

NUTRITION EDUCATION INTERVENTION: AN EFFECTIVE TOOL FOR HEALTH PROMOTION AND PRIMARY PREVENTION

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Abstract

Obesity and overweight of children are a major global problem nowadays. According to the Regional Office for Europe (2018), obesity has risen three times over the last two decades worldwide. The attention is currently focused on population-wide health promotion and disease prevention through comprehensive health education, starting in the early age of individuals, aimed at slowing down the increasing incidence of obesity and related health issues. The purpose of this research was to design nutrition education intervention based on determined dietary habits and healthy nutrition knowledge of ninth graders from the elementary schools in the Czech Republic, who have completed the compulsory school attendance. The designed interventional program reflects current nutritional habits and knowledge about nutrition of Czech students and nutritional recommendations for the Czech population targeted to children, which also corresponds to the nutritional topics integrated into the National Health Curriculum Recommendations for Czech Elementary Schools. A validated Nutritional survey (analyzing nutritional habits, attitudes towards proper nutrition and basic health nutrition skills) and Nutritional knowledge quiz (analyzing the level of knowledge related to nutrition for secondary school students) were designed to determine the relationship between knowledge and behavior of ninth grade students from elementary schools in the Czech Republic. The research group consisted of 1,028 ninth graders from 25 different elementary schools. Current nutritional habits and knowledge of Czech ninth graders were analysed and the Nutrition Education Program - a comprehensive curriculum for teachers and set of educational and didactical materials for Czech elementary schools was designed based on the research findings. The program appears to be a suiTab. instrument for effective nutrition education and a popular tool for the organization of education among teachers. Designed Nutrition Education Program allows one's knowledge, behavior and attitudes to be shaped in desired direction while letting students have fun and incorporate newly adopted behavioral patterns into their everyday lives.

Keywords:

Childhood obesity; Proper nutrition; Nutrition education; Nutrition knowledge; Nutritional habits; Behavior change; School education programming.

INTRODUCTION

Children and adolescents are a special type of audience that needs particular attention in terms of health promotion, wellbeing and disease prevention. The rapid growth of overweight and obese children and adolescents is the reason for more prominent interventions on both local and national levels. According to the World Health Organization (2013), the main factors contributing to the development of obesity and overweight in children

include the genetic disposition of the individual, temperament, character, self-awareness and self-expectation. Family and school education are considered as the most influenceable areas among other fields including the level of health literacy; general knowledge of their own, their parents' and close family members' attitudes; the nature of attitudes towards health and proper nutrition; the social status of the family; the extent of financial security of all its members; the locality of residence and

the location of the school; the level of media influence on individuals; the level of students interaction with public sources of information; but also the volatile factors such as the momentary mental state of the individual and many other factors.

Current research (USDA, 2017) shows that, in particular, the lack of knowledge about proper eating leads to overweight as one of the most important factors. Inappropriate eating habits and lack of physical activity are the leading factors that not only contribute to a pandemic of overweight and obesity (Atkinson, et al. 2001; Auld, Romaniello 1998; Battjes, et al. 2016; Durrer, Schutz 2008; Rito, et al. 2013), but also the major causes of morbidity and mortality linked to overweight and obesity. Dietary guidelines for americans (2010) classify cardiovascular disease, hypertension, type 2 diabetes mellitus, osteoporosis, and some cancers as direct consequences of inappropriate eating habits and chronic physical inactivity.

Many school-age children do not meet neither nutritional nor physical recommendations reflecting currently particular needs and movement-nutritional deficiencies of various countries worldwide. The vast majority of the population does not meet the recommendations for consumption of fruits, vegetables, whole grains and dairy products, between what it consumes an excess of refined grain products, solid fats and added sugars (Ministry of Health and the United States Department of Agriculture, 2015).

Health promotion within the field of health education occurs by deepening of knowledge related to health and disease prevention, systematic acquisition of practical skills needed for a healthy lifestyle or positive influence on health attitudes of children and adolescents (United States Department of Agriculture, 2014). The primary goal of education supporting pupils' health is to maximize the health of each individual and to protect the health of the whole population.

Adequate health education is a national concern in every country. Quality assurance is the collective responsibility of all ministries, in particular academia and health education institutions, health care systems, regulators and governments. Health is one of the primary goals of elementary education in the Czech Republic. Health promotion within the school system consists of systematically encouraging the acquisition of key healthy lifestyle competences among students, such as responsibility to make smart health-related decisions and the protection of their health. In order to maintain the effective health promotion in the Czech Republic, it is necessary to involve and integrate all educational areas.

Special attention should be paid to particularly important area of education, which is health education and proper nutrition education. Nutrition and appropriate eating habits are a vital factor in health throughout life. Fundamental nutritional knowledge and education of proper eating are essential factors in the process of shaping pupils' personality, leading to active realization of healthy lifestyle and maintaining good state of ones health.

According to the National Framework Educational Program for Elementary Education in the Czech Republic (2013), Health Education teaches students how to actively develop and protect their health through the interconnection of all its components (social, mental and physical) and how to be responsible for their own health.

Nutrition education and shaping the positive attitudes towards proper eating are generally believed to be closely related to the proper nutritional behavior of the students (Atkinson, al. 2001; Auld, Romaniello, 1998; Boumtje 2005; Cawley et al. 2013;2005, Durrer, Schutz, 2008, Espada et al., 2015, Fitzgerald et al., 2013, Harvard University 2015, Jones, Zidenberg-Cherr 2015, Lakshman et al.). WHO (2003) emphasizes the need to educate population about the official recommendations on overweight and obesity prevention. World

Health Organization calls for continuous support of state policy education and effective health literacy strategies to reverse the epidemics of overweight, obesity and related health consequences.

Current research (Ahluwalia et al. 2015; Atkinson, et al. 2001; Boumtje et al. 2005; Cawley et al. 2013; Durrer, Schutz, 2008; Espada et al. 2015; Cheng et al. 2015; Jones, Zidenberg-Cherr 2015; Mahamoud 2015; Valdivieso 2014) speaks about the growing importance of nutrition education as the key element of effective prevention on the increasing prevalence of obesity, overweight and associated diseases among school aged children. In general, the efforts of education towards a positive health behavior change are long-term processes shaping a future generation.

The programmed education is one of the key strategies for obesity and overweight prevention in secondary school students. The implementation of health promotion programs within school environment is currently one of the most effective tools of disease prevention and students' health cultivation (Auld & Romaniello, 1998). The significant amount of time that students spend in school, their interpersonal activity with the teacher, and the personal relationship they have already developed, as well as the arrangement of school classes in terms of external (material, space) and internal factors (group dynamics and inter-group relationships) are the key factors contributing to the program effectiveness.

METHODS

Survey instrument, participants and procedures

The Nutrition Education Program (NEP) – a comprehensive curriculum for teachers and set of didactical materials for Czech elementary schools was designed, based on the research findings. The main goal was to make nutrition education in Czech elementary schools more effective,

since education related to nutrition plays a significant role in active support of a students' healthy lifestyle. The Nutrition Education Program helps deepen the proper nutrition knowledge, develop specific health nutrition skills, promote healthy lifestyle and shape the necessary attitudes and personified values towards health via 6 school class lessons. The program provides a comprehensive set of ideas how to teach health nutrition, summarized in textbook called NUTRITION FOR THE SECOND STAGE OF ELEMENTARY SCHOOLS – HEALTHY PLAYFULLY. The NEP provides all necessary educational materials and tools not only for teachers but also for each and every student participating on education via this designed program. The nutrition education intervention – The Nutrition Education Program for Czech elementary schools was implemented among 82 ninth graders from three different randomly chosen elementary schools in the Czech Republic in 2018. Participating elementary schools were chosen via random and available selection.

RESEARCH RESULTS – NUTRITION EDUCATION INTERVENTION IN THE CZECH REPUBLIC

The implementation of the designed program took a place in the second half of the school year 2017/2018 at selected elementary schools in the South Bohemian region. The Nutrition Education Program – a comprehensive curriculum for teachers and set of educational and didactical materials for Czech elementary schools has been found to be an effective instrument of acquiring the required nutritional knowledge and enhancing desirable attitudes towards health nutrition among school aged children. Research provides a pedagogical intervention tool aimed to actively support the health of Czech school-aged children. Study results present educational program supporting health nutrition in the context of enhancing the educational impact on health. The designed program has a great

potential to make nutrition education more effective among participating Czech schools in an entertaining way. The Nutrition Education Program for Czech students helps deepen the proper nutrition knowledge, develop specific health nutrition skills, promote healthy lifestyle and to shape the necessary attitudes and values towards health via 6 entertaining lessons (which can be divided in up to 12 lessons or can be organized as one healthy nutrition day). The program provides school teachers with a comprehensive set of ideas on how to teach health nutrition using the detailed textbook, containing all necessary educational materials and tools for each student attending classes. Program was found to be a suiTab. instrument for proper nutrition education and teacher's favorite tool for nutrition education realization.

DISCUSSION

The Czech Republic schooling system is known for its traditional educational approach, which has been mostly overcome in the world's modern society. The formal Curriculum documents in the Czech Republic emphasize knowledge adoption over practical skills inclusion into one's life. Health education programming appears to be the future direction, not only to cover the prescribed national curriculum standards established by the state, but because it also helps teachers with often uneasy and time consuming school preparation. Students' knowledge, behavior and attitudes are being shaped in desired direction while letting the kids have fun and apply adopted skills and knowledge into their everyday lives.

Research presents a pedagogical intervention tool aimed to actively support the health of Czech children based on the nutrition analysis of 1,028 ninth graders in the final stage of compulsory schooling. The Nutrition Education Program for the second grade students of primary schools in Czech Republic was designed based on the analysis of school-aged children

nutrition, corresponding to the Czech government curriculum restrictions, Czech nutritional recommendations for school aged children.

CONCLUSIONS

The pilot implementation of the designed nutritional program took a place at selected high schools in the Czech Republic in 2018. Nutrition educators can help reduce undesirable nutritional behavior by targeted programming of the problematic nutrition-related knowledge areas and improper nutritional habits. This may lead to health strengthening of children and adolescents in the Czech Republic. The Nutrition Education Program - a comprehensive curriculum for teachers and set of educational and didactical materials for Czech middle schools and high schools have been found to be an effective instrument of acquiring the required nutritional knowledge and enhancing desirable attitudes towards health nutrition among school-aged children. The program appears to be an exceptionally suiTab. instrument for proper nutrition education and warmly accepted tool by educators for the nutrition education implementation in the Czech Republic.

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