The Association of Maternal Knowledge and Management With Prevalence and Duration of Childhood Diarrheal Disease in Yerevan

Master of Public Health Integrating Experience Project

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by

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Table of Contents

Acknow	eledgements	1
Abstrac	t	2
Backgro	ound Information/Literature Review	3
	The situation in Armenia	4
	Rationale of this study	5
Method	s	6
	Study design	6
	Study population	6
	Sampling design	7
	Sample size	7
	Data collection	8
	Study instruments	8
	Study dependent and independent variables	9
Data an	alysis	9
Ethical	considerations	9
Results		10
	Demographic Data	10
	Knowledge about diarrhea	11
	Practices regarding diarrhea prevention and management	12
	Bivariate analyses: t-test and chi-square	13
	Bivariate analyses: simple linear regression	14
Discussi	on	15
Recomm	nendation	17
Referen	ce List	18
Table 1	Characteristics of variables	20
Table 2	Socio-demographic characteristics of respondents	21
Table 3	Percent, frequencies of maternal responses about causes of diarrhea	22
Table 4	ttest statistic between mean duration of childhood diarrhea and study independent variables	22
Table 5	chi-square statistic for the association between prevalence of childhood diarrhea and independent variables	23

Table 6 Simple linear regression analyses between duration of childhood diarrhea	
(days) and socio- demographic characteristics	23
Table 7 Simple linear regression analyses between duration of childhood diarrhea maternal practices	and 24
Table 8 Simple linear regression analyses between maternal knowledge score and maternal age	24
Figure 1 Study population	25
Graph 1 Percent and count of children with diarrhea by child age	26
Graph 2 Percentage of mothers who identified causes of diarrhea	266
Graph 3 Percentage of mothers who identified causes of diarrhea	277
Graph 4 Maternal knowledge score distribution	277
Graph 5 Percent of mothers' responses about practices for diarrhea prevention and management	
Graph 6 Percent of mothers' practices for diarrhea prevention and management	288
Appendix 1 Questionnaire (English version)	29
Appendix 2 Questionnaire (Armenian version)	47
Appendix 3 Consent form (English version)	66
Appendix 4 Consent form (English version)	67

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Abstract

Background: Diarrhea is one of the major causes of morbidity and mortality among children in the developing countries. Each year 1.6 million children under 5 years old die as a result of diarrheal diseases. Based on the literature, the number of children death due to diarrheal diseases each year might be 2.5 million, especially in developing countries. The main reasons of diarrhea are unsafe water supply, inadequate sanitation and hygiene. In Armenia, about 7% of infant deaths are associated with diarrheal diseases. Based on data from the Armenian Demographic Health Survey 2005 (ADHS 2005), 17% of children under-five years of age had diarrhea in the two weeks preceding the survey. Based on the ADHS 2005, from 2000 to 2005 this percent more than doubled from 8% to 17%.

Methods: An analytical cross-sectional study design was used to assess the level of maternal knowledge and practices related to the management of childhood diarrhea and its association with the prevalence and duration of childhood diarrhea in Yerevan. The study population was mothers who have children 0-2 years-old. From two polyclinics, which were chosen by convenience sampling, mothers were chosen using systematic random sampling strategy. Sample size was estimated to be 276. Data collection was done by interviewer-administered telephone-based questionnaire. SPSS and STATA statistical packages were used for data entry and analysis.

Results: The result of the simple linear regression (SLR) showed that the reported mean duration of childhood diarrhea was higher among the children who were less than 9 months of age, whose mothers were less than 30 years-of-age, whose mothers sought health care from a physician, provided them anti-motility medicines and gave them homemade medicine. An association was found between mean knowledge score of mothers and maternal age- on the average, for each one-year increase of maternal age there was an increase in maternal knowledge score on 0.1 units.

Recommendation: Based on the finding of this research, programs to increase mothers' knowledge about childhood diarrheal management could include an educational role for more experienced older mothers with younger mothers in a management of this disease. Respected older mothers who were shown to be more effective in the management of childhood diarrheal diseases than younger mothers could be trained to teach and provide examples for the less experienced younger mothers.

Background Information/Literature Review

Diarrhea is one of the major causes of morbidity and mortality among children in the developing countries (1). Based on World Health Organization (WHO) definition "Diarrhea is the passage of loose or watery stools, usually at least three times in a 24 hour period" (2). World health report 2003 indicates that each year about 1.6 million children under 5 years old die as a result of diarrheal diseases, representing 15.2% of all deaths for children less than 5 years-of-age in developing countries (3). The number of childhood deaths due to diarrheal diseases is estimated to be 2.5 million, with most of these occurring in developing countries (4). The primary causes of diarrhea are unsafe water supply, inadequate sanitation and hygiene (5).

Some studies have been conducted to assess the association of socio-demographic characteristics, maternal knowledge, practices and diarrheal diseases management with incidence, prevalence and duration of childhood diarrhea. The findings of one study, which was conducted in northeastern Brazil, showed that the mean duration of childhood diarrhea decreased as the child's age increased. Also, the study found that the number of children with diarrhea whom were provided rehydration treatment and medication increased as the duration of diarrhea became longer (1).

Another study in the same area found that diarrhea was common in the children under the age of one year-old and identified the risk factors of diarrhea as early weaning, male sex, malnutrition, maternal age younger than 25 years-of-age, missed immunizations and previous pneumonia (6).

Another study which was conducted in Cali, Colombia found that maternal perception of childhood malnutrition, age of mother, household conditions and mother's general knowledge of diarrhea were associated with the prevalence of diarrhea (7).

Epidemiological studies in various countries worldwide have found an association between the educational level of mothers and the prevalence rate of diarrhea (8, 9). Some of the studies found that maternal beliefs, attitudes and health practices in the management of childhood diarrhea was associated with reduced severity, frequency and duration of diarrheal disease (10,11,12).

The WHO indicates it may be possible to decrease diarrhea morbidity worldwide by 37.5 % with improved sanitation, by 21% with improved water supply and that a change in sanitary behaviors could decrease diarrheal diseases by 35 % (5). In order to reduce the prevalence rate of diarrheal diseases, the WHO promotes breast feeding and better weaning practices, increased availability of clean water and sanitation, improved personal and domestic hygiene, immunization against measles and the development of an anti-rotavirus vaccine (13).

To reduce the cost burden and increase convenience, many countries recommend mixing home remedies for oral rehydration solution (ORS) rather than purchasing or acquiring pre-mixed ORS in pharmacies or medical facilities (12). Providing information to mothers on home remedies for ORS and on risk factors for diarrheal diseases may reduce childhood morbidity and severity of diarrheal disease, as well inform the development of control measures through health educational programs.

The situation in Armenia

In Armenia, about 7% of all infant deaths are associated with diarrheal diseases (14). Based on data from the Armenian Demographic Health Survey 2005 (ADHS 2005), 17% of children under-five years of age had diarrhea in the two weeks preceding the survey (14). Based on the ADHS 2005, from 2000 to 2005 this percent more than doubled, from 8% to 17% (14). About 1% of these children had dysentery or blood in the stools (14). Based on data from the ADHS 2005, diarrhea is most common during the ages of 6-11 months (14).

The morbidity rate among these children is highest in the Armavir region with 26% and lowest in the Shirak region with 8% (14). As has been shown in many studies in other countries (15), the prevalence of diarrhea for children in Armenia is higher in the rural areas than in the urban areas (14). The ADHS 2005 also found that 32% of children with diarrhea were taken to a health facility but only 25% of them were given ORS for the treatment of dehydration associated with diarrhea; dehydration is the primary cause of death due to this disease (14).

Rationale of this study

A review of the published literature found no study that evaluated the associations of socio-demographic characteristics, maternal knowledge and management of childhood diarrhea with the prevalence and duration of childhood diarrhea in Armenia. Assessing these associations in Armenia could lead to improved health educational programs for childhood diarrhea. The study's findings may lead to recommendations for future health programs targeting new mothers to prevent and manage diarrhea. These health programs may include intervention strategies to control children's diarrheal episodes by increasing the mothers' knowledge and by improving their practices related to diarrhea; these programs may also encourage health professionals to be available sources for health information about diarrhea. *The main goal* of this study

- To assess the associations of socio-demographic characteristics of mothers, maternal knowledge and maternal management of childhood diarrhea with the prevalence and duration of childhood diarrheal diseases.
- To develop recommendations to reduce diarrheal disease prevalence and duration and to provide a framework for establishing and conducting childhood diarrhea prevention programs.

The research questions were:

- 1. Is there an association between the mothers' socio-demographic characteristics (age, marital status, number of children under two years of age in the household, employment status, income and educational level) and the prevalence and duration of childhood diarrheal episodes?
- 2. Is there an association between the mothers' knowledge related to diarrhea and the prevalence and duration of childhood diarrheal episodes?
- 3. Is there an association between maternal management (practices and health seeking behaviors) of childhood diarrhea and the prevalence and duration of childhood diarrheal episodes?

Methods

Study design

An analytical cross-sectional study design was used to assess the level of maternal knowledge and practices related to the management of childhood diarrhea and their associations with the prevalence and duration of childhood diarrhea.

Study population

The target population of this study included mothers of children 0-2 years-of-age in Armenia. The surveyed study population consisted of mothers of children ages 0-2 years from two polyclinics ("Manuk" and #12 policlinics) in Yerevan.

The *inclusion criteria* for the study participants were:

- mothers who had at least one child who is 0-2 years old
- who were citizens and residents of the Republic of Armenia
- who speak Armenian

The exclusion criteria for the study participants were:

• mothers who were physicians (excluded because of their specific training in health care services and specialized knowledge concerning the treatment of diarrhea).

The decision to select children of 0-2 years-of-age was based on data from the ADHS 2005, which showed that diarrhea has the highest prevalence in this age group.

Sampling design

Two polyclinics located in different districts of Yerevan were chosen by convenience sampling. In each polyclinic a completed list of telephone numbers of mothers' with children aged 0-2 years were used as the sampling frame for the study, from which mothers were randomly chosen using a systematic random sampling strategy for telephone interviewing. Data was collected from mothers concerning children's diarrheal disease over the previous three months. The three months study recall period was selected to provide sufficient prevalence of diarrhea for analyses while minimizing recall biases.

Sample size

The sample size for this survey was calculated using WHO's EpiInfo software (16). Assumptions included 95% confidence interval (alpha=0.05) and 80% power. A leading factor of interest was the mothers' educational level and its association with prevalence and duration of childhood diarrhea (8;17). *Maternal education* was selected as the exposure status for the sample size calculation because it has a well-established important association with childhood diarrhea prevalence and duration (8;17). *Exposed* cases were selected to be mothers who completed general secondary education (<= 10 years) and *unexposed* were selected to be mothers with specialized secondary education and higher (> than 10 years) (14). Based on the literature, an expected ratio of 3:1 respectively was used for sample size calculations (14). The percentage of children with diarrheal diseases with exposed mothers

was expected to be 50%, while the expected frequency of childhood diarrhea among children with *unexposed* mothers was expected to be 30%. Based on a previous phone-based survey in Armenia, the response rate was expected to be approximately 60%. The initial sample size was computed to be 276; after adjusting for the 60% response rate, the sample size for this study was estimated to be 460.

Data collection

Eligible mothers were called on the telephone and asked if they wanted to participate in a telephone interview. If a potential participant was interested in the study, the researcher read the informed consent form and allowed her to make the decision of whether or not to participate in the study; the informed consent also explained that she could also stop the interview at any time with no consequence.

Study instruments

For collecting information on mother's socio-demographic characteristics, knowledge and practices regarding diarrheal diseases and its management, and child diarrhea prevalence and duration the researcher developed an interviewer-administered telephone-based questionnaire (Appendix 1). This instrument was adapted from the DHS 2005, with additional questions added. The questionnaire was first developed in English and than translated into Armenian (Appendix 2). It was pre-tested on 20 mothers in the two selected policlinics. Adjustments to the questionnaire were made after pre-testing. The questionnaire included both open-ended and close-ended questions.

The *Socio-Demographic Characteristics* domain contained questions related to mothers' age, marital status, employment status, educational level and household income level, number of children less then 2 yours-of age in the family, age and sex of child. The *Knowledge* domain included questions regarding maternal knowledge about causes, severity

and seriousness of diarrhea. Causes of diarrhea were measured by seven questions (Q. 41.1, 41.2, 41.3, 41.4, 41.5, 41.6 and 41.7). One point was given for a correct answer and one point was subtracted for an incorrect answer for each of these questions (2). Finally, the *Practices* domain included questions regarding childhood diarrheal disease management and treatment.

Study dependent and independent variables

The two *dependent variables* (outcomes of interest) included duration and prevalence of childhood diarrhea. The *independent variables* included mothers age, marital status, educational level, income level, employment status, number of children under two years-of-age in the household, mothers knowledge level related to diarrhea, and diarrhea management-including practices and health seeking behavior (Table 1).

Data analysis

Data entry was conducted using the SPSS statistical package. Data were analyzed using both SPSS and STATA statistical packages. Descriptive statistical analyses of demographic characteristics, maternal knowledge of diarrhea and practices of diarrheal management were conducted, with results presented in a frequency table (Table 2). Each variable was analyzed and presented independently. Bivariate analyses were conducted for associations between dependent and all independent variables. Bivariate associations were assessed using chi-square and t-tests.

Ethical considerations

The Institutional Review Board (IRB) of the College of Health Sciences of the American University of Armenia approved this survey. Participants received oral consent (Appendix 4) before started the interview. The participants were fully informed about the study and its purpose, expected risks and benefits for participation in the study and

confidentiality for study participants. It was explained that there was no risk for them as a participant in this study and that they will not receive any direct benefit from their participation. Participants were informed that their participation could assist in improving future health programs related to diarrhea management in Armenia, from which they may gain indirect benefit. The only inconvenience was their time spent on the 10-minute telephone interview. No personal identifiers were collected. All data forms will be destroyed after six months after completion of this study.

Results

Demographic Data

Overall, 253 mothers participated in this survey (Figure 1). Thirty-five percent of respondents were from "Manuk" polyclinic and 65.0% was from "#12" polyclinic; the two polyclinics are located in different districts of Yerevan. The eligibility rate was 91.0% (314/346) and the response rate was 81.0% (253/314). In Table 2 the socio-demographic characteristics of mothers with children under two years-of-age are presented. Most of the respondents (98.8%) were married. About 53.3 % (136/253) of the mothers graduated from university. The mean age of mothers was 28 years (ranging from 18-42). The majority of mothers were currently unemployed (87.0%). The largest number of respondents, 44.3% (112/253), reported a monthly family income of 100,000 – 250,000 AMD. The number of children at home ranged from one to four, with 93.7 % (237/253) of all mothers having exactly one child under the age of two years and with the remaining 6.3% (16/253) of mothers having two children less than two years of age. The percentage of male children was 51.8% (131/253) and female was 48.2% (122/253). For each participating household there was only one mother who had at least one child under the age of two years.

Out of the 253 participating households, 30.0% (76/253) of all mothers reported at least one child under age of two years who had diarrhea during the last three months. About 6.5% (5/76) of these children with diarrhea had dysentery (blood in the stools). Mean duration of diarrhea was five days (ranging from 1-35 days). Diarrhea prevalence was higher among children ranging in age from 12-24 months than those 0-12 months of age (Graph 1).

Knowledge about diarrhea

Among the causes of diarrhea identified by mothers, 56.9% (144/253) of mothers considered spoiled food as the leading cause of diarrhea. Other causes and sources of diarrhea that mothers identified were dirty conditions (33.3%), being cold (24.9%), teething (16.6%), some infections (13.0%), breast milk (5.9%), and water with 4.3% (Graph 2).

Table 3 summarizes the responses of mothers identifying risk factors for diarrhea. About 98.0% (248/253) of mothers were in agreement that spoiled food can cause diarrhea. The number of mothers who agreed and disagreed that high food or liquid intake can cause diarrhea were approximately the same, with 27.7% (70/253) and 30.0% (76/253) respectively. For the question, "do you agree that breast milk can be the cause of diarrhea?" 46.3% (117/253) of mothers were in agreement, 7.9% (20/253) neither agreed nor disagreed, 37.9% (96/253) disagreed and 7.9% (20/253) did not know. When mothers were asked the same question for formula milk, 64.0% (162/253) of mothers agreed that formula milk can cause diarrhea, 4.3% (11/253) neither agreed nor disagreed, 17.8% (45/253) disagreed and 13.9% (35/253) did not know. Almost all of the mothers (91.7%) agreed that dirty hands or dirty food might cause of diarrhea. The number of mothers who agreed and disagreed that contact with persons with diarrhea can spread diarrhea to children was approximately the same, with 38.7% (98/253) and 39.1% (99/253) respectively. In the question related to boiling water as a prevention of diarrhea, more mothers agreed with this question than disagreed with 62.1% (157/253) and 9.1% (23/253) respectively.

The greater part of mothers, 89.7% (227/253), considered that diarrhea is a serious condition because they thought it could lead to dehydration (37.9%), weakness (13.4%), intestinal dysfunction (9.5%), different infectious diseases (7.9%), exhaustion (7.5%) and death (4.7%) as shown in Graph 3. However, 7.1% (18/253) of mothers considered diarrhea as not serious. In an open-ended question, among mothers who felt childhood diarrhea was not serious most commonly (7/18) indicated that diarrhea is beneficial because it "cleans the intestines." For children with diarrhea, an equal percent of mothers, 44.7% (34/76), considered that their children's diarrhea was "mild" or "average" and only a few percent thoughts that it was "severe", with 10.5% (8/76). The greater part of mothers, 90.7% (69/76), thought that their children's lives were not in danger during the diarrhea episode.

Maternal diarrhea knowledge scores ranged from -3 (very poor) to 6 (very good). The mean knowledge score of mothers in the study was 1.7, with diarrhea knowledge scores approximately normally distributed (Graph 4).

Practices regarding diarrhea prevention and management

The majority of children had been "ever breastfeed" (95.0%), with the mean duration of breastfeeding at eight months and the mean duration of exclusive breastfeeding about three months.

A total of 69.7 % (53/76) of mothers with children who reportedly had diarrhea the previous three months sought assistance for their sick child. About 71.7 % (38/53) of these mothers sought assistance in a health center or clinic, 17.0 % (9/53) sought assistance for their sick child in a hospital and 7.5% (4/53) sought assistance from relatives (Graph 5). About 51.3% (39/76) of the children with diarrhea were given tea with mint or pomegranate, or juices (especially apple or carrot), 43.4% (33/76) of children with diarrhea were given "Rehydron" (ORS) to prevent dehydration, and 7.9% (6/76) of the children with diarrhea were given herbal medicines with chamomile, Hypericum and/or John's wort. A total of

40.7% (31/76) of the children with diarrhea were given anti-motility medicine and 15.7% (12/76) were given antibiotics. To treat diarrhea, 15.7% (12/76) of these mothers used enemas with "Rehydron", manganese solution or chamomile (Graph 6). The amount of drinking water given during the days of diarrheal episodes was more than usual in 59.2 % (45/76) of the cases, 25.0 % (19/76) of the children with diarrhea was provided the usual amount of water and 5.2% (4/76) were given less water than usual. The proportion of children who ate the same amount of food or ate less than usual was approximately the same with 40.7% (31/76) and 43.4% (33/76), respectively.

A total of 43.9% (111/253) of all children 0-2 years-of-age in households participating in the study had ever received antibiotics in their lifetimes. Among the children that received antibiotics, the largest percent, 38.7% (43/111), received antibiotics during the 6-12 months age period; only 1.8% (2/111) of the mothers that provided antibiotics to their children did so without a doctor's prescription. The most commonly used antibiotic was "Augmentin".

Bivariate analyses: t-test and chi-square

The results of this study showed that there were statistically significant ($p \le 0.05$) or marginally statistically significant (0.05< $p \le 0.10$) associations between duration of childhood diarrhea and maternal age, child age, mothers' health care seeking practices, homemade medicine use and anti-motility use (Table 4).

To test associations between childhood diarrhea prevalence and independent variables, a chi-square test was applied. No statistically significant associations were found for prevalence of diarrhea (Table 5).

Bivariate analyses: simple linear regression

All of the following associations between independent factors and duration of childhood diarrheal disease episode were found to be either statistically significant (p<0.05) or marginally statistically significant (0.05< p \leq 0.10). The result of the simple linear regression (SLR) showed that the reported mean duration of childhood diarrhea was higher by 3.6 days among the children who were less than 9 months of age as compared to the duration for children equal to or more than 9 months of age (Table 6). The mean duration of diarrhea was also higher by 2.8 days for children whose mothers were less than 30 years-of-age as compare to the duration for children whose mothers were equal to or older than 30 years-of-age (Table 6).

Healthcare seeking and treatment behaviors also were associated with duration of childhood diarrhea. The mean duration of childhood diarrhea was higher by 2.9 days among those children whose mothers sought health care from a physician than for those children who mothers did not seek health care from physician (Table 7). The mean duration of childhood diarrhea was higher by 3.5 days for those children whose mothers provided them anti-motility medicines than for those children who mothers did not provide them anti-motility medicines to treat diarrhea (Table 7). The mean duration of childhood diarrhea was higher by 5.6 days for children whose mothers gave them homemade medicine than those who did not give their children homemade medicines to treat childhood diarrhea (Table 7).

Finally, an association was found between mean knowledge score of mothers and maternal age- on the average, for each one year increase of maternal age there was an increase in maternal knowledge score on 0.1 units (Table 8).

For other variables there were no statistically significant differences in the mean duration and prevalence of childhood diarrhea.

Discussion

The study aim was to understand the associations of maternal knowledge and practices with prevalence and duration of childhood diarrhea to identify the gaps in their knowledge and practices to inform the development of interventions and to improve maternal management of childhood diarrhea.

Some findings of the current study were consistent with findings from previous studies. These findings included mothers' identification of spoiled food, being cold, teething, some infections, breast milk and water as causes of diarrhea (11).

Home treatments for diarrhea used by mothers in Armenia, as reported in this study, were rice water, "Narine" (a yogurt drink), tea with mint leaves or pomegranate, juices with apples or carrots, and herbal medicines with chamomile, Hypericum and/or John's wort. To treat diarrhea, some children were given antibiotics, used enemas and/or anti-motility medicines.

As in previous studies, findings in this study show that the duration of childhood diarrhea is shorter in children with older mothers than in younger mothers (6,7). This might be explained by the fact that older mothers are more likely to have more children and have gained experience in effective diarrhea management, thus shortening the duration of childhood diarrhea. Supporting this interpretation, this study also found that the maternal knowledge score increased for each year of maternal age; more experienced older mothers appeared to have acquired more accurate knowledge on the effective management of childhood diarrhea than less experienced younger mothers.

Similar to other studies (1), this study also found that among children under age two, the duration of diarrhea is greater in the younger children than in the older children. Children start to crawl during the ages of 6-11 months, which exposes children whit immature immune systems to new environmental contaminants, which could explain the longer duration of

diarrhea in the children under 9 months of age (14). Also, the longer duration of diarrhea among the children less than 9 months of age might be explained by the shorter duration of breastfeeding and early introduction of new food items, which might exposes the children to diarrhea- causing pathogens. The findings of one study showed that the duration of diarrhea is shorter among children who were breastfed more than three months (18).

Finally, the result of this study shows that the duration of childhood diarrhea was longer in those children whose mothers sought care from physicians, whose mothers used homemade/herbal medicine and whose mothers used anti-motility to treat diarrhea, which is consistent with other study findings (1). It is possible that for more severe cases of diarrhea mothers sought further care for their child. Thus may be that longer duration of childhood diarrhea (more severe cases of diarrhea) lead mothers to seek care rather than care seeking leading to longer duration of diarrhea.

Polyclinics were chosen by convenience sampling; any biases due to this selection would only put into question external validity, not internal validity. To reflect the population of mothers in the two policlinics, eligible mothers were selected through systematic sampling in the sampling frame; this assured proportional numbers of mothers based on the number of mothers in two polyclinics.

Data collection was conducted using telephone interviews, which excluded eligible mothers who do not have a functioning telephone; this increases the likelihood of selection bias if women without functioning phones differed from respondents by characteristics, which influenced the outcome. However, no more than 10.0% of eligible mothers lacked functioning telephones, which minimizes potential selection biases; because of the systematic sampling scheme used in the study, internal validity would not be violated by this bias.

Some mothers had difficulty recalling the time and details of their children's diarrheal episodes during the previous three months. Also, mothers' self-reported information

regarding sanitary hygienic behaviors and practices of childhood diarrhea management is a subject of reporting bias. However, these recall or reporting biases would likely to be non-differential and move results towards the null. Any statistically significant or marginally statistically significant findings would likely be more significant if any substantial recall and reporting biases of this kind were removed.

Recommendation

Since most of the diarrheal cases were treated at home, mothers need to have a basic knowledge about the management and practices of childhood diarrhea control, to shorten its duration, severity and prevalence of this life-threatening childhood disease. Based on the finding of this research, programs to increase mothers' knowledge about childhood diarrheal management could include an educational role for more experienced older mothers with younger mothers in a management of this disease. Respected older mothers who were shown to be more effective in the management of childhood diarrheal diseases than younger mothers could be trained to teach and provide examples for the less experienced younger mothers.

This study was a first step to explore the associations of maternal knowledge with the management of childhood diarrhea in Armenia. Further investigations are needed for a deeper understanding of these associations to further reduce the threat of diarrheal diseases to children.

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Table 1 Characteristics of variables

Variable Name	Type	Measurement
Dependent		
Duration of children diarrhea	Continuous	Numbers of days with diarrhea
Prevalence of diarrhea	Binary	1=Yes
	-	2=No
Independent		
Mothers age	Continuous	Number of years
Mothers marital status	Ordinal	1=Married
		2=Single
		3=Widowed
		4=Divorced
		5=Other
Mothers educational level	Ordinal	1=Secondary school
		2=High school
		3=College
		4=University
		5=Postgraduate
		6=Other
Mothers employment status	Binary	1=Employed
		2=Unemployed
Number of children under 2 years old	Continuous	Number of children (0-2 years
		old) in the family
Household income (AMD)	Ordinal	1=< 25,000
		2=25,000 – 49,999
		3=50,000 – 99,999
		4=100,000-250,000
		5=> 250,000
		6=Don't know/ Refuse to answer
Mean knowledge score	Continuous	Computed from the counts of correct
		and incorrect responses to
		knowledge questions
Mothers health services seeking	Binary	1=Sought care from physician
behavior		2=Did not seek care from physician

 Table 2
 Socio-demographic characteristics of respondents

	Percent (%)	Frequencies (n/N)
Mothers' marital status	(70)	(11/14)
Married	98.8%	(250/253)
Single	0.4%	(1/253)
Divorced	0.4%	(2/253)
Mothers' education	0.070	(2/233)
Secondary school	1.2%	(3/253)
High school	28.9%	(73/253)
College	16.2%	(41/253)
University	50.2%	(127/253)
Postgraduate	3.1%	(9/253)
Mothers' employment status		, ,
Employed	13.0%	(33/253)
Unemployed	87.0%	(220/253)
Family income level		
> 25 000 AMD	1.2%	(3/253)
25 000 – 49 999 AMD	0.8%	(2/253)
50 000 – 99 999 AMD	10.7%	(27/253)
100 000 – 250 000 AMD	44.3%	(112/253)
< 250 000AMD	20.9%	(53/253)
Don't know/Refuse to answer	22.1%	(56/253)
Sex of the child		
Male	51.8%	(131/253)
Female	48.2%	(122/253)
# of children at home		
1	50.2%	(127/253)
2	39.9%	(101/253)
3	7.9%	(20/253)
4	2.0 %	(5/253)
# of children at home (less than 2 years old)		
1	93.7%	(237/253)
2	6.3%	(16/253)

 Table 3
 Percent, frequencies of maternal responses about causes of diarrhea

	Agree	Neither agree nor disagree	Disagree	Don't know/Difficult to answer
Speiled food	98.0%	0.4%	0.0 %	1.6%
Spoiled food	(248/253)	(1/253)	(0)	(4/253)
High food / liquid intoles	27.7%	20.2%	30.0 %	22.2%
High food / liquid intake	(70/253)	(51/253)	(76/253)	(56/253)
Breast milk	46.3%	7.9%	37.9 %	7.9%
Breast milk	(117/253)	(20/253)	(96/253)	(20/253)
Formula milk	64.0%	4.3%	17.8 %	13.9 %
	(162/253)	(11/253)	(45/253)	(35/253)
Dirty food /dirty hands	91.7%	0.8%	4.3%	3.2 %
Dirty 100d /dirty flailds	(232/253)	(2/253)	(11/253)	(8/253)
Contact with persons	38.7%	4.3%	39.1 %	17.9 %
with diarrhea	(98/253)	(11/253)	(99/253)	(45/253)
Boiling water prevents	62.1%	9.5%	9.1%	19.3%
diarrhea	(157/253)	(24/253)	(23/253)	(49/253)

Table 4 ttest statistic between mean duration of childhood diarrhea (days) and study independent variables

Variables	Mean duration	p-value
Maternal age		
< 30 years old	6.0	0.06
\geq 30 years old	3.3	
Child age		
< 9 months	8.0	0.06
≥ 9 months	4.4	
Health care practices		
Sought care from physician	6.0	0.05
Did not seek care from physician	3.2	
Anti-motility medicine use		
Used anti-motility medicine	7.3	0.02
Did not use anti-motility medicine	3.7	
Homemade/ Herbal medicine		
Use Homemade/ Herbal medicine	10.3	0.04
Did not use Homemade/ Herbal medicine	4.8	

Table 5 chi-square statistic for the association between prevalence of childhood diarrhea and independent variables

% (Count) Variables Diarrhea			1		
Variables	Yes	p-value			
Maternal age	105	No			
> 30 years old	30.8% (28/91)	69.2% (63/91)	0.85		
< than 30 years old	29.6% (48/162)	70.4% (114/162)			
Maternal educational level					
Secondary school	0.0% (0/3)	100.0% (3/3)			
High school	31.5% (23/73)	68.5% (50/73)			
College	22.0% (9/41)	78.0% (32/41)	0.56		
University	32.3% (41/127)	67.7% (86/127)			
Postgraduate	33.3% (3/9)	66.7% (6/9)			
Mothers employment status					
Employed	21.2% (7/33)	78.8% (26/33)			
Unemployed	31.4% (69/220)	68.6% (151/220)	0.24		
Income level					
> 25,000 AMD	0.0% (0/3)	100.0% (3/3)			
25,000 - 49,999 AMD	50.0% (1/2)	50.0% (1/2)			
50,000 – 99,999 AMD	37.0% (10/27)	63.0% (17/27)			
100,000 – 250,000 AMD	30.4% (34/112)	69.6% (78/112)	0.56		
≤ 250,000 AMD	40.0% (18/53)	60.0% (35/53)			
Don't know/Refuse to	23.2% (13/56)	76.8% (43/56)			
answer					
Mothers marital status					
Married	30.4% (76/250)	69.6% (174/250)			
Single	0.0% (0/1)	100.0% $(1/1)$			
Widowed	0.0% $(0/0)$	0.0% $(0/0)$	0.52		
Divorced	0.0% $(0/2)$	100.0% (2/2)			
Other	0.0% (0/0)	0.0% (0/0)			
Number of children < 2					
years old					
1	29.5% (70/237)	70.5% (167/237)	0.50		
2	37.5% (6/16)	62.5% (10/16)			

Table 6 Simple linear regression analyses between duration of childhood diarrhea (days) and socio- demographic characteristics

Variables	Regression coefficient	p-value	95% confidence interval
Maternal age ≥ 30 years old < 30 years old (ref.)	-2.76	0.06	(-5.68; 0.17)
Child age > 9 months < 9 months (ref.)	-3.60	0.06	(-7.3; 0.16)

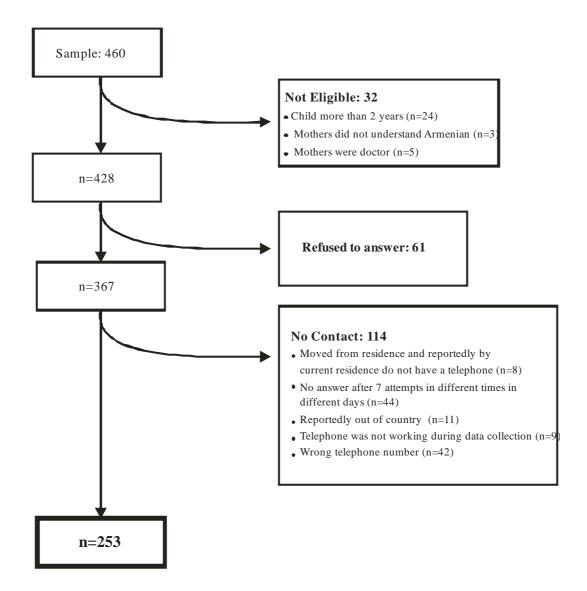
Table 7 Simple linear regression analyses between duration of childhood diarrhea and maternal practices

Variables	Regression coefficient	p-value	95% confidence interval
Health care practices Did not seek care from physician Sought care from physician (ref.)	-2.91	0.05	(-5.85; 0.03)
Anti-motility medicine use Did not use anti-motility medicine Used anti-motility medicine (ref.)	-3.50	0.02	(-6.5; - 0.54)
Homemade/ Herbal medicine Did not use Homemade/ Herbal medicine Use Homemade/ Herbal medicine (ref.)	-5.60	0.04	(-10.8; - 0.256)

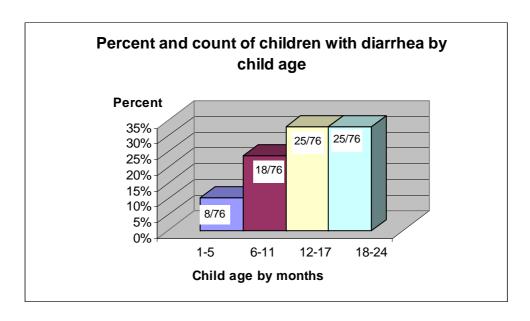
Table 8 Simple linear regression analyses between maternal knowledge score and maternal age

Variables	Regression coefficient	p-value	95% confidence interval
Maternal age (continuous)	0.07	0.002	(0.02; 0.11)

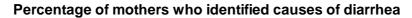
Figure 1 Study population

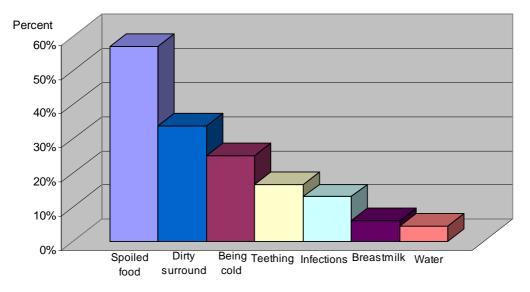


Graph 1

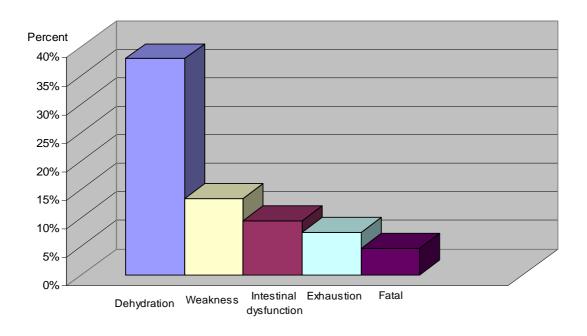


Graph 2



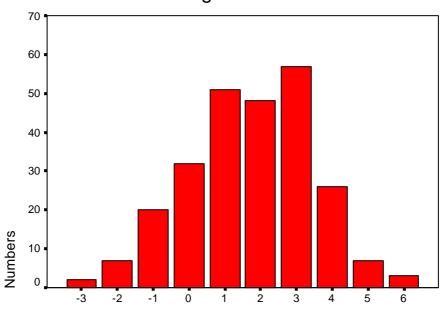


Graph 3 Percent of mothers' responses about diarrhea seriousness



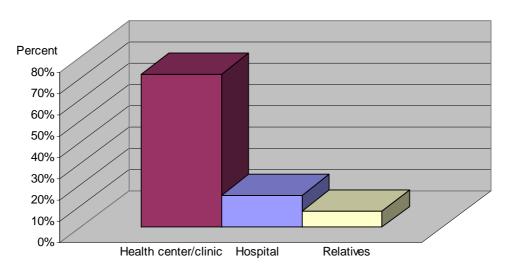
Graph 4





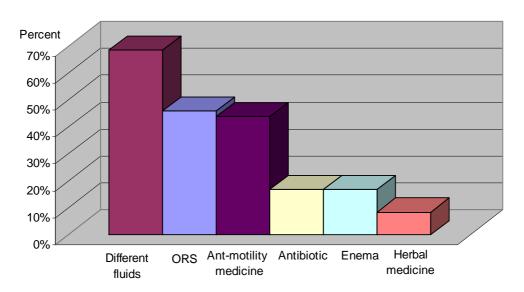
Graph 5

Percent of mothers' responses about practices for diarrhea prevention and management



Graph 6

Percent of mothers' practices for diarrhea prevention and management



Appendix 1 Questionnaire (English version)

Questionnaire

1.	How old are you?		ID#
2.	What is your marital status?	Date of interview	
	1. Married	(Day/Month/Year)
	2. Single		
	3. Widowed		
	4. Divorced		
	5. Other		
	3. What is the highest grade you finished?		
	1. Secondary school		
	2. High school		
	3. College		
	4. University		
	5. Postgraduate		
	6. Other		
	4. What is your occupation?		
	5. Do you currently work?		
	1. Yes		
	2. No		

6. How many children do you have?____

6.1 How many children do you have under 2 years of age____

	Child 1	Child 2	Child 3
7. When was your child			
born?			
	(Day/Month/Year)	Day/Month/Year)	(Day/Month/Year)
8. Sex of the child	1. Male	1. Male	1. Male
	2. Female	2. Female	2. Female
9. Has your child had diarrhea during the last 3 months?	 Yes No (Go to Q. 22) Don't know 	 Yes No(Go to Q. 22) Don't know 	1. Yes 2. No(Go to Q. 22) 3. Don't know
10. During the last time when your child had diarrhea			
10.1 How many days it	1	1	1
last	2. Don't know	2. Don't know	2. Don't know

10.2 On the average how	1. 1-2 times a day	1.1-2 times a day	1. 1-2 times a day
many watery stools did	2. 3-4 times a day	2. 3-4 times a day	2. 3-4 times a day
he/she have in a day?	3. More	3. More	3. More
	4. Don't know	4. Don't know	4. Don't know
Did she/he have			
10.3 Repeated vomiting?	1. Yes	1. Yes	1. Yes
	1.1 How many days	1.1 How many days	1.1 How many days
	2. No	2. No	2. No
	3. Don't know	3. Don't know	3. Don't know
10.4 Marked thirsty	1. Yes	1. Yes	1. Yes
	1.1 How many days	1.1 How many days	1.1 How many days
	2. No	2. No	2. No
	3. Don't know	3. Don't know	3. Don't know
10.5 Not eating well	1. Yes	1. Yes	1. Yes
	1.1 How many days	1.1How many days	1.1 How many days
	2. No	2. No	2. No

	3. Don't know	3. Don't know	3. Don't know
10.6 Not drinking well	1. Yes	1. Yes	1. Yes
	1.1 How many days	1.1 How many days	1.1 How many days
	2. No	2. No	2. No
	3. Don't know	3. Don't know	3. Don't know
	1. Yes	1. Yes	1. Yes
10.7 Blood in stools	1.1 How many days	1.1 How many days	1.1 How many days
	2. No	2. No	2. No
	3. Don't know	3. Don't know	3. Don't know
10.8 Fever	1. Yes	1. Yes	1. Yes
	1.1 How many days	1.1 How many days	1.1 How many days
	1.2 What was the highest temperature	1.2 What was the highest	1.2 What was the highest
		temperature	temperature
	2. No	2. No	2. No
	3. Don't know	3. Don't know	3. Don't know
10.9 Respiratory	1. Yes	1. Yes	1. Yes

problems, such us	2. No	2. No	2. No
difficulties with breathing	3. Don't know	3. Don't know	3. Don't know
10.10 Other symptoms			
11. In your opinion, was child's disease	 Mild Average Severe Don't know 	 Mild Average Severe Don't know 	 Mild Average Severe Don't know
12. Did you seek advice/care or treatment for the diarrhea from any person/institution?	1. Yes 2. No(Go to Q. 16)	1. Yes 2. No(Go to Q. 16)	1. Yes 2. No(Go to Q. 16)

12 377 6 1	1 77 % 1	1 77 % 1	1 11 1/1
13. Where or from whom	1. Hospital	1. Hospital	1. Hospital
did you seek care?	2. Health centre or clinic	2. Health centre or clinic	2. Health centre or clinic
(Record all responses)	3. Private physician	3. Private physician	3. Private physician
	4. Family doctor	4. Family doctor	4. Family doctor
	5. Nurse	5. Nurse	5. Nurse
	6. Pharmacy	6. Pharmacy	6. Pharmacy
	7. Traditional healer	7. Traditional healer	7. Traditional healer
	8. Relative	8. Relative	8. Relative
	9. Friend	9. Friend	9. Friend
	10. Other	10. Other	10. Other
14. Why or when did you			
decide that you should			
take your child to doctor?			

15. How many days after	1. The same day	1. The same day	1. The same day
the diarrhea began did	2. After 1 day	2. After 1 day	2. After 1 day
you first seek advice or	3. After 2 days	3. After 2 days	3. After 2 days
treatment?	4. > than 2 days	4. > than 2 days	4. than 2 days
	5. Don't remember	5. Don't remember	5. Don't remenber
16. In your opinion was	1. Yes	1. Yes	1. Yes
your child's life in danger	2. No	2. No	2. No
during this episode due to	3. Don't know	3. Don't know	3. Don't know
diarrhea?			
17. Did the physician said	1. Yes	1. Yes	1. Yes
that your child's life in	2. No	2. No	2. No
danger during this	3. Don't know	3. Don't know	3. Don't know
episode of diarrhea?			
18. Was he/she given any			
of the following to drink			

after he/she having the			
diarrhea:			
18.1 A fluid made from a	1. Yes	1. Yes	1. Yes
special packet called	2. No	2. No	2. No
"Rehydron"	3. Don't know	3. Don't know	3. Don't know
18.2 Other fluids	1. Yes	1. Yes	1. Yes
	1.1 Specify	1.1 Specify	1.1 Specify
	2. No	2. No	2. No
	3. Don't know	3. Don't know	3. Don't know
19. What else	1. Antibiotic	1. Antibiotic	1. 1Antibiotic
Did you do to treat the	1.1 Specify	1.1 Specify	1.1 Specify
diarrhea?	1.2 How often a day	1.2 How often a day	1.2 How often a day
	2. Anti-motility medicine	2. Anti-motility medicine	2. Anti-motility medicine

2.1 Specify	2.1 Specify	2.1 Specify
2.2 How often a day	2.2 How often a day	2.2 How often a day
Homemade/herbal medicine	2. Homemade/herbal medicine	3. Homemade/herbal medicine
3.1 Specify	3.1 Specify	3.1 Specify
3.2 How often a day	3.2 How often a day	3.2 How often a day
. Enema	4. Enema	4. Enema
.1 What fluid did you use in the	4.1 What fluid did you use in the	4.1 What fluid did you use in the
nema?	enema?	enema?
.2 How often a day	4.2 How often a day	4.2 How often a day
5. Other	5. Other	5. Other
- 1	2.2 How often a day Homemade/herbal medicine 3.1 Specify 3.2 How often a day Enema 1 What fluid did you use in the nema? 2 How often a day 2 How often a day	2.2 How often a day

Now I would like to			
know how much			
(NAME) was given to			
drink during the diarrhea			
(including breast milk).			
20. Was he/she given	1. Nothing to drink	1. Nothing to drink	1. Nothing to drink
	2. Given much less than usual	2. Given much less than usual	2. Given much less than usual
	3. About the same	3. About the same	3. About the same
	4. More than usual	4. More than usual	4. More than usual
	5. Don't know	5. Don't know	5. Don't know
21. When child had	1. Nothing to eat	1. Nothing to eat	1. Nothing to eat
diarrhea, was he/she	2. Given much less than usual	2. Given much less than usual	2. Given much less than usual
given	3. About the same	3. About the same	3. About the same
	4. More than usual	4. More than usual	4. More than usual
	5. Don't know	5. Don't know	5. Don't know

22. Has child ever been breastfeed?	1. Yes 2. No (Go to Q. 26)	1. Yes 2. No(Go to Q. 26)	1. Yes 2. No(Go to Q. 26)
	3. Don't know	3. Don't know	3. Don't know
23. Is he/she still being	1. Yes	1. Yes	1. Yes
breastfeed?	2. No	2. No	2. No
24. If yes, for how long in			
months?	1	1	1
	2. Since now (Go to Q. 28)	2. Since now (Go to Q. 28)	2. Since now (Go to Q. 28)
25. If yes, how long (in			
months) was your child			
breastfed without adding			
other foods or juices?			

26. If no, what kind of	1. infant formula	1. infant formula	1. infant formula
food was initiated?	2. animal milk	2. animal milk	2. animal milk
(check all that apply)	3. yogurt	3. yogurt	3. yogurt
	4. Narine	4. Narine	4. Narine
	5. Other, specify	5. Other, specify	5. Other, specify
27. How old was your			
child when you first gave			
him food other that breast			
milk? (response category			
"never" (2) means "did			
not give during the first			
year of life")			
27.1 Infant formula	1	1	8
	2. Never	2. Never	9. Never
	3. Do not remember	3. Do not remember	10. Do not remember

27.2 Animal milk	1	1	1
	2. Never	2. Never	2. Never
	3. Do not remember	3. Do not remember	3. Do not remember
27.3 Yogurt	1	1	1
	2. Never	2. Never	2. Never
	3. Do not remember	3. Do not remember	3. Do not remember
27.4 Narine	1	1	1
	2. Never	2. Never	2. Never
	3. Do not remember	3. Do not remember	3. Do not remember
27.5 Porridge	1	1	1
	2. Never	2. Never	2. Never
	3. Do not remember	3. Do not remember	3. Do not remember
27.6 Vegetables	1	1	1
	2. Never	2. Never	2. Never
	3. Do not remember	3. Do not remember	3. Do not remember
27.7 Fruits	1	1	1

	2. Never	2. Never	2. Never
	3. Do not remember	3. Do not remember	3. Do not remember
27.8 Meat	1	1	1
	2. Never	2. Never	2. Never
	3. Do not remember	3. Do not remember	3. Do not remember
27.9 Eggs	1	1	1
	2. Never	2. Never	2. Never
	3. Do not remember	3. Do not remember	3. Do not remember
27.10 Cheese	1	1	1
	2. Never	2. Never	2. Never
	3. Do not remember	3. Do not remember	3. Do not remember
28. In the first 24 months	1. Yes	1. Yes	1. Yes
of life, did your child	2. No (Go to Q. 30)	2. No (Go to Q. 30)	2. No (Go to Q. 30)
have any antibiotics?	3. Don't know	3. Don't know	3. Don't know

29.1 If yes, during what	1. During the first month	1. During the first month	1. During the first month
time period?	2. 1-6 months	2. 1-6 months	2. 1-6 months
	3. 6-12 months	3. 6-12 months	3. 6-12 months
29.2 Was the antibiotic	1. Yes	1. Yes	1. Yes
prescribed by the doctor?	1.1 Specify	1.1 Specify	1.1 Specify
	1.2 Don't know	1.2 Don't know	1.2 Don't know
29.3 Did you use all the	2. No	2. No	2. No
drugs prescribed by the	3. Don't know	3. Don't know	3. Don't know
doctor?	1. Yes	1. Yes	1. Yes
	2. No	2. No	2. No
20. And your abildren to	laying in the garden (outside of the home	.\0	

- 30. Are your children playing in the garden (outside of the home)?
 - 1. Yes
 - 2. No
- 31. Are you washing your child's hands before eating?
 - 1. Yes
 - 2. No

32. How o	often do you bathing your children?
33. Are yo	ou washing your child's toys?
1.	Yes
2.	No
34. (If yes)
1.	Every day
2.	Every week
3.	Every month
4.	Every 6 months
5.	Every year
35. Are yo	ou washing your child's bottles?
1.	Yes
2.	No
36. (If yes)
1.	Every day

2. Every week					
3. Every month					
4. Every 6 months					
5. Every year					
37. In your opinion, is diarrh	nea serious condition?				
1. Yes					
2. No					
3. Don't know					
38. (If yes) Why?					
39. (If no) Why?					
40. In your opinion what do					
41. Do you agree that?	y 04 011111 15 011 0 1110111 0	ause of charmou.			
41. Do you agree mat:					
	1. Agree	2. Neither agree nor disagree	3. Disagree	4. Don't know/Difficult to answer	
1. Spoiled food can be the cause of diarrhea					
2. High food or liquid intake can be the cause of diarrhea					

3. Breast milk can be the cause of diarrhea		
4. Formula milk can be the cause of diarrhea		
5. Diarrhea is related to dirty food and dirty hands		
6. Contact with persons with diarrhea		
7. Boiling water prevents diarrhea		

42. Approximately how much money did your family spend last month?

- 1. Less than 25,000 AMD
- 2. 25,000 49,999 AMD
- 3. 50,000 99,999 AMD
- 4. 100,000 250,000 AMD
- 5. More than 250,000 AMD
- 6. Don't know/ Refuse to answer

Thank you!

Appendix 2 Questionnaire (Armenian version)

Հարցաթերթիկ

1.	Դուք լ	ջանի տարեկան եք?
2.	Ինչպի	ոսին է Ձեր ամուսնական կարգավիճակը?
	1.	Ամուսնացած
	2.	Միայնակ
	3.	Այրի
	4.	Ամուսնալուծված
	5.	\mathbf{u}_{JL}
3.	Որն է	Ձեր կրթական մակարդակը?
	1.	8-րդ դասարան
	2.	10-րդ դասարան
	3.	Թերի բարձրագույն
	4.	Քարձրագույն
	5.	Մագիստրոս

ID #	
Հարցազրույցի ամսաթիվ	_
Օր/ամիս/Տարի	

	6. Այլ
4.	Որն է Ձեր մասնագիտությունը?

5. Այժմ Դուք աշխատում եք?

1. Ujn

2. Ոչ

6. Քանի երեխա Դուք ունեք _____

6.1 Մինչև 2 տարեկան քանի երեխա Դուք ունեք _____

	Երեխա 1	Երեխա 2	Երելսա 3
7. Երբ է Ձեր երեխան ծնվել?			
	(օր/ամիս/տարի)	(օր/ամիս/տարի)	(օր/ամիս/տարի)
8. Երեխայի սեռը	1. Տղա	1. Snu	1. Sղա
	2. Աղջիկ	2. Աղջիկ	2. Աղջիկ
9. Ձեր երեխան	1. Ujn	1. Ujn	1. Ujn
փորլուծություն ունեցել է	2. Ոչ (Անցնել հ. 22)	2. Ոչ (Անցնել հ. 22)	2. Ոչ (Անցնել h. 22)
անկախության օրվանից	3. Չգիտեմ	3. Չգիտեմ	3. Չգիտեմ
(Սեպտեմբերի 21)-ից հետո?			

10. Ձեր երեխայի վերջին			
փորլուծությունը			
10.1 Քանի օր տևեց	1	1	1
	2. Չգիտեմ	2. Չգիտեմ	2. Չգիտեմ
10.2 Մոտավորապես քանի	1. 1-2 անգամ	1. 1-2 անգամ	1. 1-2 անգամ
ջրիկ կղանքային	2. 3-4 անգամ	2. 3-4 անգամ	2. 3-4 անգամ
արտազություն ուներ մեկ	3. Ավելի	3. Ավելի	3. Ավելի
օրվա ընթացքում?	4. Չգիտեմ	4. Չգիտեմ	4. Չգիտեմ
Նա ուներ			
10.3 Կրկնվող փսխունք?	1. Ujn	1. Ujn	1. Ujn
	Քանի օր	1.1 Քանի օր	1.1 Քանի օր
	2. Ωξ	2. Ωξ	2. Ωξ
	3. Չգիտեմ	3. Չգիտեմ	3. Չգիտեմ
10.4 Նկատելի ծարավի	1. Ujn	1. Ujn	1. Ujn
զգացողություն	Քանի օր <u></u>	1.1Քանի օր	1.1 Քանի օր
	2. Ωξ	2. Ωξ	2. Ωξ

	3. Չգիտեմ	3. Չգիտեմ	3. Չգիտեմ
105 Լավ չէր ուտում	1. Ujn	1. Ujn	1. Ujn
	1.1 Քանի օր	1.1 Քանի օր	1.1 Քանի օր
	2. Ωξ	2. Ոչ	2. Ωξ
	3. Չգիտեմ	3. Չգիտեմ	3. Չգիտեմ
10.6 Լավ չէր խմում	4. Ujn	1. Ujn	1. Ujn
	4.1 Քանի օր	Քանի	Քանի օր <u></u>
	5. Ω _ξ	op	2. Ωξ
	6. Չգիտեմ	2. Ωξ	3. Չգիտեմ
10.7 Արյուն կղանքի մեջ	4. Ujn	3. Չգիտեմ	1. Ujn
	4.1 Քանի օր	1. Ujn	1.1 Քանի օր
	5. Ωξ	Քանի օր <u></u>	2. Ωξ
	6. Չգիտեմ	2. Ωξ	3. Չգիտեմ
		3. Չգիտեմ	
10.8 Քարձր ջերմություն	1. Ujn	I. Ujn	1. Ujn
	Ք անի օր	1.1Քանի օր	1.1Քանի օր

	1.3 Որն էր ամենաբարձր	Որն էր ամենաբարձր	Որն էր ամենաբարձր
	ջերմաստիճանը	ջերմաստիճանը	ջերմաստիճանը
	2. Ω _ξ	2. Ωչ	2. Ω _ξ
	3. Չգիտեմ	3. Չգիտեմ	3. Չգիտեմ
10.9 Շնչառական	1. Ujn	1. Ujn	1. Ujn
պրոբլեմներ, օրինակ դժվար	2. Ω _ξ	2. Ωչ	2. Ωξ
շնչառություն	3. Չգիտեմ	3. Չգիտեմ	3. Չգիտեմ
10.10 Այլ նշաններ			
11. Ձեր կարծիքով երեխայի	1. Թեթև	1. Թեթև	1. Թեթև
հիվանդությունը	2. Միջին	2. Միջին	2. Միջին
	3. Ծանր	3. Ծանր	3. Ծանր
	4. Չգիտեմ	4. Չգիտեմ	4. Չգիտեմ
12. Դուք որևէ մեկից կամ			
հիմնարկությունից խորհուրդ,	1. Ujn	1. Ujn	1. Ujn
հոգածություն կամ բուժում	2. Ոչ (անցնել հ. 16)	2. Ոչ (անցնել h. 16)	2. Ոչ (անցնել հ. 16)

ստացել եք կապված			
փորլուծության հետ?			
13. Որտեղ կամ ում կողմից	1. Հիվանդանոց	1. Հիվանդանոց	1. Հիվանդանոց
13. Որաալ գաս ուս գողարց	1. Վրվասդասոց	1. Վրվասդասոց	1. Վրզաա <u>դ</u> ասոց
եք Դուք այն ստացել?	2. Առողջապահական	2. Առողջապահական	2. Առողջապահական
(Գրանցել բոլոր	կենտրոն, պոլիկլինիկա	կենտրոն, պոլիկլինիկա	կենտրոն, պոլիկլինիկա
պատասխանները)	3. Մասնավոր բժիշկ	3. Մասնավոր բժիշկ	3. Մասնավոր բժիշկ
	4. Ընտանեկան բժիշկ	4. Ընտանեկան բժիշկ	4. Ընտանեկան բժիշկ
	5. Բուժքույր	5. Բուժքույր	5.
	6. Դեղատուն	6. Դեղատուն	6. Դեղատուն
	7. Ավանդական բուժող	7. Ավանդական բուժող	7. Ավանդական բուժող
	(հեքիմ)	(հեքիմ)	(հեքիմ)
	8. Բարեկամ	8. Բարեկամ	8. Քարեկամ
	9. Ընկեր	9. Ընկեր	9. Ընկեր
	10. Այլ	10. Այլ	10. Այլ

14. Ինչու կամ երբ Դուք			
որոշեցիք, որ Ձեր երեխային			
պետք է բժշկի տանել?			
15. Փերլուծությունը սկսելուց	1. Նույն օրը	1. Նույն օրը	1. Նույն օրը
քանի օր հետո Դուք	2. 1 op htunn	2. 1 օր հետո	2. 1 օր հետո
ստացաք խորհուրդ կամ	3. օր հետո	3. 2 օր հետո	3. 2 օր հետո
բուժում?	4. >քան 2 օր	4. > քան 2 օր	4. > քան 2 օր
	5. Չեմ հիշում	5. Չեմ հիշում	5. Չեմ հիշում
16. Ձեր կարծիքով	1.UJn	1.Ujn	1.UJn
փորլուծության ժամանակ	2. Ωξ	2. Ω _ξ	2. Ωξ
երեխայի կյանքը վտանգի	3. Չգիտեմ	3. Չգիտեմ	3. Չգիտեմ
տակ էր?			

17. Քժիշկը ասել է, որ	1.Ujn	1.UJn	1.Ujn
փորլուծության ժամանակ	2. Ոչ	2. Ոչ	2. Ω _ξ
երեխայի կյանքը վտանգի	3. Չգիտեմ	3. Չգիտեմ	3. Չգիտեմ
տակ է?			
18. Արդյոք փորլուծության			
ժամանակ երեխային տրվել			
է, նշվածներից որևէ մեկ			
տեսակ հեղուկը։			
18.1 Հատուկ հեղուկ	1. Ujn	1. Ujn	1. Ujn
"Ռեգիդրոն"	2. Ω _ξ	2. Ωξ	2. Ω _ξ
	3. Չգիտեմ	3. Չգիտեմ	3. Չգիտեմ
18.2 Այլ հեղուկներ			

19. Որիշ ինչ եք արել	1. Անտիբիոտիկ	1. Անտիբիոտիկ	1. Անտիբիոտիկ
փորլուծությունը բուժելու	1.1 ճշտել	1.1 ճշտել	1.1 ճշտել
համար?	1.2 Մեկ օրվա մեջ քանի	1.2 Մեկ օրվա մեջ քանի	1.2 Մեկ օրվա մեջ քանի
	անգամ	անգամ	անգամ
	2. Հակալուծողական	2. Հակալուծողական	2. Հակալուծողական դեղորայք
	դեղորայք	դեղորայք	2.1 Ճշտել
	2.1 ճշտել	2.1 ճշտել	2.2 Մեկ օրվա մեջ քանի
	2.2 Մեկ օրվա մեջ քանի	2.2 Մեկ օրվա մեջ քանի	անգամ
	անգամ	անգամ	
			3. Տանը պատրաստված/
	3. Տանը պատրաստված/	3. Տանը պատրաստված/	բոսական դեղորայք
	բոսական դեղորայք	բոսական դեղորայք	3.1 ճշտել
	3.1 Ճշտել	3.1ճշտել	3.2 Մեկ օրվա մեջ քանի
	3.2 Մեկ օրվա մեջ քանի	3.2 Մեկ օրվա մեջ քանի	անգամ
	անգամ	անգամ	

	4. Հոգնա	4. Հոգնա	4. Հոգնա	
	4.1 Ինչ հեղուկ եք օգտագործել	4.1 Ինչ հեղուկ եք օգտագործել	4.1 Ինչ հեղուկ եք օգտագործել	
	հոգնայի ժամանակ?		հոգնայի ժամանակ?	
	4.2 Մեկ օրվա մեջ քանի անգամ	4.2 Մեկ օրվա մեջ քանի անգամ	4.2 Մեկ օրվա մեջ քանի անգամ	
	5.Այլ	5.Այլ	5.Այլ	
Այժմ ես ուզում եմ իմանալ				
ինչքան հեղուկ է տրվել				
երեխային փորլուծության				
ժամանակ ներառյալ նաև				
կրծքի կաթը։				
20. Արդյոք նրան տրվել է	6. Ոչինչ	1. Ոչինչ	Ոչինչ	
խմելու	7. Ավելի քիչ քան սովորաբար	2. Ավելի քիչ քան սովորաբար	Ավելի քիչ քան սովորաբար	
	8. Մոտավորապես նույնը	3. Մոտավորապես նույնը	Մոտավորապես նույնը	

	9. Ավելին քան սովորաբար	4. Ավելին քան սովորաբար	Ավելին քան սովորաբար
	10. Չգիտեմ	5. Չգիտեմ	Չգիտեմ
21. Երեխայի փորլուծության	1. Ոչինչ	1. Ոչինչ	1. Ոչինչ
ժամանակ նրան տրվել է	2. Ավելի քիչ քան սովորաբար	2. Ավելի քիչ քան սովորաբար	2. Ավելի քիչ քան սովորաբար
ուտելու	3. Մոտավորապես նույնը	3. Մոտավորապես նույնը	3. Մոտավորապես նույնը
	4. Ավելին քան սովորաբար	4. Ավելին քան սովորաբար	4. Ավելին քան սովորաբար
	5. Չգիտեմ	5. Չգիտեմ	5. Չգիտեմ
22. Երեխան երբևիցէ կրծքով	1. Ujn	1. Ujn	1. Ujn
կերակրվել է ?	2. Ոչ (Անցնել հ. 26)	2. Ոչ (Անցնել հ. 26)	2. Ոչ (Անցնել հ. 26)
	3. Չգիտեմ	3. Չգիտեմ	3. Չգիտեմ
23. Սինչև հիմա	3. Ujn	1. Ujn	1. Ujn
շարունակվում է կրծքով	4. Ωչ	2. Ωξ	2. Ωξ
կերակրումը?			
24. Եթե այո քանի ամիս?			

25. Եթե այո, քանի ամիս է			
Ձեր երեխան միայն կրծքով	1	1	1
կերակրվել առանց այլ	2. Մինչև հիմա (Անցնել հ. 28)	2. Մինչև հիմա (Անցնել հ. 28)	2. Մինչև հիմա (Անցնել հ. 28)
սնունդ կամ հեղուկ տալու?			
26.Եթե ոչ, ինչ տեսակի	6. Արհեստական կեր	1. Արհեստական կեր	1. Արհեստական կեր
սնունդ է ընդունում (Նշել	7. Կենդանական կաթ	2. Կենդանական կաթ	2. Կենդանական կաթ
բուլոր թվարկվածները)	8. Յոգուրա	3. Յոգուրտ	3. Յոգուրտ
	9. Նարինե	4. Նարինե	4. Նարինե
	10. UJL	5. UJL	5. UJL

27. Քանի ամսեկան էր Ձեր			
երեխան, երբ առաջին անգամ			
տվեցիք կրծքի կաթից բացի			
այլ սնունդ? (Երբեք			
պատասխանը նշանակում է,			
որ "կյանքի առաջին տարվա			
ընթացքում չի տրվել՝՝			
27.1 Արհեստական կեր	1	1	1
	2. Երբեք	2. Երբեք	2. Երբեք
	3. Չեմ հիշում	3. Չեմ հիշում	3. Չեմ հիշում
27.2 կենդանական կաթ	1	1	1
	2. Երբեք	2. Երբեք	2. Երբեք
	3. Չեմ հիշում	3. Չեմ հիշում	3. Չեմ հիշում
27.3 Յոգուրտ	1	1	1
	2. Երբեք	2. Երբեք	2. Երբեք
	3. Չեմ հիշում	3. Չեմ հիշում	3. Չեմ հիշում

27.4 Նարինե	1	1	1
	2. Երբեք	2. Երբեք	2. Երբեք
	3. Չեմ հիշում	3. Չեմ հիշում	3. Չեմ հիշում
27.5 Շիլա	1	1	1
	2. Երբեք	2. Երբեք	2. Երբեք
	3. Չեմ հիշում	3. Չեմ հիշում	3. Չեմ հիշում
27.6 Քանջարեղեն	1	1	1
	2. Երբեք	2. Երբեք	2. Երբեք
	3. Չեմ հիշում	3. Չեմ հիշում	3. Չեմ հիշում
27.7 Միրգ	1	1	1
	2. Երբեք	2. Երբեք	2. Երբեք
	3. Չեմ հիշում	3. Չեմ հիշում	3. Չեմ հիշում
27.8 Միս	1	1	1
	2. Երբեք	2. Երբեք	2. Երբեք
	3. Չեմ հիշում	3. Չեմ հիշում	3. Չեմ հիշում
27.9 Qnı	1	1	1

	2. Երբեք	2. Երբեք	2. Երբեք
	3. Չեմ հիշում	3. Չեմ հիշում	3. Չեմ հիշում
27.10 Պանիր	4	1	1
	5. Երբեք	2. Երբեք	2. Երբեք
	6. Չեմ հիշում	3. Չեմ հիշում	3. Չեմ հիշում
28. Առաջին 24 ամիսների	1. Ujn	1. Ujn	1. Ujn
ընթացքում Ձեր երեխան	2. Ոչ (Անցնել հ. 30)	2. Ոչ (Անցնել h. 30)	2. Ոչ (Անցնել հ. 30)
օգտագործել է	3. Չգիտեմ	3. Չգիտեմ	3. Չգիտեմ
անտիբիոտիկ?			
29.1 Եթե այո, որ հասակում?	1. Առաջին ամսվա ընթացքում	1. Առաջին ամսվա ընթացքում	1. Առաջին ամսվա ընթացքում
	2. 1-6ամսվա ընթացքում	2. 1-6ամսվա ընթացքում	2. 1-6ամսվա ընթացքում
	3. 6-12 ամսվա ընթացքում	3. 6-12 ամսվա ընթացքում	3. 6-12 ամսվա ընթացքում

29.2 Անտիբիոտիկը	1. Ujn	1. Ujn	1. Ujn
նշանակված էր բժշկի	1.1ճշտել	1.1 ճշտել	1.1 Ճշտել
կողմից?	1.2 Չեմ հիշում	1.2 Չեմ հիշում	1.2 Չեմ հիշում
	2. Ωξ	2. Ωξ	2. Ωξ
	3 .Չգիտեմ	3. Չգիտեմ	3. Չգիտեմ
29.3 Դուք օգտագործել եք	1. Ujn	1. Ujn	1. Ujn
բժշկի կողմից նշանակված	2. Ոչ	2. Ωξ	2. Ωչ
բոլոր դեղերը?			

30. Ձեր երեխաները խաղում են պուրակում (դուրսը)?

- 1. Ujn
- 2. Ոչ
- 31. Լվանում եք Ձեր երեխայի ձեռքերը մինչև ուտելը?
 - 5. Ujn
 - 6. Ոչ
- 32. Ինչ հաճախականությամբ եք լողացնում Ձեր երեխային?

33. Դուք լվանում եք Ձեր երեխայի խաղալիքները?	
1. Ujn	
2. Ωξ	
34. Եթե այո, ինչ հաճախականությամբ	
1. Յուրաքանչյուր օր	
2. Յուրաքանչյուր շաբաթ	
3. Յուրաքանչյուր ամիս	
4. 6 ամիսը մեկ	
5. Յուրաքանչյուր տարի	
35. Դուք լվանում եք Ձեր երեխայի շիշը?	
1. Ujn	
2. Ոչ	
36. Եթե այո	
1. Յուրաքանչյուր օր	
2. Յուրաքանչյուր շաբաթ	
3. Յուրաքանչյուր ամիս	

4. 6 ամիսը մեկ				
5. Յուրաքանչյուր տարի				
37. Ձեր կարծիքով փորլուծությունը լո	ուրջ (վտանգավոր)	իրավիճակ է?		
1. Ujn				
2. Ω _ξ				
3. Չգիտեմ				
38. (Եթե այո) Ինչու?				
39. (Եթե ոչ) Ինչու?				
40. Ձեր կարծիքով փորլուծության առ	ռաջացման հիմնակ	ան պատճառը որն էն)	
				_
41. Դուք համաձայն եք, որ ?				
	1. Համաձայն եմ	2. Ոչ համաձայն եմ, ոչ էլ համաձայն չեմ	3. համաձայն չեմ	4. Չգիտեմ /Դժվարանաում եմ պատասխանել
1. Փչացած սնունդը փորլուծության				

առաջացման պատճառ կարող է

կարող է հանդիսանալ

իանդիսանալ
2. Շատ սննդի կամ հեղուկի ընդունումը

փորլուծության առաջացման պատճառ

3. Կրծքի կաթը փորլուծության առաջացման պատճառ կարող է հանդիսանալ		
4. Արհեստական կերը փորլուծության առաջացման պատճառ կարող է հանդիսանալ		
5. Փորլուծությունը կապված է կեղտոտ սննդի կամ ձեռքերի հետ		
6. Շփումը հիվանդ մարդու հետ փորլուծության առաջացման պատճառ կարող է հանդիսանալ		
7. Եռացրած ջուրը պաշտպանում է փորլուծությունից		

42. Անցյալ ամսվա ընթացքում Ձեր ընտանիքը մոտավորապես ինչքան գումար է ծախսել?

- 7. 25,000 դրամից քիչ
- 8. 25,000 49,999 դրամ
- 9. 50,000 99,999 npm $^{\circ}$
- 10. 100,000 250,000 դրամ
- 11. Ավելի քան 250,000 դրամ
- 12. Չգիտեմ/հրաժարվում է պատասխանելուց

Շնորհակալություն

Appendix 3 Consent form (English version)

TEXT OF ORAL CONSENT

Title of Research Project:

Maternal knowledge, attitudes and practices regarding diarrheal diseases, in Yerevan Explanation of Research Project:

I am a student at the American University of Armenia. My name is Satenik Papikyan. I am conducting a research study about maternal knowledge attitudes and practices of mothers on diarrheal diseases who have children ages 0-2 years old. You were randomly chosen from the lists which were provided by the policlinics.

We invite you to participate in this study because the knowledge gathered from you and other participants will allow us to better understand the situation with diarrhea and the study's findings can be used to make recommendations for future health educational programs for prevention and management of childhood diarrhea. If you agree, you will be one of 276 participants who are also residents of Yerevan and will participate in the study. The interview will last approximately 15-20 minutes. I will ask you questions and write down your opinion about different aspects regarding diarrheal diseases and its management. There is no risk for you as a participant in this study. You will not receive any benefit from the participation, except indirect benefit (information provided by policlinics) from the participation. Your personal experience and participation would contribute to this study. Your only inconvenience will be your time spent on the interview. Your participation is entirely voluntary. You have the right not to participate and you can stop the interview at anytime. All the information will be kept confidential. No name or personal identifiers will be collected. Completed information will be stored in a locked cabinet within a locked office throughout the data entry and analysis period. Only the researcher will have access to the data. Collected forms will be destroyed after 6 months. If you need more information about the study, please do not hesitate to contact the investigators in charge of this study: Professor Byron Crape: telephone: 512570 e-mail: bcrape@aua.am, Satenik Papikyan: telephone: 077 77 02 44, Email: satenik papikyan@edu.aua.com . If you want to talk to anyone about the research study because you may feel you have not been treated fairly or think you have been hurt by joining the study you should contact Varduhi Petrosyan - 51 25 68.

Do you choose to participate in this survey?

Appendix 4 Consent form (Armenian version)

Բանավոր համաձայնության տեքստ

Հետազոտության անվանումը՝

Մայրական գիտելիքները, վերաբերմունքը և փորձառությունը փորլուծության վերաբերյալ Երևանում

Հետագոտության բացատրությունը՝

Ես Հայաստանի ամերիկյան համալսարանի ուսանող եմ։ Իմ անունն է Սաթենիկ Պապիկյան։ Այս հետազոտությունը 0-2 տարեկան երեխաների մոտ փորլուծության վերաբերյալ մայրական գիտելիքների, վերաբերմունքի և փորձառության մասին է։ Դուք պատահականորեն ընտրվել եք պոլիկլինիկաների կողմից տրամադրված ցուցակից։

Մենք հրավիրում ենք Ձեզ մասնակցելու այս հետազոտությանը, որովհետև Ձեր և այլ մասնակիցների կողմից տրամադրած գիտելիքներտ հնարավորություն կընձեռի մեզ ավելի լավ հասկանալու փորլուծությանը վերաբերվող իրավիճակը և հետազոտության արդյունքները միգուցե օգտագործվեն ապագայի առողջապահական կրթական ծրագրերում բարեփոխումներ կատարելու նպատակով, որոնք կօգնեն երեխաների փորլուծությունը կանխարգելելու և ղեկավարելու։

Եթե Դուք համաձայնվեք, Դուք կլինեք մեկը 276 մասնակիցներից, որոնք նունպես Երևանի բնակիչ են և կմասնակցեն այս հետագոտությանը։

Հարցազրույցը կտևի մոտ 15-20 րոպե։ Ես կտամ հարցեր և գրի կառնեմ Ձեր կարծիքը կապված փորլուծության և այն ղեկավարելու մասին։

Դուք մասնակցելով այս հետազոտությանը որևէ ռիսկի չեք դիմում։ Դուք որև է օգուտ չեք ստանալու մասնակցությունից, բացի անուղղակի օգուտից (պոլիկլինիկաների կողմից տրամադրված ինֆորմացիա)։ Ձեր անձնական փորձը և մասնակցությունը կաջակցի այս հետազոտությանը։ Այս հարցազրույցի ընթացքում միակ անհարմարությունը Ձեր համար այդ ժամակի տրամադրումն է։ Ձեր մասնակցությունը ամբողջովին կամավոր է։ Դուք իրավունք ունեք չմասնակցելու հարցազրույցին և կարող եք ընդհատել այն ցանկացած պահի։ Հավաքագրված ինֆորմացիան կպահպանվի գաղտնի։ Ոչ մի անուն կամ անձը հաստատող ինֆորմացիա չի հավաքագրվի։ Հավաքագրված ինֆորմացիան կպահպանվի կողպված սենյակում՝ ամբողջ տվյալների մուտքագրման և վերլուծության ընթացքում։ Միայն հետազոտողը առընչություն կունենա հավաքագրված ինֆորմացիայի հետ։ Լրացված թերթիկները կոչնչացվի 6 ամիս հետո։

Եթե Դուք ավելի շատ ինֆորմացիայի կարիք ունեք կապված հետազոտության հետ կարող եք կապնվել հետազոտողների հետ տվյալ հեռախոսահամարներով՝ Պրոֆեսոր Քայրոն Քրեյփ՝ 512570 (անգլերեն), e-mail: bcrape@aua.am, Մաթենիկ Պապիկյան՝ 077 77 02 44, E-mail: satenik_papikyan@edu.aua.com. Եթե Դուք գտնեք, որ տվյալ հետազոտության ընթացքում Ձեզ պատճառվել է վնաս, կամ Ձեզ հետ անարդար են վերաբերվել, Դուք կարող եք դիմել՝ Վարդուհի Պետրոսյանին՝ 51 25 68:

Դուք ընտրում եք մասնակցել այս հետագոտությանը?