

**PhD Thesis**

**HEALTH AND HEALTH DETERMINANTS AMONG VARIOUS  
NATIONAL MINORITIES IN SOUTH-EAST HUNGARY**

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*A miniature from the Illustrated Chronicle: Saint Stephen, the first king of Hungary, in full military adornment.*

*“Nam unius lingue uniusque moris regnum inbecille et fragile est. Propterea iubeo te fili mi, ut bona voluntate illos nutrias et honeste teneas, ut tecum libentius degant quam alicubi habitant.”*

*“A country with but one tongue and one custom is weak and frail. Therefore I command thee, my son, to act benevolently towards settlers, to hold them in esteem that live more willingly with thee than elsewhere.”*

*(Saint Stephen’s Admonitions to Prince Imre-early 11th century, English translation)*

## **Introduction**

The words of the state-founding Saint Stephen have been timely for more than one thousand years, because the cultural diversity, multiculturalism, and culture autonomy accepted by the Council of Europe and the European Union (EU) are obviously parts of our political culture.

History shows that the European continent has always been a plurilingual one – although languages such as Latin were hegemonious for centuries – but it also shows that cultures have developed separately, even in regions speaking the same language (e.g. in France), despite the fact that these cultures have more or less been shaped by common factors like the antique ones or the Christian ones. Even nowadays, Europe enjoys a rich diversity of languages. 750 million citizens live in Europe, 100 million of whom belong in minority groups. This means that every seventh person belongs in a minority.

On 1 May 2004, the EU welcomed 75 million new EU citizens. In consequence, the number of people belonging in minorities living on the EU territory will be more than doubled. The new EU will not be larger in the sense of “more of the same”, but rather considerably more diverse in terms of its cultures, ethnicities and languages. This greater diversity, with its particular histories, constitutes a significant challenge for the whole EU. In this knowledge, the EU was, during the accession process, very much engaged in enhancing the situation of the minorities living in the candidate states and ensuring their political stability.

Various national communities have lived in the territory of Hungary since the foundation of the Hungarian state. A common feature of the majority of Hungary's national and ethnic minorities is that, having lived within the framework of the Hungarian state for centuries, they profess a dual identity: their consciousness of being Hungarian is as strong as their nationality ties.

Researches dealing with minorities have many precedents, in some specialized fields such as ethnography, historical science, statistics, sociology, political science, education and in the interdisciplinary analyses of minority problems.

In Hungary, there has been so far no complex health survey involving several nationalities. In the Danube-Kris-Mures-Tisa Euroregion, people of the same nationality live on both sides of frontiers, in South-East Hungary, for example, Croatian, German, Romanian and Serbian populations are found. People belonging in one of these minorities have a traditionally different cultural background, which potentially influences their attitude to health

and health-related factors such as lifestyle, career and environment. People forming the majority in one country and a minority in the other, and living under largely similar natural conditions, can have a dissimilar state of health, which is of interest.

The aim of the study was to investigate the health status and health-influencing factors of different national minorities living in closed communities in the South-East Hungarian region. The minority-related inequalities in health and health behaviour in the South-East Hungarian region among Croatian, German, Romanian and Serbian minorities were studied in comparison with the data on the Hungarian population.

## **Materials and Methods**

A cross-sectional survey was carried out on minorities living in relatively closed communities – in families where both parents belong to a minority – in the South-East Hungarian region: the Romanians in M  hker  k (Micherichi), the Serbians in Deszk (  eska), the Germans and Croatians in B  csalm  s (Almasch/Aljma  s), and a Hungarian control group from the same places. The number of participants – similar age and sex distribution – totalled 567, 100-120 per nationality, aged between 15 and 75.

Data were collected by a simple random sampling. The data obtained were representative in terms of age and sex structure of the economically active population. Local family practitioners' assistants and staff from the Minorities' Self-Administrations were employed as interviewers for data collection by means of a questionnaire. Answering the questions was voluntary and anonymous. The examination was from December 2002 to March 2004. The questionnaire of 132 entries related to socio-demographic characteristics, employment, work environment, housing conditions, health-related behaviour, participation in blood pressure and cholesterol level screening; health status and self-rated health (SRH).

The questionnaire was approved by the Human Investigation Review Board of Albert Szent-Gy  rgyi Medical and Pharmaceutical Centre, University of Szeged. Informed written consent was obtained from each of the study participants.

Data analysis was carried out with the SPSS 9.0 for Windows statistical software. The limit of significance was set at  $p < 0.05$  for all tests. The percentage figures refer to actual respondents.

1. Socio-demographic factors, health and health-related factors, social situation, working and living conditions, and lifestyle characteristics of individual nationalities were compared by One-way ANOVA and the chi-square test. Univariate logistic regression was also used (where significant differences were observed in the chi-square test) to allow comparisons with the control group.

2. Multifactorial statistical evaluation was performed by binary logistic regression.

In the following two analyses the univariate and the multivariate logistic regression model, were used. Only those variables from the univariate analyses were included in the multivariate model in which significant associations could be observed or the variables were of great importance. The associations in both univariate and multivariate analyses were examined on the basis of odds ratios (OR), 95% confidence intervals (CI) and p values.

The dependent variables were blood pressure measurements in the physician's office, and blood cholesterol level testing, while the independent variables were: socio-economic and socio-demographic characters (e.g. age, gender, marital status, nationality, and educational level), health status (e.g. chronic diseases, and SRH) and health behaviour characteristics (e.g. smoking, and participation in screening).

The associations between poor SRH as a dependent variable and in the first analyses the material situation (e.g. employment, housing conditions, and owning a computer) and socio-demographic features (age, gender, education, nationality, etc.), as independent explanatory variables and in the second analyses socio-demographic features (age, marital status, nationality, etc.), lifestyle characteristics (smoking, alcohol consumption, nutritional habits, physical activity, etc.) and health status indicators (BMI, chronic diseases etc.), as independent variables were evaluated by means of univariate and multivariate logistic regression.

## **Results**

In our study 567 persons were questioned: 121 persons of the Romanian, 120 persons of the Serbian, 97 persons of the German, 108 persons of the Croatian minority and 121 persons of the Hungarian population, as a control group.

There were not found significant differences among the five groups as concerns mean age, sex and marital status. Thus, the five groups could be considered similar in the basic

demographic characteristics. In education, however, the differences were significant ( $p < 0.001$ ). From this aspect, therefore, belonging to one of the minorities or the majority was an important issue.

Significant differences were observed in socio-economic characteristics, health behaviour and health status characteristics. The employment ratio was high in the Serbian and German minorities (over 50%) and low among the Romanians (ca. 30%). The univariate logistic regression revealed the following figures: the chance of economically active persons among the Serbians (OR=1.86), in Germans (OR=1.71), and the Croatian minority (OR=1.30) was higher than in the Hungarian control group (OR=1.00, reference category). The only population where this chance was smaller was the Romanian one (OR=0.74).

The number of those who considered their material circumstances “good” was highest in the Romanian (39.6%) and Serbian (38.7%) groups. The Hungarians tended to regard them as “acceptable” (62.8%) and the worst classification was given by the Croatians (22.7%) and Germans (19.8%). In the Romanian (OR=2.52) and the Serbian nationality (OR=2.42) groups, the grading of their material circumstances as “good” was 2.2-2.5 times more chance than among the Hungarians (OR=1.00 reference category) and Germans (OR=1.14), but among Croatians (OR=0.68) the chance was smaller.

Our study showed that Serbians went on holiday very often (66.9%), but the Hungarians (52.1%) and Germans (51.6%) did this less often. The Romanians had a holiday more rarely (48.8%), though they lived in quite good material circumstances, but the figure was the smallest in the case of the Croatians (38.1%). In the Serbian population, the chance of going on holiday was 1.8 times higher (OR=1.86) than among the Hungarians (OR=1.00, reference category). The figure for the German minority (OR=0.98) was very close to that for the control group and the chance was smaller in the Romanian (OR=0.87) and Croatian (OR=0.56) populations. In the area of the present study, the conditions with access to piped water were available for almost everyone. However, there were significant differences between the settlements in the disposal of sewage. Another settlement-specific service is household waste management. Of all the settlements studied, Méhkerék has no organised waste collection service. In the other places, this service is provided and nearly 100% of the population make use of it. The only significant difference in the structure of the dwellings (separate kitchen, bathroom and toilet) was in the presence of flush toilets ( $p < 0.001$ ), which were mostly missing among the Romanians (83.5%). The chance of having a flush toilet was 8.5 times higher in the German minority (OR=8.47), 4.7 times higher

among the Croatians (OR=4.73), and 3.5 times higher among the Serbians (OR=3.51) than in the Hungarian group (OR=1.00, reference category), but the chance was smaller in the Romanians (OR=0.45).

Only 5% of the interviewees rated the condition of their dwellings as “bad”; mainly the Hungarians (7.4%) and Germans (6.3%) did so; while the Romanians (53.7%) considered it “acceptable”. The Serbians (62.5%) and the Croatians (51.9%) tended to answer with “good”. The chance of regarding their dwellings as “good” was 2.3 times greater among the Serbians (OR=2.36) and 1.5 times greater among the Croatians (OR=1.53) and the Germans (OR=1.48) than among the Romanians (OR=1.00) and the Hungarians (OR=1.00, reference category).

There were differences in the alcohol consumption habits of the nationalities. The proportion of regular drinkers was about the same in all groups, but the percentage of those declaring total abstinence was higher (ca. 60%) in the Romanian and Croatian minorities. The chance of not drinking alcohol was 3 times higher in the Romanian population (OR=3.06), and 2.4 times higher among the Croatians (OR=2.39) than among the Hungarians. In the German (OR=0.92) and Serbian populations (OR=0.59), the chance was worse.

The use of vegetable oil, for example, was most frequent among the Romanians (ca. 90%), whereas among the Serbians 41.2% used exclusively animal fat. The chance of cooking with vegetable oil was 4.1 times greater in the Romanian minority (OR=4.15), and 1.5 times greater among the Germans (OR=1.54), but the Croatians (OR=1.14) used vegetable oil with almost the same chance as the Hungarian control group (OR=1.00, reference category). Among the Serbians (OR=0.51) the chance was only half.

Examining the daily fruit consumption of the Serbian, the German, the Croatian minorities and the Hungarian group were similar average (41-50%). About half of the Croatian and German population, 40% of the Hungarian group and one-third of the Serbian minority eat some vegetables on a regular basis. In the Romanian minority, the consumption of fruit (10.7%) and vegetables (0.5%) was markedly poorer. It may be seen that in the Romanian population (OR=7.39) the chance of eating fruit daily was 7.4 times smaller than among the Hungarians (OR=1.00, reference category). In the other groups, this chance was the same as in the reference category (among the Croatians OR=1.15) among the Germans OR=1.09, and among the Serbians OR=1.03).

As concerns the consumption of black coffee on a regular basis the highest percentage was found in the Serbian minority (77.5%), while this habit was not so important in the Romanian population (45.5%) as in the others. The chance of drinking more coffee than the

Hungarians (OR=1.00, reference category) was 2.6 times greater among the Serbians (OR=2.59), and 1.7 times greater among the Croatians (OR=1.77). In the case of the German (OR=0.84) and Romanian populations (OR=0.63) this chance was smaller.

The regular use of pharmaceuticals was the highest in the Hungarian (60.5%) and lowest in the Serbian group (37.8 %). The chance of not taking any medicine was 2.5 times higher among the Serbians (OR=2.52), 1.8 times higher in the German group (OR=1.88), 1.5 times higher among the Croatian group (OR=1.59) and 1.3 times higher in the Romanians (OR=1.27) than among the Hungarians (OR=1.00, reference category). In all groups, antihypertensives, pain killers, antiphlogistics, vitamins, cardiac drugs and tranquillisers were taken most often.

Our results showed that the participation in the cholesterol level screening and the blood pressure screening was lowest among the Romanian minority (5.0%; 20.7%). The highest percentages in both screenings were those of the Serbian (57.5%; 56.3%) and Croatian minorities (45.3%; 57.4%). In the multivariate logistic regression of the multiple analyses significant differences were among blood pressure, cholesterol level screening, age and nationality.

The health status was self-assessed on a five-grade scale. The health was judged to be “very good” in the highest proportion (33.1%) in the Romanian group, “good” was chosen by around 40-50% (highest by the Germans, with 54.6%), while 42.1% of the Hungarians and 40.7% of the Croatians regarded their health as “average”. These latter two groups also evaluated their health status as poor in the highest proportions: Hungarians: 16.6%; and Croatians: 16.7%.

In the univariate logistic regression the risk of poor health was higher at ages over 40 years, the highest risk being observed among those 60 to 69 years old (OR=12.61), women (OR=1.43), married/cohabiting subjects (OR=1.41), and those with a low level of education (OR=5.81). Hungarians had the highest risk of poor health (OR=1.00, reference category), the risk being significantly lower among the ethnic Romanians (OR=0.31), Serbians (OR=0.34) and Germans (OR=0.41). Poor SRH was observed among economically inactive persons (OR=3.22), whose material circumstances was “bad” (OR=10.19), persons who did not go on holiday (OR=4.70), those whose self-evaluation of their dwelling was “acceptable” (OR=4.75), and those who did not have another property (OR=1.92), a computer (OR=3.58), or a new car (OR=2.82).

The worst health status was reported by the ex-smokers (OR=1.77). As concerns the effect of alcohol consumption, the worst health status was reported by the non-drinkers

(OR=1.00, reference category). Physical activity had a strong positive effect on SRH, the difference between physically active and inactive persons proving significant (OR=7.11). Obesity (OR=4.27), an overweight condition (OR=1.68) and reported chronic diseases (OR=17.52) were also significantly associated with poor SRH. There was no significant correlation between the SRH and the daily consumption of fruit and vegetables.

In the multivariate analysis (material circumstances model), the following variables were significant: age, education level, nationality, economically active, self-evaluation of material circumstances, and self-evaluation of dwelling. Poor SRH was related to an older age; the risk was higher as the person became older, and the highest risk (OR=21.38) was observed for those aged from 60 to 69 years. Persons with a lower level of education assessed their health as poor to a significantly important extent (OR=3.28). High risk of poor SRH was found among the Hungarians (OR=1.00, reference category) and among the Croatian minority (OR=1.04, but the association was not significant); the risk of poor health among the Romanian minorities (OR=0.14) was significantly lower. Study of the material circumstances led to the following findings: poor SRH was given by persons who were economically inactive (OR=2.26), those who regarded their material circumstances as “bad” (OR=3.75), and those whose self-evaluation of their dwelling was “bad” (OR=3.37).

In the multivariate analysis (health behaviour model) poor SRH was related to an older age, the highest risk (OR=14.68) being observed for those aged from 60 to 69 years. Persons with a lower level of education assessed their health as poor to a significantly important extent (OR=4.43). High risk of poor SRH was found among the Hungarians (OR=1.00, reference category) and among the Croatian minority (OR=1.18, but the association was not significant); the risk of poor health among the Romanian (OR=0.07) and Serbian (OR=0.27) minorities was significantly lower. The BMI was significantly associated with poor SRH, obese persons reporting the worst health (OR=2.15). Persons with a chronic medical state judged their own health status as much worse than those who did not suffer from chronic diseases (OR=14.32).

## Discussion

According to the literature, there is an inverse relation between the socio-economic level and health, meaning that persons in lower socio-economic strata have higher mortality and more frequent health problems than those in higher socio-economic strata. This association has been found for all indicators of socio-economic level, whether based on occupation, education, or income. In our survey, the analysis of the educational level showed that those with a college or university degree were three times more numerous among the Serbians and twice as numerous among the Germans than in the other groups.

Of all the constituents of the world surrounding human individuals, the working environment is the most hazardous, imposing a 1-3 times greater health risk than any other part of the environment. The evaluation of occupational risk factors and the creation of a safe working environment are therefore of crucial importance in shaping the health status of individuals and populations. The employment ratio was high (over 50%) in the Serbian and German minorities and lowest among the Romanians (ca. 30%).

Poor housing conditions are associated with a wide range of adverse health conditions, including respiratory infections, asthma, injuries, and mental diseases. Living environment, characterised here by the presence of public utilities and the structure of dwelling units, is another important determinant of the health status. In our study, living environment was described by the presence of public utilities and the structure of dwelling units and the conditions were similar to those of the national average, with an access to piped water for almost everyone. Another settlement-specific service is household waste management. Of all settlements studied, Méhkerék has no organised waste collection service.

In Hungary, 54.2% of the adult population consume alcohol, 9.6% of them being drinkers and 5% (of the adult population) have alcohol-related diseases. In our survey there was a major difference in the alcohol consumption of the nationalities; the proportion of regular drinkers was about the same in all groups, but those declaring total abstinence was higher in the Romanian and Croatian minority.

Examining the consumption of black coffee on a regular bases the highest percentage was found in Serbian minorities.

Nutrition-related diseases are an extremely serious problem for both the individual and society. Among these, cardiovascular diseases and malignant tumours are the most important. Eating and cooking habits are major causative – or preventive – factors of these diseases. The

use of vegetable oil was most frequent among the Romanians, whereas the Serbians used exclusively animal fat. The majority of the population in Hungary does not consume sufficient amounts of milk and dairy products, fruits and vegetables, and wholemeal cereals. The situation relating to fruit and vegetable consumption in the Romanian minority was particularly poor.

Worldwide, between 60% and 85% of adults are simply not active enough to benefit their health. In general, the level of physical activity was inversely correlated with the BMI and blood pressure. In our study the physical activity was highest in the Romanian group, where the persons were more often of normal weight, while overweight was observed among the Serbian minority and obesity among the Hungarian and Croatian populations.

In Hungary, more than half of the deaths are due to diseases of the circulatory system, with coronary heart disease being the number one cause of death. In our study, 41.2% of all the participants, reported some chronic diseases, most frequently among the Hungarians (53.1%) and least frequently among the Serbians (27.3%). In all nationalities, circulatory diseases were the most abundant (34% to 48%), and musculoskeletal diseases were in second place (15.7% to 28.6%). The regular use of pharmaceuticals was highest in the Hungarians and lowest in the Serbian group.

In efforts to prevent these diseases, the early detection and elimination of the major risk factors such as hyperlipidaemia, hypertension and tobacco use are important aims to be achieved through regular screening of the blood pressure and the cholesterol level, and the avoidance of smoking. Among the minorities, the extremely low participation of the Romanians in these screenings was noteworthy. High odds ratios can be observed in the participation in cholesterol level screening among the Serbians, and in the high blood pressure screening among the Croatians.

Ex-smokers and never-smokers were more likely to have their blood pressure and cholesterol level checked than current smokers. Those who had already had a known cardiovascular disease were more likely to have their blood pressure checked than healthy persons, and those who had a higher education level or poor SRH went to have their cholesterol level checked more often.

The socio-economic status is associated with health, with SRH, and with mortality, as shown in the Scandinavian countries, Britain, Ireland, Germany, the Netherlands and the USA. This association has been found to hold true for all indicators of socio-economic level, whether based on occupation, education or income. Ethnic differences in SRH emerged as a strong prognostic indicator for subsequent mortality differences between ethnic groups in the

USA. The SRH data on the ethnic minorities in Hungary, were significantly different from those for the Hungarian majority, but the direction was opposite to that generally reported in the literature. That is, SRH was better among the ethnic minorities than among the Hungarian controls.

Regular physical exercise is important for mental and physical well-being. Via objective indicators of the health status, e.g. the BMI, existing chronic diseases proved to be closely correlated with the SRH in our study. Those with a chronic disease or a higher BMI gave a worse SRH.

## **Conclusion**

*“In varietate concordia.” “United in diversity.”*

*The motto of the European Union*

The cultural diversity, multiculturalism and culture autonomy accepted by the Council of Europe and the EU countries are obviously parts of our political culture. In Hungary, laws have been passed to protect the minorities, to create their local and national self-governments and the office of Ombudsman for National Minorities.

Compelling evidence indicates that ethnicity correlates with persistent, and often increasing, health disparities among EU and US populations and this demands national attention. A national focus on disparities in health status is particularly important as major changes unfold in the way in which health care is delivered and financed.

The programme called *Healthy People 2010* is designed to achieve two overarching goals: the first is to increase the quality and the duration of healthy life, while the second goal is to eliminate health disparities, including differences that occur by gender, ethnicity, education or income.

In recent decades, there have been negative trends in the health of the population in Hungary, which initiated the launch of the *National Public Health Programme*, with improvement of the health status and well-being of the population as a main goal. A healthy population, to be achieved by reducing inequalities, and by elaborating international, national and regional strategies, is a prerequisite of socio-economic development. The goals of the programme can only be realised with an adequate knowledge of the environmental and

lifestyle risk factors, which should be reduced and eliminated in order to establish a healthy way of life. Lifestyle is partly determined, as in case of eating habits, by deep-rooted traditions which need to be investigated (one of the aims of the present study), and changed, if necessary, to improve health.

In the literature, a wide range of researches in connection with minorities have been reported in which statistical data on ethnic and national minorities, their identity, rights (human and minority), history, education and literature are provided. In Hungary, there has as yet been no complex survey involving several nationalities, so this study provides the first data.

Several of the parameters studied in our survey indicated no special health risks for the population of the region (e.g. smoking habits), which means that the control of these risk factors should be aimed at the whole population without taking nationality into account. Some other factors, however, represent special health risks of certain minorities (e.g. alcohol consumption and cooking habits), justifying the launch of target group-oriented health programmes.

In order to achieve a better efficiency of health promotion and preventive programmes, factors influencing the participation (e.g. the difference in readiness to attend screening among different nationalities) must be taken into account during the planning and implementation.

## Publications Related to the Thesis

**I. Kómár M**, Paulik E. Data on the health and social status of some national minorities in the South-East region in Hungary. (Adatok a dél-kelet magyarországi régió egyes nemzeti kisebbségeinek egészségi és szociális állapotáról.) *Egészségnevelés* 2003;44:208-214.

**II. Kómár M**, Belec B, Paulik E, Nagymajtényi L. Environmental and social conditions and the health status in the national minorities of the Hungarian part of the DKMT Euroregion. Central European Occupational and Environmental Medicine. *Environmental and Social Conditions and Health* 2003;9(4):235-242.

**III. Kómár M**, Nagymajtényi L, Nyári T, Paulik E. The determinants of SRH among ethnic minorities in Hungary. *Ethn&Health* Accepted 14 November 2005. Impact factor:0.744

**IV.** Vincze H, Fazakas Z, **Kómár M**, Paulik E. The recognition of the health and social status of Romas living small-numbered, in closed communities. (Kis létszámú, zárt közösségben élő romák egészségi és szociális helyzetének felismerése.) *Egészségnevelés* 2003;44:161-166.

**V.** Belec B, Paulik E, **Kómár M**, Balogh S, Hajnal F, Nagymajtényi L. The characteristics of the health status from a settlement specific point of view. (Az egészségi állapot település specifikus jellemzői Csongrád megyében.) *Medicus Universalis* 2003;36(6):253-257.

**VI.** Paulik E, Lukács A, **Kómár M**, Nagymajtényi L. The health status of the Roma population living in closed communities in Csongrád County. (Csongrád megyei zárt közösségben élő roma populációk egészségügyi helyzete.) *Egészségfejlesztés* 2004;45:10-16.

**VII.** Balogh S, Hajnal F, Belec B, **Kómár M**, Papp R, Nagymajtényi L, Paulik E. Factors associated with the consumption of fruits and vegetables in South-East Hungary. *Acta Alimentaria*. 2005;34:145-152. Impact factor: 0.299

## Abstracts of Congress Presentations Related to the Subject of the Thesis

1. **Kómár M**, Belec B, Paulik E, Nagymajtényi L. Environmental and social conditions and the health status in the national minorities of the Hungarian part of the DKMT Euroregion. 5<sup>th</sup> Regional Conference on Environment and Food Quality, 4-5 September, 2003, Novi Sad, Serbia-Montenegro, p. 38.

2. **Kómár M**, Paulik E, Müller A. Data on the health and social status of some national minorities in the South-East region in Hungary. (Adatok a dél-kelet magyarországi régió egyes nemzeti kisebbségeinek egészségi és szociális állapotáról.) Népegészségügyi Tudományos Társaság (NETT) XII. Nagygyűlése, 24-26 April, 2003, Hévíz, p. 102.

3. Vincze H, Fazakas Z, **Kómár M**, Paulik E. The recognition of the health and social status of Romas living small-numbered, in closed communities. (Kis létszámú, zárt közösségben élő romák egészségi és szociális helyzetének felismerése.) Népegészségügyi Tudományos Társaság (NETT) XII. Nagygyűlése, 24-26 April, 2003, Hévíz, p. 89.

4. Belec B, **Kómár M**, Nagymajtényi L, Balogh S, Hajnal F. Data of the health status of the population living in small settlements in Csongrád County. (Adatok Csongrád megye kistelepülései lakosságának egészségi állapotáról.) Magyar Egészségügyi Társaság (MET) III. Nemzetközi Konferenciája, 20-21 June, 2003, Felsőszentiván, p. 13.

5. **Kómár M**, Nagymajtényi L, Paulik E. The subjective evaluation of the health status among some national minorities living in the south-east Hungarian region. (Az egészségi állapot szubjektív megítélése a dél kelet magyarországi régió egyes nemzeti kisebbségei körében.) Népegészségügyi Tudományos Társaság (NETT) XIII. Nagygyűlése, 6-8 May, 2004, Szekszárd, p. 19.

6. Lukács A, **Kómár M**, Nagymajtényi L, Paulik E. The health status and the use of health surveys among the Roma population in Csongrád County. (Az egészségi állapot és az egészségügyi ellátás igénybevétele Csongrád megyei roma populációk körében.) Népegészségügyi Tudományos Társaság (NETT) XIII. Nagygyűlése, 6-8 May, 2004, Szekszárd, p. 39.

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