

PSYCHODIAGNOSTICS IN PHYSICAL REHABILITATION OF STUDENTS WITH SPINAL PATHOLOGY

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Annotation. *Purpose:* to determine the main directions and application methods psychodiagnosis with vertebral pathology students. Develop a program of psycho-diagnostics system in physical rehabilitation of students with spinal pathology. *Material.* The study involved 100 students 19-20 years old. *Results.* It is proved that the students (78%) exposed to stressful situations were more prominent functional changes of the spine. Found that patients with psychological testing ensures timely detection of a person's psychological. This allows for timely and efficient start rehabilitation activities and to choose the optimal method of psychological support in the process of physical rehabilitation. *Conclusions.* Complex application psychodiagnosis in three main areas (definition of personality traits, way to respond to stressful situations, determining the parameters of emotional background) allows differentiated and effectively in the process of psychological correction physical rehabilitation students.

Keywords: psychological testing, physical rehabilitation, vertebral osteochondrosis, pathology, spine.

Introduction

Stresses surely influence on life and psychological condition of modern people. Especially expressive this influence is among youth. Results of researches of 18-21 years old persons (M.A. Dmytriyeva, 1979, Yu.V. Telnik et al., 1991) showed that 15% have unsatisfactory nervous-psychic stability, 8% are not satisfied with inter-personal relations, 5% need in additional psychological examinations [4; 5]. It is undoubted that quantity of functional disorders of nervous systems and close to nervous-psychic disorders is increasing. It. In its turn, facilitates progressing of functional disorders of backbone and, in compliance with stress theory, appearing of most frequent degenerative-dystrophic diseases of backbone; it starts a chain of pathological genetic reactions, which result in vertebral osteochondrosis, scoliosis and other diseases of supporting motor system [2; 3; 10; 13].

Most of authors, who studied role of stressful and psychological factors in progressing of neurological symptoms of backbone pathologies, pay special attention to psycho-emotional de-adaptation and type of personal responding to a disease [1; 3; 14]. Alongside with it the problems of modern psycho-diagnostic with vertebral pathologies, which would stipulate wide spectrum of tests [8; 11; 12] for determination differentiated application of psycho-correction in physical rehabilitation, have not been sufficiently elucidated.

The article is a component of scientific research problem of National university of physical culture and sports "Programming and methodic of physical rehabilitation of persons of different nosological and age groups".

Purpose, tasks of the work, material and methods

The purpose of the work is to analyze complex program of psycho-diagnostic for differentiated application of psycho-correction in physical rehabilitation of higher educational students, who have backbone pathologies.

The tasks of the work:

1. Determination of main directions and peculiarities of psycho-diagnostic methods' application with vertebral pathologies of students.
2. Determination of effectiveness of differentiated application of psycho-correction on the base of worked out program of psycho-diagnostic in system of students' with backbone pathologies physical rehabilitation.

The methods and organization of the researches: we used psycho-physiological clinical methods of examination of students with backbone pathologies (testing); methods of mathematical statistic. We carried out examinations of 19-20 years old students' groups (members of groups had functional disorders of backbone and initial symptoms of vertebral osteochondrosis).

Results of the research

Physical rehabilitation of students with backbone pathologies at higher educational establishments shall combine valuelogic and rehabilitation aspects and influence on student's personality on three main levels: cognitive, psycho-emotional and somatic.

Cognitive level stipulates influence on mental sphere of student owing to methods of pedagogic and psychological correction, forming of valuelogic education of a patient. Psycho-emotional level stipulates influence of psycho-correcting and psycho-therapeutic methodic of different orientation on students' psycho-emotional condition. Somatic level is connected with system of provisioning of aid with neurologic pathologies of backbone that envisages detail studying of their aetiopathogenesis, constant implementation of new forms of rehabilitation, observation of principles of rehabilitation processes, implementation of innovative technologies of therapeutic massage and therapeutic physical culture. So, complex physical rehabilitation stipulates health related psycho-correcting influence on all levels of rehabilitation process.

Searching new form of rehabilitation process's improvement, for its optimization it is necessary to consider individual-psychological features of their nervous system and changes of psycho emotional condition in process of physical rehabilitation.

Alongside with it, depending on individual psychological features of a personality we shall choose certain method of psycho-correction, which would combine with adjoining action of physical factors in the most harmonious way, in the process of physical rehabilitation [6; 9]. Considering the above said we chose complex of psycho-diagnostic methodic, oriented on optimization of physical rehabilitation of students with backbone pathologies.

Psychological status of the tested was evaluated on the base of talks with students, which were oriented on determination of their usual style of responding, character of relations with surrounding people, presence of psychologically hazard situations, attitude to disease, psycho-diagnostic methods. We divided used by us psycho-diagnostic methodic into three categories: determination of features of character; determination of responding to stress situation; determination of emotional background parameters [6].

The first group of methodic included questionnaire of Shmyshek, questionnaire MINI-MULT (abbreviated variant of MMPI) [15], author's questionnaire "Marathon of stresses" [6] and other. This group of methodic permitted to mark out individual-psychological features of personalities.

Other group of methodic concerns the so-called coping-strategies, which specify main models of behavior and anti-stress strategies.

Third group of methodic determines main parameters of human emotional condition. We used questionnaires of Spilberg, tests SAM (self-feeling, activity, mood), Lusher's methodic and other. Application of such methodic implies two purposes. First – we researched influence of psycho-emotional factors on expressiveness and specificities of deviations in adaptation (in our case we regarded dorsopathy). Secondly, we studied dynamic of psycho-emotional background under influence of rehabilitation methodic. All psycho-diagnostic methodic were very important for choosing of psycho-correction strategy for students with backbone pathologies, but main role in it was played by first group, which was oriented on determination of individual psychological features of personalities and features of their characters (questionnaire of Shmyshek, questionnaires MINI-MULT (abbreviated variant of MMPI) [15], author's questionnaire "Marathon of stresses". Main task of these methodic was determination of character's accentuations, which could point at threshold of stress perceiving, character of progressing of stress situation. As a rule, these methodic were applied before rehabilitation. Accentuation of personality's character was clearly determined with the help of questionnaire by Shmyshel, based on conception of K. Leongard about 10 main types of accentuations [7]. All accentuations belong to peculiarities of character and reflect orientation and depth of affect responses.

1. Hyperthymic personalities with bent to enthusiasm, with high activity, friendly, optimistic.
2. Emotional, affectively mobile with increased sensitiveness and high empathy in sphere of fine emotions.
3. Anxious: such persons have increased anxiousness, uncertainty, absence of belief in own forces, anxiety without any ground.
4. Demonstrative persons with hysteric features of character. Their main features are expressed egocentrism, demand in being the center of attention that often is realized in demonstrative behavior.
5. Disthymic persons with bent to disorders of mood; these people are concentrated on sad sides of life, sometimes they are too serious, are not active; they are afraid of changes.
6. Stagnant, with bent to stagnation of affect and dream-like responses. Such people are ambitious, painfully sensitive, do not forgive ignoring their interests and dignity.
7. Pedantic people, who have domination of emotional rigidity. They are characterized by increased accuracy, strive for order, absence of decisiveness, caution and, alongside with unwillingness and inability to quick changes, to taking responsibility.
8. Cyclothymic people are those, who are bent to depressive responding. Their main feature is change of hyperthymic and disthymic states, which can be unpredictable. Periods of optimism are changed with depressive states.
9. Excitable, having bent to increased impulse responding in sphere of motives. Manner of their communication and behavior often depends not on logic, on rational self evaluation but on impulse, strive, instinct of not controlled motives.
10. Exalted, with bent to affective exaltation. Main feature of them is exalted response. They can be easily excited by happy events and become despaired by sad facts.

Special attention was paid to accentuation of character, which express in emotional sphere (emotion, exaltedness). For example studying of interconnection of psychological features and backbone's functional condition of 100 students with functional pathologies of backbone and initial neurological symptoms of osteochondrosis of different backbone sections proved that tested with such accentuation as exaltedness (78% of cases) have the most expressed reflexive changes of skin, muscles and functional condition of backbone. Analysis of fulfilled researches permits to affirm that just presence of some accentuated features of character (those, which make personality more sensitive to stresses) disturbs adequate forming of motion stereotype of a person and is a trigger of backbone functional pathologies' progressing.

There is a need in psychological correction of accentuated features of a personality in rehabilitation and treatment of functional vertebrae pathology. Determination of the mentioned regularities is of significant practical interest. The carried out researches prove that rehabilitation of backbone functional pathologies shall be started with psychological preparation, i.e. with psycho-correction of some features of personality's character; special attention shall be paid to disorders in emotional sphere.

The most known example of personal questionnaire is many-stage questionnaire of state Minnesota (MMPI) [15]. Questionnaire MINI-MULT (abbreviated variant of MMPI) contains 71 questions, 11 scales, including three of them – evaluating.

1. HYPOCHONDRIA (Hs) – “closeness” of the tested to asthenical-neurotic type. The tested with high marks are passive, slow, believe in everything, obedient to any power; they are slow in adaptation, they badly endure changes of circumstances.
2. DEPRESSION (D). High marks were received by sensitive personalities, bent to anxious state, shameful. They are diligent in business, with high morality, responsible but they are not able to take independent decision; they are not self-assured; they are despaired with misfortunes.
3. HYSTERIA (Hy). It is intrinsic to persons, who are bent to neurologic defensive responses of conversion type. They use somatic symptoms as a mean of avoiding responsibility. They solve all problems by escaping in disease. Main feature of such people is wish to look like more important as they are actually, wish to attract attention at any cost. Feeling of such people are shallow, interests are flat.
4. PSYCHOPATHIA (Pd). High marks by this scale witness about social se-adaptation; such people are aggressive, conflict liking; they neglect social standards and values. They have changeable mood, they are sensitive.
6. PARANOIAC (Pa). Main feature of such people according to high marks by this scale is bent to forming of super valuable ideas. These people are single sided, aggressive and vindictive.
7. PSYCHO-ASTHENIA (Pt). It is a diagnosis of persons with distrustful type of character; they are anxious, uncertain with constant doubts.
8. SHIZOID (Se). Persons with high indicators by this scale have schizoid type of behavior. They are able for fine senses and perceiving of abstract images, but everyday happy and sad events are not emotionally responded by them.
9. HYPOMANIA (Ma). Persons with high indicators by this scale have are characterized by optimistic mood independent on circumstances. They are active, energetic and resilient.

Carrying out talk with a patient, it is necessary to pay attention to stresses, endured by the patient during his life. We conducted questioning in compliance with certain schema, which was conventionally titled “Marathons of stresses”. Its purpose was, first of all, to “refresh” in patient’s memory main stressful situation before sessions that make correcting process more committed; secondly, already at stage of talking searching of often repeated stereotype situations, which acute patient’s problems; patient’s main complexes are determined, their emotional and sensitive components. For determination of adequate psychological fitness, considering main peculiarities of psycho-correction methods, in practical work with questionnaire we used most often division into three types of personality: rational, emotional and will psycho-types.

1. Rational. Person is more bent to rational thinking, understanding of surrounding situations; such people often concentrate on higher spiritual spheres, trying to avoid obstacles of everyday life.
2. Will type. Person tries to constantly practice conscious self control that give him (her) sense of protection; such person tries to obey all his (her) life to own will.
3. Emotional. Person lives in world of emotions and tries to avoid stresses, re-switching attention to positive emotions; such person tries to feel positive emotions when meeting friends, relatives, enjoying music, nature, paintings, books and so on.

We carried out correlation analysis of accentuations’ and features of character determinations as per different psychological tests and questionnaires. For this purpose we, first, determined main psycho-types in control and experimental groups with the help of Marathon of stresses questionnaires. At next stage of our research we determined, which accentuations, by questionnaire of Shmyshek and scales of questionnaire MINI-MULT meet requirements of main psycho-types. If, by certain parameters of psycho-diagnostic questionnaires (Shmyshek, MINI-MULT) 70% of the tested met certain main psycho-type, we determined correlation interconnections (see table 1).

Table 1

Correlation interconnections between main psycho-types as per data of complex psycho-diagnostic system

| № | Main psycho-types (as per questionnaires “Marathone of stresses”) | Accentuations of character as per questionnaire of Shmyshek | Scales as per questionnaire MINI-MULT |
|---|---|---|---------------------------------------|
| 1 | Rational | Shizo-thymic | SHIZOID (Se). |
| 2 | Emotional | Emotional, exalted, demonstrative, hyperthymic | HYSTERIA (Hy). HYPOMANIA (Ma). |
| 3 | Will | Easily excited | PARANOIAC (Pa). |

Thus, rational psycho-type, as per questionnaire “Marathone of stresses” corresponded to shizothymic and pedantic accentuation (by questionnaire of Shmyshek and scale of shizoid condition of MINI-MULT. Emotional psycho-type correlated with emotional, exalted, demonstrated and hyperthymic accentuation ad scale of hysteria and hypomania as per appropriate questionnaires. Will psycho-type corresponds to accentuation of excitation and scale of paranoiac.

According to determined psycho-types we determined adequate methods of psycho-correction and psycho-therapy:

1. Rational: more bent to rational responding to stresses, to analysis of reasons of situations and seeking logical way out from them. In this case we used rational psycho-therapy in rehabilitation.
2. Emotional: has reduced threshold of stresses’ perceiving; such people first of all solve psycho-emotional problems. For such people psycho-therapeutic methodic, influencing on emotional sphere are the most effective: positive psycho-therapy, gestalt therapy, client-centered therapy, methodic of free breathing and etc.
3. Will psycho type uses will for solution of all problems. In this case psycho-diagnostic methodic are suggestive methods of influencing on patient: autogenic training, classic and Erikson’s hypnosis and so on.

For determination of effectiveness of differentiated complex of psycho-correction and physical rehabilitation means among students with backbone pathologies we used Lusher’s test and questionnaire SAM. By interpreting of Lusher’s test we analyzed location of main and auxiliary colors; we considered talks’ results. We calculated mean indicators of total deviation from autogenic norm (MD) in points and vegetative coefficient at the beginning, in the middle and at the end of rehabilitation course in groups. For example, in our research we examined 67 students (and fulfilled rehabilitation) of 19-20 years’ old age, who periodically complained on initial neurological symptoms of functional pathologies and osteochondrosis of backbone of first stage (34 students – with the help of traditional massage and 33 students with the help of improved methodic of rehabilitation, in which alongside with traditional massage we used psycho-correction). Comparative analysis of results showed higher effectiveness in experimental group than effectiveness of traditional methodic. For example, with improved methodic we completely removed functional blockades in 78% against 47.1% of control group students (difference was 28.7% and was statistically significant $p < 0.05$). Indicators of psycho-emotional status also differed in favor of improved rehabilitation methodic.

For example in experimental group indicators of psycho-emotional sphere as per Lusher’s test after rehabilitation course (MD – 6.5 ± 0.72 ; BK – 1.45 ± 0.08) were better than indicators of experimental group (MD – 9.3 ± 1.02 ; BK – 1.03 ± 0.07): difference of indicators (MD – 2.8 ± 1.24 ; BK – 0.42 ± 0.15) was statistically confident ($p < 0.05$). Alongside with it indicators of psych-emotional status also differed in favor of our system (mood, activity and self-feeling) by questionnaire SAM.

Conclusions:

1. Analysis of application of psycho-diagnostic methodic in combined using of psycho-correction and physical rehabilitation of students with backbone pathologies permitted to specify three main directions of psycho-diagnostics: determination of personality’s character features; determination of responding to stresses; determination of parameters of psycho-emotional status. Just such classification of psycho-diagnostic directions permits to consider individual-psychological features of students for optimization of rehabilitation process; peculiarities of their nervous systems and changes of psycho-emotional parameters in the process of physical rehabilitation.
2. Psycho-diagnostic of patients with dorsopathy has not only scientific theoretical importance but it helps to solve practical tasks: ensures timely determination of personality’s individual psychological features, which facilitate appearing of functional pathologies of backbone, permit to timely and rationally start rehabilitation as preventive and treatment measures and choose optimal method of psychological maintenance in process of physical rehabilitation.
3. We have proved effectiveness of differentiated application of psycho-correction on the base of developed by us program of psycho-diagnostic in system of complex physical rehabilitation of students with functional backbone pathologies and neurological symptoms of vertebral osteochondrosis of first stage.

Further psycho-diagnostic researches in system of physical rehabilitation of youth with backbone pathologies, implying combined influence on psychological sphere and functional condition of backbone, considering individual psychological features of young people, peculiarities of their nervous system and changes of psycho-emotional parameters, shall facilitate increasing of effectiveness of youth’s health improvement.

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