



American University of Armenia

Center for Health Services Research and Development

**Baseline Knowledge, Attitude and Practices
Survey for the Healthy Lifestyle and Nutrition
Component of WVA Mobile Medical Teams
(MMT) Project**

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List of Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ARC	American Red Cross
ARCS	Armenian Red Cross Society
AUA	American University of Armenia
CATCH	Rapid Core Assessment Tool on Child Health
BMI	Body Mass Index
CATCH	Rapid Core Assessment Tool on Child Health
CHSR	Center for Health Services Research and Development of AUA
CI	Confidence Interval
DHS	Armenia Demographic and Health Survey
HEPA	Health Enhancing Physical Activity
HIV	Human Immunodeficiency Virus
IMCI	Integrated Management of Childhood Illnesses
IRB	Institutional Research Board
IPAQ	International Physical activity questionnaire
KAP	Knowledge, Attitude, and Practice
KPC	Knowledge, Practice, and Coverage
MMT	Mobile Medical Teams
MOH	Ministry of Health
TOT	Training of Trainers
SRS	Simple Random Sampling
UNICEF	United Nations Children's Fund
WHO	World Health Organization
WVA	World Vision Armenia

Executive Summary

Socio-economic difficulties experienced by Armenia following independence have led to the decrease of living standards and negatively impacted the health status of the population. Women and children as the most vulnerable segments of the population were disproportionately affected by the negative changes.

The World Vision Armenia (WVA) seeks to improve health status of the rural population in Lori Gegharkunik, Syunik and Tavush *marzes*. Through its Mobile Medical Teams (MMT) program WVA provides access to primary health care for hard to reach communities in above-mentioned *marzes*. The program also includes nutrition, food safety and healthy lifestyle promotion component, focusing mostly on mothers of children under 5.

WVA contracted the American University of Armenia's Center for Health Services Research and Development (AUA/CHSR) to support its evaluation component by conducting baseline KAP (Knowledge, Attitude, and Practice) survey in Tashir region of Lori *marz* and Vardenis region of Gegharkunik *marz* to provide reference against which the changes brought by the program will be measured after the program implementation. The face-to face interviews were conducted with 199 mothers of children less than 5 years of age in the 22 target villages in Lori and Gegharkunik *marzes*. Hundred and nine short interviews with husbands of surveyed women were also carried out. The households were chosen with the help of weighted (stratified) Simple Random Sampling (SRS) of households containing a child under 5. The complete list of children under 5 in targeted villages provided by World Vision was used as a sampling frame.

The baseline survey instrument was collaboratively developed by CHSR and WVA staff and contained questions from several sources, including the tools used in the surveys conducted in Armenia previously, and validated international questionnaires. The main domains for which the information was sought included Socio-demographic information, KAP related to healthy lifestyle and behavior, Physical activity, Child feeding KAP, Pregnancy/postnatal care, Management of childhood illnesses, Nutrition related KAP, Child hygiene/dental care, Reproductive health, and AIDS/STIs.

Overall, the baseline data confirmed previous research conducted in Armenia (particularly in rural areas of Armenia). The results demonstrated the deficiencies in health-related knowledge, attitude and practices and highlighted the spheres demanding intensive efforts by WVA. The following findings need to be taken into account by WVA in the process of planning/implementation of intervention in the surveyed regions:

- ❑ None of the surveyed women smoke currently. The attitude towards smoking is mostly negative; however most of the women live in households where other people smoke on a daily basis. Drinking is not widespread in women; drinking problem in a household was mentioned by 8.6% of women and was significantly more prevalent in Gegharkunik.
- ❑ Fifty percents of women are HEPA (Health Enhancing Physical Activity) active according to International Physical Activity Questionnaire scoring criteria. Vigorous physical activity is not regularly and intensively performed by women. Significantly more time is spent on such activity during a day by women in lower economic category.

Women from relatively richer households spend considerably more time sitting during a day than women from poorer households.

- ❑ Ever-breastfeeding rate and the average length of the breastfeeding is high in the surveyed regions. However the exclusive breastfeeding rate for children under 6 months of age is 33.3% and appropriate complementary feeding rate of children in 6-9 months age group is 53.5%.
- ❑ Women apply for antenatal check up late in their pregnancy (4th month) and do not attend the health care facility at a minimal frequency recommended by WHO . Women from Gegharkunik villages apply to health care facility for check up later and attend more irregularly.
- ❑ Thirteen percent of surveyed women delivered the youngest baby at home. Gegharkunik women are more likely to deliver at home than Lori women. Overall, older women and women from poorer households tend to have home deliveries more frequently. The skilled health check after the delivery at home is common in the surveyed population.
- ❑ Approximately 53% of mothers knew at least two signs of childhood illnesses that indicate the need for treatment. Fifty three percent of women thought that when the child has diarrhea, he/she should be given less or the same amount of liquids as he/she normally drinks, and almost 44% thought the child should be given less food than he/she normally eats. The parasitic diseases in children were reported in 37.1% of cases. Most of women seek advice/treatment outside the house when a child is sick, with women from poorer households applying to a nurse as a first contact, and better-off women applying to a physician.
- ❑ The women had limited knowledge of healthy food and healthy methods of food preparation. The survey showed that sunflower oil and boiled butter are the most commonly used types of fat/oil used for cooking (83.4% and 78.9% respectively). The choice of the fat/oil is largely determined by the economic status of the household.
- ❑ Almost 99% of mothers swaddled the youngest child. Most of the women do not have an idea of correct timing for a child to start brushing his/her teeth and do not employ the correct frequency of teeth brushing themselves. Women in 75.8% of cases employed correct hand-washing practice.
- ❑ The use of modern contraceptive methods is low; abortion is commonly used method of birth control (on average, 2.86 abortions per surveyed woman were reported). Withdrawal remains the most commonly used traditional method of contraception (29.1%). The decisions about the contraception are made collaboratively in 49% of cases.
- ❑ Ninety five percent of the women were aware of AIDS/HIV. Unprotected sex as a way of getting infection was mentioned by 95.1% of women. In general, Lori women were more ignorant in what refers to STI knowledge/transmission.
- ❑ Eighty six percent of surveyed men smoke cigarettes; most of them smoke on a daily basis despite the negative attitude towards smoking in general and smoking in public places/inside the house. Drinking in men is not widespread, however 17.3% of men drink often or daily, and 11.8% have had drinking problem. Significantly higher proportion of Gegharkunik men reported ever having drinking problem.
- ❑ The men's knowledge of AIDS and ways of HIV transmission is relatively high. Similar to what was found in women, several incorrect ways of getting HIV infection were mentioned by men.
- ❑ Men perform all kinds of physical activities (vigorous, moderate, and walking) more often (on approximately 3 days in a week), and spend more time on these activities per day (almost 4 hours) than women do. Overwhelming majority of men are HEPA active.

The results of the investigation suggest that the general population of the surveyed communities need to be involved in the educational efforts undertaken by WVA in all spheres explored in the scope of the survey. Also, the survey data provide WVA with the opportunity to design focused interventions that would benefit specific segments of the population having the least favorable indicators of health related knowledge, attitude and practices.

1. Background

1.1. Introduction

Like many of the Newly Independent States of the former Soviet Union, Armenia suffered major disruption to its economy following independence. Living standards decreased dramatically in the years following independence and poverty has become an increasingly urgent issue. This trend has had a harsh negative impact on the health status of the population, particularly affecting the most vulnerable segments of the population including women and children¹.

Several findings showed the unfavorable situation with nutrition and food consumption patterns in the Armenian population. Malnutrition in children under-five is considered a significant problem in Armenia. A 1998 national nutrition survey was undertaken to provide baseline statistics on the nutritional status of women and children under-5. The survey results showed that less than 5% of children suffer from acute malnutrition.² However, the prevalence rates of stunting were high, ranging from 9.1% in the urban areas to 15.5% in rural areas. According to the Armenia Demographic and Health Survey (DHS) and UNICEF, 13% of children under 5 are stunted (chronic malnutrition), and 3% are severely stunted, while 2% of children are wasted and 3% are underweight.^{3, 4} An increasing trend in the levels of malnutrition is observed since 1998.⁵ Significant regional variation in the prevalence of stunted children was recorded, with a low of 8% stunting in Kotayk and a high of 32% in Gegharkunik *marz*.³ The data of the Health and Nutrition survey conducted by WVA in 2002 in Gyumri showed that 10.6% of children were stunted, 13.5% wasted, 12.2% were underweight and 3.5% overweight.⁶ The findings also showed that many children had symptoms and signs of micronutrient malnutrition.

Recent data show that low iodine consumption is a problem in Armenia. According to the 1998 nutrition survey, iodized salt was the main source of iodine for the population, but 30% of domestic salt was not iodized and 31.7% of children aged 6-59 months had low iodine consumption. However, some improvement took place during the last few years due to the rehabilitation of the salt iodination system in 1997. According to the 2000 DHS, domestic salt was sufficiently iodized in 84% of surveyed households. A notable difference existed between the consumption of iodized salt in different *marzes* (e.g. 95% of domestic salt iodized in Ararat

and Armavir versus 59% in Tavush *marz*). The findings of 2002 WV survey showed 10.1% of Gyumri children having palpable thyroid

According to the nutrition survey, 16% of children were anemic in 1998.² The 2000 DHS showed similar results for urban children (16%), and much higher rates of anemia for rural children (33%).

The anemia was shown to be prevalent in Armenian women as well. The results of DHS showed 12% rate of anemia among women.³ The MOH official data were consistent with the survey results and indicated that the prevalence of anemia among pregnant women increased during the 1990s and was 15.6% in 2000.⁷ Anemia was more prevalent in urban areas and in refugee populations.⁸ Despite extensive prophylactic measures undertaken in the last decade, the level of anemia among pregnant women remained high.⁷ This is explained by the poor nutrition of pregnant women and the insufficiency of proteins and microelements in their diet.

The data provided by 2002 WV survey showed that 54.9% of women had enlarged thyroid glands, 7.2% had low BMI (Body Mass Index), 22.6% were overweight and 15.1% were obese.⁶

Besides nutrition patterns, several other factors are shown to be affecting health in women and children, particularly those related to healthy lifestyle and behavior, including breastfeeding and childcare, physical activity, smoking and alcohol consumption, reproductive health and STIs.

According to the available statistics, there was considerable improvement in breastfeeding rates during the second half of the 1990s in Armenia coinciding with the implementation of the National Breastfeeding Promotion program.¹ There was a stable increase in the rate of exclusive breastfeeding at 4 months, from 30.6 in 1995 to 54.0 in 1999.⁸ However, some important indicators, such as exclusive breastfeeding rate, timely complementary feeding rate, and continued breastfeeding rate (> 12 months) are still low and should be targeted for improvement. The DHS data showed that 88% of children born in the five years preceding the survey were breastfed.³ However the duration of the exclusive breastfeeding was shown to be short (around 1

month). Many women begin supplementing their milk early on with infant formula, which then leads to the early cessation of breastfeeding.¹

Antenatal and delivery care has also received an attention of researchers in Armenia in recent years. The data showed that the levels of antenatal care and delivery assistance are relatively high. Ninety two percent of mothers receive antenatal care from professional health providers, and 97% of births are delivered under the supervision of trained medical providers according to DHS survey in 2000 (with rural regions getting lower coverage). The survey conducted by the Center for Health Services Research and Development for American Red Cross and Armenian Red Cross IMCI community program in Gegharkunik in 2003 confirmed these findings, although showed that the frequency of antenatal care received during pregnancy was low.⁹ It also showed high rates of home deliveries among rural population.

The reproductive health of Armenian women is characterized by high abortion rate, despite the relatively high awareness of modern contraceptive methods. The DHS survey estimated total abortion rate for Armenian women as 2.6 abortions during lifetime (the rates for rural areas were shown to be significantly higher). The low level of use of modern contraceptives among Armenian women was shown previously; 22% using modern methods according to DHS and 28.4% according to CHSR survey in 2000.^{3, 10} Reproductive health received an increased attention from governmental/international organizations in recent years, generally leading to positive, but short-term shifts in this sphere.¹⁰

The knowledge of HIV/AIDS is rather high across the country^{3, 9}. However the means of HIV prevention are not so familiar to Armenian women, as shown by 2000 DHS; only 62% of women and 73% of men believe that there is a way to avoid the virus (and only 19% are aware of such ways according to CHSR survey in Gegharkunik).

Data regarding smoking rates for Armenian women are inadequate and limited, and mostly indicate low prevalence of smoking in comparison to Armenian men.^{11, 12, 13} Smoking during pregnancy is not culturally accepted in Armenia. However, as the prevalence rate of men who smoke was very high, the probability of exposure of women (including pregnant women) to

secondary smoke is also high. In addition, even if women are aware of the risks of secondary smoke, they often are not in control of their environment.

According to the results of household health assessment in Armavir *marz* conducted by CHSR in 2001, 86.1% of women did not have a drink of alcohol during the 30 days prior to the survey. Most of the women drink rarely (76.7%) and few (19.2%) seldom. Most of Armenian women are aware that drinking alcohol during pregnancy is harmful. However, many think that drinking occasionally and drinking certain types of alcohol (like champagne, liqueurs, and beer) is not harmful, as long as it was consumed in low quantities.¹⁴

WV Armenia aims to improve the health and nutrition status of the rural population in Lori and Gegharkunik *marzes* (particularly focusing on women and children) through the Mobile Medical Team (MMT) program, which includes several components described below.

1.2. MMT program

The goal of this 5-year program is to provide access to primary health care for hard to reach communities in Lori, Gegharkunik, Syunik and Tavush *marzes*. During the program period, Mobile Medical Teams will provide access to primary health care to a total of 33,500 beneficiaries twice a month, ensuring that the entire population in the targeted communities equally benefits from its services. Mobile Medical Team visits are an essential aspect of the program, however these efforts will also be supported with an integrated nutrition and healthy lifestyle promotion program for 1,675 people annually.

The specific activities of the overall program include

- Provision of the access to primary healthcare services through bi-monthly MMT visits to approximately 33,500 people in 57 villages
- Rehabilitation of Primary Health Care facilities which will profit approximately 26,500 people

- Regular nutrition support through supplementary food, nutrition supplements and increased knowledge on health and nutrition through training provided to 1,675 children under three, pregnant and lactating women.
- Annual TOT on nutrition, food safety and healthy lifestyle promotion provided to 150 community trainers.
- Training on nutrition, food safety and healthy lifestyle promotion by TOT graduates every year for three years to approximately 1,675 community members.
- The establishment of revolving drug funds that will create a sustainable mechanism to pay for drugs in the communities after the program has ended (approximately 29,500 in 91 villages will benefit from this component).
- MMT referral diagnoses, subsidized transport to district hospitals, minor rehabilitation of seven hospital facilities and provision of medical supplies from US corporations to referral hospitals (3,350 people per year are supposed to benefit)
- Technical training for 670 health care professionals in district hospitals

One of the essential parts of the nutrition and healthy lifestyle program is the educational component provided in the form of Training of Trainers (TOT) for 150 community volunteers and primary health care nurses (75 of them are participants from Lori/Gegharkunik, and 75 from Tavush and Syunik) on community health issues, including concept of preventive medicine and individual responsibility for own health, in addition to healthy food awareness, improved nutritional practices and dietary habits, personal hygiene and safe water and sanitation, STIs and HIV/AIDS, etc. Following TOT, primary care nurses and community volunteers will conduct peer education in their communities through formal and informal information sharing sessions. These efforts will support the work of the MMTs by creating a sustainable local pool of knowledge in each village.

1.3. Purpose of the research

WV Armenia contracted the American University of Armenia's Center for Health Services Research and Development (AUA/CHSR) to conduct a baseline evaluation to assess the nutrition and health knowledge, attitude and practices (KAP) in mothers of children under 5 in

Gegharkunik and Lori *marzes*. The evaluation included a survey of 199 households in the 22 villages in Vardenis region of Gegharkunik *marz* and Tashir region of Lori *marz*. The proposed research was aimed to contribute to the successful design and implementation of healthy lifestyle and nutrition component of WVA MMT project.

The CHSR was contracted to

- Carry out detailed planning and logistic preparation for KAP survey
- Develop, pre-test and revise instruments for KAP survey
- Translate the KAP survey tool into Armenian
- Develop sampling plan and carry out sampling for the survey
- Provide a training program for the interviewers covering the knowledge, skills, and behaviors needed to successfully implement the sampling strategy and administer the survey.
- Carry out field interviews with targeted respondents
- Enter and descriptively analyze the data
- Prepare and submit descriptive survey report

2. Methods

2.1 Sampling Strategy

Based upon the data provided by WV, a Simple Random Sampling of 200 households containing a child under 5 years of age was carried out. The sample size of 200 was based on the formula $n=2z^2pq/d^2$ and was discussed with/approved by WV Armenia. The sample size allows detecting 10% difference ($d =0.1$).

This approach is the preferred/gold standard and introduces no design effect, allowing reduced sample sizes or providing greater precision of measurement for a given sample size.

The possible disadvantage to this approach is the potential for oversampling of households with multiple children under 5 as each child under five is given an equal chance of inclusion, not each mother or household (though this bias is small and both methods face the issue of multi-family households).

CHSR research assistant participated in the process of random selection of the names of the children under five from the comprehensive list of the population in studied villages provided by WV Armenia. The process of sampling was carried out in several stages:

1. Villages and total population size in each village were listed
2. The number of households to be interviewed from each village based on the general sample size and the sampling weight were identified
3. All children under 5 in each village were numerated
4. Using EpiCalc 2000 software, random numbers for the main list were generated.
5. The number of households to be interviewed was identified. Appropriate quantity of random numbers was generated per each village. Children, whose IDs matched with the generated numbers were sampled for the main list.
6. Additional 50% of households for the additional list were generated (children selected for the main list will be excluded).

The names of selected children were recorded by interviewers and, in the village, their addresses were confirmed with a local person (a village nurse or a staff of village mayor's office in each village was involved in the process of finding the selected addresses to reduce time spent finding addresses).

The above-mentioned sampling techniques are standard and can be repeated by WVA at the follow-up survey (the overall study design will be two independent sample survey). The details of sampling procedure are provided in Appendix 1.

2.2 Survey instrument

The baseline survey instrument was collaboratively developed by CHSR and WVA staff and contained questions from several sources, including the validated KPC₂₀₀₀₊ Rapid Core Assessment Tool on Child Health (CATCH), Green Path Campaign Evaluation Questionnaire developed by CHSR/JHU in 2000, Armavir household survey (CHSR, 2001/2002), Health and Nutrition Survey Among Mothers/Caregivers (WVA, 2003), International Physical Activity

questionnaire (IPAQ), and Demographic Health Survey questionnaire (Ministry of Health, 2000).

The questionnaire was translated into Armenian by CHSR staff. The instrument underwent several iterations of pre-testing in its Armenian format. The first part of the instrument included questions for mothers of children under 5, while the second part was intended for their husbands. The final interviewer-administered instrument consisted of 107 questions, and was 18 pages in length (Appendix 2).

The first part of the instrument administered to women included the following ten main sections:

- General information
- KAP related to healthy lifestyle and behavior
- Physical activity
- Child feeding KAP
- Pregnancy/postnatal care
- Management of childhood illnesses
- Nutrition related KAP
- Child hygiene/dental care
- Reproductive health
- AIDS/STIs

The second part of the instrument administered to the husbands of interviewed women included the following sections:

- KAP related to healthy lifestyle and behavior
- Physical activity

All interviews were conducted in rooms where the respondent and the interviewer were alone during the interview. In addition to completing the interviews, interviewers filled in journal forms (Appendix 3), where information was logged on compliance with the sampling protocol and response patterns.

2.3 Interviewer training/pre-test

Interviewer training and pre-testing (2 days) took place the week of November 22, 2004. A total of 5 interviewers, all women, were utilized. The training guide, containing important information regarding the research objectives, methods, sampling/questionnaire administration, tips for interviewing, and timeline, was prepared and delivered to interviewers (Appendix 4). A senior member of the CHSR staff observed each interviewer during the pre-testing phase. Data collection in Tashir region started on December 1, 2004 and ended on December 6, 2004. Data collection in Vardenis region started on December 2, 2004 and ended on December 5, 2004. Spot checks in both Tashir and Vardenis were conducted by senior CHSR staff during fielding phase to assure compliance with the survey protocol and proper interviewer techniques.

2.4 Ethical considerations

The AUA Committee on Human Research (IRB) approved the study. Before the start of the interview, an oral consent statement was read to each respondent. It included information about the benefits and risks for the research participants and information that participation in the study is voluntary (Appendix 5).

2.5 Data entry/analysis

Data were entered into a computer database and analyzed using SPSS 10.0 software. Double entry and subsequent cleaning was used to ensure the accuracy of the data entry. The Chi-square test, one-way ANOVA, and independent samples T-test were used for the analysis.

3. Results: Women

The baseline survey described current maternal and child healthy lifestyle and nutrition-related knowledge, attitude and practices in the Vardenis and Tashir regions. The data collected allowed indicating several areas, which should receive special attention by program implementers, and provided a reference against which the changes in the community subsequent to the WVA MMT program implementation can be measured.

The survey data are presented according to the main areas of interest/ questionnaire domains

(separately for women and men respondents). Where applicable, the most important and striking statistically significant associations between some of the socio-demographic variables and KAP variables of interest are shown and supported by figures.

3.1 Administrative/General

A total of 200 women from 24 villages of Vardenis (105) and Tashir (94) regions responded to the baseline survey. Mean time for survey completion was 25.45 minutes. Overall, it took 277 attempts to complete 199 women interviews and 109 men interviews. The primary reasons for non-response were not meeting the eligibility criteria (8.3%) or total refusal of the selected household to participate in the survey (5.1%), followed by the individual respondent's refusal (4.7%) and absence of all household members from the house (3.2%).

The house of one of the respondent was impossible to find. Three of the women were contacted twice since they had more than one child under age 5 (the interview was not repeated with them and women from additional list were interviewed instead). The explicit refusal rate (either the selected respondent refused or someone refused on behalf of the entire household) was 9.8%.

The information on socio-demographic status of women was obtained (Table 1). The mean age of the women was 26.94 (with the distribution spanning the age range from 17 to 45). About 93.0% of the women were married, 3.0% were married, but living apart from their husbands, 2.5% were divorced, and 1.0% was single. Fifty five percent of women had school education, while 12% had secondary/special education. Six percent had undergraduate education. Relatively high percent of women (26.8%) have not completed school education. The level of women's education significantly differed in Lori and Gegharkunik, with Lori population being less educated (higher proportion of Lori women have not completed primary education and lower proportion completed secondary-special, undergraduate or graduate education) (Figure 1).

Table 1. Socio-demographic characteristics of women

Variables	Categories	% (n)			Mean		
		Lori	Geghar-k	Total	Lori	Geghar-k	Total
Age category of respondent	Younger (<25)	38.7 (36)	48.1 (50)	43.7 (86)	27.0 (93)	26.9 (104)	26.94 (197)
	Older (≥25)	61.3 (57)	51.9 (54)	56.3 (111)			

Variables	Categories	% (n)			Mean		
		Lori	Geghar-k	Total	Lori	Geghar-k	Total
Marital status	Married	90.3 (84)	95.2 (100)	92.9 (184)			
	Married, but living apart	5.4 (5)	1.0 (1)	3.0 (6)			
	Divorced	2.2 (2)	2.9 (3)	2.5 (5)			
	Widowed	1.1 (1)	-	0.5 (1)			
	Single	1.1 (1)	1.0 (1)	1.0 (2)			
Education status*	Incomplete primary	31.2 (29)	22.9 (24)	26.8 (53)			
	School education	51.6 (48)	58.1 (61)	55.1 (109)			
	Secondary-special	6.5 (6)	17.1 (18)	12.1 (24)			
	Undergraduate	10.8 (10)	1.9 (2)	6.1 (12)			
# of adults living in the household					4.1 (93)	3.4 (105)	3.75 (198)
# of children living in the household					2.5 (93)	2.6 (105)	2.58 (198)
Main breadwinner in the household	Myself	7.0 (6)	5.0 (5)	5.9 (11)			
	Husband	52.3 (45)	54.0 (54)	53.2 (99)			
	Mother-in-law	1.2 (1)	13.0 (13)	7.5 (14)			
	Father-in-law	36.0 (31)	18.0 (18)	26.3 (49)			
	Other	3.5 (3)	10.0 (10)	7.0 (13)			
The amount spent by household members in the last month	Less than \$50	6.8 (5)	38.3 (31)	23.2 (36)			
	\$50 - \$99	32.4 (24)	35.8 (29)	34.2 (53)			
	\$100 - \$199	45.9 (34)	17.3 (14)	31.0 (48)			
	\$200 - \$500	9.5 (7)	6.2 (5)	7.7 (12)			
	More than \$500	5.4 (4)	2.5 (2)	3.9 (6)			
Presence of convenience items in the household*	No items	10.9 (10)	35.6 (37)	24.0 (47)			
	Mid number of items (1-3)	67.4 (62)	54.8 (57)	60.7 (119)	2.3 (92)	1.4 (104)	1.83 (196)
	High number of items (≥ 4)	21.7 (20)	9.6 (10)	15.3 (30)			

* - the difference is statistically significant, $p \leq 0.05$

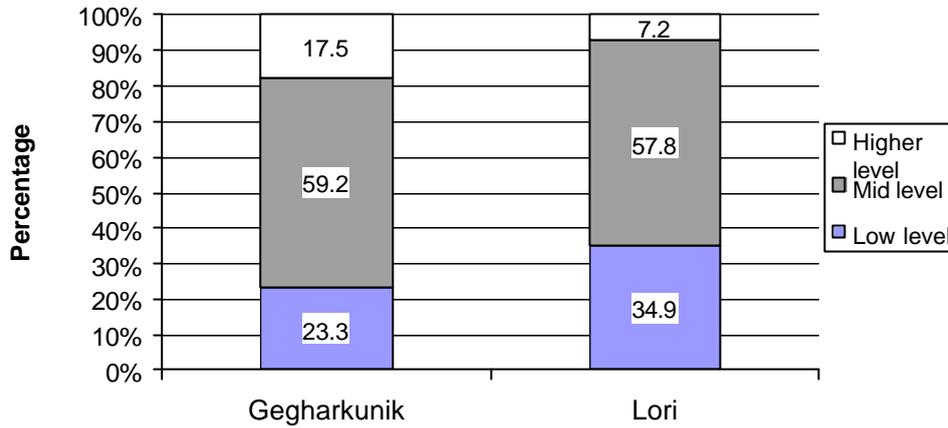
The mean number of adults living in the surveyed households was 3.75 (with the range of 1-9), while the mean number of children per household was 2.58 (with the range of 1-8).

The main breadwinner in most of the households was a husband (53.2%), followed by father-in-law (26.3%), and mother in-law (7.5%). Only in 5.9% of cases the main breadwinner was a woman herself.

The approximate amount spent in the last month by 155 households, for which the information was possible to obtain, in most of the cases have not exceed \$200.0 (34.2% of households spent

from \$50.0 to \$100.0, 31.0% from \$100.0 to \$200.0, and 23.2% less than \$50.0). Approximately 8.0% spent from \$200.0 to \$500.0, and only 3.9% reported spending over \$500.0.

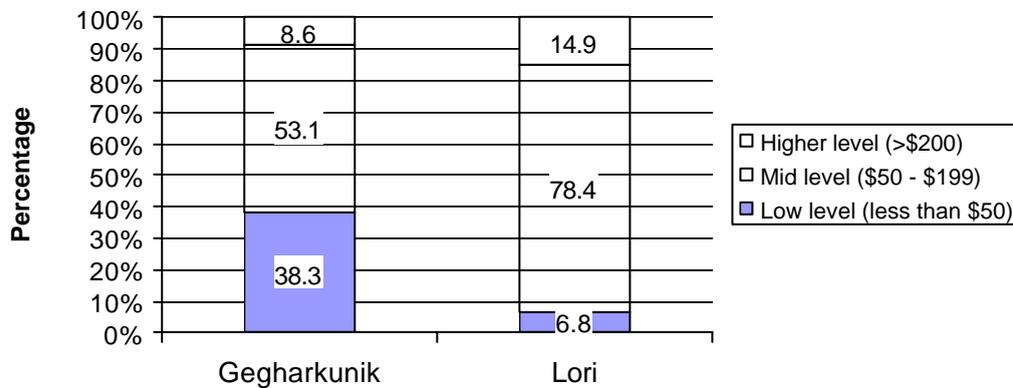
Figure 1. Women's education level by *marz* *



* - the difference is marginally significant, $p=0.05$

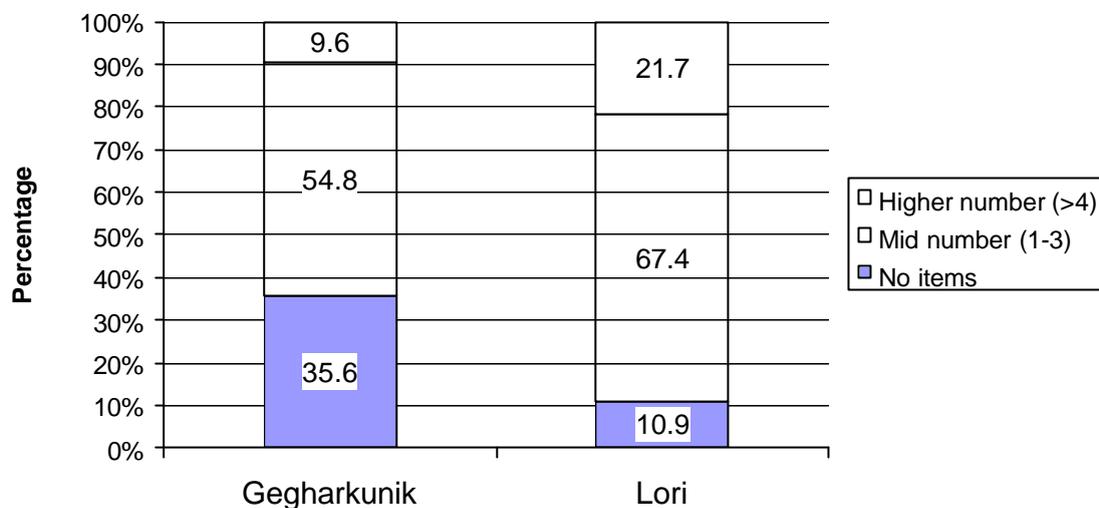
The presence of luxury/convenience items in the household was also explored as a proxy to socio-economic status. The mean number of these convenience items for the surveyed population was 1.8, ranging from 1 to 8 out of 11 possible items. Twenty four percent of respondents had 0 convenience items. Gegharkunik and Lori differed both by the level of household expenditures and by the number of convenience items in the household (Figures 2 and 3).

Figure 2. Level of household expenditures by *marz* *



*- the difference is statistically significant, $p<0.05$

Figure 3. Number of convenience items in a household by marz *



*- the difference is statistically significant, $p < 0.05$

3.2 KAP related to healthy lifestyle and behavior

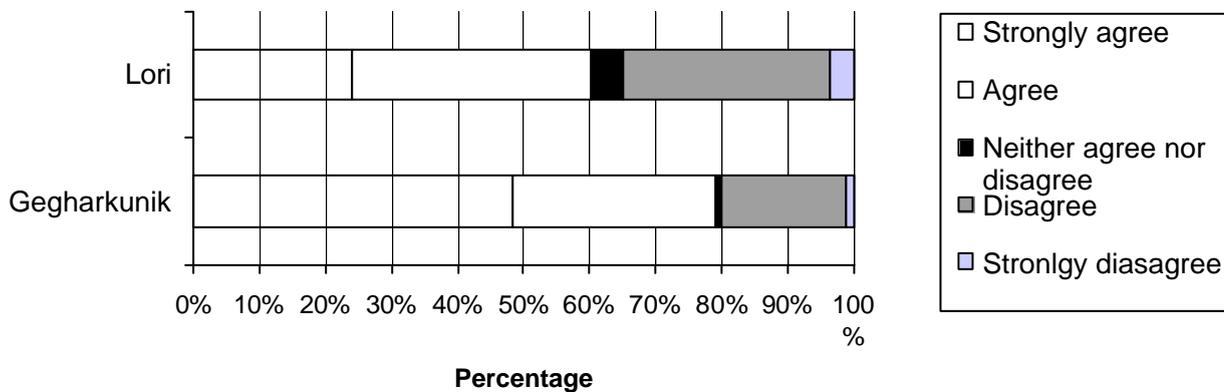
Only two women mentioned that they have ever tried smoking cigarettes. None of the women smoke currently. However, 73.9% live in a household in which other people smoke on a daily basis. Almost all women concurred with the statement that smoking tobacco is harmful to a person's health (29.1% agree and 68.8% strongly agree) (Table 2). The similar distribution of answers was obtained for the question asking if breathing smoke from another's cigarette is harmful to health (95.4% were either agree or strongly agree with this). Most of the women agreed or strongly agreed with the statement that smoking should be prohibited in public buildings (84.3%) and inside the house/room (93.9%). Women were asked about their drinking habits/attitude as well. The overwhelming majority of respondents (88.4%) never or rarely drink, while 10% drink seldom (once or twice a month). Only one woman mentioned that she drinks once a week, and one woman mentioned drinking often (more than three times a week). Less promising results were obtained on the question asking about women's opinion on drinking alcohol during pregnancy (Table 2).

Table 2. Women's attitude towards smoking/drinking

Statement:	Strongly agree % (n)	Agree % (n)	Neither agree nor disagree % (n)	Disagree % (n)	Strongly disagree % (n)
<i>Smoking tobacco is harmful to a person's health</i>	68.8 (137)	29.1 (58)	1.0 (2)	-	1.0 (2)
<i>Breathing smoke from another person's cigarette is harmful to a person's health</i>	67.2 (131)	28.2 (55)	1.5 (3)	2.6 (5)	0.5 (1)
<i>Smoking should be prohibited in public buildings</i>	65.5 (129)	18.8 (37)	7.6 (15)	6.1 (12)	2.0 (4)
<i>Smoking should be avoided inside the house/room</i>	59.6 (118)	34.3 (68)	1.0 (2)	4.5 (9)	0.5 (1)
<i>A small amount of alcohol during pregnancy negatively affects the fetus</i>	37.1 (66)	33.1 (59)	2.8 (5)	24.7 (44)	2.2 (4)

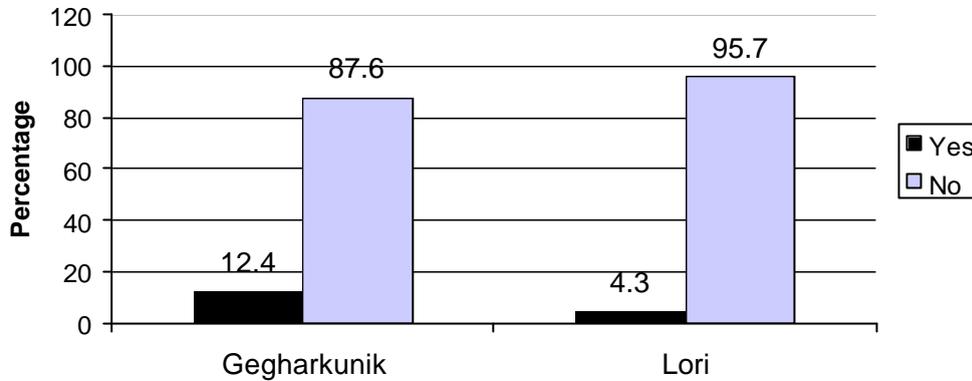
Thirty seven percent strongly agreed that drinking a small amount of alcohol during pregnancy negatively affect the fetus, and 33.1% agreed, while 24.7% disagreed, 2.2% strongly disagreed, and 2.8% neither agreed nor disagreed with the statement (the distribution of answers significantly differed between the *marzes*, Figure 4). Only two respondents have ever had drinking problem; the drinking problem for anyone in the household was present in 8.6% of all cases (more frequently seen in Gegharkunik than in Lori, Figure 5).

Figure 4. "A small amount of alcohol during pregnancy negatively affect the fetus"; responses by *marz* *



* - the difference is statistically significant, $p < 0.05$

Figure 5. Drinking problem in household by *marz* *



* - the difference is statistically significant, $p < 0.05$

3.3 Physical activity

Information was gathered concerning women’s physical activity (Table 3). On average, women have done vigorous physical activities on 2 days out of last seven days, spending approximately 2.28 hrs on the activity on average. Moderate physical activities were performed by women on average on 3.5 days out of 7 last days (2.5 hrs spent on the activity each time). On average, women walked (including walking at home and at work, traveling from place to place and any other walking for recreation, sport exercise, or leisure) on 2.73 days out of 7 last days; the mean time spent on walking was 1.42 hrs per day. More time is spent by women sitting; on average 2.9 hrs per day was spent sitting (during the last seven days). The detailed analysis of the physical activity data was conducted based on Guidelines for Data Processing and Analysis of the International Physical Activity Questionnaire (IPAQ) – Short Form.¹⁵ Based on the analysis, 50.3% of surveyed women were classified as HEPA (Health Enhancing Physical Activity) active (people who exceed the minimum public health physical activity recommendations, and are accumulating enough activity for a healthy lifestyle), 18.4% as minimally active (achieving the minimum level of activity recommended for adults in current public health recommendations), and 31.3 % as inactive (not reaching the recommended level of activity). The majority of women agreed that physical exercise is good for their health (63.8% strongly agreed and 29.1% agreed); only one woman strongly disagreed with this statement.

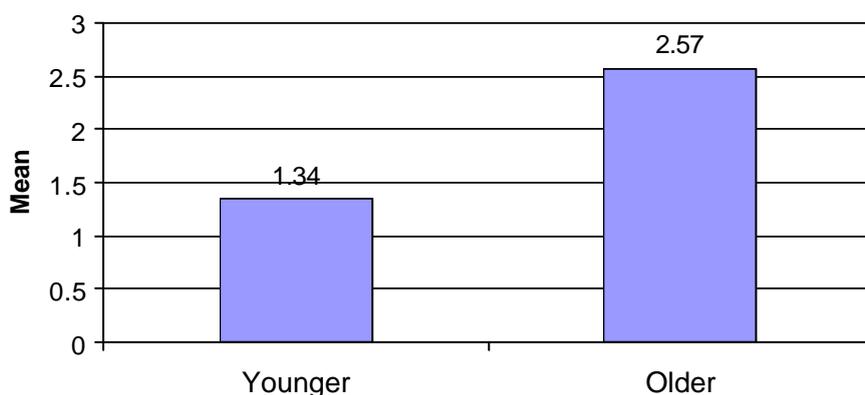
Table 3. Women’s physical activity

Type of activity	# of days spent on the activity, mean (n)			Time spent (hrs) during a day, mean (n)		
	Lori	Geghar-k	Total	Lori	Geghar-k	Total
<i>Vigorous physical activity during the last 7 days</i>	2.16 (94)	1.92 (101)	2.04 (195)	1.92 (33)	2.64 (33)	2.28 (66)
<i>Moderate physical activity during the last 7 days*</i>	4.01 (93)	3.03 (101)	3.50 (194)	2.23 (70)	2.73 (66)	2.50 (136)
<i>Walking for at least 10 minutes at a time during the last 7 days</i>	2.65 (94)	2.81 (103)	2.73 (197)	1.34 (64)	1.50 (70)	1.42 (134)
<i>Sitting on a week day*</i>	-			3.24 (94)	2.51 (104)	2.9 (198)

* - the difference is statistically significant, $p < 0.05$

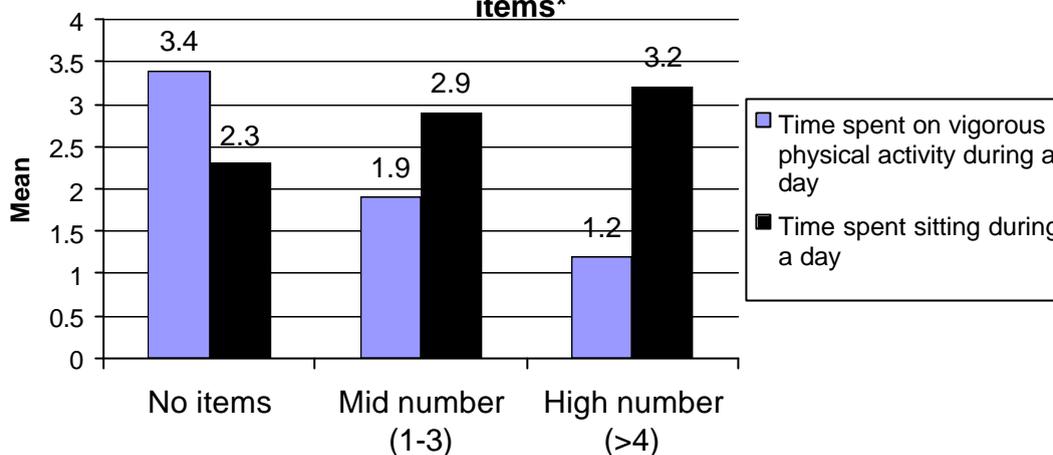
The data showed statistically significant difference between the average number of days spent on the vigorous physical activity in younger and older women (Figure 6). It was also revealed that women in richer households (with higher number of convenience items) spent significantly less time doing vigorous physical activity on the days when they do such activity and spent more time sitting during a day than women in poorer households (Figure 7).

Figure 6. # of days in the last 7 days spent on vigorous physical activity by age category of women *



* - the difference is statistically significant, $p < 0.05$

Figure 7. Time spent on vigorous physical activity during and sitting during a day by the number of convenience items*



* - the differences are statistically significant, $p < 0.05$

3.4 Child feeding knowledge, practice and attitude

The mean age of the youngest child was 28.2 months. The overwhelming majority of surveyed women (97.0%) breastfed the youngest child, and in most of the cases the child was put to the breast immediately/within first hour after delivery (50.5%). Forty one percent of women breastfed within first day after the delivery, and 8.6% after first day. On average, women breastfed the child (any type of breastfeeding) for 10.8 months. When asked about for how months a baby does not need any other food or drink but breast milk, the highest proportion of women indicated 6 months (39.4%), followed by 12 months (19.7%), 4 months (9%), and 2 months (6.4%). All but two women either strongly agreed or agreed with the statement that it is better for an infant's health to give him breastmilk than to give him cow -milk (or Narine).

Women with children under 24 months of age were asked about the feeding pattern of the child in the last day (prior to the interview). The breastmilk was given to a child by 60.7% of women, plain water by 85.4% of women, other liquids by 73.0% of women, and solid/semisolid food was provided by 77.5% of women (Table 4).

Table 4. Food given yesterday to a child under 24 months of age¹

Type of food	% (n)		
	Lori	Gegharkunik	Total
Plain water	87.9 (29)	83.9 (47)	85.4 (76)
Solid-semisolid food	84.8 (28)	73.2 (41)	77.5 (69)
Other liquids	69.7 (23)	75.0 (42)	73.0 (65)
Breastmilk	54.5 (18)	64.3 (36)	60.7 (54)

¹ - multiple responses for the question were obtained

The exclusive breastfeeding rate (percentage of infants age 0-5 months who were exclusively breastfed in the last 24 hours) was calculated. It was found that out of 12 children under 5 months of age, 4 were exclusively breastfed (33.3%). The appropriate complementary feeding rate was also computed (percentage of infants age 6-9 months receiving breastmilk and complementary foods). The data show that 53.3% of children in 6-9 months age group (n=15) received appropriate complementary feeding.

Women having children over 24 months of age were asked about the types of food consumed by their children yesterday (Table 5). It was revealed that 94.4% of children consumed products like bread, cereals (buckwheat, rice, etc.), pasta or potato during the last 24 hours, 97.2% consumed fat, oil or butter, 76.6% consumed milk/dairy products, 75.9% consumed fruits and vegetables, 57.5% consumed meat, meat products or eggs, and only 26.7% consumed legumes (Table 4). Out of 104 children, 10 received all of the above-mentioned food groups in the last 24 hours.

Table 5. Food consumed during the last 24 hrs by a child over 24 months of age¹

Type of food	% (n)		
	Lori	Gegharkunik	Total
Fat, oil or butter	95.0 (57)	100.0 (48)	97.2 (105)
Bread, cereals, pasta or potato*	98.3 (60)	89.6 (43)	94.4 (102)
Milk, dairy products	78.3 (47)	74.5 (35)	76.6 (82)
Fruits and vegetables*	68.3 (41)	85.4 (41)	75.9 (82)
Meat, meat products or eggs	57.6 (34)	57.4 (27)	57.5 (61)
Legumes	25.0 (15)	28.9 (13)	26.7 (28)

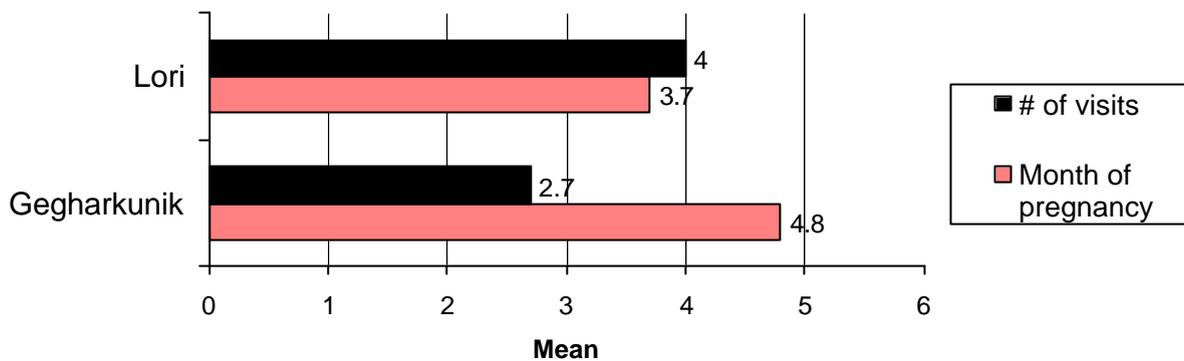
¹ - multiple responses for the question were obtained

* - the difference is statistically significant, $p \leq 0.05$

3.5 Pregnancy/Postnatal care

Questions concerning the delivery of the youngest child were asked in this section. The survey revealed that on average, women had their first antenatal care visit during the 4th month of pregnancy (median =3, SD =1.9), and had on average 3.5 antenatal visits during the whole pregnancy (median =3, SD =2.7) (less than a minimum of 4 antenatal visits recommended by WHO) (Table 6). The above-mentioned means differed by *marzes* (Figure 8).

Figure 8. Antenatal care during pregnancy by *marz* *

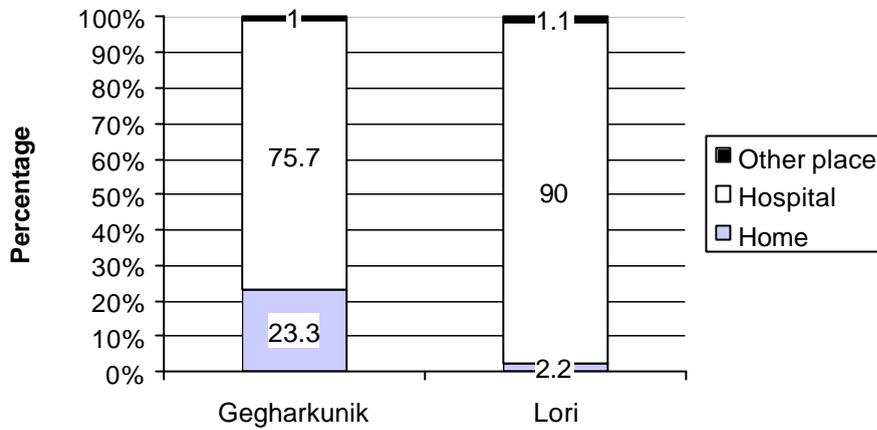


* - the differences are statistically significant, $p < 0.05$

Of 193 women responding to the question, 29.5% have never received prenatal care. About 85.7% of respondents delivered their youngest baby at the maternity house, while 13.3% at home. The percentages differed by *marz*, by the number of convenience items, and by the age category (Figures 9, 10 and 11). One of the women delivered a baby in a car, and the other woman in a tractor.

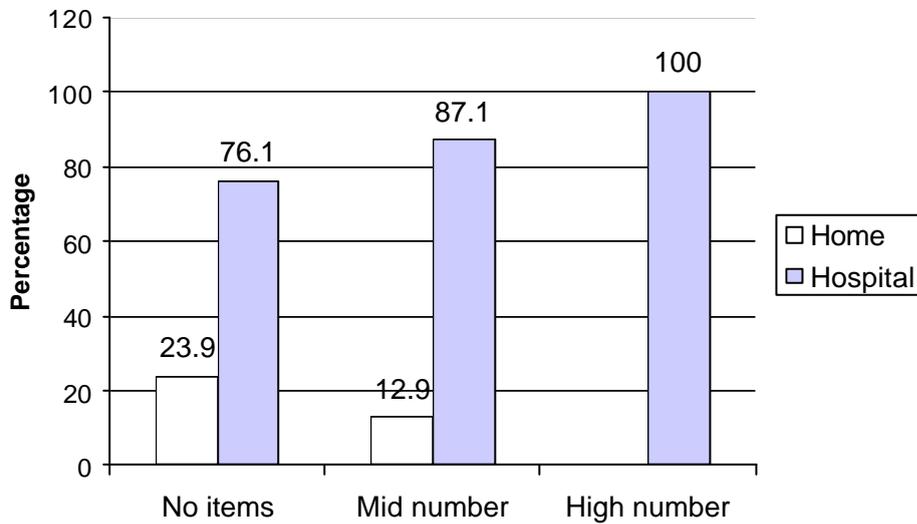
According to the data, in 25.9% of cases woman's health after delivery at home was checked by a doctor, and in 77.8% of cases by a nurse. About 18% of women mentioned traditional practitioner checking on their health after delivery. In 2 cases the "health check" was performed by a mother-in-law, and in one case by mother. Overall, out of 27 women responding to the question, 85.2% (23) received skilled health check after delivery at home (were attended either by a doctor or a nurse).

Figure 9. Place of delivery by *marz* *



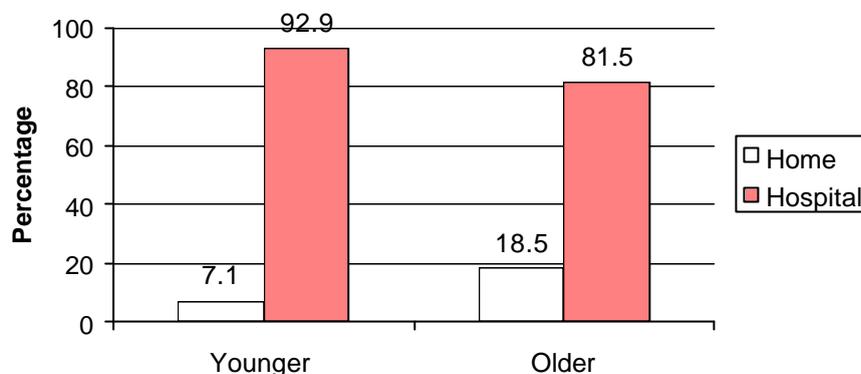
* - the difference is statistically significant, $p < 0.05$

Figure 10. Place of delivery by the number of convenience items in the household *



* - the difference is statistically significant, $p < 0.05$

Figure 11. Place of delivery by age category of women *



* - the difference is statistically significant, $p < 0.05$

3.6 Management of Childhood Illnesses (IMCI)

In this section, questions were asked regarding the timely recognition of signs in children that indicate the need for treatment, and appropriate management of illnesses. The most frequently mentioned sign of illness in children that indicates the need for treatment was high fever (74.3%), followed by looking unwell/not playing normally (46.8%), and cough (23.2%) (Table 6). Fatigue, not eating or drinking, diarrhea, and rinorhea were the next most frequently cited signs (22.1%, 18.4%, 16.3%, and 13.7% of respondents respectively). Eight percent of women named option “vomits everything”, and 6.8% “lethargic or difficult to wake”.

Table 6. Cited signs of illnesses in children that indicate a need for treatment¹

Signs of illness	% (n)		Total
	Lori	Gegharkunik	
High fever	68.5 (63)	68.4 (67)	68.4 (130)
Looks unwell or not playing normally*	57.6 (53)	36.7 (36)	46.8 (89)
Cough*	13.0 (12)	32.7 (32)	23.2 (44)
Fatigue	20.7 (19)	23.5 (23)	22.1 (42)
Not eating or drinking	21.7 (20)	15.3 (15)	18.4 (35)
Diarrhea*	10.9 (10)	21.4 (21)	16.3 (31)
Rinorhea	6.5 (6)	20.4 (20)	13.7 (26)
Vomits everything	12.0 (11)	8.2 (8)	10.0 (19)
Lethargic or difficult to wake	9.8 (9)	4.1 (4)	6.8 (13)

Signs of illness	% (n)		
	Lori	Gegharkunik	Total
Convulsions	2.2 (2)	4.1 (4)	3.2 (6)
Abdominal pain	3.3 (3)	3.1 (3)	3.2 (6)
Constipation	1.1 (1)	4.1 (4)	2.6 (5)
No appetite	2.2 (2)	1.0 (1)	1.6 (3)

[†] - multiple responses for the question were obtained

* - the difference is statistically significant, $p \leq 0.05$

The indicator showing maternal knowledge of child danger signs (percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment) was calculated. The data show that 52.6% of mothers knew at least two signs of childhood illness that indicate the need for treatment.

Women were also asked about their knowledge on how the child should be managed in case of diarrhea (Figure 12). Forty seven percent of women mentioned that the child should be given liquids more than he/she normally drinks, 31.1% thought the child should be given liquids much less than he/she normally drinks, and 21.9% thought it should be the same amount as he/she usually drinks.

What refers to food (Figure 13), 43.6% thought that when a child has diarrhea, he/she should be given food much less than he/she normally eats, 42.6% thought he/she should be given about the same amount as he/she usually eats, and 13.8% mentioned the child should receive more food than usually.

Figure 12. Management of diarrhea: liquids should be given...

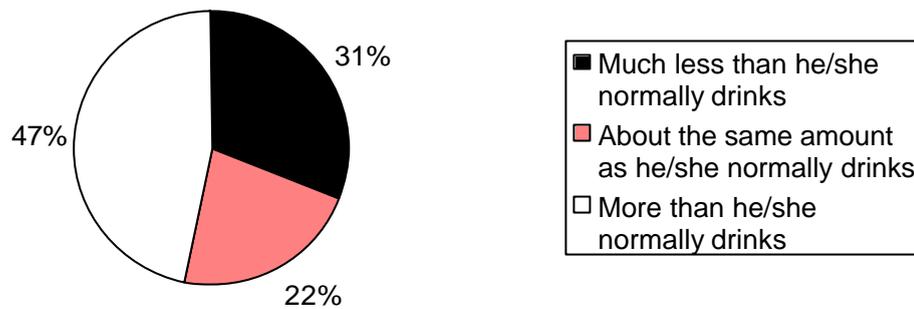
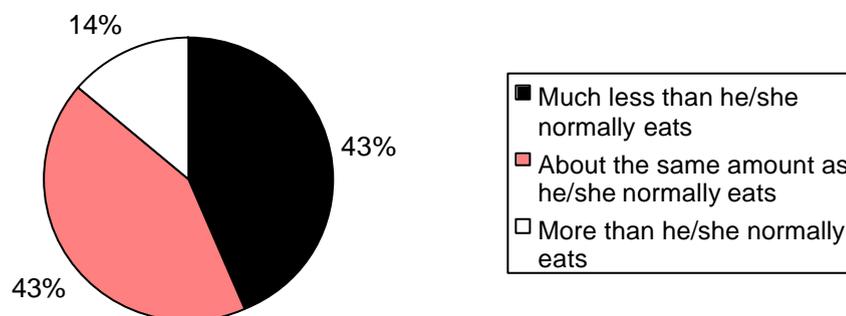
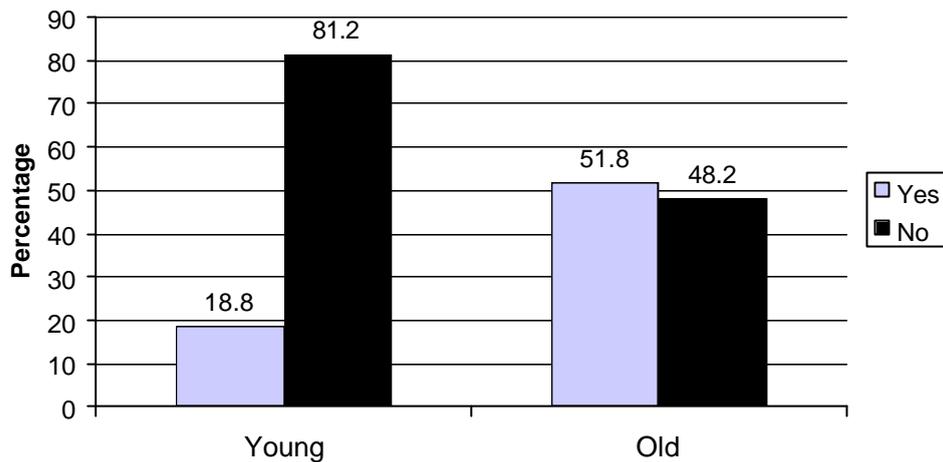


Figure 13. Management of diarrhea: food should be given...



A set of questions on parasitic diseases was administered to women. In 37.1% of cases children have ever had parasitic diseases. As one would expect, parasitic diseases were reported by older women more frequently (Figure 14).

Figure 14. Children ever having parasitic disease by age category of women*



* - the difference is statistically significant, $p < 0.05$

All women were asked about the signs that would indicate that the child has worm infestation (Table 7). The most frequently mentioned sign was itching of anus (33.1%), followed by salivation (31.3%), huge appetite (19.9%), and abdominal pain (19.3%). Weight loss and warm in feces were indicated by 14.5% of women each, while bruxism, nausea/dizziness, anorexia, and constipation were mentioned by 13.9%, 12%, 12%, and 3.0% respectively. When asked about the signs indicating that the child has scabies, most of the women mentioned itching (85.9%), and rash (37.8%). Four women mentioned redness on the skin as a sign. Itching was the most frequently cited sign of louse/pediculus (89.8%). Fewer women mentioned seeing lice on a head (17.6%), sores on a head (3.2%), and feeling of something moving in hair (2.7%) (Table 7).

Table 7. Signs of parasitic diseases¹

Signs	% (n)		
	Lori	Gegharkunik	Total
Warm infestation			
Itching *	42.0 (34)	24.7 (21)	33.1 (55)
Salivation	37.0 (30)	25.9 (22)	31.3 (52)

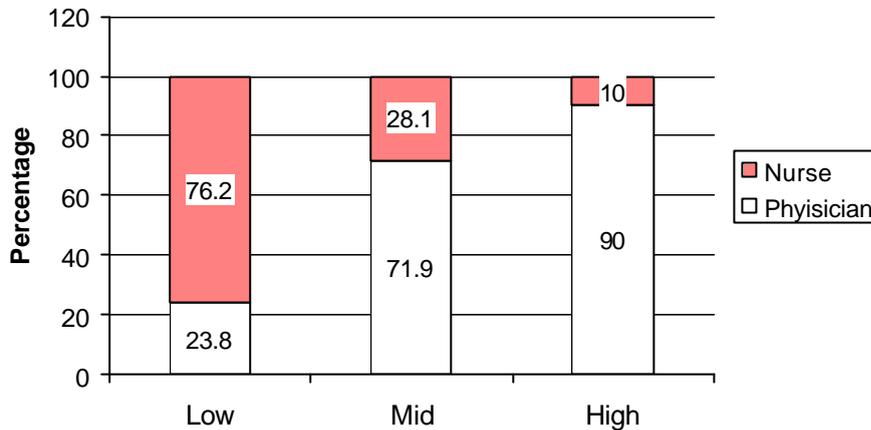
Signs	% (n)		
	Lori	Gegharkunik	Total
Huge appetite	14.8 (12)	24.7 (21)	19.9 (33)
Abdominal pain	22.2 (18)	16.5 (14)	19.3 (32)
Weight loss*	4.9 (4)	23.5 (20)	14.5 (24)
Warm in feces*	8.6 (7)	20.0 (17)	14.5 (24)
Bruxism*	7.4 (6)	20.0 (17)	13.9 (23)
Nausea/dizziness	16.0 (13)	8.2 (7)	12.0 (20)
Anorexia	16.0 (13)	8.2 (7)	12.0 (20)
Constipation	3.7 (3)	2.4 (2)	3.0 (5)
Diarrhea	1.2 (1)	3.5 (3)	2.4 (4)
Anemia	-	2.4 (2)	1.2 (2)
Scabies			
Itching	84.2 (64)	87.5 (70)	85.9 (134)
Rash	32.9 (25)	42.5 (34)	37.8 (59)
Redness on skin	2.9 (3)	1.1 (1)	2.6 (4)
Louse/pediculus			
Itching*	94.4 (84)	85.7 (84)	89.8 (168)
Visible lice on a head	16.9 (15)	18.4 (18)	17.6 (33)
Sores on a head	2.2 (2)	4.1 (4)	3.2 (6)
Feeling of something moving in the hair	3.4 (3)	2.0 (2)	2.7 (5)
Irritability	1.1 (1)	-	0.5 (1)

! - multiple responses for the question were obtained

* - the difference is statistically significant, $p < 0.05$

Care-seeking attitude of women was also investigated. It was found that 60.8% of women seek advice or treatment outside of the house for a sick child. When seeking help, the first point of contact is physician (54.7%), followed by nurse (40.2%), and other person with medical education (3.4%). Two women mentioned applying to a person without medical education (neighbors). It was found that women in the low expenditure category tend to apply to a nurse for advise/treatment, while better-off women apply to physicians (Figure 15).

Figure 15. First contact for advise/treatment by household expenditure category *



* - the difference is statistically significant, $p < 0.05$

3.7 Nutrition related knowledge, attitude, and practices

A set of questions was asked about the women's nutrition related knowledge, attitude and practice. When asked about the food groups considered as source of “empty calories”, the highest percentage of women indicated sweets (43.1%). However, vegetable food rich in protein and starch (potato, bread, cereals, buckwheat) were also mentioned by relatively high percentage of women (23%) as a source of empty calories. Oil was mentioned by 8% of respondents, followed by meat and eggs (7.5%), and milk and dairy (4.0%). Approximately 5% of women indicated fruits and vegetables as a source of empty calories. When asked about which food products can increase the risk of cardio-vascular diseases, most women mentioned fatty meat (94.3%). Another relatively frequently cited food product was boiled butter (23.9%), followed by olive oil (5.7%), and fish (3.8%).

Cooking practice among women was also investigated (Table 8). Sunflower oil was the most popular cooking oil among respondents (83.4%), followed by boiled butter (78.9%), butter (66.3%), and hydrogenated vegetable oil (61.3%). Less commonly used are lard (36.7%), fat

made in Norway/Australia (26.1%), margarine (25.1%), and olive/corn oil (11.6%). Flaxseed oil and soya been oil are very rarely used (2.5% and 2.0% respectively). Interesting associations were found between the use of a certain type of a fat/oil and some of the socio-demographic characteristics of women (Figures 16, 17, 18 and 19).

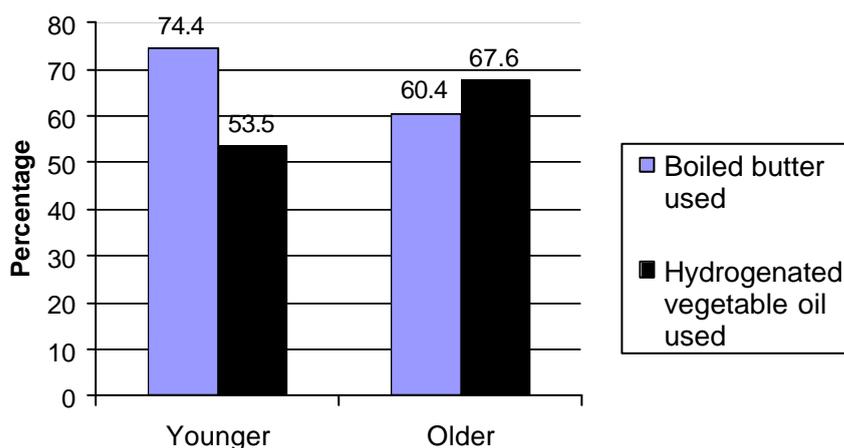
Table 8. Type of fat/oil used by women for cooking¹

Types of fat/oil	% (n)		
	Lori	Gegharkunik	Total
Sunflower oil*	47.2 (94)	52.8 (105)	83.4 (166)
Boiled butter	76.6 (72)	81.0 (85)	78.9 (157)
Butter*	51.1 (48)	80.0 (84)	66.3 (132)
Hydrogenated vegetable oil	52.1 (49)	69.5 (73)	61.3 (122)
Lard	37.2 (35)	36.2 (38)	36.7 (73)
Fat made in Norway/Australia	25.5 (24)	26.7 (28)	26.1 (52)
Margarine*	4.3 (4)	43.8 (46)	25.1 (50)
Olive oil	9.6 (9)	13.3 (14)	11.6 (23)
Corn oil*	5.3 (5)	17.1 (18)	11.6 (23)
Flax-seed oil	-	4.8 (5)	2.5 (5)
Soya been oil	-	3.8 (4)	2.0 (4)

¹ - multiple responses for the question were obtained

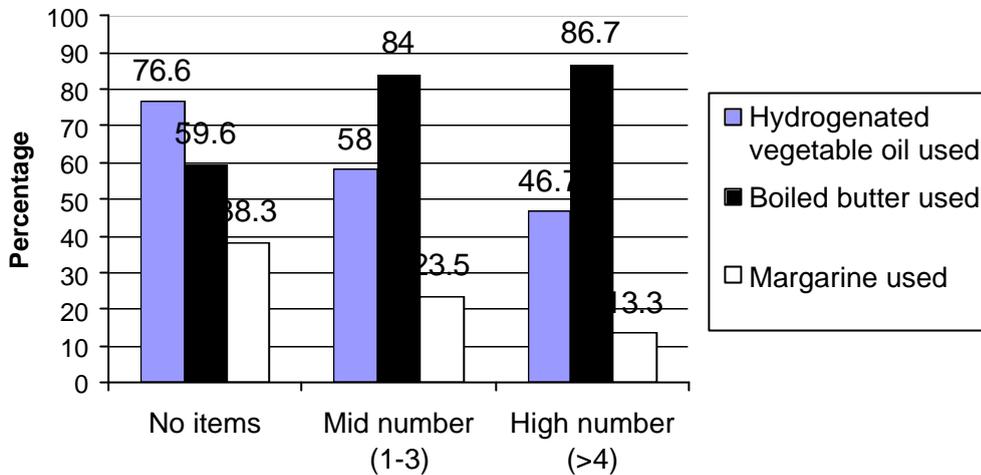
* - the difference is statistically significant, $p < 0.05$

Figure 16. Use of fat/oils by age category *



* - the differences are statistically significant, $p < 0.05$

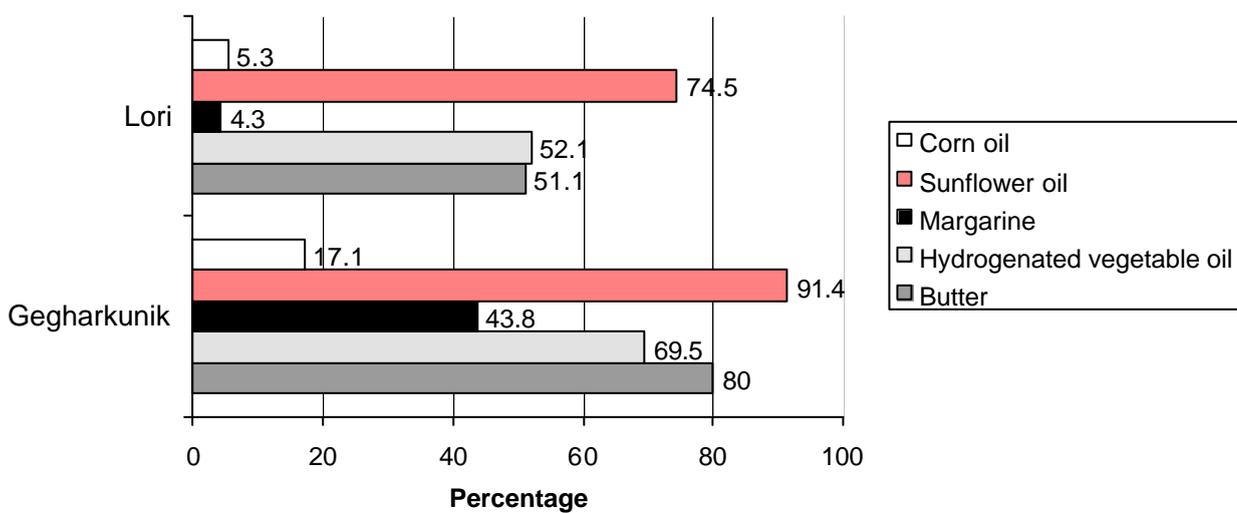
Figure 17. Use of fat/oils by the number of convenience items in the household *



* - the differences are statistically significant, $p < 0.05$

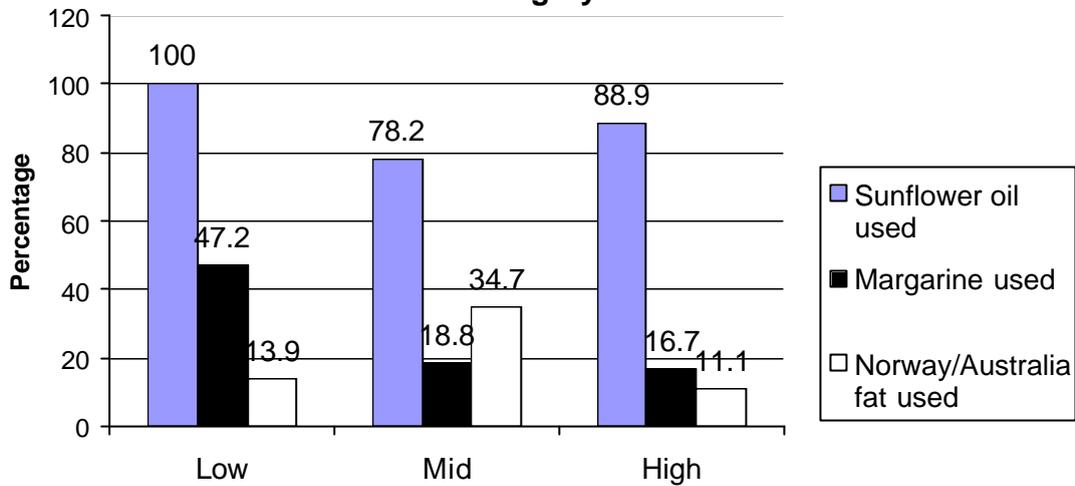
Women were asked to identify the method of cooking which they consider healthier. Cooking with oil/fat was considered healthy by the highest percentage of women (62.0%), followed by boiling with water (59.4%), and BBQ (34.2%). The lowest percentage of women (32.1%) mentioned steaming as a healthy method of food preparation.

Figure 18. Use of fat/oils by marz *



*- the differences are statistically significant, $p < 0.05$

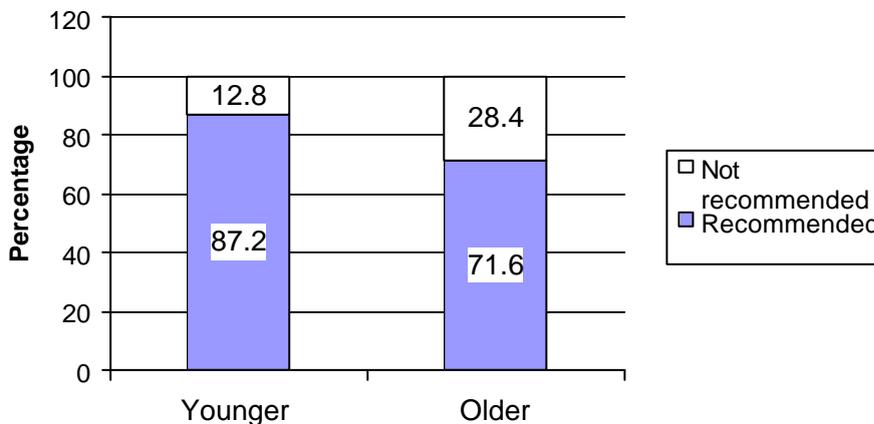
Figure 19. Use of fat/oils by household expenditure category *



*- the differences are statistically significant, $p < 0.05$

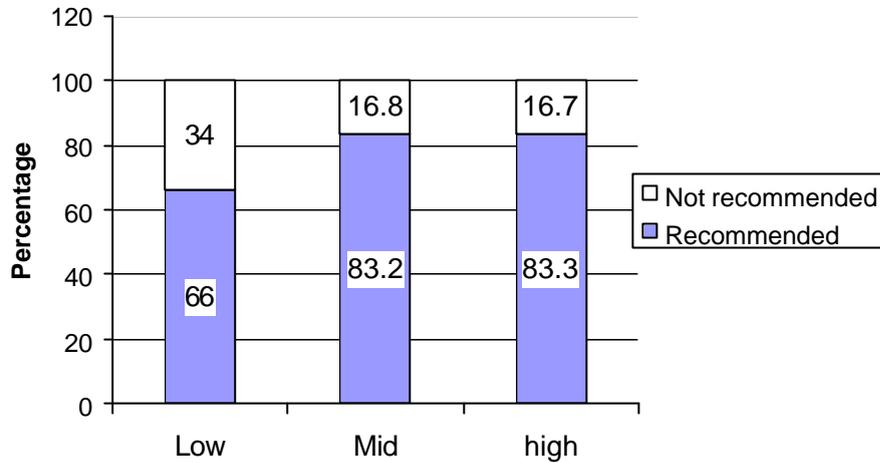
Most of the women considered that for daily use it is recommended to drink natural juice (78.7%), tea (74.1%), spring water (65%), and mineral water (54.3%). Coffee and coca/fanta/sprite were relatively rarely mentioned as recommended drinks (28.9% and 6.6% respectively). Notable associations were found between the age, education, economic categories of the women, and *marz*, and their knowledge of “recommended drinks” (Figures 20, 21, 22 and 23).

Figure 20. "For daily use it is recommended to drink natural juice" by age category *



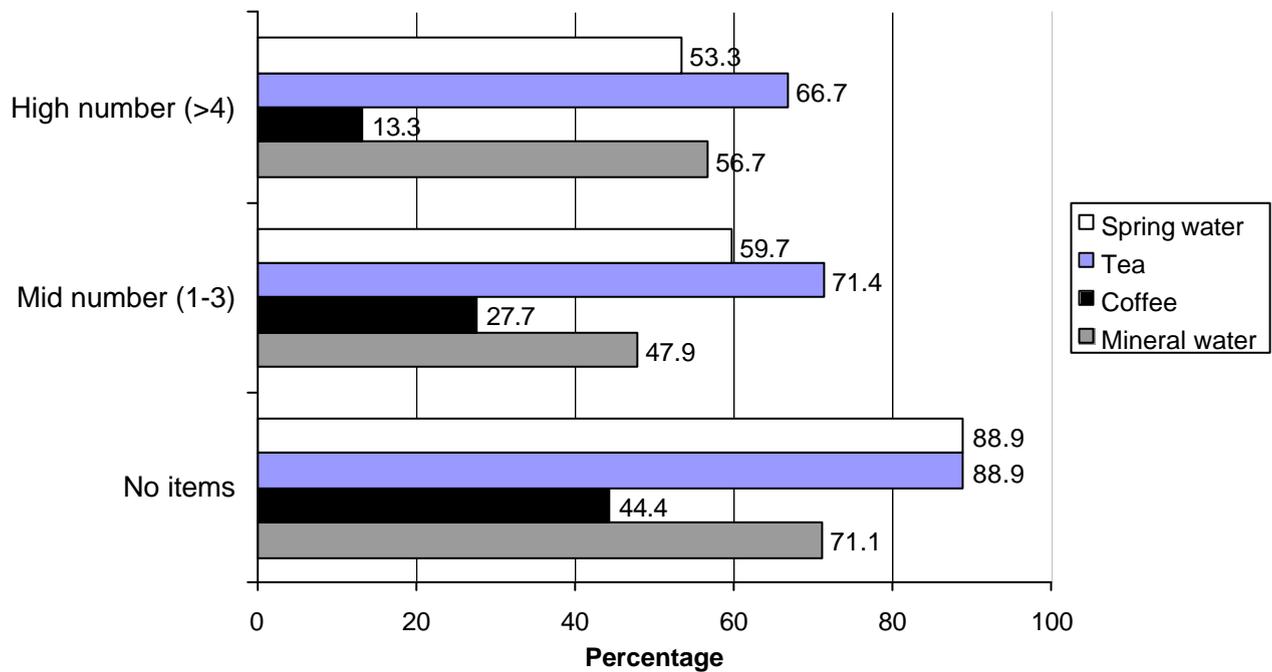
* - the difference is statistically significant, $p < 0.05$

Figure 21. "For daily use it is recommended to drink natural juice" by education category *



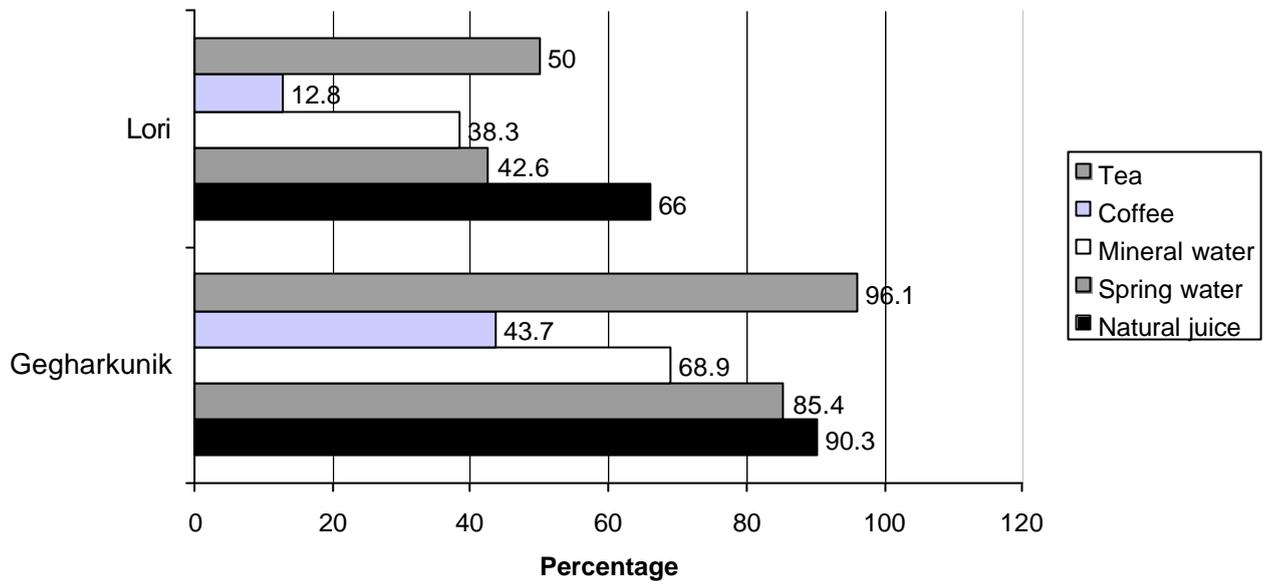
* - the difference is statistically significant, $p < 0.05$

Figure 22. Knowledge of recommended drinks by the number of convenience items in a household *



* - the differences are statistically significant, $p < 0.05$

Figure 23. Knowledge of recommended drinks by marz *



* - the differences are statistically significant, $p < 0.05$

Almost 80% of women agreed with the statement that coffee and tea affect iron absorption within the body. When asked about the ways to prevent goiter, most of the women mentioned iodized salt (79.2%). Using special food and doing physical activity to prevent goiter were mentioned by 41.6% and 12.1% of respondents respectively (Table 9).

Table 9. Goiter can be prevented by...¹

Ways of prevention	% (n)		
	Lori	Gegharkunik	Total
Using iodized salt	77.3 (58)	81.1 (60)	79.2 (118)
Using special food*	28.0 (21)	55.4 (41)	41.6 (62)
Physical exercise*	6.7 (5)	17.6 (13)	12.1 (18)

¹ - multiple responses for the question were obtained

* - the differences are statistically significant, $p < 0.05$

According to 73% of women, botulism can be prevented by washing fruits and veggies under running water. Sterilizing for two hours during food preparation, boiling for 15-20 minutes for

home-made canned food before eating, and drying freezing veggies and fruits or preserving in non hermetic tares to avoid botulism were mentioned by 63.2%, 58.6%, and 40.8% respectively.

3.8 Child hygiene/dental care

Six questions concerning child and personal hygiene were administered to the respondents. It was revealed that all but three women in the surveyed population have swaddled the youngest child. When asked about from what age should the child learn how to brush his/her teeth, 27.6% of women indicated the age of two years, 25.9% mentioned three years, 21.6% mentioned at the age of 4 to 7 years, 21.1% mentioned one year, and only 2.2% told that child should learn to brush teeth as soon as he/she has teeth. One of the respondents thought that the child should learn brushing teeth after 7 years of age. Women were also asked about how often they brush their teeth. The majority (52.8%) do it once a day, while 29.6% do it twice, and 11.6% do it less than once per day (once in two days, once in a week, etc.). Three percent of women never brush teeth, and 1% do it after meal.

The survey data showed that most of the women (40.2%) bath the youngest child once per week. Twenty six percent of women bath the child every other day, and 20% 2-5 times a week. Several women (8% of respondents) bath the child every day, and 4% less than once a week.

The respondents were asked about when do they wash their hands with soap/ash (Table 10). Almost all respondents (99%) reported washing their hands with soap after defecation, after attending to a child who has defecated (96.5%), before food preparation (88.4%), and before feeding the children (81.8%). Two women reported never washing their hands with soap.

Table 10. Hand washing practices¹

Washing hands with soap	% (n)		
	Lori	Gegharkunik	Total
After defecation	97.8 (91)	100.0 (105)	99.0 (196)
After attending to a child who has defecated	94.6 (88)	98.1 (103)	96.5 (191)
Before food preparation	83.9 (78)	92.4 (97)	88.4 (175)
Before feeding children	78.5 (73)	84.8 (89)	81.8 (162)
Never	1.1 (1)	1.0 (1)	1.0 (2)

¹ - multiple responses for the question were obtained

Maternal correct hand-washing practice rate (percentage of mothers who wash their hands with soap/ash before food preparation, before feeding children, after defecation, and after attending to a child who has defecated) was calculated. According to the data, 75.8% of surveyed mothers employ correct hand-washing practice (washing hands with soap/ash before food preparation, before feeding children, after defecation, and after attending to a child who has defecated).

3.9 Reproductive health

According to the data, on average, surveyed women had 4.07 pregnancies in their life (median =3, range =1-12), and on average, gave birth to 2.48 children (median =2, range = 1-9). Forty eight percent of respondents ever had an abortion. On average, women have had 2.86 abortions in their life (median =2, range =1-10). The number of abortions was significantly higher in Lori women (Figure 24).

The most common contraceptive method used by women was withdrawal (29.1%) (Table 11). The next most used traditional method was douching (5.1%), followed by the safe period method (4.1%). Among the modern methods in use were male condoms (24.5%), IUD (23%), and pills (20.9%). Depo-Provera/injections were rarely used (1% of respondents). Abortion as a means of contraception used was cited by 17.3% of women. No method was cited by roughly one-third (29.1%) of the respondents.

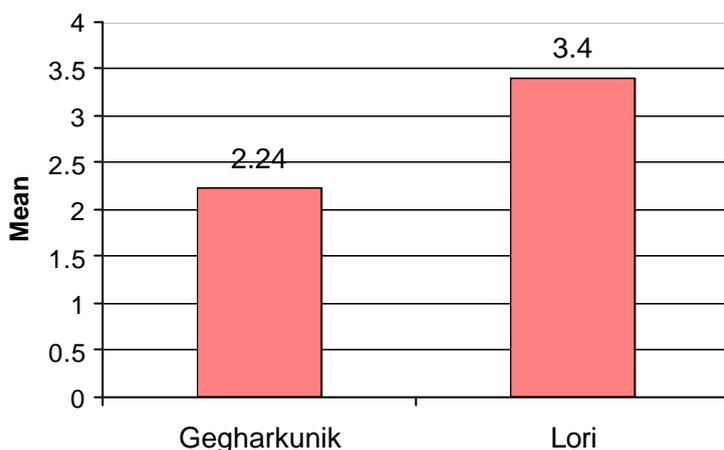
Table 11. Use of contraceptive methods¹

Methods	% (n)		
	Lori	Gegharkunik	Total
Withdrawal*	16.5 (15)	40.0 (42)	29.1 (57)
Male condoms*	31.9 (29)	18.1 (19)	24.5 (48)
IUD*	35.2 (32)	12.4 (13)	23.0 (45)
Pills*	38.5 (35)	5.7 (6)	20.9 (41)
Abortion*	37.4 (34)	-	17.3 (34)
Douching	2.2 (2)	7.6 (8)	5.1 (10)
Safe period	3.3 (3)	4.8 (5)	4.1 (8)
Depo-Provera/ injections	2.2 (2)	-	1.0 (2)
LAM (Lactational Amenorrhea Method)	-	1.9 (2)	1.0 (2)
No method	33.0 (30)	25.7 (27)	29.1 (57)

¹ - multiple responses for the question were obtained

* - the differences are statistically significant, $p < 0.05$

Figure 24. # of abortions by *marz* *

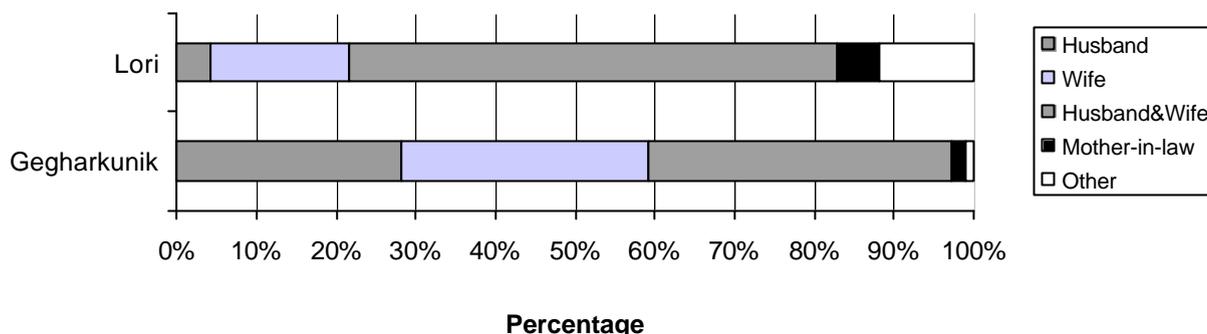


* - the difference is statistically significant, $p < 0.05$

Women were also asked about who is responsible for making the decision about contraception in their families. Collaborative decision-making by both husband and wife was mentioned in 49% of cases, the wife alone was mentioned in 24.5% of cases, and husband alone in 16.8% of cases. Mother-in-law as a decision-maker was cited by 3.6% of respondents. Some of the women (5.6%) told that nobody is responsible for making the decisions about contraception. The data showed that the decision in Lori families is rarely made by husband or wife alone, rather it is made collaboratively by husband and wife, while in Gegharkunik individual decisions are more frequent (Figure 25).

Fifty six percent of women either agreed or strongly agreed with the statement “I know how to prevent getting pregnant if I do not want to have a child”, while 32.1% disagreed and 7.3% strongly disagreed. About 8% neither agreed nor disagreed with the statement.

Figure 25. Who is making decision about contraception by *marz* *

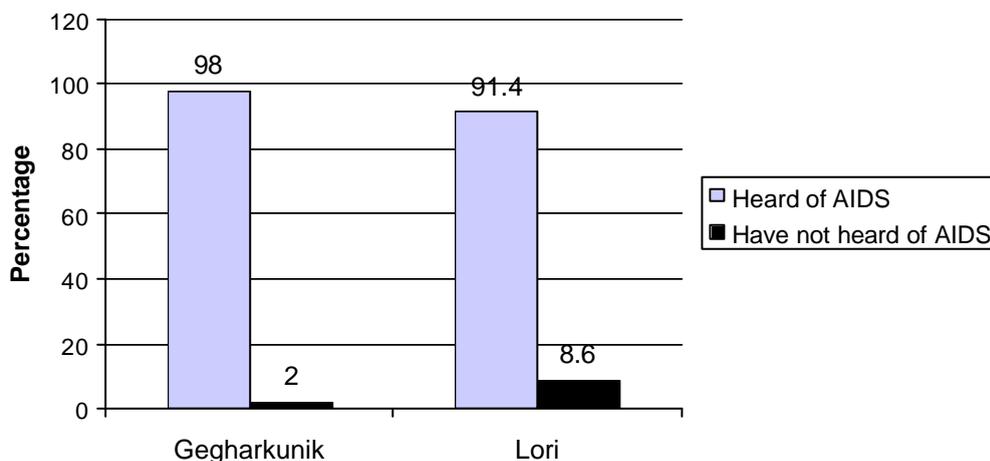


* - the difference is statistically significant, $p < 0.05$

3.10 AIDS/STIs

The overwhelming majority of women have heard about HIV/AIDS. The statistically significant difference between *marzes* was observed, with higher proportion of Gegharkunik women aware of AIDS (Figure 26).

Figure 26. AIDS awareness by *marz* *



* - the difference is statistically significant, $p < 0.05$

The women aware of AIDS were asked about the ways of getting infected with AIDS (Table 12). The overwhelming majority of them cited unprotected sex (95.1%). Less frequently mentioned were blood transfusion (21.6%), sharing needles (17.9%), donating blood (16.7%), kissing on the

mouth (13.0%), and using objects of a person with AIDS (9.3%). Through air, shaking hands, and toilet seat were mentioned by 4.3%, 3.1%, and 1.9% respectively.

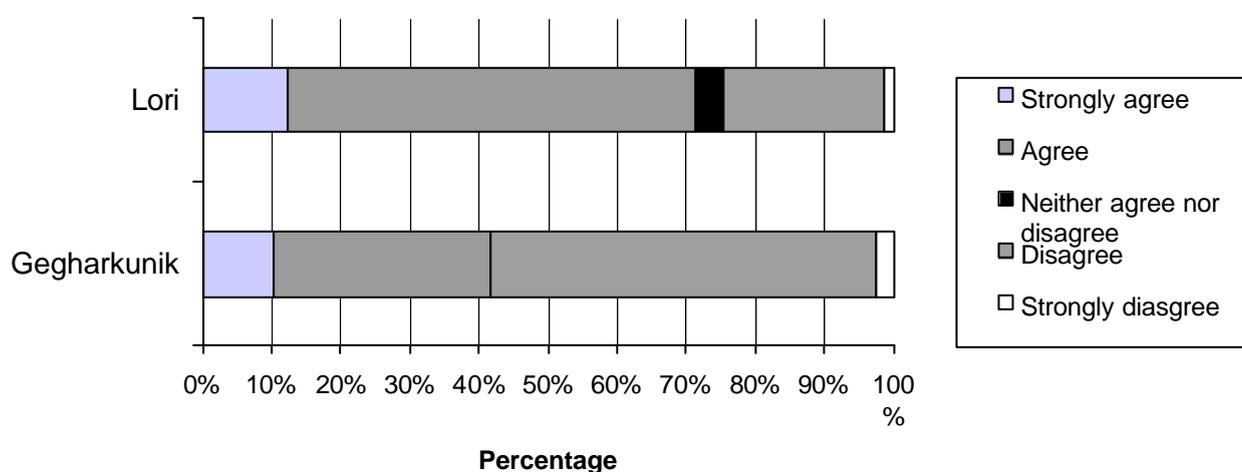
Table 12. Knowledge of ways of getting infected with AIDS¹

Ways of getting infection	% (n)		
	Lori	Gegharkunik	Total
Unprotected sex	97.4 (75)	92.9 (79)	95.1 (154)
Blood transfusion	23.4 (18)	20.0 (17)	21.6 (35)
Sharing needles	18.2 (14)	17.6 (15)	17.9 (29)
Donating blood	19.5 (15)	14.1 (12)	16.7 (27)
Kissing on the mouth	16.9 (13)	9.4 (8)	13.0 (21)
Using objects of a person infected with AIDS	7.8 (6)	10.6 (9)	9.3 (15)
Through air	2.6 (2)	5.8 (5)	4.3 (7)
Shaking hands	1.3 (1)	4.7 (4)	3.1 (5)
Toilet seat	2.6 (2)	1.2 (1)	1.9 (3)
Undergoing surgical procedures with contaminated instruments	-	3.5 (3)	1.9 (3)
Public bathroom	3.9 (3)	-	1.9 (3)

¹ - multiple responses for the question were obtained

The majority of women (56.0%) agreed or strongly agreed with the statement “All birth control methods will protect me against getting a sexually transmitted disease”, while forty two percent disagreed or strongly disagreed. The distribution of answers by *marz* is shown on the Figure 27.

Figure 27. "All birth control methods will protect me against getting STI" by *marz* *



* - the difference is statistically significant, $p < 0.05$

Fifty two percent of women agreed and 26.2% strongly agreed that condoms prevent from sexually transmitted diseases, while only 19.5% disagreed or strongly disagreed. Of 149 women answering to the question “Do you think a person can be infected with an STI and not have any symptoms or signs of the disease”, 67.1% answered positively, and 32.9% negatively. Women’s knowledge about the signs and symptoms leading to think that a woman has an STI were also explored: the most known sign was genital discharge/dripping (60.6%), followed by abdominal pain (37.6%), and itching (34.3%) (Table 13). Foul smelling discharge, genital sores/ulcers and loose of weight were relatively infrequently mentioned (17.2%, 10.1%, and 5.1% respectively). The overwhelming majority of women (91.7%) would definitely apply to health care facility in case of having a STI; some would probably apply (7.8%), and one woman would probably not apply to health care facility.

Table 13. Signs and symptoms leading to think that a woman has STI¹

Signs	% (n)		
	Lori	Gegharkunik	Total
Genital discharge	57.1 (32)	65.1 (28)	60.6 (60)
Abdominal pain	35.7 (20)	40.0 (18)	37.6 (38)
Itching	37.5 (21)	30.2 (13)	34.3 (34)
Foul smelling discharge	23.2 (13)	9.3 (4)	17.2 (17)
Genital sores/ulcers	12.5 (7)	7.0 (3)	10.1 (10)
Loose of weight	5.4 (3)	4.7(2)	5.1 (5)
Blood in urine	3.6 (2)	4.7 (2)	4.0 (4)
Inflammation in genital area	3.6 (2)	4.7 (2)	4.0 (4)
Inability to get pregnant	7.1 (4)	-	4.0 (4)

¹ - multiple responses for the question were obtained

4. Results: Men

4.1 Administrative/General

A total of 109 men responded to the baseline survey. The interview was completed in 54.8% of cases; the main reason for non-response was the absence of a husband at home (39.2%). The explicit refusal was got only in one case. Mean time for men survey completion was 6.94 minutes. The mean age of men respondents was 32.02. Fifty four percent of men had school

education, while 15.7% had secondary/special education. Undergraduate education was completed by 6.5% of respondents. Three percent have not completed undergraduate education, and 21.3% have not completed the school.

4.2 KAP related to healthy lifestyle and behavior

Ninety percent of men have ever smoked cigarettes, of them 85.9% currently smoke. Most of the current smokers (96.5%) smoke daily, and smoke 18.52 cigarettes per day on average (range = 3-40). The majority of smokers smoke in the presence of their family members always (57.3%), 32.9% do it rarely, and 9.8% never (Table 14). However, overwhelming majority of men concurred with the statement that smoking tobacco is harmful to a person’s health (25.5% agreed and 64.5% strongly agreed), and that breathing smoke from another’s cigarette is harmful to a person’s health (25% agreed, and 64.8% strongly agreed). Most of the men (73.1%) agreed or strongly agreed with the statement that smoking should be prohibited in public buildings, and interestingly, almost 91.0% concurred with the statement that smoking should be avoided inside the house.

Table 14. Men’s attitude towards smoking

Statement:	Strongly agree % (n)	Agree % (n)	Neither agree nor disagree % (n)	Disagree % (n)	Strongly disagree % (n)
<i>Smoking tobacco is harmful to a person’s health</i>	64.5 (71)	25.5 (28)	5.5 (6)	4.5 (5)	-
<i>Breathing smoke from another person’s cigarette is harmful to a person’s health</i>	64.8 (70)	25.0 (27)	5.6 (6)	4.6 (5)	-
<i>Smoking should be prohibited in public buildings</i>	54.6 (59)	18.5 (20)	8.3 (9)	17.6 (19)	0.9 (1)
<i>Smoking should be avoided inside the house/room</i>	54.5 (60)	36.4 (40)	4.5 (5)	3.6 (4)	0.9 (1)

The drinking habits of men were also explored (Figure 28). Twenty eight percent of respondents drink seldom (once or twice a month), and 27.3% drink rarely or never. Nineteen percent drink

occasionally, 8.2% drink frequently (two or three times a week), and 8.2% drink often (more than three times a week). Ten people (9.1%) mentioned drinking daily. Only 11.8% of respondents considered that they have ever had a drinking problem (most of them were from Gegharkunik, Figure 29).

Figure 28. Men's drinking frequency

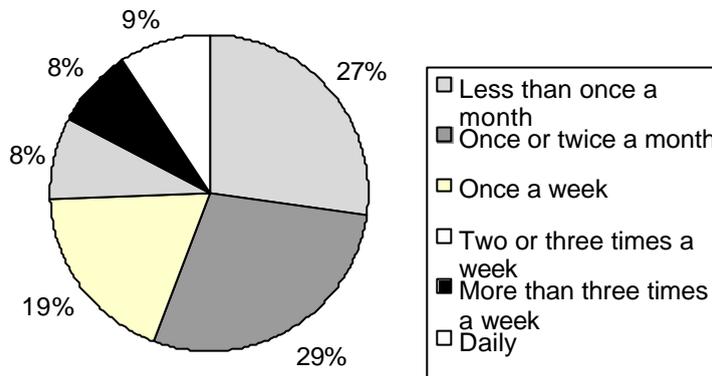
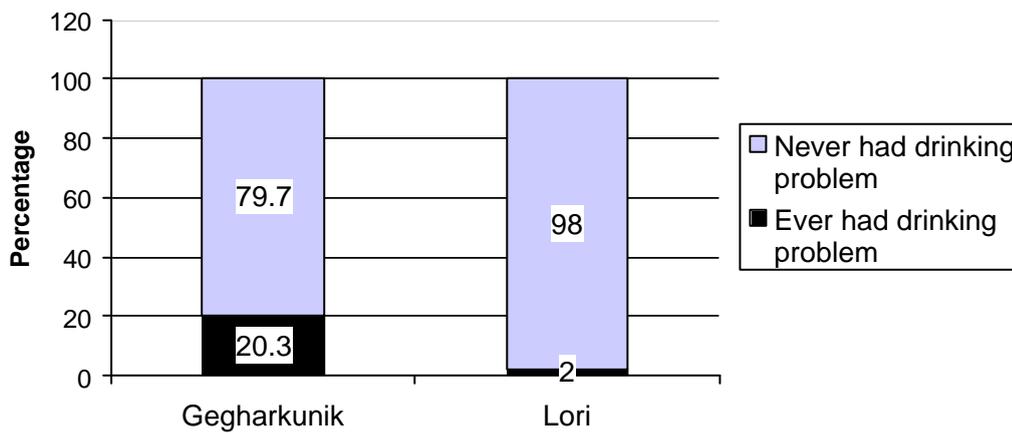


Figure 29. Drinking problem in men by *marz**



* - the difference is statistically significant, $p < 0.05$

4.3 AIDS knowledge

Most of the men have heard about AIDS (93.4%); of these, 91.5% mentioned unprotected sex as a way to get infected with AIDS, 25.5% mentioned blood transfusion, 19.1% using objects of a person infected with AIDS, 16% donating blood, and 16% sharing needles (Table 15). Some mentioned undergoing surgical procedures with contaminated instruments (5.3%) and kissing on the mouth (5.3%) as possible ways of getting infected.

Table 15. Men’s knowledge of ways of getting infected with AIDS¹

Ways of getting infection	% (n)		
	Lori	Gegharkunik	Total
Unprotected sex	88.6 (39)	94.0 (47)	91.5 (86)
Blood transfusion	27.3 (12)	24.0 (12)	25.5 (24)
Using objects of a person infected with AIDS	11.4 (5)	26.0 (13)	19.1 (18)
Donating blood*	25.0 (11)	8.0 (4)	16.0 (15)
Sharing needles	11.4 (5)	20.0 (10)	16.0 (15)
Undergoing surgical procedures with contaminated instruments	6.8 (3)	4.0 (2)	5.3 (5)
Through air	10.0 (5)	2.3 (1)	6.4 (6)
Kissing on the mouth	2.3 (1)	8.0 (4)	5.3 (5)

¹ - multiple responses for the question were obtained

* - the difference is statistically significant, $p < 0.05$

4.4 Physical activity

On average, men have done vigorous physical activities on 2.8 days out of last seven days, spending approximately 3.9 hrs on the activity on average (Table 16). Moderate physical activities were performed by men on average on 3.5 days out of 7 last days. The mean time spent on the moderate activity each time was 2.7 hrs). On average, men walked (including walking at home and at work, traveling from place to place and any other walking for recreation, sport exercise, or leisure) on 5.4 days out of 7 last days, with the mean duration of walking being 2.7 hrs. The detailed analysis of the on men physical activity data was conducted based on Guidelines for Data Processing and Analysis of IPAQ. It showed that in the majority of cases men were HEPA active (72.3%); only 14.9% were classified as minimally active, and 12.9% as inactive (see the section 3.3 for the similar analysis of women physical activity data). The time

spent by men sitting was also explored; it constituted on average 3.6 hrs per day (during the last seven days). Most of surveyed men concurred that physical exercise is good for their health (69.7% strongly agreed and 22.9% agreed).

Table 16. Men’s physical activity

Type of activity	# of days spent on the activity, mean (n)			Time spent (hrs) during a day, mean (n)		
	Lori	Geghark-k	Total	Lori	Geghark-k	Total
<i>Vigorous physical activity during the last 7 days</i>	2.98 (51)	2.64 (59)	2.8 (110)	4.61 (24)	3.38 (32)	3.9 (56)
<i>Moderate physical activity during the last 7 days</i>	2.86 (50)	4.02 (57)	3.50 (107)	2.26 (26)	3.04 (39)	2.7 (65)
<i>Walking for at least 10 minutes at a time during the last 7 days*</i>	5.46 (50)	5.28 (57)	5.36 (107)	2.20 (47)	3.21 (54)	2.74 (101)
<i>Sitting on a week day</i>			-	3.76 (51)	3.45 (56)	3.6 (107)

* - the difference is statistically significant, $p < 0.05$

5. Discussion

The main findings of the baseline survey along with corresponding explanations/details are summarized below.

5.1 Observations

5.1.3 KAP related to healthy lifestyle and behavior in women

Smoking is not common in rural Armenian women; none of the surveyed women smoke currently. The overwhelming majority of women had negative attitude towards smoking and drinking; however most of the women live in households where other people smoke on a daily basis. Drinking is also not widespread in Gegharkunik/Lori women, although the drinking problem in a household was mentioned by 8.6% of women and was significantly more prevalent in Gegharkunik. This may imply the need for further exploration of drinking habits in Gegharkunik and planning of specific interventions.

5.1.4 Physical activity in women

According to the data, women do not regularly and intensively perform vigorous physical activity; it is reported significantly more often by older women than by younger women. In addition, women in lower economic categories (in the households with no convenience/luxury items) spend significantly more in such activities during a day. Women from relatively richer households spend considerably more time sitting during a day than women from poorer households. Both associations are telling and show clear trend towards stratification in rural areas with possible negative effect on health.

The highest percentage of women was classified as HEPA active (accumulating enough activity for a healthy lifestyle). However, these results should be interpreted with caution, since a relatively high number of cases were considered outliers and were truncated to normalize the distribution levels of physical activity (many time variables for Vigorous, Moderate, and Walking activity exceeding 240 minutes, were recoded to 240 minutes based on IPAQ analysis recommendations). It may imply that the above-mentioned analysis could fail to differentiate between health enhancing physical exercise and exhausting, overstrained farming and other daily work of rural population, which are not always leading to the same results. Unlike westernized countries, where the physical activity is mostly attributable to leisure-time activity, physical activity in rural regions of Armenia is more work-related and might need other measurement techniques/development of a specific tool/questionnaire.

5.1.5 Child feeding knowledge, practice and attitude

Overall, the data on breastfeeding practice in surveyed women coincide with the data got previously in Armenia in other rural regions.^{3, 9} Ever-breastfeeding rate and the average length of the breastfeeding is high. Most of the women breastfed their youngest child and put the child to the breast in adequate time. Women are aware that it is better for infant to feed him with breastmilk; however the exclusive breastfeeding rate for children under 6 months of age and appropriate complementary feeding rate of children in 6-9 months age group are low. This coincides with previous findings and indicates the need for educational efforts in this area (although these results should be interpreted with caution, since the n-s for both rates were small).^{3, 9}

5.1.6 *Pregnancy/Postnatal care*

The data on timing of the women's first antenatal care visit and the number of visits repeated findings from other surveys investigating this practice.⁹ Women apply for antenatal check up late in their pregnancy (4th month) and do not attend the health care facility at a minimal frequency recommended by WHO. This can be probably explained by the isolation of some of the villages from quality health care facility. This explanation is partially confirmed by the statistically significant difference found between these variables in Lori and Gegharkunik population groups (women from Gegharkunik villages, many of which are in worse geographical location apply to health care facility for check up later and attend more seldom). The same tendency is seen in home deliveries; Gegharkunik women are more likely to deliver at home than Lori women. Overall, women from poorer households tend to have home deliveries more often (which partially explains frequent home deliveries in Gegharkunik where households are generally poorer as shown by survey data). Also, the rate of home deliveries is higher in older women (over 25 years) by 11 percent. The skilled health check (by doctor or a nurse) after the delivery at home is relatively common in both *marzes*. However, the possible negative outcomes of home deliveries and the reasons for the enduring practice of home deliveries in Gegharkunik despite several efforts in this area undertaken by some of the international organizations need to be explored further.

5.1.7 *Management of Childhood Illnesses (IMCI)*

The maternal knowledge of child danger signs and the management of childhood illnesses in surveyed regions are comparable to previous findings and document the need for intensive educational programs in this area. Approximately 53% of mothers knew at least two signs of childhood illnesses that indicate the need for treatment. The knowledge of how the child should be managed in case of diarrhea was even lower (the highest percentage of women thought that the child should be given less or the same amount of liquids as he/she normally drinks, and almost 43% thought the child should be given less food than he/she normally eats). The parasitic diseases in children were reported in 37.1% of cases; significantly higher proportion of older women (over 25 years) mentioned that their children had such a disease, which may imply that

parasitic diseases are rather common in the surveyed population, but as expected are more prevalent in older children (while the target of the current survey are children under 5). According to the survey data, most of women seek advice/treatment outside the house when a child is sick, with women from poorer households applying to a nurse as a first contact, and better-off women applying to a physician. This finding is not surprising taken into account the absence of a physician in some of the villages and the need to cover long distance to reach a doctor in a near-by town or village.

5.1.8 *Nutrition related knowledge, attitude, and practices*

In general, women had limited knowledge of healthy food and healthy methods of food preparation. The survey showed that sunflower oil and boiled butter are the most commonly used types of fat/oil used for cooking. It was also found that the choice of the fat/oil is largely determined by the economic status of the household. Significantly higher proportion of women from wealthier households tend to use boiled butter in comparison to women from poorer households (who use hydrogenated vegetable oil and margarine more frequently). However, sunflower oil (which is of relatively low price) is also commonly used in poorer households. What refers to women's knowledge of recommended drinks for daily use, strong association was found between the age and education status of women and their knowledge of natural juice being recommended drink for daily use (with more educated and younger women being more knowledgeable). It was also shown that women from poorer households are more likely to think that mineral water, coffee, tea, and spring water are recommended for daily use (these data should be interpreted with caution since it may also mean that there is tendency in poorer women to readily agree with whatever statement is read by the interviewer). The significant association noticed between the knowledge of recommended drinks and *marz* (with Gegharkunik women more often tending to think that a certain type of drink is recommended for daily use) probably confirms that finding.

Most of the women knew that using iodized salt can prevent goiter, however the real practice of using iodized salt was not explored. Also, about 42% of women thought that certain type of food can prevent goiter, which is wrong, as staple food and drink do not contain iodine.

5.1.9 Child hygiene/dental care

The results of the survey confirmed that swaddling the child is still common practice in rural areas of Armenia. Also, rather widespread ignorance was recorded regarding the child/mother dental care (most of the women do not have an idea of correct timing for a child to start brushing his/her teeth and do not employ the correct frequency of teeth brushing themselves). The maternal correct hand-washing practice indicator was calculated, which showed that not all of the surveyed mothers employ correct hand-washing practice (75.8% of the survey population do wash their hands with soap before food preparation, before feeding the children, after defecation, and after attending to a child who has defecated).

5.1.10 Women's reproductive health

The findings on the women's reproductive health confirmed the data obtained by numerous surveys conducted in Armenia on this topic previously.^{2, 3, 9, 10} The use of modern contraceptive methods in rural areas remains low; abortion is commonly used method of birth control (average number of abortion per woman in surveyed regions was 2.86, with significantly higher proportion of Lori women practicing abortion). Withdrawal remains the most commonly used traditional method of contraception. The decisions about the contraception are made collaboratively in 49% of cases (the highest proportion), which does not coincide with data from the qualitative research conducted in rural areas of Armenia, particularly, in Gegharkunik, previously (earlier data showed the role of husbands in decision making to be more pronounced).^{16,17}

5.1.11 KAP of AIDS/STIs in women

Overall, most of the women were aware of AIDS (95.1%) and the most important ways of its transmission (unprotected sex as a way of getting infection was mentioned by 95.1% of women). However women would still benefit from educational efforts in the sphere, as some of them have mentioned harmless practices such as shaking hands or using public bathroom as potential ways of getting infected (some also mentioned the infection can be transmitted through air, or through toilet seat). In general, Lori women were more ignorant in what refers to STI

knowledge/transmission; significantly higher proportion of Lori women haven't heard of AIDS at all and significantly higher proportion of them thought that all birth control methods protect from STIs.

5.1.12 Men's KAP related to healthy lifestyle and behavior

Men's attitude towards smoking resembled women's attitude (which was negative) in most respects, however most of men do smoke cigarettes (85.9%), and smoke on a daily basis. The men keep on smoking despite their opinion that smoking is harmful to smoker's health and to the health of the people breathing the smoke from their cigarettes, and despite they agree that smoking should be prohibited in public buildings and should be avoided inside the house. The smoking is widespread and is not related to any of the socio-demographic characteristics of smokers (like age group, education or household economic status). This may imply that drastic enabling measures helping men to quit smoking could be necessary.

Drinking is not widespread in men, however 17.3% of men drink often or daily, and 11.8% have had drinking problem. Significantly higher proportion of Gegharkunik men reported ever having drinking problem, thus confirming the data obtained from women.

5.1.13 Men's AIDS knowledge

The men's knowledge of AIDS and ways of HIV transmission repeated the data obtained from women and was relatively high. Like women, men cited several incorrect ways of getting AIDS infection, which indicates gaps in their education regarding this issue.

5.1.14 Men's physical activity

As expected, men perform all kinds of physical activities (vigorous, moderate, and walking) more often and spend more time on these activities per day than women do. Most of the men (72.3%) were classified as HEPA active, however, as explained above (see the paragraph 5.1.4), this classification could be not the ideal method for assessing health enhancing physical activity in rural men.

5.2 Conclusion

Overall, the results of the survey supported previous findings and demonstrated the need for community-based programs (both educational and infrastructure-building programs), which would improve maternal and child health in rural communities. The breaking down of data by some of the socio-demographic variables and geographic location in many cases illustrated the direct link of the health knowledge and practice to the background characteristics of population. This should attract the attention of WV program planners/implementers and should help them to design competent, focused interventions. It also allows believing that comprehensive multi-faceted programs touching upon many aspects of health care provision in rural regions simultaneously (as MMT program of WVA) have more chances for success than merely educational, or construction, or food/drug provision programs do.

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