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A CURRENT PERSPECTIVE ON  
**HEALTH  
SCIENCES**



TRAKYA UNIVERSITY

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## Preface

Trakya University Chancellor (Rector) Prof. Yener Yörük and Dean (Faculty of Health Sciences) Prof. Nezh Dağdeviren have given us the opportunity to share Turkey, Balkan, Middle East countries health sciences talents, creativity, experiences. This book is the intensive work of all these health scientists.

This book is intended to give readers a feel for what health sciences is about in Turkey, Balkan and Middle East Countries. This is not a single author book. Therefore, all kind of current health sciences subjects are included in side.

I am also grateful to all my colleagues, especially my team Ast. Prof. Alper Kızıltepe and Ast. Prof. Emre Atılğan for their skill and encouragement during the process of this book. Lastly, to my family who in difficult times never wavered in their support.

"The word incurable is not found in any language. Mainly it means: I do not know yet how to cure you. We must take the responsibility to tell patient that, or refer her/him to someone who might be able to help. Health scientist is otherwise ruining patient life in that time"

Avicenna "The Book of Healing"

"We need not fall victim to the liberal fallacy of assuming that because we can perceive a problem we are, de facto, not part of the problem".

David Mamet on "DECAY"

Editorial: Prof. Ayşegül Yıldırım Kaptanoğlu

23.04.2014 EDIRNE/TURKEY TRAKYA UNIVERSITY BALKAN CAMPUS

## POPULATION BASED STUDY OF GENERAL HEALTH OF CHILDREN FROM RURAL AREA IN MACEDONIA

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### Abstract

**Aim** of the study is to evaluate general health status of children who live in rural area in the proximity of Bitola. In the study were included all children aged 0-6 years who live in 11 villages with less than 1000 inhabitants. **Methodology:** We gathered healthcare information about 116 children with a structured questionnaire designed for the study. The data was given by the children's parents. **Results:** 92 (56,4%) of the children are male and 71 (43,6%) are female. Average age is 37,04 months. 2,43% of all children are not vaccinated. 28,22 % were born with caesarean section, 20% were born prematurely. 8,59 % were not breastfed at all, 41,6% were breastfed less than 6 months. The majority of children 72,18 %, were exposed to cow's milk before they were 1 year old. Identified morbidities in children from rural population: anaemia – 1,84 %, cardiovascular diseases 0,61 %, allergies – 2,45%. **Discussion:** The general health of rural population of children is generally good. The rate of vaccination and breastfeeding is low. The educational level about the early childhood nutrition is also low. The numbers of caesarean section deliveries seems high and the reasons for this situation should be explored more thoroughly. **Conclusion:** We have explored the general health status of children from the rural areas and identified educational needs of families with young children in rural areas. Nurses should target the rural population with educational programs concerning early childhood nutrition, vaccination programs and the benefits of breastfeeding and vaginal delivery.

**Key words:** public health, vaccination, rural population, breastfeeding

### Introduction

There is an increasing recognition of the critical importance of children's experiences during infancy and very early childhood, in determining future physical and emotional health<sup>1</sup>. Despite organisational differences in health care, public health nurses in various developed countries worldwide support families with young children to provide as good a start as possible, for example in Canada<sup>2</sup>, Norway<sup>3</sup> and the UK<sup>4</sup>.

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Health care in Republic of Macedonia is a fundamental human right, guaranteed in the state constitution. Health care is organized in three levels, in terms of complexity and specialization of services. Primary care is the backbone of the healthcare system and is executing more than 80 % of health services. Currently, primary care is organized in a network of health care teams of general and family medicine, as well as dental, gynaecological and paediatric teams, working on the principle of chosen doctor. Rural population in the country has a different access to healthcare services than the urban population. These citizens receive basic healthcare services in primary healthcare settings, which often are more than 30 km away from their home. It is a rarity to have an available medical team in villages with less than 1000 inhabitants in their community.

From a public health perspective it is especially important to know the specific needs of the rural population. Therefore, the main goal of health data collection was to identify the health care needs of families with young children from rural areas in the municipality of Bitola and municipality of Novaci, to obtain data on the health status of the population, and to identify areas of healthcare that this population requires additional education and prevention.

### Methodology

The research was conducted in 11 villages in the municipalities of Bitola and Novaci. Mapping methodology was created by the teaching staff of Higher Medical School Bitola through review of public health literature and previous research experience of all involved. As mapping instruments we used specially designed questionnaires for health status of children, adult family members and a questionnaire for public health conditions in the household. The study was conducted in three phases.

The first phase contained creation of questionnaires through a process of designing items, selection of the optimal target items and final technical review and processing of the questionnaires. The questionnaire for health status of children consists of 51 items with multiple answers. The questionnaire for health status of adult family members consists of 62 items, 11 additional items for women and 23 items for geriatric population. The questionnaire for public health conditions in households contains 10 items on social, sanitary and nutritional conditions in families.

The second phase of the study was conducted in the homes of families with preschool children aged 0-6 years in rural areas in the border region. Villages that were included in the study were Logovardi, Zabeni, Egri, Gorno Orizari, Dolno Orizari, Porodin, Poeshevo, Germijan, Kremenica, Medzitlija, Opticari and Lazec. All the interviewers are doctors or nurses, trained for the specific interview. Interviews were conducted with families in their homes, where interviewers collected data on all family members. At the beginning of each home visit, parents were informed about the purpose of the visit and verbal consent for their involvement was requested. In the second phase of the study 612 questionnaires were completed.

In the third phase of the study we proceeded with analysis of questionnaires from 113 households, 336 questionnaires from adult family members and 163 questionnaires from children. Database was created and statistical analysis was performed.

**Results:**

**Table 1. Descriptive statistics of interviewed families with children of preschool age (0-6 years) in every village:**

Number	Village	Number of interviewed families	Number of interviewed children	Number of interviewed adults
1.	Germijan	10	12	18
2.	Orizari	23	37	58
3.	Egri	13	19	54
4.	Zabeni	9	12	33
5.	Kremenica	6	8	14
6.	Lazec	9	11	25
7.	Logovoradi	12	20	34
8.	Medzitlija	5	7	9
9.	Opticari	7	10	28
10.	Pocsevo	12	16	43
11.	Porodin	7	11	20
	<b>Total</b>	<b>113</b>	<b>163</b>	<b>336</b>

**Profile of the rural region according to the characteristics of families with small children**

The villages in the border region, families with children 0 to 6 years of age have an average 5.7 family members. Most families with young children live in extended families (70%). Regarding the employment status of parents, 41.7% of the able population has a working relationship.

<b>Table 2. Identified features of households - 113 households</b>	
Type of water supply	Well - 2,67 %
Location of toilets	Inside the house - 63,71%
	Outside the house - 8,85%
	Drainage connector (sanitation) - 7,97%
	Septic tank - 19,47%
Percentage of families that do not consume dairy products at all	2,70 %

**Health profile of the rural region according to the characteristics of children aged 0-6 years**

<b>Table 3. Identified features of children - 163 children</b>	
Gender distribution	Male - 56,4% Female - 43,6%
Average age	37.04 months
The course of pregnancy was:	<ul style="list-style-type: none"> <li>• Normal - 93,8 %</li> <li>• Troubled - 6,2%</li> <li>• Health problems - 4,65%</li> <li>• Psychological problems - 0,39%</li> <li>• Other - 1,16%</li> </ul>
Maternal age at birth	< 20 age - 11,11 % 21-34 age - 80,86% 35 - 49 age - 8,03 %
Mother's illnesses during pregnancy	Anaemia - 78,57% Elevated blood pressure - 16,67% Infections - 4,76%
Percentage of mothers who received prescribed drugs during pregnancy	Yes - 18,52 % No - 81,48 %
Percentage of mothers who smoked during pregnancy	Yes - 0,61 % No - 99,39 %
Method of childbirth	Spontaneous - 69,94% Caesarea - 28,22% Vacuum - 1,23% Other - 0,61%
Risks during childbirth	Premature birth and low weight at birth - 20% Asphyxia - 33,33% Other problems - 26,67%
Percentage of breastfed children	Yes - 91,41 % No - 8,59 %
Reasons for non-breastfeeding	Maternal problems - 61,4% Child's issues - 38,6%
Duration of breastfeeding	Less than 3 months - 21,13% 3-6 months - 20,42% 6-9 months - 19,72% 12 months - 16,90% Longer than 12 months - 21,83%
Reasons for discontinuation of breastfeeding	Agalaktija - 55,55% Mother's illness - 3,03% Mother's necessity to take medications - 1,01% Separation of the child - 4,04% Causes of the child - 21,21% Other - 15,16%

Percentage of children receiving adapted milk formula in the first 12 months of life	47,02 %
Period in which adapted milk was introduced	Before the 3rd month - 38.37% 3-6-th month - 32.56% After the 6th month -12.8% After the 9th month - 16.29%
Percentage of children who received cow's milk in the first 12 months of life	72,18 %
Percentage of children who did not receive some nutritional products in the first year of life	Fruit - 6.41% Vegetables - 9.62% Meat-30.12% Milk and products of milk - 22.43% Eggs - 31.42%
Percentage of regularly vaccinated children	YES - 97,57 % NO- 2,43 %
Percentage of children who suffer from illnesses	Anaemia and other blood disorders - 1.84% Cardiovascular disease - 0.61% Allergies - 2.45%
Percentage of children who were hospitalized	YES - 13,9 %
Reasons for hospitalization	Cough - 36.4% Diarrhoea, vomiting - 27.2% Other - 36.4%
Percentage of children who have had a surgery	YES - 4,91 %
Sleeping disorders	Trouble to go to bed and fall asleep - 3.07% Wakes up often - 8.59% Speaks during sleep- 3.07% Sleepwalking - 2.45% Nightmares - 0.61% Other - 0.61%
Flat feet	7,4%
Percentage of children with spine deformity	1,2%
Percentage of children with visual impairment	1,2%
Percentage of children with speech difficulties	1,8%
Percentage of children who use computer	41,2%
Time spent in front of computer daily	1-2 hours a day - 80,3% >2 hours a day - 19,7%

Percentage of children who regularly visit dentist	29,2%
Percentage of children who maintain oral hygiene	54,6%

Health profile of the rural region according to the characteristics of adult family members

Education	Illiterate - 1.2 % Without formal education - 9.8%
Percentage of people with diagnosed conditions	Increased blood pressure - 11.27% Diabetes - 2.08% Myocardial infarction - 0.3% Other heart disease - 3.86% Stroke - 2.74% Chronic bronchitis - 0.3% Kidney diseases - 1.48% Rheumatic disease - 4.75% Anaemia - 1.19% Elevated cholesterol - 4,45 % Other - 1.78%
Percentage of overweight people	16%
Percentage of people with a face, hands or feet deformity	1,48 %
Percentage of people who have requested psychiatric help	4,15 %
Diagnosed psychiatric disorders (percentage of people who requested psychiatric help)	Depression - 71.4% Anxiety - 21.4% Difficulties in concentration and memory - 7.14%
Percentage of people who take medication for psychological problems	5,04 %
Percentage of people who abuse alcohol	1,19 %
Percentage of violence between family members	1,18 %
Percentage of families seeking help for domestic violence	0,9 %
Percentage of women who have never visited a gynaecologist for preventive examination	28,6 %

Percentage of women who have had abortion	14,72 %
Percent of families who have not been visited in their home by a nurse after giving birth	68,09 %

### Discussion

The study shows that healthcare, prevention and health education are not on a satisfactory level in rural border region, because of the distance of healthcare facilities and lack of preventive nursing care for this population.

The results indicate that the general health of the population with young children is generally good, with low prevalence of acute and chronic diseases. What is troubling is the insufficient utilization of preventive programs such as vaccination programs, gynaecological examinations, nursing services and preventive dental services.

We have recorded worrying percentage of illiteracy among the young adult population. Also attitudes towards domestic violence are uncanny and indicate a need for more extensive work on changing prejudices. The percentage of deliveries by caesarean section seems high, but we have not obtained sufficient information about the reasons for caesarean section.

Young mothers in the rural area have insufficient knowledge about early nutrition and benefits of breastfeeding.<sup>v, vi, vii</sup> The cow milk is introduced very early in the child's life, and the duration of the breastfeeding is very short. The rural population is not sufficiently informed about the contemporary recommendations regarding the early-life nutrition.

The following recommendations to improve health of families with small children emerged from the analysis of the collected data on the health status of rural population:

- Conducting of educational programs regarding the nutrition in infant and early childhood period.
- Implementation of educational programs for prevention of common diseases in children.
- Conducting educational programs on domestic violence in order to encourage rural population to report domestic violence and reduce tolerance towards domestic violence.
- Implementation of educational programs about the importance of vaccination and to encourage healthy psychosocial and psychomotor development.
- Improving prenatal care for mothers and children.

- Enhancing employment policy of existing preventive healthcare services and establishment of postnatal care by nurses in rural areas.
- Implementation of educational programs to improve dental health.
- Joint multi institutional approach towards the improvement of sanitary infrastructure of homes in rural areas.

The needs of parents identified by both parents and professionals could best be met by social support, with skilled facilitation and suitable resources.<sup>viii</sup> The resolution of tensions between caseload-based and population-based health visiting, as well as the management of the tensions inherent in these changes, seems to be vital in order to implement these approaches. Many parents would like information made available online. Further research and application activities should include broader preventive examinations of children who live in rural areas and education and conducting healthcare educational protocols in several areas that are considered to be of immediate priority:

- Home care of children with common cold and cough<sup>ix, x</sup>
- Enhancement of psychomotor and psychosocial development of children 0-6 years old
- Prevention and care of spine deformities
- Home care and nutrition of children with diarrhoea<sup>xi</sup>
- Contemporary views on nutrition and breastfeeding of children<sup>xii, xiii, xiv, xv</sup>

The role of nurses and the privilege of home-based visits by nurses are mainly not available to the rural population. This is something that has to change if we want to improve the health status and availability of health information for families who live in distant rural areas.

Besides the primary objective of the study (data collection), this activity had indirect benefits: It helped to raise awareness about healthcare issues and services. The local population had an opportunity to talk to doctors and nurses at home and to get information about the benefits of healthcare preventive programs in order to improve the quality of life of their children and family, the community as a whole, and the rural border region in general.

### Conclusion

We have explored the general health status of children from the rural areas and identified educational needs of families with young children in rural areas. The results indicate that the general health of the population with young children is generally good, with low prevalence of acute and chronic diseases. What is troubling is the insufficient utilization of preventive programs such as vaccination programs, gynaecological examinations, nursing services and preventive dental services. We have recorded worrying percentage of illiteracy among the young adult population and tolerant attitudes towards domestic violence. Nurses should target the rural population

with educational programs concerning early childhood nutrition, vaccination programs and the benefits of breastfeeding and vaginal delivery.

#### Disclosure

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