university performance: | | |
| Excellent | 15.8% (18) | 22.8% (26) |
| Good | 69.3% (79) | 62.3% (71) |
| Poor | 14.9% (17) | 14.9% (17) |
| Family owns a car or uses it regularly | 71.1% (81) | 75.4% (86) |
| Have adequate money to buy food | 86% (98) | 92.1% (105) |
| Food preparation on their own: | | |
| Always | 13.2% (15) | 5.3% (6) |
| Usually | 19.3% (22) | 17.5% (20) |
| Sometimes | 32.5% (37) | 35.1% (40) |
| Rarely | 23.7% (27) | 26.3% (30) |
| Never | 11.4% (13) | 15.8% (18) |

* $P < 0.001$ at pre-measure between intervention and control groups

Table 7.3. Nutritional concerns and dietary habits by the sample groups at pre-test and post-test

| Variable | Comparison Group % (n) | | Intervention Group % (n) | |
|-----------------------------------------------|---------------------------|----------------------|-----------------------------|----------------------|
| | Pre-test N = 114 | Post-test N = 114 | Pre-test N = 114 | Post-test N = 114 |
| Usually eating meals at: | | | | |
| Fixed hours | 43% (49) | 44.7% (51) | 51.8% (59) | 43.9% (50) |
| Variable hours | 57% (65) | 55.3% (63) | 48.2% (55) | 56.1% (64) |
| Frequency of eating breakfast: | | | | |
| Everyday | 34.2% (39) | 31.6% (36) | 35.1% (40) | 42.1% (48) |
| 4-6 times a week | 7.9% (9) | 14% (16) | 8.8% (10) | 9.6% (11) |
| 1-3 times a week | 17.5% (20) | 23.7% (27) | 24.6% (28) | 20.2% (23) |
| Almost never | 40.4% (46) | 30.7% (35) | 31.6% (36) | 28.1% (32) |
| Frequency of eating lunch: | | | | |
| Everyday | 36% (41) | 37.7% (43) | 29.8% (34) | 43% (49) |
| 4-6 times a week | 27.2% (31) | 25.4% (29) | 17.5% (20) | 21.1% (24) |
| 1-3 times a week | 24.6% (28) | 18.4% (21) | 30.7% (35) | 24.6% (28) |
| Almost never | 12.3% (14) | 18.4% (21) | 21.9% (25) | 11.4% (13) |
| Perception of own body weight being: | | | | |
| High | 22.8% (26) | 21.1% (24) | 23.7% (27) | 21.1% (24) |
| Appropriate | 59.6% (68) | 61.4% (70) | 63.2% (72) | 64% (73) |
| Low | 17.5% (20) | 17.5% (20) | 13.2% (15) | 14.9% (17) |
| Use of special diet at the time of this study | 8.8% (10) | 4.4% (5) | 7.9% (9) | 7.9% (9) |
| My own diet provides enough calories | 47.4% (54) | 46.5% (53) | 54.4% (62) | 51.8% (59) |
| Fats in own diet are: | | | | |
| Low | 11.4% (13) | 17.5% (20) | 9.6% (11) | 14% (16) |
| Normal | 64.9% (74) | 59.6% (68) | 61.4% (70) | 56.1% (64) |
| High | 7% (8) | 6.1% (7) | 7.9% (9) | 9.6% (11) |
| Proteins in own diet are: | | | | |
| Low | 6.1% (7) | 9.6% (11) | 5.3% (6) | 7.9% (9) |
| Normal | 63.2% (72) | 60.5% (69) | 69.3% (79) | 65.8% (75) |
| High | 11.4% (13) | 7% (8) | 4.4% (5) | 7.9% (9) |
| Carbohydrates in own diet are: | | | | |
| Low | 5.3% (6) | 6.1% (7) | 1.8% (2) | 6.1% (7) |
| Normal | 57% (65) | 57.9% (66) | 55.3% (63) | 50.9% (58) |
| High | 18.4% (21) | 16.7% (19) | 21.1% (24) | 28.9% (33) |
| Vitamins in own diet are: | | | | |
| Low | 24.6% (28) | 21.9% (25) | 13.2% (15) | 18.4% (21) |
| Normal | 50% (57) | 50.9% (58) | 54.4% (62) | 53.5% (61) |
| High | 6.1% (7) | 8.8% (10) | 7.9% (9) | 7.9% (9) |
| Minerals in own diet are: | | | | |
| Low | 7.9% (9) | 6.1% (7) | 5.3% (6) | 7.9% (9) |
| Normal | 50% (57) | 50% (57) | 47.4% (54) | 48.2% (55) |
| High | 4.4% (5) | 3.5% (4) | 4.4% (5) | 5.3% (6) |

Table 7.4. Consumption of fat and vitamin supplements, rating of nutritional knowledge and habits, perceived changes in dietary habits and their reason by sample groups

| Variable | Comparison Group % (n) | | Intervention Group % (n) | |
|------------------------------------------------------------------------------------|---------------------------|----------------------|-----------------------------|----------------------|
| | Pre-test N = 114 | Post-test N = 114 | Pre-test N = 114 | Post-test N = 114 |
| Visible fat on meat eaten by participant constitutes: | | | | |
| Most of the fat | 9.6% (11) | 7.9% (9) | 9.6% (11) | 11.4% (13) |
| Part of the fat | 14% (16) | 15.8% (18) | 19.3% (22) | 20.2% (23) |
| As little as possible | 76.3% (87) | 76.3% (87) | 71.1% (81) | 68.4% (78) |
| Type of fat usually used for baking: | | | | |
| Butter or lard | 54.4% (62) | 42.1% (48) | 56.1% (64) | 50.9% (58) |
| Vegetable fat | 45.6% (52) | 57.9% (66) | 43% (49) | 49.1% (61) |
| Margarin | 0% (0) | 0% (0) | 0.9% (1) | 0% (0) |
| Type of fat usually used for frying: | | | | |
| Butter or lard | 27.2% (31) | 24.6% (28) | 34.2% (39) | 17.5% (20) |
| Vegetable fat | 72.8% (83) | 75.4% (86) | 64.9% (74) | 82.5% (94) |
| Margarin | 0% (0) | 0% (0) | 0.9% (1) | 0% (0) |
| Consumption of vitamin supplements: | | | | |
| Always | 2.6% (3) | 0.9% (1) | 0.9% (1) | 0% (0) |
| Usually | 2.6% (3) | 3.5% (4) | 6.1% (7) | 5.3% (6) |
| Sometimes | 21.9% (25) | 18.4% (21) | 14.9% (17) | 16.7% (19) |
| Rarely | 20.2% (23) | 20.2% (23) | 21.9% (25) | 20.2% (23) |
| Never | 52.6% (60) | 57% (65) | 56.1% (64) | 57.9% (66) |
| Rating of nutritional habits compared with recommendations of experts: | | | | |
| Poor | 16.7% (19) | 14.9% (17) | 19.3% (22) | 10.5% (12) |
| Fair | 31.6% (36) | 28.9% (33) | 38.6% (44) | 36.8% (42) |
| Good | 21.9% (25) | 21.9% (25) | 14% (16) | 25.4% (27) |
| Excellent | 0% (0) | 2.6% (3) | 0% (0) | 0.9% (1) |
| Rating of nutritional knowledge compared with what should be known by a physician: | | | | |
| Poor | 13.2% (15) | 10.5% (12) | 8.8% (10) | 9.6% (11) |
| Fair | 43.9% (50) | 31.6% (36) | 46.5% (53) | 31.6% (36) |
| Good | 21.9% (25) | 27.2% (31) | 26.3% (30) | 36% (41) |
| Excellent | 1.8% (2) | 2.6% (3) | 0.9% (1) | 3.5% (4) |
| Have changed dietary habits during last 4 months | 27.2% (31) | 21.1% (24) | 18.4% (21) | 24.6% (28) |
| The reason for recent change in dietary habits: | | | | |
| Didn't liked the way that looked | 10.5% (12) | 11.4% (13) | 8.8% (10) | 5.3% (6) |
| Learned something about nutrition* | 8.8% (10) | 7% (8) | 7.9% (9) | 17.5% (20) |
| Other | 7.9% (9) | 2.6% (3) | 1.8% (2) | 1.8% (2) |

* $P < 0.05$ at post-measure between intervention and control groups

Table 7.5. Consumption of food groups and food items by sample groups

| Food groups and food items | Comparison Group FGP Servings Mean ± SD | | Intervention Group FGP Servings Mean ± SD | |
|-----------------------------------------------------|-----------------------------------------------|----------------------|-------------------------------------------------|----------------------|
| | Pre-test N = 114 | Post-test N = 114 | Pre-test N = 114 | Post-test N = 114 |
| Milk, yogurt and cheese group* | 3.82 ± 2.9 | 4.42 ± 2.9 | 3.56 ± 2.6 | 4.08 ± 2.7 |
| Vegetable group † | 3.87 ± 4.1 | 8.09 ± 5.8 | 3.71 ± 3.6 | 7.22 ± 5.0 |
| Fruit group ‡ | 8.08 ± 7.7 | 10.87 ± 9.6 | 7.22 ± 7.1 | 8.58 ± 5.9 |
| Meat, poultry, fish, dry beans, eggs and nuts group | 3.99 ± 3.7 | 3.80 ± 3.3 | 3.96 ± 3.9 | 3.32 ± 3.0 |
| Bread, cereal, rice and pasta group § | 4.61 ± 2.9 | 3.89 ± 2.9 | 4.92 ± 2.8 | 4.8 ± 3.1 |
| Fats, oils and sweets group | 7.91 ± 6.1 | 7.10 ± 5.9 | 8.46 ± 5.4 | 5.97 ± 3.9 |
| Butter ¶ | 0.84 ± 1.3 | 0.67 ± 1.0 | 0.89 ± 1.3 | 0.63 ± 0.9 |
| Chocolate ¶ | 1.89 ± 2.0 | 1.69 ± 1.9 | 1.99 ± 2.0 | 1.09 ± 1.4 |
| Candy ¶ | 1.11 ± 1.7 | 1.32 ± 1.8 | 1.07 ± 1.5 | 0.72 ± 1.0 |
| Cake ¶ | 0.87 ± 1.2 | 0.74 ± 1.2 | 0.75 ± 1.2 | 0.44 ± 0.5 |
| Sugar † | 2.70 ± 2.1 | 1.79 ± 1.8 | 3.02 ± 2.3 | 2.32 ± 2.1 |

* Borderline statistical significance in both groups between pre-test and post-test

† P< 0.0001 in both groups between pre-test and post-test

‡ P< 0.05 in both groups between pre-test and post-test

§ P< 0.05 in comparison group between pre-test and post-test

|| P< 0.0001 in intervention group between pre-test and post-test

¶ P< 0.05 in intervention group between pre-test and post-test

Table 7.6. Consumption of food groups at between-group comparisons at pre- and post-test

| Food groups and food items | Mean difference in servings | | Significance (2tailed) | |
|-----------------------------------------------------|-----------------------------|----------------------|------------------------|----------------------|
| | Pre-test N = 114 | Post-test N = 114 | Pre-test N = 114 | Post-test N = 114 |
| Milk, yogurt and cheese group | (0.26) | (0.33) | (0.47) | (0.38) |
| Vegetable group | (0.17) | (0.86) | (0.74) | (0.22) |
| Fruit group * | (0.87) | (2.29) | (0.38) | (0.03) |
| Meat, poultry, fish, dry beans, eggs and nuts group | (0.02) | (0.48) | (0.96) | (0.26) |
| Bread, cereal, rice and pasta group * | (-0.31) | (-0.92) | (0.42) | (0.02) |
| Fats, oils and sweets group † | (-0.54) | (1.12) | (0.48) | (0.09) |

* P<0.05 at post-test

† borderline statistical significance at post-test

8. Appendices

ID# _ _ _ _ _

*American University of Armenia
AUA College of Health Sciences
Dietary Practices Questionnaire*

This questionnaire was developed for use as part of a student's research project at the AUA. Its' purpose is to identify the usual foods consumed by several groups of students attending the university.

Please fill in the blanks.

Your Name _____

Surname _____

Middle Name _____

Today's date (day/month/year) _____

Your Group Number _____

Please fill in the blanks or check the answers, which best describe your usual practices.

ID# _____

- 1). Date of birth (day/month/year) _____
- 2). Body weight _____ kg, 3). Height _____ cm.,
- 4). Gender-- /Male/, /Female/
- 5). What is the city of your permanent living-- /Yerevan/, /Other/, Specify _____
- 6). Do you live at--- /Dormitory/, /Home (rented)/, /Home/, /Other/, Specify _____
- 7). Do you usually eat your meals at – /Fixed hours/, /Variable hours/
- 8). Do you usually eat breakfast --- /every day/, /4-6 times a week/, /1-3 times a week/, /almost never/
- 9). Do you usually eat lunch --- /every day/, /4-6 times a week/, /1-3 times a week/, /almost never/

Indication. 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

| FOOD AND AMOUNTS | Average use during the last month | | | | | | | | |
|--------------------------------------------------|-----------------------------------|-------------------|-------------------|-----------------|--------------------|--------------------|------------------|---------------------|-----------------|
| | 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 |
| Dairy Foods | | | | | | | | | |
| Skim or low fat milk (1 cup) | | | | | | | | | |
| Whole milk (1 cup) | | | | | | | | | |
| Matsuni (1 cup) | | | | | | | | | |
| Sour Cream (1/2 cup) | | | | | | | | | |
| Yogurt (1cup) | | | | | | | | | |
| Ice Cream (1/2 cup) | | | | | | | | | |
| Cottage Cheese (1/2 cup) | | | | | | | | | |
| Hard cheese, plain or as part of a dish (28 gr.) | | | | | | | | | |
| Margarine (2tsp) | | | | | | | | | |
| Butter (2tsp) | | | | | | | | | |
| Fruits | | | | | | | | | |
| Apples (1) | | | | | | | | | |
| Pears (1) | | | | | | | | | |
| Oranges (1) | | | | | | | | | |
| Grapefruit (1/2) | | | | | | | | | |
| Orange or grapefruit juice (3/4 cup) | | | | | | | | | |
| Peaches, apricots or plums (1) | | | | | | | | | |
| Bananas (1) | | | | | | | | | |
| Watermelon (slice) | | | | | | | | | |
| Strawberries (2/3 cup) | | | | | | | | | |
| Lemon (1/2) | | | | | | | | | |

| FOOD AND AMOUNTS | Average use during the last month | | | | | | | | |
|---------------------------------------------------------|------------------------------------------|----------------------------|----------------------------|--------------------------|-----------------------------|-----------------------------|---------------------------|------------------------------|-------------------------|
| | 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 |
| Tangerine (1) | | | | | | | | | |
| Red-pulp (1) | | | | | | | | | |
| Berries (1/2 cup) | | | | | | | | | |
| Other fruits(fresh, or 1/2 cup canned or 1/4 cup dried) | | | | | | | | | |
| Vegetables | | | | | | | | | |
| Cabbage, cauliflower (1/2 cup) | | | | | | | | | |
| Carrots (whole or cooked) (1/2 cup) | | | | | | | | | |
| Spinach or other greens (1/2 cup) | | | | | | | | | |
| Peas (1/2 cup) | | | | | | | | | |
| Squash (1/2 cup) | | | | | | | | | |
| Potatoes (1) | | | | | | | | | |
| Beans (1/2 cup) | | | | | | | | | |
| Lentils (1/2 cup) | | | | | | | | | |
| Tomatoes (1) or tomato juice (3/4cup) | | | | | | | | | |
| Beet (1/2 cup) | | | | | | | | | |
| Aubergine (1/2 cup) | | | | | | | | | |
| Pepper (1) | | | | | | | | | |
| Cucumber (1) | | | | | | | | | |
| Meats, Eggs and Fish | | | | | | | | | |
| Chicken (85 gr.) | | | | | | | | | |
| Hamburgers (85 gr.) | | | | | | | | | |
| Hot dogs (85gr.) | | | | | | | | | |
| Processed meats (sausage, salami, bologna, ham)(85gr.) | | | | | | | | | |
| Beef, pork or lamb as a sandwich or mixed dish (85gr.) | | | | | | | | | |
| Beef, pork or lamb as a main dish (85gr) | | | | | | | | | |
| Fish (85gr.) | | | | | | | | | |
| Eggs (1) | | | | | | | | | |
| Organ Meats (85gr.) | | | | | | | | | |
| Sweets, Baked Goods, Cereals | | | | | | | | | |
| Chocolate (28gr.) | | | | | | | | | |
| Candy without chocolate (28gr) | | | | | | | | | |
| Cake (slice) | | | | | | | | | |
| Sugar in coffee or tea (1tsp) | | | | | | | | | |
| Honey (1tsp) | | | | | | | | | |
| Jam (1tsp) | | | | | | | | | |
| Cookies (1) | | | | | | | | | |
| White Bread (slice- 40gr) | | | | | | | | | |
| Dark or whole grain bread (slice- 40gr.) | | | | | | | | | |
| Cooked rice or buckwheat (1/2 cup) | | | | | | | | | |
| Cooked pasta (1/2 cup) | | | | | | | | | |
| Miscellaneous | | | | | | | | | |
| Potato chips (small bag) | | | | | | | | | |
| Nuts (1/3 cup) | | | | | | | | | |
| Potatoes, mashed (1/2 cup) | | | | | | | | | |
| Pizza (2slices) | | | | | | | | | |
| Tea (1 cup) | | | | | | | | | |
| Coffee (1 cup) | | | | | | | | | |
| Coca Cola, Pepsi etc. (1 bottle) | | | | | | | | | |
| Beer (1 bottle) | | | | | | | | | |
| Milk in coffee or tea (1tbsp) | | | | | | | | | |

Additional information (please, mark the relevant square)

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>10). My overall university performance is <input type="checkbox"/> / excellent /, <input type="checkbox"/> / good /, <input type="checkbox"/> / poor /</p> | <p>20). What kind of fat do you usually use for baking? <input type="checkbox"/>/butter or lard/, <input type="checkbox"/>/vegetable oil/, <input type="checkbox"/>/margarine/</p> |
| <p>11). I think my body weight is <input type="checkbox"/> /high/, <input type="checkbox"/> /appropriate/, <input type="checkbox"/> /low/</p> | <p>21). What kind of fat do you usually use for frying? <input type="checkbox"/>/butter or lard/, <input type="checkbox"/>/vegetable oil/, <input type="checkbox"/>/margarine/</p> |
| <p>12). I am currently on a special diet <input type="checkbox"/> /yes/, <input type="checkbox"/> /no/</p> | <p>22). I consume vitamin supplements <input type="checkbox"/> /always/, <input type="checkbox"/> /usually/, <input type="checkbox"/> /sometimes/, <input type="checkbox"/> /rarely/, <input type="checkbox"/> /never/</p> |
| <p>13). I think, my diet provides enough calories <input type="checkbox"/> /yes/, <input type="checkbox"/> /no/ <input type="checkbox"/> /don't know/</p> | <p>23). How would you rate your nutritional habits compared with those recommended by experts <input type="checkbox"/> /poor/, <input type="checkbox"/> /fair/, <input type="checkbox"/> /good/ <input type="checkbox"/> /excellent/ <input type="checkbox"/> /don't know/</p> |
| <p>14). I think, the fats in my diet are <input type="checkbox"/> /low/, <input type="checkbox"/> /normal/, <input type="checkbox"/> /high/ <input type="checkbox"/> /don't know/</p> | <p>24). How would you rate your knowledge about nutrition compared with what you think should be known by a physician <input type="checkbox"/> /poor/, <input type="checkbox"/> /fair/, <input type="checkbox"/> /good/ <input type="checkbox"/> /excellent/ <input type="checkbox"/> /don't know/</p> |
| <p>15). I think, the proteins in my diet are <input type="checkbox"/> /low/, <input type="checkbox"/> /normal/, <input type="checkbox"/> /high/ <input type="checkbox"/> /don't know/</p> | <p>25). My family owns a car, or uses a car on a regular basis <input type="checkbox"/> /yes/, <input type="checkbox"/> /no/</p> |
| <p>16). I think, the carbohydrates in my diet are <input type="checkbox"/> /low/, <input type="checkbox"/> /normal/, <input type="checkbox"/> /high/ <input type="checkbox"/> /don't know/</p> | <p>26). I think, I have adequate money to buy food <input type="checkbox"/> /yes/, <input type="checkbox"/> /no/</p> |
| <p>17). I think, the vitamin content of my diet is <input type="checkbox"/> /low/, <input type="checkbox"/> /normal/, <input type="checkbox"/> /high/ <input type="checkbox"/> /don't know/</p> | <p>27). I prepare my food by myself <input type="checkbox"/> /always/, <input type="checkbox"/> /usually/, <input type="checkbox"/> /sometimes/, <input type="checkbox"/> /rarely/, <input type="checkbox"/> /never/</p> |
| <p>18). I think, the mineral content of my diet is <input type="checkbox"/> /low/, <input type="checkbox"/> /normal/, <input type="checkbox"/> /high/ <input type="checkbox"/> /don't know/</p> | <p>28). I have changed my food habits during the last four months <input type="checkbox"/> /yes/, <input type="checkbox"/> /no/, If you marked <i>no</i>, skip the next question</p> |
| <p>19). What do you do with the visible fat on meat? <input type="checkbox"/>/eat most of it/, <input type="checkbox"/>/eat some of it/, <input type="checkbox"/>/eat as little as possible/</p> | <p>29). The reason for this change was that <input type="checkbox"/>/ I didn't like the way I looked/, <input type="checkbox"/>/ I learned something about nutrition/ <input type="checkbox"/> / Other/,Specify _____/</p> |

Comments from student about nutrition _____

Thank You for your Participation.

American University of Armenia
College of Health Sciences
Master of Public Health Program
Winter 2003

Dear Participant:

Good day! I invite you to join my study entitled “A Study to Determine the Impact of a Nutrition Course on Dietary Practices Among Medical College Students“. I am a Master of Public Health student at the AUA. As a part of my course requirement, I am studying the dietary practices of several groups of medical students attending the Medical University of Armenia. Your group numbers have been obtained from the Department of General Medicine of the University and randomly selected.

Information for the study will be collected through the use of the attached questionnaire, which should take approximately 45 minutes to complete. Your participation is highly valuable for this project. It is possible that your answers may lead to nutrition educational programs, which could benefit other groups of people. In addition, there is an opportunity for private nutritional counseling for those students who request it after the end of the study.

In addition to the completion of this questionnaire, you will be contacted in approximately four-months to take the same questionnaire. There are no other requirements other than completion of the two questionnaires.

Attempts have been made to assure the information on the questionnaire is neither sensitive nor embarrassing. Although your name is required on the questionnaire, it will be kept confidential. Only group or aggregate data will be used in any written or oral reports about the findings. The only people who will have access to the questionnaire are me and my thesis advisors. The purpose of obtaining your name is to be able to provide you with the follow-up questionnaire and the feedback that might be appropriate. After data input, the questionnaires will be maintained in sealed boxes and stored in my locked cabinet at the Medical College for 3-years. After that time, they will be destroyed.

You have the right to decline participation anytime during the study. It is your right to decide whether or not to complete the questionnaire. If you decide not to participate, there will be no reprisal or negative effects. You may ask me any questions about this study. I can be contacted at the following telephone number (55 30 49). If you believe that your questions have not been satisfactorily addressed or you have not been treated fairly, you may contact Dr. Michael Thompson at the AUA at 51 25 60.

The completion of the questionnaire will imply your consent to participate in the study. Please take time now to complete it and then place it into the container in the front of the classroom.

Armen V. Abelyan, MD _____

Michael E. Thompson, MS, DrPH, Associate Director, MPH Program _____

Armen G. Haroutunyan, MD, DrPH, Dean of I General Medicine Dep. _____

Mushegh M. Mirijanyan, MD, DrPH, Dean of II General Medicine Dep. _____

Հայաստանի Ամերիկյան Համալսարան
Բժշկական Գիտությունների Քոլեջ
Հասարակական Առողջապահության Մագիստրոսի Ծրագիր
Ձմեռ 2003

Հարգելի Մասնակից

Բարև Ձեզ: Ես հրավիրում եմ Ձեզ մասնակցելու իմ հետազոտությանը՝ վերնագրված «Սնուցման վերաբերյալ դասընթացի ազդեցությունը բժշկական համալսարանի ուսանողների սննդային սովորույթների վրա»: Ես ուսանում եմ ՀԱՀ-ի Հասարակական Առողջապահության Մագիստրոսի ծրագրում և որպես իմ կուրսային հանձնարարության մաս ուսումնասիրում եմ Երևանի Պետական Բժշկական Համալսարանի ուսանողների տարբեր խմբերի սննդային սովորույթները: Ձեր խմբերի համարները ձեռք են բերվել համալսարանի Ընդհանուր Բժշկության Ֆակուլտետի դեկանատից պատահականության սկզբունքով:

Հետազոտության համար անհրաժեշտ տեղեկությունները հավաքվելու են կցված հարցաթերթի օգնությամբ, որի լրացման համար կպահանջվի մոտավորապես 45 րոպե: Ձեր մասնակցությունը այս ծրագրում խիստ արժեքավոր է: Հնարավոր է, որ Ձեր պատասխանները նպաստեն ճիշտ սնուցման վերաբերյալ ուսուցողական ծրագրերի զարգացմանը, որոնք կարող են օգտակար լինել բնակչության այլ խմբերի համար: Բացի այդ, սննդի հարցերի վերաբերյալ անհատական խորհրդատվություն ցանկացող ուսանողներին կտրվի այդ հնարավորությունը անմիջապես հետազոտության ավարտից հետո: Ի հավելումն հարցաթերթի այսօրվա լրացմանը, չորս ամիս անց ձեզ նորից կբաժանվի նույն հարցաթերթը՝ լրացման խնդրանքով: Այս հետազոտությանը Ձեր մասնակցության միակ պահանջը երկու հարցաթերթերի լրացումն է:

Հնարավորինս ջանք է գործադրվել՝ հարցաթերթում նուրբ և շփոթմունք առաջացնող հարցեր չընդգրկելու համար: Չնայած պահանջվում է լրացնել Ձեր անունը, սակայն այն գաղտնի է պահվելու: Միայն ընդհանրացված տվյալներն են օգտագործվելու արդյունքներն ամփոփող բանավոր կամ գրավոր զեկուլյցներում: Հարցաթերթերը մատչելի են լինելու միայն իմ և իմ թեզի խորհրդատուների համար: Ձեր անունը անհրաժեշտ է Ձեզ հերթական հարցաթերթը բաժանելու և անհրաժեշտության դեպքում խորհրդատվական օգնություն ցուցաբերելու նպատակով: Տվյալների ներմուծումից հետո հարցաթերթերը կպահվեն անձեռնմխելի և կնքված տուփերում Բժշկական Համալսարանի փակ սենյակում 3 տարվա ընթացքում: Այդ ժամանակամիջոցից հետո նրանք կոչնչացվեն:

Դուք իրավունք ունեք մերժելու Ձեր մասնակցությունը հետազոտություն ցանկացած պահին: Եթե դուք որոշեք չմասնակցել, դա ոչ մի բացասական հետևանք չի ունենա Ձեզ համար: Դուք կարող եք հետազոտության վերաբերյալ ցանկացած հարց ուղղել ինձ, նաև զանգահարելով ինձ հետևյալ հեռախոսահամարով (55-30-49): Եթե Դուք համարեք, որ Ձեր հարցերին բավարար պատասխան չի տրվել կամ Ձեր նկատմամբ անարդար վերաբերմունք է ցուցաբերվել, Դուք կարող եք զանգահարել Դ-ր. Մայքլ Թոմփսոնին ՀԱՀ-ի (51-25-60) հեռախոսահամարով:

Հարցաթերթի լրացումը կնշանակի Ձեր համաձայնությունը՝ հետազոտությանը մասնակցելու: Խնդրում եմ այժմ լրացնել հարցաթերթը և գետեղել այն դասասենյակի առջևում տեղադրված տուփի մեջ:

Արմեն Վ. Աբելյան, հետազոտող բժիշկ _____

Մայքլ Թոմփսոն, բ.գ.դ., Հասար-ն Առողջ.-ն Մագիստրոսի Ծրագրի փոխտնօրեն _____

Արմեն Գ. Հարությունյան, բ.գ.դ., Ընդհ. Բժշկ. I Ֆակ-ի Դեկան _____

Մուշեղ Մ. Միրիջանյան, բ.գ.դ., Ընդհ. Բժշկ. II Ֆակ-ի Դեկան _____

ID# _ _ _ _ _

*Հայաստանի Ամերիկյան Համալսարան
ՀԱՀ-ի Բժշկական Գիտությունների Քոլեջ
Սննդային Սովորույթների Հարցաթերթ*

Այս հարցաթերթը ստեղծվել է ՀԱՀ-ում ուսանողի գիտական աշխատանքում օգտագործման նպատակով: Դրա նպատակն է պարզել Բժշկական Համալսարանի ուսանողների կողմից սովորաբար օգտագործվող սննդամթերքների հավաքածուն:

Խնդրում ենք լրացնել հետևյալը

Ձեր անունը _____

Ազգանունը _____

Հայրանունը _____

Այսօրվա ամսաթիվը (օր/ամիս/տարի) _____

Ձեր խմբային համարը _____

Խնդրում ենք լրացնել տողերը կամ նշել այն վանդակները, որոնք լավագույնս են բնութագրում **ID#** _____
 են Ձեր սովորական վարքագիծը:

1). Ծննդյան ամսաթիվը (օր/ամիս/տարի) _____

2). Քաշը _____ կգ., 3). Հասակը _____ սմ.,

4). Սեռը-- /Արական/, /Իգական/

5). Մշտական բնակության քաղաքը-- /Երևան/, /Այլ/, անվանումը _____

6). Դուք բնակվում եք--- /Հանրակացարանում/, /Տանը (Վարձով)/, /Տանը/, /Այլ/, անվանումը _____

7). Դուք սովորաբար սնվում եք – /որոշակի ժամերին/, /երբ պատահի/

8). Դուք սովորաբար առավոտյան նախաճաշում եք ---

/ամեն օր/, /4-6 անգամ շաբաթը/, /1-3 անգամ շաբաթը /, /համարյա երբեք/

9). Դուք սովորաբար կեսօրին նախաճաշում եք ---

/ամեն օր/, /4-6 անգամ շաբաթը/, /1-3 անգամ շաբաթը /, /համարյա երբեք/

Ցուցում. Նշված յուրաքանչյուր սննդամթերքի համար ընտրեք և նշեք 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 թեմիսի խաղազնդակ բռնած ձեռքի չափի է:

Պանրի 28 գրամը (28 գր.) մոտավորապես Ձեր բթամատի չափի է:

1 ծգ. (ծաշի գդալը) = 3թգ. (թեյի գդալ)

8 թեյի գդալը = 1/2 բաժակի

| Սննդամթերքը և Չափերը | Միջին օգտագործումը անցյալ ամսվա ընթացքում | | | | | | | | |
|---------------------------------------------|-------------------------------------------|-----------------|-----------------|------------|--------------------|--------------------|------------------|-------------------|-------------------|
| | օրը 6x և ավել | օրը 4-6 x | օրը 2-3 x | օրը 1 x | շաբ աթը 5-6x | շաբ աթը 2-4x | շաբ աթը 1x | ամի սը 1-3x | Համար յա երբեք |
| Կաթնամթերքներ | | | | | | | | | |
| Քիչ յուղային կաթ (1 բաժակ) | | | | | | | | | |
| Ամբողջական կաթ (1 բաժակ) | | | | | | | | | |
| Մածուն (1 բաժակ) | | | | | | | | | |
| Թթվասեր (1/2 բաժակ) | | | | | | | | | |
| Յոգուրտ (1 բաժակ) | | | | | | | | | |
| Պաղպաղակ (1/2 բաժակ) | | | | | | | | | |
| Կաթնաշոռ (1/2 բաժակ) | | | | | | | | | |
| Պանիր (28 գր.) | | | | | | | | | |
| Մարգարին (2 թգ.) | | | | | | | | | |
| Կարագ (2 թգ.) | | | | | | | | | |
| Մրգեր | | | | | | | | | |
| Խնձոր (1 հատ) | | | | | | | | | |
| Տանձ (1 հատ) | | | | | | | | | |
| Նարինջ (1 հատ) | | | | | | | | | |
| Գրեյպ-ֆրուտ (1/2 հատ) | | | | | | | | | |
| Նարնջի կամ գրեյպ-ֆրուտի հյութ (3/4 բաժակ) | | | | | | | | | |
| Դեղձ, ծիրան, կամ սալոր (1 հատ) | | | | | | | | | |

| Մենդանթերը և Չափերը | Միջին օգտագործումը անցյալ ամսվա ընթացքում | | | | | | | | |
|-----------------------------------------------------------------------|--------------------------------------------------|--------------------------|--------------------------|--------------------|-----------------------------|-----------------------------|---------------------------|----------------------------|---------------------------|
| | օրը 6x և ավել | օրը 4-6 x | օրը 2-3 x | օրը 1 x | շաբ աթը 5-6x | շաբ աթը 2-4x | շաբ աթը 1x | ամի սը 1-3x | Համար յա երբեք |
| Բանան (1 հատ) | | | | | | | | | |
| Չմերուկ (1 կտոր) | | | | | | | | | |
| Ելակ (2/3 բաժակ) | | | | | | | | | |
| Կիտրոն (1/2 հատ) | | | | | | | | | |
| Մանդարին (1 հատ) | | | | | | | | | |
| Արքայանարինջ (խՏՐՏսպՍ) (1 հատ) | | | | | | | | | |
| Հատապտուղ (1/2 բաժակ) | | | | | | | | | |
| Այլ մրգեր (թարմ 1 բաժակ կամ 1/2 բաժակ պահածո կամ 1/4 բաժակ չորացրած) | | | | | | | | | |
| Բանջարեղեն | | | | | | | | | |
| Կաղամբ, ծաղկակաղամբ (1/2 բաժակ) | | | | | | | | | |
| Գազար (ամբողջական կամ եփված) (1/2 բաժակ) | | | | | | | | | |
| Սպանախ կամ այլ կանաչեղեն (1/2 բաժակ) | | | | | | | | | |
| Ոլոռ (1/2 բաժակ) | | | | | | | | | |
| Դդմազգիներ (1/2 բաժակ) | | | | | | | | | |
| Կարտոֆիլ (1 հատ) | | | | | | | | | |
| Լոբի (1/2 բաժակ) | | | | | | | | | |
| Ոսպ (1/2 բաժակ) | | | | | | | | | |
| Պոմիդոր(1հատ) կամ պոմիդորի հյութ (3/4 բաժակ) | | | | | | | | | |
| Բազուկ (1/2 բաժակ) | | | | | | | | | |
| Բադրիջան (1/2 բաժակ) | | | | | | | | | |
| Պղպեղ (1 հատ) | | | | | | | | | |
| Վարունգ (1 հատ) | | | | | | | | | |
| Միս, Չու և Չուկ | | | | | | | | | |
| Հավ (85 գր.) | | | | | | | | | |
| Համբուրգեր (85 գր.) | | | | | | | | | |
| Նրբերշիկ (հոթ դոգ) (85 գր.) | | | | | | | | | |
| Մշակված մսեր (սալամի, ապխտած երշիկ, վետչինա) (85 գր.) | | | | | | | | | |
| Տավարի,խոզի, ոչխարի մսով բուլետերբրոդ (85 գր.) | | | | | | | | | |
| Տավարի, խոզի, կամ ոչխարի մսով ճաշ (85 գր.) | | | | | | | | | |
| Չուկ (85 գր.) | | | | | | | | | |
| Չու (1 հատ) | | | | | | | | | |
| Օրգանային մսեր (լյարդ, փայծաղ) (85 գր.) | | | | | | | | | |
| Քաղցրավենիքներ, խմորեղեն, հաց | | | | | | | | | |
| Շոկոլադե կոնֆետներ (28 գր.) | | | | | | | | | |
| Ոչ շոկոլադե կոնֆետներ (28 գր.) | | | | | | | | | |
| Թխվածք (1 կտոր) | | | | | | | | | |
| Շաքար թեյի կամ սուրճի մեջ (1 թգ.) | | | | | | | | | |
| Մեղր (1 թգ.) | | | | | | | | | |
| Մուրաբա, քեմ (1 թգ.) | | | | | | | | | |
| Բուլկի (1 հատ) | | | | | | | | | |
| Սպիտակ հաց (1 կտոր- 40գ.) | | | | | | | | | |
| Գորշ հաց (1 կտոր- 40գ.) | | | | | | | | | |
| Եփված բրինձ կամ գրեչկա (1/2 բաժակ) | | | | | | | | | |
| Եփված մակարոնեղեն (1/2 բաժակ) | | | | | | | | | |
| Այլևայլ | | | | | | | | | |
| Կարտոֆիլի չիփսեր (1 փոքր տուփ) | | | | | | | | | |
| Ընկույզներ (1/3 բաժակ) | | | | | | | | | |
| Կարտոֆիլի պյուրե (1/2 բաժակ) | | | | | | | | | |
| Պիցցա (2 կտոր) | | | | | | | | | |

Միջին օգտագործումը անցյալ ամսվա ընթացքում

| Սննդամթերքը և Չափերը | | | | | | | | | |
|-----------------------------------------|--------------------------|----------------------|---------------------|-------------------|------------------------|------------------------|----------------------|-----------------------|--------------------------|
| | օրը 6x և ավել | օրը 4-6 x | օրը 2-3x | օրը 1x | շաբաթը 5-6x | շաբաթը 2-4x | շաբաթը 1x | ամիսը 1-3x | Համարյա երբեք |
| Թեյ (1 բաժակ) | | | | | | | | | |
| Սուրճ (1 բաժակ) | | | | | | | | | |
| Կոկա-կոլա, Պեպսի և այլն (1 ապակե շիշ) | | | | | | | | | |
| Գարեջուր (1 ապակե շիշ) | | | | | | | | | |
| Կաթ սուրճի կամ թեյի մեջ (1 ճգ.) | | | | | | | | | |

Լրացուցիչ ինֆորմացիա (խնդրում ենք նշել համապատասխան վանդակը)

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10). Իմ ընդհանուր առաջադիմությունը համալսարանում <input type="checkbox"/> /գերազանց է/, <input type="checkbox"/> /լավ է/, <input type="checkbox"/> /բավարար է/ | 20). Ինչպիսի՞ ճարպ եք սովորաբար օգտագործում եփելիս <input type="checkbox"/> /կարագ կամ խոզաճարպ/, <input type="checkbox"/> /բուսական յուղ/, <input type="checkbox"/> /մարգարին/ |
| 11). Ես կարծում եմ, որ իմ քաշը <input type="checkbox"/> /բարձր է/, <input type="checkbox"/> /նորմալ է/, <input type="checkbox"/> /ցածր է/ | 21). Ինչպիսի՞ ճարպ եք սովորաբար օգտագործում տապակելիս <input type="checkbox"/> /կարագ կամ խոզաճարպ/, <input type="checkbox"/> /բուսական յուղ/, <input type="checkbox"/> /մարգարին/ |
| 12). Ես ներկայումս հատուկ դիետա եմ պահում <input type="checkbox"/> /այո/, <input type="checkbox"/> /ոչ/ | 22). Ես օգտագործում եմ վիտամինային պրեպարատներ <input type="checkbox"/> /միշտ/, <input type="checkbox"/> /սովորաբար/, <input type="checkbox"/> /երբեմն/, <input type="checkbox"/> /հազվադեպ/, <input type="checkbox"/> /երբեք/ |
| 13). Ես կարծում եմ, որ իմ սնունդը բավական կալորիա է պարունակում <input type="checkbox"/> /այո/, <input type="checkbox"/> /ոչ/ <input type="checkbox"/> /չգիտեմ/ | 23). Ինչպես կգնահատեք Ձեր սննդային սովորույթները համեմատած մասնագետների հանձնարարականների հետ <input type="checkbox"/> /վատ/, <input type="checkbox"/> /բավարար/ <input type="checkbox"/> /լավ/ <input type="checkbox"/> /գերազանց /, <input type="checkbox"/> /չգիտեմ/ |
| 14). Ես կարծում եմ, որ ճարպերի պարունակությունը իմ սննդում <input type="checkbox"/> /ցածր է/, <input type="checkbox"/> /նորմալ է/, <input type="checkbox"/> /բարձր է/ <input type="checkbox"/> /չգիտեմ/ | 24). Ինչպես կգնահատեք Ձեր սննդային գիտելիքները՝ համեմատելով դա բժշկին անհրաժեշտ գիտելիքների հետ <input type="checkbox"/> /վատ/, <input type="checkbox"/> /բավարար/ <input type="checkbox"/> /լավ/ <input type="checkbox"/> /գերազանց /, <input type="checkbox"/> /չգիտեմ/ |
| 15). Ես կարծում եմ, որ սպիտակուցների պարունակությունը իմ սննդում <input type="checkbox"/> /ցածր է/, <input type="checkbox"/> /նորմալ է/, <input type="checkbox"/> /բարձր է/ <input type="checkbox"/> /չգիտեմ/ | 25). Իմ ընտանիքը ունի սեփական ավտոմեքենա կամ կանոնավոր կերպով օգտվում է ավտոմեքենայի ծառայություններից <input type="checkbox"/> /այո/, <input type="checkbox"/> /ոչ/ |
| 16). Ես կարծում եմ, որ ածխաջրատների պարունակությունը իմ սննդում <input type="checkbox"/> /ցածր է/, <input type="checkbox"/> /նորմալ է/, <input type="checkbox"/> /բարձր է/ <input type="checkbox"/> /չգիտեմ/ | 26). Ես կարծում եմ, որ ունեմ բավական գումար սնունդ գնելու համար <input type="checkbox"/> /այո/, <input type="checkbox"/> /ոչ/ |
| 17). Ես կարծում եմ, որ վիտամինների պարունակությունը իմ սննդում <input type="checkbox"/> /ցածր է/, <input type="checkbox"/> /նորմալ է/, <input type="checkbox"/> /բարձր է/ <input type="checkbox"/> /չգիտեմ/ | 27). Իմ սնունդը ես ինքնուրույն եմ պատրաստում <input type="checkbox"/> /միշտ/, <input type="checkbox"/> /սովորաբար/, <input type="checkbox"/> /երբեմն/, <input type="checkbox"/> /հազվադեպ/, <input type="checkbox"/> /երբեք/ |
| 18). Ես կարծում եմ, որ հանքային աղերի պարունակությունը իմ սննդում <input type="checkbox"/> /ցածր է/, <input type="checkbox"/> /նորմալ է/, <input type="checkbox"/> /բարձր է/ <input type="checkbox"/> /չգիտեմ/ | 28). Վերջին չորս ամսվա ընթացքում ես փոխել եմ իմ սննդային սովորույթները <input type="checkbox"/> /այո/, <input type="checkbox"/> /ոչ/, Եթե նշել եք <u>ոչ</u> տարբերակը, բաց թողեք հաջորդ հարցը |
| 19). Ես ուտում եմ մսի վրա տեսանելի ճարպի <input type="checkbox"/> /մեծ մասը/, <input type="checkbox"/> /մի մասը/, <input type="checkbox"/> /հնարավորին չափ փոքր մասը/ | 29). Այդ փոփոխության պատճառն այն էր, որ... <input type="checkbox"/> / ինձ դուր չէր գալիս տեսքս/, <input type="checkbox"/> / ես ճիշտ սնվելու մասին որոշ բան սովորեցի/ <input type="checkbox"/> / Այլ/, անվանեք _____ / |

Սննդի վերաբերյալ ուսանողի մեկնաբանություններ _____

Ենթահավաքություն Ձեզ մասնակցության համար

9. List of appropriate journals where this study might be published

American Journal of Public Health

Vestnik International Academy of Ecology and Life Protection Sciences

Medical Science of Armenia