

## **The impact of social determinants on growth and health in preschool children**

Kalcev Goce<sup>1</sup> Zisovska Elizabeta<sup>1 2</sup>

<sup>1</sup> University Goce Delcev, Stip - Faculty of medical sciences

<sup>2</sup> University Clinic for Gynecology and Obstetrics - Skopje

### **Abstract**

**Introduction:** It is worldwide known that social, cultural, political, and economic environment has a direct impact on the preschool children's health and growth. Although, there is a significant rate of preschool child morbidity and mortality in Macedonia, and there is not precise data about the impact of social determinants on health and growth of preschool children yet.

**Aim of the study:** The purpose of this thesis is to gain insight into the causal link between the common social determinants and the health and growth of preschool children, on the other hand. The results should serve to improve prevention and develop local programs to promote a sustainable system for improving children's health, with the help of reliable data.

**Material and methods of work:** As a material, it was used health documentation from the parent pediatric institutions from Public Health Center – Zeleznicar (Skopje), and from outpatient clinic in municipality of Butel (Skopje). Statistically, there were processed 50 health documents randomly selected from both institutions, a total of 100, in the period of 2013 - 2017.

**Results:** With the help of this paper, it will be possible to identify the link between social determinants and health with growth in children under five years of age. Of the group of mothers with primary education, 71% had a newborn with low birth weight, of the mothers with secondary education 18% had a newborn with low birth weight and a group of mothers with a university education, 2% had a newborn with low birth weight. In the study, one congenital anomaly was observed in a mother of age 36. That was congenital non – neoplastic nevus. In families where there are no employees 100% of the pre-school children had chronic infections, in families with 1 employee 87% of pre-school children had chronic infections and in families with 2 employees 77% of pre-school children had chronic infections. In children who only had healthy drinking water, there was no episode of diarrhea coming from contaminated drinking water, while pre-school children who came in contact with, in 100% there was diarrhea caused by contaminated drinking water. In the group of pre-school children living in homes with sanitary conditions, 100% are absent digestive disorders caused by unsecured sanitation in the home. In the group of pre-school children living in homes where no sanitary conditions are provided, 100% of them were digestive diseases where unsecured sanitation appeared as an aetiological moment.

**Conclusion:** Determining levels of inequality is essential for improving the health and nutrition of the poor. This does not mean only a set of solutions that involve multiple institutions, but also their effective dealing with all levels of determination. The social determinants of health are not vacuumed. Their quality and accessibility to the population are usually the result of public policy decisions made by the authorities.

**Keywords:** social determinants, preschool children, health, growth.

### **Introduction**

Social determinants of health represent economic and social conditions that affect individual and group differences in health status within a population. (1)

The World Health Organization says: The unequal distribution of health-related harmful experiences is by no means a natural phenomenon, but a result of a toxic combination of poor social policies and unfair economic engagements. Poor children and their mothers are in place above the richer in terms of mortality, morbidity and malnutrition. (2) Such inequalities in health outcomes are actually the result from the following chain of events:

- poor children in comparison to the richer ones, are more likely to be exposed to agents that cause diseases.
- after exposure, they are more vulnerable, due to lower resistance and low coverage with preventive interventions.
- if they already have a disease which requires medical treatment, they are less likely to have access to a health service. The quality of these services is likely to be lower. (2)

Studying the social determinants of children's health and nutrition requires information from the economic status of the household. Socio-economic differences in child mortality rates are constantly changing around the world. Inequalities are slightly more pronounced in children under 5 years of age than in infant mortality, suggesting that childhood deaths in children between 1 and 4 years are more common. Mortality rates are more prevalent among poor children. (3) Most deaths of children under five years of age in the world are caused by a few conditions, namely neonatal causes, pneumonia, diarrhea, malaria, measles and HIV/AIDS, with malnutrition being an underlying cause in about a third of these deaths. The importance of neonatal mortality as the main component of health in children under 5 years of age gets big attention. (4)

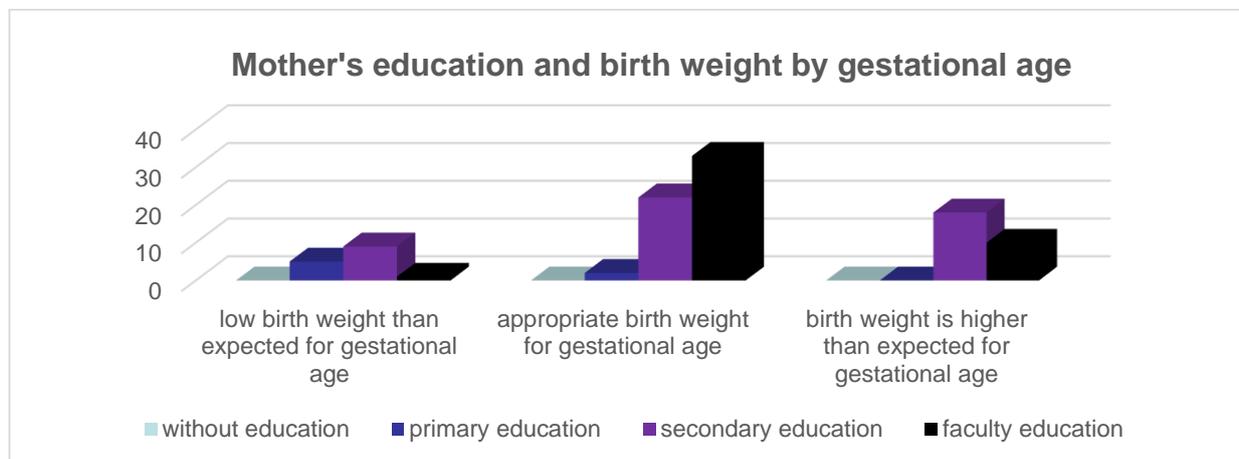
Key interventions for reducing inequality must include an improved approach to the utilization and coverage of antenatal, prenatal, postnatal care and children's health. Special emphasis should be placed on the work in the health sector at different levels (national, state, local) line with other health services.(5) Many preventive interventions, however, are more likely to achieve initial high coverage, through field work or community work. Policies for reducing child poverty are particularly important because increased stress hormones in children interfere with the development of brain hemispheres and brain connections, causing long-term chemical damage. (6)

## **Material and methods**

Health documentation of the children assigned to their chosen pediatrician was explored. Two outpatient clinics have given consent to collaborate in the research study: Zeleznicar (Skopje), and from outpatient clinic in municipality of Butel (Skopje). For statistical work out, 50 patients were from each outpatient clinic were included in the study, which means 100 patients entered the study during four years' period (2013 – 2017). The results were intended to be used in specially designed programs and measures for prevention and promotion of sustainable system for improving children's health.

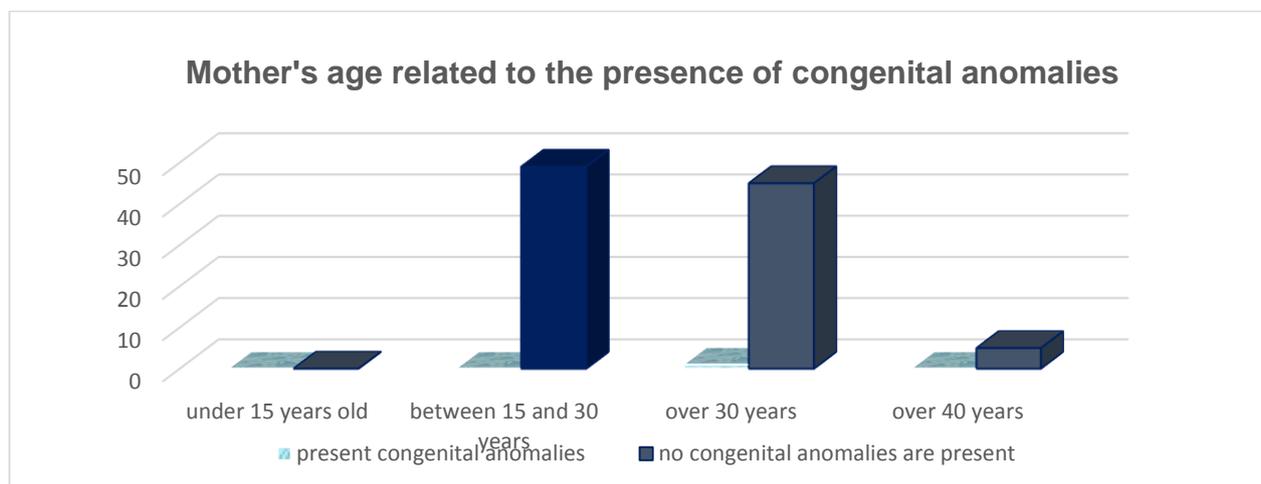
## **Results and discussion**

Out of 100 processed health records, 7% were mothers with primary education, 49% were mothers with secondary education and 44% with university education. Of the group of mothers with primary education, 71% had a newborn with low birth weight, of the mothers with secondary education 18% had a newborn with low birth weight and a group of mothers with a university education, 2% had a newborn with low birth weight. (Figure 1)



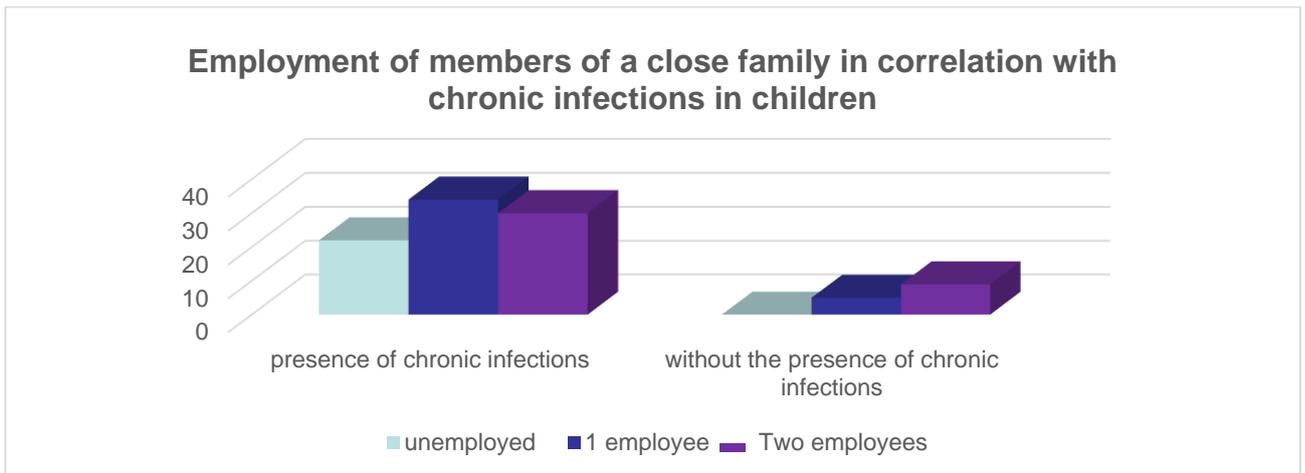
**Figure 1: The correlation between mother's education and birth weight by gestational age**

An educated mother has more opportunities to get more information as a result of contacts in the outside world. An important role is played by her financial or emotional independence, or both. It all affects the capacity to make decisions regarding all aspects, such as caring, proper behavior, using immunization services etc. (7) Maternal education has a greater impact on the mortality of older children. Women's education should be one of the priorities in a society.



**Figure 2: The relation between mother's age and presence of congenital anomalies**

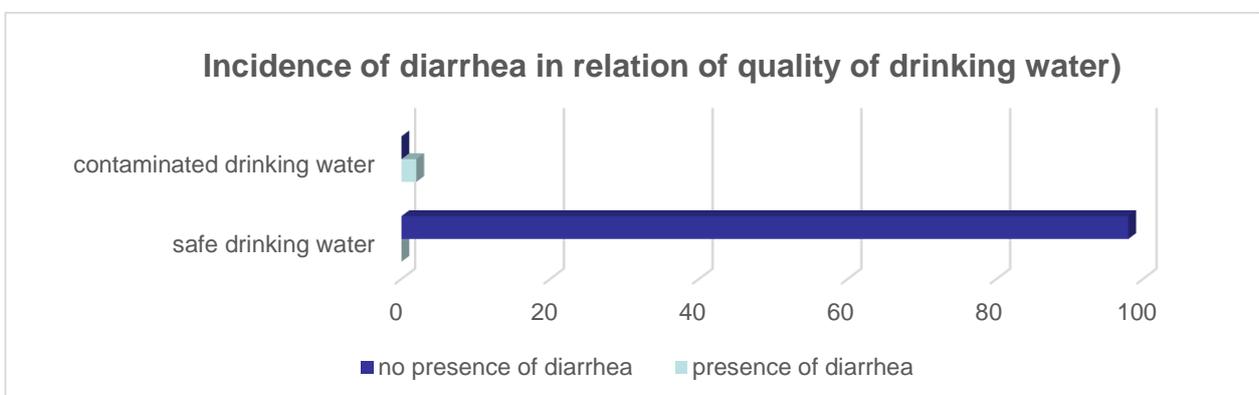
The role of maternal age for appearance of Down syndrome is known since 1930. Late maternal age is also associated with infant mortality, neonatal mortality, with defects in neural tube, and defects in the anterior abdominal wall. Parents older than 40 years have an increased risk of getting a child with congenital anomaly. In the study, one congenital anomaly was observed in a mother of age 36. That was congenital non - neoplastic nevus. (Figure 2)



**Figure 3: The connection between employment of members of a close family and presence of chronic infections in preschool children**

Of the 100 processed health records, 22% of the families didn't have a single employee, 39% of the families had 1 employee and 39% of the families had 2 employees from the immediate family. In families where there are no employees 100% of the pre-school children had chronic infections, in families with 1 employee 87% of pre-school children had chronic infections and in families with 2 employees 77% of pre-school children had chronic infections. (Figure 3) Children from low-income households with chronic health conditions have worse health conditions than children from high income families. Children's health is closely linked to the long term average overall household income, while the negative health effects of lower permanent income are accumulated over the life of children. These children as future individuals arrive at the maturity threshold with lower health status and partially lower education as a consequence of poorer health.

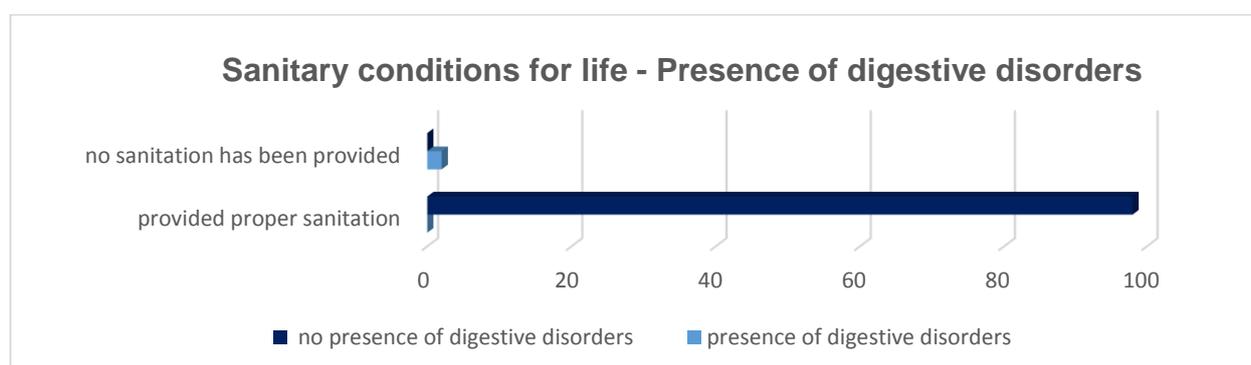
Out of 100 processed health records, 98% of pre-school children had healthy drinking water according to all standards, and 2% of pre-school children came into contact with contaminated drinking water. In children who only had healthy drinking water, there was no episode of diarrhea coming from contaminated drinking water, while pre-school children who came in contact with in 100% there was diarrhea caused by contaminated drinking water. (Figure 4)



**Figure 4: Contaminated drinking water as a reason for diarrhea**

Healthy drinking water is one of the essential elements to reduce the incidence of diarrhea. Increasing the availability of basic health services will significantly reduce the incidence of mortality in newborns.

Out of 100 processed health records, 98% of pre-school children lived in homes where sanitary conditions were provided, and 2% of pre-school children in homes where they do not have sanitary conditions. In the group of pre-school children living in homes with sanitary conditions, 100% are absent digestive disorders caused by unsecured sanitation in the home. In the group of pre-school children living in homes where no sanitary conditions are provided, 100% of them were digestive diseases where unsecured sanitation appeared as an etiological moment. (Figure 5)



**Figure 5: The connection between sanitary conditions for life and digestive disorders**

Better economic position of a the household can improve the sanitary conditions of the household. The data clearly reveal that children belonging to poorer households have a higher prevalence of worse nutritional status. Children from richer households are associated with better nutritional status. Poverty is the basis of all social economic differences and affects health.

## Conclusion

Expanding knowledge about social determinants of health, including among health workers, can improve the quality and standard of care for people who are marginalized, poor or live in developing countries by preventing early death and disability while working to improve quality of life. The social determinants of health are not vacuumed. Their quality and accessibility to the population are usually the result of public policy decisions made by the authorities

## References

1. Whitehead M, Dahlgren G. Leveling up (part 1): a discussion paper on concepts and principles for tackling social inequities in health. Copenhagen, WHO Regional Office for Europe, 2006.
2. Assessing infant and young child feeding: progress towards developing simple indicators (informal meeting). Geneva, World Health Organization, 2006..
3. Black RE, Morris SS, Bryce J. Where and why are 10 million children dying every year? *Lancet*, 2003, 361(9376):2226–2234.
4. Black RE et al. Maternal and child under nutrition: global and regional exposures and health consequences. *Lancet*, 2008, 371(9608):243–260.
5. Scoping paper: priority public health conditions. Geneva, World Health Organization, Commission on Social Determinants of Health and Priority Public Health Conditions Knowledge Network, 2007.
6. Webannex2. Individual level interventions: examples for child health and nutrition
7. Samindra P, Poonam K. Social Determinants of Health and its Impact on child morbidity and mortality, 2015.