

**FORMATION OF PRACTICAL COMPETENCES  
OF FUTURE PHYSICAL THERAPISTS AND OCCUPATIONAL THERAPISTS  
IN THE PROCESS OF PROFESSIONAL TRAINING**

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**Abstract**

The article is devoted to the study of the formation of practical competencies of future physical therapists and occupational therapists in the process of professional training. The aim of the research was to study the impact of certain methods on the quality of future physical therapists and occupational therapists' skills and abilities during clinical neurological practice. The research methods such as observation, questionnaire, success analysis and mathematical processing of the obtained data were applied in the work.

As a result of an experiment conducted at the clinical bases of neurological practice in Chernivtsi with the fourth year students, it was discovered that the proposed pedagogical techniques (usage of methodical guidelines, patterns and neurological and physiotherapeutic examinations schemes, development of individual rehabilitation programs) and practice defences conduction with practical skills demonstration increase the efficiency of theoretical knowledge acquisition and improve the future specialists skills in physical therapy and occupational therapy.

Clinical practice helps to improve the training of physical therapists and occupational therapists for future professional activities.

The combination of clear methodological recommendations with independent research work, substantiation of physiotherapeutic interventions and practice of practical skills allows students to bring their preparation as close as possible to the requirements for the Standard of Higher Education in Ukraine.

**Keywords:** *competencies formation; future specialists; professional training; clinical practice; individual rehabilitation program; practical skills.*

### **1. Introduction**

Global changes in the modern society and reformation the system of higher education in Ukraine require special attention to professional training. All these need constant development of higher professional education content, ensuring the variability and flexibility of curricula and programs, their immediate response to the needs of social and industrial practices [1, p. 13].

Ukraine is undergoing a period of rearrangement in modern medicine to international requirements, in particular, the medical services reorganization and the introduction of a multidisciplinary approach [4, p. 39].

The most priority in the field of higher education is the competence approach, which aims to achieve the ultimate goal of education i.e. the transition from theoretical knowledge to professional competence [7, p. 78].

Transformations in education have led to a change in its basic paradigm, namely, the need to move from learning knowledge, skills, abilities to training the ability to learn and self-improve. The earlier you start teaching a student to learn, the more successfully he/she will acquire the necessary competencies in the future [6, p. 177].

### **2. Literature review**

An important aspect in the formation of specialists in this area is the combination of theoretical and practical activities. According to the scientific works of A.M. Hertsyk, the physical therapists and occupational therapists' activities combine clinical and extra clinical activities. Clinical activity consists of a rehabilitation examination, evaluation, diagnosis, prognosis and rehabilitation intervention. Out-of-clinic activities of a physical therapist include participation in research, training programs, assisting and administrative activities [5, p.19].

Creative ability to apply the received experience in various situations creates preconditions for formation of readiness for self-education, self-development and self-improvement of the person. Teachers of higher education direct the activities of students to study the material of different disciplines, thus bringing them to the need to perform independent work, research tasks [2, p.18].

According to the order № 1419 of the Ministry of Education and Science of Ukraine, it was approved and put into effect on 19.12.2018, the Standard of higher education of Ukraine for the first (bachelor's) level in specialty 227 "Physical therapy, occupational therapy", field of knowledge 22 "Health". This document defines the competencies, knowledge and skills that must be mastered by a future specialist in physical therapy and occupational therapy. In particular, they include "the ability to perform the basic components of the examination in physical therapy and occupational therapy as observation, survey, measurement and testing and then documenting their obtained results".

A systematic vision of solving the problem of developing the diagnostic competence of future specialists in physical rehabilitation has not yet found a holistic scientifically sound coverage in scientific works on the theory and methods of professional education. This problem is considered by different scientists through the valeological thinking, the formation of the motivational sphere of the future specialist in physical rehabilitation, and the

professional culture, improving the system of psychological thinking, at the same time we are forced to state the lack of comprehensive justification in professionally-oriented disciplines [7, p. 80].

During the analysis of literature sources it is noticed that to the issue of neurological clinical practice is given insufficient attention. However, this part of the training allows you to master the practical skills of both diagnostics and elements of influence, and thus acquire the skills necessary for professional development and future professional activity.

The main objectives of the practice are acquaintance of students with the types, conditions and circumstances of professional activity in specific medical, rehabilitation and other institutions; development and improvement of all necessary professional skills and abilities of a physical rehabilitation specialist; formation, development and mastering of a moral and psychological qualities as an integral part of professional training; promoting the choice of future professional activity [3, p.19].

### **3. Purpose of the research**

Studying the possibilities of improving the practical training of specialists in physical therapy and occupational therapy at the bachelor's level by means of clinical neurological practice.

### **4. Methods and organization of research.**

During the research, there were used such methods as observation, questionnaires, analysis of success and mathematical processing of research data.

The study was conducted on the basis of clinical practice of students majoring in "physical therapy, occupational therapy" in Chernivtsi Stroke City Centre, in the neurological departments of the local clinical hospital №2 and the regional drugs addicted dispensary in Chernivtsi. 50 students of the fourth-year took the internship.

In accordance with the curriculum, students during the VII semester studied the discipline "Physical Therapy in Neurology". Clinical rehabilitation practice was conducted in the second half of the semester. Therefore, in the process of studying the discipline, topics devoted to neurological and physiotherapeutic diagnostics, as well as clinical and physiological substantiation of methods and means of physiotherapeutic intervention were investigated. The knowledge and skills acquired in lectures and practical classes on the subject provided the initial level of knowledge and skills required for traineeship.

To facilitate the development of diagnostic skills by students, we have developed guidelines for the order and interpretation of survey results. Methods of rehabilitation intervention students learned in the study of relevant disciplines, in particular: "Adaptive physical culture", "Fundamentals of manual therapy", "Rehabilitation massage", "Physical therapy of different ages", "Occupational Therapy" and others.

During the internship, students performed tasks to improve the skills of examination and practiced the skills of physical rehabilitation of patients, according to the list.

The list included:

- mastering the skills of communication with patients (interpersonal skills i.e. listening, calming, communicating, influencing, etc.);

- identification of needs and formulation of the patient's problem;
  - study of the peculiarities of communication with patients and their relatives;
  - use of methods for assessing the functional state of patients with pathology of the nervous system such as survey, general and neurological examination, study of reflexes, study of movements coordination, study of sensitivity, study of cognitive functions (speech, memory), manual testing of muscle strength by Lovett, assessment muscle strength (according to MSReak L.), testing (formal) muscle strength on a 5-point scale MRC (Medical Research Council of the United Kingdom), assessment of muscle tone on the MMT scale, the study of muscle spasticity on the scale Ashfort, determining the index of activity in Bartel's everyday life, using a modified Rankin scale to assess performance (determining the degree of vital functions disruption), testing swallowing function (screening for dysphagia), using the scale for disability (EDSS scale), volume (amplitude) movements in the joints using a goniometer;
  - forecasting the possibilities of application and consequences of the impact of physical rehabilitation methods on the patient's body;
  - drawing up an individual program for physical rehabilitation during nervous diseases;
  - use of methods of physical rehabilitation for various diseases and injuries of the nervous system i.e. providing medical treatment for stroke, development and use of breathing exercises, preparation and use of therapeutic exercises for spastic or paralyzed muscles; compilation and application of sets of therapeutic exercises for passive, passive-active and active classes with different muscle groups, preparation and application of sets of therapeutic exercises to prepare for verticalization; patients verticalization, restoration of gait function, development and application of complexes of therapeutic exercises to prepare for transplantation in a wheelchair, transplantation of a patient in a wheelchair, measures to prevent complications as bedsores, pneumonia, thrombosis and contractures within lying patients; massage for spastic or paralyzed muscles, use of aids and devices (large gymnastic ball, bars, roller cart, treadmill, Swedish wall, walking devices, movable or rigid walking supports, etc.), the use of therapeutic exercise in hyperkinesis, the use of corrective exercises for spastic forms of paralysis, the use of therapeutic exercises for hypotension, the use of other methods of physical therapy available for application on the basis of practice;
  - filling in the documentation of a physical therapist and occupational therapist;
  - evaluation of the physical rehabilitation effectiveness;
  - correction of individual programs for physical rehabilitation of the neurological profile patients;
  - making recommendations on the application of medical, psychological and social measures during discharge or at the next stages of rehabilitation;
  - providing pre-medical care in emergencies (emergency care in vegetative-vascular crisis, Quinke's edema, migraine attacks; intoxication, etc.).
- Students independently conducted complexes of therapeutic exercises, massage, occupational therapy classes, conducted physical therapy procedures under the supervision of the basic medical institution specialists.

To defend the practice, students had to develop an individual rehabilitation program for patients with selected neurological and concomitant diagnosis according to the scheme developed by us. The program was recommended to include the results of the examination, the appointment of a physical therapist and instructions for the appointment. In particular, there were sets of exercises, the procedure for performing physical therapy procedures, massage techniques, etc. Students also made recommendations to conditional patients about occupations and lifestyle at home after discharge from the hospital according to diagnoses.

The individual rehabilitation program was developed according to the following scheme:

1. Passport part (surname, name, patronymic, date of birth, age).
2. The main diagnosis.
3. Concomitant diagnosis.
4. Examination data (visual examination; survey; general examination; neurological examination; study of reflexes, cerebellar function, sensitivity, cognitive functions; body mass index).
5. Data of physiotherapeutic testing (by methods of Lovett, Ashfort, Barthel, etc.).
6. Physiotherapeutic intervention i.e. list of appointments of a physical therapist (kinesitherapy, physical therapy procedures, diet therapy, hydrotherapy, etc.) with dosage (number of procedures, duration), means (drugs for iontophoresis, ultrasound exposure) and areas of exposure with combination of basic and concomitant diagnosis.
7. Expected results.
8. Instructions for appointments i.e. sets of exercises, massage techniques, techniques of physiotherapy procedures (iontophoresis, ultrasound, magnetic therapy, etc.), features of the use of other used methods of rehabilitation (diet therapy, herbal medicine, mechanotherapy, etc.).
9. Recommendations for the domestic stage of rehabilitation (homework for the patient).

During the practice defence, the commission evaluated the quality of practical skills, theoretical knowledge and documentation.

## **5. Results and discussion.**

Working with the diagnostic instructions made it possible to arrange the examination process and determine the extent of the body language to determine the extent of the intervention. Preparation of an individual rehabilitation program, instructions for practical skills and clinical and physiological justification of methods and means of intervention allowed to work more deeply on the theoretical material on the given neurological diagnoses. The selection of physiotherapeutic techniques and tools in a combination of basic and concomitant diagnoses allowed to develop analytical and creative thinking of future professionals. The need to demonstrate practical skills in front of the commission during the defence of the practice encouraged students to be more responsible in their practice.

The proposed methodological approach to the neurological practice of future physical therapists and occupational therapists, in our opinion, makes it possible to bring their training as close as possible to the requirements of the Standard of Higher Education of Ukraine for

the first bachelor's degree in Physical Therapy, Occupational Therapy. The combination of studying the theoretical course "Physical Therapy in Neurology" with the practice gives the opportunity to improve the level of rehabilitation training of students, which is confirmed by the analysis of current and final results of the student. During the analysis of the current success of students, it was found that the average scores for the oral examination in the classroom after the internship were higher by 5-10%, compared to the classes before it. The results of the evaluation of the final control for the second module showed an increase in quality performance by 7.8% compared to the first module.

According to the results of the survey, 100% of respondents believed that the guidelines for the examination of patients helped to perform the tasks of practice and its protection, as well as the knowledge gained in the study of the subject "Physical Therapy in Neurology". 72.7% of respondents believe that the internship contributes to better theoretical and practical preparation for the exam and for professional development. 36.4% of respondents believed that working on the development of individual rehabilitation programs contributes to better preparation for the exam, 18% denied it, and 45.5% had some doubts. In the first place for professional development 63.6% of respondents made the implementation of practical influences and skills development, 36.6% for communication with patients, 18.1% for communication with staff, and only 9.1% of respondents believed that the development of individual rehabilitation programs can best prepare for professional activities.

## **6. Conclusions**

Clinical neurological practice provides an opportunity to improve the theoretical and practical level on training of physical therapists for future professional activities.

The combination of methodical recommendations with independent search work, substantiation of physiotherapeutic interventions and practice of practical skills allows students to bring their preparation as close as possible to the requirements of the Standard of Higher Education of Ukraine.

In the process of training specialists in physical therapy and occupational therapy, it is necessary to constantly search for optimal combinations of methodological techniques of theoretical and practical training.

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