

Macedonian Medical Master of Science Theses in Public Health Defended in 2007-2010

Macedonian Journal of Medical Sciences

Institute of Immunobiology and Human Genetics, Faculty of Medicine, University "Ss Cyril and Methodius", Skopje, Republic of Macedonia

Abstract

Citation: Macedonian Journal of Medical Sciences. Macedonian Medical Master of Science Theses in Public Health Defended in 2007-2010. *Maced J Med Sci.* 2011 Sep 30; 4(3):296-333. <http://dx.doi.org/10.3889/MJMS.1857-5773.2011.193>.

Key words: Medical Publications; Medical research; Master of Sciences; Public Health; Republic of Macedonia.

Correspondence: Macedonian Journal of Medical Sciences. Institute of Immunobiology and Human Genetics, Faculty of Medicine, University "Ss Cyril and Methodius", Skopje, Republic of Macedonia. 50 Divizija No 16, PO Box 60, 1109 Skopje, Republic of Macedonia. Telephone: +389 2 3110556. Telefax: +389 2 3110558. EMail: mjms@ukim.edu.mk

Received: 12-Oct-2011; Revised:10-Nov-2011; Accepted: 14-Nov-2011; Online first: 17-Nov-2011

Copyright: ©2011 Macedonian Journal of Medical Sciences. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Competing Interests: The author have declared that no competing interests exist.

Brankica B. Mladenovic. Knowledge, attitudes and practices regarding use of contraception among high-school students in Skopje [MSc thesis]. Skopje, Republic of Macedonia: *Cathedra of Social Medicine, Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2007.*

Objectives: The *purpose* of the study was to determine the knowledge, attitudes and practices regarding use of

We present English abstracts of MSc theses in Public Health defended in 2007-2010 at the Faculty of Medicine, University "Ss Cyril and Methodius", Skopje, Republic of Macedonia. English summaries are published as they are translated by authors and included in the final version of defended MSc. Macedonian Medical Master of Science (MSc) theses are deposited in the Central Medical Library and National and University Library "St. Kliment Ohridski" in Skopje, Republic of Macedonia.

At the Faculty of Medicine in Skopje 26 MSc theses were defended in 2007-2010, 8 MSc are without abstracts (30.8%) and 13 MSc are without Key words (50.0%).

Editorial Board does not take any responsibility either for the content, nor the quality of the abstracts. We have to repeat that primary responsibility for the quality of the MSc theses belongs to the mentors, to the institutions they are representing, to the Vice-Dean of science, and to Responsible person for MSc in Public Health. All of them should be more actively involved in the preparation of Master of Science theses in Public Health in order international standards to be achieved.

contraception among high-school students in Skopje, in order to document data which could be used in creating interventions for improving adolescent sexual and reproductive health.

General objectives:

1. To assess the main determinants of high-school students' sexual conduct.

2. To assess the knowledge regarding contraception by the study population.
3. To assess the practices regarding use of contraception by the study population.
4. To better describe the level of use of the existing sexual and reproductive health service

Methods: Data were obtained through a quantitative, cross-sectional study conducted in March-April 2006, using paper-and-pencil self-administered questionnaire. The population under study included 310 high-school students from 5 different high-schools from Skopje, from both genders, from 4-th grade, aged 17-19. The age was selected on purpose as they were expected to have more sexual experience and accordingly, more experience in contraception use. All students registered in classes selected at random were invited to participate in the survey. There were two levels of sampling: 1) the school and 2) the class. The questionnaire contains 32 questions, divided in three sections: section for general characteristics, section for sexually active, and section for non-active students.

Results:

1. Sexual conduct

The median age of onset of sexual activity is 16 years for boys and 17 years for girls. High proportion of students (43.2%) started their sexual activity when studying in high-school. There was a significant difference of reported sexual activity between the males and females: when reaching grade 4 of the study, 63% of the boys and 27% of the girls had already started with sexual activity. The difference between gender was also demonstrated in the duration of the relationship before the first sexual intercourse as well as in the number of partners. The first sexual intercourse is highly unplanned activity; 59.1% of the boys and 43.9% of the girls reported that their first sexual intercourse was unplanned. Of those sexually non active, 55% of the girls and 37.5% will accept sexual relationship for the first time without using condom. Fifty percent of the girls reported having no consideration and 20% have no intention to go for counseling on contraception and STI before the first sexual intercourse.

2. Knowledge about contraception

Students use many different sources/providers of information about contraception. The most frequently cited sources of information on contraception were non-professional sources, like TV, radio, Internet and peers. Medical staff and medical services were less mentioned.

The survey demonstrated an insufficient knowledge of the students about contraception (except condoms), especially about modern contraceptive methods, including pills, emergency contraception and the concept of "dual protection". The detection of individual perspectives to have the first child and unwanted effects of non-protected sex such abortions or STIs demonstrated that students have need for contraception.

3. Use of contraception

Condoms were by far the most frequently used contraceptive method. The use of modern contraceptives like pills and emergency contraception were marginal. Data show that there is no significant difference regarding the level of use and the contraceptive method used between tow genders during the first sexual intercourse, as well as with the current partner. The frequently used contraceptive method at the first sexual intercourse were condoms. Condoms were by far the contraceptive method frequently used at most recent sexual intercourse. The level of information about contraception has positive influence on the level of use. Those who have used contraception during the first sexual intercourse are more likely to use contraception during the recent intercourse. Students did not discuss about contraception with the partner before the first intercourse. Prolonged sexual activity has no influence on contraceptive method used, as well as on the level of use.

4. Utilization of sexual and reproductive health services

The under-use of sexual and reproductive health facilities for contraceptive purpose as well as for diagnosis and treatment of STIs was clearly demonstrated.

The proportion of students who ever visited a doctor or a health facility for a problem related to sexual and reproductive health is 33/310 (11.6%). Marginal proportion of students have visited such facility for contraceptive purpose or only 5% of the sexually active girls; only 1.0% of the student have made a visit for diagnosis or treatment for STI. Main barriers identified (lack of information and subjective barriers) demonstrated that provision of services appeared sufficient but not well adapted to their needs.

Conclusion

The study shows elements of risky sexual behavior and insufficient knowledge about contraception. The under-use of modern contraceptive methods, purpose was clearly demonstrated. Adolescents are entering their reproductive years ill prepared to protect and safeguard

their sexual and reproductive health. In conclusion, young people need to be guided in their reproductive health seeking behavior especially in their contraception need and adequately provided with information about contraceptive methods and the symptoms of STIs. Medical staff should be additionally educated for working with youth. Young people should be convinced that such services are "youth friendly".

Key words: Not available.

Defended: April 5, 2007.

Mentor: Prof. Dr. Mome Spasovski

Angelina Bachanovic. The regulatory mechanism as public-health instrument on the system for food safety in the Republic of Macedonia [MSc thesis]. Skopje, Republic of Macedonia: Cathedra of Hygiene, School for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2007.

Abstract not available

Key words: Not available.

Defended: April 5, 2007.

Mentor: Prof. Dr. Dragan Gjorgjev.

Gabriela Topuzovska. Quality of life at patients on hemodialysis [MSc thesis]. Skopje, Republic of Macedonia: Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2007.

Background. Health related quality of life is a valid marker of outcome for chronic dialysis therapy. Medical treatments can no longer be evaluated on basis of survival only, and comparison of quality of life in relation to different parameters and treatments are required.

Methods. The quality of life was evaluated using disease specific questionnaires such as KDQOL-Kidney Disease Quality of Life. A wide range of questionnaires are available which assess different aspects of an individual's health. The study was provided in 7 dialysis centers in Republic of Macedonia, and was inquired 151 patients.

Results. Analysis of data by demographics collections gender, age and extensive of dialysis period, showed that quality of life was decreased in two different aspects: burden of kidney disease and role limitation, in all analyzed groups of patients. With growing on dialysis

time we noticed going down on quality of life. The specific determinants work status, degree of education and place of living, showed that influence of the disease is reducing the workers possibilities of the patients, which is confirmed with data that very big percentage of patients are retired. Degree of education is confirming the hypothesis of his influence over quality of life. The place of living has not influence over the quality of life in this study population.

Conclusions. This study has elements of lowest quality of life in patients of hemodialysis. The obtaining dates of this study for quality of life in patients of dialysis, showing absence of the process of reintegration and resocialization of this group of patients in the society.

Key words: *hemodialysis; quality of life; chronic kidney disease.*

Defended: July 5, 2007.

Mentor: Prof. Dr. Elisaveta Stikova

Biljana Danilovska - Filipovic. Diabetes mellitus tip II - Public health challenge of XXI-century [MSc thesis]. Skopje, Republic of Macedonia: Cathedra of Epidemiology and Biostatistics with Medical Informatics, Faculty of Medicine, University "Ss Kiril and Metodij"; 2007.

According to the WHO data and International Diabetes Federation, in 1995y. in the world around 135 million people had Diabetes. In 2005 y. in the world around 194 million people suffered of this disease. Expecting is that this number will be 366 million people till 2030 y.

Diabetes spread conditions are wareed. Diabetes took epidemiological characteristics and become to be trend for the human race and we have now more than 3 million death people in a year in the world, because of the Diabetes complications.

Goal of our survey is, according to our data, to show the influence of some risk-factors associated with the survey problem, to make range-list of risk-factors according to the epidemiological potential that they have it.

The survey contains 2 parts. First part is descriptive analysis of relevant variables in the sick people from Diabetes Type II in R. of Macedonia in the period 1997-2005 y. Second part, show analytically, the relevant epidemiological variables, in the survey groups (105 persons are with Diabetes Type II and 105 persons are without Diabetes Type II). We made investigations in two

groups of persons, with the special designed non-standard questionnaire, where all relevant data were noted. All dates were analyzed with adequate statistic methods and the risk-factors were defined as the factors which took parts in the illness appearance and again the risk-factors were defined with statistic importance of the variables which were goal of the investigation. Our survey shows that the existence of Diabetes Type II is the family of the patient, increases the risk of it for 8 times, overweight and hypertensio arterialis increases the possibility for Diabetes Type II 4 times, physical inactivity and high values of triglycerides increases the possibility for 3 times and high values for cholesterol increases the risk for 2 times. The place of living (city), social background, poor standard, age and smoking are also risk-factors, but nationality, religion, marital status, education, occupation and alcohol consummation, are not valid as a risk-factors for appearance of Diabetes Mellitus Type II.

Key words: *Diabetes Type II; Risk-factors; Prevention.*

Defended: July 9, 2007.

Mentor: Prof. Dr. Rozalinda Isjanovska

Jaroslav Karadzinski. Influence of the medical education on the level of knowledges, attitudes and skills development for health-promotion activities related to tobacco use among students of Medical and Dental faculty [MSc thesis]. Skopje, Republic of Macedonia: Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2007.

Background. In the New Public Health, the interactions between behavior and the environment are defined as life style which can be of great influence on the personal life. One of the greatest behavioral risks spreading epidemically is the tobacco use.

Methods. The study was conducted with a questionnaire distributed to students from the IV, V and VIth year of the Medical and Dental Faculty, University of Sst Cyril and Method, Skopje, all together 309 of them. The research consists of collecting, analyzing and validation of data from different sources relevant to this study. The methodology was standardized one from the Global Health Professionals Survey (GHPS), produced by WHO, Center for Diseases Control (CDC) USA and Canadian Public Health Association (CPHA), 2005. Statistical analysis was made with SPSS 14 (SPSS Inc, Chicago). Considering that all variables are categorical (measured

with nominal and ordinal scale) they are presented as number and percentage as well. Mutual correlation of variables as well as statistical significance of the association was tested with χ^2 -(Pearson coefficient) and Fisher exact test for small figures, and Spearman's Rho for correlation of distinct variables. All statistical sets were performed applying required statistical significance level of $p < 0.05$) results regarded as "significant") and the results with $p > 0.05$ as "absence of evidence of a difference".

Results. From the total number of students ($n=309$), 175 students (56.6) are form the Medical faculty and 134 (43.4%) from the Dental faculty Skopje. There is a significant prevalence group (41.4%) of smokers found among the tested group. 77% of the students tried to smoke in some period of their life. The greater percentage (44.5) started smoking when there were at the age between 18-19, High percentage of smokers (77.3%) and non smokers (83.1%), believe that health professionals should serve as an example to their patients and that they should routinely consult their patients on smoking cessation as said by 95.8% of the smokers and 98.6% of non-smokers. But there is a difference in the knowledge, attitudes and habits, depending on the smoker status. Significantly ($p < 0.05$) higher is the number of the non smokers compared to smokers that are in favor of banning the smoking in the restaurants, discos/bars and public places. More than half of the tasted students (59% females and 58% males) never discussed about risk factors from smoking on any of the course on the medical or the dental faculty, or it was insufficient. Their knowledge about this problem depends on the year of the study (most of the positive answers - 66% is acquired from the study population in IVth year of the studies).

Conclusions. The level of the students' knowledge on the ill effects of the tobacco smoking should be enhanced through modernization of the educational study programs. Students attitudes related to the activities connected with control and use of tobacco products, are positive and properly directed. The consultation and continuous education concerning this meter, aimed for the health professionals, i.e. medical and dental faculty students, should be a long term task.

Key words: *Tobacco use; smoking; education; attitudes; students.*

Defended: July 11, 2007.

Mentor: Assistant Prof. Dr. Elena Kjosevska.

Aleksandar Stojanov. Evaluation of the diagnostic task and the validity of the registered data about Hepatitis virosa in the Republic of Macedonia [MSc thesis]. Skopje, Republic of Macedonia: Cathedra of Epidemiology and Biostatistics with Medical Informatics, Faculty of Medicine, University "Ss Kiril and Metodij"; 2007.

Hepatitis virosa is one of the most important health issues around the world. Hepatitis virosa represent a group of diseases that has gained on importance in the public health because of its wide presence in the world, its serious consequences, but also with the possibility of taking measures.

Hepatitis virosa is a clearly defined clinical syndrome containing all kind of etiology and all sorts of different clinical, epidemiological, serological and pathological characteristics.

The aim of our research is to analyze the collected data, collected in a methodic way, as a reliable basis for planning and conducting measures for disabling the incriminatory causable relationship between the dominant variables and by conducting them, we can lower the risks of producing invalid and unreliable data for the Hepatitis virosa in Macedonia.

The research represents an epidemiological field study ant it is done in the period of one year (2006). The data collecting is done by a specified question nary, field up by the health institutions through out the state. The collected data (the registered cases of Hepatitis virosa in the R. of Macedonia, 1996-2005 and data about epidemiological procedures and the laboratory methods of differentiation of Hepatitis virosa were analyzed with the aid of corresponding epidemiological and statistic methods.

In the R. of Macedonia, 1995-2006, in total 13.760 cases were registered Hepatitis virosa with the average annual incidence of 68,03/100.000 inhabitants. 58% of the case were of the Hepatitis virosa A type, with the average annual incidence of 35,74/100.000; 12% of the cases were of the Hepatitis virosa B type, with the annual incidence of 8,36/100.000; 2% of the cases were Hepatitis virosa of C, D and E type with the annual incidence of 1,4/100.000 and 33% of the caeses were of an undetermined type of Hepatitis virosa, with the annual incidence of 22,52/100.000 inhabitants. The trend of the incidence of the hepatitis virosa A, B, C, D, and E type is in a constant decrease. The average annual incidence of the Hepatitis A type is the highest in the region of Skopje (56,06/100.000), of the B type, in the region of Prilep (15,33/

100.000), of the C, D and E type, also in the region of Prilep (2,99/100.000) and of the undetermined type in the region of Strumica (88,30/100.000). The mail sex is more common with each type of Hepatitis virosa. More frequently, patients at the age of 14 are infected with the A type and the undetermined type; with the type B and the C, D and E type, are patients at the age between 20-29. The serological differentiation of the different types of Hepatitis virosa, is being practiced in the region of Skopje since 1996, and the remaining part of the country, only 66.9% are being serologically differentiated. In all health institutions in the Republic, where differentiation of Hepatitis virosa is being practiced, proper serological methods are used. The performances of the laboratories with specific serological markers are on a high level in the region of Skopje. The experts from the laboratories in the remaining part in the Republic of Macedonia are heaving problems (lack) of the specific markers of serological differentiation of the Hepatitis virosa.

Hepatitis virosa is a serious health problem and it needs preventive measures in the sense of decreasing of the incidence of all types of Hepatitis virosa and removing the causes of it's appearing, supplying more reliable and more valid tests for diagnosing and procedures, in the purpose of improving the quality and the health/life of the general population.

Key words: *Hepatitis virosa A; Hepatitis virosa B; Hepatitis virosa C, D, E; undetermined Hepatitis virosa; incidence health improving.*

Defended: November 6, 2007.

Mentor: Prof. Dr. Dragan Danilovski.

Vera Dimitriovska. Public health aspects of the nutrition and lifestyles in the older persons in the Republic of Macedonia [MSc thesis]. Skopje, Republic of Macedonia: Faculty of Medicine, University "Ss Kiril and Metodij"; 2008.

Abstract not available

Key words: Not available.

Defended: June 3, 2008.

Mentor: Prof. Dr. Dragan Gjorgjev.

Radmila Ristovska. Managing with human resources – algorithm for improving the performance of the

doctors in the primary health care [MSc thesis]. Skopje, Republic of Macedonia: Cathedra of Social Medicine, Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2008.

Abstract not available.

Key words: Not available.

Defended: November 28, 2008.

Mentor: Prof. Dr. Fimka Tozija.

Elisaveta Jovanova. Rational pharmacotherapy of arterial hypertension at level on primary health care in the Republic of Macedonia – public health aspects [MSc thesis]. Skopje, Republic of Macedonia: Cathedra of Social Medicine, Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2008.

Objectives

The purpose of the study was to evaluate the knowledge, adherence and acceptance to practice for the guidelines for management of the hypertension in primary care physicians, for general practice in the selected towns.

General objectives:

1. To assess physician's adherence to the current guidelines for diagnosis and treatment of the hypertension
2. To assess knowledge of the guideline for evidence based medicine
3. To assess the impact of the different factors on the pharmacotherapy for hypertension
4. To determine the sources of information and continuing medical education

Methods

Data were obtained through a cross-sectional study conducted in June-August 2007, using self-administered questionnaire. The population under study included 70 physicians from primary care, general practice, in three towns (Skopje, Tetovo and Kumanovo). The selection of the towns was made by the number of citizens, the three biggest in Macedonia. The questionnaire contains 10 questions, section for years of working live and specialization, section for diagnosis and treatment of the hypertension, the factors that have impact on the pharmacotherapy and the sources for the information and continuing medical education.

Results

1. Guidelines compliance

Only half or 49% of the physicians gave the correct answer about the threshold of the arterial pressure for diagnosis of hypertension, and the rest of the physicians had different threshold. The biggest number of the physicians, or 97% do recommends another tests for new diagnosed patients with hypertension. About thresholds of arterial pressure for starting pharmacotherapy in particular clinical case 90% of the physicians had higher threshold, only 10% had the same like in the guidelines. The right goal arterial pressure after using pharmacotherapy had only 30% of the doctors, the rest 70% of them do not had correct goal pressure.

2. Initial pharmacotherapy

Only 20% of the physicians used fabric name of the drug to answer for drug for initial pharmacotherapy for particular clinical case. There is significant domination in the proportion for doctors who use monotherapy (70% of the doctors), comparing the others who use fixed fabric combination (3%) and the others who use combination of two or more drugs. For this case 86% of the doctors prescribed the right initial pharmacotherapy.

3. Knowledge of the guidelines for evidence based medicine

There was no one physician who didn't know the meaning of the "evidence based medicine practice". Only 19% answered that they know what its mean, but they don't use it in everyday practice, and the rest 81% of the doctors know the meaning and they do it in everyday practice. Most of the physicians, 96%, know the current guidelines for evidence based medicine ad use in everyday practice, 3% know but don't use and only one doctor don't know the current guidelines for evidence based medicine.

4. Influence of some factors on the choice for pharmacotherapy for hypertension

Strong influence on the choice for pharmacotherapy for hypertension have next factors: positive lists of the drugs (79% of the doctors), the price of the drug (69% of the whole sample), the way of dosage the drug (51% of the doctors), own experience and habit for prescribing some drug (64% of the physicians), guidelines for evidence based medicine (79% of the doctors) and the name-brand of the pharmaceutical company (41% of all of the doctors). Neither strong nor weak influence have written promotional materials from pharmaceutical company

(51% of the doctors), and weak influence on the choice of the pharmacotherapy for hypertension have other promotional materials from pharmaceutical company (73% of the physicians) and commercial reasons, according to 67% of all doctors.

5. Sources for continuing medical education

The sources that physicians use for information and continuing medical education a lot are: medical books (54% of the doctors), congresses, seminars, symposia organized by the medical associations (82% of the doctors) and congresses, seminars, symposia organized by the pharmaceutical companies according to 69% of the doctors. Sources that doctors use neither lot nor less are: Macedonian medical magazines (53% of the sample) and promotional materials by the pharmaceutical companies according to 46% of the physicians. Less used sources are foreign medical magazines (50% of the doctors) and internet 41% of all physicians.

Conclusion

General conclusion from the study is that primary care physicians from general practice have modest knowledge of the guidelines from evidence based medicine from management of hypertension. Pharmacotherapy from hypertension is not rational yet, the choice for pharmacotherapy, the continuing medical education and the sources for information are influenced by pharmaceutical companies.

Key words: Not available.

Defended: November 18, 2008.

Mentor: Prof. Dr. Mome Spasovski

Goran Sanevski. Public health aspects of pollution in the ambient air in the urban areas in Republic of Macedonia and the impact on the children's health [MSc thesis]. Skopje, Republic of Macedonia: Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2009.

Abstract not available.

Key words: Not available.

Defended: June 8, 2009.

Mentor: Prof. Dr. Mihail Kochubovski.

Lolita Mitevaska. Accreditation of the health

institutions in the Republic of Macedonia – Situation and prospective [MSc thesis]. Skopje, Republic of Macedonia: Cathedra of Social Medicine, Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2009.

Abstract not available.

Key words: Not available.

Defended: June 15, 2009.

Mentor: Prof. Dr. Doncho Donev.

Vladanka T. Andreeva. Partnership between NGOs and Public Health Organisations in the implementation of the National HIV/AIDS Strategy [MSc thesis]. Skopje, Republic of Macedonia: Cathedra of Social Medicine, Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2009.

Introduction: Civil Society has a long history of participation in health preservation and promoting. In many countries NGO sector has taken the lead in the HIV response, promoting the human rights based approach. Global trends are reflected in Macedonia as well, where NGOs are key advocates for HIV prevention among the vulnerable groups. The **main aim** of the study is to analyze and depict the role that the NGOs had in the implementation of the implementation of the first National HIV/AIDS Strategy 2003-2006, as well as to formulate recommendations for future partnership between NGOs and the Public Health sector.

Methods: The study was designed as *retrospective-prospective research*. In the *retrospective part*, focused on the period November 2004-October 2007, the role of the NGOs in the implementation of the National HIV/AIDS Strategy priorities was analyzed. The *prospective part* of the research was designed as a Delphi study, and through application of questionnaires to a group of 22 experts, expert opinion on the role of the NGOs in the implementation of the National Strategy, as well as recommendations for future interaction between NGOs and the public health sector were gathered.

Findings: Within the framework of the implementation of the first National HIV/AIDS Strategy activities were conducted in few programme areas, and six NGOs (HOPS, HERA, MIA, Doverba, EGAL and Izbor) were key partners targeting most at risk groups (young people, injecting drug users, commercial sex workers, man who

have sex with man, Roma and prisoners). In the analyzed period, 16,587 young people, 5% of the total young population in the country, were covered with different peer education sessions; 731,315 condoms in total were distributed, and out of them 250,000 were distributed to young people; 2,281 client had voluntary counseling and testing; 767 contacts with MSM were established; 173 commercial sex workers and 3,355 clients of sex workers were reached; 3909 injecting drug users were covered with harm reduction activities, and 1281 injecting drug users had access to substitution treatment. The experts involved in the Delphi Study were unanimous in their response that the successful implementation of the first National HIV/AIDS Strategy was largely due to the partnership established between the Government and the NGOs. Accountability, creativity, and team work were just some of the attributes used to portray NGOs contribution. The role that NGOs had in the HIV/AIDS demystification, as well as the bold and intensive social mobilization, was emphasized. That helped fight stigma and discrimination that people living with HIV and their families are facing with, and improved access to health and social services. Considering the findings of the SWO analysis, 8 recommendations for future partnership between the NGOs and public health sector were formulated. The recommendations were divided in four specific areas: legal framework; sustainability; coordination and capacity building.

Conclusion: Activities undertaken and results achieved within the implementation of the National Strategy have proved the necessity to have NGOs as equal partners to the public health sector. The established cooperation and coordination between the Government and the NGOs is one of the main prerequisite for service provision to the most at risk groups. Future partnership between the NGOs and the Public Health Sector in Macedonia should be based on the success achieved with the implementation of the National HIV/AIDS strategy, and principles of joint trust, partnership, participation and consultations.

Key words: *NGOs; Public Health Organizations; most at risk groups; HIV prevention; good governance; coordination; partnerships.*

Defended: June 25, 2009.

Mentor: Prof. Dr. Fimka Tozija.

Aleksandar Mitrevski. Evaluation of the oral healthcare in the Republic of Macedonia and total

expected cost design in providing preventive and treatment services [MSc thesis]. Skopje, Republic of Macedonia: Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2009.

Oral healthcare in the developed countries, as America and Europe has established efficient preventive programs, thus the caries and the epidemics of the periodontal diseases are stopped. In these countries, significantly decreased values of the average caries index are registered, which indicates that oral and dental diseases might be stopped. On the contrary, in the developing countries, the caries frequency is still high.

The oral health condition in our country is dramatic. The incidences of dental caries, periodontal diseases and orthodontic anomalies are still very high. Furthermore, most concerning is the fact that in some areas a trend of their increase exists, despite the efforts of the society, growing number of qualified dentists and dental service capacities.

In order to address these problems, the purposes of our investigations were focused towards:

- Obtaining accurate caries incidence values in predefined age groups;
- Estimation of the expected costs for the conservative treatment of the dental caries;
- Evaluation of the financial effects from application of preventive dental procedures performed in two community regions in the Republic of Macedonia (Skopje and Strumica);
- analysis and evaluation of the economic indexes between the conservative dental caries treatment and the financial effects of application of preventive measures.

Our study group consisted of 50 subjects aged 6 and 12 years respectively, from Skopje-Center and city of Strumica with their suburban areas. The investigation comprised of determination of the following indexes: DMF-index and economic evaluation of treatment procedures compared to preventive measures among the subjects of the study group.

Our results revealed high DMF-index values, particularly when compared to those in the western European countries.

Analysis of the results of the economic effects of conservative dental caries treatment compared to caries prevention measures costs are unfavorable only in the 6 years old children group from Skopje-Center

Community (1:0.63), whilst the other values are positive and range from 1:1.32 in Strumica urban areas with 6-year olds; this analysis was highly favorable among 12-year old subjects from the rural areas in Skopje (1:2.93).

The realization of the projected purposes and hypotheses in this study revealed that the oral health condition of pediatric population in the Republic of Macedonia is a serious public health problem which might be resolved by a co-ordinated preventive dental healthcare. The conducted study also concludes that the minimal finances invested in primary preventive measures will lead towards better healthcare and huge savings in a short period of time. The indexes point to the fact that the best possible methods in solving of this national public health problem should be chosen, by preference of the whole population model to the individual clinical approach to the problem.

This master's thesis contributes to defining of the activities of the national policy in the dental preventive program and will be a basis for massive application of dental preventive measures. It obtains relevant indexes for the oral health condition in the urban and rural areas; as well as the economic evaluation indexes of the preventive measures, such as public health activities in the protection against tooth decay and their efficiency in comparison to conservative dental caries treatment.

In order to fulfill these aspirations, a thorough understanding and engagement of the following factors is necessary:

- Taking into consideration the national oral pathology and etiological factors that have a serious impact on the above mentioned conditions;
- Identification of strategies for prevention of oral diseases;
- Financial policy, organization and professional recruitments;
- Application of adequate methods and measures in order to prevent the appearance of oral diseases;
- Motivation of the human resources at each level in fulfillment of the previously mentioned factors.

The final conclusion of this study can be the recommendation of application of "caries free" politics, which expects further decrease of the DMF index. The entrance of the existing twenty year' old "caries free" generation in the 21st century will probably increase the average number of healthy teeth; furthermore, most of the population will have a complete dentition.

In order to improve oral and dental health of the population in general, we have to emphasize the necessity of obligatory conduction of systematic prevention and treatment. This aim can be achieved by application of a unique protocol in prevention of oral diseases in the whole country, supported by financial and other resources for their implementation.

Key words: Not available.

Defended: July 16, 2009.

Mentor: Prof. Dr. Mome Spasovski.

Natasha Mitrevska Teovska. Patient's attitudes and knowledge about the protection of personal data in the specialist - consultative services of the public and the private sector of the health system in the Republic of Macedonia [MSc thesis]. Skopje, Republic of Macedonia: Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2009.

Abstract not available.

Key words: Not available.

Defended: July 20, 2009.

Mentor: Prof. Dr. Doncho Donev.

Aneta Kostovska. Attitudes and knowledge about the patients' rights from public health aspect [MSc thesis]. Skopje, Republic of Macedonia: Cathedra of Epidemiology and Biostatistics with Medical Informatics, Faculty of Medicine, University "Ss Kiril and Metodij"; 2009.

In Republic of Macedonia patients' rights are regulated by Law for protection of patients' rights passed and declared on 2 June 2008.

The aim of the work is to get acquainted with the real situation about the level of informing, attitudes and acknowledgement of the common population, health workers and collaborators in R. Macedonia about the patients' rights according to Law for protection of patients' rights.

The work presents a transversal, analytical-descriptive study carried out at the Faculty of Medicine and University clinics in Skopje, in the period from 01.01 until 31.03.2009. In this research two groups were included, 300 patients

(N1) which were chosen by chance from the ambulances of the University Clinics in Skopje and 300(N2) health workers, chosen by chance from the same clinics where the patients were asked.

Analysis of the two questioned groups about being informed and acquainted with the existence of Law for protection of patients' rights in our country, showed that health workers and assistants are considerably informed (94%), as expected and the percentage of the patients who were informed about this law was also big (82%) or 247 ones.

According to the results got from the questionnaire, patients are different informed about the different rights according to the law (30%-97%), which displays a necessity for searching a mechanism for its drawing nearer to them. Health workers and assistants are largely more informed about certain rights for patients, but the number of patients who were questioned is also large. One may conclude that both groups that were questioned are almost equally informed about the rights of the patients.

The importance of the problem with informing of the population about the Law for protection of patients' rights is stressed by the number of activities and campaigns launched by the Health Ministry.

Key words: *law; patients' rights; informing; attitudes and knowledge.*

Defended: November 20, 2009.

Mentor: Dr sci. Dr .Milka Zdravkovska.

Sonja Panovska. Osteoporosis – a public health problem among the women in menopause [MSc thesis]. Skopje, Republic of Macedonia: Faculty of Medicine, University “Ss Kiril and Metodij”; 2009.

Abstract not available.

Key words: Not available.

Defended: December 7, 2009.

Mentor: Prof. Dr. Rosalinda Isjnovska.

Teuta Agai-Demjaha. Effects of unemployment on the health of the unemployed persons – public health problem and action steps – our experience [MSc thesis]. Skopje, Republic of Macedonia: Cathedra of

Occupational Medicine, Center for Public Health, University “Ss Kiril and Metodij”; 2009.

Introduction: Today unemployment represents an urgent problem in the world in general and in Republic of Macedonia in particular. This specific phenomenon generates serious consequences. More and more data confirm that unemployment and unstable employment result in health consequences.

Aims: Determining the main health effects of unemployment on physical and mental health of the unemployed through most frequent registered “self-reported” health problems; assessment of differences in a lifestyle (smoking, alcohol consumption, level of physical activity) and life conditions (home, water supply, nutrition) between the employed and unemployed, assessment of the impact of different lengths of unemployment on the health of the unemployed; assessment of the impact of the length of the previous working experience, working factors and working conditions of the previous job on the health of unemployed and recommendations for undertaking appropriate measures and guidelines for the implementation of health promotion and prevention of the unemployed.

Materials and methods: The research represents a descriptive-analytical model of an epidemiological cross-sectional study with a retrospective surveillance approach. During the research 400 people were interviewed, of which 200 were unemployed and 200 were employed. The interviewees were selected through random selection, while throughout the study the following questionnaires have been used: “*Unemployment Health Effect Survey Questionnaire*” and “*Health Effects of Working and Life Conditions Survey Questionnaire*”. The study has been implemented within the framework of “*Preventive Program for Health and Work Ability Assessment among the Unemployed in Republic of Macedonia*” and through regular medical check-ups in the Institute of Occupational Health- WHO Collaborating Center and Services of Occupational Health in Republic of Macedonia.

Results: According to the collected data concerning the existence of health problems of the unemployed and employed, statistics show a significantly higher prevalence of overall health problems among the unemployed (59.0%) in comparison to the employed (40.5%). Regarding specific health problems, statistics show a significantly higher prevalence among the unemployed in comparison to the employed. When it comes to the correlation of health problems with the

employment status, our results show that the majority of the unemployed (83.0%) believe that their health problems are related to their unemployment status, while around 40% of the employed believe that their health problems are related to their employment status. The correlation to stressful events generated by long-term unemployment was detected in 88.0% of the unemployed and only in 8.5% of the employed. A considerably higher number of the unemployed (in comparison to the employed) correlate the presence of stressful events with other problems. Data from the two groups show that a relatively high number of the unemployed (38.5%) believe that they would not be able to do the job for which they have been trained by the age of 60, while the majority of employed ones (58.5%) believe otherwise. The correlation between the length of the previous working experiences and lowered mood and heart problem in unemployed persons is statistically significant. Professional exposure to bad microclimate conditions is the most frequently mentioned reason for specific health problems among the unemployed people with previous working experience.

Conclusion: The prevalence of overall health problems is significantly higher among the employed. The prevalence of the specific health is in most cases significantly higher among the unemployed in comparison to the employed. The majority of the unemployed interviewees link unemployment with their existing health problems. The prevalence of stressful events generated by long-term unemployment as well as other problems is significantly higher among the unemployed in comparison to the employed. A considerably higher number of the unemployed (in comparison to the employed) believe that they would not be able to do the same job by the age of 60. Among the unemployed a significant correlation between the length of the previous employment and lowered moods and heart problems has been registered. Professional exposure to bad microclimate conditions is the most frequently mentioned reason for specific health problems among the unemployed with previous working experience. There is a need for continued and planned surveillance and assessment of health problems and working ability of the unemployed, combined with a logistically and financially accessible health protection that focuses on the prevention and promotion of the health of the unemployed population.

Key words: *Unemployment; health effects; physical and mental health; public health; occupational medicine.*

Defended: December 29, 2009.

Mentor: Prof. Dr. J. Karadzinska - Bislimovska.

Blashko Kasapinov. Injuries burden in the children and youth in the Republic of Macedonia – a priority public health problem [MSc thesis]. Skopje, Republic of Macedonia: Cathedra of Social Medicine, Center for Public Health, Faculty of Medicine, University “Ss Kiril and Metodij”; 2010.

Introduction: Injuries and violence pose a great threat to the health of people worldwide, especially to children and youth. Eight of fifteen leading causes of death in young adults aged 15-29 are related to injuries and violence. When all age groups are considered, injuries are ranked as third leading cause of death.

Main objective: The main objective of this paper is to determine the burden, characteristics and risk-factors for injuries in children and youth aged 0-24, in order to propose and develop preventive programs for decreasing the injuries burden.

Material and methods: Retrospective analysis of data for children and youth aged 0-24, collected through transversal cross-sectional study, designed according to standard methodology by the World Health Organization for community survey on injuries and violence conducted in April-May 2008 on the whole territory of republic of Macedonia. Multi-stage sampling technique was used to select the sample for this survey. Total of 1200 households have been covered, 4868 questionnaires have been completed, out of which 48 persons with injuries aged 0-24 have been identified, and this sample represents the survey population. Cross-tabulation and Chi-square tests were used for statistical significance testing. All statistical tests were performed applying required statistical significance level of $p < 0.05$ (results regarded as “significant”) and the results with $p > 0.05$ as “absence of evidence of a difference”.

Results: 59.2% of injured were males, while 40.8% were females; male-to-female ratio was 1,45:1. The age was in the span from 3 to 24, while the mean age was $14,04 \pm 6,4$ more than half of injured were ethnic Albanians, followed by ethnic Macedonians. The most common place of injury was street/highway with more than one quarter of cases, followed by injuries at home and injuries at school, while the injuries most frequently happened during leisure activities, unspecified activities and sporting activities. According to the injury mechanism, the majority were result of falls, followed by injuries sustained by struck/hit from other person or object. The

most common type of injury was sprain/strain, followed by cuts and fractures.

Recommendations: Injury prevention in children and adolescents should be comprehensively assessed with application of evidence-based effective interventions.

Key words: *injuries; children and youth; morbidity; mortality; prevention and control.*

Defended: January 11, 2010.

Mentor: Prof. Dr. Fimka Tozija.

Tanja Jovanovska. HCV infection in the prison population in Republic of Macedonia - public health challenge of the modern society [MSc thesis]. Skopje, Republic of Macedonia: Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2010.

Abstract not available.

Key words: Not available.

Defended: January 11, 2010.

Mentor: Prof. Dr. Biljana Taushanova.

Bisera Rachic. Public-health aspect of the behavior of adolescent in the Republic of Macedonia concerning nutrition habits, physical activity, smoking and alcohol consumption [MSc thesis]. Skopje, Republic of Macedonia: Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2010.

Introduction. A big part of the diseases of adolescent population comes as a result of the risk taking behavior in relation with their nutrition habits, physical inactivity, use of alcohol and tobacco. The globalization as a world phenomenon and the social protective factors as family, school, peers and media influent over adolescent behavior. Healthy lifestyle and strong emotional relation between parents and children, as well as peer connection, correspond with good psychosocial welfare, higher self-confidence, better behavioral and social competence, and certainly is a reason more for the adoption of healthy life habits. The adolescent risk behavior connected with dietary habits, physical activity, consumption of alcohol and tobacco is one of the main reasons for increased prevalence of chronic non-infective diseases (HND) in the last decades of the 20th and the beginning of the new

century.

The main objective of the survey was to analyze the behavior of adolescent in the Republic of Macedonia concerning nutrition, physical activity, smoking and alcohol consumption, as well as its relation with the community protective factors (parents, peers, media) in order to design preventive programs for adolescent health promotion by controlling the negative influence of the society appearances and factors over their health.

Materials and methods. The basic instrument of the actual study is the questionnaire from the Global research on adolescent health. Actually, it's a standard questionnaire from the WHO and CDC which consists of 74 questions, 52 basic and 22 extended and specific questions for our country. The questionnaire was designed in order to match the age and the sex of the respondents. The pupils from 7th and 8th grade in primary schools and 1st and 2nd year in secondary school in the Republic of Macedonia, aged 13-15 years (urban and rural community; 30 schools) were the target population of the study. The total of examinees was 2116 persons. Statistical data processing is derived with statistical software SPSS 16.0 and with required statistical significant where $p < 0.05$ for statistical significant results, and $p > 0.05$ for leave out significant results.

Results. Results from this survey give complete information about habits in adolescent behavior when it comes to nutrition, physical activity, use of tobacco and alcohol, as well as for the impact of the protective factors such as parents, peers, school and media. This survey indicated that adolescents in Republic of Macedonia practice rick behavior and face a great deal of health problems connected with the dietary habits. 3.4% from the examinees are obese, while 12.7% tend to get obese. This problem is significantly more evident among boys in comparison with girls older age, the percentage of pupils with higher weight in urban areas is higher than in rural ones. Obligatory physical activity in youth is at least 60minutes daily, 7 days a week. Here it is practiced only by 14.2% and mostly by boys. Smoking habits also, respect a big problem. This survey indicated that the trend of girls who smoke regularly is present in Macedonia too. In the last 30 days, girls smoked significantly more (15.1%) than boys (11.4%). Habits in consumption of alcohol are an important issue as well. The survey showed that pupils in rural environment start consuming alcohol at very young age, more precisely when they get 8 or 9 years old. The survey showed that parents influence as well as their attitudes and behavior about certain issues has very important role in pupil's habits

(e.g. 7.7% of the respondents smoked on regular basis, 21% smoked one or more days in last 30 days in situations when parents rarely knew about their children's spare time activities; or in families where both parents smoke respondents have higher addiction to smoking-9.0% from them are regular smoker). The research indicated that peers have major influence too, there is a significant statistic difference between male and female responders, and more specifically peer's influence is more evident when it comes to girls, and media also play a very important role on pupil's behavior and adoption of new habits.

Conclusion. The survey highlighted risk habits and behaviors among a great share of students both in urban and rural areas, such as the behavior connected to the nutrition, physical inactivity, smoking and consumption of alcohol which endanger their health. Such behaviors are not simply the actions of individuals but take place in social context, which indicates that greater engagement of all relevant factors is necessary, starting with parents, schools, peers and media and their education in order to improve and raise the awareness of risk taking behavior of adolescents, as well as its prevention.

Key words: *adolescents; nutrition; smoking; physical activity; alcohol; globalization; family; peers; mediums.*

Defended: January 11, 2010.

Mentor: Prof. Dr. Elena Kjosevska.

Snezjana M. Lazarevska. Public health approach on disability with lumbar pain. [MSc thesis]. Skopje, Republic of Macedonia: Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2010.

The objectives of this work are: To determine the differences between results from the disability of patients with lower lumbar pain, depending on the type of the applied methods; physiotherapy or therapy with medicaments, and according to age, the index of bodyweight and the malformation of the spinal column, as well as the connection between the type of the profession and the level of changes on the spinal column and the influence of the professional education in the application of ergonomic principles and practicing previously mastered exercises for the sacrum.

Materials and methods: The research has covered 200 patients with lower lumbar pain, treated with medicaments and physiotherapy, and according to the

applied therapy, patients were divided in two groups and being tested both in the beginning and in the end of the treatment. The Oswestry index is used for the assessment of the disability with lumbar pain. In the cases of 50 respondents a questionnaire was used to determine whether they abide, and what are the results of the ergonomic advice given previously and the use of exercises for the sacrum. For statistical data processing, proper statistical methods and tests were used: Person- X^2 , Fisher-exact, Man-Whitney, Kruskal-Wallis, Wilcoxon, Kolmogorov-Smirnov and Student-t-test, and the statistics significance was specified for $p < 0.05$.

Results: On average, the respondents are 53,8 years old, and most of them are female (62%). 34% have a job sitting at a desk, and 48% are physically inactive. 72% of the respondents have malformations of the spinal column, and in those cases the use of physiotherapy is **3,5** times more efficient than the use of medicament therapy $X^2=14.286$ ($p < 0.5$). The T-test has shown almost double decrease of the index of the patients' disability in case where physiotherapy was used (**28,80**), compared to the decrease of the index of patients' disability in cases where medicament therapy was used (**15,72**), ($p < 0.05$). Out of 50 people being questioned: 36 (72%) have abided, whereas 14 (28%) have not abided by the ergonomic advice. 16 patients have done the exercises, 8 have exercised occasionally, 18 did the exercises only in the beginning, 3 have not exercised at all, and 5 haven't done the exercises, but were physically active. The adherence to the exercises is associated with the adherence to the ergonomic advice in case of $p < 0.05$. The X^2 -test indicates that there is no statistical significance between adherence to the ergonomic advice and the reappearance of disorders in patients ($p > 0.05$). The malformations and the age of the respondents, statistically are significantly associated with the type of therapy (physical/medicament) in the unique analysis ($p < 0.05$).

Conclusion: By applying physiotherapy in the early stadium, and by decreasing the long-term rest, one can accomplish better and faster results in reducing the disability with lumbar pain.

Key words: *lower lumbar pain; disability; malformation; ergonomic principles.*

Defended: December 18, 2010.

Mentor: Prof. Dr. Biljana Taushanova.

Igor Spiroski. Characteristics of the nutritional status of the Roma children population at primary school age in Republic of Macedonia [MSc thesis]. Skopje, Republic of Macedonia: Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2010.

Introduction: Main objective of the research is to assess the nutritional status of the Roma children population attending first and fifth grade of primary school in Macedonia in order to detect precursors of possible health risk at early age.

Material and methods: The research is designed as comparative epidemiological cross sectional survey using retrospective (case-control study) and prospective methods. Population group consisted of 229 children from the first and 272 children from the fifth grade of primary school in different towns in the Republic of Macedonia. The control group consisted of 283 children attending first grade and 356 children attending fifth grade but are from different ethnic background, other than Roma. The main instrument of the survey was the questionnaire. Every participant was measured for his/hers body height and weight. Height and weight was measured with the medical instrument having integrated height and weight mater. Sub-scapular and triceps skin folds were measured with caliper.

Results: There is statistically significant difference of the values of the body weight among children attending first grade from population group and control group. Statistically significant difference is also proved at the height-for-age, weight-for-age and BMI-for-age indexes. The ranges of standard deviations where there is significant difference, at all three indexes, are: e"-2SD and <-1SD ; e"-1SD and Median; >+1SD and d"+2SD and >+2SD and d"+3SD. There is no statistically significant difference of the values of the anthropometric parameters between the population of Roma children and the control group attending fifth grade of primary school.

Conclusion: Health risks of the population of Roma children compared to those of the control group, both in children attending first and fifth grade, are related to their lower values of the anthropometric indexes i.e. the ranges of the SD which are placed left of the median. For the z-scores of SD placed right of the median, there are lower percentage of cases of Roma children with increased health risk. That counts for all the three indexes. Social determinants of the Roma population's principles and conditions of living, which could be

investigated in future researches, could bring additional light on the problem of impaired nutritional status in Roma population at this age.

Key words: Roma; children; nutritional status; health risk; assessment.

Defended: December 21, 2010.

Mentor: Prof. Dr. Dragan Gjorgjev.

Zoran Biban. Public health aspect on the social and economic status of the nutrition of the population in the Republic of Macedonia [MSc thesis]. Skopje, Republic of Macedonia: Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2010.

Introductin: During their mental and physical development, people eat food that of course affects the same. Some conditions such as being overweight or on the other hand being extremely skinny, lead to more efficient development of the diseases as we know them. There could be a worse combination considering the economical vulnerability of certain people. This fact itself should lead to achieving higher standards for these people or in other words getting their lifestyle to a bigger and healthier level. There is certain continuity in the effects of risk factors for developing chronic diseases and also opportunities for their prevention. Poorer countries are in need of different preventive approaches than the wealthier. Poverty is a major aspect of vulnerability and social exclusion.

The result of the social and economic status of the individual arises into being a hazard when it comes to the availability, quality and hygienic status of the food he is eating. The main goal of the research is to determine the social as well as the economical status of the people when it comes to the products that they are buying and level of the health promotional activities in Republic of Macedonia regarding the healthy nutrition.

Material and methods: The research was designed on the basics of the health statistics showing mortality and morbidity of people that live in the Republic of Macedonia regarding chronic diseases connected to healthy nutrition and the available data on the consumption basket. The project shows the registered number of deaths and suffering in Macedonia in the years of 2003 to 2005 and reports on the movement of prices of the consumer basket for the same period. This research is an analytical study on the contents of the general statistics

and other published materials in the period of the year 2003 to 2005. Retrospective data cover of the cost of the consumption basket and its products and product groups, their nutritive value as well as the annual rate of morbidity and mortality from the food linked diseases. The prospective part that also is in a function of promotion of the healthy nutrition included questionnaire survey and gathering information in order to determine the level of the health promotional activities here in the Republic of Macedonia. After the content analysis of materials and data were carried out, a standard statistical treatment was executed.

Results: Based on data showing the annual consumption of food per a member of one average household during 2003-2005 that was obtained from State Statistical Office of Macedonia, an assessment was made of the average daily dietary intake for the adult population in the state.

The monthly consumption basket (which only includes the minimum food commodities for a family of four) about 12.000 dears occupies almost 80% of the average salary. Accordingly, the family would only have 3400 dears remaining to meet other needs such as health, clothing, footwear, hygiene, entertainment and other. The data show that an average Macedonian citizen spends approximately 80 dears per day (only for food and drink), thus meaning that if an average family had bought 32 kilograms of bread, which means that each member of the family had eaten about 8 kilograms of bread in 30 days. Regarding data showing annual consumption of food products for an average member of a household during the of 2003 to the year of 2005 that was obtained from State Statistical Office of the Republic of Macedonia, an assessment was made of the average daily dietary intake for the adult population in the state. Also, according to the State Statistical Office, during the period 2003-2005, a four-member household was able to fill the monthly expenditure basket for food and drink. This was achievable with an average salary.

The total energy intake includes a certain percentage of macro-nutrition: protein with 14.40%, fat with 35.72% and carbohydrates with 49.18%. It is evident that the content of fat in the daily meal of 116.8g (35.72%) is much higher compared to the recommended values for the adult population (an average of 70g per day or <30% of the total energy). Average daily intake of protein is 105.98g which is a greater intake for about 40% compared to the recommended daily requirements. Carbohydrates are included with 361.92g and are within the limits of the recommended daily needs.

According to analyses in terms of daily vitamin needs it is estimated that the daily meal for the period 2003-2005, more of these substances are represented with the exception of some vitamins.

In the year of 2003 to the year of 2005, in the context of promoting healthy lifestyles and specifically the area of nutrition, the main carrier of the promotional activity in the health system is the Republican Institute for Health Protection-Skopje (IJZ) regarding the Program for Health care in Macedonia.

Conclusions and recommendations:

The population has a reduced purchasing power when it comes to the availability of food that meets the daily needs of the organism according to recommended standards. The structures of the products in the consumption basket deviate from the structure of the recommended healthy, food pyramid. When it comes to the specific criteria of vulnerability and the groups that should receive financial help, a wider public debate is needed in order to discuss the available options and approaches. Any approach that would be accepted needs to have a broad government support and support anchored from the many stakeholders.

The health promotion activities in the Republic of Macedonia are a valid source of information and education needed for people to learn about proper nutrition. Unfortunately their availability is debatable because of the lack of indicators that recognize their performance (and there is no tracking systems for the same).

It is necessary to intensify activities on promoting modern and continues education of health workers in particular. An introduction on the subject of knowledge of food hygiene needs to be added to the regular education system, which cause would indicate it to be a continuing aspect of education for the wider population.

Key words: *nutrition; annual consumption of households; uninfectious chronicle diseases; promotion; the public health system.*

Defended: December 26, 2010.

Mentor: Prof. Dr. Dragan Gjorgjev.

Lejla Rusevska. The influence of the temperature and climate changes in the population on national level from public health aspect [MSc thesis]. Skopje, Republic of Macedonia: Institute for Public Health,

Faculty of Medicine, University "Ss Kiril and Metodij"; 2010.

Introduction: The balance of incoming short-wave from radiation from the Sun and the long-wave radiation on the Earth is disbalanced because of the "greenhouse gases", that destroy the ozone and consequently leads toward increasing the air temperatures. Global environmental changes are attributable to human activities. The average temperature of the Earth's surface has been increased for 0.74° C since 1850 and it is expected to continue increasing from 1.4 to 5.8° C till 2100. These climate changes and variations will have a great health impact with serious influence on people's life and economy in the whole civilization.

Goal: The main goal of the research is to present the public health aspect of the influence of weather and climate changes on the health of the population in Republic of Macedonia. The accent is put on the need of taking specific public health preventive measures in terms of adaptation and mitigation in the health sector for decreasing the burden of diseases caused by the expected climate changes.

Materials and methods: The materials of the research are: data for ambient air temperature and data for mortality rate in Republic of Macedonia.

The research is ecological study which is based on the following methods:

1. With descriptive method it is analysed the data of monthly mortality distribution from all reasons in Republic of Macedonia for the period of 1994-2007.
2. Computer modeling and use of the method expert judgement. Based on the results it is predicted the future trend of the climate changes in the period until 2050. Science-based forecast is made of the expected mortality in the period of 2024-2037 according the expected temperature and the results from the climate changes within this period.

Results: Overall it is noticed the increasing trend of the air temperature in the second half of the 20th century and Macedonia as well. In terms of rains registered in the 20th century, there are differences on the regional and local level distribution.

The highest maximal air temperature in the country measured in July 2007 is 45.7°C in Demir Kapija.

Key words: Not available.

Defended: March 31, 2010.

Mentor: Prof. Dr. Mihail Kochubovski.

Sanja Dimovska. Estimation of the prevalence and identification of knowledge, attitudes and practices for possible risk factors for development of eating disorders in students aged 13-14 in the Republic of Macedonia [MSc thesis]. Skopje, Republic of Macedonia: Cathedra of Hygiene, Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2010.

Background: Eating disorders are one of the most common psychiatric problems faced by adolescents and are characterized by chronicity and high rates of recurrence. It affects both females that represent a population with higher prevalence, but male are not an exception and new studies reveal that they are similarly affected. Anorexia nervosa is characterized by starvation, fear of becoming fat, disturbed perception of body shape, unjustified influenced of shape on self-evaluation, denial of the seriousness of low body weight and amenorrhea (for females). Bulimia nervosa is marked by uncontrollable binge eating, compensatory behavior to prevent weight gain (e.g., vomiting) and absurd influence of shape on self-evaluation. The diagnostic category of Eating Disorder Not Otherwise Specified (EDNOS) is more commonly detected than either anorexia or bulimia nervosa (APA 1994) and eating problems that do not reach diagnostic threshold are quite common in community surveys. Eating disorders are characterized by medical complications, psychosocial impairment and accompanying psychopathology. They have the highest levels of treatment seeking, inpatient hospitalization, suicide attempts and mortality of common psychiatric syndromes.

Purpose: The principal goal of the survey was to estimate prevalence of EDs and to identify knowledge, attitudes, practices and beliefs in students aged 13-14 in Republic of Macedonia for possible risk factors for development of EDs, aimed at establishment of baseline data for development of specific intervention programs for the target groups.

Methodology: Data was collected by self-administered EAT 26 questionnaire, distributed to selected students in class. Data from health professionals was collected by Questionnaire on knowledge, attitudes and practices on EDs, involved in treatment of adolescents.

Data was collected from 1293 students in urban and rural areas of 4 municipalities in RM, including the capital

Skopje. Total of 40 responses were received from health professionals involved in treatment of selected age group.

Results: The survey has been conducted on a sample of 1293 respondents in 4 regions in RM and capital Skopje. Obtained results have completely proved hypotheses defined in the project proposal. EDs are more prevalent in female population (52.1%), assessed by sub-scale 1 and 2 of the EAT-26 instrument. In the total population 334 respondents have classified as at risk of ED (17.4%); more than a half of them (56%) are Macedonians, but respondents with EDs are also identified among representatives of other ethnic groups. Of them, 49.4% have normal BMI, while 37.7% have classified as underweight. 84.7% respondents with ED have never been treated by health professional.

Results obtained from the questionnaire for health professionals show that health professionals are aware of how to recognize the problem with EDs in school children aged 13-14, but are not using any pharmacologic treatment. However, results have to be interpreted with caution, given the small response rate (39.8%).

Key words: Not available.

Defended: June 3, 2010.

Mentor: Prof. Dr. Dragan Djordjev.

Evgenija Kirovska-Petreska. Preparedness of the health laboratories for quality standard applications [MSc thesis]. Skopje, Republic of Macedonia: Cathedra of Hygiene, Center for Public Health, Faculty of Medicine, University "Ss Kiril and Metodij"; 2010.

Tendencies in business system standardisation processes today are owed to intensive expansion of standards on global levels and relate to different management systems within an organization (quality, environmental protection, safety, laboratory testing and other). This study only examines aspects of quality management in public health laboratories through application of the ISO 9001:2008; ISO 17025:2005 and ISO 15189:2007 standards. Some results of detailed analyses of those standard and their application in public health laboratories in the Republic of Macedonia are also presented. Public health laboratories are shown in relation to the equipment, spatial area and staff in the QM/QA model laboratories in line with the quality standards.

The main goal of this master's study is to determine preparedness of public health laboratories concerning the conditions (area, equipment, and staff) and in relation to quality standard application. With a view of accomplishing this goal, the following has been done:

-identification of the current condition of laboratories in relation to the area, equipment and staff as well as quality standard application in the Institute and Public Health Centers in the Republic of Macedonia.

Data from a survey conducted on employees and management in the Public Health Institute of the Republic of Macedonia and the ten Public Health Centers throughout Macedonia have been used as materials for the research with the sample encompassing interviewees with minimum higher education.

This research took three months and an observational-analytical method was applied.

This research was conducted through a Questionnaire (Appendix 1), which was actually the basic research instrument. The Questionnaire was adapted from the ISO/IEC 17025:2005 standard and modified for the goals of the study. It consists of 62 questions related to the fulfillment of the conditions (area, equipment and staff); questions about the commitment of a management team in institutions; and questions referring to the management system monitoring.

Total 144 employees completed the Questionnaire which they were given during the survey (face to face method), with the aim of reducing possible errors.

Statistic processing was conducted through application of standard descriptive analyses of quality indicators and check of the hypotheses put forward. Analysis of the relation of quality indicators (answers to questions in the Questionnaire) is presented through tables and graphs. The study identified that globally, the preparedness of public health laboratories in the Republic of Macedonia in relation to conditions (area, equipment and staff), for quality standard application, is seen as PARTIAL.

The study has shown that the current condition of laboratories in relation to the area, equipment and staff, as well as quality standard application in the Institute and the Public Health Centers in the Republic of Macedonia varies and differs significantly between accredited and non-accredited public health laboratories.

Analysing the answers to the Questionnaire showed that in the accredited public health laboratories in the Republic of Macedonia, interviewed employees in the Public

Health Institute of the Republic of Macedonia showed best knowledge and dedication for quality system maintenance in testing laboratories.

One can distinguish essential differences in the management staff's view and knowledge in relation to introducing quality systems between managers-health professionals and managers-economists.

Testing Laboratories in the Institute of Public Health of the Republic of Macedonia and few Public Health Centers have adequate and modern equipment, in line with the testing methods. Most laboratories in Public Health Centers have great inadequacy of space in relation to its distribution, non-permitted access, cleanliness and

monitoring the ambiance conditions.

Professional and competent staffs work in the Institute and in all Public Health Centers, in particular when it comes to the testing activities. Motivation of staffs instigated by management teams is what is missing. Both internal and external trainings of staffs are necessary.

Key words: *Accreditation; QMS; standards; quality management; ISO 9001:2008; ISO/IEC 17025:2005 and ISO 15189:2007.*

Defended: November 22, 2010.

Mentor: Prof. Dr. Dragan Gjorgjev