AMERICAN UNIVERSITY OF ARMENIA

Center For Health Services Research and Development

SEVAN HOUSEHOLD HEALTH ASSESSMENT: FOLLOW-UP 2004

Prepared by:

Anahit Demirchyan, MD, MPH

Senior Project Manager

Michael E. Thompson, MS, DrPH

Director

For

American International Health Alliance

Sevan, Gegharkunik– Providence, Rhode Island Partnership

Table of Contents

Executive Summary

This follow-up survey measured changes in self-reported health status, knowledge, attitudes, beliefs, and practices of Sevan residents since the initiation of the AIHA Sevan-Providence Community Health Partnership in 2000.

To generate comparative data with the baseline survey (spring 2000), the study utilized the same study design: multi-stage cluster sample, probability proportional to size, cross sectional survey with combination of interviewer-administered and self-administered styles and the same instruments as at the baseline. All women 18 years old and older living in a selected household were considered eligible for the survey with emphasis on women having children under 10 years of age. The survey protocol was approved by AUA Committee on Human Research. As at the baseline, trained nurses from the Sevan polyclinic conducted the fieldwork; CHSR assumed responsibility for the overall management and implementation of the survey.

As at the baseline, a total of 750 households (15.3% of all households in the sample frame) participated in the survey. Data entry and analysis was conducted using SPSS 11.0 software. The results suggested mild/moderate, but significant improvement since the baseline survey in almost all areas, including perceived health status, health knowledge, satisfaction with own health and life, accessibility of healthcare services, and use of early diagnosis/prevention services by the target population. Positive changes in socio-economic conditions and the impact of partnership activities may both play important roles in these improvements. However, low affordability of health services, poor practice and knowledge of preventive care and reproductive health, high prevalence of perceived poor health and depression, and high exposure of the population to cigarette smoke were among findings of the survey indicating the need for continued targeted activities in the following directions:

❑ Increase accessibility/affordability of health care services
❑ Introduce screening/early detection protocols/guidelines in the polyclinic
❑ Empower polyclinic to provide population screening services
❑ Educate public on prevention/early detection of diseases, reproductive health, childcare, smoking, healthy lifestyle, etc.
❑ Enhance provision of psychological services to the population.

1. Background Information

1.1 Program Rationale

This project was a follow-up stage of the Household Health Survey conducted in Sevan in 2000. It measured changes in perceived health status and satisfaction with health care services among Sevan residents since the implementation of the Sevan Polyclinic-Providence Community Health Partnership in 2000. This partnership project was funded by US Agency for International Development (USAID) through American International Health Alliance (AIHA) and sought to improve primary care services in Sevan City and 3 adjacent villages (Gagarin, Varser, Geghamavan) served by Sevan polyclinic through improved coordination and integration of services.

The same study design and instruments as at the baseline (with several additional questions) were used in the follow-up phase to gather data on self-reported health status, knowledge, attitudes, beliefs, and practices of the target population along with key demographic and socio-cultural information. The data generated was comparable with the baseline survey, thus making possible assessing the impact of the partnership project.

In the scope of the partnership project, the following activities were conducted:

✓ Training of the staff of Sevan polyclinic: 29 physicians and nurses were trained in the US, 30 physicians and nurses participated in AIHA training programs in Sevan, out of which 15 were trained as trainers

✓ Implementation of clinical guidelines and standards in the polyclinic

✓ Renovation of the polyclinic including installation of a separate heating system

✓ Equipping the polyclinic with ultrasound, ECG, defibrillator, pickphluometer, cytology lab equipment, glucometer, ophthalmoscopes, othoscopes

✓ Establishment of new services including cytology lab, ultrasound, emergency healthcare

✓ Introduction of nursing leadership

✓ Establishment of a training center at the polyclinic

✓ Advocacy of healthy lifestyle among Sevan population during home visits, sick and preventive visits to polyclinic, meetings in schools and kindergartens. Advocacy included topics on women's reproductive health (early diagnosis of breast and cervical cancer, family planning, menopause), infant feeding, dental health, immunization, child caring, mental health (depression, stress reduction, drug and alcohol abuse, smoking, violence in family).

✓ Publication/distribution of educational brochures for public on the topics mentioned above

✓ Organization of a community health fair in polyclinic.

As it is evident from this listing, the partnership addressed specifically those areas identified as priorities by the baseline survey in 2000.[1, 2]

1.2 Research Goals and Objectives

The main goal of the study was to assess the impact of the AIHA funded community health partnership project between Sevan polyclinic and the health community of Providence, Rhode Island, launched in 2000. The second goal was prioritizing the current health care system needs among population served by Sevan polyclinic.

The scope of the obtained data was the same as at the baseline survey:

✓ Basic demographic and socio-cultural information about the target population

✓ Information on health knowledge, attitudes, beliefs and practices of the target population

✓ Perception of the target population concerning the accessibility and availability of local health care services

✓ Data on psychological and economic wellbeing of the target population.

2. Methods

2.1 Survey Concept

As at the baseline, the survey utilized a multi-stage cluster sample, probability proportional to size, cross sectional, hybrid (combination of interviewee-administered and self-administered) design, which ensured:

✓ generalizability of the survey results for the population in target area

✓ feasibility of implementing the survey within the limited human and financial resources and time-constraints

✓ consistency and quality of data for measuring the impact of on-going primary health care program in subsequent evaluations

✓ comparability of the results with those obtained from the baseline survey.

Pre-post panel design was not used to avoid time-consuming efforts for finding the same respondents, to circumvent the risk of having considerable proportion of dropouts from follow-up, and to provide maximum flexibility in analyzing the data. Again, the goal was to provide the most robust dataset within the available resources.

The sample size was the same as at the baseline: 750 households in Sevan city and the three adjacent villages: Gagarin, Varser, Geghamavan. Taking into consideration the fact that the total population in the sample frame (Sevan and the three villages) was 23,325 according to the last census (2001)[3] data and that the mean family size in this area was 4.76 (baseline survey data), surveying 750 households meant surveying ~15.3% of the households in the target area, which was more than enough to detect even mild changes that occurred during the period of partnership functioning. As during the baseline survey, 10 households were included in each cluster as this balanced concerns of homogeneity bias with daily individual workload and other logistical concerns.

To ensure similarity with the baseline and take benefit from the local capacity built during the baseline survey, the same nurses from Sevan polyclinic (with few exceptions) were re-trained to conduct the fieldwork. Overall, 9 nurses were involved in interviewing

process and a local coordinator (physician) was assigned to coordinate/oversee their activities along with CHSR staff (Appendix 1).

CHSR assumed responsibility for the overall management and implementation of the survey including interviewer training, instrument development and pre-testing, quality assurance, data entry, descriptive/comparative analyses, and preparing an analytic report.

2.2 Inclusion Criteria

As at the baseline survey, all women 18 years old and older living in a selected household were considered eligible for the survey. Again, women having children under 10 years of age were considered a first choice, other married women in the household were considered a second choice. Preference was given to these categories since the questionnaire contained many questions specific to younger married women.

2.3 Sampling Strategy

The sampling strategy repeated that of the baseline: a multistage cluster sampling (probability proportional to size)[4]. The desired number of clusters from each polyclinic district was identified using systematic random sampling proportionate to the number of population served in each district (all the population targeted by this survey was served by the Sevan city polyclinic and divided into primary medical services or so called districts). Second, the addresses of the starting points for each cluster were randomly selected from the list of addresses of children born between 2000-2002 in each district (as at the baseline, the lists of children currently aged 2-4 were used to generate the starting point addresses for clusters as these lists were believed to be most complete in terms of population coverage and more accurate than other available population listings).[5]

From the starting address, an attempt was made to interview each adjacent address moving always to the right/up until a total of 10 surveys were completed for each cluster. This strategy gave a high probability that there would be a family with 2-5 years old child in each cluster, since the first addresses were also included in the cluster. However, this

was the strategy practiced during the baseline survey and repeating it was necessary to ensure comparability of data with the baseline.

The sampling process was administered by CHSR staff. The interviewers received starting point addresses from the local coordinator of the survey and individually implemented the survey protocol to select the respondents (Appendix 2). The Interviewers also completed journal forms (Appendix 3) for each cluster to facilitate compliance with protocols and to assess response and refusal rates.

2.4 Survey Instrument

Virtually the same survey instrument used for the baseline study was used during this survey. Only minimal changes were introduced to correct formatting and ambiguity errors identified during the analysis of the baseline data and few new questions were added to specifically address some partnership activities (like participation in health fair, provider consulting skills, etc.).

The instrument covered the following topics (Appendix 4): key demographic and socio-cultural factors (family structure, living conditions, employment, income); quality of life of the family; health status of family members; health satisfaction; health behavior; nutrition (knowledge, practice); child-bearing and caring of young children (knowledge, practice); mental health and depression of the respondent; access to medical care and to early diagnosis and prevention services; reproductive health (knowledge, practice); safety: public, private, domestic violence (attitude, practice); and dental care (knowledge, practice).

2.5 Interviewer training

CHSR staff developed a training manual for interviewers (Appendix 5). Nine nurses from Sevan polyclinic and a local coordinator participated in the training. Out of these nurses, seven had participated in the baseline survey. Two nurses were newly involved and required detailed training/pre-testing. The interviewer training took place during April 14-15, 2004. It was held in the Training Center of Sevan polyclinic (established by the

pertnership) and included 1.5 days of didactic training and 0.5 day of field pre-testing. Upon completion, all 9 nurses were assessed by CHSR staff as capable of conducting the fieldwork.

2.6 Survey protocol

The same survey protocol as at the baseline was practiced, according to which nurses selected the respondent, introduced the survey and consent form, and conducted the first part of interview by guiding the respondent through non-sensitive demographic questions (Part I). They then provided the respondent with Part II of the survey to complete individually and seal in an envelope to ensure that the completed survey would only be accessible to CHSR staff. The interviewer left the respondent to finish completing the self-administered part of the questionnaire on her own and moved onto the next house after making an appointment to return in an hour or so to collect the completed survey.

2.7 Languages used

Again, the main language of survey was Armenian. However, for the cases when respondents expressed a preference for Russian, they were provided with the Russian format of the survey (or its self-administered part). Thus, Armenian, Russian, and mix (Armenian nurse-administered and Russian self-administered) surveys were generated.

2.8 Ethical Considerations

Taking into consideration the importance of ethical considerations when asking people questions regarding their personal life and the life of their family, measures were undertaken to ensure that the ethical norms of the survey were kept. The study protocol was reviewed and approved by the AUA Committee on Human Research. Respondents were provided with an informed consent form (Appendix 6) before the start of the interview. The form included general information about the logistics and goals of the survey as well as information concerning respondents' right to refuse and confidentiality

issues. Both the self-administered format of the main survey (containing all the sensitive items) and the instruction to seal the completed questionnaire in an envelope provided tangible proof that the confidentiality of the survey and the right to refuse would be kept. As with the baseline survey, this also contributed to the sincerity of respondents in completing the questionnaire and possibly increased the response rate. At the end of interview, the respondents were provided with contact information.

2.9 Survey administration and data entry

Data collection started on April 20, 2004 and lasted ten days. Completed surveys were delivered to CHSR, reviewed, and entered into an SPSS data file by CHSR staff. Double-entry was used to ensure the precision of the information. Upon completion of the entry, the data were cleaned. The analysis was carried out using SPSS 11.0 software.

3. Results

3.1 Administrative Information

A total of 750 households from Sevan and the three adjacent villages (Gagarin, Varser, Geghamavan) were involved in the survey. The urban/rural ratio of the sample was about 4.4:1 (610 from Sevan, 140 from villages), which is consistent with the population data in the target area. On average, it required 2.0 visits/attempts to complete one survey or 20.3 per cluster of 10. At the baseline, this number was similar: 22 visits/attempts per cluster. The main reason for non-response was "no one at home" (36.3% of all visits/attempts). The second most common reason was "the selected respondent is not at home" (5.4%). Refusal (total or by selected respondent) constituted 5.3% of all visits/attempts. This sequence of reasons for non-response repeated the one revealed at the baseline (Table 1).

Table 1. Reasons for non-response at baseline and follow-up surveys (percentages out of all visits/attempts)

	Baseline	Follow-up
No one at home	40.6%	36.3%
Selected respondent is not at home	7.7%	5.4%
Refusal (total or by selected respondent)	4.9%	5.3%
Other	1.8%	3.7%

The self-administered portion of the survey was considered incomplete if more than half of the questions were left unanswered. Incomplete surveys constituted 2% of the sample (15 surveys) at the baseline and 3.9% (29 surveys) at the follow-up. The difference was statistically significant (the p-value of a two-sided Pearson Chi-Square test was 0.032).

The main language of the survey was Armenian: 97.9% of all surveys were conducted in Armenian. Mixed-language surveys (Armenian nurse-administered and Russian self-administered) were completed in 1.3% of cases, and Russian was used in 0.8% of surveys. The proportion of surveys fully or partially conducted in Russian decreased significantly compared to the baseline survey: Armenian 91.3%, mixed language 6.5%, Russian 2.1% (p < 0.000).

3.2 Socio-Demographic Data

<u>Age & Nationality</u>

The mean age of the respondents was 36.7 (sd 12.2 years) with the age range of 18-80. Out of all respondents, 3.2% were 20 years old and younger and 5.2% 60 years old and older. At the baseline study, 4.8% were 20 years old and younger and 6.8% 60 years old and older. The mean age of the respondents was 38.0 (sd 12.3 years), which was marginally different from the respondent mean age at the follow up survey (p=0.045). However, after excluding an 85-years old outlier from the baseline data, the mean age at the baseline became 37.9 and the difference between two means non-significant (p=0.056). This outlier was excluded from further analysis of respondent-specific data to allow comparisons between two surveys without a need for age-adjustment.

Gegharkunik marz was the place of birth for 80.5% of the respondents, and Armenia for 95.3% of them (these numbers were 73.4% and 90.1% respectively at the baseline). The overwhelming majority of respondents were Armenians: 99.6% (97.9% at the baseline, p=0.023) (Table 2).

Table 2. Respondents' country of birth: baseline vs. follow-up

Country	Baseline	Follow-up
Armenia	90.1%	95.3%
Azerbaijan	5.7%	3.1%
Georgia	1.5%	0.9%
Russia	1.1%	0.1%
Karabakh	1.1%	0.3%
Ukrain	0.4%	0.3%
Other	0.1%	-

The mean duration of respondents' living in Sevan was 26.6 years (sd 13.2 years) at the follow-up and 25.2 years (sd 13.4 years) at the baseline. The difference between these means is marginally significant (p=0.047).

Household Composition

The mean number of people living in a household was 4.7 (sd 1.8), which is not different from the baseline data: 4.8 (sd 1.9). A small, but significant difference in terms of household size was observed between urban and rural areas (4.6 in urban vs. 5.1 in rural, p=0.001). Of all respondents, 3.1% lived alone. A household size of 8 or more people was stated in 5.3% of the households (these rates were respectively 4.1% and 6.3% at the baseline). The mean number of children under 18 living in a household was 1.6 (sd 1.1), which is not different from the baseline data: 1.7 (sd 1.4). This number was significantly higher (p=0.001) in rural areas (mean 1.9, sd 1.1) than in urban areas (mean 1.5, sd 1.1). The respondent's husband was the head of household in 49.6% of cases, husband's father/mother/grandparents in 33.9% of cases, respondent's father/mother/grandparents in 6.4% of cases. The respondents themselves were the heads of household in 9.8% of cases. Respondent-head of household relationship at this survey repeated the same pattern revealed at the baseline study. The mean age of heads of household was 52.4 (sd 13.8),

which is not different from the baseline data (52.2, sd 12.82). The percentage of heads of household aged 60 years old or older was 31.3% (31.7% at the baseline).

Education

The highest level of education completed by the respondents was less than 10 years of school in 5.7% of cases, 10 years of school in 26.3%, professional technical education in 52.0%, and institute/university in 16.0%. These were not different from the baseline data. The household heads' educational level was somewhat lower: 15.2% completed less than 10 years of school, 30.2% 10 years of school, 39.4% received professional technical education, 15.0% completed institute/university, and 0.3% had postgraduate education.

Employment

Of the respondents, 22.1% and 34.7% of the heads of their household were reported as being employed (similar to the baseline rates of 23.4% and 32.8% respectively). Meanwhile, 43.5% of respondents reported that none of their household members were currently employed (this data was not available for the baseline survey). Lack of appropriate workplaces was mentioned as the main reason for unemployment for both the respondents and the heads of household (66.5% respondents and 57.6% household heads). Lack of childcare was the second most common reason for respondents' unemployment (10.6%). Some 4.6% of respondents mentioned being unable to work because of a permanent health impairment, 7.2% of them were retired, and 4.6% were homemakers. Out of all unemployed heads of household, 30.0% were retired, and 10.3% were unable to work because of a permanent health impairment. Virtually all employed respondents and employed heads of household had only one job. The government was the primary employer for 91.4% of employed respondents and for 57.9% of employed heads of household. While there were no significant differences between the baseline and follow-up surveys in terms of distribution of respondents' primary employers, there were significant differences in proportions of heads of household' employers: the role of government as a primary employer decreased and the role of private organizations and self-employment increased significantly (Figure 1 and 2).

**Figure 1. Primary Empoyers of
Household Heads, 2000**

8%

10%

10%

72%
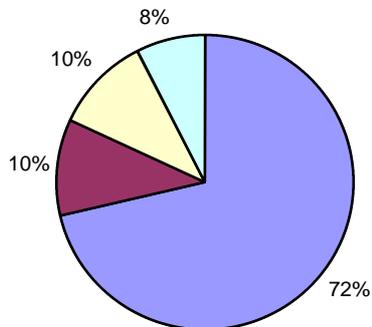
Government   NGOs   Private org.   Self-employed

**Figure 2. Primary Employers of
Household Heads, 2004**

14%

19%

58%

9%
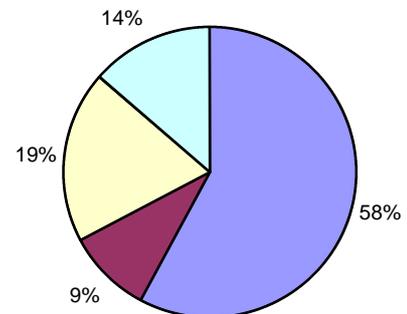
Government   NGOs   Private org.   Self-employed

The mean number of working hours per week was 51.2 (sd 20.2) for heads of household and 35.2 (sd 22.0) for respondents. For the former, the duration of working hours per week was not significantly different from that at the baseline (49.6, sd 22.3), but for respondents, significant increase in working hours was observed as compared to the baseline (29.5, sd 19.8, p=0.019).
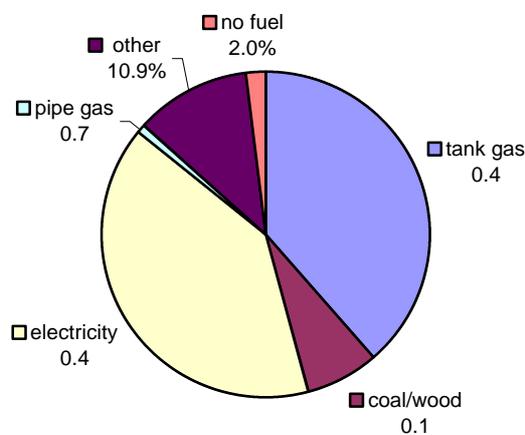
According to the respondents' perception, their current position was inconsistent with their professional/vocational training in 29.6% of cases (not different from the baseline rate of 24.0%). This was true for the heads of household in 46.4% (35.3% at the baseline survey, p=.042).

Living Conditions

The mean number of rooms in the respondents' house/apartment was 3.0 (SD 1.1). As at the baseline, heaters with flue or vent, burning wood, kerosene, oil, etc. were mentioned as the most common means of heating the living quarters (77.5% at the follow-up and 66.0% at the baseline). The role of other heating means was much less (portable electric heaters 5.9%, built-in electric units 2.1%, room heaters without flue/vent 4.4%, hot water heating system in 0.3%). The proportion of those not heating their living quarters during winter decreased significantly: from 15.8% at the baseline to 5.6% at the follow-up (p<0.001).

There was significant change in the type of fuel people use for cooking. Electricity, which was the most frequently mentioned fuel at the baseline, was mostly replaced with piped gas, which was the primary fuel for cooking for 54.6% of respondents (0.7% at the baseline). The second most frequently used fuel for cooking was tank gas: 28.6%, followed by electricity: 10.9% (Figures 3, 4).

Figure 3. Fuel for cooking, 2000   **Figure 4. Fuel for cooking, 2004**
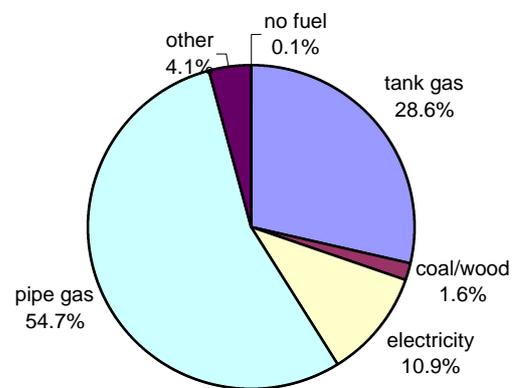
Convenience Items/Household Expenditures

Possession of selected convenience items and monthly expenditures of the household were used as proxy measures for socio-economic status. Out of these items, no significant decrease in possession of any was observed. Furthermore, statistically significant increases were observed in percentages of those households equipped with indoor toilet, hot water tank, color TV, VCR, and cellular phone (Table 3).

Table 3. Possession of convenience/luxury items, baseline vs. follow-up

Convenience Items	Baseline (%)	Follow-up (%)	p-value*
Indoor toilet	60.1	76.5[†]	.000
Hot water tank	4.1	8.8[†]	.000
Color television	55.5	63.9[†]	.001
VCR	20.2	27.7[†]	.001
Automobile	20.0	18.1	
Auto washing machine	55.5	58.8	
Telephone	72.8	70.9	
Personal Computer	1.2	2.1	
Cable/satellite TV	2.2	3.0	
Cellular phone	1.0	8.2[†]	.000
Vacation home/villa	2.0	2.7	
Non of the above	8.0	6.2	

* *Pearson chi-square test*

[†] *Statistically significant difference between baseline and follow-up*

The situation changed also in terms of monthly expenditures. The proportion of those households spending less than $50 during the last month decreased from 60.9% to 44.2%, those spending $50-99 increased from 12.2% to 23.8%, and those spending $100-500 increased from 3.5% to 9.1% (the difference was statistically significant, p<.000, Pearson chi-square test). In both surveys, the proportion of "don't know" and "refuse to answer" responses to this question was high, but similar (27.9% at the baseline and 27.8% at the follow up). The proportion of those respondents thinking that the monthly income of their family is enough to meet the family needs increased significantly: from 1.6% at the baseline survey to 7.5% at the follow-up (p<.000).

At the follow-up survey, respondents were asked if members of their household attended the health fair organized by the partnership in Sevan polyclinic in 2001. Of the respondents, 22.3% answered positively to this question and out of them, 22.0% indicated that more than one members of their household attended the health fair. Adults constituted the main proportion (~78.5%) of those who attended the health fair, children ~ 11.6% and adolescents ~9.9%.

3.3 Quality of Life

3.3.1 Health Status of Household Members

<u>Children</u>

The respondents rated the health of children in their household as excellent/good/very good in 55.3% of the surveys and fair/poor in 44.7%. At the baseline, these numbers were 50.2% and 49.8% respectively; this difference was insignificant. However, the proportion of those respondents mentioning health problem(s) in children in their household decreased significantly: from 23.9% at the baseline to 15.3% at the follow-up (p<.000). Problems with respiratory system and gastro-intestinal pathology were reported to be the most common reasons of poor health of children, followed by vision impairment and neurological pathology. This pattern was somewhat different from at the baseline survey, where vision impairment was reported as the most common reason of poor health of children.

<u>Respondents & Household Heads</u>

Significant increase in perceived health status of both respondents and heads of household was observed at this survey as compared to the baseline data. The respondents rated their own health in the last month as good/very good/excellent in 38.1% of surveys (29.7% at the baseline, p=.001, Pearson chi-square test) and the health of their household heads as such in 35.8% of surveys (26.0% at the baseline, p=.001). Figure 5 demonstrates the perceived rating of household heads', respondents', and children's health at the baseline and follow-up surveys.

**Figure 5: Health of household members during last month:
baseline vs. follow-up**
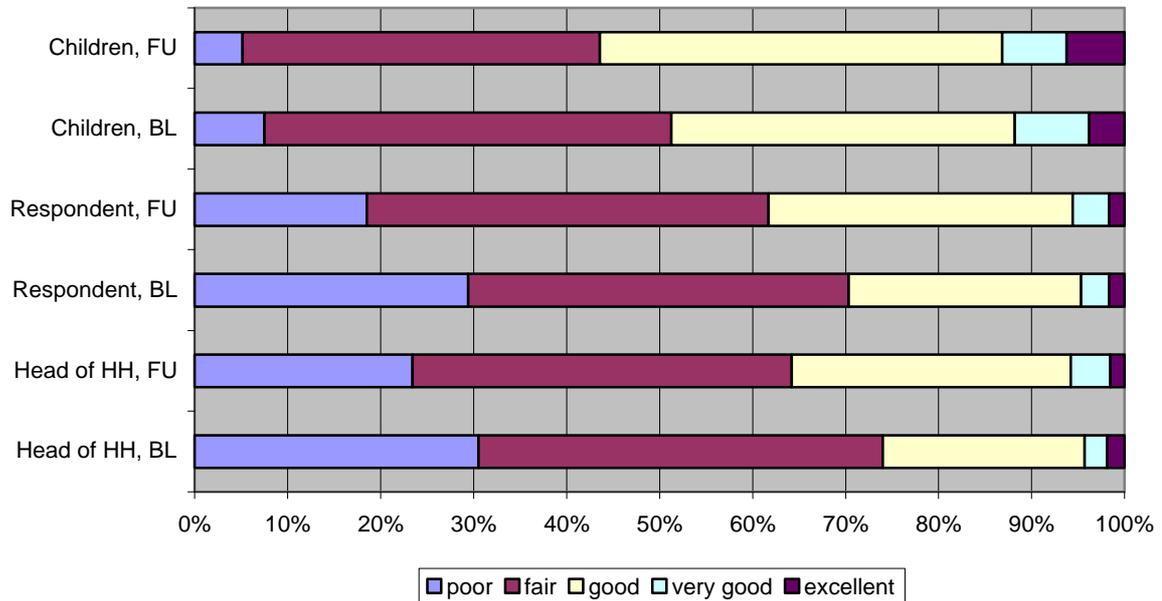
Health Dynamics

When asked about the dynamic of the overall health of their family members compared to one year ago, respondents rated the health of children in the household, their own health, and the heads of household health significantly better now than at the baseline survey. Children's health was rated as 'better' in 20.9% and 'worse' in 4.6% of surveys (at the baseline, 17.5% and 14.8% respectively, p<.000). Respondents perceived their own health as getting better in 14.3% and worse in 25.8% of surveys (at the baseline, 10.3% and 41.4% respectively, p<.000). The health of the heads of household was rated as 'better' in 11.8% and 'worse' in 29.4% of surveys (at the baseline, 8.5% and 43.1% respectively, p<.000). The perceived health dynamic of household members at the follow-up and baseline are demonstrated in Figure 6.

Figure 6. Health of household members compared to 1 year ago: baseline vs. follow-up
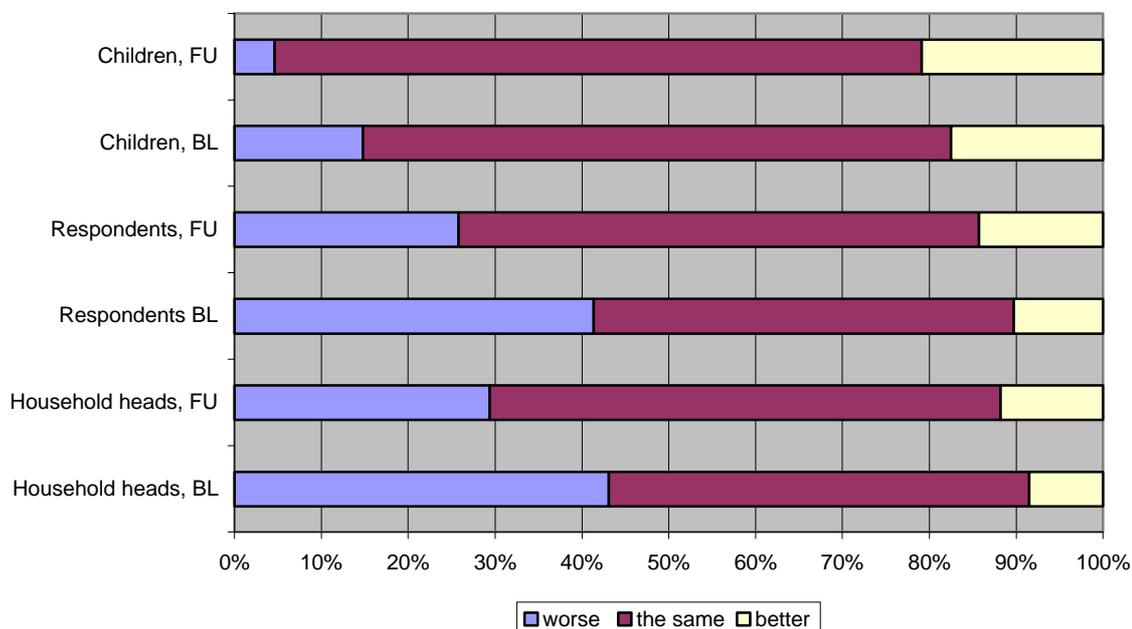
Chronic Health Conditions

The respondents were asked to indicate any chronic health conditions they or anyone from their household suffered from. The most common chronic conditions among household members were high blood pressure (reported in 25.2% of respondents, 24.8% of household heads, and 13.7% of other family members) and vision problems (in 20.5% of respondents, 25.8% of household heads, and 17.5% of other family members). These were followed by cardiac diseases (reported in 16.2% of respondents, 16.6% of household heads, and 8.6% of other family members) and gastro-intestinal pathology (reported in 15.7% of respondents, 16.0% of household heads, and 11.9% of other family members). The next chronic conditions in terms of frequency were kidney diseases (reported in 13.8% of respondents, 11.5% of household heads, and 8.7% of other family members) and lung diseases (reported in 5.5% of respondents, 9.1% of household heads, and 6.1% of other family members). Diabetes, mental diseases and cancer were reported less frequently. This pattern repeated that from the baseline survey. The interesting finding of the follow-up was the declining frequency of reporting each condition. The

prevalence of all these conditions among all household members decreased since the baseline survey; often this reduction was statistically significant (Table 4).

Table 4: Frequency of chronic health conditions in household members according to respondents' perception, baseline vs. follow-up

Chronic health condition (perception)	Respondents		Heads of HH		Other family members	
	Baseline (%)	Follow-up (%)	Baseline (%)	Follow-up (%)	Baseline (%)	Follow-up (%)
High blood pressure	36.6	25.2[†]	36.9	24.8[†]	24.8	13.7[†]
Problems with vision	33.1	20.5[†]	43.0	25.8[†]	28.1	17.5[†]
Cardiac diseases	28.1	16.2[†]	26.8	16.6[†]	20.4	8.6[†]
Gastro-intestinal diseases	26.3	15.7[†]	33.8	16.0[†]	20.4	11.9[†]
Kidney problems	24.9	13.8[†]	25.8	11.5[†]	21.1	8.7[†]
Lung diseases	7.5	5.5	14.1	9.1[‡]	8.0	6.1
Mental disorders	2.8	2.0	2.0	1.7	3.7	3.0
Diabetes	2.5	1.4	3.7	2.4	1.5	1.3
Cancer	1.5	1.4	1.3	0.3[*]	1.3	0.7

[†] *Pearson Chi-square test results, p<.000*
[‡] *Pearson Chi-square test results, p<.01*
[*] *Pearson Chi-square test results, p=.045*

As at the baseline, there were no major urban-rural differences in the perceived prevalence for the majority of these chronic diseases. An exception was poor vision among respondents, which was more frequently stated in urban than in rural areas (23.0% vs. 9.4%, p=0.000). This exception was observed at the baseline survey as well: urban residents reported poor vision in 35.2% of surveys, rural residents in 24.6% (p=0.028). Among heads of household, self-reported cardiac diseases at the follow-up survey were more frequent in rural areas than in the city (18.3% vs. 9.9%, p=0.022).

Injuries

The proportion of those respondents who mentioned some accident, injury or poisoning during the past 12 months among household members requiring professional help decreased significantly as compared to the baseline (27.8% of all surveyed households at the baseline, 17.5% at the follow-up, p<.000, Pearson Chi-square test). Again, the most

common type of injury was fall, mentioned by 42.7% of those respondents who answered positively to the question concerning injuries in their household during the past 12 months. Cut/slash/puncture was the next most common type of injury mentioned by 22.2% of them. The next common injury was poison/overdose, the frequency of which decreased significantly as compared to the baseline survey (17.9% at the follow-up, 36.8% at the baseline, p=0.033). The frequencies of different types of injuries experienced by the household members during 1999-2000 (baseline) and 2003-2004 (follow-up) are provided in Table 5.

Table 5. Frequencies of different injuries reported by participants: baseline vs. follow-up

Type of injury	Baseline (%) (n=180)	Follow-up (%) (n=117)
auto crash	8.3	6.8
pedestrian/vehicle	5.0	2.6
fall	36.7	42.7
fire/scalding	18.9	11.1
drowning	1.1	2.6
poison/overdose	36.8	17.9[†]
cut/slash/puncture	23.8	22.2
gunshot	3.4	1.7
hit/struck by person/object	13.0	6.0
other	17.6	11.1

[†] *Statistically significant difference between baseline and follow-up: p=0.033 (Pearson Chi-square test)*

The majority of accidents happened just once during 12-month period. Accidents like fall and poisoning/overdose were more likely to happen repeatedly (27.9% of all reported falls and 28.5% of all reported poisons/overdoses happened more than once). The reported mean frequencies for each type of injury per 100 households per year are provided in Table 6.[i]

---

[i] These data is available only from the follow-up survey, since at the baseline people often mentioned "more than once" or "several times" instead of writing the exact number of the injuries. "More than once" responses were found only rarely at the follow-up survey and were recoded to 2 (the most conservative approach was applied) for calculating the mean number of injuries per household.

Table 6. Mean numbers of different injuries per 100 households per year reported by participants of the follow-up phase of the Sevan Household Health Survey, 2004

Type of injury	Mean number of injuries per 100 households per year
auto crash	1.3
pedestrian/vehicle	0.9
fall	10.7
fire/scalding	2.4
drowning	1.3
poison/overdose	4.4
cut/slash/puncture	5.5
gunshot	0.4
hit/struck by person/object	0.9
other	3.1
Total	**30.9**

Everyday Activities

The respondents were asked to assess the extent to which their health limits them in everyday activities. Again, the situation improved significantly as compared with the baseline with respect to several daily activities including walking different distances, bending/kneeling/stooping, climbing stairs, and lifting/carrying groceries (Table 7).

Table 7: Proportion of respondents with limited activities because of health condition, baseline vs. follow-up, Sevan, 2004

| Activity	Baseline (%) (n = 576 – 617)		Follow-up (%) (n = 565 – 615)		*p-value[†]*
	Limited a lot	*Limited a little*	*Limited a lot*	*Limited a little*	
Bathing or dressing oneself	7.8	11.5	6.9	9.0	
Walking one hundred yards	13.1	17.8	10.1	11.5	.001
Walking several hundred yards	24.2	19.0	16.1	19.0	.002
Walking more than a mile	34.1	22.1	24.6	22.2	.001
Bending, kneeling, or stooping	22.8	27.2	18.4	19.9	.000
Climbing one flight of stairs	11.2	18.8	10.5	10.8	.001
Climbing several flights of stairs	27.7	29.0	19.9	21.9	.000
Lifting or carrying groceries	28.8	27.5	20.3	23.1	.000
Moderate activities *(moving a table, pushing a vacuum cleaner)*	12.8	24.7	14.2	18.8	
Vigorous activities *(running, lifting heavy objects, participating in the strenuous sports)*	38.7	26.7	34.3	25.7	

[†] Pearson chi-square test

Despite the observed improvement since the baseline survey, the proportion of respondents feeling limited in their everyday activities because of health condition remained rather high: 60.0% felt limited in vigorous activities such as running, lifting heavy objects, participating in strenuous sports; 46.8% in walking more than a mile, 43.4% in lifting or carrying groceries, 41.8% in climbing several flights of stairs, and 38.3% in bending/kneeling/stooping. Some 15.9% of respondents felt limited even in bathing or dressing themselves[ii].

[ii] For the questions concerning limitation of daily activities due to health condition, many respondents showed tendency to check only those response options that indicate limited function and simply to skip over the options that indicate unlimited function, which resulted in rather high proportion (19%-25%) of missing values. This was the case during both baseline and follow-up surveys and should be taken into consideration as possible source of bias resulting in higher than real percentages of limitation in different daily activities due to health condition.

With increasing age, the proportion of those with limits in their daily activities increased considerably, as shown in Figure 7. The age-related correlation was significant both at the baseline and follow-up surveys: for both surveys and for each activity, the correlation between increasing age and limitation of daily activities was statistically significant (p<.000, Spearman correlation test).

Figure 7. Proportion of respondents with limitations in daily activities because of health, 2004
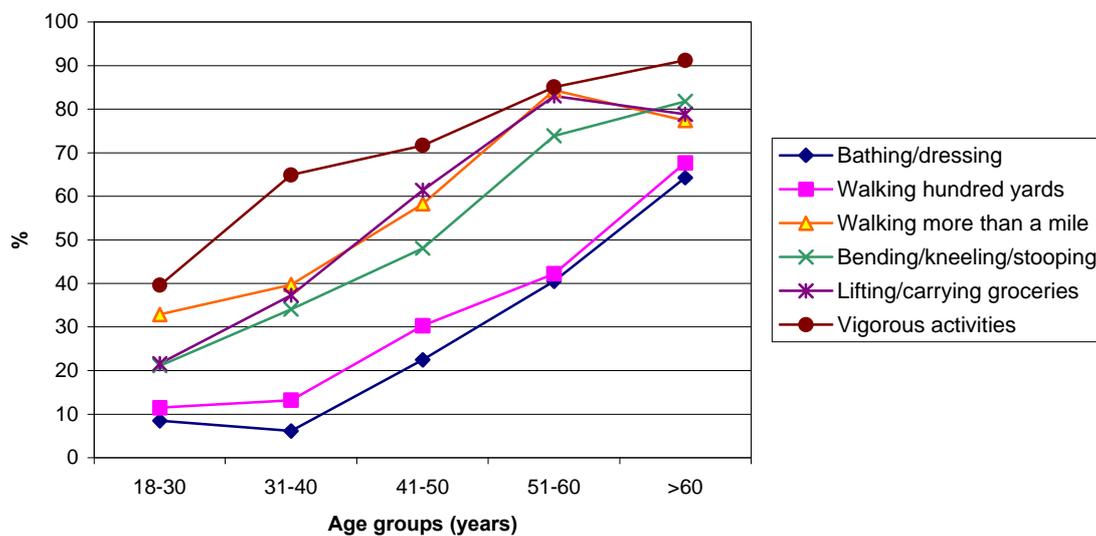
Compared to the baseline survey, positive dynamic was observed also in responses to the question "how much bodily pain did you feel during the past four weeks". The proportion of those answering 'none' to this question increased from 21.1% to 38.0%. The proportion of those who reported feeling severe or very severe pain during the past four weeks decreased from 23.1% to 11.8%. The Pearson Chi-square test showed significant difference between baseline and follow-up data on the amount of pain reported by the respondents (p<.000).

3.3.2 Satisfaction With Own Health and Life

Considerable increase in respondents' satisfaction with their health and life was observed, covering almost all the areas touched in this topic. Most of all, the respondents were satisfied with the time spent with their family/friends (65.4%), the help they get from

their family/friends (64.4%), their sexual activities (63.4%), and their ability to think (59.6%). The majority of respondents (60.1%) still felt dissatisfied with the ability of their household income to meet the family needs. The proportions of those respondents feeling dissatisfied with their recreational/leisure time activities and the health of their body were still rather high: 37.4% and 30.5% respectively. However, even in these areas considerable improvement was observed (Table 8).

Table 8: Respondents' satisfaction with own health and life in 2000 and 2004, Sevan.

Satisfaction with:		*Extrem. dis-satisfied*	*Dis-satisfied*	*Neither dissatis-fied nor satisfied*	*Satisfied*	*Very satisfied*
the health of their body (%)	BL[*]	14.8	26.1	39.7	16.3	3.1
	FU[**]	8.8	21.7	36.8	29.7	3.1
their ability to think (%)	BL	6.7	17.1	26.2	42.4	7.6
	FU	2.6	13.7	24.0	50.2	9.4
their sexual activity (%)	BL	8.9	9.9	27.8	46.5	6.9
	FU	6.8	7.3	22.4	53.6	9.9
how much they see their family/friends (%)	BL	4.5	10.2	24.7	49.5	11.1
	FU	2.2	6.6	25.7	54.7	10.7
the help that they get from family/friends (%)	BL	5.8	13.7	26.2	44.7	9.7
	FU	2.6	7.2	25.7	54.5	10.0
their daily activities (%)	BL	11.0	27.5	32.9	24.8	3.8
	FU	4.1	19.0	35.1	38.2	3.5
their recreational or leisure time activities (%)	BL	18.7	35.7	25.0	17.6	2.8
	FU	10.9	26.5	31.3	28.2	3.1
their household income meeting their needs (%)	BL	47.2	31.1	13.7	5.7	2.4
	FU	25.6	34.5	23.5	14.8	1.7
their ability to help in their community (%)	BL	12.0	18.7	37.1	26.3	6.0
	FU	5.5	11.8	41.0	37.8	3.9

* Baseline survey, 2001.

** Follow-up survey, 2004.

To measure if the changes were significant as compared to the baseline survey data, the satisfaction measuring questions were recoded into dichotomous variables, where 'satisfied' and 'very satisfied' responses were combined in one option, and 'very dissatisfied', 'dissatisfied', and 'neither dissatisfied nor satisfied' responses into another

option. As with analyses of other respondent-specific items, the age outlier (the 85 years-old participant of the baseline survey) was excluded from the analyses. The results showed statistically significant increase of satisfaction in all measured areas besides the 'time spent with family/friends' (Table 9).

Table 9. Proportions of respondents satisfied with their health and life, baseline, 2000 vs. follow-up, 2004, Sevan

% of respondents satisfied with:	Baseline	Follow-up	p-value[*]
the health of their body	19.3	32.6	.000
their ability to think	50.0	59.6	.000
their sexual activity	53.4	63.4	.000
how much they see their family/friends	60.5	65.4	.061
the help that they get from family/friends	54.2	64.4	.000
their daily activities	28.7	41.7	.000
their recreational or leisure time activities	20.5	31.2	.000
their household income meeting their needs	8.1	16.3	.000
their ability to help in their community	32.2	41.8	.000

[*]*Pearson Chi-square test*

Figure 8 visually demonstrates the changes in respondents' satisfaction with different aspects of their health and life between baseline and follow-up surveys.

Figure 8. Respondents' satisfaction with their health and life: baseline vs. follow-up
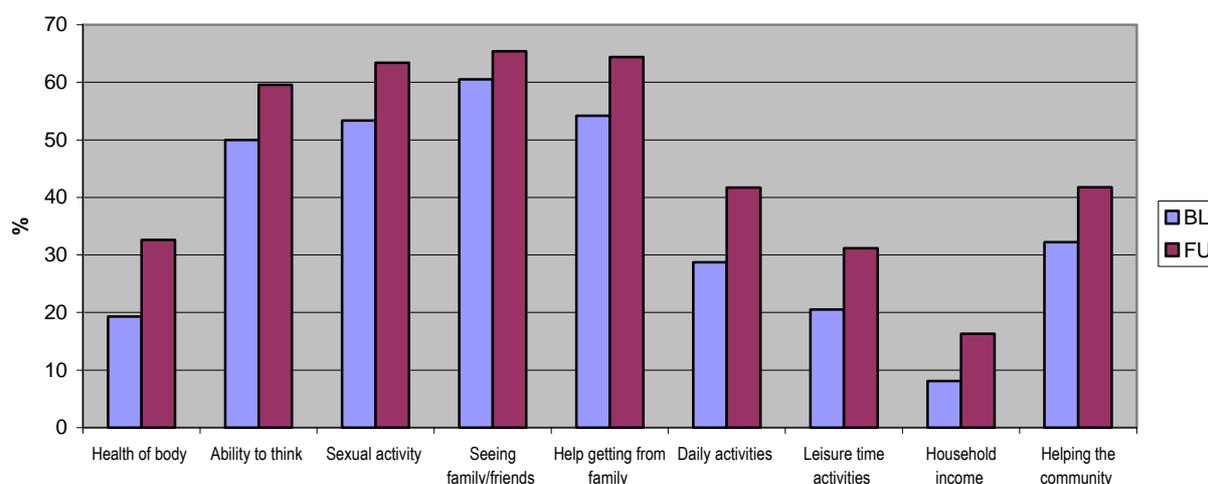
3.3.3 Health Behavior

Smoking behavior and respondents' attitude towards smoking was measured through the same items as at the baseline survey with a small difference: a new question was added to measure the extent of passive smoking among target population. Of the respondents, 731 answered to the questions on their smoking behavior (716 at the baseline). The proportion of those who reported smoking cigarettes some time in their life was significantly lower than at the baseline: 3.0% vs. 7.0%, p=.001. No other differences in terms of smoking behavior were observed between the surveys.

Out of the 22 respondents who ever smoked, 14 (63.6%) were current smokers (64.6% at the baseline), constituting 1.9% of all respondents. The average number of cigarettes they smoked per day was 15.9 ± 9.7 (not different from the baseline: 16.8 ± 11.5). Out of all household members who were more than 12 years of age (3.63+1.4 in a household), 28.7% smoked (29.0% at the baseline). On average, '1.01' males and '0.03' females smoked in each household, meaning that the male/female ratio in this group of smokers was ~34:1 (~25:1 at the baseline).

An interesting finding was that all the respondents who reported ever smoking were Sevan residents. Among rural residents, no respondent reported ever smoking. The difference between the city and villages was statistically significant: p=.021.

Concerning the prevalence of passive smoking, 41.2% of the respondents mentioned that their family members always smoke in the presence of non-smokers. An additional 19.3% of respondents stated that this is a 'usual' behavior for smokers in their family. Thus, the members of at least 60.5% of the target households were exposed to cigarette smoke through either active or passive smoking (Figure 9).

Figure 9. Smoking in the presence of non-smokers, Sevan, 2004
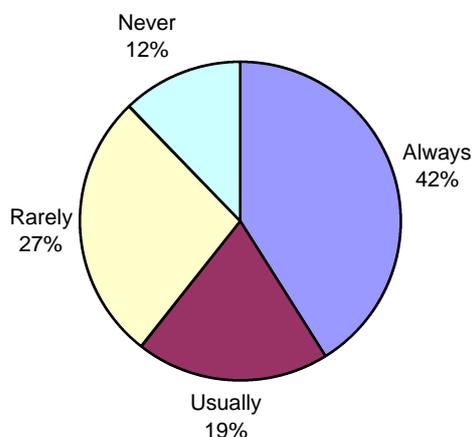
Items measuring respondents' attitude towards smoking were recoded to dichotomous variables, where positive attitudes were assigned the value 1, negative or indifferent attitudes value 0. As at the baseline, the majority of respondents expressed negative attitude toward smoking. More than 90% of them agreed or strongly agreed that smoking is harmful for both smokers' health and the health of people breathing smoke from another person's cigarette. Also, 84.7% of respondents were against allowing students to smoke in public, 72.5% against allowing workers to smoke while on the job (a statistically significant increase was observed here as compared to the baseline), and 56.1% for prohibiting smoking in public buildings and restaurants (Table 10).

Table 10: Proportion of respondents with desired attitude toward smoking: baseline vs. follow-up, Sevan

Statements	*Baseline: 2000,* (%)	*Follow-up: 2004,* (%)
Smoking tobacco is harmful to a person's health	92.0	94.2
Breathing smoke from another person's cigarette is harmful to a person's health	91.1	92.3
Student should be allowed to smoke in public	83.8	84.7
Workers should be allowed to smoke while on the job	65.5	72.5[*]
Smoking should be prohibited in public buildings	56.8	57.6

[*] *Statistically significant difference between baseline and follow up data: p=.005 (Pearson Chi-square test)*

With respect to drinking alcohol, 79.3% of respondents mentioned that they did not have a drink of alcohol during the past 30 days. This was not different from the baseline proportion of 79.2%. To the question about average frequency of drinking alcohol, 94.5% of respondents answered rarely or seldom: one-two times a month or less (92.9% at the baseline, the difference is insignificant). Only 8 respondents out of 697 who answered this question (1.1%) mentioned drinking two-three times a week or more, including 2 respondents (0.3%) who reported drinking daily. At the baseline survey, the reported frequency of drinking alcohol two-three times a week or more was not statistically different: 1.7%. However, the proportion of those mentioning that they had drinking problem ever in their life was significantly lower now than at the baseline survey (1.5% vs. 5.2%, p<.000). Significant difference from the baseline was observed also in the proportions of those household members who had a drinking problem some time in their life (11.5% at the follow-up, 15.4% at the baseline, p=.034). Of the respondents, 29.2% knew where to get help if someone in their family had a drinking problem (at the baseline, 25.0%, the difference is insignificant).

Statistically significant difference was observed also in the proportions of those respondents who knew someone in Sevan who had a problem with drug addiction. Again, this percentage was lower at follow-up (2.9% vs. 5.8%, p=.007). Meanwhile, 0.8% of the respondents mentioned that someone in their family had a problem with drug addiction (0.9% at the baseline). Of the respondents, 18.8% knew where to get help if someone in their family were drug addicted (17.8% at the baseline, the difference is insignificant).

3.3.4 Attitude Toward Nutrition

Several questions in the survey assessed respondents' beliefs about nutrition. The overwhelming majority of respondents, 96.0%, agreed (including 61.5% of those who strongly agreed) that good nutrition (healthy food) is necessary for a healthy body. With this respect, there were no differences between the baseline and follow-up data. However, the answers to the next question differed significantly: at the baseline, only 21.9% of the respondents believed that their family was receiving good nutrition. This proportion increased almost twofold at the follow up: 40.4% (p=.000).

The situation considerably improved also with the ability of families to get food. At the baseline, 79.5% of respondents worried that their family will not have enough to eat, including 27.5% of those who worried about this always or usually. This proportion decreased to 54.2% at the follow-up (p=.000). Consistent with this, the proportion of respondents who mentioned never or only occasionally having enough money to buy food for their family decreased from 76.6% at the baseline to 63.0% at the follow-up (p=.000). The answers to the question on the frequency of going to sleep hungry showed the same tendency of improvement: the proportion of "always" and "usually" responses decreased from 16.1% at the baseline to 4.5% at the follow-up, p=.000 (Table 11).

Table 11. Ability of families to get food, baseline vs. follow-up, Sevan, 2004

	Always (%)		Usually (%)		Occasionally (%)		Never (%)		p-value[*]
	BL	FU	BL	FU	BL	FU	BL	FU	
'Worry for not having enough to eat'	17.8	5.7	9.7	6.5	51.9	42.1	20.5	45.8	.000
'Went to sleep hungry during the last 30 days'	8.0	1.8	8.1	2.7	43.3	21.4	40.7	74.1	.000
'Have enough money to buy food'	6.4	12.2	17.0	24.7	34.3	41.9	42.3	21.2	.000

* Difference between baseline and follow-up data according to the Pearson Chi-square test

3.3.5 Knowledge of Child-bearing and Caring of Young Children

Several questions measured respondents' knowledge and beliefs about childbearing and caring for young children. These questions were intentionally addressed to those respondents who had at least one household member less than 10 years of age. A total of 384 respondents answered these questions.

The respondents were asked to choose the best answer from the given response choices for the first three questions of this section. Of the respondents, 15.6% knew the recommended minimum length of time ("2 years") for birth spacing (13.1% at the baseline). The percentage of correct answers on the question concerning the optimal duration of exclusive breastfeeding ("6 months") was again rather low: 29.0% (21.2% at

the baseline, which is marginally different, p=.065). The situation was better with the question on amount of liquids that should be given when a child has diarrhea: 67.0% of the respondents answered this question correctly by choosing "more liquids than a child normally drinks" option. The baseline proportion of correct answers to this question was lower: 60.7%, but the difference was insignificant (p=.065).

For several questions the respondents were asked to indicate if the statement given was true or false. The question on positive association between breastfeeding frequency and breast milk production received the highest proportion of correct answers 77.3% (74.6% at the baseline) among the questions in this group. The question on the risk for a child contracting HIV if given an injection with an unsterilized needle gathered the next highest proportion of correct answers: 65.6%, (similar to the baseline). No significant differences were found also in the proportions of correct answers to questions on risk of contracting HIV from a sterilized needle (45.2% at baseline, 50.4% at follow-up) and rapid breathing in a child as a sign of pneumonia (57.8% at baseline and 59.9% at follow-up). Among this group of questions, the question on child bearing (effect of alcohol usage during pregnancy on the fetus) received the lowest proportion of correct answers (Table 12). However, statistically significant increase was observed in the proportion of correct answers to this question as compared to the baseline (31.0% at the baseline and 42.6% at the follow-up, p=.001).

Table 12: Proportions of correct answers to questions measuring respondents' child bearing and childcare knowledge, baseline vs. follow-up, Sevan

Questions	*Baseline (%)*	*Follow-up (%)*	*P-value*
Recommended minimum length of time between births	13.1	15.6	NS[*]
Optimal duration for exclusive breastfeeding	21.2	29.0	NS
Quantity of liquids for a child with diarrhea	60.7	67.0	NS
Alcohol usage during pregnancy affects the fetus	31.0	42.6	.001
Frequent breast feedings increase milk production	74.6	77.3	NS
Injection with unsterilized needle may cause AIDS	64.6	65.6	NS
Injection with sterilized needle may cause AIDS	45.2	50.4	NS
Rapid breathing could be a sign of pneumonia	57.8	59.9	NS

[*] *NS-not significant (Pearson Chi-square test)*

The respondents were also asked to express the extent of their agreement or disagreement with 8 statements regarding different aspects of childcare. The highest proportion of positive attitudes were expressed toward the questions on breastfeeding: 83.1% of the respondents agreed that breast milk is better for an infant's health than "Narine" (a product of cow milk fermented by acidophilus bacilli widely promoted in Armenia as one of the healthiest infant foods); and 68.3% agreed that breastfeeding in the second year of child's life is in his best interest. However, these proportions were not significantly different from that at the baseline. Unlike this, the demonstrated attitudes toward the questions on immunization, diarrhea and antibiotics, smoke and pneumonia, and child development improved significantly as compared to the baseline (Table 13).

Table 13: Proportions of correct attitudes to statements on childcare, baseline vs. follow-up, Sevan, 2004

Statements	*Baseline (%)*	*Follow-up (%)*	*P-value*
Breastmilk is better for an infant's health than "Narine"	78.3	83.1	NS[*]
Breastfeeding into the second year of life is in child's best interests	73.8	68.3	NS
It does not really matter if the vaccine schedule is followed	44.6	52.9	.019
I can make decision to treat my child's diarrhea with antibiotics	40.1	57.7	.000
Smoky surroundings have no effect on whether a baby catches pneumonia	39.1	46.9	.028
A child with a cough or cold should be kept as hot as possible	23.7	35.5	.000
Physical punishment is necessary to make a child obey and respect parents	54.4	62.7	.017
Playing is not an important part of children's development	60.3	64.5	NS

[*] *NS-not significant (Pearson Chi-square test)*

The mean summative knowledge score of the respondents on childbearing and child caring (the mean of the sum of correct answers to all childbearing and child caring questions, where each correct answer is taken as 1) was 8.8 (sd 2.8) out of the highest

possible value of 16. At the baseline, this score was lower: 7.8 (sd 2.8). The difference between the baseline and follow-up summative knowledge scores was statistically significant: p<.000 (Independent Samples T-test for Equality of Means). The mean summative knowledge scores on different topics of child caring are provided in Table 14. As demonstrated in Table 14, statistically significant increase in mean knowledge scores as compared to the baseline was observed in all areas except BF (where the highest mean scores were observed both at the baseline and follow-up surveys).

Table 14. Mean summative knowledge scores of the respondents on different topics of child caring, baseline vs. follow-up, Sevan, 2004

Topics	Highest possible score	Baseline *(mean±sd)*	Follow-up *(mean±sd)*	p-value[*]
Reproductive Health	2	0.44±0.57	0.58±0.61	.001
Breastfeeding	4	2.48±1.05	2.58±1.04	NS[**]
Child Development	2	1.15±0.82	1.27±0.76	.025
HIV/immunization	3	1.55±1.01	1.69±0.95	.038
Diarrhea/ARI	5	2.22±1.21	2.67±1.23	.000
Summative knowledge score	16	7.82±2.80	8.80±2.76	.000

[*] *Independent Samples T-test for Equality of Means*

[**] *NS-not significant*

3.3.6 Respondents' Mental Health and Depression

A 20 question-scale (CES-D Scale[6] translated into Armenian) was included in the questionnaire to estimate the level of depression in the target population. The completed scale was not considered valid even if one answer out of the 20 was missing. As a result, some 224 questionnaires out of 750 (29.9%) at the baseline and some 232 (30.9%) at the follow-up were considered not valid, decreasing the response rate for this particular section to 70.1% and 69.1% respectively.

A cumulative depression score was calculated for each respondent. According to the scale, a cumulative score of 17-22 was considered as a sign of possible depression and a

cumulative score 23 and over as a sign of probable depression. The results revealed that probable depression existed in 32.3% of respondents, with possible depression in an additional 25.3% of them. At the baseline survey, these proportions were 44.1% and 22.9% respectively. The observed reductions in the prevalence of both probable depression alone (from 44.1% to 32.3%, p<.000) and probable plus possible depression (from 67.0% to 57.6%, p=.002) were statistically significant (Table 15).

Table 15: Depression prevalence among respondents, baseline vs. follow-up, Sevan

|	*Baseline (%)*	*Follow-up (%)*	*p-value*[*]
Probable depression	44.1	32.3	.000
Possible depression	22.9	25.3	
No Depression	33.0	42.4	.002

[*] *Pearson Chi-square test*

The average depression score for the sample was 19.05 (sd 10.0), which is significantly lower than that at the baseline: 21.7 (sd 10.2) (the Independent Samples T-test resulted in a p-value less than .000). However, the observed average score is still much higher than the US population average score of 7.8 - 9.92[iii].

A clear tendency of increase in proportions of probably depressed was observed with age both at the baseline and follow-up surveys (p<.000, Spearman correlation test) (Table 16, Figure 10).

[iii] It should be noted that the measure of CES-D has not been clinically validated in Armenia. A validation study is planned for Fall 2004.

Table 16: Prevalence of Depression by Age, Sevan, 2004

Depression level		Age				
		18-30	31-40	41-50	51-60	>60
Probable Depression (%)	BL	35.4	42.2	53.1	63.6	47.6
	FU	24.8	26.9	37.5	60.0	72.0
Possible Depression (%)	BL	24.3	21.1	21.1	21.2	38.1
	FU	25.7	24.4	32.7	20.0	4.0
No Depression (%)	BL	40.3	36.6	25.8	15.2	13.6
	FU	49.5	48.7	29.8	20.0	24.0

Figure 10. Prevalence of Probable Depression by Age: Baseline vs. Follow-up
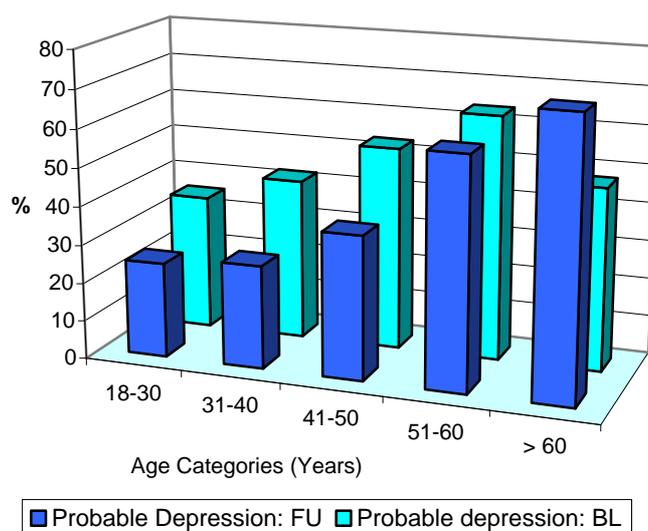
3.4 Access to Medical Care

3.4.1 Personal Health Care Services

The survey also evaluated the accessibility of medical care and its changes since the baseline survey. Several measures of access such as availability of transportation and medications, waiting time for getting medical care, cost of health services, and treatment of medical staff were studied. The answers to these questions were analyzed through

recoding "always" and "usually" replies into one response option and "occasionally" and "never" replies into another response option. Thus, dichotomous variables were created and compared with each other to judge about changes between the baseline and follow-up data on personal health services. The results of this comparison are provided in Table 17.

Table 17: Perception of accessibility of medical care, baseline vs. follow-up, Sevan *(Proportions of "always" and "usually" responses to the given statements)*

Statements	Baseline (%)	Follow-up (%)	p-value[*]
I have to wait too long at the polyclinic before receiving care	22.4	12.8	.000
It is difficult to get to the doctor or polyclinic to get medical care	38.4	17.8	.000
It is difficult to get an appointment for medical care	38.5	16.2	.000
I can get transport to see a doctor when I am sick	30.0	44.1	.000
I can afford the cost of a doctor visit	12.0	23.5	.000
I go to the doctor so that I will not get sick in the future	11.1	16.4	.004
I have enough money to buy the medicines recommended by the doctor	13.2	23.1	.000
I am able to get medicines prescribed by doctor	19.0	33.7	.000
Physicians and staff treat me with courtesy/respect during my medical visits	63.9	75.3	.000
I can get childcare when needed so that I can get medical care for myself	44.8	50.0	NS[**]

[*] *Pearson Chi-square test*

[**] *Difference is not significant*

As shown in Table 14, the situation with all the measures besides the ability to get childcare improved significantly since the baseline survey, indicating both increased accessibility of health care services and improved ability of people to take care of their own health. However, the proportion of those respondents who could afford medical care always or usually was still very low: 23.5%. The same was true with some other measures: the proportion of those making preventive check-ups (16.4%), being able to pay for prescribed medications (23.1%) or get those medications (33.7%). Less than half of the respondents (44.1%) reported being able to get transportation to visit a doctor.

3.4.2 Access to Health Services

Information was gathered about the extent of use of health care services by the target population. To avoid recall bias, most questions referred to the past four weeks. There was no significant difference between baseline and follow-up surveys in proportions of those households whose members made visit(s) to the polyclinic during that period of time. These proportions were 16.6% for adults and 18.3% for children at the baseline and 18.1% at the follow-up (for both children and adults)[iv]. However, the proportion of those respondents mentioning that they or someone in their family needed to go to polyclinic or hospital during that period but did not, decreased significantly: from 54.6% at the baseline survey to 38.1% at the follow-up (p<.000). Again, lack of money to pay for services was mentioned as the most common reason for this (69.3%). Lack of time (4.0%), mistrust of providers (3.3%), self-treatment (3.3%), fear of diagnosis/medical care (2.6%), indifference to own health (0.7%), and difficulties with transportation (0.7%) were among other reasons. Some 16.1% of respondents did not mention any reason.

The average waiting time at the polyclinic to see a doctor or nurse was less than 15 minutes for 63.2% of the respondents, and 15 to 30 minutes for 30.5% of them. Only 1.1% of the respondents mentioned waiting more than 1 hour. Waiting time was not a problem at the baseline survey either: 60.7% mentioned waiting less than 15 minutes, 28.0% 30-60 minutes, and 4.7% more than an hour. Nevertheless, the observed improvement in waiting time to see a doctor/nurse was statistically significant: the proportion of those waiting less than 30 minutes increased from 88.6% at the baseline to 93.8% at the follow-up, p=.003 (Pearson Chi-square test).

Sevan is a small city and at the baseline survey, not surprisingly, some 69.6% of respondents stated that they usually walk to the polyclinic. However, the proportion of those walking to the polyclinic decreased significantly at the follow-up survey: to 51.9%


[iv] The adult and pediatric polyclinics in Sevan city were separate institutions located in different buildings at the time of baseline survey. Now they are located in the same building and act as a single provider.

(p<.000). Accordingly, the proportions of those usually visiting polyclinic by car, bus, or taxi increased (Figures 11, 12).

Figure 11. Means of transportation to the polyclinic, baseline, 2000
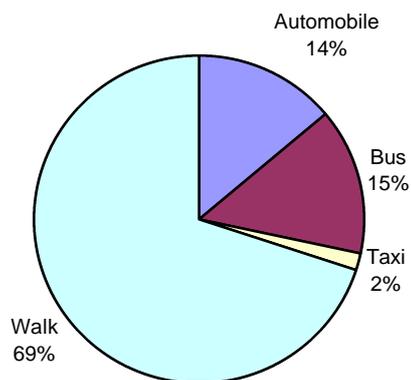
Figure 12. Means of transportation to the polyclinic, follow-up, 2004
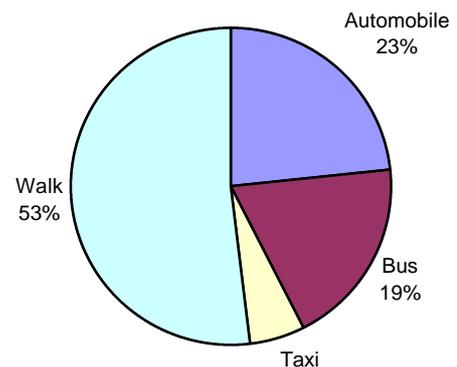
With respect to frequency of hospitalizations, 17.3% of the respondents mentioned that someone from their household was hospitalized during the past 12 months. This proportion was significantly lower from that at the baseline survey (22.4%, p=.015).

Of the respondents, 61.3% reported that when referred to a specialist in past, their household members have primarily seen a specialist in Sevan. Another 15.8% mentioned referring primarily to a specialist in Yerevan. These proportions were not significantly different from the baseline data: 67.6% and 22.8% respectively. The only significant difference here was observed in the proportion of those who marked "other" response option (23.0% at the follow up vs. 9.6% at the baseline, p<.000). The overwhelming majority of the respondents who answered in this way could not specify a usual place of referral and mentioned seeing specialists in both Sevan and Yerevan.

The proportion of respondents thinking that specialists in Yerevan were more qualified than in Sevan remained unchanged (46.9% at the follow-up and 47.5% at the baseline). Considerable proportion of the respondents answered "do not know" to this question both at the follow-up and baseline surveys (39.8% and 37.0% respectively). However, the

proportion of those who's household members would prefer to be referred to a specialist in Yerevan increased significantly: from 17.8% to 22.6%. Accordingly, the proportion of those preferring to be referred to a specialist in Sevan decreased from 31.9% to 25.1% (p=.001). For a considerable proportion of respondents (47.7% at the follow-up and 43.2% at the baseline), the choice of preferred referral site depended on the illness.

3.4.3 Attitude toward Access to Medical Care

Respondents were asked to indicate the extent of their agreement with several statements to identify their attitude toward access to medical care. To compare to the baseline survey results, these questions were recoded into new dichotomous variables, where "strongly disagree", "disagree" and "neither agree nor disagree" responses were combined in one option, while "agree" and "strongly agree" responses in another option.

The comparison showed that there were no significant changes in the proportions of those who agreed that most people need medicines from a doctor in order to be healthy (72.6% at the follow-up and 74.1% at the baseline) and most people could become healthier by changing their lifestyle and behaviors (79.3% and 81.9% respectively). Unlike this, the observed increases in proportions of those who knew where to go to get medical care (78.3% at the follow-up and 71.6% at the baseline) and who reported receiving good care during her last illness (72.3% and 60.1% respectively) were statistically significant. Of the employed respondents, 56.2% agreed that they were able to take paid time off from work to get medical care for themselves. At the baseline, this proportion was lower (51.2), but the difference was not significant (Table 18).

Table 18. Attitudes of respondents towards access to medical care, baseline vs. follow-up, Sevan, 2004

Statements	*Baseline, 2000 (%)*	*Follow-up, 2004 (%)*	*p-value*[*]
Most people need medicines from a doctor in order to be healthy.	74.1	72.6	NS[**]
Most people can become healthier by changing their lifestyle and behaviors.	81.9	79.3	NS
I know were to go so that I can get medical care.	71.6	78.3	.004
I received good medical care from a doctor during my last sickness.	60.1	72.3	.000
I am able to take time off from work with pay to get the medical care that I need.	51.2	56.2	NS

[*]*Pearson Chi-square test*

[**]*Difference is not significant*

Some new items on nurse leadership and providers' skills to counsel/educate patients were included to measure the impact of some specific interventions conducted by the partnership since the baseline survey. Less than half of the respondents (43.8%) agreed that nurses could educate patients as well as doctors. Considerably higher percentage of the respondents agreed that doctor was interested in their overall health (60.7%) and knowledgeable about their specific illness (65.1%). However, the proportion of those who received health-related informational literature during the last visit to doctor was not as high: 31.2% (Table 19).

Table 19: Attitudes of respondents to the additional items on accessibility/quality of medical care, Sevan, 2004

Statements	*Strongly disagree (%)*	*Disagree (%)*	*Neither agree nor disagree (%)*	*Agree (%)*	*Strongly agree (%)*
Most people feel nurses can educate patients as well as doctors	6.4	24.1	25.7	35.8	8.0
The doctor was interested in my overall health in addition to my complaint.	4.8	16.7	17.7	48.7	12.0

Statements	Strongly disagree (%)	Disagree (%)	Neither agree nor disagree (%)	Agree (%)	Strongly agree (%)
I was educated about my specific illness/disease from a doctor during my last sickness.	3.1	11.2	20.5	55.1	10.0
I received health-related information or brochures the last time I visited a doctor.	15.9	35.8	17.1	25.8	5.4

Respondents were asked to rate the importance of several factors in selecting a specialist. Physician's referral was considered the most important factor. The next factors in terms of perceived importance were specialist's reputation and cost of treatment. These were followed by hospital/clinic reputation and personal experience. Friend's referral was considered as the least important factor. In terms of importance, the sequence of the first three factors was different at the baseline survey: cost of treatment was considered as the most important factor followed by specialist's reputation, and doctor's referral. The proportion of those considering doctor's referral very important increased significantly. Meanwhile, the respondents considered "cost of treatment" and "hospital reputation" as very important significantly less frequently (Table 20).

Table 20: Proportions of respondents considering the following factors "very important" in selecting a specialist, baseline vs. follow-up, Sevan, 2004

Factors	Baseline (%)	Follow-up (%)	p-value[*]
Physician's referral	68.2	74.4	.011
Friend's referral	18.0	20.0	NS
Cost of treatment	75.7	67.4	.001
Specialist's reputation	73.5	68.9	NS
Hospital/clinic reputation	61.2	55.4	.031
Previous experience (own of friend's)	51.2	51.8	NS

[*] *Pearson Chi-square test*

[**] *Difference is not significant*

Among other factors listed by respondents as important in selecting a specialist, specialist's kind attitude towards the patients, his professional level, his experience, and the cleanliness/comfort of the medical facility were the most commonly mentioned ones.

3.4.4 Access to Early Diagnosis and Prevention Services

Respondents were asked about their knowledge and behavior regarding screening for the early detection of certain diseases and health problems such as cervical cancer and breast cancer. Some 42.9% of the respondents mentioned that they had ever heard about Pap smear as a screening test to detect the early stages of cervical cancer. This proportion was almost the same at the baseline survey: 42.5%. Of those having heard of the Pap smear, 61.9% answered correctly to the question about recommended frequency of having Pap smear, i.e., once a year (59.6% at the baseline). Only 4.7% of the respondents knew the correct starting age for a PAP smear: 18 years old (5.2% at the baseline). There were no significant differences in this respect between baseline and follow-up surveys.

With respect to their own behavior, out of all women who heard about Pap smear, some 17.0% mentioned having had one within the last year, and additional 9.5% of them within the past 1-2 years. The majority of respondents either never had (54.6%) or had one more than 4 years ago (8.8%). There were no significant differences in this area between the baseline and follow-up surveys.

For the question on recommended frequency of having a screening mammography, 57.9% of respondents answered correctly: every year or every two years (depending on age). Again, this proportion was similar with that at the baseline survey: 58.5%. There was a very small proportion (2.6%) of correct answers to the question on recommended starting age of having the first mammogram (35-39 years old). Some 10.4% of respondents mentioned 40 years of age, which also can be considered a correct answer according to American Cancer Society recommendations. The situation was similar with the one observed at the baseline survey: 4.4% of correct answers and 5.5% of those who mentioned 40 years of age.

With respect to their own practices, 11.1% of the respondents over 35 years of age mentioned that they had a screening mammogram sometime in their life. Out of them 50.0% had it within the last year, 22.5% 1-2 years ago, 17.5% 3-4 years ago, and 10.0% 4 or more years ago. The proportion of women over 35 who reported ever having a screening mammogram was significantly lower at the baseline survey: 4.9% (p=.001).

A positive change was observed in terms of ever checking blood cholesterol level. The proportion of those who positively answered to this question increased from 13.1% at the baseline survey to 21.1% at the follow-up, p<.000 (Pearson Chi-square test).

A new question was added on the time the respondents last had their blood pressure checked. The vast majority of them (76.7%) had it checked within the last year. However, 11.6% of those who replied to this question could not remember if their blood pressure was ever checked (Figure 13).

**Figure 13. Time of last blood pressure check, Sevan, 2004, n=705**
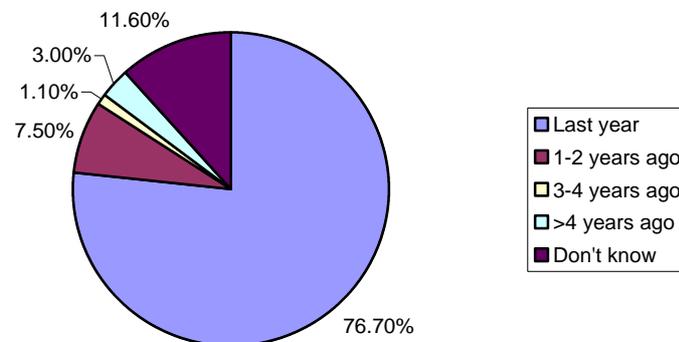
As at the baseline, the coverage of children with immunization was among the best indicators: 93.6% of the respondents positively answered the question if the children in their household were immunized. This number was not statistically different from the baseline data of 91.3%. Statistically significant improvement was observed in the coverage of adolescents (15-17 years old) with their medical exam: the proportion of positive answers to this question increased from 56.5% at the baseline to 72.2%, p=.004.

3.5 Reproductive Health Knowledge and Practices

The respondents were asked about the number of pregnancies they had in their life, including miscarriages, stillbirths, and abortions. Those respondents who could not recall the exact number of pregnancies were provided with answer options "don't remember but more than 5" and "don't remember but more than 10". To calculate the mean number of pregnancies, "don't remember but more than 5" answers were recoded to 7.5 (mean of the range 5 to 10) and "don't remember but more than 10" answers to 11 (the most conservative approach). With this methodology, the mean number of pregnancies constituted 4.3 (sd 3.6) at the follow-up survey and 5.6 (sd 4.9) at the baseline.[v] The difference was statistically significant: p<.000 (two independent samples t-test). The data was analyzed also through defining the following categories: 'no pregnancy', '1-5 pregnancies', '6-10 pregnancies', and 'more than 10 pregnancies'. Again, the analysis revealed significant difference between the baseline and follow-up data: the proportion of those having 1-5 pregnancies increased since the baseline (from 51.7% to 63.8%) and the proportion of those having 6 or more pregnancies decreased from 42.2% to 29.6% (p<.000). The proportion of those who never was pregnant was almost the same at the baseline and follow-up surveys: 6.2% and 6.6% respectively (Figure 14).

**Figure 14. Number of pregnancies in respondents, Sevan**
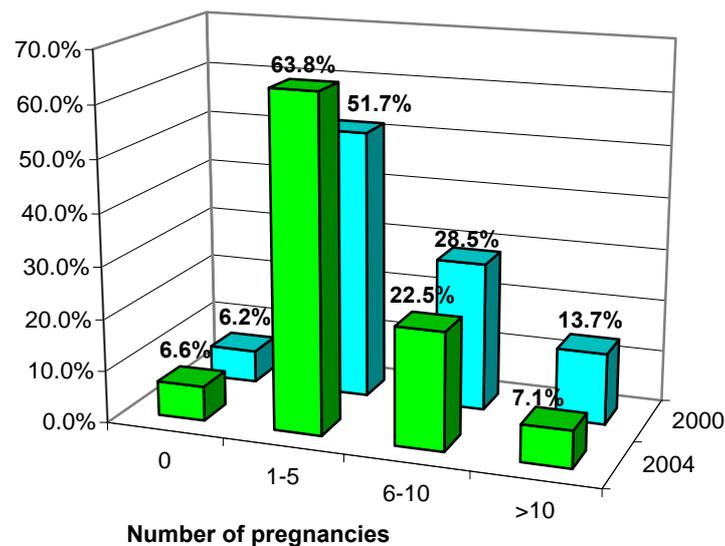
[v] As with the other respondent-specific data analysis, the age outlier (85 years old) was excluded from the data to make the groups similar in terms of age.

2.2 (sd 1.1) at the follow-up. Again, the difference was statistically significant (p<.000, Two Independent Samples T-test). The proportions of respondents by the number of children they gave to birth are provided in Figure 15.

Figure 15. Number of children given to birth, Sevan
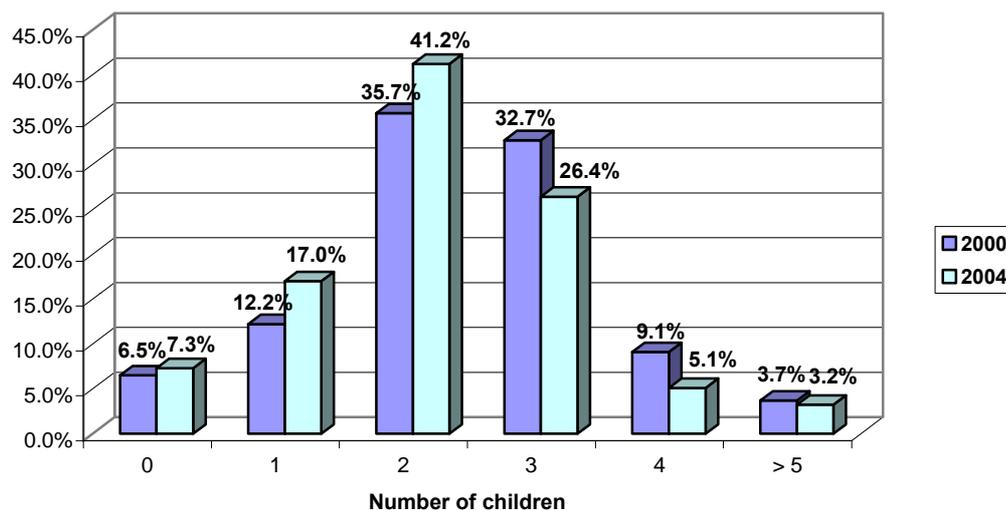
Of all respondents, 77.4% mentioned being sexually active (74.2% at the baseline). When asked, what decision they would make if they become pregnant, 42.9% answered that they would keep the baby (this proportion was only 28.2% at the baseline). Meanwhile, 38.5% of the respondents indicated that they would get an abortion (48.8% at the baseline). The observed difference between the responses to this question was statistically significant (p<.000), indicating that more people were inclined now to keep the baby than before. Some 16.9% of sexually active respondents reported they were unable to become pregnant (20.6% at the baseline). The vast majority of the respondents, 94.5%, mentioned being aware of where to get a pregnancy test. This proportion increased significantly since the baseline survey, when it was 88.6% (p=.007).

The proportion of those not using any method of contraception was rather high: 39.2%, but not statistically different from the baseline data of 33.6%. Among contraceptives, the use of IUD increased significantly: from 3.3% at the baseline to 16.2% now (p<.000). Meanwhile, the use of other contraceptives decreased significantly, including withdrawal,

safe period, douching, abortion, female sterilization, and Depo-Provera. The most common methods of contraception were male condoms (17.5%), IUD (16.2%), safe period (9.7%), and withdrawal (8.2%), (Table 21).

Table 21. Contraception methods used by respondents, baseline vs. follow-up, Sevan

Method of contraception	*Baseline (%)*	*Follow-up (%)*	*p-value**
Pills	8.6	6.1	NS**
IUD	3.3	16.2	.000
Depo-Provera/injections	1.0	-	.036
Male condoms	21.6	17.5	NS
Spermicide/cream/jelly	0.2	-	NS
Female sterilization: tubal ligation	1.9	0.4	.040
Male sterilization: vasectomy	0.5	0.9	NS
Emergency contraception: "Morning-after" pills	0.2	-	NS
Abortion	9.5	4.1	.001
Safe period method (calendar)	16.2	9.7	.004
Lactational Amenorrhea Method	0.5	-	NS
Withdrawal	12.3	8.2	.045
Douching	10.5	6.5	.034
Other methods	1.2	1.5	NS
Use no method	33.6	39.2	NS

Pearson Chi-square test

**Difference is not significant*

The respondents were also asked to express their attitude to several statements regarding sexual education and family planning. Their attitude was positive to the statement about the necessity of sexual education for high school students: 75.4% agreed, which is not different from the baseline data of 78.8%. However, surprisingly, as compared to the baseline survey data, the respondents were less favorable toward educating students at school how to use contraceptives (agreed 46.6% vs. 56.0% at the baseline, p=.001), or enabling high school students to get condoms at school health centers (agreed 9.9% vs. 18.3% at the baseline, p<.000). The proportion of those respondents who agreed that

modern family planning methods effectively prevent from pregnancy, and those who thought that condoms prevent from getting STDs also decreased significantly (Table 22). The expressed attitude toward the remaining two statements was not different from the baseline: 67.6% of the respondents thought that they knew how to prevent getting pregnant, and 24.2% of them knew that not all birth control methods protect against STDs.

Table 22: Proportion of favorable/correct attitudes toward statements on sexual education and family planning, baseline vs. follow-up, Sevan

Statements	*Baseline (%)*	*Follow-up (%)*	*p-value**
Modern family planning methods (tablets, condoms, IUD etc.) are an effective way to prevent a woman from pregnancy.	60.1	54.5	.041
I know how to prevent getting pregnant if I do not want to have a child.	67.4	67.6	NS[**]
All birth control methods will protect me against getting a sexually transmitted disease.	23.2	24.2	NS
High school students need to be taught about sex education in the schools.	78.8	75.4	NS
High school students need to be taught in the schools how to use contraceptives to prevent pregnancy and sexually transmitted diseases.	56.0	46.6	.001
High school students should be able to get condoms at school health centers.	18.3	9.9	.000
Condoms prevent from getting sexually transmitted diseases.	61.3	54.7	.013

Pearson Chi-square test
**Difference is not significant*

3.6 Personal safety

Several questions were included in the questionnaire to measure respondents' attitude toward public and private safety. Of the respondents, 65.4% felt safe at work always or usually. The proportion of those feeling safe (always or usually) while shopping was lower: 57.6%. Interestingly, the overwhelming majority of the respondents, and even

those who felt unsafe while shopping, indicated that they never worry (or only occasionally worry) that they would be robbed or attacked while shopping (97.0%) or while at home (97.9%). A possible explanation for this contradiction could be misinterpretation of the meaning of the verb used for safe in Armenian because the verb has two meanings depending on context: feeling secure and feeling safe.

The questions on personal/public safety were recoded into dichotomous variables through combining "always" and "usually" responses in one option and "occasionally" and "never" responses in another option to measure if the observed changes in perceived safety were significant. The analysis showed that there were no major differences in perceived safety between baseline and follow-up surveys (Table 23). The only significant decrease since the baseline survey was observed in proportions of those who worry that will be robbed while at home always (from 1.5% to 1.0%), usually (from 2.9% to 1.0%), or occasionally (from 14.1% to 11.0%).

Table 23: Proportion of positive answers to questions on personal safety, baseline vs. follow-up, Sevan

Statements	Baseline (%)	Follow-up (%)	p-value[*]
I feel safe when I go shopping.	58.7	57.6	NS
I feel safe when I am at work.	68.8	65.4	NS
I worry that I might be robbed or attacked while I am shopping.	96.0	97.0	NS
I worry that I will be robbed or attacked while I am at home.	95.5	97.9	.014

[*] *Pearson Chi-square test*

[**] *Difference is not significant*

The respondents (all women) were also asked to express the extent of their agreement with several statements concerning relationships between men and women in the family. The majority of respondents (60.7%) agreed that women have the right to disagree with the men in family. Meanwhile, 69.7% of them agreed also that women must obey men; and an even higher proportion, 79.2% agreed that men have a right to discipline women in their home. The latter two proportions, however, decreased significantly as compared

to the baseline data: 74.5% (p=.045) and 85.9% (p=.001) respectively (Table 24).

Several questions concerning trust of police were included in the questionnaire. Of the respondents, 48.6% agreed that they could count on police to protect them. The proportion of those who felt that police would help them if they were attacked or robbed was higher: 63.5%. Some 51.4% agreed that police would help them if someone in their household would intentionally hurt them. This proportion was significantly lower than at the baseline (57.2%, p=.030). The proportion of those who felt being able to seek medical care if someone that they live with intentionally hurt them was somewhat higher: 68.1% (Table 24).

Table 24: Proportions of those who agreed to the statements on men-women relationships in family and trust to police, baseline vs. follow-up, Sevan

Statements	*Baseline (%)*	*Follow-up (%)*	*P-value[*]*
At home, women have the right to disagree with the men in the house.	64.5	60.7	NS[**]
Men have the right to discipline women in their home.	85.9	79.2	.001
Women must obey men.	74.5	69.7	.045
I can count on the police to protect me.	47.5	48.6	NS
The police will help me if I am attacked or robbed.	61.2	63.5	NS
I think that the police will help me if I am intentionally hurt at home by someone that I live with.	57.2	51.4	.030
I can seek medical care if someone that I live with intentionally hurts me.	69.7	68.1	NS

[*] *Pearson Chi-square test*

[**] *Difference is not significant*

Several questions were asked to measure the degree of exposure of the target population to violence. Some 6.4% of respondents mentioned that they personally witnessed a severe argument, fight, or other violence during the past 30 days. Meanwhile, 2.2% of them indicated that someone intentionally hit them within the last 30 days. These proportions were not different from those observed at the baseline survey (8.5% and 3.5% respectively). Concerning the questions on being threatened or hit/bit by a household

member, the obtained data was significantly different from the baseline. The proportion of those who reported being threatened with physical violence by a household member decreased from 6.0% at the baseline to 3.3% at the follow up (p=.016). Similarly, 8.8% reported being ever hit or bit by a household member as compared to 15.9% at the baseline (p=.000).

3.7 Dental Care

Questions on dental care were directed to measure both the respondents' attitude to preventive dental check-ups and their own behavior. Of the respondents, 43.3% stated that they went to a dentist within the last year and 17.8% 1-2 years ago. Meanwhile, 10.0% of them indicated visiting a dentist 4 or more years ago, and 7.6% never. The proportion of those who visited a dentist within last year has significantly increased since the baseline: 43.3% vs. 37.9%, p=.038.

The picture was similar with the respondents' family members' last visit to a dentist: 51.0% of the respondents answered that the last time when one or more of their family members went to a dentist was within the last year, and 17.8% 1-2 years ago. The proportion of those respondents whose family members went to a dentist last time 4 or more years ago was 5.2%. Another 5.9% answered "never" to this question. Again, significant difference was found in proportions of those who's family members visited a dentist within last year: 41.7% at the baseline and 51.0% at the follow-up, p=.001.

A considerable proportion of respondents (44.2%) indicated that normally an adult should receive a dental check-up every 6 months (43.5% at the baseline). Some 28.0% considered this frequency being every year (this number was significantly higher from that at the baseline: 21.4%, p=.004). There was a rather large proportion of "don't know" answers to this question both at the baseline and follow-up surveys: 25.4% and 22.2% respectively. For the right frequency of children's dental check-up and cleaning, 51.9% of the respondents mentioned "every 6 months" and 20.3% "every year" (similar to the baseline proportions of 52.5% and 16.9% respectively). Again, the proportion of "don't know" responses was considerable: 20.0% at the follow-up and 21.4% at the baseline.

4. Main findings

<u>Socio-economic Status</u>

One of the main findings of this survey was moderate, but statistically significant improvement in household income and living conditions of the target population as compared to the baseline data. The situation with unemployment remained the same: only 22.1% of the respondents and 34.7% of the heads of their household were employed, and no one was employed in 43.5% of the surveyed households. Some interesting trends were observed since the baseline survey: the role of government as a primary employer decreased and the role of private organizations and self-employment increased, a tendency of increase in working hours of employees was observed along with an increase in proportion of those whose position was inconsistent with their professional/vocational training. Average monthly expenditures increased significantly. The same tendency was observed with possession of convenience/luxury items included in the questionnaire as indirect measures of household income: the proportion of those households equipped with indoor toilet, hot water tank, color TV, VCR, and cellular phone increased significantly. Consistent with this, significantly higher proportion of respondents (7.5%) as compared to the baseline (1.6%) reported that the monthly income of their family was enough to meet the family needs. The proportion of those not heating their living quarters during winter decreased significantly (from 15.8% to 5.6%). Piped gas became the main fuel for cooking and largely replaced electricity and other fuels. The proportion of those worrying that their family would not have enough to eat decreased significantly (from 79.5% to 54.2%) and those going to sleep hungry always or usually decreased from 16.1% to 4.5%. However, the proportion of those dissatisfied with their family income was still rather high (60.1%), household expenditures for the last month were less than $50 for 44.2% of the households. More than half of the families still worried about not having enough to eat. Overall, the socio-economic situation in the target area appeared to be difficult, but convincing trend of improvement was observed in the 4 years passed since the baseline survey.

Health Status

The same tendency of improvement as compared with the baseline data was observed with health status of the target population. The proportion of those respondents mentioning health problems in children decreased significantly (from 23.9% to 15.3%). Significant improvement in perceived health status of both respondents and heads of household was observed: the health was rated as good/very good/excellent for 38.1% of respondents (29.7% at the baseline) and 35.8% of heads of household (26.0% at the baseline). The same picture was revealed with perceived dynamic of health: the proportions of "getting better as compared to one year ago" increased and "getting worse" decreased significantly for all three categories: children, respondents, and heads of household. However, the health was still rated as fair or poor for 44.7% of children, 61.8% of respondents, and 64.2% of heads of household. The most common chronic health conditions among household members were high blood pressure and vision problems, followed by cardiac diseases and gastro-intestinal pathology. This pattern repeated that from the baseline survey, but the perceived prevalence of all these conditions among all household members decreased significantly since the baseline survey. Of the surveyed, 17.5% mentioned having an accident in their family during the last year, which is significantly lower from the baseline proportion of 27.8%. The most common accident was fall, followed by cut/slash/puncture and poison/overdose (interestingly, the latter decreased significantly: from 36.8% to 17.9%). As compared to the baseline, the situation significantly improved also in terms of respondents' ability to conduct some daily activities, including walking different distances, bending/kneeling/stooping, climbing stairs, and lifting/carrying groceries. However, the proportion of those felt limited in their everyday activities because of health condition remained rather high: 60.0% felt limited in vigorous activities, more than 40.0% in activities such as walking more than a mile, lifting/carrying groceries, and climbing several flight of stairs, and 15.9% in even bathing or dressing themselves. A positive dynamic was observed also in the extent of bodily pain felt by the respondents: the proportion of those who reported 'severe or very severe pain' decreased and those who reported 'no pain' increased significantly as compared to the baseline data. Consistent with the above mentioned, considerable increase in respondents' satisfaction with own

health and life was observed since the baseline survey covering almost all measured areas. Revealed prevalence of probable (32.3%) and possible (25.3%) depression among respondents was significantly lower from the baseline (44.1% and 22.9% respectively). The average depression score for the surveyed sample was 19.05, which is significantly lower than that at the baseline (21.7) but still much higher than the US population average score of 7.8-9.9.

Health Behavior

The proportion of those who ever smoked cigarettes was significantly lower than at the baseline: 3.0% vs. 7.0%. There were no other significant differences between baseline and follow-up data in terms of smoking practices. Of the respondents, 1.9% were current smokers. The average number of cigarettes they smoked per day was 15.9. Out of all household members that were more than 12 years of age, 28.7% smoked. The male:female ratio in this group of smokers was 34:1. Due to rather high prevalence of passive smoking, the members of at least 60.5% of the surveyed households were exposed to cigarette smoke through either active or passive smoking. Only 1.5% of the respondents mentioned having drinking problem ever in their life and 11.5% reported that someone living in their household had a drinking problem. These numbers were significantly lower from that at the baseline survey: 5.2% and 15.4% respectively. The drinking frequency in respondents (rarely or seldom in 94.5%) was similar to that at the baseline. As compared to the baseline, significantly lower proportion of respondents (2.9% vs. 5.8%) mentioned knowing someone in Sevan who had a problem with drug addiction.

Health Knowledge

The mean knowledge score of the respondents on childbearing and caring for young children was 8.8 out of the highest possible value of 16. At the baseline, this score was lower (7.8). The difference between these two scores was statistically significant showing an increase in respondents' knowledge on these issues. In terms of knowledge on different topics, statistically significant increase in mean knowledge scores as compared to the baseline was observed in the areas of diarrhea/acute respiratory infection, child

development, HIV/immunization, and reproductive health. The mean knowledge score was the highest on breastfeeding and the lowest on reproductive health.

Accessibility of Medical Care

The situation with all the measures intended to assess personal health care services improved significantly since the baseline survey, demonstrating both increased accessibility of health care services and improved ability of people to take care of their own health. While the proportion of people visiting a clinic during one month period remained unchanged as compared to the baseline and the number of hospitalizations decreased significantly, the proportion of those respondents who mentioned that their family members needed to refer to a polyclinic/hospital but did not, decreased significantly: from 54.6% at the baseline to 38.1% at the follow-up, indicating some improvement in people's ability to pay for services. Significant improvements were observed also in waiting time to see a doctor/nurse and in proportions of those who use transportation means (instead of walking) to visit polyclinic. At the follow-up survey, the proportions of those who reported receiving good care during their last illness and who knew where to get medical care also increased significantly. Some improvements were observed also with the usage of early diagnosis/prevention services. The proportion of those women over 35 who reported ever having a screening mammogram increased significantly as compared to the baseline (from 4.9% to 11.1%). The proportion of adolescents covered by their medical exam (72.2% as compared to 56.5%) and the percentage of those who ever checked their blood cholesterol level (21.1% as compared to 13.1%) also increased significantly. The percentage of respondents who visited a dentist within last year has significantly increased since the baseline: 43.3% vs. 37.9%. The same significant increase was observed in proportion of household members who last visited a dentist within last year (from 41.7% to 51.0%). However, the main problem with accessibility of medical care remained its low affordability for the vast majority of respondents (76.5%). The situation was unsatisfactory with some other measures also, like the low proportions of those making preventive check-ups (16.4%), being able to pay for prescribed medications (23.1%) or get those medications (33.7%). For the majority of respondents (61.3), Sevan was the primary place for seeking treatment, although the

proportion of those preferring to be referred to a specialist in Yerevan increased significantly. The latter could be connected with the observed increase in proportion of those who do not consider too much burden going to Yerevan to see a specialist.

Reproductive Health

The mean number of pregnancies that respondents had during their life was 4.3, which is significantly lower than that at the baseline survey (5.6). The same tendency was observed with the mean number of children given birth to: 2.2 as compared to 2.4 at the baseline. Of those sexually active respondents who were able to get pregnant, 42.9% expressed wish to keep the baby in the case of pregnancy, which was much higher than the baseline proportion of 28.2%. As to the contraceptive usage, the proportion of those who did not use any method of contraception was 39.2% (not different from the baseline). The usage of IUD increased significantly (from 3.3% to 16.2%), while the usage of some other methods (mainly traditional) decreased. The most frequently used methods were male condoms (17.5%) and IUDs (16.2%). Some changes were observed in respondents' attitude toward sexual education and family planning. As compared to the baseline data, the respondents were less favorable toward educating students at school how to use contraceptives or enabling high school students to get condoms at school health centers. Another interesting observation was that as compared to the baseline, lower percentage of respondents agreed that modern family planning methods effectively prevent from pregnancy or condoms prevent from getting STDs.

Safety

The overwhelming majority of respondents (~97%) never worried that they would be robbed or attacked while shopping or while at home. In terms of exposure to violence, 6.4% of them personally witnessed some violence and 2.2% were intentionally hit during the past 30 days. These numbers was not different from the baseline data. Unlike this, the proportions of those who reported being threatened with physical violence (3.3%) or being ever hit or bit by a household member (8.8%) decreased significantly as compared to the baseline data (6.0% and 15.9% respectively). The proportion of those women who think that men have right to discipline women in their home and that women must obey

men decreased significantly, but still were rather high (79.2% and 69.7% respectively). Only 48.6% of the respondents agreed that they could count on police to protect them. The proportion of those who felt that police would help them if they were intentionally hurt at home by a household member decreased significantly (from 57.2% to 51.4%).

5. Conclusions

In almost all surveyed areas, including perceived health status of the target population, health knowledge, satisfaction with own health and life, accessibility of healthcare services, and use of early diagnosis/prevention services, the follow-up survey revealed mild/moderate but significant improvement since the baseline survey in 2000. Several factors could play role in this improvement including improving socio-economic conditions of the target population and the activities undertaken by Sevan/Providence community health partnership during this period. The partnership activities targeted both peoples' knowledge on health and health services and the services itself, making those more efficient and accessible for the target population. Many of the observed improvements took place in the areas covered by the advocacy activities of the partnership, the topics of which (mental health, reproductive health, child caring, dental health, violence in family, etc.) were chosen to better address the existing needs revealed through the baseline survey. The respondents were more satisfied with their/their family members' health and the health care they receive, which, in some extent, could be a result of provider education and introduction of clinical guidelines and standards in the scope of the activities undertaken by the partnership.

However, the situation was still difficult in many areas, including those where some improvements were observed. The health of more than 60% of adults and 45% of children was still rated as fair or poor. Because of poor health, one-sixth of the respondents felt limited in elementary daily activities (bathing or dressing themselves). More than half of the families still worried about not having enough to eat always, usually or occasionally. One-third of the respondents were probably depressed with an additional one-fourth of those possibly depressed. Medical services were still not

affordable for more than three-fourth of the families. The proportion of those making preventive check-ups was still very low (16%). And the majority of population (60.5%) was exposed to cigarette smoke through either active or passive smoking.

The observed positive changes in population health status and their satisfaction with health services could, in some extent, be attributable to the partnership activities, demonstrating the impact a well-designed community health partnership could make on population health in even most serious situations. Meanwhile, the remaining problems indicate the need of continuation of partnership activities to further improve the situation, specifically in the following directions:

- ❑ Increase accessibility/affordability of health care services
- ❑ Introduce screening/early detection protocols/guidelines in the polyclinic
- ❑ Empower polyclinic to provide population screening services
- ❑ Educate public on prevention/early detection of diseases, reproductive health, childcare, smoking, healthy lifestyle, etc.
- ❑ Enhance provision of psychological services to the population.

6. References

[1] Demirchyan A, Zhamgaryan R, Thompson ME, Gagnon DE. The use of a household survey in the community assessment process. *Commonhealth*, Spring 2001, p. 43-44. [published in English and Russian]

[2] Demirchyan A, Thompson ME. Sevan Household Health Survey, Descriptive Report of the Baseline Phase, AUA Center for Health Services Research, August, 2000 (unpublished)

[3] The Results of 2001 Census of the Republic of Armenia, Natioal Statistical Service of the Republic of Armenia, State Committee of the Organization ad Conduction of the RA Census 2001, Yerevan 2003

[4] Thompson ET, Harutyunyan T, A Pre-Post Panel Evaluation of the Green Path Campaign for Family Health, Armenia 2000. AUA Center for Health Services Research, May, 2001

[5] Evaluation of the National Immunization Program of the Republic of Armenia. Yerevan, Ministry of Health of the Republic of Armenia and UNICEF/Armenia, December 1999.

[6] Radloff, LS, Locke, BZ. The Community Mental Health Assessment Survey and the CES-D Scale, Chapter 9, from Series in Psychosocial Epidemiology, Volume 4, Community Surveys of Psychiatric Disorders, edited by Weissman MM, Myers JK, Ross CE. Rutgers University Press, New Brunswick, New Jersey, 1986

Appendices