



AMERICAN UNIVERSITY OF ARMENIA
Center For Health Services Research and Development

ARMAVIR HOUSEHOLD HEALTH ASSESSMENT: FOLLOW-UP 2004

Anahit Demirchyan, MD, MPH

Michael E. Thompson, MS, DrPH

For

American International Health Alliance

Armavir Marz Health Department – University of Texas, Galveston Partnership

A · I · H · A



August 2004

Table of Contents

Executive Summary	ii
1. Background Information	1
1.1 Program Rationale	1
1.2 Research Goals and Objectives	2
2. Methods	3
2.1 Survey Concept	3
2.2 Inclusion Criteria	4
2.3 Sampling Strategy	4
2.4 Survey Instrument	5
2.5 Interviewer training	5
2.6 Survey protocol	6
2.7 Languages used	6
2.8 Ethical Considerations	6
2.9 Survey administration and data entry	7
3. Results	7
3.1 Administrative Information	7
3.2 Socio-Demographic Data	8
3.3 Quality of Life	15
3.3.1 Health Status of Household Members	15
3.3.2 Satisfaction With Own Health and Life	23
3.3.3 Health Behavior	25
3.3.4 Attitude Toward Nutrition	28
3.3.5 Knowledge of Child-bearing and Caring of Young Children	29
3.3.6 Respondents' Mental Health and Depression	33
3.4 Access to Medical Care	35
3.4.1 Personal Health Care Services	35
3.4.2 Access to Health Services	38
3.4.3 Attitude toward Access to Medical Care	40
3.4.4 Access to Early Diagnosis and Prevention Services	42
3.5 Reproductive Health Knowledge and Practices	44
3.6 Personal safety	48
3.7 Dental Care	52
4. Main findings	53
5. Conclusions	59
6. References	62
7. Appendices	65

Executive Summary

This follow-up survey (2004) measured changes in self-reported health status, knowledge, attitudes, beliefs, and practices of the residents of Armavir marz since the initiation of the AIHA Armavir Marz Health Department - University of Texas, Galveston Community Health Partnership in 2000.

To generate comparative data with the baseline survey, the study utilized the same study design. The survey protocol was approved by the American University of Armenia Committee on Human Research. As at the baseline, trained nurses from the polyclinics of Armavir marz conducted the fieldwork. Center for Health Services Research and Development assumed responsibility for the overall management and implementation of the survey.

A total of 1019 households (the same sample size as at the baseline) from 63 populated areas (3 towns and 60 villages) throughout Armavir Marz were involved in the survey. Data entry and analysis was conducted using SPSS 11.0 software. The results suggested mild, but significant improvement since the baseline survey in many areas, including perceived health status, satisfaction with own health and life, and accessibility of healthcare services. Positive changes in socio-economic conditions and the impact of partnership activities may both have played important roles in these improvements. However, no significant changes were observed in some important areas, such as the use of early diagnosis and prevention services, knowledge of childbearing and childcare, reproductive health practices, and smoking behavior, etc. Many problems remained, including low affordability of health services, poor practice and knowledge of preventive care, high prevalence of perceived poor health, and high depression rates. There is a continuing need for targeted activities addressing:

- ❑ Educating public on prevention/early detection of diseases, reproductive health, childcare, smoking, etc.;
- ❑ Empowering primary health care services to provide population screening services;
- ❑ Introducing screening/early detection protocols in primary health services;
- ❑ Enhancing provision of psychological services to the population;
- ❑ Introducing mechanisms to further increase the affordability, accessibility, and utilization of health services.

1. Background Information

1.1 Program Rationale

This household health survey was a follow-up of the survey conducted throughout Armavir Marz in 2001. It measured changes in perceived health status and satisfaction with health care services among the residents of Armavir Marz since the implementation of the Armavir Health Department-University of Texas, Galveston Community Health Partnership. The US Agency for International Development (USAID) funded the latter through the American International Health Alliance (AIHA). The partnership sought to improve the health of Armavir population through healthcare provider training and promotion of healthy lifestyles.

The same study design and instruments as at the baseline were used 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. This comparability made possible assessing the impact of the partnership project.

The partnership addressed many of those areas identified as priorities by the baseline survey in 2001:¹

- ✓ Established training center at the Armavir Polyclinic.
- ✓ Trained trainers at the University of Texas Medical Branch in Galveston: 11 physicians and 9 nurses between 2000-2002.
- ✓ Trained health care providers at the Armavir Polyclinic Training Center: 66 physicians, 120 nurses, and 15 teachers were trained. Training addressed reproductive health, healthy lifestyle, depression, first aid, and other issues identified at the baseline survey.
- ✓ Organized a community health fair (April 2002)
- ✓ Developed/provided community health resources on healthy lifestyle, health education activities, infectious diseases, reproductive health, and population hygiene.
- ✓ Broadcasted the health education spots.

- ✓ Developed and implemented a health education curriculum in schools.
- ✓ Advocated healthy lifestyle during home visits, sick and preventive visits to polyclinic, and through health education in schools. Advocacy topics included women's reproductive health (early diagnosis of breast and cervical cancer, family planning, prenatal care), violence in family, smoking, and drug and alcohol abuse.
- ✓ Increased the preparedness of population for emergencies (earthquake, fire, radiation, toxic gases) through theoretical trainings and simulated responses to emergency situations.
- ✓ Provided supplies to cope with emergencies, such as: defibrillators, radiation dosimeters, radiophones, and supplies to provide care for burns, uniforms, etc.
- ✓ Equipped Armavir Polyclinic with examination tables, sphygmomanometers, stethoscopes, microscopes, glucometers, centrifuges, scales, ophthalmoscopes, otoscopes, training materials for the Training Center (publications, videos, CDs), etc.
- ✓ Developed/implemented statistical forms to monitor cases of arterial hypertension, bronchial asthma, and diabetes.

1.2 Research Goals and Objectives

The goal of the study was to assess the impact of the AIHA funded community health partnership project between Armavir Marz Health Department and University of Texas, Galveston, launched in 2000 in addressing the targeted health needs of Armavir. A secondary goal was to prioritize the current health care system needs to guide those efforts.

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

- ❑ Basic demographic and socio-cultural information
- ❑ Information on health knowledge, attitudes, beliefs and practices
- ❑ Perception of the target population concerning the accessibility and availability of local health care services
- ❑ Data on psychological and economic well-being.

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 Armavir population
- ❑ 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.

A panel design was not used to avoid time-consuming efforts to find 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.ⁱ

The sample size was the same as at the baseline survey: 1020 households from 63 populated areas of Armavir Marz (at the baseline, 59 populated areas were involved). Again, 10 households were included in each cluster as this balanced concerns of homogeneity bias with daily individual workload and other logistical concerns.

An effort was made to involve in the fieldwork the same nurses as at the baseline: eight out of twelve nurse-interviewers were the same as at the baseline survey. Overall, five nurses were involved in the interviewing process from Armavir Polyclinic, five from Vagharshapat, one from Baghramyan, and one from Metsamor. Two local coordinators (physicians) were assigned to coordinate/oversee their activities along with the staff of

ⁱ The same methodology and instruments were recently used to assess the impact of another AIHA community health partnership: Sevan Polyclinic – Health Community of Providence, Rhode Island, on the health and satisfaction with health services of the Sevan population.

the Center for Health Services Research and Development (Appendix 1). The nurse-interviewers were trained/re-trained to conduct the fieldwork.

The Center for Health Services Research and Development (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.² First, the populated areas to be involved in the survey throughout the marz and the desired number of clusters from each were identified using systematic random sampling proportionate to the population in each populated area according to the 2001 census data.³ 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 selected area/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).⁴

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. Also, both the large cluster size and the large sample size with wide diversity of populated areas (63) involved in the survey reduced the possibility of potential selection bias, which was further reduced by the desire to include mothers of young children in the sample.

CHSR staff conducted the sampling. The interviewers received starting point addresses 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 assessment of compliance with protocols and to assess response and refusal rates.

2.4 Survey Instrument

Essentially the same survey instrument used for the baseline study was used during this study. 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 childcare (knowledge, practice, attitude); 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). After discussions with Armavir Health Department, for efficiency purposes, it was decided to conduct separate trainings for the selected nurses from Armavir polyclinic, Metsamor and Baghramyan, and those from Vagharshapat. The first training took place in Armavir Polyclinic Training Center on 20 May 2004 and took one full day. Out of seven nurses who participated in this training, only one (the nurse from Metsamor polyclinic) was

newly involved and needed more help/practice to learn the subject. The second training took place on 24 May 2004 in Vagharshapat polyclinic for the five nurses involved in the survey from that facility. Of them, three were newly involved in the survey. However, due to small number of trainees, it was possible to complete the training (both didactic part and pre-testing) during one full day. Upon completion of the trainings, all 12 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

The main language of survey was Armenian. However, for 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

The study protocol was reviewed and approved by the Committee on Human Research of the American University of Armenia. The same measures as at the baseline were undertaken to address possible ethical concerns. Respondents were provided with an informed consent form (Appendix 6) before the start of the interview. The form included general information about 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 evidence that the confidentiality of the survey and the right to refuse would be kept. At the end of interview, respondents were provided with contact information.

2.9 Survey administration and data entry

Data collection started on 21 May 2004. It took almost three weeks to complete the surveys throughout the marz. The completed surveys were delivered to CHSR on 11 June 2004, reviewed, and entered into an SPSS data file by CHSR staff. Upon completion of the entry, the data were cleaned and merged with the baseline dataset. The analysis was carried out using SPSS 11.0 software.

3. Results

3.1 Administrative Information

A total of 1019 households from 63 populated areas (3 towns and 60 villages) throughout Armavir Marz were involved in the survey (Appendix 7). The urban/rural ratio of the sample was about 1:1.8 (360 from the cities of Armavir, Vagharshapat, and Metsamor, and 659 from villages), while at the baseline this ratio was 1:1.5 (400 from rural and 619 from urban areas) reflecting demographic changes captured by the recent census. On average, it required 1.8 visits/attempts to complete one survey or 18.0 per cluster of 10. At the baseline, this number was somewhat lower: 16.0 visits/attempts per cluster. The main reason for non-response was "no one at home" (319 out of 1832 visits/attempts or 17.4% of all visits/attempts). The second most common reason was refusal: 12.5% (7.3% total refusals and 5.2% refusals by the selected respondent). The selected respondent was not at home in 7.2% and the selected respondent was unable to participate because of health condition in 5.2% of all visits/attempts. At the baseline, somewhat different pattern was revealed. Particularly, refusals constituted lower proportion: 7.4% (Table 1).

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

	Baseline	Follow-up
No one at home	22.7%	17.4%
Refusal (total or by selected respondent)	7.4%	12.5%
Selected respondent is not at home	4.8%	7.2%
Selected respondent is incompetent	3.3%	5.2%
Other	0.8%	2.2%

The self-administered portion of the survey was considered incomplete if more than half of the questions were left unanswered. Incomplete surveys constituted only 0.7% of the sample (7 surveys) at the baseline and 3.2% (33 surveys) at the follow-up. The difference was significant (the p-value of Two-sided Pearson Chi-square test was 0.000).

Several reasons could be brought to explain this difference: the selected season for the fieldwork (late May-early June is a peak time for agricultural work in Armavir Marz, while early April, when the baseline survey was conducted, is a less busy time); the time of survey coincided with the introduction of social security numbers throughout the country, which frightened many people, making them reluctant to give any information to interviewers.

The main language of the survey was Armenian: 98.4% of all surveys were conducted in Armenian. Mixed-language surveys (Armenian nurse-administered and Russian self-administered) were completed in 1.4% of cases, and Russian was used in 0.2 % of surveys. This distribution repeated that observed at the baseline (98.0% Armenian, 1.3% mixed, and 0.7% Russian).

3.2 Socio-Demographic Data

Age & Nationality

The mean age of respondents was 36.0 (sd 12.1 years), which is not different from the baseline data of 35.6 (sd 10.6 years). Of all respondents, 4.6% were 20 years old or younger and 4.6% 60 years old or older. This pattern was also similar with the baseline.

Armavir marz was the place of birth for 68.5% of the respondents (60.4% at the baseline, $p < .000$), and Armenia for 93.1% of them (90.1% at the baseline, the difference is insignificant). The vast majority of respondents were Armenians: 98.4% (96.3% at the baseline) (Table 2).

Table 2. Respondents' nationality: baseline vs. follow-up

Country	Baseline	Follow-up
Armenian	96.3%	98.4%
Russian	0.6%	0.1%
Yezidi	2.5%	1.4%
Other	0.7%	0.1%

The mean duration of respondents' living in Armavir was 28.4 years (sd 14.1 years) at the follow-up and 26.1 years (sd 13.0 years) at the baseline (the difference between these means is significant: $p = 0.000$).

Household Composition

The mean number of people living in a household was 5.1 (sd 1.8), which is somewhat lower from the baseline data: 5.3 (sd 1.9), $p = .035$ (independent samples T-test). As at the baseline, the difference in the household size between urban and rural areas was highly significant with larger size in rural areas (4.7 in urban areas vs. 5.3 in rural, $p = 0.000$).

Of all respondents, 2.0% lived alone (almost the same, 1.9% at the baseline). A household size of 8 or more people was stated in 8.1% of the households (statistically not different from the baseline rate of 10.0%). Larger households were more typical for rural areas: the proportion of households with 8 or more people was 5.0% in urban areas and 9.7% in rural ($p = .008$, Pearson Chi-square test). The mean number of children under 18 living in a household was 1.7 (sd 1.2, range 0-9), which is significantly lower from the baseline data of 2.0 (sd 1.3), $p = .000$. As at the baseline, this number was significantly higher in rural than in urban areas (1.8 ± 1.2 vs. 1.5 ± 1.1 respectively, $p = .000$, Independent Samples T-test).

Respondent's husband was the head of household in 47.5% of cases, husband's father/mother/grandparents in 36.9% of cases, respondent's father/mother/grandparents in 7.3% of cases. Respondents themselves were the heads of household in 6.3% of cases. This pattern nearly repeated that observed at the baseline. The mean age of heads of household was 53.2 (sd 14.1, range 20-95), which is marginally different ($p=.047$) from the baseline data (54.5, sd 14.5, range 25-90). The percentage of heads of household aged 60 years old or older was 34.8% (43.3% at the baseline, $p=.000$).

Education

The highest level of education completed by the respondents was less than 10 years of school in 13.3% of cases (7.8% at the baseline), 10 years of school in 34.3% (41.6% at the baseline), professional technical education in 42.8%, and institute/university in 9.6%. (the latter two percentages are almost similar to the baseline: 40.1% and 10.4% respectively). Thus, the educational level of respondents was somewhat lower at the follow-up ($p=.000$, Pearson Chi-square test) mainly due to higher percentage of those who had not completed 10 years of school.

The opposite pattern was observed with household heads' educational level: it was somewhat higher from the baseline level ($p=.021$, Pearson Chi-square test). Of the household heads, 22.7% completed less than 10 years of school (29.0% at the baseline), 36.5% 10 years of school (31.9% at the baseline), 29.0% received professional technical education (the same at the baseline), and 11.8% completed institute/university or postgraduate education (10.0% at the baseline).

Both the respondents' and the household heads' educational levels were slightly higher in urban, than in rural areas (the p -value of difference was .002 for the respondents and .015 for the heads of household).

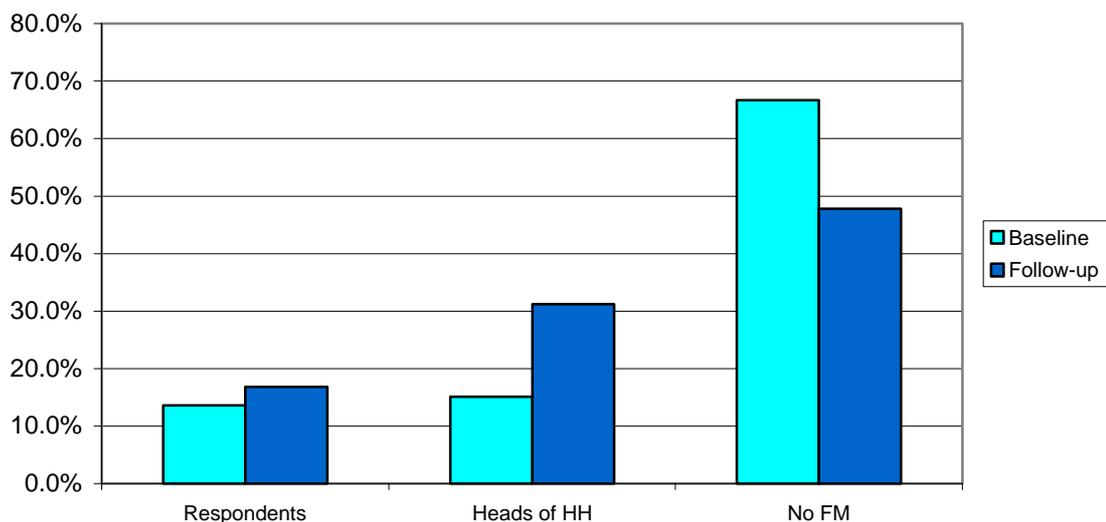
Employment

The proportion of respondents who reported being currently employed increased slightly but significantly: 13.1% at baseline vs. 16.8% at the follow-up, $p=.017$, Pearson Chi-

square test. More substantial, a twofold increase in the proportion of employed heads of household was observed: 15.1% at the baseline vs. 31.2% at the follow-up, $p=.000$, Pearson Chi-square test. Accordingly, the proportion of those who reported that none of their household members were currently employed decreased significantly from the baseline level of 66.7% to 47.8% at the follow-up ($p=.000$, Pearson Chi-square test) (Figure 1).

The mean number of employed household members per household was 0.43 (sd 0.68) at the baseline and 0.74 (sd 0.91) at the follow-up ($p=.000$, Independent Samples T-test).

Figure 1. Employment Rates, Baseline 2001 vs. Follow-up 2004



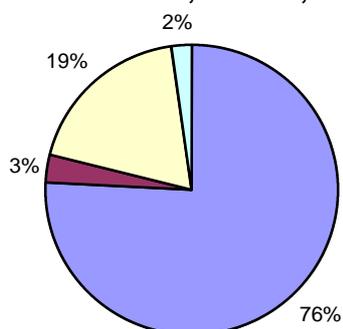
Although, according to the survey results, almost half of the households had no family member employed, this proportion should be taken with caution, since many rural residents did not consider farming as employment. This might serve as one of the reasons for the considerable urban-rural differences observed during the follow-up survey both in the employment rates of heads of household (44.2% in urban vs. 24.6% in rural areas, $p=.000$, Pearson Chi-square test) and the mean numbers of family members employed per household (0.88 ± 0.88 in urban vs. 0.67 ± 0.92 in rural areas, $p=.000$, Independent Samples T-test). The proportion of those who reported that none of their household members were

currently employed was 36.0% in urban areas vs. 54.2% in rural ($p=.000$). The same pattern of urban-rural differences in the employment rates was observed at the baseline survey.

Lack of appropriate workplaces was mentioned as the main reason for unemployment for both the respondents and the heads of household (51.1% respondents and 47.6% household heads). Lack of childcare was the second most common reason for respondents' unemployment (14.9%), while for household heads the second reason was being retired (38.5%). Some 7.7% of respondents and 9.5% of household heads were unable to work because of a permanent health impairment. Out of respondents, 5.8% mentioned being retired, and 12.6% being homemakers. Another 6.2% of respondents and 3.2% of household heads reported not looking for work.

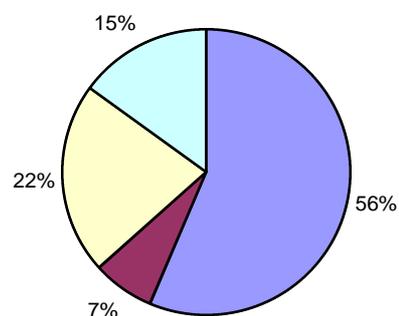
Virtually all employed respondents and employed heads of household had only one job. The government was the primary employer for 87.3% of employed respondents. Another 4.4% of them worked in private organizations, 1.1% in NGOs, and 7.2% were self-employed. The situation was different in terms of distribution of household heads' primary employers. As compared to the baseline data, the role of government as a primary employer decreased significantly ($p=.000$) and the role of non-governmental organizations and self-employment increased (Figures 2 and 3).

Figure 2. Primary Employers of Household Heads, Armavir, 2001



■ Government ■ NGOs ■ Private org. ■ Self-employed

Figure 3. Primary Employers of Household Heads, Armavir, 2004



■ Government ■ NGOs ■ Private org. ■ Self-employed

The mean number of working hours per week was 49.9 (sd 21.3) for heads of household and 36.7 (sd 17.1) for respondents. Both means were not significantly different from that at the baseline (54.3 ± 22.7 and 34.6 ± 18.8 respectively).

According to the respondents' perception, their current position was inconsistent with their professional/vocational training in 32.7% of cases, which is significantly higher than the baseline rate of 17.2% ($p=.011$, Pearson Chi-square test). The proportion of those heads of household whose position was inconsistent with their training was higher: 41.8%, but not different from the baseline rate of 40.2%.

Living Conditions

The mean number of rooms in the respondents' house/apartment was 3.4 (sd 1.3), which is not different from the baseline number (3.3 ± 1.2). 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 (81.5% at the follow-up and 68.2% at the baseline). The role of other heating means was much less (portable electric heaters 3.7%, built-in electric units 2.0%, stove 1.9%, room heaters without flue/vent 1.7%, hot water heating system 0.3%). Compared to the baseline, the proportion of those using compost to heat their living quarters significantly decreased: from 10.9% to 1.2% ($p=.000$). The proportion of those not heating their living quarters during winter also decreased significantly: from 9.0% at the baseline to 4.0% at the follow-up ($p=.000$, Pearson Chi-square test).

There was significant change in the type of fuel people use for cooking. Electricity, which was the most frequently mentioned fuel at the baseline (31.9%), was mostly replaced with piped or bottled gas, which was reported as the primary fuel for cooking by 64.6% of respondents (35.6% at the baseline). Compost was the second most frequently used fuel for cooking (11.0%) followed by electricity (9.8%) and coal or wood (8.3%). Urban-rural analysis of the data showed that compost was mainly used for cooking in rural areas (16.3% in rural areas vs. 1.1% in urban, $p=.000$).

Convenience Items/Household Expenditures

Possession of selected convenience items and monthly expenditures of the household were used as proxy measures for socio-economic status. Statistically significant increases were observed in percentages of those households equipped with color TV, VCR, cellular phone, automobile, and indoor toilet. Indeed, the proportion of those mentioning “none of the above items” decreased significantly (Table 3). However, this number was still rather high (18.7%) and exceeded significantly that in Sevan (6.2%).⁵

Table 3. Possession of convenience/luxury items, baseline 2001 vs. follow-up 2004

Convenience Items	Baseline (%)	Follow-up (%)	p-value*
Indoor toilet	38.2	42.7 [†]	.041
Hot water tank	5.5	7.5 [†]	
Color television	43.8	59.5 [†]	.000
VCR	12.9	18.8 [†]	.000
Automobile	19.6	25.1	.004
Auto washing machine	44.6	47.4	
Telephone	43.5	45.5	
Personal Computer	1.5	2.2	
Cable/satellite TV	3.5	3.5	
Cellular phone	1.7	6.7 [†]	.000
Vacation home/villa	2.2	1.5	
Non of the above	23.7	18.7	.007

* Pearson chi-square test [†] Statistically significant difference between baseline and follow-up

As at the baseline survey, the major differences between urban and rural areas were revealed in terms of having indoor toilet (71.7% in urban vs. 27.0% in rural areas, p=.000) and telephone (70.2% in urban vs. 32.0% in rural areas, p=.000), which could be explained by general characteristics of these residency area types rather than by differences in socio-economic status of urban and rural populations. Some minor, but statistically significant differences were observed in terms of possession of some other convenience items also: color TV, VCR, auto washing machine, cable/satellite TV, and cellular phone were more frequently reported in urban areas, while automobile was more commonly reported in rural areas. However, the proportion of those who stated having “none of the above items” was significantly higher in rural areas (10.7 in urban vs. 23.0

in rural areas, $p=.000$), indirectly indicating lower socio-economic status of the rural population.

Compared to the baseline, the situation changed positively in terms of monthly expenditures. The proportion of those households spending less than \$50 during the last month decreased from 75.6% to 54.1%, those spending \$50-99 increased from 16.4% to 34.7%, and those spending \$100-500 increased from 5.3% to 9.9% (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 (30.9% at the baseline and 29.8% at the follow up). The proportion of those respondents thinking that the monthly income of their family was enough to meet the family needs was very low (6.2%) but still significantly higher than that at the baseline: 3.1% ($p=.002$, Pearson Chi-square test). Again, the monthly expenditures were slightly, but significantly higher in urban areas as compared to the rural ($p=.014$).

3.3 Quality of Life

3.3.1 Health Status of Household Members

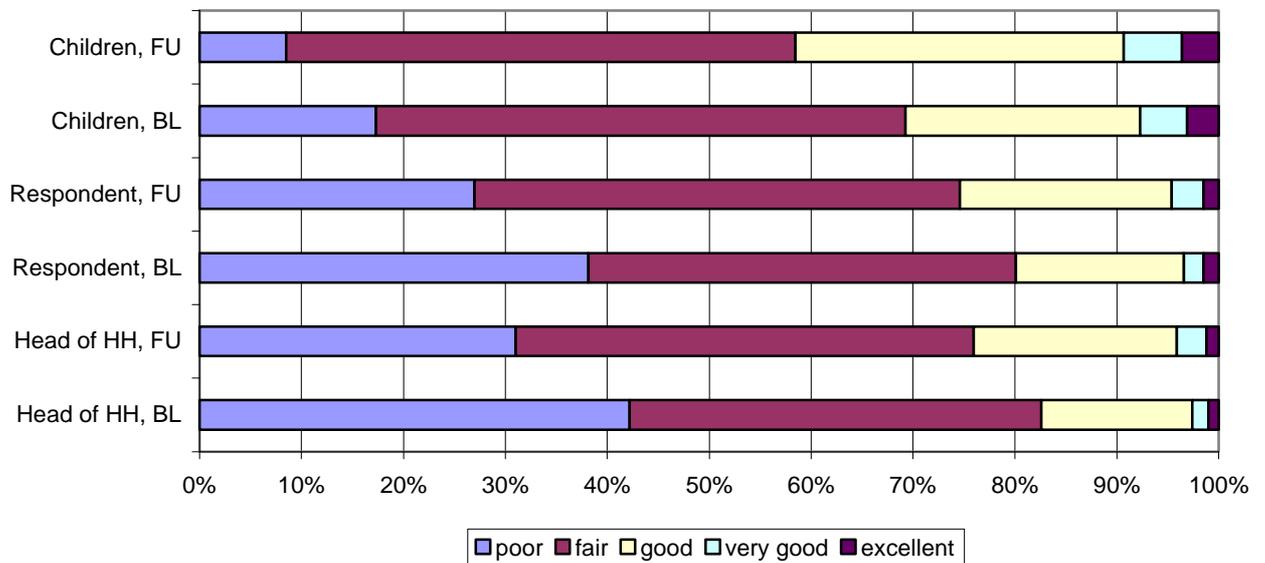
Children

Respondents rated the health of children in their household as excellent/very good/good in 41.5% of the surveys and fair/poor in 58.4%. Although the negative rating still prevailed, these numbers were significantly more optimistic than the baseline numbers of 30.7% and 69.2% respectively ($p=.000$, Pearson Chi-square test). The proportion of those respondents mentioning health problem(s) in children in their household was not significantly different from the baseline level (27.0% at the baseline vs. 23.0% at the follow up, $p=.063$). Problems with ENT system (17.6%), nervous system pathology (14.4%), and vision impairment (13.1%) were reported to be the most common reasons of poor health of children, followed by gastrointestinal pathology (9.8%) and respiratory disorders (7.8%). This pattern was somewhat different from that at the baseline survey, where intestinal problems were reported as the most common (~20.0%) reason of poor health of children.

Respondents & Household Heads

Like the baseline, the majority of respondents (74.6%) rated their own health as “fair” or “poor” (47.6% and 27.0% respectively). Almost similar rating was given to the health of household heads: 44.9% “fair” and 31.0% “poor”. However, slight but significant increase in perceived health status of both respondents and heads of household was observed at the follow-up survey as compared to the baseline data. The proportion of those who rated their own health in the last month as good/very good/excellent increased from 19.9% to 25.4% (p=.000, Pearson Chi-square test). The same tendency of improvement was observed with the rating of heads of household health (from 17.4% to 24.1%, p=.000). Figure 4 summarizes the perceived rating of household heads’, respondents’, and children’s health at the baseline and follow-up surveys.

Figure 4: Health of household members during last month: baseline 2001 vs. follow-up 2004, Armavir

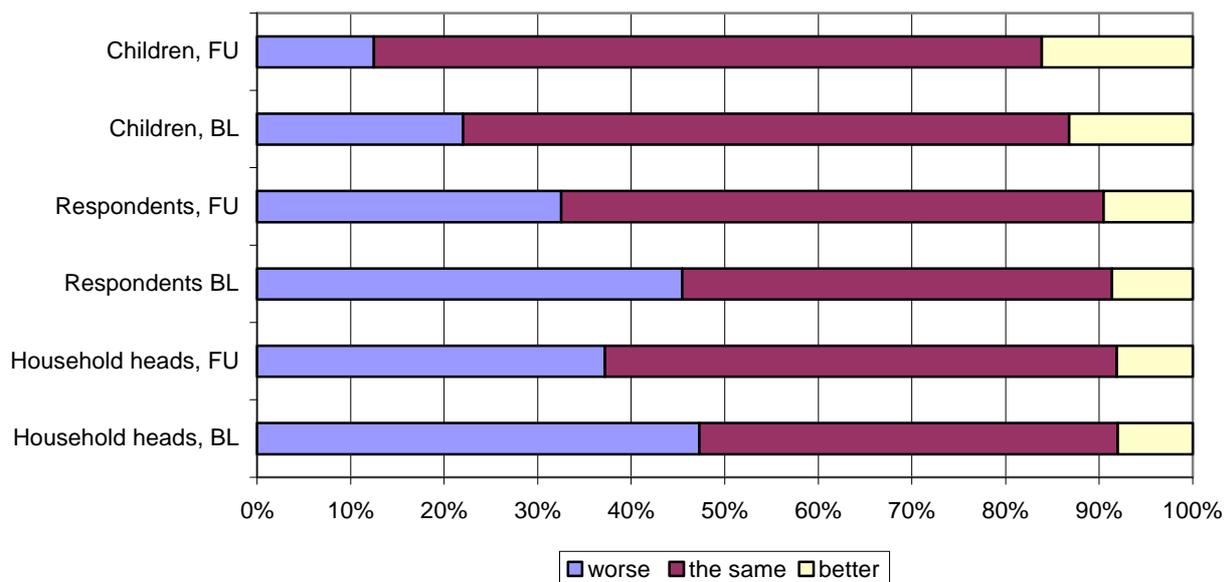


Health Dynamics

When asked about the dynamic of the overall health of their family members compared to one year ago, again, respondents rated the health of children in the household, their own health, and the heads of household health slightly but significantly better now as

compared to the baseline survey. Children’s health was rated as ‘better’ in 16.1% and ‘worse’ in 12.5% of surveys (at the baseline, 13.2% and 22.0% respectively, $p=.000$). Respondents perceived their own health as getting better in 9.5% and worse in 32.5% of surveys (at the baseline, 8.6% and 45.5% respectively, $p=.000$). The health of the heads of household was rated as ‘better’ in 8.1% and ‘worse’ in 37.2% of surveys (at the baseline, 8.0% and 47.2% respectively, $p<.000$). The perceived health dynamic of household members at the follow-up and baseline surveys are demonstrated in Figure 5. There were no major differences between urban and rural areas in terms of household members’ perceived health status.

Figure 5. Health of household members compared to 1 year ago: baseline 2001 vs. follow-up 2004, Armavir



Chronic Health Conditions

The respondents were asked to indicate any chronic health conditions they or anyone in their household suffered from. The most common chronic condition among household members was high blood pressure (reported in 24.0% of respondents, 26.9% of household heads, and 18.6% of other family members), followed by vision problems (in 19.8% of respondents, 20.8% of household heads, and 15.1% of other family members). The next in terms of reporting frequency were cardiac diseases (in 19.1% of respondents,

20.4% of household heads, and 13.7% of other family members), gastro-intestinal pathology (in 14.3% of respondents, 17.5% of household heads, and 13.2% of other family members), kidney diseases (in 10.7% of respondents, 11.3% of household heads, and 8.4% of other family members) and lung diseases (reported in 4.4% of respondents, 7.8% of household heads, and 7.3% of other family members). Diabetes, mental diseases and cancer were reported less frequently. This pattern virtually repeated that from the baseline survey. The interesting finding of the follow-up phase was that the frequency of reporting of almost each condition declined as compared to the baseline, and for some conditions this decline was statistically significant. The only exception was the observed increase in frequency of reporting of cancer cases among heads of household as compared to baseline survey (Table 4).

Table 4: Frequency of chronic health conditions in household members according to respondents' perception, baseline 2001 vs. follow-up 2004, Armavir

<i>Chronic health condition (perception)</i>	Respondents		Heads of HH		Other family members	
	Baseline (%)	Follow-up (%)	Baseline (%)	Follow-up (%)	Baseline (%)	Follow-up (%)
High blood pressure	27.2	24.0	29.0	26.9	21.4	18.6
Problems with vision	19.0	19.8	27.8	20.8 [‡]	18.5	15.1
Cardiac diseases	23.5	19.1 [†]	23.6	20.4	15.4	13.7
Gastro-intestinal diseases	19.3	14.3 [‡]	18.5	17.5	16.6	13.2 [*]
Kidney problems	17.1	10.7 [‡]	14.0	11.3	12.8	8.4 [‡]
Lung diseases	5.6	4.4	8.2	7.8	7.3	7.3
Mental disorders	4.7	2.5 [†]	5.6	2.7 [‡]	5.1	3.6
Diabetes	1.6	1.1	3.1	3.0	2.4	2.4
Cancer	0.8	0.8	0.1	0.8 [†]	0.6	0.7
None mentioned	37.6	46.6 [‡]	30.0	35.6 [†]	45.6	52.9 [‡]

[‡] Pearson Chi-square test results, $p < .01$ [†] Pearson Chi-square test results, $p < .05$

^{*} Pearson Chi-square test results, $p = .056$ (marginally significant)

There were no significant urban-rural differences in the perceived prevalence of these chronic diseases. Cancer in household heads could be considered as the only exception. Overall, 7 cases of cancer in heads of household were reported in rural areas (1.2%) and none in urban, the difference was marginally significant: $p = .058$ (Chi-square test).

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 slightly but significantly as compared to the baseline (28.4% at the baseline, 24.3% at the follow-up, $p=.041$, Pearson Chi-square test). At the follow-up survey, the frequency of reporting accidents was somewhat higher in rural areas (20.6% in urban areas vs. 26.4% in rural, $p=.045$). This pattern was not observed at the baseline.

Again, the most common type of injury was fall, mentioned by 30.9% of those 236 respondents who answered positively to the question concerning injuries in their household members during the past 12 months (or by 7.2% of all respondents). Poison/overdose was the next common type of injury mentioned by 20.7% of them (4.8% of all respondents). This was followed by cut/slash/puncture (13.0% or 3.0% of all respondents). At the follow-up survey, significant reduction was observed in the frequency of reporting cut/slash puncture, drowning, and pedestrian/vehicle accidents as compared to the baseline data. The frequencies of different types of injuries experienced by the household members during 2000-2001 (baseline) and 2003-2004 (follow-up) are summarized in Table 5.

Table 5. Frequencies of injuries reported by participants: baseline, 2001 vs. follow-up, 2004, Armavir (among all respondents)

Type of injury	Baseline (%)	Follow-up (%)
auto crash	2.1	1.7
pedestrian/vehicle	1.4	0.4 [†]
fall	9.2	7.2
fire/scalding	2.2	1.4
drowning	0.7	0.1 [†]
poison/overdose	5.5	4.8
cut/slash/puncture	5.9	3.0 [‡]
gunshot	0.3	0.4
hit/struck by person/object	2.3	1.7

[‡] Statistically significant difference between baseline and follow-up: $p<.01$ (Pearson Chi-square test)

[†] Statistically significant difference between baseline and follow-up: $p<.05$ (Pearson Chi-square test)

Interestingly, the only urban-rural differences were found in terms of auto crashes reported more frequently in rural, than in urban areas (2.4% in rural areas vs. 0.3% in urban, $p=.010$, Pearson Chi-square test)

The majority of accidents happened just once during 12-month period. Accidents like hit/struck by person/object, fall, cut/slash/puncture, and poisoning/overdose were more likely to happen repeatedly (47.2% of all reported hits, 30.1% of falls, 18.5% of cuts, and 15.9% of 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.ⁱⁱ

Table 6. Reported mean numbers of injuries per 100 households per year, Armavir, 2004

Type of injury	Mean number of injuries per 100 households per year
auto crash	2.4
pedestrian/vehicle	0.6
fall	15.5
fire/scalding	1.9
drowning	0.2
poison/overdose	6.4
cut/slash/puncture	4.8
gunshot	0.4
hit/struck by person/object	3.8
Total	39.8

ⁱⁱ These data was 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" response was found only once at the follow-up survey and was recoded as 2 (the most conservative approach) to calculate the mean number. Those who refused to answer these questions were excluded from the analysis decreasing the denominator by 59 (to 960). "Other injuries" reported by the respondents were stressful situations (surgery, delivery, stroke, relative loss, etc.) rather than injuries and thus were excluded from the analysis.

Everyday Activities

The respondents were asked to assess the extent to which their health limits them in everyday activities. As compared to the baseline, the proportions of missing answers to these questions were somewhat lower but still rather high: 20.5%-26.2% vs. 23.2%-30.9% at the baseline. The situation improved significantly with respect to several daily activities including walking different distances, bending/kneeling/stooping, climbing stairs, lifting/carrying groceries, and conducting vigorous activities (Table 7).

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

Activity	Limited a lot		Limited a little		p-value [†]
	Baseline (%)	Follow-up (%)	Baseline (%)	Follow-up (%)	
Bathing or dressing oneself	9.1	8.0	13.4	14.1	NS
Walking one hundred yards	14.6	11.9	19.6	19.3	NS
Walking several hundred yards	30.5	20.3	23.7	20.5	.000
Walking more than a mile	42.3	30.6	25.5	20.9	.000
Bending, kneeling, or stooping	32.9	24.2	26.0	22.2	.000
Climbing one flight of stairs	18.1	16.0	20.7	18.0	NS
Climbing several flights of stairs	37.8	30.1	24.7	21.3	.000
Lifting or carrying groceries	29.9	22.1	28.6	23.3	.000
Moderate activities (<i>moving a table, pushing a vacuum cleaner</i>)	18.6	16.0	23.3	19.9	NS
Vigorous activities (<i>running, lifting heavy objects, participating in the strenuous sports</i>)	46.6	35.8	24.4	24.4	.000

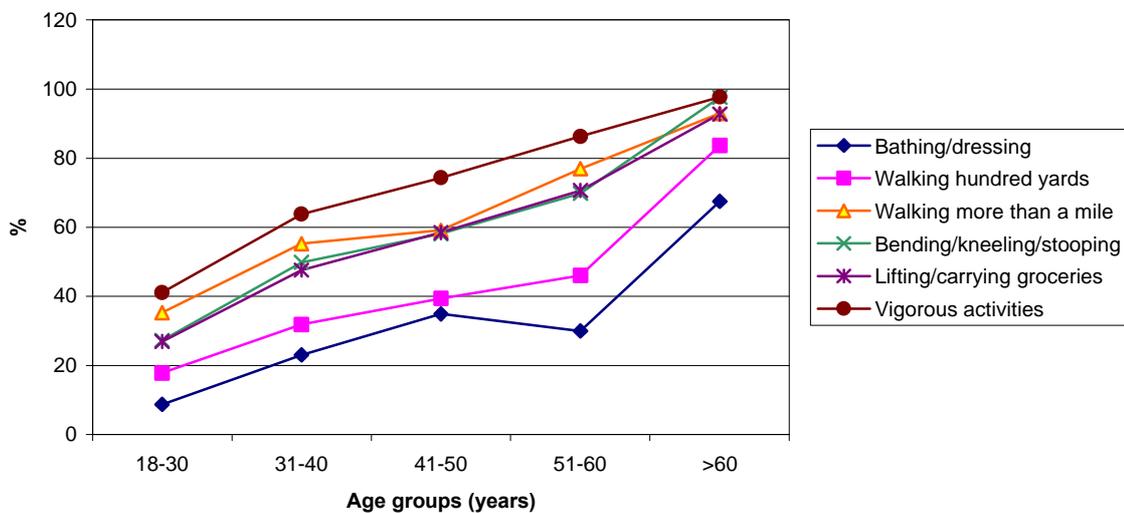
[†] Pearson chi-square test

Interestingly, the improvement was mainly observed with respect to those activities demanding more physical activity/energy (walking *more than a mile*, bending, kneeling, or stooping, climbing *several flights of stairs*, lifting or carrying groceries, vigorous activities), while limitations in simple activities (bathing or dressing oneself, walking *one hundred yards*, climbing *one flight of stairs*) indicating serious/chronic health impairments remained the same.

Despite the observed improvement, the proportion of respondents feeling limited in their everyday activities because of health condition remained rather high: 60.2% felt limited in vigorous activities, more than half in climbing several flights of stairs and walking more than a mile. Almost half was limited in bending/kneeling/stooping and carrying groceries, one-third in climbing one flight of stairs and walking one hundred yards, and 22.1% in even bathing or dressing themselvesⁱⁱⁱ.

With increasing age, the proportion of those with limits in their daily activities increased considerably, as shown in Figure 6. 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 6. Proportion of respondents with limitations in daily activities because of health, Armavir, 2004



ⁱⁱⁱ 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 normal function, which resulted in high proportions 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.

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 25.1% to 41.0%. The proportion of those who reported feeling very severe pain during the past four weeks decreased from 12.1% to 4.3%, and those feeling severe or moderate pain from 34.3% to 27.9%. The Pearson Chi-square test showed significant difference between baseline and follow-up data on the amount of pain reported by the respondents ($p < .000$). No urban-rural differences were observed in terms of both the extent to which the health limited the respondents in their everyday activities or the amount of pain they felt.

3.3.2 Satisfaction With Own Health and Life

Substantial increase in respondents’ satisfaction with their health and life was observed, covering almost all the areas touched upon the survey. Most of all, the respondents were satisfied with the help they get from their family/friends (63.8%), closely followed with the time spent with family/friends (63.1%). In terms of reported frequency of being satisfied, the next areas were: the respondents’ sexual activity (59.3%), their ability to think (55.8%), and their ability to help in the community (41.5%).

The majority of respondents (59.0%) still felt dissatisfied with the ability of their household income to meet the family needs. The proportion of those feeling dissatisfied with their recreational/leisure time activities and the health of their body were also rather high: 42.9% and 39.5% respectively. However, even in these areas, considerable improvement was observed. According to Pearson Chi-square test, the observed changes between the baseline and follow-up data were statistically highly significant in all considered areas except sexual activity (Table 8).

As at the baseline survey, no considerable differences were observed between urban and rural areas in terms of respondents’ satisfaction with their health and life.

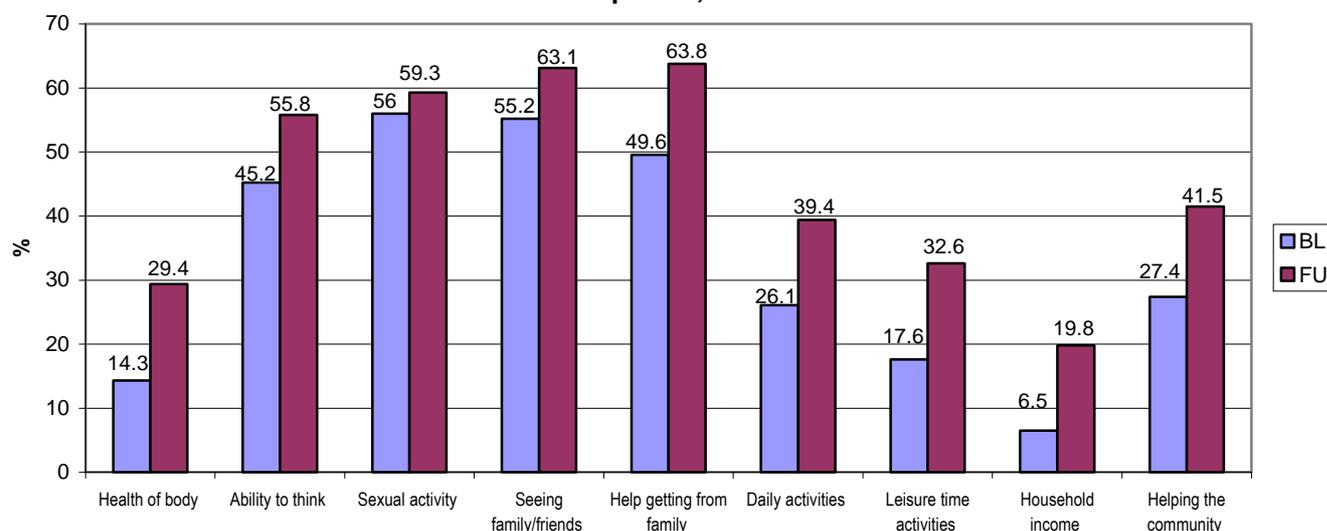
Table 8: Respondents' satisfaction with own health and life in 2001 and 2003, Armavir.

Satisfaction with:		Extremely dissatisfied	Dissatisfied	Neither dissatisfied nor satisfied	Satisfied	Very satisfied	P-value [†]
the health of their body (%)	BL [*]	21.5	28.3	35.8	11.7	2.6	.000
	FU [‡]	12.6	26.9	31.1	23.9	5.5	
their ability to think (%)	BL	9.4	20.4	25.1	37.6	7.6	.000
	FU	4.9	15.7	23.7	47.8	8.0	
their sexual activity (%)	BL	8.5	9.4	26.1	46.7	9.3	NS ^{**}
	FU	7.8	10.4	22.5	49.7	9.6	
how much they see family/friends (%)	BL	5.3	12.9	26.6	45.4	9.8	.004
	FU	3.1	11.1	22.6	53.7	9.4	
the help from family/friends (%)	BL	9.2	13.4	27.8	41.5	8.1	.000
	FU	3.6	10.6	22.0	53.8	10.0	
their daily activities (%)	BL	11.5	30.1	32.3	23.0	3.1	.000
	FU	6.2	24.4	30.0	34.2	5.2	
their recreational activities (%)	BL	24.1	34.9	23.4	15.4	2.2	.000
	FU	14.0	28.9	24.5	26.9	5.7	
their income meeting needs (%)	BL	46.0	32.2	15.4	5.6	0.9	.000
	FU	27.1	31.9	21.1	16.8	3.0	
their ability to help in community (%)	BL	17.5	26.4	28.8	24.3	3.1	.000
	FU	7.5	19.6	31.3	35.7	5.8	

^{*} Baseline survey, 2001. [‡] Follow-up survey, 2004. [†] Pearson Chi-square test. ^{**} NS-not significant.

Figure 7 visually depicts the changes in respondents' satisfaction with different aspects of their health and life between baseline and follow-up surveys.

Figure 7. Respondents' satisfaction with their health and life: Baseline 2001 vs. follow-up 2004, Armavir



3.3.3 Health Behavior

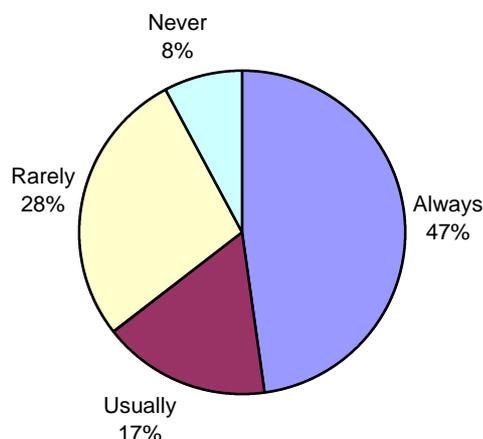
Smoking behavior and respondents' attitude towards smoking were measured through the same items as at the baseline survey with a small difference: a new question was added to measure the extent of passive smoking among target population. Of the respondents (all women), 993 answered questions on their smoking behavior (959 at the baseline). The proportion of those who reported smoking cigarettes some time in their life was significantly lower than at the baseline: 3.6% (36) vs. 6.3% (60), $p=.006$, Pearson Chi-square test.

Out of those who ever smoked, 25 (69.4%) were current smokers (at the baseline, 34 or 56.7% of those who ever smoked), constituting 2.5% of all respondents who answered the questions about their own smoking behavior. This number was not statistically different from the baseline proportion of 3.5%. The average number of cigarettes smoked per day was 18.0 ± 14.5 (not different from the baseline average of 15.3 ± 9.5). Out of all household members who were more than 12 years of age (4.0 ± 2.0 in a household), 27.4% smoked (28.7% at the baseline). On average, 1.07 males and 0.03 females smoked in each household, meaning that the male/female ratio in this group of smokers was ~36:1 (~22:1 at the baseline).

No urban-rural differences were observed in terms of reported prevalence of smoking both among respondents and household members over 12. However, the average number of cigarettes respondents smoked per day was significantly higher in rural than in urban areas (10.9 ± 8.8 cigarettes/day in urban areas vs. 23.6 ± 15.9 in rural, $p=.027$, Pearson Chi-square test).

Concerning the prevalence of passive smoking, 47.9% of the respondents mentioned that their family members always smoke in the presence of non-smokers. An additional 16.5% of respondents stated that this is a 'usual' behavior for smokers in their family. Thus, the members of at least 64.4% of the target households were exposed to cigarette smoke through either active or passive smoking (Figure 8). However, the proportion of missing answers to this question was rather high: 33.5%.

Figure 8. Smoking in the presence of non-smokers, Armavir, 2004



Items measuring respondents' attitude towards smoking were recoded to dichotomous variables, where desired attitudes were assigned the value 1, undesired 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 (statistically significant increase as compared to the baseline). Also, 82.7% of respondents were against allowing students to smoke in public, 72.1% against allowing workers to smoke while on the job, and 56.0% for prohibiting smoking in public buildings and restaurants (Table 9).

Table 9: Proportion of respondents reporting desired attitude toward smoking: Baseline 2001 vs. follow-up 2004, Armavir

Statement	Baseline: 2001, (%)	Follow-up: 2004, (%)
Smoking tobacco is harmful to a person's health	91.1	94.5*
Breathing smoke from another person's cigarette is harmful to a person's health	91.7	95.3*
Student should be allowed to smoke in public	84.5	82.7
Workers should be allowed to smoke while on the job	70.7	72.1
Smoking should be prohibited in public buildings	56.1	56.0

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

However, no increase was observed in the latter proportions, meaning that the percentage of those who would approve taking active measures (e.g. legislations, regulations) to prohibit smoking remained unchanged during the last three years. Urban residents expressed desirable attitude toward allowing students to smoke in public more often than rural residents did: 87.2% of urban residents disagreed with this statement as compared to 80.2% of rural residents, $p=.007$. Other significant urban-rural differences in the attitude towards smoking were not observed

With respect to drinking alcohol, 86.7% of respondents mentioned that they had not had a drink of alcohol during the past 30 days. This was not different from the baseline proportion of 86.1%. To the question about average frequency of drinking alcohol, 96.4% of respondents answered rarely or seldom: one-two times a month or less (95.9% at the baseline, the difference is insignificant). Only 9 respondents out of 937 who answered this question (1.0%) mentioned drinking two-three times a week or more, including 2 respondents (0.2%) 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: 0.6%. The proportion of those mentioning that they had drinking problem ever in their life (1.6%) was also not different from the baseline data (1.8%). Significant difference from the baseline was observed in the proportions of those household members who had a drinking problem some time in their life (14.2% at the baseline vs. 10.6% at the follow-up, $p=.020$). Interestingly, the proportion of those who knew where to get help if someone in their family had a drinking problem decreased significantly (21.7% at the baseline vs. 17.2% at the follow-up, $p=.015$, Pearson Chi-square test). The only significant urban-rural difference here was that urban residents mentioned having a drink of alcohol during the past 30 days more often than rural residents did (21.7% of urban residents vs. 17.2% of rural, $p=.015$, Pearson Chi-square test).

The proportions of those who knew someone in their city/village who had a problem with drug addiction was lower at the follow-up: 1.9% vs. 3.0%, but the difference was not significant. Meanwhile, 0.6% of the respondents mentioned that someone in their family had a problem with drug addiction (0.3% at the baseline). Again, the proportion of those

knowing where to get help if someone in their family were drug addicted decreased (14.4% at the baseline vs. 11.8% at the follow up), but the decrease was insignificant. Respondents from urban areas mentioned knowing somebody from their city/village with drug addiction more frequently than rural residents did (3.5% of urban residents vs. 1.0% of rural, $p=.005$). Another statistically significant difference between urban and rural areas was that more rural residents knew where to get help if someone is drug-addicted than urban residents did (8.9% of urban vs. 13.4% of rural, $p=.039$).

3.3.4 Attitude Toward Nutrition

Several questions in the survey assessed respondents' beliefs about nutrition. The overwhelming majority of respondents, 96.7%, agreed (including 66.6% 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 23.1% of the respondents believed that their family was receiving good nutrition. This proportion increased substantially at the follow up: 39.2% ($p=.000$, Pearson Chi-square test). In urban areas, the proportion of those believing that their family was receiving good nutrition was significantly higher than in rural areas (41.7% in rural vs. 34.6% in urban, $p=.030$).

The situation considerably improved also with the ability of families to get food. At the baseline, 82.1% of respondents worried that their family would not have enough to eat, including 30.2% of those who worried about this always or usually. This proportion decreased to 69.4% 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 77.4% at the baseline to 68.1% 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 "never" responses increased from 40.3% at the baseline to 54.8% at the follow-up, $p=.000$, Pearson Chi-square test (Table 10).

Table 10. Ability of families to get food, baseline 2001 vs. follow-up 2004, Armavir

	Always (%)		Usually (%)		Occasionally (%)		Never (%)		p-value*
	BL	FU	BL	FU	BL	FU	BL	FU	
'Worry for not having enough to eat'	20.0	9.6	10.2	6.9	51.9	52.9	17.9	30.6	.000
'Went to sleep hungry during the last 30 days'	5.2	2.9	6.6	6.9	47.8	35.4	40.3	54.8	.000
'Have enough money to buy food'	7.5	11.4	15.0	20.5	57.2	51.7	20.2	16.4	.000

* P-value of the difference between baseline and follow-up data according to the Pearson Chi-square test

In terms of the ability of families to get food, the only statistically significant urban-rural difference at the follow-up survey was that the proportion of those who mentioned going to sleep hungry always, usually, or occasionally was higher in rural areas: 49.5% (vs. 37.4% in urban), $p=.001$, Pearson Chi-square test. This pattern was not observed at the baseline survey.

3.3.5 Knowledge of Child-bearing and Caring of Young Children

Questions measuring respondents' knowledge and beliefs about childbearing and childcare were intentionally addressed to those respondents who had at least one household member less than 10 years of age. A total of 533 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, 13.1% knew the recommended minimum length of time ("2 years") for birth spacing. This proportion was still low but significantly better than the baseline proportion of 7.3% ($p=.002$, Pearson Chi-square test). The percentage of correct answers to the question concerning the optimal duration of exclusive breastfeeding ("6 months") was also rather low (33.4%) but significantly higher from the baseline proportion of 26.0% ($p=.007$). The situation was better with the question on amount of liquids that should be given when a child has diarrhea: 69.1% 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: 51.3% (significant difference: $p=.000$).

For several questions, the respondents were asked to indicate if the statement given was true or false. As at the baseline, the question on positive association between breastfeeding frequency and breast milk production received the highest proportion of correct answers (84.9%) among the questions in this group. The question on rapid breathing in a child as a sign of pneumonia gathered the next highest proportion of correct answers: 76.4% (similar to the baseline proportion of 74.6%). No significant changes were found also in responses to the question on the risk for a child of contracting HIV if given an injection with an unsterilized needle: 68.3% answered correctly to this question at the follow-up and 70.1% at the baseline. Unlike this, the proportion of correct answers to the question on risk of contracting HIV from a sterilized needle increased significantly (48.0% at the baseline, 54.6% at the follow-up, $p=.031$). The question on child bearing (effect of alcohol usage during pregnancy on the fetus) again received the lowest proportion (45.6%) of correct answers among this group of questions (Table 11).

Table 11: Proportions of correct answers to questions measuring respondents' child bearing and childcare knowledge, baseline 2001 vs. follow-up 2004, Armavir

<i>Questions</i>	<i>Baseline (%)</i>	<i>Follow-up (%)</i>	<i>P-value</i>
Recommended minimum length of time between births	7.3	13.1	.002
Optimal duration for exclusive breastfeeding	26.0	33.4	.007
Quantity of liquids for a child with diarrhea	51.3	69.1	.000
Alcohol usage during pregnancy affects the fetus	45.0	45.6	NS*
Frequent breast feedings increase milk production	85.0	84.9	NS*
Injection with unsterilized needle may cause AIDS	70.1	68.3	NS*
Injection with sterilized needle may cause AIDS	48.0	54.6	.031
Rapid breathing could be a sign of pneumonia	74.6	76.4	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. Again, the highest proportion of positive attitudes were expressed toward the questions on breastfeeding: 88.5% 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 78.5% agreed that breastfeeding in the second year of

child's life is in his best interest (the latter proportion increased significantly as compared to the baseline proportion of 70.7%, $p=.003$). Another significant increase was observed in the proportion of desired attitudes concerning the question on keeping a child with cough or cold as hot as possible: 30.0% of the respondents disagreed with that as compared to 21.9% at the baseline ($p=.002$). No significant changes were observed in the demonstrated attitudes toward the questions on diarrhea and antibiotics, smoke and pneumonia, and physical punishment and obedient child. Interestingly, two questions (on the importance of following immunization schedule and the role of play for child development) received significantly lower positive attitudes than at the baseline. The proportion of respondents who disagreed with the wrong statement on following the immunization schedule decreased from 54.8% at the baseline to 39.3% at the follow-up ($p=.000$). The proportion of those who disagreed with the wrong statement on the role of play for child development decreased from 57.9% at the baseline to 48.8% at the follow-up ($p=.002$) (Table 12).

Table 12: Proportions of correct attitudes to statements on childcare, baseline 2001 vs. follow-up 2004, Armavir

Statements	Baseline (%)	Follow-up (%)	P-value
Breastmilk is better for an infant's health than "Narine".	86.4	88.5	NS*
Breastfeeding into the second year of life is in child's best interests.	70.7	78.5	.003
It does not really matter if the vaccine schedule is followed.	54.8	39.3	.000
I can make decision to treat my child's diarrhea with antibiotics.	48.3	52.6	NS*
Smoky surroundings have no effect on whether a baby catches pneumonia.	41.0	38.1	NS*
A child with a cough or cold should be kept as hot as possible.	21.9	30.0	.002
Physical punishment is necessary to make a child obey and respect parents.	51.0	47.5	NS*
Playing is not an important part of children's development.	57.9	48.8	.002

* 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 one) was 8.8 (sd 2.8) out of the highest possible value of 16. At the baseline, this score was similar: 8.6 (sd 2.4). Thus, no significant change was observed between the baseline and follow-up summative knowledge scores. The mean summative knowledge scores on different topics of child caring are provided in Table 13. Again, the highest knowledge score was observed in the area of breastfeeding (71.5%), followed by HIV/vaccination (54.9%) and diarrhea/respiratory infections (53.4%). The lowest knowledge score was again observed in the area of childbearing (29.4%). As presented in Table 13, statistically significant improvements in mean knowledge scores as compared to the baseline were observed in the areas of breastfeeding (66.9% at the baseline vs. 71.5% at the follow-up, $p=.001$, Independent samples t-test) and diarrhea/respiratory infections (48.2% at the baseline vs. 53.4% at the follow-up, $p=.001$), while knowledge on child development significantly decreased (54.8% at the baseline vs. 48.0% at the follow-up, $p=.005$).

Table 13. Mean summative knowledge scores of the respondents on different topics of child caring, baseline 2001 vs. follow-up 2004, Armavir

Topics	Baseline (<i>mean±sd</i>) (%)	Follow-up (<i>mean±sd</i>) (%)	p-value [*]
Breastfeeding	66.9±22.1	71.5±22.5	.001
HIV/immunization	58.3±31.6	54.9±29.4	NS ^{**}
Child Development	54.8±39.2	48.0±39.2	.005
Diarrhea/ARI	48.2±23.8	53.4±25.8	.001
Childbearing	26.9±28.9	29.4±30.5	NS ^{**}

^{*}Independent Samples T-test for Equality of Means ^{**}NS-not significant

At the follow-up survey, the summative knowledge scores were not statistically different between urban and rural areas. However, the knowledge score on respiratory infections/diarrhea was higher in urban areas (58.0±23.4 in urban vs. 51.1±26.6 in rural areas, $p=.003$). Particularly, the proportion of correct answers to the question on deciding

to treat own child's diarrhea with antibiotics was higher in urban areas (59.3% in urban vs. 49.3% in rural, $p=.031$). Significant urban-rural differences were also observed in the proportions of correct answers to the questions on the role of play in child development (higher in urban areas: 59.0% in urban vs. 43.9% in rural, $p=.001$) and benefits of breastfeeding in the second year of life (higher in rural areas: 73.0% in urban vs. 81.2% in rural, $p=.030$).

3.3.6 Respondents' Mental Health and Depression

A 20 question-scale (CES-D Scale⁶ 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 if even one answer out of the 20 was missing. As a result, some 319 questionnaires out of 1019 (31.3%) at the baseline and some 230 (22.6%) at the follow-up were considered not valid, decreasing the response rate for this particular section to 68.7% and 77.4% 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 still existed in 52.3% of respondents, with possible depression in an additional 19.8%. At the baseline survey, these proportions were 55.4% and 22.3% respectively. The observed reduction in the prevalence of depression was slight but statistically significant (Table 14).

Table 14: Depression prevalence among respondents, baseline 2001 vs. follow-up 2004, Armavir

	<i>Baseline (%)</i>	<i>Follow-up (%)</i>	<i>p-value*</i>
Probable depression	55.4	52.3	
Possible depression	22.3	19.8	
No Depression	22.3	27.9	.041

* Pearson Chi-square test

The average depression score for the sample was 22.5 (sd 9.3), which is significantly lower than that at the baseline: 23.9 (sd 9.8) ($p=.005$, Independent Samples T-test for equality of means). However, the observed reduction was slight and resulted in an average higher than the Sevan population average score of 19.05 (sd 10.0)⁵ and much higher than the US population average score of 7.8 - 9.92^{iv}.

As at the baseline, there were no significant urban-rural differences in depression prevalence (the average depression score was 22.4±8.9 in urban areas and 22.6±9.4 in rural).

A clear tendency of increasing probable depression was observed with age both at the baseline and follow-up surveys ($p<.000$, Spearman correlation test) (Table 15, Figure 9).

Table 15: Prevalence of Depression by Age, baseline 2001 and follow-up 2004, Armavir

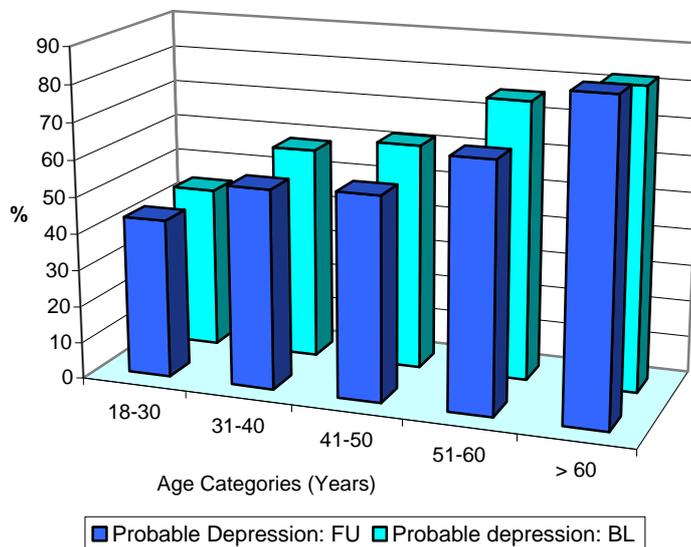
Depression level		Age				
		18-30	31-40	41-50	51-60	>60
Probable Depression (%)	BL*	44.3	58.1	61.8	76.0	82.1
	FU**	43.3	54.4	55.5	67.3	85.7
Possible Depression (%)	BL	26.5	20.5	21.3	20.0	7.1
	FU	21.4	18.6	18.9	25.0	8.6
No Depression (%)	BL	29.2	21.3	16.9	4.0	10.7
	FU	35.3	27.0	25.6	7.7	5.7

* BL-Baseline survey

** FU-Follow-up survey

^{iv} 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.

Figure 9. Prevalence of Probable Depression by Age: Baseline 2001 vs. Follow-up 2004, Armavir



3.4 Access to Medical Care

3.4.1 Personal Health Care Services

The survey also evaluated the accessibility and affordability of medical care and its changes since the baseline survey. Several measures of access such as availability of transportation and medications, waiting time to receive medical care, cost of health services, and treatment of medical staff were studied. The analysis showed that the situation with all the measures improved significantly since the baseline survey, indicating both increased accessibility/affordability of health care services and improved ability of people to take care of their own health. The proportion of positive answers (the sum of “always” and “usually” answers to the questions written in positive and “occasionally” and “never” answers to the questions written in negative) given to the statements measuring the accessibility/affordability of personal health care services at the baseline and follow-up surveys are provided in Table 16. The observed changes are visually presented in Figures 10^v and 11.

^v The questions on transportation and childcare are written in negative in Figure 10 and the responses to these items are reversed to be consistent with the remaining three items presented in the figure.

Table 16: Proportion of positive answers to the questions on access to personal health care services, Baseline 2001 vs. follow-up 2004, Armavir

<i>Statements</i>	<i>Baseline (%)</i>	<i>Follow-up (%)</i>	<i>p-value*</i>
I have to wait too long at the polyclinic before receiving care	77.3	80.8	.006
It is difficult to get to the doctor or polyclinic to get medical care	55.5	71.9	.000
It is difficult to get an appointment for medical care	58.5	77.1	.000
I can get transport to see a doctor when I am sick	33.5	41.4	.000
I can afford the cost of a doctor visit	12.7	17.5	.000
I go to the doctor so that I will not get sick in the future	36.1**	44.7**	.001
I have enough money to buy the medicines recommended by the doctor	11.0	16.6	.000
I am able to get medicines prescribed by doctor	14.9	23.9	.000
Physicians and staff treat me with courtesy/respect during my medical visits	60.5	63.1	.003
I can get childcare when needed so that I can get medical care for myself	29.8	41.9	.000

*Pearson Chi-square test

**For this particular item, the sum of “always”, “usually”, and “occasionally” answers is provided, since the main changes were observed in the latter response option.

Figure 10. Access to medical care, BL 2001 vs. FU 2004, Armavir

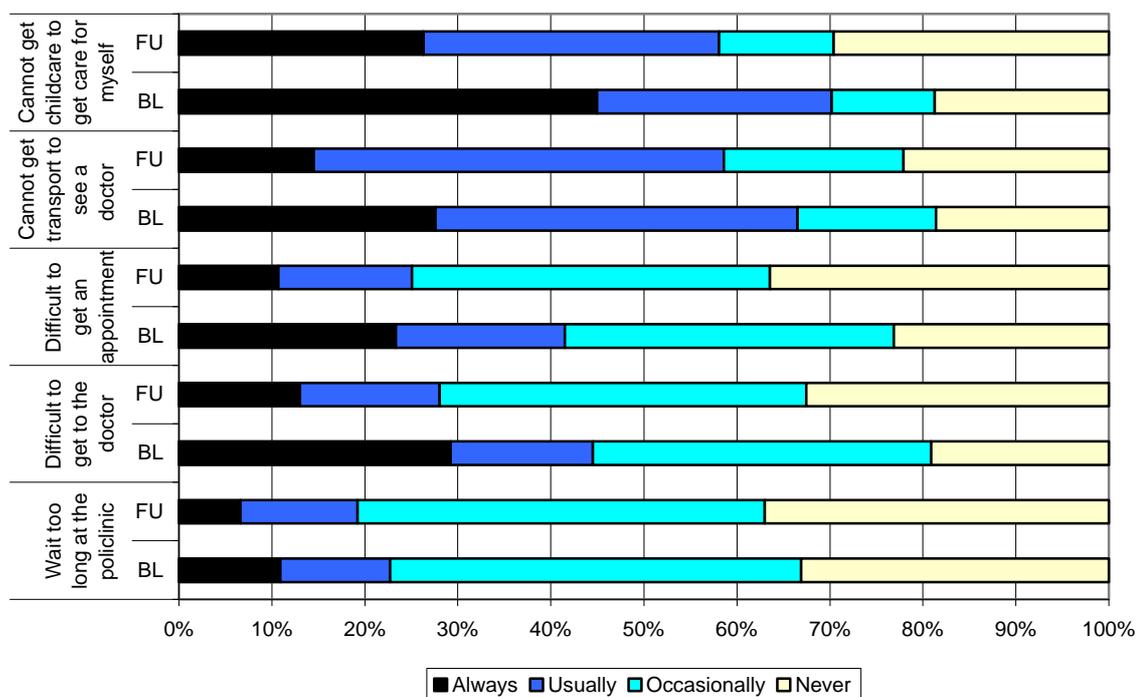
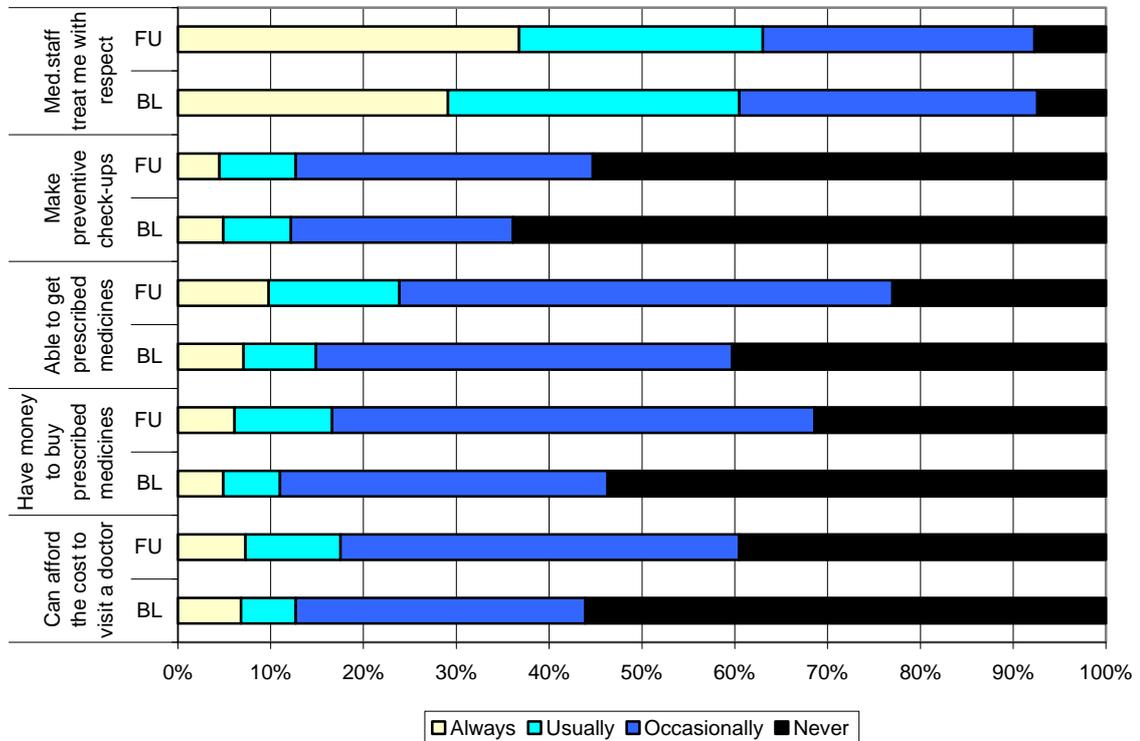


Figure 11. Affordability of care and other measures, BL 2001 vs. FU 2004, Armavir



Although a clear improving trend was observed in all items, the situation was still difficult in many areas. The proportion of those respondents who could afford medical care was still very low: 17.5%. The same was true with some other measures: the proportion of those making preventive check-ups always or usually (12.7%), those being able to pay for prescribed medications (16.6%) or get the medications (23.9%). Less than half of the respondents reported being able to get transportation (41.4%) or childcare when needed (41.9%) to visit a doctor.

The only urban-rural difference was observed with respect to the question measuring the extent of difficulties connected with getting to a polyclinic/doctor. Urban residents considered it difficult always or usually in 19.6% of cases, while rural residents in 32.6%, $p=.000$ (Pearson Chi-square test).

3.4.2 Access to Health Services

Information was gathered about the utilization of health care services by the target population. To avoid recall bias, most questions referred to the past four weeks. There were no significant differences between baseline and follow-up surveys in proportions of those households whose members made visit(s) to the adult or pediatric polyclinic during that period of time. The proportion of those having an appointment in the adult polyclinic was 15.9% at the baseline and 14.4% at the follow-up. Appointments in pediatric polyclinic were reported by 21.6% of respondents at the baseline and 21.7% at the follow-up. There were significant urban-rural differences in the latter proportion: it was higher in urban areas (27.3% in urban areas vs. 19.2% in rural, $p=.016$).

Significant difference was found in 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. This proportion decreased significantly: from 67.0% at the baseline survey to 49.4% at the follow-up ($p<.000$, Pearson Chi-square test). Again, lack of money to pay for services was mentioned as the most common reason for this (93.2%). Other factors mentioned much more rarely were lack of time (2.8%), fear of diagnosis/medical care (0.7%), difficulties with transportation (0.7%), indifference to own health (0.5%), etc.

The average waiting time at the polyclinic to see a doctor or nurse was less than 15 minutes for 59.2% of the respondents, and 15 to 30 minutes for 30.9% of them. Only 4.7% 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, 26.2% 15-30 minutes, and 5.3% more than an hour. Nevertheless, the observed improvement in waiting time to see a doctor/nurse was statistically significant: $p=.016$ (Pearson Chi-square test).

The role of walking as a usual means to get to the polyclinic decreased significantly: from 56.4% at the baseline to 39.6% at the follow-up ($p=.000$). Instead, more people reported going to polyclinic by bus (32.2% at the follow-up vs. 18.9% at the baseline). Although this might be partially connected with selection of some settlements for the

follow-up survey different from that at the baseline, the role of improved economic conditions cannot be ignored when explaining this difference. As at the baseline, significant urban-rural differences were observed here: rural residents used bus (41.5%) and automobile (27.3%) as a usual means to get to polyclinic more often the urban residents did (15.2% and 18.1% respectively). Walking was mentioned more often by urban residents (59.8% vs. 28.5%, $p=.000$). This is natural when taking into consideration that polyclinics are located in cities. However, the proportion of those urban resident who used automobile/bus to get to polyclinic also increased significantly as compared to the baseline (16.6% at the baseline vs. 33.3% at the follow-up, $p=.000$). The same tendency of replacing walking with other transportation means (mainly bus) was observed in rural settlements (at the baseline, 30.4% of them used bus and 38.9% walked to polyclinic while at the follow-up the usage of bus increased to 41.5% and the role of walking decreased to 28.5%). All of these indirectly indicate a positive change in the living conditions of Armavir residents making health services more accessible.

With respect to frequency of hospitalizations, 22.7% of the respondents (with no urban-rural differences) mentioned that someone from their household was hospitalized during the past 12 months. This proportion was not different from the baseline data (23.1%).

Of the respondents, 45.1% (with no urban-rural differences) reported that when referred to a specialist in past, their household members have primarily seen a specialist in Armavir. Another 25.4% mentioned referring primarily to a specialist in Yerevan. These proportions were not significantly different from the baseline data: 47.2% and 29.5% respectively. Some 22.1% of respondents (20.2% at the baseline) could not specify a usual place of referral and mentioned seeing specialists in Armavir and Yerevan equally.

The proportion of those thinking that specialists in Yerevan were more qualified than in Armavir was 40.0%, which is not significantly different from the baseline proportion of 36.7%. Instead, the proportion of those who disagreed with this statement increased significantly (17.6% at the follow-up vs. 9.0% at the baseline, $p=.000$, Two-sample test of proportion). A considerable proportion of the respondents (42.4%) answered “do not

know” to this question, but this proportion was significantly lower from that at the baseline (54.3%, $p=.000$).

Consistent with the observed trend of appreciating specialists in Armavir more, the proportion of those whose household members would prefer to be referred to a specialist in Armavir rather than in Yerevan increased significantly: from 20.4% to 26.0% ($p=.003$). The proportion of those preferring to be referred to a specialist in Yerevan was significantly higher in urban areas as compared to the rural (30.3% vs. 21.5%, $p=.000$). This was consistent with another urban-rural difference observed at the follow-up survey: those thinking that specialists in Yerevan were better than in Armavir constituted 46.0% in urban areas while considerably less: 36.8% in rural ($p=0.005$). For a considerable proportion of respondents (39.6% at the follow-up and 40.1% at the baseline), the choice of preferred referral site depended on the illness.

The majority of respondents: 68.8%, still considered it a burden going to Yerevan to see a specialist, but this proportion decreased significantly as compared to the baseline proportion of 78.5% ($p=.000$). No urban-rural differences were observed.

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 was no significant change in the proportion of those who agreed that most people need medicines from a doctor in order to be healthy (78.3% at the follow-up and 77.0% at the baseline). Unlike this, the observed increases in proportion of those who believed that most people could become healthier by changing their lifestyle and behaviors (80.6% at the follow-up and 75.6% at the baseline), who

knew where to go to get medical care (80.3% at the follow-up and 69.3% at the baseline), and who reported receiving good care during her last illness (72.0% and 61.5% respectively) were statistically significant. Of the employed respondents (n=280), 62.6% 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 (55.6%), but the difference was not significant (Table 17).

Table 17. Attitudes of respondents towards access to medical care, baseline 2001 vs. follow-up 2004, Armavir

Statements	Baseline (%)	Follow-up (%)	p-value*
Most people need medicines from a doctor in order to be healthy.	77.0	78.3	NS**
Most people can become healthier by changing their lifestyle and behaviors.	75.6	80.6	.008
I know where to go so that I can get medical care.	69.3	80.3	.000
I received good medical care from a doctor during my last sickness.	61.5	72.0	.000
I am able to take time off from work with pay to get the medical care that I need.	55.6	62.6	NS

*Pearson Chi-square test

**Difference is not significant

Respondents were asked to rate the importance of several factors in selecting a specialist. Specialist's reputation was considered the most important factor. The next factors in terms of perceived importance were physician's referral 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: doctor's referral was considered as the most important factor closely followed by cost of treatment and specialist's reputation. The proportion of those considering specialist's reputation very important increased significantly. Significant increases were observed also in proportions of those respondents considering personal experience and friend's referral very important in selecting a specialist (Table 18).

Table 18: Proportion of respondents considering the following factors “very important” in selecting a specialist, baseline 2001 vs. follow-up 2004, Armavir

Factors	Baseline (%)	Follow-up (%)	p-value*
Physician’s referral	75.2	78.3	NS**
Friend’s referral	15.7	27.2	.000
Cost of treatment	74.1	77.6	NS
Specialist’s reputation	72.3	80.3	.000
Hospital/clinic reputation	62.1	67.2	NS
Previous experience (own of friend’s)	52.5	63.0	.000

* *Pearson Chi-square test*

** *Difference is not significant*

Among other factors listed by respondents as important in selecting a specialist, specialist’s professional level, his experience, knowledge, and kind attitude toward patients, as well as his human characteristics: kindness, humanity, and honesty, were most commonly mentioned.

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 and breast cancer. Some 38.8% of the respondents mentioned that they had ever heard about a Pap smear as a screening test to detect the early stages of cervical cancer. This proportion was slightly but significantly lower than the baseline proportion of 43.8% ($p=.02$, two-sample test of proportions). This reduction, however, could be attributable to the decrease in proportion of those who confused Pap smear with vaginal culture at the baseline, thus answering positively to this question then. Of those having heard of the Pap smear, 74.4% answered correctly to the question about recommended frequency of having Pap smear, i.e., once a year (almost similar: 71.3% at the baseline). Only 6.3% of the respondents knew the correct starting age for a PAP smear: 18 years old (4.7% at the baseline, the difference is not significant).

With respect to their own behavior, out of all women who heard about Pap smear, 20.7% mentioned having had one within the last year, and an additional 8.5% of them within the past 1-2 years (at the baseline, these proportions were 16.4% and 7.6% respectively). The majority of respondents either never had (48.4%) or had one more than 4 years ago (7.4%). There were no significant differences in this area between the baseline and follow-up surveys. Neither urban-rural differences were found.

To the question on recommended frequency of having a screening mammography, 31.1% of respondents answered correctly: every year or every two years (depending on age). This proportion was slightly, but significantly higher from the baseline proportion of 25.9% ($p=.010$, two-sample test of proportions). The proportion of correct answers to this question was significantly higher in urban areas (37.5% in urban vs. 27.6% in rural, $p=.001$, two-sample test of proportions).

Very few (3.1%) answered correctly to the question on recommended starting age of having the first mammogram (35-39 years old). Some 9.0% of the respondents mentioned 40 years of age, which also can be considered a correct answer according to American Cancer Society recommendations. The situation was similar to the baseline survey: 4.5% of those who mentioned an age in the range of 35-39 years old and 6.5% of those who mentioned 40 years of age.

With respect to their own practices, 7.8% of the respondents over 34 years of age (a total of 37 women as compared to 6.3% or a total of 32 women at the baseline) mentioned that they had had a screening mammogram sometime in their life. Of them, 21.6% had it within the last year, 24.3% 1-2 years ago, 5.4% 3-4 years ago, and 35.1% 4 or more years ago (13.5% did not remember). No significant baseline-follow-up or urban-rural differences were found.

A negative change was observed in terms of ever checking blood cholesterol level. The proportion of those who positively answered to this question decreased from 11.9% at the baseline survey to 8.6% at the follow-up, $p=.016$ (Two-sample test of proportions).

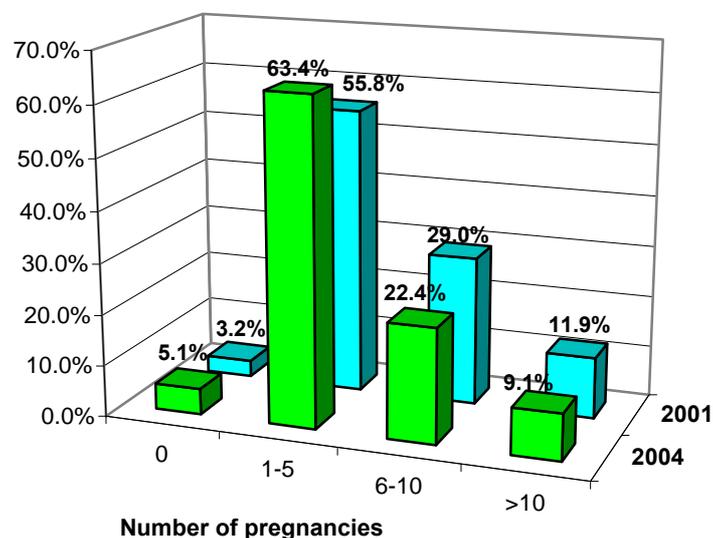
As at the baseline, children immunization coverage was among the best indicators: 96.4% of the respondents positively answered the question if the children in their household were immunized. This number was not statistically different from the baseline proportion of 95.0%. Statistically significant improvement was observed in the coverage of adolescents (15-17 years old) receiving their medical exam: the proportion of positive answers to this question increased from 43.1% at the baseline to 61.4%, $p=.000$. No urban-rural differences were found here.

3.5 Reproductive Health Knowledge and Practices

Several items were included in the questionnaire to evaluate respondents' knowledge and practices on reproductive health. The first item asked about the number of pregnancies respondents had 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 4.6 (sd 3.7) at the follow-up survey and 5.4 (sd 3.9) at the baseline. The difference was statistically significant: $p<.000$ (Two independent sample t-test). No significant urban-rural differences were found in the reported number of pregnancies.

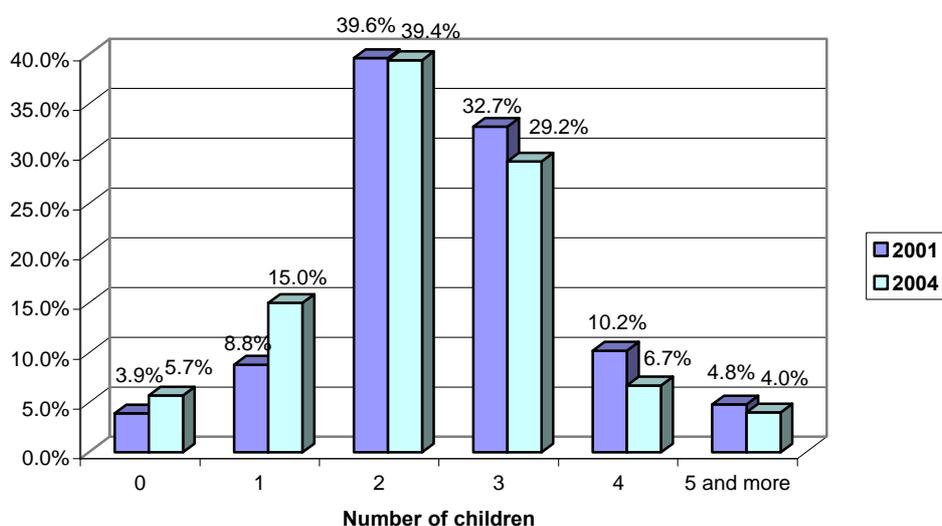
The data was analyzed also through defining the following categories: 'no pregnancy', '1-5 pregnancies', '6-10 pregnancies', and 'more than 10 pregnancies'. Again, the analysis revealed significant difference between the baseline and follow-up data: the proportion of those having 1-5 pregnancies increased since the baseline (from 55.8% to 63.4%) and the proportion of those having 6 or more pregnancies decreased from 40.9% to 31.5% ($p<.000$, Pearson Chi-square test). The proportion of those never pregnant was 3.2% at the baseline and 5.1% at the follow-up (the difference is not significant) (Figure 12).

Figure 12. Number of pregnancies in respondents, 2001 vs. 2004, Armavir



The mean number of children given birth to was 2.5 (sd 1.2) at the baseline survey and 2.3 (sd 1.2) at the follow-up. Again, the difference was statistically significant ($p=.000$, two independent samples t-test). The mean number of children given to birth was significantly higher in rural areas as compared to urban (2.4 ± 1.2 in rural areas vs. 2.2 ± 1.2 in urban, $p=.004$, two independent samples t-test). The proportion of respondents by the number of children they gave to birth both at the baseline and follow-up surveys are provided in Figure 13.

Figure 13. Number of children given to birth, 2001 vs. 2004, Armavir



Of all respondents, 79.3% mentioned being sexually active (82.6% at the baseline, the difference is insignificant). The proportion of sexually active respondents was significantly higher in rural areas (82.4% in rural vs. 73.5% in urban areas, $p=.001$, Pearson Chi-square test), which repeated the tendency observed at the baseline survey. When asked, what decision the respondents would make if they become pregnant, 33.4% answered that they would keep the baby (this proportion was 29.0% at the baseline). Meanwhile, 45.0% of the respondents indicated that they would get an abortion (vs. 55.1% at the baseline, $p=.000$, two-sample test of proportion). Some 13.9% of sexually active respondents reported they were unable to become pregnant (almost the same: 13.3% at the baseline). The vast majority of the respondents, 92.1%, mentioned being aware of where to get a pregnancy test. This proportion was similar to baseline data of 90.7%.

The proportion of those not using any method of contraception was rather high: 49.2%, and increased significantly since the baseline (41.6%), $p=.005$, Pearson Chi-square test. The most commonly used modern contraceptives were condoms (16.8%), followed by IUD (10.6%) and pills (5.2%). Among traditional methods, douching (6.4%), safe period (6.0%), and withdrawal (6.0%) were practiced most commonly. This sequence repeated that observed at the baseline (Table 19).

Table 19. Contraception methods used by respondents, baseline 2001 vs. follow-up 2004, Armavir

<i>Method of contraception</i>	<i>Baseline (%)</i>	<i>Follow-up (%)</i>
<i>Modern methods</i>		
Male condoms	15.4	16.8
IUD	15.0	10.6*
Pills	6.0	5.2
Abortion	6.0	4.2
Male sterilization: vasectomy	0.9	1.0
Female sterilization: tubal ligation	0.4	0.1
Depo-Provera/injections	0.1	0.1
Emergency contraception	0.1	0.1
Lactational Amenorrhea Method	0.0	0.1
Spermicide/cream/jelly	0.0	0.0

Method of contraception	Baseline (%)	Follow-up (%)
<u>Traditional methods</u>		
Douching	8.8	6.4
Safe period	8.5	6.0
Withdrawal	7.9	6.0
Other methods	0.4	0.6
Use no method	41.6	49.2**

* Significant difference, $p=.015$, Pearson Chi-square test

** Significant difference, $p=.005$, Pearson Chi-square test

The only significant change in contraceptive usage since the baseline survey was that the use of IUD decreased from 15.0% at the baseline to 10.6% at the follow-up ($p=.015$, Pearson Chi-square test). No urban-rural differences in usage of contraceptives were observed except the finding that rural residents mentioned using abortion more often than urban residents did (5.3% of rural residents vs. 1.9% of urban, $p=.040$, Pearson Chi-square test).

The respondents were also asked to express their attitude to several statements regarding sexual education and family planning. The majority (77.2%) agreed with the statement about the necessity of sexual education for high school students (not different from the baseline data of 76.8%). However, as compared to the baseline survey, respondents were less favorable toward educating students at school how to use contraceptives to prevent STDs (agreed 43.7% vs. 49.5% at the baseline, $p=.011$). A small proportion of respondents (19.1%) agreed with the statement on enabling high school students to get condoms at school health centers (not different from the baseline proportion of 16.1%).

Concerning the statements on family planning, the proportion of those who agreed that modern family planning methods effectively prevent pregnancy (56.7%), and those who reported knowing how to prevent undesired pregnancy (69.3%), remained unchanged as compared to the baseline. However, at the follow-up survey, significantly fewer respondents (59.7% vs. 64.5% at the baseline, $p=.033$) knew that condoms can prevent STDs. Unlike this, the proportion of those who knew that not all birth control methods protect against STDs increased significantly (30.7% at the follow-up vs. 24.8% at the

baseline, $p=.005$, Pearson Chi-square test) (Table 20).

Table 20: Proportion of desirable/correct attitudes toward statements on sexual education and family planning, baseline 2001 vs. follow-up 2004, Armavir

Statements	Baseline (%)	Follow-up (%)	<i>p-value</i> [*]
Modern family planning methods (tablets, condoms, IUD etc.) are an effective way to prevent a woman from pregnancy.	53.0	56.7	NS ^{**}
I know how to prevent getting pregnant if I do not want to have a child.	65.2	69.3	NS
All birth control methods will protect me against getting a sexually transmitted disease.	24.8	30.7	.005
High school students need to be taught about sex education in the schools.	76.8	77.2	NS
High school students need to be taught in the schools how to use contraceptives to prevent pregnancy and sexually transmitted diseases.	49.5	43.7	.011
High school students should be able to get condoms at school health centers.	16.1	19.1	NS
Condoms prevent from getting sexually transmitted diseases.	64.5	59.7	.033

^{*} *Pearson Chi-square test*

^{**} *Difference is not significant*

Interestingly, rural residents expressed more favorable attitude to the statements on educating high school students how to use contraceptives to prevent pregnancy and STDs and making condoms available for them at school health centers. In rural areas, 46.4% of the respondents agreed with the first statement (as compared to 38.8% in urban areas, $p=.024$) and 22.5% with the second (as compared to 12.8% in urban areas, $p=.000$).

3.6 Personal safety

Several questions were included in the questionnaire to measure respondents' attitude toward public and private safety. Of the respondents, 74.5% felt safe at work always or usually. The proportion of those feeling safe (always or usually) while shopping was

lower: 51.7%, but increased significantly as compared to the baseline proportion of 44.9 (p=.003). 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 (94.3%) or while at home (96.2%). The same contradiction was observed during the baseline survey and a recent survey in Sevan city with usage of the same instrument. A possible explanation for this 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 percentages of positive attitudes to the given statements were compared between the baseline and follow-up surveys. The analysis showed that there were no major differences in perceived safety between baseline and follow-up surveys, except the observed increase in proportion of those who felt safe always or usually while shopping (Table 21).

Table 21: Proportion of positive answers to questions on personal safety, baseline 2001 vs. follow-up 2004, Armavir

Statements	Baseline (%)	Follow-up (%)
I feel safe when I go shopping.	44.9	51.7*
I feel safe when I am at work.	77.5	74.5
I worry that I might be robbed or attacked while I am shopping.	95.9	94.3
I worry that I will be robbed or attacked while I am at home.	96.5	96.2

* *Difference is significant, p=.003, Two-sample test of proportion*

Some slight urban-rural differences were also observed at the follow-up survey: rural residents felt less safe when go shopping (57.1% of those feeling safe always or usually in urban areas vs. 48.8% in rural, p=.014) and worried more to be robbed or attacked while shopping (21.6% of those who worried always, usually, or occasionally in urban areas vs. 29.5% in rural, p=.020).

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 (64.2%) agreed that women have the right to disagree with the men in family. Meanwhile, 77.0% of them agreed also that women must obey men; and an even higher proportion, 84.6% agreed that men have a right to discipline women in their home. There were no significant attitudinal changes between baseline and follow-up surveys in respect of these issues (Table 22). Neither significant urban-rural differences were observed.

Table 22: Proportion of those who agreed to statements on men-women relationships in family, baseline 2001 vs. follow-up 2004, Armavir

Statements	Baseline (%)	Follow-up (%)	P-value*
At home, women have the right to disagree with the men in the house.	60.0	64.2	NS**
Men have the right to discipline women in their home.	87.4	84.6	NS
Women must obey men.	76.2	77.0	NS

* Pearson Chi-square test

** Difference is not significant

Different pattern was observed in terms of the next few questions measuring the trust of police among respondents. The latter showed a clear decreasing trend since the baseline survey. Of the respondents, 42.7% agreed that they could count on police to protect them. This was not significantly different from the baseline proportion of 42.0%. However, the proportion of those who strongly disagreed with this statement increased from 8.7% at the baseline to 15.6% at the follow-up ($p=.000$, two-sample test of proportion). The proportion of those who felt that police would help them if they were attacked or robbed was somewhat higher: 50.6%, but significantly lower than the baseline proportion of 58.9% ($p=.000$, Pearson Chi-square test). Some 50.0% agreed that police would help if someone in their household would intentionally hurt them and 60.5% felt able to seek medical care if someone that they live with intentionally hurt them. Both proportions were significantly lower than the baseline ones (58.3% and 68.7% respectively, $p=.000$ for both differences, Pearson Chi-square test) (Table 23).

Table 23: Proportion of those agreeing with statements on trust of police: Baseline 2001 vs. follow-up 2004, Armavir

Statements	Baseline (%)	Follow-up (%)	P-value*
I can count on the police to protect me.	42.0	42.7	NS
The police will help me if I am attacked or robbed.	58.9	50.6	.000
I think that the police will help me if I am intentionally hurt at home by someone that I live with.	58.3	50.0	.000
I can seek medical care if someone that I live with intentionally hurts me.	68.7	60.5	.000

* Pearson Chi-square test

** Difference is not significant

Some urban-rural differences were also found in this respect. Trust of police was significantly higher among rural residents as compared to those living in urban areas (Table 24).

Table 24: Proportion of those agreeing with statements on trust of police: Urban-rural differences, Armavir, 2004

Statements	Urban, n=336 (%)	Rural, n=617 (%)	P-value*
I can count on the police to protect me.	36.1	46.2	.003
The police will help me if I am attacked or robbed.	44.7	53.7	.008
I think that the police will help me if I am intentionally hurt at home by someone that I live with.	44.6	52.9	.014
I can seek medical care if someone that I live with intentionally hurts me.	57.4	62.1	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 5.7% of respondents mentioned that they personally witnessed a severe argument, fight, or other violence during the past 30 days. This percentage was significantly lower from the baseline proportion of 8.6% (p=.013, Pearson Chi-square test). The proportion of those who indicated being intentionally hit by someone within the last 30 days also decreased significantly: from 2.5% at the baseline to 0.8% at the follow-up (p=.004). The same declining trend was observed in the proportion of those who

reported being ever hit or bit by a household member: 11.4% at the baseline versus 7.4% at the follow-up survey ($p=.003$, Pearson Chi-square test). The proportion of those who indicated being ever threatened with physical violence by a household member also decreased, but the difference between baseline and follow-up data was statistically insignificant (3.7% at the baseline vs. 2.6% at the follow-up). In this respect, the only urban-rural difference at the follow-up survey was observed in proportion of those being ever hit by a household member. The latter was higher in urban areas (10.0% in urban vs. 6.0% in rural areas, $p=.023$).

3.7 Dental Care

Questions on dental care were directed to measure both the respondents' attitude toward preventive dental check-ups and their own behavior. Of the respondents, 37.1% stated that they went to a dentist within the last year and 17.9% 1-2 years ago. Meanwhile, 10.9% of them indicated visiting a dentist four or more years ago, and 8.1% never. These proportions were identical with those observed at the baseline.

The picture was similar with the respondents' family members' last visit to a dentist: 41.5% 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 18.1% 1-2 years ago. The proportion of those respondents whose family members went to a dentist last time 4 or more years ago was 4.7%. Another 8.1% answered "never" to this question. Again, no significant differences were found as compared to the baseline.

Some 38.3% of respondents indicated that normally an adult should receive a dental check-up every 6 months (45.2% at the baseline, $p=.002$, two-sample test of proportion). Some 25.6% considered this frequency being every year (19.1% at the baseline, $p<.001$). The summative percentage of those considering the normal frequency of preventive dental check-ups either every 6 months or every year did not change significantly (64.3% at the baseline vs. 63.9% at the follow-up). There was a rather large proportion of "don't know" answers to this question both at the baseline and follow-up surveys: 26.3% and 28.0% respectively. For the right frequency of children's dental check-up and cleaning,

49.9% of the respondents mentioned “every 6 months” (53.9% at the baseline, the difference is insignificant) and 21.4% “every year” (17.0% at the baseline, $p=.014$). Again, the proportion of “don’t know” responses was considerable: 22.3% at the follow-up and 23.0% at the baseline.

4. Main findings

Socio-economic Status

A slight, but statistically significant improvement in household income and living conditions of the target population was observed at this survey as compared to the baseline. The unemployment rate decreased for both respondents and household heads. Accordingly, the proportion of those households having no members employed decreased significantly: from 66.7% to 47.8%, and the mean number of employed members per household increased considerably: from 0.43 to 0.74. The role of government as a primary employer decreased and the role of non-governmental organizations and self-employment increased significantly. The proportion of those respondents whose position was inconsistent with their professional/vocational training also increased. Significant increase in average monthly expenditures was observed. The proportion of those thinking that the monthly income of their family was enough to meet family needs was still very low (6.2%), but doubled since the baseline survey. Consistent with this, significant increases were observed in percentages of those households equipped with color TV, VCR, cellular phone, automobile, and indoor toilet.

As compared to the baseline, a significant decrease was found in the proportion of households using compost to heat their living quarters (from 10.9% to 1.2%) and those not heating their living quarters at all (from 9.0% to 4.0%). Piped/bottled 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 82.1% to 69.4%), but still was rather high. The same tendency of decrease was observed with proportions of those having insufficient money to buy food or going to sleep hungry. However, the majority of respondents (59.0%) still felt dissatisfied with the ability of their family income to meet family needs; household expenditures for the

last month were less than \$50 for more than half (54.1%) of the households. More than two-thirds of the families (69.4%) still worried about not having enough to eat. Overall, the socio-economic situation appeared to be very difficult, but slowly improving.

Health Status

A similar slight improving trend was observed with health status. Slight but significant improvement in perceived health status of family members was revealed: health was rated as good/very good/excellent for 41.5% of children in the household (30.7% at the baseline), 25.4% of respondents (19.9% at the baseline), and 24.1% of heads of household (17.4% at the baseline). A similar trend was observed with perceived health dynamic of household members: 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 58.4% of children, 74.6% of respondents, and 75.9% 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 and was similar to that revealed during the recent survey in Sevan. The interesting finding of this survey was that the perceived prevalence of almost all reported conditions decreased as compared to the baseline, and for some conditions (kidney problems, mental disorders, gastro-intestinal diseases, vision problems, cardiac diseases) this decline was statistically significant.

Of the surveyed, 24.3% mentioned having an accident in their family during the last year, which is slightly but significantly lower from the baseline proportion of 28.4%. The most common accident was fall, followed by poison/overdose and cut/slash/puncture. Significant reduction was observed in the frequency of reporting cut/slash/puncture, drowning, and pedestrian/vehicle accidents.

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, lifting/carrying groceries, and conducting vigorous activities. An interesting finding was that the improvement was mainly observed in those activities demanding more physical activity/energy, while limitations in simple activities indicating serious/chronic health impairments remained the same: more than one third of the respondents still felt limited in climbing one flight of stairs or walking one hundred yards, and 22.1% felt limited in even bathing or dressing themselves. The proportion of those limited in more energetic activities also remained rather high: more than half of the respondents felt limited in vigorous activities, climbing several flights of stairs, and walking more than a mile. 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, substantial increase in respondents' satisfaction with own health and life was observed since the baseline survey covering almost all the measured areas. The prevalence of probable (52.3%) and possible (19.8%) depression among respondents was still very high. However, the slight decrease in the revealed prevalence of this condition as compared to the baseline (55.4% and 22.3% respectively) was statistically significant. The average depression score for the sample was 22.5, which was significantly lower than that at the baseline (23.9) but higher than the recent Sevan population average score (19.05) and much higher than the US population average score (7.8-9.9).

Health Behavior

The proportion of those women who reported smoking cigarettes some time in their life was significantly lower than at the baseline: 3.6% vs. 6.3%. There were no other significant differences between baseline and follow-up data in terms of smoking practices. Of the respondents, 2.5% were current smokers. The average number of cigarettes they smoked per day was 18.0. Out of all household members that were more than 12 years of age, 27.4% smoked. The male/female ratio in this group of smokers was 36:1. Due to rather high prevalence of passive smoking, the members of at least 64.4% of

the surveyed households were exposed to cigarette smoke through either active or passive smoking. These findings were very similar to those revealed at the recent survey among Sevan residents. An interesting finding was the significant increase observed in the proportion of those considering smoking harmful, while no increase was observed in proportion thinking that smoking should be prohibited.

Of the respondents, 1.6% mentioned having drinking problem ever in their life and 10.6% reported that someone living in their household had a drinking problem. The latter number was significantly lower from that at the baseline (14.2%). Interestingly, the proportion of those who knew where to get help if someone in their family had a drinking problem decreased significantly (from 21.7% to 17.2%). The drinking frequency in respondents (rarely or seldom in 96.4%) was similar to that at the baseline. Of the respondents, 1.9% mentioned knowing someone in their city/village who had a problem with drug addiction. This number was not significantly different from the baseline proportion of 3.0%. Respondents from urban areas mentioned knowing somebody with drug addiction significantly more frequently than rural residents did (3.5% vs. 1.0%).

Health Knowledge

No significant change was observed between the baseline and follow up surveys in terms of the mean knowledge score of respondents on childbearing and caring for young children (8.8 out of the highest possible value of 16 at the follow-up and 8.6 at the baseline). With respect to each question, the proportion of correct answers either increased or remained unchanged since the baseline except two items, where significant decreases in proportions of correct answers were observed. These items were intended to measure the knowledge of respondents on importance of following immunization schedule correctly and of playing with a child to contribute to his/her development (15.5% decline was observed in correct responses to the first question and 9.1% to the second). The proportion of correct answers to the latter question was particularly low in rural areas (59.0% in urban vs. 43.9% in rural). In terms of knowledge on different topics, a statistically significant increase in mean knowledge scores as compared to the baseline was observed in the areas of breastfeeding and diarrhea/acute respiratory infections,

while the knowledge on child development significantly decreased. As at the baseline, the mean knowledge score was the highest on breastfeeding and the lowest on reproductive health. The knowledge score on respiratory infections/diarrhea was significantly lower in rural areas as compared to urban.

Accessibility of Medical Care

The situation with all the measures intended to assess personal health care services improved significantly since the baseline survey, indicating both increased accessibility/affordability of health care services and improved ability of people to take care of their own health. While the proportion of people hospitalized or visiting adult or pediatric polyclinics during the given period of time remained unchanged as compared to the baseline, the proportion of those respondents who mentioned that their family members needed to refer to a polyclinic/hospital but did not, decreased significantly: from 67.0% at the baseline to 49.4% at the follow-up, indicating some improvement in people's ability to pay for services.

Another finding indirectly demonstrating improved living conditions in Armavir was the replacement of walking as a usual mean to get to polyclinic with bus/automobile, a tendency observed both in urban and rural areas. Slight but significant improvement was observed also in waiting time to see a doctor/nurse. As compared to the baseline, a tendency of appreciating specialists in Armavir more was found and, consistent with this, the proportion of those who's household members would prefer to be referred to a specialist in Armavir rather than in Yerevan increased, especially among rural residents.

Among factors that respondents considered important in selecting a specialist, specialist's reputation was considered the most important leaving behind two factors considered the most important at the baseline survey: doctor's referral and cost of treatment. This could indirectly indicate improved ability of people to make a free choice of specialist. Some positive attitudinal changes toward access to medical care happened since the baseline survey: significant increase was observed in the proportion of those believing that people could become healthier by changing their lifestyle and behaviors, who knew where to

apply to get medical care, and who reported receiving good medical care during last illness. However, almost no changes were observed in the usage of early diagnosis/prevention services to prevent cervical and breast cancer. A negative change was observed in terms of ever checking blood cholesterol level (from 11.9% at the baseline to 8.6% at the follow-up). Unlike this, the proportion of adolescents covered by their medical exam increased significantly (from 43.1% to 61.4%). The coverage of children with immunization was again among the best indicators (96.4%). Concerning dental care and preventive check-ups to dentist, no changes were observed since the baseline survey. The main problems with accessibility of medical care still remained its low affordability for the vast majority of respondents (82.5%) and the low proportion of those making preventive check-ups (12.7%).

Reproductive Health

The mean number of pregnancies that respondents had during their life was 4.6, which is significantly lower than that at the baseline survey (5.4). The same tendency was observed with the mean number of children given birth to: 2.3 as compared to 2.5 at the baseline. Of those sexually active respondents who were able to get pregnant, 33.4% expressed wish to keep the baby in the case of pregnancy (29.0% at the baseline) and 45.0% indicated that they would get an abortion, which is significantly lower than the baseline proportion of 55.1%. As to the contraceptive usage, the proportion of those who did not use any method of contraception was rather high: 49.2%, and increased significantly since the baseline (41.6%). The most commonly used contraceptives were condoms (16.8%) and IUDs (10.6%), but the usage of the latter decreased significantly since the baseline (15.0%).

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 to prevent pregnancy and STDs. Another interesting observation was that as compared to the baseline, lower percentage of respondents agreed that condoms prevent from getting STDs. Meanwhile, the proportion of those who knew that not all birth control methods prevent against STDs increased

significantly. Surprisingly, rural residents expressed more favorable attitude to the statements on educating high school students how to use contraceptives to prevent pregnancy and STDs and making condoms available for them at school health centers.

Safety

The majority of respondents (74.5%) felt safe at work. This proportion was not different from the baseline. The proportion of those feeling safe while shopping was lower (51.7%), but increased significantly since the baseline (44.9%). Rural residents felt less safe while shopping as compared to urban. In terms of exposure to violence, 5.7% of the respondents personally witnessed some violence and 0.8% were intentionally hit during the past 30 days. These numbers were significantly lower from the baseline proportions (8.6% and 2.5% respectively).

The same tendency of reduction was revealed in proportion of those being ever hit or bit by a household member (7.4% vs. 11.4% at the baseline). There were no significant changes in rather high proportions of those respondents thinking that women must obey men (77.0%) and men have a right to discipline women in their home (84.6%). Unlike this, a clear tendency of decrease since the baseline survey was observed in proportions of those trusting police (by ~14%). Only half of the respondents believed that police would help them in the case of being attacked, robbed, or hurt, and even less proportion (42.7%) agreed that they can count on police to protect them. Interestingly, trust of police was significantly higher among rural residents.

5. Conclusions

Overall, slight but significant improvements were observed in the majority of measured areas as compared to the baseline data in 2001. Perceived health status/health dynamic of the target population improved modestly, but significantly. The reported prevalence of many chronic health conditions (kidney problems, mental disorders, gastro-intestinal diseases, vision problems, cardiac diseases) decreased. A slight but significant decrease in the prevalence of probable/possible depression was observed. The situation improved significantly in terms of respondents' ability to conduct most daily activities. Consistent

with these, substantial increase in respondents' satisfaction with their own health and life was observed covering almost all the measured areas. Accessibility/affordability of medical care also improved significantly. As a result, the proportion of those who needed but did not refer to health services decreased substantially.

Several factors could play role in this improvement including the observed slight but statistically significant improvement in household income and living conditions of the target population and the activities undertaken by Armavir-Galveston Community Health Partnership during the past three years.

The observed tendency of appreciating specialists in Armavir more now than at the baseline survey could be attributable to the comprehensive trainings of health care providers in the marz conducted by the partnership during these years. The same reasoning could explain the observed increase in proportion of those who reported receiving good medical care during their last illness. The observed significant increase in proportion of those believing that people could become healthier by changing their lifestyles and behaviors could be an impact of the advocacy of healthy lifestyle by the partnership through different communication channels: local TV, school education, health education during sick and preventive visits, etc. One of the areas specifically targeted by the partnership activities was violence in family, the impact of which might explain the significant reduction in proportion of those reporting being hit or bit by a household member.

However, in some areas targeted by the partnership (e.g. women's reproductive health, early diagnosis of breast and cervical cancer, family planning, smoking) no dynamic or even some negative trends since the baseline survey were observed. The mean knowledge score of the respondents on childbearing and caring for young children was rather low (8.8 or 55%) and was not been changed from the baseline survey. Among different topics, the mean knowledge score on reproductive health was the lowest. No changes were observed in the usage of early diagnosis/prevention services to prevent cervical and breast cancer. The proportion of those sexually active respondents who did not use any

method of contraception was rather high (49.2%) and increased significantly since the baseline. No changes in terms of smoking practices were observed and almost two third of the target population were regularly exposed to cigarette smoke through either active or passive smoking.

The situation was still difficult in many areas, including those where some improvements were observed. The health of three-fourth of adults and more than half of children was still rated as fair or poor. Because of poor health, more than half of the respondents felt limited in usual daily activities and more than one fifth in even bathing or dressing themselves. The prevalence of probable and possible depression among respondents was still very high (52.3% and 19.8% respectively). The proportion of those thinking that the monthly income of their family is enough to meet family need was still very low (6.2%). More than two-thirds (69.4%) of the families still worried about not having enough to eat. The main problems with accessibility of medical services remained its low affordability for the vast majority (82.5%) of respondents and the low proportion (12.7%) of those making preventive check-ups.

Although positive changes in population health status and their satisfaction with health services were observed that could be partially attributable to the partnership activities, the remaining problems indicate the continuing need for activities to improve the situation, particularly in the following areas:

- ❑ Educating public on prevention/early detection of diseases, reproductive health, childcare, smoking, etc.
- ❑ Empowering polyclinic staff to provide population screening services
- ❑ Introducing screening/early detection protocols/guidelines in the polyclinic
- ❑ Enhancing provision of psychological services to the population.
- ❑ Introducing mechanisms to further increase the affordability of health care services

6. References

¹ Thompson, ME, Demirchyan, A, Babajanyan, A, Baseline Household Health Assessment in Armavir Marz, Armenia. AUA Center for Health Services Research, June, 2001 [report produced in English and Armenian]

² Thompson ME, 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

³ The Results of 2001 Census of the Republic of Armenia, National Statistical Service of the Republic of Armenia, State Committee of the Organization and Conduction of the RA Census 2001, Yerevan 2003

⁴ 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.

⁵ Demirchyan, A, Thompson, ME, Sevan Household Health Assessment, Follow-up 2004. AUA Center for Health Services Research and Development, June, 2004

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