Working together
www.rcis.ro

Revista de cercetare și intervenție socială

ISSN: 1583-3410 (print), ISSN: 1584-5397 (electronic)
Selected by coverage in Social Sciences Citation Index, ISI databases

A STUDY ON THE COGNITIVE LEVEL OF HEALTH EDUCATION FOR SECONDARY SCHOOL STUDENTS FROM THE RURAL ENVIRONMENT

Elena Mihaela CARAUSU, Lucian Stefan BURLEA,
Iulian-Costin LUPU, Ileana ANTOHE

Revista de cercetare și intervenție socială, 2016, vol. 55, pp. 19-30

The online version of this article can be found at:
www.rcis.ro, *www.doaj.org* and *www.scopus.com*

Published by:
Expert Projects Publishing House

On behalf of:
„Alexandru Ioan Cuza" University,
Department of Sociology and Social Work
and
Holt Romania Foundation
REVISTA DE CERCETARE SI INTERVENTIE SOCIALA
is indexed by ISI Thomson Reuters - Social Sciences Citation Index
(Sociology and Social Work Domains)

A Study on the Cognitive Level of Health Education for Secondary School Students from the Rural Environment

Elena Mihaela CARAUSU[1], Lucian Stefan BURLEA[2],
Iulian-Costin LUPU[3], Ileana ANTOHE[4]

Abstract

Due to particularities related to anatomy, fiziology, health and adaptability, adolescents, especially those coming from the rural environment, are an important population group, coping with specific problems and vulnerabilities. The aim of this study targetted the awareness of certain health and social aspects with regards to health education for adolescents in rural environment. The main objective is focused on the evaluation of the cognitive level of health education regarding general and oro-dental health in adolescents from the rural area. The investigated group, which was statistically representative for the studied population, comprised of 160 persons (88 males, 72 females). The maximum accepted error was ±1.68%. We are focused on main indicators of general health, oro-dental morbidity and addressability towards health services. The responses to the health education questionnaire revealed that cognitive educational level is precarious in fields: the general health and oro-dental health. The prevalence of general morbidity (51.40%), obesity (20.56%) and the prevalence of smoking (6.54%) and alcohol (3.74%) consumption was assessed for knowledge of general health status. The prevalence of the dental caries (51.55%) and periodontal disease (29.90%) was assessed in order to evaluate the oro-dental morbidity. Adolescents from the rural environment represent a highly vulnerable population group that requires the implementation of a health promotion program at community level. Adolescents' health ought to be one of the primary concerns for the decision factors, with the purpose of ensuring an acceptable health level for future generations.

Keywords: oro-dental morbidity, general health, management, health education, health promotion, prevalence, parenting education.

[1] Grigore T. Popa University of Medicine and Pharmacy, Faculty of Dental Medicine, Iasi, ROMANIA. E-mail: mihaelacarausu@yahoo.com

[2] Grigore T. Popa University of Medicine and Pharmacy, Faculty of Dental Medicine, Iasi, ROMANIA. E-mail: lucianburlea@yahoo.com (Corresponding author)

[3] Grigore T. Popa University of Medicine and Pharmacy, Faculty of Dental Medicine, Iasi, ROMANIA. E-mail: lupu_costin@yahoo.com

[4] Grigore T. Popa University of Medicine and Pharmacy, 16 Universității Street, 700115, Iasi-Faculty of Medicine, Iasi, ROMANIA. E-mail: ileanaantohe@gmail.com

Introduction

On an international level, adolescents' health is recognized as a fundamental component of human development and welfare, on which depends the population's health, as well as the development and prosperity of all countries. In this respect, the EU Health Strategy *„Health is the greatest wealth*", 2008-2013 emphasizes the fact that *„a good health state, from prenatal period, to adolescence constitutes in fact an important social and economic resource"* (Ministry of Health, 2016: 7).

World Health Orgnization (WHO) triggers in its report over *„The Health Behaviour of School-aged Children* (HBSC)" that in central and East-European countries, among which Romania is mentioned also, *„adolescents' health is neglected by the authorities, therefore they are vulnerable and they have limited access to health services"* (Currie *et al*., 2012). On a national level, two strategic documents identify the main directions and major interventions in children and young people's health: „National Health Strategy 2014-2020" and „National Strategy for protection and promoting children rights for the period of 2014-2020" (Ministry of Health, 2016: 6).

In the past few years, the concept of rural health has become more and more noticeable (Braswell & Johnson, 2013). This refers to an interdisciplinary field of public health which deals with the study of the health level of the population coming from the rural environment, comprising several fields of study: public health, sociology, health economy, family practice, dental medicine, nursing (Manuc & Carausu, 2014). According to the principle of equity in health, all citizens should have equal chances at health. In spite of this, if we are to talk about many developing countries around the world, there are significant differences between the rural and urban population as to what concerns the general and oro-dental health state. Adolescents found in the rural environment generally have a reduced accessibility to health services, by comparison to that of adolescents from the urban environment. The fact that in the rural environment there are fewer practitioners (general and dental practitioners), fewer medical services and the fact that there is a total lack of health education programs and programs promoting general and oro-dental health, basically means fewer preventive medical services and an increase in the response time as to what emergency situations are concerned (Rourke, 2008).

In Romania, the primary medical services are being provided by general practitioners who provide preventive and curative medical services for all children, regardless of the medical insurance that the parents / legal guardians have or do not have (ISNP, 2011). The main problems that can be found when it comes to primary health care are a limited capacity of actively identifying health risks among children in rural communities, but also the limited offer of preventive medical services in the main health package (Ministry of Health, 2016: 9). Oro-

dental health, as an integral and essential part of general health, has a significant impact over the wellfare and quality of life (Bertness *et al*., 2016). Moreover, general and oral healths are interconnected, because oral diseases and various cronic diseases have „common risk factors" (Conway *et al*., 2013). Social and economic factors are affecting health; therefore, inequalities at this level are reflected in the general and oro-dental health of adolescents from the rural environment (Currie *et al*., 2012; Anton-Paduraru *et al*., 2015). Poorness has a negative impact over adolescents in the rural environment, 40% of them living in very poor conditions or even at the limit of subsistence. Poorness affects adolescents' health and development by limiting access to health services, to a correct and balanced nutrition and to education opportunities on the one hand, and on the other hand, poorness influences the teenager's family, determining the parents to leave the country in order to look for a job (Ministry of Health, 2016: 9).

Methodology

Our research respected the methodology of the prevalence studies. The investigation file used for collecting data comprised the following sections: general, social and economic factors; adresability to health services; general and oro-dental morbidity; attitude towards the general and oro-dental health condition; oro-dental health, pathology and hygiene. The data regarding oro-dental health were collected by the dental practitioner, whose professional experience allowed an efficient communication with the secondary school students considered for the study.

The study was developed following on two research directions: (1) forwarding an elaborated questionnaire in this sense (the research method being social and medical enquiry), the quality of the answers being evaluated on a Likert scale; the obtained data was statistically processed using the following indicators: frequency, structure (the percent of the present/absent answers), central tendency for quantitative characteristics (medium value) and for testing statistical significance of differences; (2) clinical examination of adolescents and introducing data regarding general and oro-dental health (Petersen & Baez, 2013) in the database.

The data provided in the questionnaire was corroborated with the results of the clinical examination. The demographic, social and economic factors, considered *independent variables*, were: age (already turned), gender (male/female), parent's education (UNESCO, 2012) and type of family. For the family income level, the following categories were established: poorness, reduced, and medium.

In this study, the prevalence of the general morbidity, the indicators of oro-dental morbidity, the addressability of the adolescents from the rural environment to the general practitioner, and to the dental medicine services in the last 2 years,

oral hygiene, the degree of education for health, autoperception of oro-dental health (SOH) and autoperception of the general health, were considered *dependent variables.* For the study of general morbidity for the adolescents from the rural environment we used the International Classification of Diseases and Health Problems, Revised Version No. 10 (WHO, 2013). For the study of oro-dental morbidity there were followed the main indicators recommended on a European level (Topping, Bonner, & Pitts, 2005; Dascalu, Carausu, & Manuc, 2008), which were correlated to the most important prevalence indicators of general diseases (Zanoschi *et al.*, 2003). *The statistical analysis* was realized with the help of SPSS 18.0 (SPSS for Windows). Ethical clearance for the study was obtained from the institutional ethical committee.

Goal and objectives

The present study was realized with the purpose of knowing the level of health education level of adolescents in the rural environment, correlated with their health condition (general and oro-dental). In order to reach its goal, the research set the main specific objectives: (1) evaluating the cognitive level of health education regarding general and oro-dental health condition; (2) evaluating general morbidity and oro-dental morbidity in the studied group. The results of the study are useful for consolidating a health promotion program, integrated at a community level, the program having been created for the main health problems raised into question by secondary scool students from the rural environment.

Material and method

The North Eastern region is the region having the largest number of inhabitants in Romania. In 2011, this region registered a medium population density of 100.2 inhabitants/km^2, which exceeded the medium value registered per country (89.5 inhabitants/km^2). Iași is the county having the largest population density, with 149.9 inhabitants/ km^2 (INS, 2015). The group of subjects considered for this study comes from a rural community of Iasi county, located in the North-Eastern region of Romania, having 4975 inhabitants, 341 (6.85%) out of which being adolescents. The rural community population that has been taken for this study has access to the healh services provided by two Family Medicine practices and two Dental Medicine practices. The study was realized in January – October 2016. Initially there were 168 adolescents included in the study. Due to the fact that the global participation rate to our study was 95.24%, in the final group only 160 subjects with ages between 13 and 15 remained. The medium age for the total studied group was 13.92 years, 13.85 years for females and 13.98 years for males. The studied group is representative for adolescents from the rural environment within Iasi county, the maximum error being ± 2.68%. The teenager's family was requested the acceptance for the participation of the teenager to the present study.

Results

Gender distribution of children in the studied group evidenced the prevalence of the male gender subjects (88 persons, respectively 55.0%) and of the female (72 persons, respectively 45.0%). The demographic and social characteristics of the studied group are synthetically presented in *Table 1*. Following a social and economic aspect, the studied lot includes adolescents from the rural environment whose parents either work abroad, or in their own homes doing subsistence agriculture and animal husbandry, or which beneficiate from minors' allowances. Most of the adolescents from the studied group were from families with reduced monthly incomes, who have confronted with significant financial difficulties in the past few years.

Table 1. Demographic and social characteristics of the studied group

Age / Gender / General factors:	13-15 years		
	Male n_1 (%)	Female n_2 (%)	Total N (%)
	88(55.0%)	72(45.0%)	160(100.0%)
Age (already turned):			
-13 years [1];	21(23.84)	25(34.72)	46(28.95)
-14 years [2];	48(54.56)	33(45.83)	81(50.63)
-15 years [3];	19(21.60)	14(19.44)	33(20.62)
Medium age (years)	13.98	13.85	13.92
Mother's education (ISCED, 2013):			
-without education [1];	4(4.55)	7(9.72)	11(6.87)
-elementary school (ISCED 1) [2];	11(12.50)	16(22.22)	27(16.88)
-secondary school (ISCED 2) [3];	14(15.91)	12(16.67)	26(16.25)
-upper secondary education (ISCED 3) [4];	19(21.59)	13(18.06)	32(20.00)
-post secondary education (ISCED 4)[5];	20(22.73)	15(20.83)	35(21.86)
-master(tertiary education) (ISCED 7) [6];	9(10.23)	8(11.11)	17(10.63)
-non-answer[9].	11(12.50)	1(1.39)	12(7.50)
Family income on a monthly basis:			
-without any income [1];	7(7.95)	5(6.94)	12(7.50)
-poorness(sub 400 Lei/month)[2];	16(18.18)	11(15.27)	27(16.87)
-reduced (401-880 Lei/month)[3];	29(32.95)	25(34.72)	54(33.75)
-medium (881-1050 Lei/month)[4];	28(31.82)	21(29.17)	49(30.63)
-non-answer [9].	8(9.09)	10(13.89)	18(11.25)
Living conditions:			
-unsatisfactory [1];	20(22.73)	11(15.28)	31(19.36)
-satisfactory [2];	27(30.61)	29(40.28)	58(36.25)
-good [3];	23(26.14)	22(30.56)	45(28.13)
-unknown [9].	18(20.45)	10(13.89)	28(17.50)

Odds Ratio (OR) (Viera, 2008); CI 95%- *Confidence Interval 95% for OR.*

Adolescents from the studied group filled in a health education questionnaire, which gathered questions related to health, disease prevention, personal and oro-dental hygiene. The calculated mean value for all the answers offered by the adolescents from the studied lot to the health education questionnaire is 1.86 for the total lot (the scale used for evaluating the answers was Likert 0-4), 1.8 for male gender and 1.9 for female gender. The unsatisfactory general level of the answers received for the questions can be explained by the lack of interest for health education as what the adolescents and their parents are concerned, as well as the teachers. To serve as an example, *Table 2* shows a synthesis of answers to the most important items contained in the questionnaire.

Table 2. Synthesis of answers to the health education questionnaire

Age / Gender / Item:	13-15 years		
	Male n_1 (%)	Female n_2 (%)	Total N (%)
	88(55.0%)	72(45.0%)	160(100.0%)
When is it mandatory for hands to be washed:			
-unsatisfactory/ incomplete answer [1];	27(30.68)	17(23.61)	44(27.50)
-satisfactory answer [2];	21(23.86)	19(26.39)	40(25.00)
-good answer [3];	19(21.59)	23(31.94)	42(26.25)
-very good answer [4];	16(18.18)	12(16.67)	28(17.50)
-non-answer [9].	5(5.68)	1(1.39)	6(3.75)
Mean value	2.0	2.1	2.07
How are „contageous" diseases transmitted?			
-unsatisfactory/ incomplete answer [1];	22(25.00)	16(22.22)	38(23.75)
-satisfactory answer [2];	31(35.23)	27(37.50)	58(36.25)
-good answer [3];	17(19.32)	14(19.44)	31(19.37)
-very good answer [4];	13(14.77)	9(12.50)	22(13.75)
-non-answer [9].	5(5.68)	6(8.33)	11(6.87)
Mean value	1.7	1.8	1.73
How can one prevent dental caries?			
-unsatisfactory/ incomplete answer [1];	19(21.59)	13(18.06)	32(20.00)
-satisfactory answer [2];	30(34.09)	26(36.11)	56(35.00)
-good answer [3];	23(26.14)	22(30.56)	45(28.13)
-very good answer [4];	12(13.64)	8(11.11)	20(12.50)
-non-answer [9].	4(4.55)	3(4.17)	7(4.37)
Mean value	2.3	2.4	2.37
When was the last time you changed our tooth brush?			
-I don't have one/I don't change the tooth brush [1];	20(22.73)	15(20.83)	35(21.88)
-last year [2];	26(29.55)	17(23.61)	43(26.86)
-6 months ago [3];	24(27.27)	22(30.56)	46(28.85)
-3 months ago [4];	13(14.77)	16(22.22)	29(18.13)
-non-answer [9].	5(5.68)	2(2.78)	7(4.37)
Mean value	1.8	2.1	1.98
How often do you brush your teeth?			
-twice a day [1];	13(14.77)	16(22.22)	29(18.13)
-daily[2];	20(22.73)	22(30.56)	42(26.25)
-sometimes [3];	26(29.55)	17(23.61)	43(26.86)
-never [4];	25(28.41)	14(19.44)	39(24.37)
-non-answer [9].	4(4.55)	3(4.17)	7(4.37)
Mean value	1.8	2.1	1.97

Odds Ratio (OR); CI 95%- *Confidence Interval 95% for OR.*

The data presented in *Table 3* shows the results concerning the addressability of the adolescents from the rural environment to the dentist. The addressability, calculated for the total group, was 60.62% (97 subjects), respectively 59.09% (52 persons) for males and 62.50% (45 persons) for female gender subjects. The accessibility of adolescents from the rural environment to health services is influenced by factors related to organizing and functioning of health system, parents' education, but also by the family income. The data presented in *Table 3* and *Table 4* brings forth the oro-dental morbidity in the case of secondary school students from the rural environment, which is relatively different for the two genders.

Table 3. Addressability of the adolescents from the rural area to the oro-dental health services

Age / Gender / Factors:	13-15 years			Odds Ratio (CI 95%)	*p* value
	Male n_1 (%)	Female n_2 (%)	Total N (%)		
	52	45	97		
Addressability to dental office:					
-not scheduled [1];	2(3.85)	3(6.67)	5(5,15)	OR=0.74	
-emergency [2];	23(44.23)	22(48.89)	45(46,39)	(0.33-1.65)	p<0.05
-scheduled [3].	27(51.92)	20(44.44)	47(48,45)		
Most recent visit to the dental					
practitioner:	6(11.54)	2(4.45)	8(8.25)	OR=0.61	
-non-answer [9];	12(23.07)	16(35.55)	29(29.90)	(0.27-1.37)	p<0.05
-last year [1];	15(28.85)	12(26.67)	27(27.84)		
-2 years ago [2];	19(36.54)	15(33.33)	34(35.05)		
-never [3].					
Auto-perception of oral health (SOH):					
-non-answer [9];	1(1.92)	2(4.44)	3(3.09)	OR=0.41	p<0.05
-bad [1];	11(21.15)	17(37.78)	28(28.87)	(0.17-0.99)	
-medium [2];	19(36.54)	18(40.00)	37(38.14)		
-good [3].	21(40.38)	8(17.78)	29(29.90)		

Odds Ratio (OR); CI 95%- *Confidence Interval 95% for OR; RA- Attributable Risk.*

The results of the oro-dental morbidity are showed in *Table 4*.

Table 4. Oro-dental morbidity for adolescents in the rural environment

Age / Gender / Factors:	13-15 years			Odds Ratio (CI 95%)	*p* value
	Male n_1 (%)	Female n_2 (%)	Total N (%)		
	52	45	97		
Oro-dental morbidity (prevalence)					
Dental caries [K02.1, K02.2, K02.3, K02.5, K02.8]	27(51.92)	24(53.33)	51(52.58)	OR=0.88 (0.39-1.95)	p<0.05
Radicular remainings [K08.3]	7(13.46)	11(24.44)	18(18.56)	OR=0.48 (0.17-1.37)	p<0.05
Subgingival and overgingival tartar [K03.5]	11(21.15)	8(17.78)	19(19.59)	OR=1.24 (0.45-3.42) RA=19.35%	p<0.05
Affecting pulp and periapical tissue [K04.0 K04.1, K04.2]	5(9.62)	8(17.78)	13(13.40)	OR=0.49 (0.15-1.63)	p<0.05
Parodontal disease [K05.3, K05.4, K05.5, K05.6]	9(17.31)	13(28.89)	22(22.68)	OR=0.60 (0.25-1.45)	p<0.05
Dental abcess K04.6, K04.7, K04.8]	10(19.23)	7(15.56)	17(17.53)	OR=1.29 (0.45-3.73) RA=22.43%	p<0.05
Dental and under-jaw anomalies	3(5.76)	5(11.11)	8(8.24)	OR=0.49 (0.11-2.18)	p<0.05
Dental trauma	5(9.62)	2(4.44)	7(7.22)	OR=2.29 (0.42-12.41)	p<0.05
Oral hygiene: -unsatisfactory [1]; -medium [2]; -good [3].	 12(23.08) 22(42.31) 19(36.54)	 15(33.33) 19(42.22) 11(24.44)	 27(27.84) 41(42.27) 30(30.93)	 OR=0.59 (0.24-1.43)	p<0.05

Odds Ratio (OR); CI 95%- *Confidence Interval 95% for OR; RA- Attributable Risk.*

Table 5 presents the evaluation results of the addressability of adolescents from the rural environment to the general practitioner or / pediatrician. The calculated addressability for the entire lot was 66.87% (107 subjects), respectively 63.64% (56 persons) for males and 70.83% (51 persons) for female gender subjects. The reduced addressability to physician is a significant risk factor to the overall health of adolescents in rural areas. We noticed a significant association between parents' low education level (ISCED 1) and the reduced addressability to the family physician / pediatrician of the middle school students in rural areas (OR = 1.14).

Table 5. Addressability of adolescents from the rural area to the basic health services

Age / Gender / Factors:	12-15 years			Odds Ratio (*CI 95%)*	*p* value
	Male n_1 (%)	Female n_2 (%)	Total N (%)		
	56	51	107		
Access to general practitioner /pediatrician (2015):				OR=1.48	
-yes [1];	18 (32.14)	21(41.18)	39(36.45)	(0.67-3.26)	p<0.05
-no [2];	31(55.36)	26(50.98)	57(53.27)	RA=32.43%	
-non-answer[9].	7(12.50)	4(7.84)	11(10.28)		
Self perception of health (SPH):					
-ill [1];	4(7.14)	7(13.73)	11(10.28)	OR=0.55	p<0.05
-healthy [2];	49(87.50)	42(82.35)	91(85.05)	(0.19-1.53)	
-non-answer [9].	3(5.36)	2(3.92)	5(4.67)		

Odds Ratio (OR); CI 95%- Confidence Interval *95% for OR; RA- Attributable Risk*

General morbidity (*Table 6*) of secondary school students from the rural environment taken for study, dominated by untreated diseases (19.63%) and recently diagnosed (13.08%), with only 18.69% of the cases correctly diagnosed and treated determines social and health problems that are very difficult to handle, on a medium term or long term. In our study, the prevalence of smoking has low value (6.54%) as compared to the average of urban area at national level (14.2%).

Table 6. Prevalence of general morbidity, smoking and alcohol consumption

Age / *Gender* / Factors:	13-15 years		
	Male n_1 (%)	Female n_2 (%)	Total N (%)
	56	51	107
General prevalence	29(51.79)	26(50.98)	55(51.40)
Smoking	5(8.93)	3(5.88)	7(6.54)
Alcohol consumption	3(5.36)	1(1.96)	4(3.74)

A relatively healthy lifestyle was registered for 20.32% of the subjects, being insignificantly higher in the case of males than in the case of female gender subjects 23.82% *vs.* 17.59%. The highest number of subjects with a healthy lifestyle was registered at subjects with the age of 15 (17 persons– 10.62%).

Discussions

In Romania, the population from certain rural regions of EU confronts with difficulties related to accessibility to basic health services and dental medicine (Manuc & Carausu, 2014). Numerous research sustain that in the families where parents have a low financial status and low educational level, children adopt an unhealthy life style (Cojocaru & Cojocaru, 2011). By broadly analyzing the morbidity determined by oro-dental diseases in the studied lot, it was therefore

concluded that parodontal diseases and dental caries have a relatively high prevalence. According to WHO, the solutions proposed by Public Health specialists (Petersen & Kwan, 2011) on the improvement of population's oro-dental health are efficient when they are integrated together with the other solutions for general diseases within several national health programs integrated at a community level (Teslariu *et al*., 2016). In this sense, The WHO Global Oral Health Programme aligns to strategies designed for preventing general diseases, and promoting oral health (WHO, 2012).

Emphasis is made on a coherent health politics, based on health education, promotion of oral health and prevention of oro-dental diseases (Carausu *et al.*, 2016), which should include: (1) an efficient control of risk factors for oral health and mentioning the ones that are common also for general diseases, as well as for oral health, in order to simultaneously prevent general diseases, as well as oro-dental diseases; (2) implementing health programs designed for preadolescents and adolescencents from the rural environment, coming from poor families (Duma *et al*., 2014); (3) the technical and legislative suport necessary for configuring an efficient oral health system and one that integrates oral health in general health.

General health (Mocanu, 2013) and oro-dental health of preadolescents and adolescents from the rural environment is influenced, on the one hand, by the social and economic level, the education level, the prevalence of tabacosis and parents' alcohol consumption, and, on the other hand, by their own personal oral hygiene, diet (Trandafir *et al.*, 2015) and general background that has been altered by certain general diseases (ex. digestive and renal diseases etc., which simultaneously evolve, can influence the background by making it susceptible to oro-dental diseases).

The strategy of European WHO region "*Investing in children: the European child and adolescent health strategy 2015–2020*" renders the interventions for preventing violence (Ciubara *et al.*, 2016) and abuse over adolescents as one of the intervention priorities (subject area no. 37). In this sense, WHO recommends violence to be considered as a public health problem, as well as a risk factor problem, correlated to the former, according to the ecological model (Ministry of Health, 2016: 46).

Conclusions

The analysis of the results of our study showcases the following conclusions: (1) Adolescents coming from the rural area have a precarious general and oro-dental health condition; (2) The unsatisfactory general level of answers to the questionnaire can be explained by a feeble interest regarding health education on behalf of the adolescents, as well as their parents and teachers; (3) Accessibility to health services that adolescents from the rural area have is influenced by factors related to organizing and functioning of health system, but also to the family income level and parents' education level; (4) The solutions proposed by the public health specialists regarding the improvement of oro-dental health of adolescents from the rural environment are efficient when are implemented together with general health solutions within certain health programs integrated at community level.

References

Anton-Paduraru, D.T., Moscalu, M., Oltean, C., Trandafir, L.M.S., & Ciubara, A. (2015). 283 Psycho-social aspects in children with cystic fibrosis from a regional centre in north-eastern Romania. *Journal of Cystic Fibrosis*, *14*(S1), S130.

Bertness, J., Holt, K., & Barzel, R. (2016). *Promoting Oral Health in Schools: A Resource Guide,* Washington DC: National Maternal and Child Oral Health Resource Center.

Braswell, A., & Johnson, N. (2013). *Rural America Oral Health Needs*; National Rural Health Asociation Congress.

Carausu, E.M., Albu, A., Lupu, I.C., Checherita, L.E., & Manuc, D. (2016). *Educatia pentru sanatate si promovarea sanatatii la preadolescentii si adolescentii din mediul rural;* A XXII-a sesiune stiintifica dedicata Zilei Mondiale a Sanatatii, *Preventia afectiunilor stomatologice*, Ed. Grigore T. Popa, UMF Iasi, vol. Rez., 63.

Ciubara, A., Chirita, R., Burlea, L.S., Lupu, V.V., Mihai, C., Moisa, S.M., & Untu, I. (2016). Psychosocial particularities of violent acts in personality disorders. *Revista de Cercetare si Interventie Sociala*, *52*, 265-272.

Cojocaru, D., & Cojocaru, S. (2011). The deprivatization of family and its effect on parenting in Romania, *Revista de Cercetare si Interventie Sociala*), *33*, 209-222.

Conway, D.I., McMahon. A.D., Robertson. A.D., Macpherson. L.M.D. (2013). Dental Epidemiology. In Ahrens W, Pigeot, *Handbook of Epidemiology*, New York: Springer Scientific.

Currie, C. Zanotti, C., Morgan, A., Currie, D., de Looze, M., Roberts, C., Samdal, O., Smith, O.R.F., Barnekow, V. (2012). *Social determinants of health and well-being among young people*. Health Behaviour in School-aged Children (HBSC) study: International report from the 2009-2010 survey; Copenhagen, WHO Regional Ofice for Europe. Health Policy for Children and Adolescents, No. 6.

Dascalu, C., Carausu, E.M., & Manuc, D. (2008). Methods for Data Selection in Medical Databases: The Binary Logistic Regression- Relations with the Calculated Risks. *World Academy of Science, Engineering and Technology*, *14*, 278-282.

Duma, O.O., Rosu, S.T., Manole, M., Petrariu, F.D., Constantin, B. (2014). Disparities in the access to primary healthcare in rural areas from the county of Iasi, Romania. *Rev Med Chir Soc Med Nat Iasi*, *118*(3), 743-748.

http://www.uis.unesco.org/Education/Documents/isced-2011-operational-manual.pdf

INS (2015). *Romania in cifre, 2015*, Bucuresti: INS. http://www.insse.ro/cms/files/publicatii/Romania_in_cifre_2015final.pdf

INSP (2011). *Raportul stării de sănătate: România 2010, Indicatori ECHI*; Institutul Național de Sănătate Publică (INSP). http://www.insp.gov.ro/cnepss/wp-content/themes/PressBlue/pdf/ Raport%20stare% 20 sanatate. %20 Indicatori% 20ECHI .pdf

Manuc, D., & Carausu, E.M. (2014). *Sante Publique*, Bucuresti: Carol Davila.

Ministry of Health (2016) *National Report: Children and young people's health in Romania 2015, Bucuresti:* Carol Davila.

Mocanu, V. (2013). Prevalence of Overweight and Obesity in Urban Elementary School Children in North-eastern Romania: Its Relationship with Socio-economic Status and Associated Dietary and Lifestyle Factors. *BioMed Research International*, *2013*, Article ID: 537451. http://dx.doi.org/10.1155/2013/537451

Petersen, P.E., & Kwan, S. (2011). Equity, social determinants and public health programmes- the case of oral health. *Community* Dentistry and *Oral Epidemiology*, *39*, 481-487.

Petersen, P.E., Baez, R.J. (2013). *Oral health surveys: basic methods*. Geneva: WHO.

Rourke, J. (2008). Increasing the number of rural physicians. *Canadian Medical Association Journal*, *178*, 322-325.

SPSS (2012). SPSS, versiunea 18.0. http://www-03.ibm.com/software/products/en/spss-stats-pro

Teslariu, O., Oltean, C, Gavriluta, L.A., Iliescu, M.L., & Anton-Paduraru, D.T. (2016). Obesity in preschool children. *Romanian Journal of Pediatrics*, *LXV*(1), 51-55.

Topping, G., Bonner, B., Pitts, N. (2005). *European Global Oral Health Indicators (EGOHID)- Health Surveillance in Europe*. http://ec.europa.eu/health/ph_projects/2005/action1/docs/action1_2005_frep_14_a20_en.pdf

Trandafir, L.M., Anton-Paduraru, D.T., Miron, I., & Indrei, L.L. (2015). Psychosocial Implications of Childhood Obesity, *Revista de Cercetare si Interventie Sociala*, *49*, 205-215.

UNESCO (2012). *ISCED Clasification 2011*. Montreal: UNESCO Institute for Statistics.

Viera, A.J. (2008). Odds ratios and risk ratios: what's the difference and why does it matter? *Southern Medical Journal*, *101*(7), 730-734.

WHO (2012). *The WHO Global Oral Health Programme*. WHO, Geneva. http://www.who.int/mediacentre/factsheets/fs318/en/

WHO (2013)- *Clasificația Internațională a Maladiilor (ICD-10 versiunea 2013)- ICD-10-CM Diagnosis Code*; WHO, Geneva. http://www.icd10data.com/ICD10CM/Codes/I00-I99/I30-I52/I51-/I51.81

Zanoschi, G., Duma, O.O., Iliescu, M.L., & Manole, M. (2003). *Elemente de statistica aplicata în sanatatea publica*, Iasi: Tehnopres.