

The cover features a central image of a person standing on a dark rock in a snowy, mountainous landscape. The sky is dark with a vibrant green aurora borealis. Overlaid on the top left are several diagonal bands in shades of teal and brown. The title 'REVISTA INCLUSIONES' is printed in large, bold, white capital letters across the center.

REVISTA INCLUSIONES

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**EMOTIONAL INTELLIGENCE IN THE STRUCTURE OF ADAPTATION PROCESS
OF FUTURE HEALTHCARE PROFESSIONALS**

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Abstract

The study presents the empirical research on *emotional intelligence* as a factor of efficient adaptation of future healthcare professionals to their professional environment. It considers *emotional intelligence* as a complex construct of mental abilities related to handling emotional information and generating emotional experience of an individual. Cluster analysis is used to determine the levels of adaptiveness: high (16.59%), medium (38.57%) and low (44.84%). The study determines the indexes of intercorrelation of the components of social and psychological adaptation of the future healthcare professionals; it diagnoses the level of manifesting *emotional intelligence* in the future healthcare professionals with different levels of adaptiveness ($p \leq .05$; $p \leq .01$). The research focuses on the differences in the structure of *emotional intelligence* of well-adapted and badly-adapted future healthcare professionals ($p \leq .05$; $p \leq .01$) to their professional environment. The structure is represented by the content characteristics: understanding of one's own emotions and other people's emotions, managing one's own emotions and other people's emotions; emotional competence;

emotional experience. The study proves that empathy, emotional competence and self-improvement are the factors ensuring an appropriate level of adaptation of future healthcare professionals to their professional environment.

Keywords

Adaptation – Emotions – Motivation – Healthcare education

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Introduction

Adaptation to a professional environment is one of the fundamental factors of successful professional activity of an individual. It concerns not passive adaptation but an active form of entering a professional environment. The result of this process depends on an individual's *emotional intelligence*, the development of *emotional intelligence* being its integral index.

The studies of H. Gardner¹, D. Goleman² have become fundamental for putting the term "*emotional intelligence*" into scientific circulation by J. Mayer and P. Salovey³. Further research on *emotional intelligence* by the above-mentioned authors proves similarity of its structure to classical criteria of general intelligence⁴. D. Goleman considers affective empathy as a key element of *emotional intelligence*⁵. Guided by this idea, J. Mayer offers four dimensions relating to these aspects of empathy: 1) the ability to perceive and express emotions in other people's poses and facial expressions; 2) the ability of emotions to assist in thinking; 3) the ability to analyze emotions, understand their evolution and results; 4) managing emotions in the context of personal purposes, self-knowledge and social education⁶.

The research on emotional exhaustion as a consequence of a low level of professionals' *emotional intelligence*⁷ and the research on psychological correction of the syndrome of emotional exhaustion of nurses are of great scientific interest and social significance⁸. It was established that timely psychological assistance provided by healthcare professionals is a powerful protective measure to prevent emotional exhaustion. It was substantiated that emotional exhaustion is caused by low emotional intelligence. The precondition for low intelligence is a lack of necessary knowledge, skills and abilities at the beginning of professional career⁹.

Emotional intelligence is an integrative personality trait J. Mayer and P. Salovey regard it as a group of cognitive abilities to identify, understand and manage emotions¹⁰. Since psyche is a functional system containing emotional-volitional and intellectual-cognitive structures¹¹, understanding of the process of psychological adaptation should be examined in terms of the correlation between rationality and emotions. This correlation is thoroughly

¹ H. Gardner, *Frames of mind: the theory of multiple intelligences* (New York: Basic Books, 1983).

² D. Goleman, *The varieties of the meditative experience* (Los Angeles: JP Tarcher, Incorporated, 1988).

³ J. D. Mayer & P. Salovey, "The intelligence of emotional intelligence", *Intelligence*, Vol: 17 num 4 (1993): 433-442.

⁴ J. D. Mayer; D. Caruso & P. Salovey, "Emotional intelligence meets traditional standards for an intelligence", *Intelligence*, num 27 (1999): 267-298.

⁵ D. Goleman, *D. "Emotional intelligence* (New York: Bantam Books, 1995).

⁶ J. D. Mayer; P. Salovey & D. Caruso, "Emotional intelligence: theory, findings, and implications". *Psychological Inquiry – PSYCHOL INQ*, num 15 (2004): 197-215.

⁷ Halian, O. "Responsibility and emotional burnout of teachers", *Insight: the psychological dimensions of society*, num 2 (2019): 16-23.

⁸ O. V. Tanasiichuk, "Psychological correction of nurses' emotional burnout syndrome", *Insight: the psychological dimensions of society*, num 1 (2019): 41-46.

⁹ Tanasiichuk, O. V. "Psychological correction ...

¹⁰ J. D. Mayer & P. Salovey, "The intelligence ...

¹¹ A. Damasio, "How the Brain Creates the Mind", *Scientific American*, Vol: 281 num 6 (1999): 74-79
y V. Viljunas, *Psychology of emotional phenomena* (Moscow: MSU. 1976).

described in the studies by O. Artemeva¹², L. Vigotskiy¹³, K. Izard¹⁴, P. Simonov¹⁵, C. Smirnov¹⁶, P. Johnson-Laird¹⁷, K. Oatley¹⁸ et al. The difference here can be only functional. In particular, a rational (cognitive) component is mainly referred to conscious self-regulation, that is essential for maintaining efficiency of adaptation process. An emotional component is normally related to behavioral manifestations, physiological reactions (psychophysiological and vegetovascular) and subjective experiences which are apparent in nervous and mental stability, anxiety and aggressiveness¹⁹. All these are important since the emergence of emotions in a particular situation, i.e. modality of emotions, is related to the past experience and evaluation of the current situation²⁰. According to the cognitive and physiological theory, visceral reactions of an organism which are invariable when any emotional states emerge, determine only their intensity, leaving the formation of other parameters to the cognitive sphere. The above-mentioned information makes the research on emotional intelligence in the structure of adaptation process of future healthcare professionals topical.

Emotional intelligence is considered by the scientific community as the ability to think over one's own and other people's emotions for efficient thinking. We maintain that *emotional intelligence* contributes to personal growth, efficient professional activity and career of an individual. Since an individual's ability to adapt to their professional environment is a considerable part of success in professional development, the correlation of "*emotional intelligence* – adaptation" is obvious.

We assume that the research on *emotional intelligence* in the structure of adaptation process will allow obtaining significant empirical results that will help future healthcare professionals enter their professional environment efficiently, make less effort to adapt to it and focus on fulfilling their responsibilities better.

Purpose is to conduct empirical research on the structure of *emotional intelligence* of future healthcare professionals at the stage of their study at higher education institutions.

Methodology and methods

Methodological fundamentals of the empirical research on *emotional intelligence* of future healthcare professionals at the stage of their study at a higher education institution are the system of successive measures with application of psycho-diagnostic instruments.

¹² E. Artem'eva, Основы психологии субъективной семантики (Moscow: Smysl, 1999).

¹³ L. Vygotskiy, Thinking and speech (Moscow: Лабиринт, 1999).

¹⁴ K. Izard, "Психология эмоций" (St. Petersburg: Peter, 2000).

¹⁵ P. Simonov, Consciousness and empathy, In: L. Kulikov (ed.). Psychology of consciousness (St. Petersburg: Peter, 2001). 162-169.

¹⁶ S. Smirnov, Psychology of an image: the problem of activeness of mental reflection (Moscow: МГУ, 1985).

¹⁷ P. Johnson-Laird & K. Oatley, "The language of emotions: an analysis of a semantic field", Cognition and Emotion, num 6 (1989): 201-223.

¹⁸ K. Oatley & P. Johnson-laird, "Towards a cognitive theory of emotions", Cognition and Emotion, num 1 (1987): 29-50.

¹⁹ A. Halian, "Personality resources of adaptation of future health workers to their professional activity". Extended abstract of Candidate's thesis (Lesya Ukrainka Eastern European National University. Lutsk. 2016).

²⁰ S. Schachter & J. E. Singer, "Cognitive, social, and psychological determinants of emotional state", Psychological Review, Vol: 69 num 5 (1962): 379-399.

This methodology was tested by the researchers when examining adaptation to professional activity²¹, sensor regulation in situations of uncertainty²², motivation for professional development of future professionals²³ and also evaluating mental states of expectations in different activities²⁴. All the above-mentioned experimental and empirical studies contain the elements of the research on adaptation, affective-volitional sphere, motivation and self-regulation.

Participants

The research participants were 223 third- and fourth-year students of the higher education institution “Boryslav Medical College” (BMC), (Lviv region, Ukraine). The students were seeking the degree in the following academic areas: “Physician assistant program” and “Nursery program”. The average age of the sample was 17.84 years (SD=1.68, the range of 17-18 years).

Organization of Research

Psycho-diagnostic instruments for measuring the research parameters were used during the academic term. “Methods of diagnostics of social and psychological adaptation” (“DSPA”)²⁵ were used to diagnose the levels of adaptiveness of future healthcare professionals to the conditions of their professional activity. The diagnostic construct of the method includes the following scales: adaptiveness / non-adaptiveness, self-acceptance / lack of self-acceptance, acceptance of others / non-acceptance of others, emotional comfort / emotional discomfort, internal control / external control, dominance / subordination, escapism, sincerity scale. The obtained results, except the level of an individual’s adaptiveness, give information about the factors determining them. The reliability index by the method “DSPA”, obtained by means of Cronbach’s α , was $\alpha = .707$.

²¹ A. Halian, Personality resources...

²² I. Halian, Value-semantic self-regulation of personality: genesis and mechanisms of functioning (Drogobych: DSPU. 2016) y I. Popovych; I. Halian; O. Halian; I. Burlakova; Ly. Serbin; M. Toba; N. Buhaiova & Yu. Bokhonkova, Yu. “Sensory Regulation of Future Teachers in a Situation of Uncertainty”. Revista ESPACIOS, Vol: 41 num 2 (2020).

²³ A. S. Borysiuk, “Research on the peculiarities of the motivation sphere of future doctors”, Insight: the psychological dimensions of society, num 1 (2019): 102-109; I. M. Halian, “Personal determinants of responsibility of future educators”, Insight: the psychological dimensions of society, num 1 (2019): 15-21; I. Halian, “Motivational and value determinants of future physical culture teachers’ professional becoming”, Science and education, num 3 (2018): 36-42 y I. Popovych; L. Lymarenko; N. Tereshenko; T. Kornisheva; O. Yevdokimova; A. Koverznieva y M. Aleksieieva, “Research on the Effectiveness of Training Technologies’ Implementation in Student Theater”, Revista Inclusiones, Vol: 7 num 2 (2020): 104-121.

²⁴ V. V. Khmil & I. S. Popovych, “Philosophical and Psychological Dimensions of Social Expectations of Personality”, Anthropological Measurements of Philosophical Research, num 16 (2019): 55-65; I. Popovych; O. Blynova; A. Zhuravlova; M. Toba; T. Tkach, y N. Zavatska, “Optimization of development and psycho-correction of social expectations of students of foreign philology”, Revista Inclusiones. Vol: 7 num Especial (2020): 82-94; I. Popovych; A. Borysiuk; L. Zahrai; O. Fedoruk; P. Nosov; S. Zinchenko y V. Mateichuk, “Constructing a Structural-Functional Model of Social Expectations of the Personality”, Revista Inclusiones, Vol: 7 num Especial, (2020): 154-167 y I. Popovych; O. Kononenko; A. Kononenko; V. Stynska; N. Kravets; L. Piletska y O. Blynova, “Research on the Relationship between Existential Anxiety and the Sense of Personality’s Existence”, Revista Inclusiones, Vol: 7 num Especial (2020): 41-59.

²⁵ C. Rogers & P. Daymond, “Diagnostics of social and psychological adaptation”. In: Fetiskin, N., Kozlov, V. & Manujlov, G. (Eds.). Social and psychological diagnostics of personality and small-group development (pp.136-139) (Moscow: The Publishing House of the Institute of Psychotherapy, 2002).

The ability to understand an individual's attitude represented by their emotions and the ability to manage emotions on the basis of the decisions made (*Emotional Intelligence*) were diagnosed by means of the Questionnaire of "*Emotional Intelligence*" ("EQ") (Holl, H., 2002)²⁶. The diagnostic construct of the method includes the following scales: emotional awareness; managing one's own emotions (emotional release, emotional flexibility); self-motivation (voluntary emotion management); empathy; recognizing other people's emotions (the ability to affect other people's emotional states). The processing of the results involves distinguishing the levels of partial and integral emotional intelligence. The reliability index by the method "EQ", obtained by means of Cronbach's α , was $\alpha = .787$.

Cluster analysis was used to differentiate the research participants by the levels of adaptiveness. It is a multi-dimensional statistical procedure used to create classifications by arranging objects into relatively homogenous classes on the basis of their pairwise comparison by the criteria determined and measured in advance. Two basic methods of cluster analysis were used in the research. Firstly, the method of connection between groups was used to determine an optimal number of clusters, and then, after preliminary clusterization by means of hierarchical methods – the method of k-means, since it requires the number of clusters determined in advance. The Euclidian Squared Distance served as the similarity measure.

Procedures

The research was organized by the scheme of ascertaining experiment. The diagnostic profiles were obtained by the following methods: "DSPA", "EQ" and psychological content parameters were determined. Sincerity and non-randomness of the responses were ensured by voluntary participation of the research participants in the experiment and confidentiality of the results.

The obtained results were interpreted individually by each method, and thereafter we searched for a causal relation between the diagnosed mental phenomena. The levels of adaptiveness were determined by means of cluster analysis, and the depth of the correlation between particular characteristics of the phenomenon under study was measured by means of Kendall correlation analysis (T_k).

The research was conducted according to ethical standards of the committee on the rights of experiments of Helsinki declaration²⁷.

Statistical Analysis

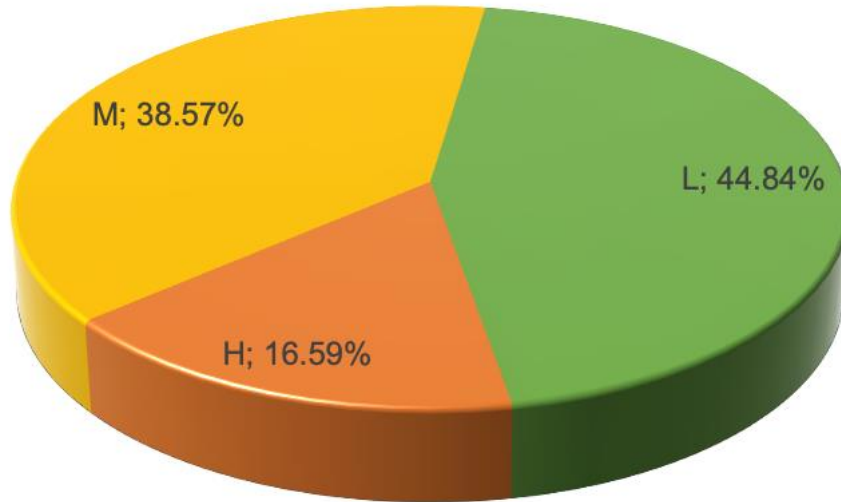
Statistical processing of the empirical data and graphical presentation of the results were performed by means of the statistical programs "*Statistical Package for the Social Sciences*" v. 21.0, this method is also known as *PASW (Predictive Analytics SoftWare) Statistics* та "*MS Excel*".

²⁶ H. Holl, Diagnostics of "emotional intelligence". In: Fetiskin, N., Kozlov, V. & Manujlov, G. (Eds.). Social and psychological diagnostics of personality and small-group development (Moscow: The Publishing House of the Institute of Psychotherapy. 2002), 41-42..

²⁷ "WMA Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects". (2013).

Results and Discussion

We distinguished between the groups of the research participants differing in the levels of adaptiveness. There is 16.6% of the respondents with a high level of adaptiveness to their environment. 38.6% of the future healthcare professionals show a medium level of adaptiveness. 44.8% of the research participants are badly-adapted (see Fig. 1). Such indexes are quite predictable if we take into consideration the character and conditions of the academic activities.



Note: H – high; M – medium; L – low

Figure 1

Distribution of the research participants by the levels of adaptiveness

Each level is characterized its content features, that could be detected on personal and functional-professional levels. For instance, the individuals with a high level of psychological adaptiveness are more adequate in their self-esteems and the evaluation of situations. They are characterized by adequate emotional reactions. It is a consequence of a sufficient level of the development of emotional and volitional characteristics, self-regulatory abilities and self-control. Whereas a low level of adaptiveness can be determined by depression, anxiety, negative emotions and frustration as an indicator of experiencing states of crisis. We think that such respondents have to make maximum psycho-physiological efforts to harmonize their state. The differences by the levels of adaptiveness of the future healthcare professionals are statistically reliable by the Student’s t-test (see Table 1).

Scale	Levels of adaptiveness			t _{cr}
	High	Medium	low	
High		9.30	16.7	p≤.01
Medium	9.30		8.40	p≤.01
Low	16.7	8.40		p≤.01

Table 1

Indexes of statistical significance of the groups with different levels of adaptiveness

Adaptiveness affects a functional-professional level. It enables an individual to master and perform professional actions and operations. Motivation for achieving success and avoiding failure, high responsibility and a developed system of personal values are fundamental for it. Adaptiveness of future healthcare professionals to the conditions of their professional activity depends on personal resources. Their correlation is proved by the results of the correlation analysis (Kendall correlation coefficient (T_k) was used). The variables considered as parameters of adaptiveness in the methods “DSPA” were correlated: adaptiveness / non-adaptiveness, self-acceptance / lack of self-acceptance, acceptance of others / non-acceptance of others, emotional comfort / emotional discomfort, internal control / external control, dominance / subordination and escapism (see Table 2).

Scale	Adaptiveness	Self-acceptance	Acceptance of others	Emotional comfort	Internal control	Aspiration dominance for	Escapism
Adaptiveness		.396**	.241**	.404**	.417**	.279**	-.247**
Self-acceptance	.396**		.435**	.550**	.355**	.337**	-.107*
Acceptance of others	.241**	.435**		.529**	.299**	.212**	-.192**
Emotional comfort	.404**	.550**	.529**		.495**	.364**	-.193**
Internality	.417**	.355**	.299**	.495**		.283**	-.201**
Dominance	.279**	.337**	.212**	.364**	.283**		-.034
Escapism	-.247**	-.107*	-.192**	-.193**	-.201**	-.034	

Note: * – statistical significance of $p \leq .05$; ** – statistical significance of $p \leq .01$.

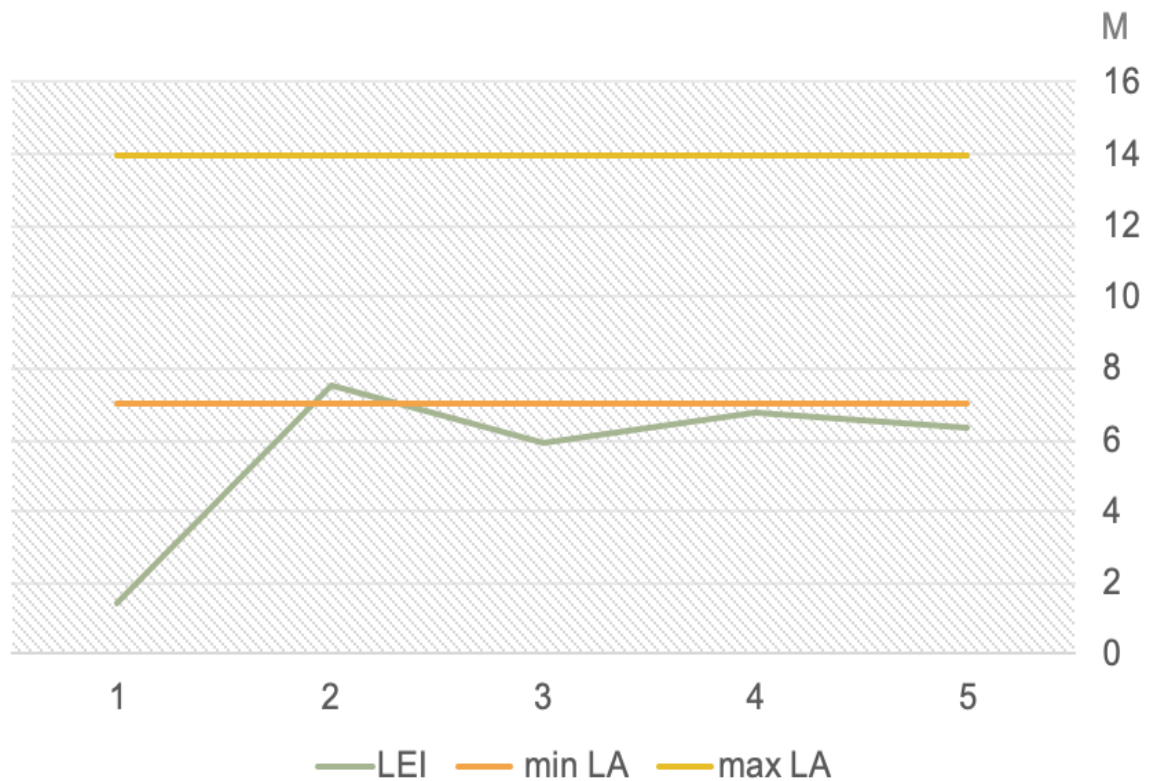
Table 2

Indexes of intercorrelation of the components of social and psychological adaptation of the future healthcare professionals by the sample (n=223)

The correlation analysis proves a positive statistically significant intercorrelation between the above-mentioned scales, and a negative intercorrelation – with the scale “Escapism” (-.247; $p \leq .01$). We maintain: the better adapted to their environment the future healthcare professional are, the less they are willing to avoid, escape, hide from unpleasant physical and mental aspects of the real life into a fictional world. This protective mechanism is normally characteristic of individuals with a low level of adaptiveness. We assumed that the ability to adapt depends on emotional intelligence as well as on other factors. Therefore the following stage of our research was aimed at determining the correlation of *emotional intelligence* of the future healthcare professionals with their ability to adapt. The results with the index of 28.02 points (the average from 40.00 to 69.00 points) obtained by the method (“EQ”)²⁸ proved a low level of manifestation of *emotional intelligence* in the research participants. The lowest index was obtained by the scale “managing emotions” (1.47 points) (see Figure 2).

²⁸ H. Holl, Diagnostics of “emotional intelligence...”

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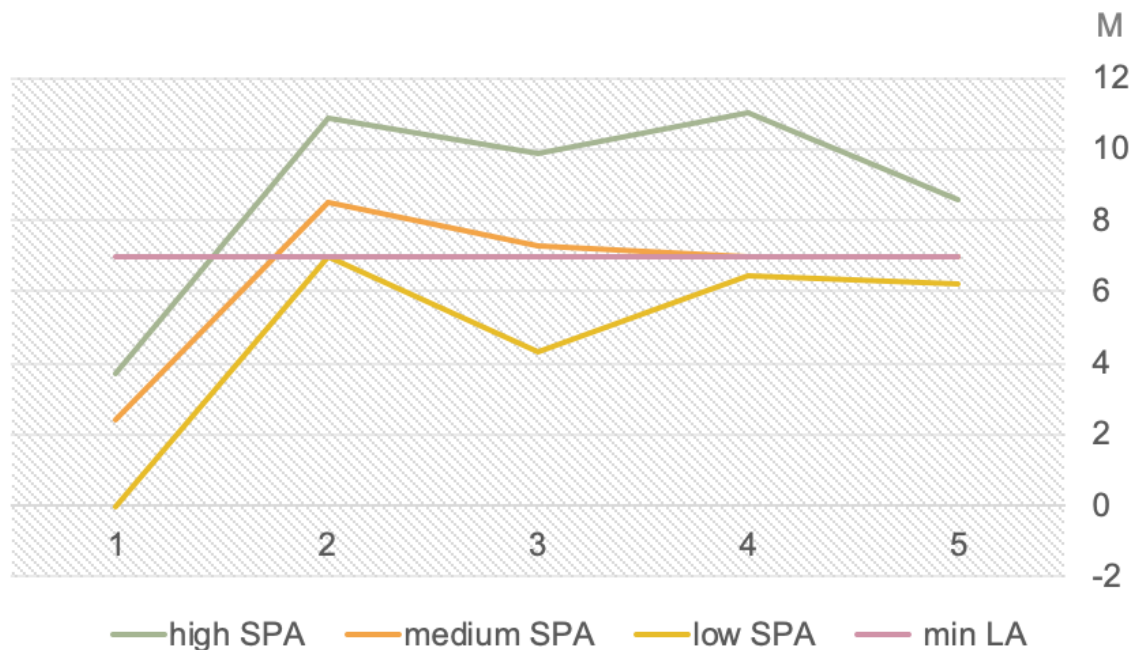
Note: 1 – managing emotions; 2 – emotional awareness; 3 – self-motivation; 4 – empathy; 5 – recognizing other people's emotions; LEI – level of *emotional intelligence*; min LA – min limit of the average; max LA – max limit of the average.

Figure 2

The level of manifestation of *emotional intelligence* in the future healthcare professionals

Sufficient understanding of emotional states based on emotional awareness contrasts with a low self-regulatory ability. Other components of emotional intelligence approach a medium level, they are: self-motivation (M=5.91) and empathy (M=6.77).

Some levels of adaptiveness are characterized by their own manifestations of *emotional intelligence*. For instance, the highest indexes by almost all the scales were shown by the respondents with a high level of adaptiveness. Empathy with the coefficient of 11.00 points and emotional awareness with the index of 10.86 points enable the respondents to meet the requirement of the professionogram (see Fig. 3). It concerns that part of working hours which healthcare professionals spend on individual communication with their patients at all the stages of diagnostic, treatment and rehabilitation process.



Note: 1 – managing emotions; 2 – emotional awareness; 3 – self-motivation; 4 – empathy; 5 – recognizing other people’s emotions; high SPA – high social and psychological adaptiveness; medium SPA – medium social and psychological adaptiveness; low SPA – low social and psychological adaptiveness; min LA – min limit of the average.

Figure 3

The level of manifestation of social and psychological adaptiveness in the future healthcare professionals

Low indexes of the above-mentioned emotional indexes in the respondents with a medium and especially low level of adaptiveness concern the issue of the level and quality of their social and psychological knowledge. Low self-regulatory ability in all the respondents is, on the one hand, a consequence of their emotional immaturity (early adolescence). On the other hand, it is necessary to mention different types of emotionality, distinguished by I. Hardy²⁹. In our opinion, it is the low level of empathy, that explains the efficiency of adaptation of future healthcare professionals to their professional environment.

The correlation analysis involving the indexes of adaptiveness and components of *emotional intelligence* determined certain characteristics of the role of empathy in the structure of adaptation process in the students of the Medical College (BMC) (see Table 2).

²⁹ I. Hardy, Doctors, nurse and patients. The psychology of dealing with patients (Budapest: The Publishing House of the Academy of Sciences of Hungary, 1988).

Components of emotional intelligence		Emotional awareness	Managing emotions	Self-motivation	Empathy	Recognizing emotions	Integral index
Adaptiveness	High level of adaptiveness	.646*	.029	-.832**	.024	.634**	-.036
	Medium level of adaptiveness	-.182*	.481**	-.015	-.071	.059	.063
	Low level of adaptiveness	.113*	.435*	.612**	.107	.465**	.540**

Note: * – statistical significance of $p \leq .05$; ** – statistical significance of $p \leq .01$.

Table 2
Correlation matrix of the indexes of adaptiveness and *emotional intelligence* of the future healthcare professionals

The respondents with a high index of the level of adaptiveness show a positive statistically significant correlation of “adaptiveness” with such components of *emotional intelligence* as: recognizing emotions ($Tk = .634$; $p \leq .01$), emotional awareness ($Tk = .646$; $p \geq .01$). However, they demonstrate a negative statistically significant correlation with self-motivation ($Tk = -.820$; $p \leq .01$). Adaptiveness of the future healthcare professionals with a medium level depends on their ability to manage emotions ($Tk = .481$; $p \leq .01$). The badly-adapted respondents require the ability to recognize emotions ($Tk = .465$; $p \leq .01$) and manage them ($Tk = .435$; $p \leq .01$). Their aspiration for self-motivation will assist in it ($Tk = .612$; $p \leq .01$).

Conclusions

1. The research proves a leading role of *emotional intelligence* in the structure of adaptation process. Emotional intelligence is considered as a complex construct of mental abilities, related to handling emotional information and generating emotional experience of an individual.

2. We identified the differences in the structure of *emotional intelligence* of the future healthcare professionals, well-adapted and badly-adapted to their professional environment ($p \leq .05$; $p \leq .01$). The structure is represented by the content features including understanding of one’s own emotions and other people’s emotions, managing one’s own emotions and other people’s emotions; emotional competence (the ability to understand one’s own emotions and other people’s emotions; emotional flexibility in treating situations and other people); emotional experience based on the integrated emotional knowledge an individual gains throughout the life and uses in everyday interaction with the environment.

3. Empathy, emotional competence and self-improvement are the factors ensuring an appropriate level of adaptation of future healthcare professionals to their professional environment.

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