Interdisciplinary model using information technology for prevention of violence and intellectual fatigue in rural student communities

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Abstract
Health and education are considered to be basic resources for forming future healthy adults who will be useful for the society, community and economy. Therefore, promoting the health of school children and youngsters represents a priority in governmental policies and strategies in Romania and other European Union member states. Once the work capacity of pupils and youngsters is exceeded, fatigue and exertion may cause irritability, nervousness reflected in verbal aggression, threats, bullying, moderate aggressive gestures, such as light pushing or kicking, reduced physical and psychological activity, resignation, isolation and even depression. Promoting education and health must be integrated into the information system of health services. PROFVIOB project aims to carry out a scientific evaluation and analysis of the main medical, social, pedagogical, family and community factors responsible for causing school violence and fatigue in the rural environment. The scientific analysis of the two major public health problems, social pediatrics, social and psycho pedagogical assistance will allow the implementation of new methods and good practice prevention models in schools, families and the community by designing new community-based health education models. The main aspects covered by the research are: promoting the physical and psychological health of the pupils using interdisciplinary prevention methods, evaluating the frequency and seriousness of school stress, fatigue and violence from a medical, psychological and pedagogical perspective, the relation among parents, children and schools, pupils’ interest in the learning process, the partnership between schools and families, social support and assistance for promoting children’s interests in schools, families, community and society. This paper presents the main ways of using information technology as an important tool for the development and implementation of the program and underlines recommendations for its use for management, research, medical, social and pedagogical practice in rural school environments.

Keywords: information technology, online health education, intellectual fatigue, interdisciplinary model, the rural student communities

1 Introduction
Individual health is defined by the WHO as the state of complete physical, mental and social wellbeing and not only the absence of disease and disabilities, while the health of human groups is defined as the global synthesis of individual health. Starting from these definitions we perceive the need to identify and implement new interdisciplinary health education models [1, 12, 17].

The pluridisciplinary research involved in the proposed project covers the basic provisions of the Maastricht Treaty, article 129 referring to public health, which states that a high level of human health protection shall be ensured by encouraging cooperation among member states and supporting their activities [2, 4, 5].

The activity of the community will focus on major health problems such as disease prevention, drug addiction, promoting research in the field of disease etiology and transmission and health education in the school environment. [17, 18]

The topics covered by the project are currently of utmost scientific and political importance at both national and European level as they concern pupils’ and youngsters’ health, which requires immediate reforms in public health, school and academic education [19, 20].

The Bologna process underlines the importance of academic education in promoting research but also the importance of academic research for economic and cultural development and ensuring social cohesion.
Health education is a term used to describe the
learning opportunities created deliberately to facilitate behavior changes to achieve a predetermined objective. In this context, education for health is closely linked to disease prevention, thereby aiming to change behaviors that have been identified as risk factors for certain diseases. It is primarily an educational activity that involves some forms of communication designed to improve knowledge and develop understanding and skills that promote health [2, 6, 9].

Health and education are considered to be basic resources for forming future healthy adults who will be useful for the society, community and economy. Therefore, promoting the health of school children and youngsters represents a priority in governmental policies and strategies in Romania and other European Union member states [7, 8, 17, 18].

Once the work capacity of pupils and youngsters is exceeded, fatigue and exertion may cause irritability and nervousness reflected in verbal aggression, threats, bullying, moderate aggressive gestures, such as light pushing or kicking, reduced physical and psychological activity, resignation, isolation and even depression. Fatigue and school-related stress are reflected in three types of responses: social attitudes and behaviors (including violent behaviors of various types and degrees), cognitive and emotional. Starting from this reality, the topic of our research aims to study the causes, manifestations and consequences of this mass phenomenon [3, 10, 11].

The protection of children and youngsters, their intellectual, physical and moral education are universal objectives as well as fundamental values of vital importance for the world [13, 15, 18].

The proposed research aims to carry out a scientific evaluation and analysis of the main medical, social, pedagogical, family and community factors responsible for causing school violence and fatigue in the rural environment. The scientific analysis of the two major public health problems, social pediatrics, and school social and psycho pedagogical assistance will allow the implementation of new methods and good practice prevention models in schools, families and the community by designing new community-based health education models [12, 14, 17].

2 Description of the program
The main aspects covered by the research are: promoting the physical and psychological health of the pupils using interdisciplinary prevention methods, evaluating the frequency and seriousness of school stress, fatigue and violence from a medical, psychological and pedagogical perspective, the relation among parents, children and schools, pupils’ interest in the learning process, the partnership between schools and families, social support and assistance for promoting children’s interests in schools, families, community and society.

The new health education model for preventing phenomena specific to this generation, such as fatigue and violent behavior, which will be designed and put forward for implementation in rural schools with the help of information technology, will improve the communication among pupils, schools and families. Thus pupils’ resistance to stress will increase and prevent school fatigue, at the same time improving their tolerance and stimulating their desire to get actively involved in health promotion. The implementation of the new community-based health education method for promoting pupils’ health will also lead to a more efficient public health system that assures medical care in rural schools. This will allow specialists to identify, propose and implement a new method for preventing school fatigue and violence in communities.

The specific objectives, which derive directly or indirectly from the general objectives and are correlated with the activities proposed, are as follows:

Objective I/2007: Creating the research database for the research topic
Objective I/2008: Preparing the empirical research and the research instruments
Objective II/2008: Carrying out field research in the rural environment
Objective I/2009: Implementing the health education method in school environments
Objective II/2009: Psych-pedagogical assistance for pupils and teachers
Objective III/2009: Disseminating the research results of the stage
Objective I/2010: Drawing up studies, conclusions and recommendations following empirical research

Objective II/2010: Disseminating the research results

The objectives proposed by the interdisciplinary consortium are in accordance with the aim and objectives of Program-PN-II-ID-PCE-2007-1 such as health, that aim to improve the methods used for disease prevention, especially chronic psychosomatic diseases. The objectives are also in accordance with the requirements in force at European level that allow the results to be integrated for improving research and development. The project meets the requirements of Program-PN-II-ID-PCE-2007-1.
3. Use of information technology for preventing violence and intellectual fatigue in rural student communities

The rising cost of healthcare presents a compelling argument for developing innovative health education and communication strategies aimed at improving health outcomes among different segments of the population using a wide array of information technologies [4, 20, 21]. Information technology (IT), as defined by the Information Technology Association of America (ITAA), is "the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware [16]. IT deals with the use of electronic computers and computer software to convert, store, protect, process, transmit, and securely retrieve information.

The PROFVIOB program is using the information technology in different phases.

1. Data collection and interpretation
First of all, several data were collected and analyzed regarding school violence and fatigue among school students from several rural areas from Cluj County. The information technology was useful in different ways during this process. First the information in electronic format offered by several social, medical and school institutions were collected. Second, in order to achieve the goals and objectives of the research, groups of students from rural areas, were selected by simple random sampling, randomization process, characterized by that each of the school have the same chance to be selected in the sample (sampling probabilistic). Research methods used were: clinical examinations, psychological testing, direct and participatory observation, investigation by questionnaire, interview-semi structured anamnesis, individual conversation, focus groups, computer and printed questionnaires. All primary data were collected in a central database which will be processed with statistical software programs by assessing the studied indicators and the results obtained by implementing the new model of prevention of stress, fatigue, school violence and its impact in health status of students living in rural communities.

2. Using information technology for implementation of the program
During the implementation of the program information technology was used to communicate with teachers, psychologist and pupils through email and discussion groups and it is intended to be extended also for the communication with parents[21,22]. Moreover the web page of the program contains information about the objectives of the program, its activities and will be continuously updated in order to include information for children, teachers and parents regarding the ways, institutions and materials which can help them to better understand and prevent school violence and intellectual fatigue.

4. Conclusions
The research team expects that a method or model for integrating the personality of the teenager and young individual in the social and professional mechanism will be defined and implemented. The following will be carried out in view of achieving these results: the factors responsible for fatigue and school violence will be analyzed, prevention methods will be implemented while the concept of health education will be promoted through information technology. The positive results obtained at the end of this multidisciplinary research (improved quality of life of pupils) will allow the implementation of this community-based model of health education in Romanian schools in order to prevent chronic psychosomatic diseases in children. The model proposed will allow the future development of a multidisciplinary national counseling center based on the concept of health education, which will improve, monitor and periodically evaluate the quality of life and the medical, social and pedagogical services provided to pupils, teachers and parents in order to prevent stress, fatigue, violence in schools and chronic psychosomatic diseases. This center will be based in our university and will collaborate with other universities and research centers from Romania and abroad. The research results will contribute to improving and modernizing the Romanian medical, social and pedagogical services. They will also increase the quality of the medical, social and educational action taken for educating pupils and teachers (the comportments and physical indicators), improve the methods for preventing chronic psychosomatic diseases and promote multidisciplinary research through new information technologies, distributed databases and educational software. The project proposes a new interdisciplinary method of preventing fatigue and school violence, based on the concept of health education. It uses a new, advanced and
computerized solution for management, research, medical, social and pedagogical practice in rural school environments.

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References:
[4]. Escrig, B., Cours systemes de communications numeriques, ENSEIRB, 2003
[18]. www.data.euro.who.int World Health Organization-WHO
[19]. www.iuhpe.org International Union for Health Promotion and Education (IUHPE).
[22]. http://www.sciencedirect.com/science