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Health-related Knowledge Development in Roma Pupils

Abstract: The paper discusses possible ways of systematic implementation of intervention programs designed for the development of health-related knowledge and skills in Romany pupils. The research results indicate a considerable educational potential of a health education intervention program pursuing substantial increase in health-related knowledge in Romany primary school pupils. The results suggest that pro-health programs integrated in school curricula are a relevant part of health-oriented education of Romany pupils.

Keywords: health, education, Romany pupil, intervention program, knowledge, primary school.

Theoretical framework

Social disadvantage is a significant factor that causes education problems and disadvantages for Roma pupils. Since none of the former education programs have succeeded in overcoming Roma education problems it is necessary to seek and verify a new education paradigm that will reflect specific features of the Roma minority and will concentrate on education progress of individual pupils (taking into consideration general quantitative criteria and established standards). By implication, it is necessary to identify and introduce education strategies that will support the talents of Roma pupils through innovative and stimulating approaches interrelating education and positive experiences.

In general, the successful and balanced development of cognitive, social-affective and psycho-motor aspects of personality is determined by the life-style structure and contents and the related level of health. Any discrepancies between the structure and the contents of life-style of Roma, on one hand, and the generally established and recognized standards, on the other, are negatively projected onto the physical, mental and emotional condition of Roma children/pupils. This fact correlates with the serious health problems and high frequency of socio-pathological phenomena in Roma children and youth. This situation is significantly influenced by factors like different family education; tolerated drug-addiction; low level of health awareness; inadequate individual and community hygiene; irregular, one-sided and poor-quality nutrition; poor quality and quantity of motion activities; absence of a systematic daily routine – a life-style based on irregular and accidental activities; poor knowledge of reproductive health; absence of health-prevention awareness; high illness-rate and frequent disabilities; lack of interest in education to health. The fact that Roma children identify themselves with the behaviour of their parents and their community manifests itself in their specific attitude to health. A limited functionality, or even dysfunction of family education (including education to health) imposes additional tasks upon school education. In particular, school curricula put the emphasis on education to health thus establishing the necessary conditions for positive intervention and subsequent turn in various adverse health-related parameters pertaining to Roma pupils' life-style, especially pupils from a socially handicapped environment.

Health parameters in the Roma population are much worse than in the majority population. This is undoubtedly a consequence of a way of life that does not respect the requirements of a regulated life-style. As a result, Roma represent a risk group for the occurrence of tuberculosis, infectious diseases, injuries, poisoning and burns. Many of them suffer from respiratory system diseases, support-motion system problems, frequent sensory diseases, mainly diseases of the eye and adnexa. Roma children increasingly suffer (compared to the majority population) from skin and parasitic diseases, for example, salmonellosis, scabies, pediculosis – infes-

tation, pyoderma – purulent skin disease, trachoma – chronic purulent conjunctivitis and corneal fungal infections – diseases caused by fungi; viral hepatitis A, but also B and C, is more frequent in Roma communities. Isolated and segregated communities are characterized by a high incidence of contagious diseases due to adverse life conditions, such as jaundice, tuberculosis, meningitis. The incidence of primary congenital glaucoma has been reported, too. A higher incidence of mental diseases has also been reported (oligophrenia). The incidence of phenylketonuria is extremely high (Bernasovský & Bernasovská, 1996; Liba, 1999; Ginteret et al., 2001, 2004; Horňák, 2005; Matulay, 2009; Bartošovič & Hegyi, 2010). The life-style of Roma is typical of the high consumption of unhealthy food – overly high consumption of cheap fat meat, sausages, animal and vegetable fats, consumption of sweetmeats and sweet beverages, insufficient consumption of whole-grain products, fruit and vegetables, milk and milk products. Furthermore, consumption of fish, eggs, leguminous plants and vegetables are very low. They are replaced with bread and sweetmeats (Popper, Szeghy & Šarkozy, 2009). An early and tolerated consumption of drugs is another serious problem. Many Roma children smoke and drink alcohol, thus imitating the behavioural model of their parents, relatives and the community as a whole. A monitoring of Roma children (1012 respondents – Roma pupils attending the 3rd year of primary school, without regard to their age), aimed at the identification, analysis and evaluation of the initial contact and experiences with drugs (alcohol, tobacco, solvents) in children, their families and their community (Liba, 2006, 2007) revealed that Roma children drink alcohol and smoke (rarely volatiles – toluene) as early as primary school age. Alcohol and tobacco are considered to be an integral part of Roma life. Baška et al. (2007) report on the relation between the smoking habit development age and the intensity of smoking, i.e., the number of smoked tobacco products per day – the earlier age of regular smoking the higher the intensity of smoking at a later age. Furthermore, Popper, Szeghy & Šarkozy (2009) confirm the high consumption of tobacco products in Roma – it exceeds 50% in all examined age groups as well as in both males and females. Excessive consumption of medication was reported for almost all Roma communities (mainly

ibuprofen, paracetamol, diazepam (Bartošovič & Hegyi, 2010)). Many Roma are only aware of those diseases that can be directly perceived, mostly inflammatory diseases, conditions accompanied with fever, injuries, poisoning, burns, influenza, etc. The symptoms of other serious diseases (genetic diseases, degenerative diseases, autoimmune diseases, tumours, and mental disorders) are frequently ignored and, therefore, they are not cured (Popper, Seghy & Šarkozy, 2009). Interestingly, the Roma population consider their health condition more positively than it is in reality. This fact, no doubt, reflects the level of health awareness in Roma and the specific reference frame for assessment of their health.

All the above-mentioned facts suggest that the structure and contents of the life-style of Roma children are evidently influenced by their self-identification with the life-style of the family and the community. This results in the lack of relevant knowledge of and skills in health protection and support. This is, in turn, reflected in an inadequate stance to the generally recognized standards of life-style.

This paper examines the possibilities of supporting the healthy development of Roma children from a socially handicapped environment. I am aware of the fact that the preparation, implementation and evaluation of the whole process is conditioned by a systematic theoretical and empirical reflection of the current situation and subsequent re-definition, modification and possible innovation of the established educational procedures. Better knowledge and skills of Roma children from a socially disadvantaged environment can and should be supported by situations that, through motivating and stimulating strategies, make it possible to pursue pro-health education objectives.

Given this background, we verified and evaluated the education efficiency of a pro-health intervention program focused on the knowledge of health and healthy life-style in Roma children from a socially disadvantaged environment.

Research problem

Is there any correlation between a program of pro-health intervention, on one hand, and the positive (effective) development of the health-related knowledge in Roma pupils from a socially disadvantaged environment?

Research question

Can a program of pro-health intervention significantly improve the level of knowledge of Roma pupils about health and healthy life-style?

Research objectives

The required changes in the level of knowledge of Roma pupils from a socially disadvantaged environment will be achieved through a purposeful and targeted program of pro-health intervention).

Hypothesis

Significant positive changes in the level of knowledge of Roma pupils from a socially disadvantaged environment (health, healthy life-style) will be achieved by means of a health-education intervention program.

Research method

Our research sample included twenty Roma pupils attending the 3rd year of primary school. They met the attributes of homogeneity in terms of their level of knowledge (school results), their interest in and

motivation for learning, the approach of their families to education and, primarily, their social status – socially disadvantaged (4 boys and 16 girls). The oldest pupil was eleven, the youngest one was nine. The average age was 10.85. The boy-to-girl proportion was 1:4.

The health-education intervention program was implemented as part of school education – nine two-hour sessions (natural science and physical education classes) during one school-year. The program interconnected general and specific objectives and methodological procedures with education needs and requirements reflecting the respondents' potential. The program emphasized an individual approach, concentration, perception, and exactness; it activated verbal activity, contributed to the development of word-stock, and stimulated the motivation structure in Roma children from a socially disadvantaged environment. The program covered six themes (human body, health factors, hygiene, nutrition, drugs, motion activities).

The education efficiency was evaluated by means of a knowledge test – a pre-test (in accordance with the National Education Program for Primary Schools, 2008). The post-test implied the education themes (in accordance with the National Education Program for Primary Schools, 2008) as well as our program of health-education intervention whose education forms, methods and tools (for example, interactive whiteboard, dramatization, motivating fairy-tales, pantomime, singing songs, motion games, information-communication technologies, etc.) supported and developed the specified themes of education to health (in accordance with the National Education Program for Primary Schools, 2008). The contents, the formal relevance (understanding the questions) and the duration of the knowledge test were verified within the pre-research period. The teacher of our respondents took part in classroom testing together with the researchers (as approved by the school management). The test included 13 tasks – 4 matching tasks, 5 selection tasks, 1 rearrangement task, 1 open production task, 1 creative answer task and 1 completion task. The tasks were based on listening, underlining, writing, combining, rearranging, circling, crossing and completing.

Research results and discussion

The hypothesis was verified by comparing the input knowledge test results with those of the output knowledge test obtained after the completion of the health education intervention program. The significance level of our testing was $\alpha = 0.05$ (i.e., 5 %). The data were analyzed and interpreted by means of a statistical method, in particular, the descriptive statistics the objective of which is data description, processing, arrangement, their graphical representation, and calculation of fundamental statistical characteristics. In addition, we employed the Anderson-Darling normality test in order to identify the distribution of individual cohorts. This made it possible to select the most appropriate statistical method for confirming or rejecting the research hypothesis. If the value calculated by means of the Anderson-Darling test was below 0.05, the analyzed data did not meet the condition of normal distribution. The research hypothesis was tested by the nonparametric Mann-Whitney U-test that is used to compare medians from two independent samples.

Statistical calculations were done by means of the Minitab 15 – Statistical Software. The results were compared to the critical values specified for the given amount of data.

The p-value is the level calculated by the Mann-Whitney test. It represents the probability of error due to the postulation of difference between the variables examined: $p \geq \alpha$ implies null hypothesis H_0 ; $p < \alpha$ means that null hypothesis is turned down: in this case, the alternative H_A hypothesis applies.

In verifying the hypothesis I selected a few respondent answers that meet the requirement of relevant knowledge of health and healthy lifestyle.

Healthy foodstuff

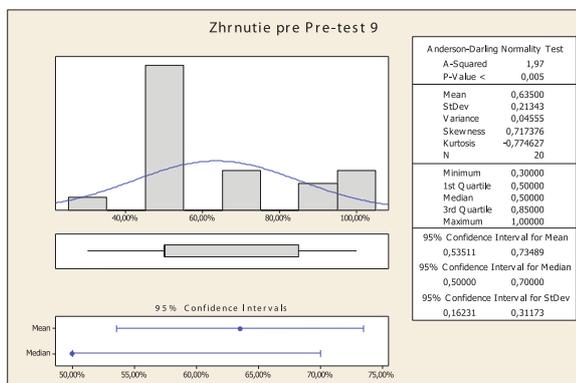


Diagram 1. Descriptive statistics– pre-test

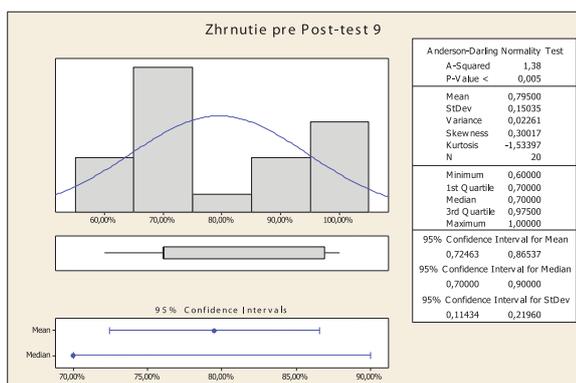


Diagram 2. Descriptive statistics – post-test

The following conclusions can be drawn from this summary:

Given the fact that the data does not have normal distribution, the median value of 50% will be considered to be a mediocre success level in the pre-test, 70% in the post-test. The maximum success level in both the pre-test and the post-test was 100%, the minimum value in the pre-test was 30% and in the post-test 60%. The calculated pre-test dispersion was 4.56%, the post-test dispersion was 2.26%.

Since the p-value calculated by the Mann-Whitney U-test ($p=0,006$) is lower than the specified significance level α , the null hypothesis has been turned down and the alternative H_A hypothesis has been accepted. The H_A hypothesis assumes that the level of knowledge of Roma pupils about healthy foodstuffs will change significantly in favour of the output test thanks to the implementation of the health-education intervention program. The result is represented in Diagram 3.

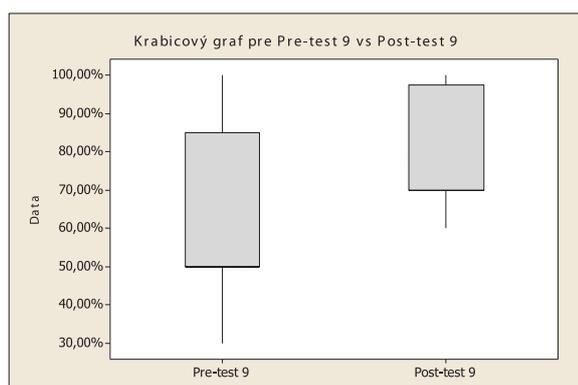


Diagram 3. Box diagram – pre-test vs. post-test

Drugs

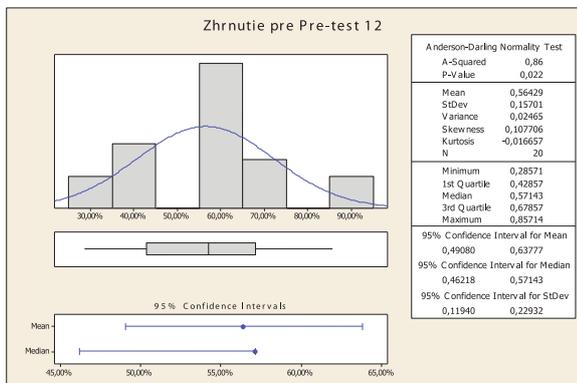


Diagram 4. Descriptive statistics – pre-test

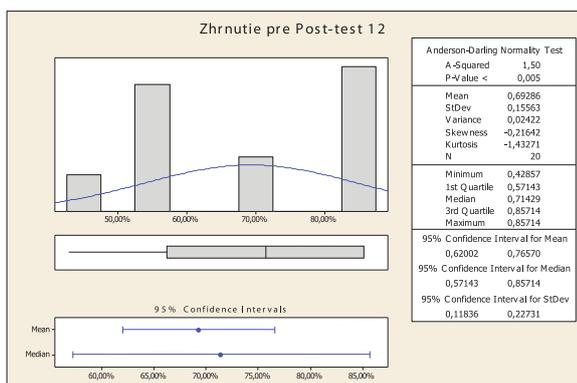


Diagram 5. Descriptive statistics – post-test

The following conclusions can be drawn from this summary:

Given the fact that the data do not have a normal distribution, the median value of 57.14% will be considered to be a mediocre success level in the pre-test, 71.43% in the post-test. The maximum success level in both the pre-test and the post-test was 85.71%, the minimum value in the pre-test was 28.57% and in the post-test 42.86%. The calculated pre-test dispersion was 2.47%, the post-test dispersion was 2.42%.

Since the p-value calculated by the Mann-Whitney U-test ($p=0,0196$) is lower than the specified significance level α , the null hypothesis has been rejected and the alternative H_A hypothesis has been accepted. The H_A hypothesis assumes that the level of knowledge of Roma pupils about drugs will change significantly in favour of the output test as a result of implementation of the health-education intervention program. The result is represented in Diagram 6.

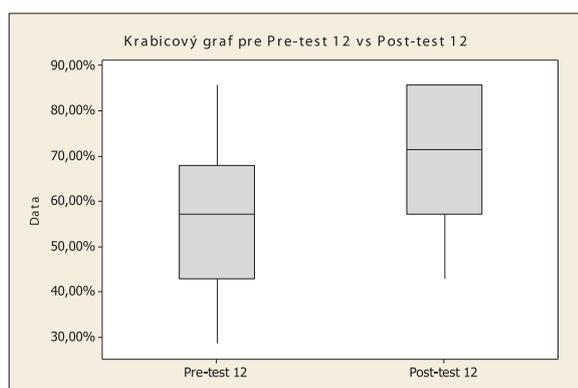


Diagram 6. Box diagram – pre-test vs. post-test

Overall knowledge test results

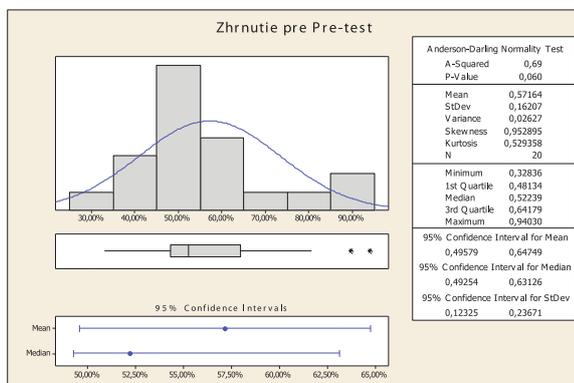


Diagram 7. Descriptive statistics – pre-test

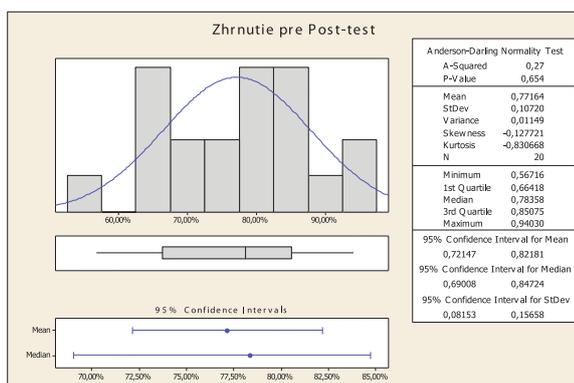


Diagram 8. Descriptive statistics – post-test

The following conclusions can be drawn from this summary:

Since the data correspond to normal distribution, the median value of 52.23% will be considered to be a mediocre success level in the pre-test, 78.36% in the post-test. The maximum success level in both the pre-test and the post-test was 94.03%, the minimum value in the pre-test was 32.84 % and in the post-test 56.72 %.

Since the analyzed data have normal distribution in this case a parametric pair t-test was employed for comparison of the results. Since the p-value ($p=0,000$), calculated by the t-test, is lower than the specified significance level α , the null hypothesis has been turned down and the alternative H_A hypothesis has been accepted. The H_A hypothesis assumes that the level of knowledge of Roma pupils about health and drugs will change significantly in favour of the output test as a result of implementation of the health-education intervention program. The result is represented in Diagram 9.

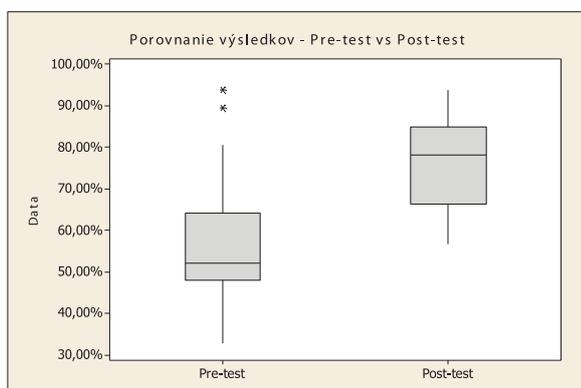


Diagram 9. Box diagram – pre-test vs. post-test

Roma pupils from a socially disadvantaged environment preferred the tasks consisting of circling and underlying the correct answer. They did not like the tasks based on the completion of words or even whole sentences, which is, no doubt, connected to their cognitive limitations manifested in both their verbal and written use of language. Personal assistance (in data collection) was required for explaining individual test items to pupils.

Conclusions

The health-education intervention program reflects the current educational conditions. Its implementation pursued the verification of causal relations between the examined variables and subsequent objectification of the education influence, i.e., the education efficiency of the program. I realize that the objectivity of my findings and their interpretation may have been influenced by certain undesired variables, including circumstances and events that had not been planned before the research implementation, for example, education conditions, teacher personality, school attendance by pupils, family influence, etc. I am aware of these factors that affect the process of education. Therefore, I tried to compensate for their unpredictable effects by careful preparation, fair cooperation with the school teachers, direct program implementation as well as by objective interpretation of the results obtained.

It may be concluded that the structure and contents of the health-education intervention program (temporal succession of the daily routine, observation of specific rules, climate, sense of cooperation, development of responsibility, awareness of ones capabilities, etc.) significantly improve the level of the health-related knowledge of Roma pupils from a socially disadvantaged environment. The program provided me with important information about the way of improving the pro-health knowledge and enabled me to compare my findings with the currently established procedures. In addition, it contributed to the development of the desired cognitive operations in the specific area of education.

The implementation of the pro-health intervention program is an effective supportive strategy of improving the level of knowledge of Roma pupils from a socially disadvantaged environment. The research results suggest that pro-health programs integrated in school curricula may become a relevant part of a systematic education strategy in which the knowledge of health and healthy life-style is an inherent part of a systematic development of the value system in Roma pupils. The ultimate goal of this effort consists in making the care of health an accepted life value and need of the Roma minority.

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