

**ABSTRACT OF THE DOCTORAL THESIS**

**BY Mrs. GINETA-IONELA VANVU**

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**THESIS ADVISOR: Ph.D. MARIANA CORDUN**

**TITLE THESIS:**

***CONTRIBUTIONS ON THE PROPHYLAXIS OF THE PROFESSIONAL DISEASES AFFECTING THE PHARMACY STUDENTS AT “GR.T. POPA” UNIVERSITY OF MEDICINE AND PHARMACY BY MEANS OF DEVELOPING SPECIFIC PHYSICAL EDUCATION CURRICULA***

**Key words:** professional diseases – pharmacists – prophylaxis – students – Physical Education and Sports

The need to acquire as much information on the prophylaxis of professional diseases by creating a few Physical Education and Sports curricula, on the connection between diseases and the characteristics of the Pharmacy students and the intention to highlight the effects that can thus appear and the influence of the new teaching approaches on the educational-instructive process that takes place during the university PE lesson determined me to choose this topic for my thesis.

Forming healthy habits for an active life by means of the constant practice of physical exercise and sports both during the PE lesson and the leisure time activities asks for systematic and easily accessible information. The importance of the students' ability to identify the possibilities of improving life quality by means of physical exercise that represents prophylaxis for illnesses or deficiencies is a priority objective of the Physical Education practiced at a University specialized in a different area than sports, especially for preparing them for their profession from a physical point of view.

This study is divided into 3 parts and contains the theoretical background of this topic, the preliminary research that highlighted the specialists' opinion (i.e. pharmacists, pharmacist assistants) on the physical and psychological effort that takes place during the practice of their profession and a third part based on PE research. The second part research led to the identification of professional risk

factors by applying a questionnaire on a number of 1124 subjects from 5 counties in the area of Moldova (i.e. Iasi, Neamt, Suceava, Bacau, Vaslui). This represented an incentive for my research in the third part that led to the creation of a Curriculum for University Physical Education, adding to the motion ability that is specific to pharmacists (i.e. prophylaxis, tonicity).

The experience I have acquired for many years both at the lower secondary school (for which I created a Curriculum for Olympic Education as an optional course) and at the University determined me to expand my area of research by elaborating and applying my own programmes of prophylactic exercise for students during the PE lesson, the practise of sports or as an independent activity.

***Thus I have deduced the following hypotheses:***

1. The implementation of exercise programmes during the PE lesson can induce the future pharmacists a proactive attitude towards such a practice, considered to be the main factor in preventing professional diseases.
2. The systematic practice of physical exercise under various forms (sports, leisure activities, etc.) can improve the physical potential of the pharmacy students and indirectly prevent specific pathology.

The research was done on 160 subjects, first year Pharmacy students at “Gr.T. Popa” University of Medicine and Pharmacy, Iasi, divided into two groups (80 students in the experimental group and 80 subjects in the control group), aged between 18 and 23, during a University year (2008-2009).

The students in the control group have done the mandatory PE lesson according to their curriculum and the students in the experimental group have done activities based on my specialized curricula with objectives, teaching contents and physical exercise programmes for the purpose of prophylaxis of the pharmacists’ professional diseases.

The experimental group was divided into 3 groups according to the subjects’ options resulted from the application of the Physical Activity Index, a group whose activity takes place during the PE lesson and 2 groups during the sports practice lesson: basketball – medium level and volleyball – beginner level.

Each group has done exercise programmes for maintaining the corect body posture for the prophylaxis of the spine deficiencies (cervical, dorsal/posterior and lumbar) of cardio-vascular diseases and of the nervous system.

The mandatory lesson of the experimental group was supplemented by optional sports leisure activities (as a result from the application of the Physical Activity Index (PAI)) that were monitored in an individual chart for physical activity.

The investigational methods used in this research were: the study of bibliography, the observation, the conversation, the inquiry based on a questionnaire and the teaching experiment and the results interpretation was done

by means of statistics and graphic representation; the SPSS (Statistical Package for the Social Sciences) and Excel were used for calculations.

The tests focused on the force of the superior and inferior limbs, the abdominal and back muscles and the mobility of the spine. As somatic parameters I measured height, weight, thoracic perimeter (during rest, breathing in and out) abdominal perimeter (ortho and clinostatism), physiological parameters, vital capacity, cardiac frequency. As somatic – functional indices I measured the evaluation of the Ruffier-Dickson Index, the body mass index and the Physical Activity Index.

Because of the numerous students' and colleagues' requests to help them improve their physical potential and implicitly their life quality by means of my activity at the Physical Education department of the faculty of Pharmacy at "Gr.T. Popa" University of Medicine and Pharmacy I elaborated the new curriculum which contains objectives and contents that are specific to the profession of pharmacist.

The exercise had a prophylactic effect focused on improving their physical potential, being implemented to the pharmacy students during the PE lesson, the sports lessons (basketball, volleyball, etc) and the sports leisure time activities.

The exercise was done by subjects as programmes (part of the body preparation for physical effort and selective influence of the locomotor system) but also for the development of physical qualities with the right effort dosage according to the topics and the objectives of the lesson.

The students' results at the initial testing determined during the practical evaluation the necessity to apply the individual chart for physical activity as extra activity added to the ones done during the PE lesson and sports practice in order to attain the research objectives, the subjects being from the experimental group but wanted to improve their Physical Activity Index this way.

Other physical activities done by the students outside the PE lesson and the sports practice (activities that require extra preparation) were represented by: participation in University sports competitions (basketball, street-ball, football, badminton, table tennis, etc.), actions organized by "Cova&Urzica" Olympic Club in collaboration with The Pharmacy Students Society in Iasi (dance and aerobics) and by the Romanian Olympic Academy in Iasi (artistic programmes).

The study done with the help of the first year students of the faculty of Pharmacy at "Gr.T. Popa" University Iasi highlighted practical aspects by means of the results from the research done on the experimental and control groups on the prophylaxis of the professional diseases and by applying PE and sport curricula focused on the characteristics of the Pharmacy profession (the preliminary study).

The experimental group subdivided into 3 groups A, B and C to which I applied specific adequate exercises of prophylaxis got significantly better results as

compared to the control group, a fact proved by the evolution of the registered parameters. I underline the fact that these results are from the activities of volunteering that I organize at “Cova&Urzica” Olympic Club at the Pharmacy Faculty of “Gr.T. Popa” University of Medicine and Pharmacy.

I think that the main role in forming the habit of the students’ self-monitoring of the physical exertion/effort belongs to the PE Professor who can redirect the educational process differently according to the information given by them (through Physical Activity Index) and an Individual Physical Activity Chart such as I have devised.

I also think that the activity of a University Olympic Club is very important as the offer of activities is various and supports educational social family and long term responsibility.

By means of this paper I tried to create in my students the habit of doing systematic exercise and self-evaluating their physical potential by doing it so that it induces in time prophylactic effects on the pathology developed and confirmed in the preliminary study.

The original elements in this research are represented by:

- The implementation methodology of the physical exercise with a prophylactic purpose so as to improve the physical ability of the 1<sup>st</sup> year Pharmacy students
- The elaboration of exercise programmes applied during the PE lesson, the sports practice and as leisure time activities
- The creation of individual physical activity charts so as to work differently with the students according to their age, gender and physical potential, so as to maintain some somatic – functional indices within normal limits
- The involvement of “Cova&Urzica” Olympic Club as a motivational support for promoting health by means of physical exercise.