

**PREDICTORS OF HEALTH IN CHILDREN AGED 2-9 IN NOYEMBERYAN
REGION OF TAVOUSH MARZ, ARMENIA**

Master of Public Health Thesis Project Utilizing Professional Publication Framework

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Table of Contents

<i>Acknowledgment</i> _____	<i>iii</i>
<i>Abstract</i> _____	<i>iv</i>
<i>Introduction</i> _____	<i>5</i>
<i>Definition of the problem</i> _____	<i>9</i>
<i>Design and Methods of the CHCA survey</i> _____	<i>12</i>
Objectives _____	<i>12</i>
Design _____	<i>12</i>
Sampling _____	<i>13</i>
Data collection and management _____	<i>13</i>
<i>Design and methods of the evaluation of the secondary data of CHCA survey</i> _____	<i>15</i>
Research questions and hypothesis _____	<i>15</i>
Sampling _____	<i>15</i>
Definition of the variables _____	<i>16</i>
Data collection and management _____	<i>18</i>
<i>Results</i> _____	<i>19</i>
<i>Discussion</i> _____	<i>21</i>
<i>Limitations</i> _____	<i>22</i>
<i>Conclusions and recommendations</i> _____	<i>23</i>
<i>References</i> _____	<i>25</i>
<i>Tables</i> _____	<i>28</i>
<i>Table 1. Socio-demographic characteristics of examined children</i> _____	<i>28</i>
<i>Table 2. Socio-demographic characteristics of mothers</i> _____	<i>29</i>
<i>Table 3. Prevalence of anemia adjusted for mid altitude</i> _____	<i>29</i>
<i>Table 4. Adjustment of maximum hemoglobin concentration and hematocrit values for anemia.</i> _____	<i>30</i>
<i>Table 5. Prevalence of health problems in children in age 24-108 months in Noyemberyan region</i> _____	<i>30</i>
<i>Table 6. Prevalence of diseases and disorders in children in age 24-108 months in Noyemberyan region (%)</i> _____	<i>30</i>
<i>Table 7. Pearson square analysis of association between SES and health status.</i> _____	<i>31</i>
<i>Table 8. Pearson square analysis of association between mother's employment status and health status.</i> _____	<i>31</i>
<i>Table 9. Results of simple logistic regression model (Health status – dependent variable)</i> _____	<i>32</i>

<i>Table 10. Results of multiple logistic regression model on 2 covariates (Health status – dependent variables)</i>	33
<i>Appendices</i>	34
Appendix 1	34
Appendix 2	37
Appendix 3	40
Appendix 4	42

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Abstract

Rationale and main goal: The Children's Health Care Association (CHCA) conducted a health and nutritional survey among children aged 2-9 in 5 villages of the Noyemberyan region of Tavoush Marz, Armenia. CHCA sought to identify the main predictors of health as a key toward preventing disease.

Design and methods: The cross-sectional analytical study enrolled 497 participants using a cluster convenience sampling design. For the analysis of the secondary data, the analytic sample was restricted into 421. Instruments were developed to systematically record caretaker, provider, and laboratory/clinical assessments.

Results: SPSS and EpiInfo-2000 software were used to analyze the data. The most important predictors of health were higher family socioeconomic status (SES), maternal employment, and better children's nutritional status. All other factors examined (maternal education and age, duration of breastfeeding, and family size) were confounded by SES and hemoglobin level.

Conclusions: The findings suggest that programs that improve SES, nutritional status, and regional medical support will have the most impact on health. The World Bank/Government of Armenia Poverty Reduction Strategy already seeks to improve SES. Parental health education programs and integrated early childhood development strategies, including integrated management of childhood diseases (IMCI) and improved nutritional status of children, coupled with expanded screening programs and improved diagnostic support are still needed.

Introduction

Despite the extraordinary advances of the 20th century, a significant component of the burden of illness still remains attributable to infectious diseases, undernutrition, and complications of childbirth [1]. According to the WHO each year more than 10 million children in low-and middle-income countries die before they reach their fifth birthday [2]. However, seven in ten of these deaths are due to just five preventable and treatable conditions: pneumonia, diarrhea, malaria, measles, and malnutrition, and often to a combination of these conditions. Surveys, conducted in many countries show that many sick children are not properly assessed and treated, and parents are poorly advised due to such factors as financial and physical inaccessibility [2].

Socio-economic status (SES), as well as several other demographic factors, is critical for the health status of population. In many surveys such factors as mothers' educational level, employment status, age, and birth order are recognized as the main determinants of the health and nutritional status of children [3, 4]. A survey conducted by UNICEF in Kuwait in 1995, showed that stunting was most prevalent in first-order children and its "prevalence rate decreased gradually to reach its lowest value in late-order children." The same survey also revealed an association between mother's employment status and wasting [3].

Two common components of socio-economic status are education and income. A challenge for researchers is how to measure them to serve as the predictors of health outcomes. [4]. In many cases SES is considered as subjective [5,6]. Therefore, family income and socio-economic status, the main predictors of health status, are complex and poorly defined indicators. However, as a chain of causality, low SES may result in physical and mental health of population through low access to proper nutrition and to health and social services as well as various mechanisms such as "poor or "risky" health-related behaviors, social exclusion, prolonged and/or heightened

stress, loss of sense of control, and low self-esteem” [6]. In this situation, children are especially vulnerable.

Though stunting in preschool children is falling globally and is expected to continue to fall, reaching 29% in 2005 compared with 47% in 1980 [7], malnutrition is the most important risk factor of mortality and morbidity for a number of childhood illnesses [2]. The main causes of malnutrition are inadequate access to food, inadequate care of children and women, and inadequate access to basic health services, sometimes combined with an unhealthy environment [8]. Such diseases like acute-respiratory diseases, food allergy, functional stomach and gut-intestinal disorders are linked to feeding practices during the first 12 months of life [9]. In developing countries, another issue, also identified as a priority, is anemia, the main cause of which is using poor quality supplementary food, especially given before six months and in rural areas. This increases the risk of diarrheal and other nutrition-related diseases, and instead of growth advantage it is likely leading to a growth faltering [8,10]. However, nutrition and health status are not determined simply by food supply. Rather, these are the outcomes of three groups of factors: household food security, good health services (including a healthy environment), and quality of care [2,10].

The UNICEF-Cornell Colloquium on Care and Nutrition of the Young Child in 1995 developed the same concept describing the various factors that influence the quality of care. The framework, dedicated to care and nutrition of children, developed a conceptual model of nutrition status of young children. It highly emphasized the essence of access to health services, both preventive and curative procedures as well as good care, defined as a provision in the household and the community of time, attention and support to meet the physical, mental and social needs [8].

Many aspects of child health are determined by maternal health, age, and educational level, duration of breastfeeding as well as the quality of the social and physical environments in early years of life [10]. A study on main predictors of the maternal competence by first time mothers revealed that the more a mother is isolated from the society, the less her competence; and, conversely, the more balanced the mother's state of mind, the better she felt about succeeding in child care, and the more easy going the child [11].

Infant and childhood mortality and morbidity are the most sensitive indicators of inequity and poverty [2]. Over the past decade, despite considerable investment and effort by many partners to assure children the best start to life, indicators of health and nutritional status in the poorest countries have remained stagnant. At primary health care facilities in low-income countries, diagnostic supports such as radiology and laboratory services and pharmaceuticals are minimal or non-existent [2]. Due to scarcity of resources, most of developing countries and countries in transition do not include funding such widely accepted programs as periodic health check-ups for organized groups of children (pre-schools, schools, orphanages) in their national health policy. Most deaths among children after 2 years of age are due to diseases that can be prevented, and also can be treated very easily at home if they are recognized early. These early periodic detection programs are valuable sources of information about the population and one of the options to decrease the burden of childhood illness. Most are funded from external sources [6]. According to the new economic context of health care, each intervention should be clearly calculated in terms of its cost-effectiveness and cost-benefit [12]. From this point of view, a health screening program is a typical example of transforming outputs into years of life saved or into money saved [12]. The UNICEF promoted approach, called “triple-A approach” addresses the same issue and stands for assessment, analysis and actions [9]. Therefore, one of the

important parts of decision-making and problem solving is initial assessment. In order to achieve this goal UNICEF and other international organization in developing countries conducted several health and nutritional surveys. By analyzing the data, it was possible to determine the main causes of undernutrition and poor health status for developing intervention strategies that decrease morbidity and mortality. Specifically, the purposes of these health and nutritional assessment are to:

- ❑ Screen for any health emergency or risk from any emergency
- ❑ Identify the main causes of emergency, estimate its severity and geographical extent
- ❑ Assess their likely evolution and impact on health and nutritional state
- ❑ Identify the areas and the socioeconomic groups most affected or at risk
- ❑ Assess existing response capacity and identify the most effective measures to prevent or minimize the nutritional emergency; and
- ❑ Establish or expand existing surveillance, thus, the effectiveness of measures taken can be monitored over time [8].

The Kuwait National Survey and cross-sectional study on morbidity and morbidity-associated factors in Cameroon noted that such factors as birth order, family income and mother's education and employment status, and, in general, the poverty were found to affect the prevalence of undernutrition and morbidity in children [3, 13]. Among several factors affecting the prevalence of obesity among preschool children, birth order was found the main predictor. The result of the Kuwait survey suggests that the “first child received more care from the young mothers which may be reflected in overfeeding and hence obesity” [3]. It is also postulated that many mothers in the Middle East prefer to have an overweight or obese infant than an infant with normal body

weight [13]. This belief is more common among illiterate mothers, especially in developing countries [13].

Definition of the problem

The socioeconomic crisis in Armenia has had a profound and adverse impact on the public healthcare system, decreasing accessibility to health services for the larger public [14]. Indeed, the number of visits for medical service has declined dramatically in recent years [15]. The reason is not in the improved health of children, rather in the increase of medical service costs, and the lack of communication [15].

Since independence the structure of Armenia's economy has dramatically changed. "The share of industry in GDP dropped from 44.5% in 1990 to 23.4% in 1998, due to the war with Azerbaijan, the collapse in trade with the former Soviet Union and the transition to market prices" [14].

According to the Profile of Internal Displacements, [16] extreme poverty is increased in rural areas. In particular as an effect of the drought during summer 2000, approximately 55 % of the population cannot meet their basic food needs and such factors like unemployment, female head of household, refugee status, lack of access to land, pensioner status, and the lack of support from abroad, translated into high rates of malnutrition among children [16]. This is likely to contribute to an increase in the already high rate of anemia, which was, according to the Health and Demographic survey in 2000, about 39% in children aged 0-5 in Tavoush Marz [17].

Armenia inherited from the Soviet period the ineffective health care practices with heavy emphasis on hospital care [18]. In addition, public expenditure on health care fell from 2.7% of GDP in 1990 to 1.3% in 1997 and income of most care-takers dropped. Combined with use of clinically unapproved and costly ineffective guidelines, both at out-patient and in-patient level,

the situation was even more devastating [18]. Such practices cause heavy burden to both the health system and caretakers. However, the most families in Armenia are forced to pay themselves for the majority of their health care expenses through either formal or informal payments [18]. In this situation, the fundamental problem at the primary health care facilities is issue of access. Access has become excessively difficult for a large segment of the population, especially for vulnerable groups of the population and population from rural areas. The reason is lack of finance and transportation. All these factors result in the delay of care-seeking and the tendency for incorrect self-treatment [18].

Another factor, which also influences the quality of care, is lack of appropriate health services (radiology, laboratory) [14]. Moreover, the low level of utilization of basic health services is linked to low awareness at community household level. According to the Health Financing and Primary Health Care Development project, conducted in 1997 in Armenia, utilization of health services has been declining over the past decade: number of office visits (per capita/year) fell by 41% between 1990 and 1996, the number of home visits by physicians fell 53% [15]. So, health care system is directly hit by the economic crisis. This is especially emphasized in the regions, where availability and accessibility to health care has declined considerably due to increased costs, absence of specialists, and lack of transportation.

Also, some rural health facilities have been destroyed or damaged by the war or earthquake, and staff was forced to leave [2]. Tavoush Marz is one of the most impaired in this respect. This region constitutes roughly 10 per cent of the territory of Armenia but, given its location along 350 kilometers of border with Azerbaijan, it has been disproportionately affected by the problem of conflict-induced displacement [16]. At the same time, it has also suffered from internal displacement due to natural disasters, in particular mudslides. Half of the displaced households

in Tavoush as well as in Vayots Dzor and Gegharkounik Marzes consist of families of only one or two members. The other half consists mostly of young families. Typically, 50-60 per cent of the population, mainly women, children and the elderly, leave the villages for the summer pasture lands, where they live in temporary dwellings [16]. A survey, conducted in 54 villages in 5 Marzes of Armenia bordering Azerbaijan in 1998, showed that the only 60% of the researched frontier villages had medical offices and these had only 20% of the required personnel [16]. Certainly, these facts result in a quality of medical examination and treatment that is well below standard.

A recent UNICEF child health and nutritional assessment revealed considerable growth of various pathologies among children [15]. There is a diversity of uncongenial factors in Armenia influencing children's health. Long-term malnutrition (mainly in respect to vitamins, and microelements), disbacteriosis caused by disorders of nutrition, and helminthiasis, as well as insufficiency of vitamins, can lead to decreasing the body's resistance [15].

Similarly dangerous is the microclimate of houses and schools, especially during winter, (oven heating, air pollution) that is unsuitable to the minimal physiological demands. Anemia in children is observed at an average rate of 30% [19]. In comparison with 1990 the number of children under age 14 that suffer from tuberculosis had doubled by 1997 [15]. Alternations in physical development indexes are also recorded [20, 21]. The departure of physical indexes from the norm is attributed to qualitative and quantitative nutrition deficiency in children [20]. Many other health problems in preschool-age children, such as gastrointestinal diseases, tooth decay, postural deviations, and vision disorders are also prevalent [15].

Taking into account above mentioned health statistical data, low utilization as well as increasing inaccessibility of health services, which are more strongly emphasized in rural areas

the health and nutritional survey in children aged 2-9 was conducted in Nojembery region of Armenia by CHCA. This report represents the subsequent analysis of that data.

Design and Methods of the CHCA survey

Objectives

The CHCA survey targeted about 500 children from 4 villages (Koghb, Berdavan, Dovegh and Jujevan) equally geographically surrounding Noyemberyan. These places are parts of Tavoush Marz the most impacted by war with Azerbaijan (total population 150328) [16]. The survey was conducted with the financial support of Jinishian Memorial Foundation, involving specialists from the Republic Children's Clinical Hospital and also volunteers from the local NGO. The ultimate goal of the project was to improve the overall health and nutritional status of the children. Specifically, the purpose of the survey was to

- ❑ Detect diseases and disorders of children and evaluate their nutritional and health status;
- ❑ Find the possible associations between socio-demographic characteristics and nutritional status and health status of children;
- ❑ Determine main intervention strategies for improving health and nutritional status of children of selected region

Design

Taking into account that the purpose of the study was to define the prevalence of health problems in children, based disease-specific concept of health, and find possible association between independent variables and outcome, cross-sectional analytical study was conducted [22].

Sampling

The target population was purposely selected based on geography, age and health staffing cluster sampling. Initially 5 clusters (villages and one city Noyemberyan) were selected. One hundred children sampled by convenience from each cluster. The inclusion criterion was age of children from 24 to 108 months.

Data collection and management

The data was collected using the questionnaire-examination card, assessing child's development and past health status through interviewing the respondents (caretakers). The instrument was adopted from the several surveys on patient satisfaction by the primary health care and health and nutritional status in Armenia and USA [17, 23, 24]. The child examination card included social-demographic questions, questions from the history of present diseases and disorders, duration of breastfeeding as well as questions about pregnancy, its duration and complications. The remainder of the card was dedicated to an objective assessment of health status and treatment recommendations.

Before starting the program, the examination card was pre-tested and revised. In order to obtain accurate and reliable data a training program for the personnel on specific measurement and recording techniques was conducted, including not only theoretical explanations and demonstrations, but also providing an opportunity to practice the measurement techniques, as well as reading and recording the results [25]. The administration of the Republic Children's Clinical Hospital gave this opportunity.

Next step of the data collection process was the primary observation, including anthropometrical assessment (height and weight) and laboratory testing. Physicians selected

children for further instrumental investigations (abdominal ultrasonography, echocardiography, ENT and ophthalmologic observation), based on the previous data.

Anthropometrical assessment was done using UNICEF electronic scale and length/height board. The accuracy of the scales was checked before use at least twice daily during the survey. Field supervisors were responsible for checking the quality of measurements: this was achieved by routinely repeating measurements. Before answering questions, taking measurements and performing invasive procedures, mothers or other caretakers were familiarized with and signed the consent form. Children under five years of age received simple oral explanation of the study. Informed voluntary agreement of children in age 60-96 months was solicited in the presence of a parent.

Each child had his own examination card. All answers and findings as well as results of the investigations with final conclusion about the health statuses were fixed. The medical team presented to parents the booklets on child health care, "Your Child", published by the CHCA.

The survey lasted 8 months (November 2002- June 2003) and was implemented in 3 stages: preliminary, preparatory, and main. Several steps were accomplished during each of the stages.

The preliminary stage included the collection of the data about size of the population, location of selected villages, information about local customs and traditions, child health care and nutrition, and preparing training materials for the interviewers. During the preparatory stage the questionnaire, consent form and technical part were developed. The working group and schedule were formatted and the administration of the selected villages and local NGO informed about the survey. The field stage lasted 4 months and included the health assessment.

Design and methods of the evaluation of the secondary data of CHCA survey

The CHCA survey dataset included the necessary elements to address research questions of interest to this paper. The objectives and methods of this secondary analysis are presented here.

Research questions and hypothesis

The major research questions addressed by this study are the following:

- ❑ What is the prevalence of health problems in children aged 24-108 months in Noyemberyan region of Tavoush Marz in 2002?
- ❑ Whether the prevalence of health problems in children aged 24-108 months from families with low socio-economic status on 15% higher compared with children from high and middle income families?
- ❑ What are the main socio-economic, demographic and nutritional factors or combination of them predicting the health status of children in Noyemberyan district of Tavoush Marz in 2002?

The hypothesis of the study is: children from the families with low socio-economic status, low nutritional status, having unemployed, low educated and young mother more likely have a poor health than children from high and middle SES, normal nutritional status, and having the employed and educated mother. In an attempt to determine whether the above-mentioned factors influence the health in children, children were divided into two groups with low and high level of indicators. The outcome variable, health status, was dichotomous and defined as a healthy child or child having at least one health problem.

Sampling

Initially the study population consisted of 497 children, and the budget of the program allowed targeting such quantity of children. However, the theoretical sample size was calculated,

using the formula: $N = z^2 [P_1(1-P_1) + P_2(1-P_2)] / d^2$, where $z = 1.96$ (level of significance $\alpha = 0.05$), $P_1 = 0.55$, (55% of children from low SES will have at least one health problem), $P_2 = 0.4$ (40% of children from high SES will have at least one health problem), and $d = 0.15$ (15%), the assumed practical difference between frequency of health problems in children with low SES, and high and middle SES [22]. Thus, each group should contain at least 84 children, and two groups should equal to 168.

According to the survey purpose, about 497 children were examined in the study. Evaluating the data, 76 children have been excluded. The reason was that initially the research question of the evaluation program was addressed to children in age 24-108. Therefore, the exclusion criterion was age factor, and the analytic sample, drawn from cross-sectional study, has been restricted to 421. The theoretical calculation of the sample size with the proportion 1: 2 of unexposed (high SES) to exposed (low SES), using EpiInfo2000, also justified that the analytical sample size is entirely met the minimal sample size requirements.

Definition of the variables

In general, the health status, defined by the WHO is a “state of complete physical, mental and social well-being and not merely the absence of disease and infirmity” [26]. There are different health status measures, which are during recent 15 years were sufficiently well developed and tested [27]. These types of measures can be classified into two groups: a group for assessment of general health using the questionnaire and other instruments for assessing physical and mental health like Activities of Daily Living (ADL) or SF-36; and a second group that includes the measures for assessing the absence or severity of diseases and disorders [26]. First group measures are not applicable for children; therefore, early detection system including screening, developmental assessment, identifying the risk factors and protective factors for health and well-

being outcomes is the comprehensive way of intervention programs for children and their families [25]. It has long term benefits for physical and mental health, educational achievement and emotional functioning [2].

The clinical definition of the health status in this survey was based on the patient's history, coming from the detailed interviewing of the caretakers about complaints and recent illnesses. Other characteristics determining health status are diagnosis of a disease or disorder through physical examination, laboratory testing or other instrumental investigations. General conclusion on the health status is based on all these findings and made by a medical team.

Among independent variables, socio-economic status (SES) is widely used, and its most sensitive indicator was the family income. Aiming to estimate the SES only monetary value was used, excluding other sources of income such as farming, gifts and humanitarian assistance. The cut-off level of SES was family income, where the estimated basic package was less than 6,000 Armenian Dram per capita [27]. According to this definition the SES was classified as low and high. The impact of other independent variables on outcome like mothers' age, educational level and employment status, and child's gender and nutritional status were also taken into account. The levels of some independent variables were reduced for the analytic reasons. Mother's educational level was defined as high (more than 10 years old) and low (less or equal to 10 years of education) after reducing 4 levels. Breastfeeding, assessing the nutritional status of children was reduced from five levels into two: never breastfed or breastfed up to 2 months (one level) and breastfed more than 2 months (another level).

In children, anthropometrics are increasingly significant and the best indicators of nutritional status [20, 28]. Acute malnutrition or past (chronic) malnutrition is generally characterized by low weight-for-age (WA), which is an indicator of being underweight [2]. Mid-upper arm

circumference, which is used for estimating acute malnutrition in emergency cases were considered inappropriate. Another parameter - weight-for-height (WH) is an indicator that relates body mass to stature (wasting). Height-for-age (HA) is a measure of linear growth and considered as an indicator of past nutritional adequacy. Any deficit of this indicator is the sign of stunting [25]. As a cut-off level ± 2 Z-scores of WA, WH, and HA were considered abnormal.

Another method of nutritional assessment is determining the hemoglobin (Hb) concentration or hematocrit (Hct), where for children aged 2-5 and 5-8 years old anemia is defined as an hemoglobin concentration < 11.2 g/dl (hematocrit $< 34\%$) and 11.5 g/dl (hematocrit 34.5%) respectively [29, 30]. However, the effectiveness of screening on anemia will be lowered if the cut-off level is not adjusted for high and mid altitudes, mentioned in many studies [29] (Table 4). Therefore, during analysis of this study the cut-off level was defined as 11.4 g/dl ($11.2 + 0.2$) for children aged 2-5, 11.7 g/dl ($11.5 + 0.2$) for children aged 5-8, and 12.1 g/dl ($11.9 + 0.2$) for children after 8 (Table 3). [31, 32, 33]. These cut-off levels were defined due to adaptive responses of hematological parameters to high and mid altitude environment and the elevated hemoglobin concentration in high and low altitude is explained by systolic pulmonary arterial pressure (Ppa) difference [32].

Data collection and management

Collected data was paper-based information with different types of variable measurement. The data were coded and data screen was formatted, using SPSS-11 software package. In order to eliminate the errors cleaning and double entry with checking were performed, regrouping and recoding were used for analyzing the data [22]. The data, used for assessment of nutritional status were transferred and analyzed in EpiInfo2000. Main statistical methods, used to analyze the data were variance ratio, two-sample t-test with equal variances, Pearson chi-square, and

logistic regression. The study outcome, child's health status, was defined as a dichotomous variable.

Results

Main socio-demographic characteristics, included children's age groups, birth order, gender, SES, family size as well as mother's educational level, age, and employment status are presented in Tables 1 and 2. Forty-four percent of examined children were female. About eighty-one percent of children lived in poverty. Children were categorized into two age categories (2-<5 and 5-9 years old) that is more appropriate for analyzing the data. According to this about one-third of children were less than 5 years old.

The indicators related to mothers showed that about 44% mothers have a high educational level (Table 2). The mean age of the mothers was 30 years, and 18 % of them were categorized as young (aged 18-25) (Table 2). The data on duration of breastfeeding showed that about 15% of children were never breastfed or breastfed up to two months. As an important indicator of nutritional status, anemia was diagnosed in 7.9% of the participants. Among them, only four were defined as moderate anemia. According to the data, the mean hemoglobin level was 127.36g/L; the prevalence of anemia in children aged 2-<5 and aged 5-9 was 10.1% and 7.4% respectively (Table 3). The prevalence of stunting (low height for age) was defined in 11.88% cases, in which stunting in children aged 2-<5 are not significantly higher (12.4%) than in older age category (11%). The prevalence of wasting (low weight for age) and signs of acute malnutrition was 6.9% and 3.3% respectively.

Table 5 presents data about the prevalence of at least one health problem (55%) and the main diagnosed conditions. The more prevalent diseases are related to the ENT problems, uro-nephrologic, gastrointestinal and respiratory problems. Among children, having ENT and urinary

tract infections (UTI), more than half of cases were combined, which is the sign of infection. The prevalence of all diagnosed diseases is presented in Table 6.

The results of analytical part showed the association of main predictors of the health. One of the most important was socio-economic status. The Pearson chi square test, simple logistic regression and other tests showed statistically significant association between SES, mother's employment status, blood hemoglobin level, and health status of children (Tables 7 and 8). The chance of having child with at least one health problem in children from families with low income was 2.26 times higher than from families with high SES (Table 9). The same statistically significant association ($p\text{-value} < 0.05$) was defined between the level of hemoglobin and health status. Another finding showed that chance of having children with health problem in unemployed mothers significantly higher ($OR=1.52$) than in employed mothers (Table 9). The p -value of this result is 0.0509, which approaches, but does not reach statistical significance.

The analyses addressed toward finding the association between anthropometrical indicators and health status did not reveal a statistically significant relationship. The same should be mentioned about other variables, such as BF, birth order, family size, mother's age, and education level (Table 9). However, after including SES in the model, the regression coefficient of above-mentioned variables drastically changed, which shows statistically significant association with health status (Table 10). In the logistical regression analysis of two covariates the best combination was nutritional status with SES, which showed the higher prevalence of health problems in children from low-income families and having low nutritional status (Table 10).

The best two models of the multiple analysis, using three and four variables, found out through Hosmer-Lemeshow goodness-of-fit test, are presented in the Table 11. These models

indicated statistically significant association of health status with mother's age, educational level, child's birth order, SES, and mother's employment status. In these models, SES was positively associated with poor health after adjusting the other variables. Living in a low-income family, being young, having low educational level, and having child first in the birth order, is significantly associated with higher risk of having child with health problems.

Discussion

The findings of this study met the hypothesis of this study, implying that there is a statistically significant difference between health status of children from low and high SES. This fact once again confirmed how decisive and important the socio-economic factor is. Its influence also was confirmed by the fact of its confounding effect on all other variables, especially variables, defining nutritional status. The association between SES and health status suggests a chain of causality, starting from low access to adequate food intake and health care, and ending with low public awareness. Deteriorating health conditions are especially emphasized in children, having low nutritional status and living in low-income families. Children, having young, illiterate mothers from low-income families, which are explained by isolation from the society as well as lack of knowledge and practice on child health care have also high risk for poor health [12]. There is a same reasonable explanation for the association between mother's employment status and health status of children.

The findings also showed considerable increase in nephrological and ENT problems as well as organ-system abnormalities compared with data from the literature [34]. This can be explained by the absence of a systematic surveillance system in Armenia to identify and treat these disorders. Another reason is low awareness of parents on child health care issues in combination with lack of well-trained health professionals and diagnostic support in the selected area. A third

reason for such finding is the ecological situation in the region, mostly related to poor water and sanitation after the war [16].

Other interesting findings such as high percentage of low SES of the family (81%) and low level of anemia compared with the official statistics have been revealed [17, 27]. The explanation of such a low level of anemia, compared with 39% of anemia in Tavoush Marz, is the big difference between the proportion of preschool (31%) and school age (69%) children involved in the study. The world statistics shows that children aged 2-5 are more prone to have a low nutritional status and anemia than elder children [35]. On the other hand, anthropometrical data (stunting, wasting) showed almost the same results as it were revealed by the survey conducted by the UNICEF in 1998 and Health Demographic Survey 2000 [17, 36]. It could be concluded that the situation has not changed since that time, but the observed data is considered as generalizable only for the region, but not for the whole country. Comparing the survey data on duration of breastfeeding with the data from survey, done by UNICEF, it was revealed that the percent of children never breastfed decreased from 5% in 1998 to 1.2%. This fact is explained by the continuous promotion of breastfeeding with implementing Baby-friendly hospitals and polyclinics in the country.

Limitations

The presented data and results, certainly, are not ideal and there are some biases, which could limit and change the final results.

First, despite testing and revising the instrument as well as training the medical team the instrument and interviewer errors could occurred during the survey, which somehow may create the bias for further analysis of the data.

Another limitation is the selection bias. According to the Health Demographic Survey 2000 Population Pyramid of Armenia, the distribution of the proportions of children under 5 and from 5 to 9 years old was approximately the same. Therefore, in this case, where the percentage of children under five is more than twice less than children aged 5-9, a selection bias likely occurred. This is important in terms of that the morbidity and the low indicators of nutritional status are more prevalent in children under 5 than in older children, which could somehow decrease the real picture.

Third important bias, which may exist, is that the conclusion about the health status was based on all findings, determined by the medical team, without keeping inter-rater reliability.

Recall bias is the fourth type of limitations. This is especially related to the question about family income. The respondents very often exaggerate the real condition or, conversely, may minimize.

As a part of limitations of the study it is worth mentioning that many studies revealed the relation between intestinal parasites, genetics, and nutritional status. Therefore, only anthropometrics, BF and hemoglobin level do not allow to account the impact of such kind of non-nutritional factors like helminthes, diseases and genetics [37].

Conclusions and recommendations

The results of the study marked notable difference in health status of children from the low and high SES as well as children having employed and unemployed young mothers, high and low level of hemoglobin. Despite different programs and strategies such as immunization program, integrated management of childhood illness (IMCI), breastfeeding are successfully developed and implemented by the Ministry of Health, some of them needs to be expanded in the regions.

Aiming to estimate the contributions of the selected major factors to regional burden of diseases and disorders the recommendations and intervention strategies were developed toward increasing the access of child to health care through the expanding the WHO and UNICEF-promoted integrated management of childhood illness (IMCI) strategy with its three components. This approach will improve the professional knowledge and skills, increase the diagnostic support as well as raise parents' awareness through community educational programs. Another approach, Integrated Early Childhood Development, intends to intervene in different fields, such as water, sanitation, psychological support and nutrition [38]. This program will also increase the role of the mothers in child health care. It is deeply rooted in human rights recognizing children's and women's rights, emphasizing their role in the society and family. Therefore, children's health and social welfare directly are linked with the health, nutrition and women's well being.

Taking into account current situation in Armenia the study results call for consideration of the implementing the poverty reduction programs, integrated early development strategy, involving parents in the health educational process and early periodic screening and prevention program for improving the systematic surveillance system.

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Tables

Table 1. Socio-demographic characteristics of examined children

Characteristics	Frequency	Percentage
Gender		
male	186	44.12
female	235	55.88
Total	421	421
Age group		
2-5 years	129	30.64
5-9 years	292	69.36
Total	421	100
(2 - 3 years old)	32	7.60
(3 - 4 years old)	88	9.03
(4 – 5 years old)	59	14.01
(5 – 6 years old)	74	17.58
(6 – 7 years old)	100	23.75
(7 – 8 years old)	86	20.43
(8 – 9 years old)	32	7.60
SES of family		
Low	344	44.12
High	77	55.88
Total	421	421
Birth order		
First child	181	42.99
Others	240	57.01
Total	421	100.00
Duration of breastfeeding		
Never or up to 2 months	62	14.73
More than 2 months	359	85.27
Total	421	100.00

Note: Birth order – Sequential number of child in the family

Low - monetary income \leq 2500 High - monetary income $>$ 25000

Table 2. Socio-demographic characteristics of mothers

Characteristics	Frequency	Percentage
Education		
Low	185	43.94
High	236	56.06
Total	421	100.00
Age category		
18-25 yrs. old	75	17.81
>25 yrs. old	346	82.19
Total	421	100.00
Employment		
Employed	123	29.22
Unemployed	298	70.78
Total	421	100.00
Delivery		
Premature	16	3.80
Term	405	96.20
Total	421	421

Table 3. Prevalence of anemia adjusted for mid altitude

Hemoglobin concentration	Number of cases	Percentage in each age group
<114 g/l ¹	9	10.1
<117 g/l ²	19	7.4
<121 g/l ³	3	9.1
Total	28	7.9

Note: hemoglobin concentration mean = 127.36 g/l, SD

1 – children in age 2-<5

2 – children in age 5-<8

3 – children in age >8

Table 4. Adjustment of maximum hemoglobin concentration and hematocrit values for anemia.

	Hemoglobin concentration (< g/dl)	Hematocrit (%)
Altitude (feet)		
3000-3999	+ 0.2	+ 0.5
4000-4999	+ 0.3	+ 1.0
5000-5999	+ 0.5	+ 1.5
6000-6999	+ 0.7	+ 2.0
7000-7999	+ 1.0	+ 3.0
8000-8999	+ 1.3	+ 4.0
9000-9999	+ 1.6	+ 5.0
10000-11000	+ 2.0	+ 6.0

Recommendations to Prevent and Control Iron Deficiency in the United States. CDC and Prevention. MMWR. Vol.47, 1998.

Table 5. Prevalence of health problems in children in age 24-108 months in Noyemberyan region

Health Status	Frequency	Percent	Cumulative percent
Absence of health problem	188	44.56	44.66
At least one health problem	233	55.34	100.00
Total	421	100.00	

Absence of health problem (no diseased) – reference group (coding – 0)

At least one health problem (diseased) – coding -1

Table 6. Prevalence of diseases and disorders in children in age 24-108 months in Noyemberyan region (%)

Diseases and Disorders	Prevalence %
ENT problems	27.3
Gastrointestinal problems	7.7
Uro-nephrologic problems	15.9
Caries	21
Cardio-vascular diseases	2.1
Respiratory problems	5.2
Vision problems	3.8
Musculo-skeleton	0.7
Neurologic nproblems	1.9
Allergic problems	2.1
Infectious & oncological	1.4

Table 7. Pearson square analysis of association between SES and health status.

Health Status	SES (1)	SES (0)	Total
Absence of health problem	47	141	188
	25.00	75.00	100.00
	61.04	40.99	44.66
At least one health problem	30	203	233
	12.88	87.12	100.00
	38.96	59.01	55.34
Total	344	77	421
	81.1	18.25	100.0
	100.0	100.0	100.0

Pearson chi 2 (1)= 10.2346 Pr.=0.001

Table 8. Pearson square analysis of association between mother's employment status and health status.

Health status	Employed (1)	Unemployed (0)	Total
Absence of health problem	64	124	188
	34.04	65.96	100.00
	52.03	41.61	44.66
At least one health problem	59	174	233
	25.32	74.68	100.00
	47.97	58.39	55.34
Total	123	298	421
	29.22	70.78	100.00
	100.00	100.00	100.00

Pearson chi2(1) = 3.8263 Pr = 0.0509

**Table 9. Results of simple logistic regression model
(Health status – dependent variable)**

Independent Variable	OR	CI	P-value
SES	2.26	1.36, 3.74	0.0014
Hemoglobin concentration	11.12	2.6, 47,9	0.0000
Mother’s employment st.	1.52	0.99, 2.32	0.0509
Mother’s educational level	1.2	0.81, 1.21	0.36
Mother’s age	1.43	0.76, 2.69	0.26
Duration of breastfeeding	0.98	0.58, 1.68	0.93
Family size	0.97	0.66, 1.44	0.89
Birth order	0.93	0.63, 1.37	0.72
Stunting (HAZ)	0.74	0.44, 1.22	0.24
Wasting (WAZ)	0.66	0.37, 1.62	0.14
Acute Malnutrition (WHZ)	0.77	0.42, 1.39	0.38

Table 10. Results of multiple logistic regression model on 2 covariates (Health status – dependent variables)

Independent Variables	OR	CI	P-value
1. Moth.educ level & SES	1.2 2.22	0.81, 1.21 <u>1.34, 3.69</u>	0.36 0.004
2. Mother's age & SES	1.43 2.26	0.76, 2.69 <u>1.36, 3.76</u>	0.26 0.006
3. Mother's educ. level & Hb concentration	1.45 11.01	0.94, 2.25 <u>2.56, 47.36</u>	0.094 0.001
4. Mother's age & Hb concentration	1.34 2.22	0.70, 2.56 <u>1.34, 3.69</u>	0.36 0.002
5. Duration of BF & SES	0.98 2.27	0.58, 1.68 <u>1.36, 3.76</u>	0.93 0.006
6. Family size & SES	0.97 2.26	0.66, 1.44 <u>1.36, 3.75</u>	0.89 0.006
7. Family size & Hb concentration	0.96 11.2	0.62, 1.48 <u>2.61, 48.1</u>	0.84 0.001
8. Birth order & SES	0.93 2.27	0.63, 1.37 <u>1.36, 3.76</u>	0.72 0.006
9. Birth order & Hb concentration	0.84 11.2	0.54, 1.30 2.61, 48.08	0.44 0.001
10. HAZ & SES	<u>1.75</u> 2.21	0.93, 3.33 <u>1.33, 3.67</u>	0.083 0.000
11. WAZ & SES	<u>2.25</u> 2.26	0.96, 5.26 <u>1.36, 3.77</u>	0.061 0.000
12. WHZ & SES	<u>1.89</u> 2.22	0.58, 6.19 <u>1.34, 3.69</u>	0.29 0.000

Table 11. Best two models (multiple logistic regression)

Independent variables	OR	CI	P-value & Hosmer-Lemeshow chi 2
Mother's age	1.35	0.70, 2.60	
Mother's education	1.06	0.71, 1.58	0.02
Birth order	1.04	0.69, 1.56	4.42
SES	2.22	<u>1.31, 3.78</u>	
Mother's age	1.27	0.65, 2.45	
Mother's education	0.94	0.62, 1.44	0.02
Mother's employment	1.45	0.93, 2.32	5.62
Birth order	1.03	0.69, 1.55	
SES	2.22	<u>0.32, 3.73</u>	

Appendices

Appendix 1

Child's examination card

1. First, Last name _____	2. Gender m <input type="checkbox"/> f <input type="checkbox"/>
3. Age _____ years, _____ months	4. Birth date dd/mm/yy <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/>

5. Family monthly income /including salary and other sources/

- 1) up to 250000 AMD
- 2) from 25000 to 500000 AMD
- 3) from 50000 to 100000 AMD
- 4) more than 100000 AMD

6. How much did your family spend last month on electricity? _____ AMD

7. Do you have the car? 1. Yes , 0. No ,
If Yes, how many _____

8. Which type of electric equipment do you have?

- 1) Teapot
- 2) Washing machine
- 3) Oven/heater
- 4) Color TV
- 5) other

9. The number of family members _____

10. Age of mother _____

11. Mother's education

- 1) school up to 8-th grade
- 2) school /8-10/
- 3) college
- 4) institution/university

12. Is mother working? 1. Yes , 0. No

13. Birth order of the child 1 2 3 4 5 6 7 /mark appropriate number/

14. Duration of pregnancy weeks, 1) premature birth , 2) mature birth

15. Normal duration/period of pregnancy 1. Yes , 2. No

If "No" mark the appropriate complications

- 1) bleeding
- 2) pregnancy induced hypertension
- 3) anemia
- 4) threatened abortion
- 5) vaginal infection

16. Childbirth period 1. Normal , 2. Problems

If there were problems, mark the appropriate

- 1) not breathing
- 2) breathing with difficulties

17. Birth weight _____ gram

18. Birth height _____ sm

19. Exclusive Breastfeeding

- 1) 0-2 months

- 2) 3-4 months
- 3) 5-6 months
- 4) 7-12 months
- 5) more than 12 months

20. If you didn't breast feed, the alternative feeding was

- 1) cow milk
- 2) infant formula
- 3) other

21. Vaccination

- 1) fully
- 2) not fully
- 3) didn't receive

22. Did your child get sick recent 6 months? 1. Yes , 2. No

If "Yes", please mark the problems

- 1. otholaringological diseases
- 2. gastrointestinal diseases
- 3. respiratory and lung diseases
- 4. infectious diseases
- 5. cardiovascular diseases
- 6. allergic and skin diseases
- 7. injuries
- 8. other _____

23. Did you apply to health care provider (doctor, nurse or pharmacist)?

- 1. Yes , 0. No

If "No", miss the questions N 24

24. Are you satisfied by the service 1. Yes , 0. No .

25. Mark the reason why you didn't apply for medical service /apply to all/

- 1. I have already been at the doctors who didn't help
- 2. the health care facility is far
- 3. there is no money
- 4. there is no transportation

Objective Data

Child height _____ sm, weight /kg,gr/ 1) _____, 2) _____, 3) _____

Complains _____

Skin _____

Subcutis _____

Musculo-skeleton system /teeth/ _____

Nose, pharynx, ears, adenoids _____

Cardiovascular system _____

Respiratory system _____

Urino-sexual system

Sight

Nervous system

Laboratory Analysis

Hb _____g/l

Urinalysis - protein , salt , glucose , bilirubin , specific gravity

Instrumental investigations

ECG

Ultrasound of heart

Ultrasound of abdomen

Conclusion/diagnosis

**0.Sanus/No
problems**

1.Problems

Recommendations

Doctor _____ Signature _____

§ | _____ 2002

Appendix 2

Երեխայի դիտարկման քարտ

1. Անուն, Ազգանուն _____ 2. Սեռը ար , իգ
3. Տարիքը ----տարեկան, ----ամսական, 4. Ծննդյան թիվը /օրը/ամիսը/տարի --

5. Ընտանիքի ամսական ընդհանուր եկամուտը -
1. մինչև 25000 դրամ ,
2. 25000 մինչև 50000 դրամ ,
3. 50000 մինչև 100000 դրամ ,
4. 100000 դրամից ավելի :

6. Որքան գումար եք ծախսում ամսական էլեկտրոնեղբայրի համար _____ դրամ

7. Ունե՞ք ավտոմոբե՞նա 1. այո , 0. ոչ , եթե այո, ապա քանի հատ _____

8. Ինչպիսի՞ էլեկտրական սարքավորումներ ունեք տանը.
1. թեյնիկ ,
2. լվածքի մեքենա ,
3. վառարան ,
4. գունավոր հեռուստացույց
5. այլ _____

9. Տան անդամների քանակը _____

10. Սոր տարիքը _____

11. Սոր կրթությունը –
1. դպրոց /մինչև 8-րդ դասարան/
2. դպրոց /8-10 դասարան/
3. միջնակարգ/մասնագիտական ,
4. բարձրագույն

12. Մայրը աշխատում է 1. այո , 0. ոչ

13. Ընտանիքի ո՞ր երեխան է 1 2 3 4 5 6 7 /նշել համապատասխան թիվը/

14. Հղիության ժամկետը շաբաթ, 1. հասուն , 2. անհաս

15. Հղիության նորմալ ընթացքը 1. այո , 2. ոչ եթե ոչ /նշել/

16. Ծննդաբերության ընթացքը 1. նորմալ , 2. ոչ եթե ոչ /նշել/ _____

17. Քաշը ծնվելուց _____ գր ,

18. Հասակը ծնվելուց _____ սմ

19. Կրճրով կերակրվել է՝
1. 0-2 ամիս ,
2. 3-4 ամիս ,
3. 5-6 ամիս ,
4. 7-12 ամիս ,
5. 12 ամս. ավել

20. Եթե ոչ կրճրով, ապա
1. կովի կաթ ,
2. պատրաստի կաթնային խառնուրդ ,
3. այլ

21. Պատվաստումներ
1. լրիվ
2. ոչ լրիվ
3. չի ստացել

22. Վերջին 6 ամսում հիվանդացել է երեխան

- 1. այո ,
- 2. ոչ , եթե այո, ապա նշեք համապատասխան այն հիվանդությունը, որով երեխան հիվանդացել է
 - 1. քիթ/կոկորդ/ականջի հիվանդություններ
 - 5. սիրտ-անոթային
 - 2. աղեստամոքսային հիվանդություն
 - 6. ավերգիկ կամ մաշկային հիվ-ն
 - 3. շնչուղիների և թոքերի հիվանդություն
 - 7. վնասվածք
 - 4. ինֆեկցիոն հիվանդություն
 - 8. այլ _____

23. Ղիմե՞լ եք արդյոք որևէ բուժաշխատողի՝ բժշկի, բուժքրոջ կամ դեղագործի

- 1. Այո ,
- 2. Ոչ , եթե այո, ապա բաց թողեք հարց 24

24. Բավարարվա՞ծ եք արդյոք բուժ. օգնությամբ

- 1. այո ,
- 2. ոչ

25. Նշեք պատճառը՝ ինչու՞ չեք դիմել բժշկական օգնությանը

- 1. արդեն եղել էի բժշկի մոտ, որը բոլորովին չէր օգնել
- 3. չունեմ բավարար գումար
- 2. հիվանդանոցը կամ պոլիկլինիկան հեռու է
- 4. փոխադրամիջոց չունեմ

Օբյեկտիվ տվյալներ

Երեխայի հասակը _____սմ, քաշը կգ/գր 1/_____ 2/_____ 3/_____

Բողոքներ այս պահին _____

Մաշկ _____

Ենթամաշկային հյուսվածք _____

Ոսկրա-մկանային համակարգ
/ատամներ/ _____

Քիթ, կոկորդ, նշիկներ _____

Սիրտ _____

Թոքեր _____

Միզասեռական համակարգ _____

Տեսողություն _____
Նյարդային համակարգ _____

Լաբորատոր քննություններ

Hb _____գ/լ

Մեզի ընդհանուր հետազոտություն - սպիտակուց , աղեր , գլյուկոզ , տեսակարար կշիռ , բիլիռուբին ,

Գործիքային հետազոտություններ

Էլեկտրասարտագրություն _____
Սրտի ուլտրաձայնային հետազոտություն _____
Որովայնի ուլտրաձայնային հետազոտություն _____

Եզրակացություն

0. Առողջ _____

1. Առողջական խնդիրներ _____

Խորհուրդներ

Բժիշկ Ա.Ա. _____ ստորագրություն _____

« » _____ 2002թ.

Appendix 3

CONSENT FORM

Children's Health Care Association (CHCA)
Jinishian Memorial Foundation (JMF)

Program - Nutritional and Health Status of Children in Age 2-8 in Tavoush marz

This project is the research study, having the purpose to early detect and prevent diseases and disorders of children with evaluation of their physical development and nutritional status. The project developed by the CHCA and funded by JMF.

The Tavoush Marz has been selected as a bordering region of Armenia, where the health indicators of the children considerably yield to demand of international standards as well as the diagnostic supports such as radiology and laboratory services are minimal or non-existent.

The target population of this study is about 500 children in age 2-8. All children in this age from the selected 4 (Dovegh, Koghb, Berdavan, Jujevan) villages and Nojemberian city can be examined.

In case of parent's agreement at the beginning of the interview the questions related with socio-economic status of the family as well as child health and development will be answered. During the examination the following investigations will be conducted: assessment of the weight, height; examination by the pediatrician and specialists (ENT specialist, ophthalmologist, surgeon), urine analysis: In case of necessity the ultrasound investigation will be conducted (abdomen, heart) has no any negative effects. All procedures will be done using expendable medical supplies. For assessing the level of serum hemoglobin the expendable automatic needles and drop of the blood will be used, which is almost painless, however, can present the minimal risk in terms of physical and psychological aspect.

This is the volunteer study, therefore, the parent can refuse to involve their child/children in the study; she/he can join the study or withdraw at any time. The program covers all expenses of diagnostics. In case of necessity of in-depth examination, it will be suggested to conduct other instrumental investigations in Yerevan, in the Republic Children's Clinical Hospital.

The potential beneficiaries are children and parents, because their expenses will be reduced and they will get an access to medical care. First of all disorders or health problems of the child will physical development will be assessed and parents will get the recommendations of the specialists. Secondly, all obtained data will be analyzed. This will allow finding the possible causes of health problems and presenting them to the local and governmental authorities as well as the international organizations for getting possible assistance in improving the health status of the children in this region.

Access to obtained data will have only the working group of this program, keeping confidentiality of the names and diagnoses; during the analyzing the data only identification

numbers will be used.

THIS CONSENT FORM CONTINUES ON THE REVERSE SIDE

For questions regarding the study you may contact to Dr. Gevorg Boyajyan, program manager, and Dr. Naira Gharakhanyan, program coordinator through the phone (3741) 64 66 81 and e-mail ngchca@yahoo.com.

If the parent wants to talk to anyone about the research study because he/she feels they have not been diagnosed or recommended fairly or think they have been hurt by joining the study they should contact at CHCA (374 1) 23 54 11

If read it carefully and agree that your child would be participated in the medical investigation, please sign your name below.

Subject's signature

_ Witness to Consent Procedures*

Signature of Investigator

Date

Appendix 4

Երեխաների Առողջության Պահպանման Ասոցիացիա /ԵԱՊԱ/

Ջինիշյանի Հիշատակի Հիմնադրամ
Համաձայնագիր

**Ծրագիր - 2-8 տարեկան հասակի երեխաների առողջական և սնուցման գնահատում
Տավուշի մարզում**

Այս ծրագիրը հետազոտական է և նպատակ ունի վաղ ախտորոշել երեխաների հիվանդություններն և շեղումները և տալ երեխաների ֆիզիկական զարգացման և սնուցման գնահատական: Ծրագիրը ներկայացվել է Երեխաների առողջության պահպանման ասոցիացիա ՀԿ-ի կողմից և ֆինանսավորվել է Ջինիշյանի հիմնադրամի կողմից:

Տավուշի մարզն ընտրվել է, որպես հեռավոր մարզերից մեկը, որտեղ երեխաների առողջական վիճակի ցուցանիշները բավականաչափ զիջում են միջազգային ստանդարտներին և որտեղ կա բժշկական սարքավորումների և լաբորատոր քննության հնարավորությունների պակաս: Ընտրված բնակչությունը՝ 2-8 տարեկան երեխաներ են, որոնք բնակվում են Նոյեմբերյան քաղ. կամ մերձակա 4 գյուղերում /Ղովեղ, Կողբ, Ջուջևան և Բերդավան/:

Ծնողի համաձայնության դեպքում հետազոտության սկզբում կլրացվի հարցաթերթիկ, որը պարունակում է հարցեր՝ վերաբերող թե՛ ընտանիքի սոցիալական վիճակին և թե՛ երեխայի առողջությանը: Հետազոտության ընթացքում կկատարվեն հետևյալ գործողություններ. հասակի, քաշի որոշում; մանկաբույժի և նեղ մասնագետների զննում (ակնաբույժ, քիթ կոկորդի մասնագետ /ԼՈՌ-մասնագետ/, վիրաբույժ); հեմոգլոբինի որոշում; մեզի հետազոտություն: Անհրաժեշտության դեպքում կկատարվի ուլտրաձայնային հետազոտություն /որովայնի, սրտի սոնոգրաֆիա/, որը չունի բացասական ազդեցություն: **Բոլոր միջամտությունները կկատարվեն միանվագ բուժ. պարագաներով:** Հեմոգլոբինի որոշումը կակատարվի վերցնելով կաթիլ արյունը միանվագ ավտոմատիկ ասեղներով, որոնք գրեթե ցավ չեն պատճառում, սակայն այնուամենայնիվ որոշ անհանգստություն /ֆիզիկական կամ հոգեկան/ կարող է պատճառել: Այս հետազոտությունը կամավոր է և ծնողը կարող է հրաժարվել երեխայի մասնակցությունից, ցանկացած պահին ընդդրվել կամ դուրս գալ հետազոտությունից: Բոլոր ծախսերը, կապված հետազոտությունների հետ, նախատեսված են ծրագրով: Եթե հարկ եղավ ավելի խորը հետազոտմանը, ապա երեխաների հետազոտությունը կշարունակվի Հանրապետական մանկական կլինիկական հիվանդանոցում:

Ծրագրի պոտենցիալ շահառուներն են երեխաները, ինչպես նաև ծնողները քանզի կկրճատվի նրանց ծախսերը և տվյալ պահին կապահովվի բժշկական ծառայության մատչելիությունը: Առաջին հերթին, երեխաների առողջական խնդիրները և շեղումները կհայտնաբերվեն, կգնահատվի նրանց ֆիզիկական զարգացումը և ծնողները կստանան մասնագետների խորհրդատվություն երեխայի առողջության վերաբերյալ: Երկրորդը, բոլոր ստացված տվյալները կվերլուծվի: Այն հնարավորություն կտա պարզելու հիվանդության և շեղումների պատճառները, և ներկայացնելու այն տեղային և կենտրոնական իշխանություններին, ինչպես նաև միջազգային կազմակերպություններին՝ երեխաների առողջության բարելավման համար հնարավոր օգնություն կամ միջամտություն ստանալու համար:

Ամբողջ ստացված տվյալները կպահպանվեն ԵԱՊԱ-ի գրասենյակում և այլ ուրիշ անձ /ոչ այս ծրագրի աշխատակից/ չի ունենա հնարավորություն ուսումնասիրել այս տվյալները: Մասնակիցների

անունների և դիագնոզների վերաբերյալ կապահպանվի գաղտնիություն և միայն մասնակիցների համարները կօգտագործվեն ծրագրի վերլուծության ժամանակ:

Լրացուցիչ հարցերի դեպքում Ղուք կարող եք զանգահարել ծրագրի ղեկավարին՝ Գևորգ Բոյաջյանին, կամ ծրագրի համակարգողին՝ Նաիրա Ղարախանյանին՝ հեռախոսահամարով 64 66 81, կամ կապնվել էլ. փոստով ngchca@yahoo.com.

ԵԱՊԱ/ՋՀՀ/Համաձայնագիր

Եթե ծնողը ցանկանում է որևէ մեկի հետ այն կապակցությամբ, որ երեխան ճիշտ չի հետազոտվել, կամ որևէ վնաս է հասցվել հետազոտությունից, ապա զանգահարեք ԵԱՊԱ-ի գրասենյակ՝ 23 54 11 հեռախոսահամարով:

Եթե կարդացել եք այս ամենը ուշադրությամբ և համաձայն եք, որպեսզի իմ երեխան անցնի բժշկական հետազոտություն, ապա ստորագրեք:

Ծնող՝ _____

Համաձայնագրության վկա _____

Հետազոտողի ստորագրությունը _____

Ամսաթիվ _____
