

SHORT LIFE EXPECTANCY AND METABOLIC SYNDROME IN ROMANIES (GYPSIES) IN SLOVAKIA

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SUMMARY

The aim of this review is to explain short life expectancy in Romanies. Romanies represent the second largest minority in Slovakia (about 7%). Most of them exist on the fringes of the majority society. Their general situation worsened after the fall of communism in 1989. In a market oriented society the unemployment of Romanies further increased due to their poor education and lack of skills. Roman general health is substantially worse than that of the majority population. They have high prevalence of communicable diseases due to poor sanitary and living conditions. Furthermore, epidemiological and metabolic studies revealed in Romanies high prevalence of obesity associated with increased cardiovascular risk. There is no explanation for this seemingly paradoxical phenomenon, in a population living in poor economic conditions. It is possible that in the course of the many generation-long migration from India to Europe, pregnant Romanies and their fetuses suffered excessive nutritional deficiency. This might have induced adaptive metabolic and genetic changes aimed at optimum utilization of scarce food supply. There is a hypothetical possibility that in them “thrifty gene” was formed. Arrival of Romanies to Europe resulted in somewhat better nutrition, along with sharply reduced physical expenditure. The consequence is a metabolic syndrome with type 2 diabetes and increased cardiovascular mortality. Such unique metabolic feature in Romanies will undoubtedly stimulate further research in molecular biology that may ultimately clarify the role of “thrifty genes”.

Key words: Romany people, gypsies, life expectancy, obesity, metabolic syndrome, thrifty genotype

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INTRODUCTION

The Romany ancestors were a group of people who left India. By the 1300's, their migration had entered Southeastern Europe, by the 1350–1400's, the Central and Western Europe. Initially they were considered migrants from Egypt (E-gyptians) and subsequently all nomadic and socially unstable population groups acquired the broader name “gypsy”. The majority societies throughout the world developed hostile attitude related to Romany migration, social ills and poor life style. Their low social status persists, especially in Central and Eastern Europe where Romanies represent 7–10% of the population (Romania, Bulgaria, Slovakia and Hungary). General condition of Romanies has further worsened after 1989. Endemic problems (high illiteracy, dire poverty, poor housing) are now heightened by massive and disproportionate unemployment. Frequent adverse encounters with the authorities have made Romany communities reluctant to cooperate with the majority establishment. There is a lack of reliable official data on the exact number of Romanies. Demographic evaluation has been hampered not only by migration but also because Romanies are often reluctant to report their ethnic origin. There are fewer Romanies in the Czech Republic than in Slovakia. Last census in the Czech Republic in 2001 estimated the minorities to represent only 4%, of that Romanies only 0.11% (less than Poles, Germans, Russians and even Vietnamese).

SHORT LIFE EXPECTANCY (LE) IN ROMANIES

There are numerous reports on short life expectancy (LE) in Romanies. Some of these are based on popular newspaper articles or on reports from Romany organizations. Estimated LE of Slovak Romany males at birth (1, 2) is 7.5 years lower than that of the majority. Similarly realistic appears the estimate of LE in

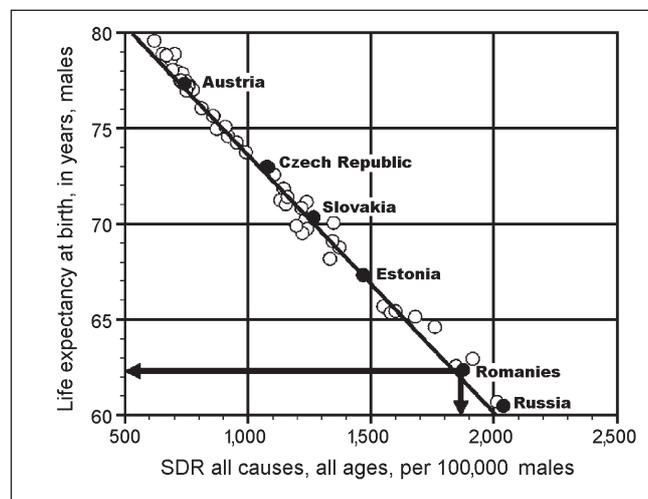


Fig. 1 Estimated life expectancy at birth of Roma males (Serbia, Slovakia) is very short.

Slovak Romany females: At birth it is 6.6 years lower than in the non-Romany majority. Undoubtedly, an important factor of lower LE in Romanies is the substantially higher infant mortality.

Fairly thrustworthy demographic data on Romany in Serbia were published recently (3) and they contribute to our understanding of Romany LE. WHO data for 2005–2006 (4) support a close correlation between standardized death rate (all causes-all ages) and the LE at birth (Fig. 1). Such analysis indicates the LE for Serbian Romanies to be 62.2 years which is very close to 62.4 years for Slovak Romanies that was calculated using a different method (1, 2). Compared to population data from various other countries (4) Serbian Romanies have substantially higher overall standardized mortality. The mortality of Romany females was three times that of the mortality of Austrian women. Such enormous difference in mortality cannot be solely related to the high Romany infant mortality.

Age structure pyramids of Romanies compared to non-Romany population in Slovakia, Hungary and Serbia are very similar (1–3). In each of these countries there live two ethnically different populations when demographic indicators are taken into consideration. Romanies have mainly a progressive type of age structure, characterized by high density of the child population and very low density of older people. Their age pyramid is close to the age structure of populations in developing nations. While the non-Romany male population older than 70 represents about 10% of the population, there is only 1% of Romany males in this category. Based on this we can assume that premature mortality of middle age Romanies is very high.

MORBIDITY AND MORTALITY OF ROMANIES

The burden of communicable disease among Romany is high and diseases associated with poor hygiene seem to be particularly important. In Romanies living in Slovakia and in the Czech Republic there is high prevalence of hepatitis, tuberculosis and skin diseases (5–8).

Limited evidence suggests an increased morbidity and mortality of Romanies also from non-communicable diseases. There is a paucity of data about mortality caused by the two most widespread chronic diseases – cardiovascular and cancer among

Romanies (6–8). One preliminary report states that in Romany communities in Slovakia cardiovascular diseases were the most common cause of death (9).

How does this compare with Romanies in other parts of the world? American data on a small sample of 58 Roma people in the area of Boston (10) found hypertension in 73%, diabetes in 46%, hypertriglyceridaemia in 80%, hypercholesterolaemia in 67%, occlusive vascular disease in 39% and chronic renal insufficiency in 20% of Romanies. Life style interviews revealed that 86% smoked cigarettes and 84% were obese. Thirteen of twenty-one marriages were consanguineous, yielding an inbreeding coefficient of 0.017. This report proposed that both heredity and environment may be responsible for the striking pattern of vascular disease in American Romanies (10).

OBESITY, DIABETES AND METABOLIC SYNDROME IN ROMANY PEOPLE

Obesity associated with poverty is a paradox of the economically developing world. This phenomenon has no ethnic distinction and it is related to abundance of food, especially one with “empty” calories, the non-existence of basic social support for low income groups along with almost complete absence of training in life style awareness, including nutrition education.

A not surprising finding then is the high prevalence of obesity in Romanies who are marginalized both economically and socially. Young Romany females even in the poorest Slovak settlements are more overweight than Slovak girls who live in the same region (11). In Western Slovakia where Romanies are more affluent, their higher level of obesity is even more pronounced (Fig. 2). The incidence of obesity in Romany males and females is about double of the non-Romany majority. The difference in morbid obesity (BMI ≥ 40) is even higher between these two ethnic groups.

Metabolic syndrome which is associated with obesity, especially of the visceral type, with insulin resistance, high blood pressure and elevated serum lipids can lead to the development of metabolic disorders such as type 2 diabetes and cardiovascular disease. Higher incidence of metabolic abnormalities, obesity, dyslipidemia and of insulin resistance was detected even in young Romanies (12, 13). A Slovak American team (14) then,

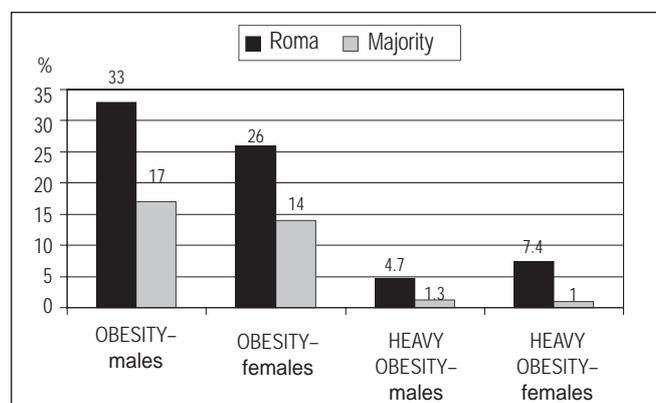


Fig. 2. High prevalence of obesity and morbid obesity in Romanies living in western Slovakia.

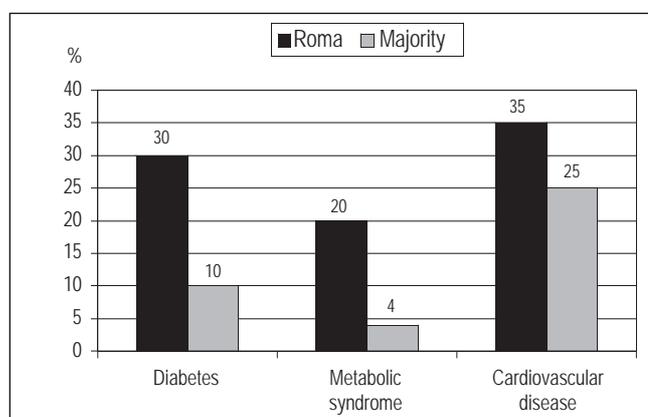


Fig. 3. Very high prevalence of diabetes type 2, metabolic syndrome and cardiovascular disease in Romanies living in western Slovakia. According to Vozarova de Courten et al. (13).

not surprisingly, revealed in this geographic region large ethnic differences in the prevalence of the metabolic syndrome, type 2 diabetes and of cardiovascular disorders (Fig. 3).

The predisposition of Romanies to acquire the metabolic syndrome may be associated with a „thrifty gene“ hypothesis. Specific genes have evolved to maximize metabolic efficiency and fat storage. Such genotype would have been advantageous for child-bearing women, it would allow them to store fat (build-up energy reserves) more quickly during times of abundance and thus better survive episodes of food-scarcity (15). During episodes of starvation a pregnant female may then modify the development of her unborn child such that it will be prepared for survival in an environment in which resources are likely to be short. This may lead to the development of a thrifty phenotype. In the Czech Republic Roma infants have significantly lower birth weight and shorter length (16). The hypothesis of thrifty genes proposes that in a population undergoing transition from starvation to better nutrition there will be obesity, impaired glucose and fat tolerance as well as heart disease (17).

Romanies may be affected by this nutrition phenotype they acquired over past millenia. Migrating cohorts suffered periodic starvation even in their North Indian homeland. This motivated their long and troublesome exodus Westward. During this migration that lasted many centuries, pregnant Romanies and their unborn babies suffered profound nutritional deficiency. Such condition may have induced biological adaptation to assure optimum utilization of scarce food energy. After Romany arrived to South and Central Europe their economic level relatively improved, in spite of a marginalized societal status. Compared to the domestic majority living in the region for much longer, Romanies acquired an increased risk of adverse metabolic pathways that result in their shorter LE (Fig. 4).

CONCLUSION

This review focuses on metabolism rather than on the social, economic and general health conditions of Romanies. All the

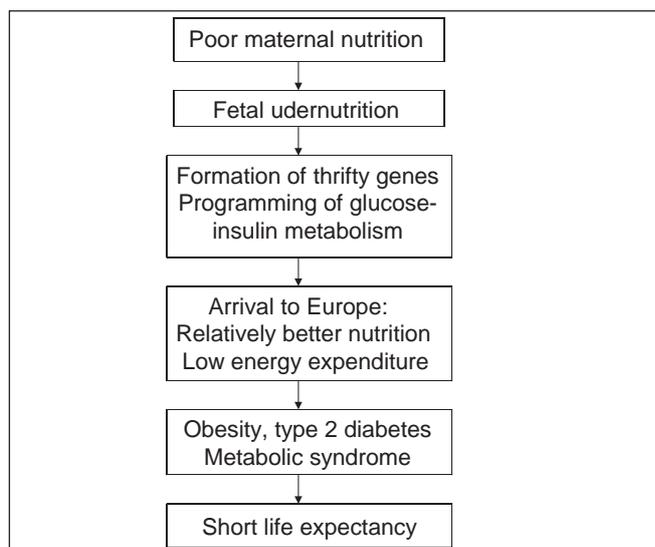


Fig. 4. Hypothesis on the development of metabolic changes in Romanies during their anabasis from India to Europe.

society bears responsibility to remedy these social ills. Rather, we try to describe the hypothesis for a high prevalence of obesity, metabolic syndrome, diabetes and cardiovascular disease in Romanies of Slovakia and Central Europe. Romanies are more affected than the non-Romany majority which has, paradoxically, a higher intake of food energy. Romanies suffer significantly shorter LE. This is partly a consequence of their high infant mortality but also of a high mortality at the middle age. There are various theories explaining the marked metabolic difference between Romanies and the rest of the population. Undoubtedly, this unique metabolic aspect of Romany ethnicity will further motivate molecular biologists to explore the existence of “thrifty genes”. New research along this path may lead to better understanding and to corrective measures in the worldwide epidemics of obesity, diabetes and heart disease.

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