

Health Behaviors, Nutritional Status, and Anthropometric Parameters of Roma and Non-Roma Mothers and Their Infants in the Czech Republic

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ABSTRACT

Objective: To compare maternal health behaviors, maternal nutritional status, and infant size at birth of Romas and non-Romas in the Czech Republic.

Design: Maternal interviews and food frequency questionnaire, maternal blood samples, physical measurements of mothers and infants.

Setting: Hospital, maternal/child care center; 2-4 days postpartum.

Participants: 76 Roma mothers and 151 mothers from the majority population.

Main Outcome Measures: Infant length/weight; maternal height/weight; weight gain during pregnancy; duration of pregnancy; maternal smoking habits; dietary intake; use of food supplements during pregnancy; and maternal blood levels of folate, β -carotene, retinol, and α -tocopherol.

Analysis: Comparison of ethnic groups by 2-sample Wilcoxon test, chi-square, Fischer's exact test, relative risk, and analysis of variance (ANOVA).

Results: Pregnancy duration was about 1 week shorter in Roma women ($P < .001$), and their infants had lower birth weight ($P < .001$) and shorter length ($P < .001$). Prevalence of smoking was significantly higher among Roma mothers ($P < .001$). Roma women used food supplements less frequently than non-Roma women ($P < .001$) and had significantly lower mean blood concentrations of folate ($P < .001$), β -carotene ($P < .001$), retinol ($P < .02$), and α -tocopherol ($P < .02$).

Conclusions and Implications: The nutritional status of Roma mothers is worse than that of mothers from the majority Czech population. The dietary and smoking habits of pregnant Roma women should be of special concern to family doctors, obstetricians, nutrition educators, and social workers.

Key Words: pregnancy, Roma women, nutritional status, folate, β -carotene, retinol, α -tocopherol (*J Nutr Educ Behav.* 2009;41:58-64.)

INTRODUCTION

The Roma people originated in India and migrated to the West between the third and tenth centuries.^{1,2} The Roma community is very diverse and has a complex ancestry¹; individual lineages differ widely in terms of origins, values, and dialects.¹

The Roma reached central Europe and the present Czech Republic at the end of the fourteenth century.^{1,3} Although Roma have lived in Europe for many centuries, they have remained on the outskirts of society in most European countries, perhaps because of their wandering nature.¹ Many suffered pogroms in the Middle

Ages,² and most of the Roma people inhabiting the Czech Republic were killed in concentration camps during the Second World War.¹

The majority of Romas presently living in the Czech Republic came from culturally disparate, primarily agrarian East Slovakia during the post-war Socialist period.^{1,4} According to the 2001 Czech Republic census, the number of individuals professing to belong to the Roma minority was 11 716,⁵ and 23 211 Czech citizens consider the Roma language as their mother language.⁶ However, the actual population of Romas in the Czech Republic is estimated to be between 150 000 and 300 000.^{3,5} Information on intermarriages between Roma and other ethnic groups is not available. Most Roma people of the Czech Republic speak Czech,¹ which is the language of their school education. Up to 55% speak Romany, or

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a dialect which assimilates Czech with Romany,^{3,8} at home.⁷

Despite longstanding cohabitation with Roma citizens, Czech society has resisted the complete integration of Romas because of their specific and often diametrical cultural values and traditions.^{3,9} The Socialist party of Czechoslovakia attempted to encourage integration of the Romas^{1,3}; in 1958, the Roma vagrant lifestyle was outlawed, and Roma gypsies were compelled to settle in industrial cities and towns.⁶

After the Velvet Revolution in 1989, the paternalistic approach of the government was replaced by civil movements and campaigns to support the cultural emancipation of the Romas.^{1,6} As a component of mandatory school education, Romany children must attend elementary schools, but because of language barriers, many are placed in special schools with slower curricula.⁷ The percentage of high school and university graduates is probably lower than the majority population, but no official nationwide statistics exist to corroborate this theory.⁷ Romas in the current market economy have higher rates of unemployment, poverty, and social deprivation and exclusion, likely owing to the lower levels of attained education and professional qualifications.^{7,8} From a legal point of view, Romany citizens have the same civil liberties as the majority population. Many governmental programs and national campaigns exist to encourage Roma people in integration, cultural development, and education at all levels.^{10,11}

In the past, the traditional dietary habits of Roma were influenced by their migratory lifestyle,¹ but most Roma people now consume a diet similar to the general middle-European diet.⁶ However, the health status of the Roma population in the Czech and Slovak Republics has been found to be worse than that of the general population,^{12,13} especially with regard to a variety of health markers (eg, infectious diseases, spondylopathy, and cardiovascular, respiratory, metabolic, and hepatic diseases).¹⁴ Similar conclusions were reached in a study conducted in England.¹⁵ The higher incidence of health problems in Romanies has multiple etiologies, in which social determinants and health

behaviors play significant roles.^{3,6,16} The most significant risk factors are alcohol consumption, drug use, smoking, heavy manual (unskilled) labor, becoming sexually active at an early age, and lack of preventive health care (including during childhood and pregnancy).¹⁷ From the medicolegal viewpoint, Roma people in the Czech Republic have equal access to health care (including unemployed individuals and women on maternity leave) under the national public health insurance program. However, in certain aspects they are not well conversant with the system and are quite often uncooperative. It is believed that they rely largely on primary care (except prevention), although for various other reasons, secondary and tertiary care visits are not undertaken. Statistical analysis has shown differences in their usage of health care. Unfortunately, ethnicity is not a category that is monitored in standard statistical health care registries.⁹ Researchers working with Romas frequently encounter specific difficulties, which include the following: (1) Romas, as well as other minorities, are far more difficult to contact; (2) Romas are unwilling to communicate with those outside of their community; and (3) Romas fear providing personal information (eg, data regarding level of education, living conditions, food consumption). One can speculate that researchers sometimes hesitate to include minorities in their research for these very same reasons.^{18,19}

Nutrition is an important health determinant that can affect the course of pregnancy and its outcomes. Optimal nutritional status during pregnancy is reflected not only in the improved health of the mother, but also in the improved health of the infant.^{20,21} Folate deficiency in pregnancy is associated with megaloblastic anemia. This condition can result in spontaneous abortions, abruptions, and placental infarctions. The developing fetus can also suffer developmental retardation and neural tube defects (NTD).²² Folate deficiency is commonly found among people who for various reasons eat little fresh fruit or vegetables. There is an increased need for folate during pregnancy because mothers need to transfer approximately 100 to 300 μg of folate

per day to the fetus.²³ Serum levels less than 4.5 ng/mL are indicative of an inadequate folate intake and can be regarded as a harbinger to the development of folate deficiency.^{24,25} The National Health and Nutrition Examination Survey – NHANES 1999, the largest and longest-running national source of objectively measured health and nutrition data of the population of the United States, assessed levels of folic acid among women of childbearing age and compared it with the NHANES III (1988–1991). The NHANES III was conducted prior to recommendations regarding the use of dietary supplements containing folic acid. From the NHANES III to the NHANES 1999, mean plasma folate concentrations for all women aged 15–44 years increased from 6.3 to 16.2 ng/mL.^{26,27} Vitamin A (retinol) and its precursor β -carotene are fat-soluble micronutrients that are essential for many functions, including vision, reproduction, growth, and regulation of cell proliferation and differentiation.²⁸ Vitamin A and β -carotene are essential for successful gestation,^{28,29} and Ziari et al recommended $> 0.8 \mu\text{g/mL}$ serum concentration of β -carotene for pregnant women.³⁰ Cigarette smoking adversely affects fetal growth and increases the risk for delivery of a low-birth weight infant premature delivery.^{31–33}

As there are little data about nutritional behavior and the nutritional status of pregnant Roma women in the Czech Republic, the authors decided to study these issues. Basic demographic and anthropometric characteristics of Roma mothers and newborns were compiled, and data on consumption of vitamins and trace elements and plasma or serum levels of certain vitamins were collected. Results obtained from Roma mothers were compared with the data from mothers in the majority Czech population.

METHODS

The study was conducted in cooperation with physicians and nurses of the Clinical Department of Gynecology and Obstetrics, University Hospital Královské Vinohrady, and the Institute of Mother and Child Care in Prague from 2000 to 2002.

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