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### Physiotherapists' work in public perception

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### Abstract

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### **Keywords**

physical traits, temper, physical and mental strain

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Article

# Physiotherapists' work in public perception

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### 1. Introduction

Physiotherapy as an integral part of medicine and health care system, often perceived as a medico-social process based on continuous cooperation with another person, is dynamically developing and changing along with the advance of science and technology [1, 2]. During the process of education to the profession, a future physiotherapist gains knowledge and skills in kinesiotherapy (motion treatment), physiotherapy and balneotherapy (using natural and artificial physical factors in treatment) and therapeutic massage, as well as sociology, psychology, pedagogy and many other fields of science. Mastering these subjects influences not only the effectiveness of the conducted therapeutic process but also patient's satisfaction and perception of a therapist [1-4]. Working with a wide group of other medical specialists, physiotherapists constantly strive to become more independent in the implementation of the therapeutic process [5, 6]. Literature indicates that among many factors, a patient's age and disease entities or condition in particular determine their satisfaction with the therapy, which is also strongly linked to previous expectations, assessment of its effectiveness as well as the therapist's personal and professional traits. Patients' assessment and feelings often affect members of their family and broader social groups, such as co-workers. It is not only therapists' expertise and professional competence that is assessed but also their individual personality and physical traits [7–10]. Literature data indicate that a few of the most important factors in choosing

studies for this profession are the need to help, serve others and compensation [11]. Personal opinions are often shared with relatives and colleagues, and such aspects as professional competence and skills or personality traits/appearance are subjected to evaluation/criticism. The assessment or categorization of these traits may result from one's knowledge or personal experience with the job, yet sometimes merely the perception of the profession. Due to that, the analysis of this socially sensitive issue is a very rare subject matter of scientific research. The available research data mainly focus on the efficiency researched in terms of professional strains/burdens, assessment of the effectiveness or the role of communication in the profession, and they surely do not exhaust the issue [12–19]. The knowledge of the subject concerning the physiotherapist's professional profile, social expectations and the nature of work is crucial especially when choosing the career or managing therapists' teams [11, 20, 21].

The aim of the study is to establish socially expected physical traits of a physiotherapist and the key aspects of their job, based on the opinions of a larger group of respondents having various knowledge and experience in contact with therapists and their work. It is assumed that both the respondents' gender and education might impact the perception of usefulness of certain features of character (personality traits) of a therapist and social categorization and assessment of the job and its successful performance.

### 2. Materials and Methods

Materials used in the study were collected at the end of the last decade in a survey conducted among people who had previous experience with a physiotherapist and their work. 710 men and 1411 women living in different size towns and cities of central and western Poland participated in the study. The subjects were patients of rehabilitation health care centres (35%), physiotherapists, students of physiotherapy and students of physiotherapy of post-secondary schools (31%), healthcare professionals and academic teachers (21%) as well as physical education students and physically active people who regularly go to fitness clubs (13%).

The questionnaire used in the research was taken from previous works [22–24]. It included 14 closed-ended questions, and the respondents were asked to choose one of the answers indicated. The first four questions enabled gathering information about the subject; five further questions identified the preferences of physiotherapist's physical traits, physical fitness and temper. The remaining questions concerned physiotherapist's education and their job in terms of its burden/strains. The material was analysed taking into account the respondents' sex and education.

In order to assess the differences in the respondents' preferences, a test for equality of two percentage structures based on statistics 'Z' was used. The assessment of the dependence between the level of education and the percentage relevance of the answer frequency was carried out using a test for equality of proportions based on Fisher-Snedecor's test.

In cases when the percentage value of the answers in the three groups was smaller than 0.2 or larger than 0.8, the statistical evaluation was made using the F2 test, in other cases using the F1 test. The level of statistical significance was set at p < 0.05. The assessed range of differences was 0.05.

### 3. Results

The subjects were between 18 and 89 years of age, with the mean age of  $36.64 \pm 14.63$ . Half of them were below 32 years old, and the age distribution of both genders was similar.

The majority of the respondents had secondary education (53.4%), and the number of those with higher education (33.9%) was three times higher than of the respondents with vocational education (12.7%). Men more often than women had higher and vocational education.

The preferences of the basic physical traits of a physiotherapist appear to be consistent with the widely expected preferences of people from many social and professional groups. For most subjects of all test groups, the physiotherapist's gender is irrelevant. This opinion is expressed mostly by women and people with higher education (F1 = 6.528; p = 0.001). Along with the growth of this view, there are fewer people who think that a physiotherapist should be a woman (F1 = 5.940; p = 0.003), and a male physiotherapist is preferred by a similar percentage of respondents with different levels of education.

<b>Table 1.</b> Numerical characteristics of the physiotherapist's preferred sex differentiated with the sex
of subjects

The preferred sex of a physio-therapist	Females	Males	Total	Female (%)	Male (%)	Sur- veyed (%)	Z	р
Irrelevant	1269	533	1802	90	75	85	9.0381	0.000*
Female	88	92	180	6	13	8	-5.2414	0.000*
Male	54	85	139	4	12	7	-7.1529	0.000*
Total	1411	710	2121	100	100	100		

Z – the result of the test of equality of two percentage structures based on the statistics "Z" p –value used to determine statistical significance; \* statistically significant difference: p < 0.05

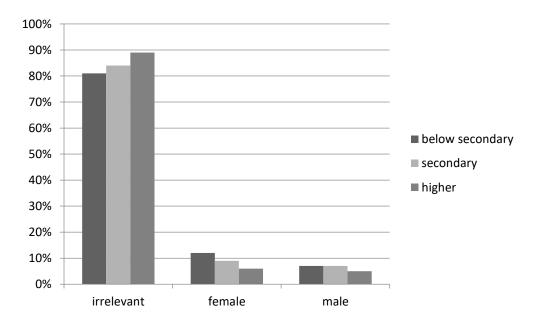


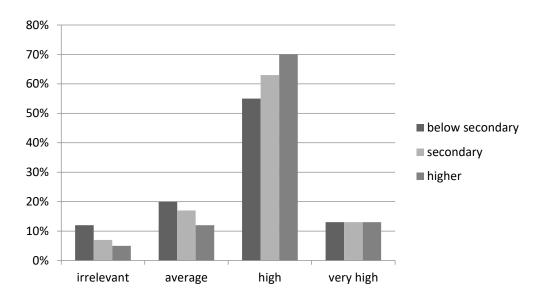
Fig. 1. Characteristics of physiotherapist's gender differentiated with the subjects' level of education.

More than half of the respondents of all test groups (59.71%) believe that physiotherapist's body build is irrelevant. This opinion is expressed mostly by women (Z = 3.458; p = 0.000) and people with lower education (F2 = 3.699; p = 0.025). But for this group, athletic body build is preferred by other respondents and grows with the level of education (3–17%; F2 = 21.698; p = 0.000). Accordingly, as the educational background increases, the number of respondents who opt for a slender body build (18–9%; F1 = 6.518; p = 0.001) gradually decreases. The smallest number of the respondents in all test groups prefer a physiotherapist of sturdy body build (0–1%).

Regardless of the morphological indexes and the established variables in the test groups, the majority of the respondents expect a physiotherapist to look neat (86–91%). Women more often than men express this view (Z = 3.038; p = 0.001), and with an increase in the level of

education, the percentage of people preferring an averagely neat look of a physiotherapist also rises (3-6%; F1 = 4.278; p = 0.014).

The basic physical traits of a therapist complement the requirements regarding his or her temper and fitness, and seem irrelevant for only a minimal percentage of the respondents, mostly for people with a low level of education (5–12% F1 = 6.426; p = 0.002). The majority of the respondents (64%) expect good physical fitness of a therapist and the percentage of people sharing this opinion rises with the level of education (55–70%; F1 = 11.467; p = 0.000). The average and very high level of physical fitness is preferred by similar percentages of subjects from all the test groups.



**Fig. 2.** Characteristics of the physiotherapist's expected physical fitness differentiated with the subjects' level of education.

The assessment of the expected level of therapist's physical fitness was expanded by the question whether a person with a disability could perform this job. More than half of the respondents (54%) think a physiotherapist should not be disabled. The remaining group, women more frequently than men, believe that this profession can be performed by both people with and without disabilities (26–22%; Z = 2.237; p = 0.013), and for the majority of men the problem of a therapist's disability remains irrelevant (20–25%; Z = -2.719; p = 0.003). The respondents' level of education did not play a role in establishing their opinion in this respect.

Most of the respondents (69%) think that a physiotherapist should be a sanguine person. Women more often than men share that view (72–63%; Z = 3.942; p = 0.000); on the other hand, a phlegmatic temperament pointed by quite a big number of the subjects (20%) was more frequently chosen by men (17–24%; Z = -3.725; p = 0.000). Along with the level of education, there is an increase in the preference towards a sanguine temperament of a physiotherapist (55–70%; F1 = 12.040; p = 0.000), followed by those who think that a specific type of personality is irrelevant (4–10%; F1=10.409; p = 0.000). However, there is a clear decrease in the percentage of those who choose a phlegmatic temperament (38–16%; F1 = 0.000; p = 34.790). Both melancholic and choleric temperaments are the least preferred in all the groups (1–2%).

As for the physiotherapist's education, a characteristic indirectly describing the profession and its importance in the healthcare system, it is rated differently by particular groups of respondents. More than half (61%) of the them believe that a physiotherapist should have higher education. Women share that view more often than men (64–55%; Z = 4.028; p = 0.000) and they less frequently point to secondary education as being sufficient (12–15%; Z = -2.183; p = 0.015) and to its irrelevance for the job (24–30%; Z = -2.811; p = 0.002). This trend is also apparent when the level of the subjects' education rises and thus is visible in the increase in the percentage preference for a therapist with higher education (53–69%; F1 = 14.624; p = 0.000)

and the decrease in the percentage preference for those having secondary education only (16–8%; F1 = 12.047; p = 0.000) and for its irrelevance (31–23%; F1 = 3.117; p = 0.044).

The job of a physiotherapist is classified as a medical profession focused on treatment (76%), prophylaxis (42%), postural correction (58–65%; Z = 3.033; p = 0.001) and biological regeneration (19–15%; Z = 2.061; p = 0.020), the last two being chosen mostly by women. Men more often classified it as focused on health education (35–19%; Z = -5.933; p = 0.000), leisure (5–18%; Z = -8.370; p = 0.000), nursing (10–14%; Z = -2.288; p = 0.011) and pedagogy (4–7%; Z = -1.876; p = 0.030). The remaining categories constitute a small share, i.e. personal hygiene (2%). Along with the level of education, there is an increased number of subjects who pointed to biological regeneration (10–17%; F1 = 3.202; p = 0.041) and pedagogy (0–5%; F1 = 12.525; p = 0.000) but a decreased number of those who indicated prophylaxis (48–40%; F1 = 3.374; p = 0.034) and physical activity (35–26%; F1 = 4.139; p = 0.016).

**Table 2.** Numerical characteristics of physiotherapist's activity areas differentiated with the subjects' level of education.

Areas of activity	Below secondary	Secondary	Higher	Total	Below secondary (%)	Secondary (%)	Higher (%)	F1	Ь	F2	Ъ
Thera- peutics	154	560	790	1504	74	82	74	6.901	0.001*	7.267	0.001*
Nursing	29	75	121	225	14	11	11	0.668	0.513	0.974	0.378
Pro- phylaxis	101	304	424	829	48	44	40	3.374	0.034*	4.742	0.009*
Pedagogy	0	34	21	55	0	5	2	12.525	0.000*	17.113	0.000*
Physical education	22	45	102	169	11	7	10	2.900	0.055	3.265	0.038*
Health education	30	125	184	339	14	18	17	0.866	0.421	1.194	0.303*
Physical activity	74	183	272	529	35	27	26	4.139	0.016*	6.471	0.002*
Recreation	11	36	66	113	5	5	6	0.423	0.655	0.478	0.620
Posture correction	131	433	658	1222	63	63	62	0.136	0.873	0.146	0.864
Sport	11	51	88	150	5	7	8	1.266	0.282	1.895	0.150
Personal hygiene	8	8	31	47	4	1	3	3.432	0.032*	4.767	0.009*
Biological regenera- tion	21	115	153	289	10	17	14	3.202	0.041*	3.994	0.018*

*F* – multiple-ratio equality test result based on Fisher-Snedecor test statistics

p – value used to determine statistical significance; \* statistically significant difference: p < 0.05

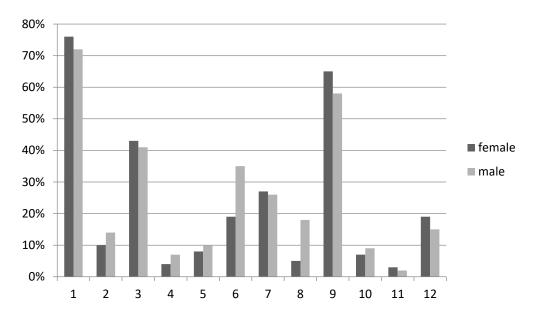
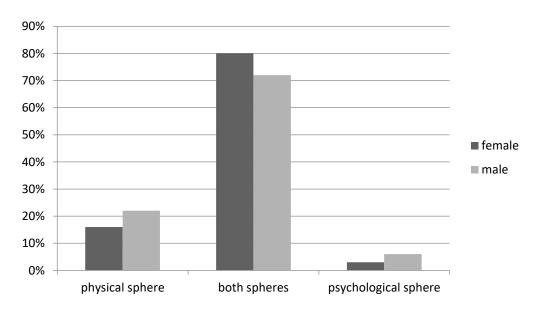
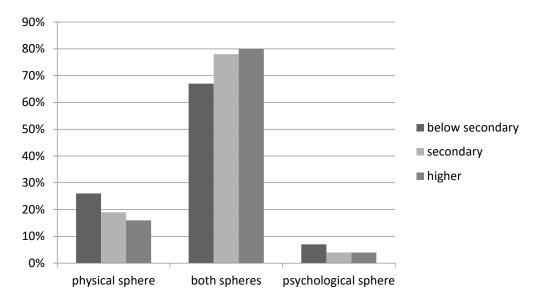


Fig. 3. Characteristics of physiotherapist's activity areas differentiated with the respondents' sex.

The assessment of the level of physiotherapist's body strain by the work they perform largely depends on the diversity of the respondents and an area it affects. The majority seem to believe that both physical and psychological spheres are affected in a similar way (78%). Women more often share that view (80–72%; Z = 3.088; p = 0.001), and men more frequently point to the physical sphere (16–22%; Z = -2.295; p = 0.011), rather than the psychological one (3–6%; Z = -2.005; p = 0.022). Along with the level of education, there is an increase in the number of people who think that both spheres are equally affected. All the percentages of the subjects of both test groups are statistically significant.

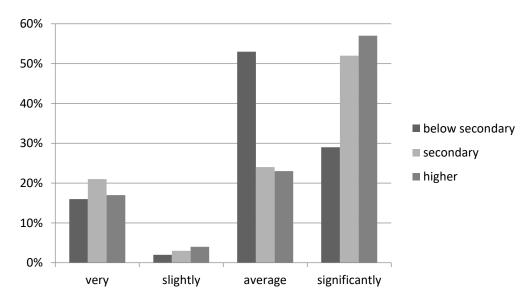


**Fig. 4.** Characteristics of the scope of strain of a physiotherapist's biological sphere differentiated with the subjects' sex.



**Fig. 5.** Characteristics of the scope of strain of a physiotherapist's biological sphere differentiated with the level of subjects' education.

More than half of men and women think that a strain of a therapist's physical sphere is significant, and many respondents believe that the level of the strain is average. Differences in the percentage levels in the opinions of men and women are not statistically significant. Figure 6 shows that along with the level of education there is an increase in the number of respondents who think that the strain of physiotherapist's physical sphere is significant (29–57%; F1 = 12.952; p = 0.000) and a decrease in the number of those who assess it as average (53–23%; F1 = 18.480; p = 0.000). The differences of shares of this assessment are statistically significant.



**Fig. 6.** Characteristics of the scope of strain of a physiotherapist's physical sphere differentiated with the level of subjects' education.

Almost the same percentage of all men and women point to a significant and average strain of physiotherapist's psychological sphere and only a few percent believe the strain is fractional. Differences in the percentage levels of opinions of men and women are not statistically significant. Figure 7 shows that, similarly to the physical sphere, the higher the level of the respondents' education, the more significant the strain of physiotherapist's psychological area seems to be (29-48%; F1 = 7.765; p = 0.000) and lower the number of those who assess it as

50%
40%
30%
20%
10%
0%

average (57–38%; F1 = 5.859; p = 0.003). The differences of shares of this assessment are statistically significant.

**Fig. 7.** Characteristics of the scope of strain of a physiotherapist's psychological sphere differentiated with the level of subjects' education.

average

significantly

### 4. Discussion

very

slightly

Based on the results, several conclusions can be drawn, and taken the literature data available, they should be discussed in more detail.

Statistically significant differences both in large-percentage and small-percentage categories were found, and their number was slightly larger when the level of the respondents' education was taken as a variable, especially regarding the job characteristics. The number of gradients rather than gender can be responsible for the proportions of the frequency of statistically significant differences, with the category of physiotherapist's physical traits taking the lead. Out of six characteristics, only the preference concerning gender and therapist's body build was irrelevant for the majority of the subjects, particularly women, and in others the answers chosen by more than half of the subjects were similar to these commonly expected from jobs based on people-to-people contacts. Due to that, regardless of the gender and the body build, a physiotherapist is expected to look neat, have a high level of physical fitness and have a sanguine personality, which, perhaps as in the case of the previous observations, was the most frequently chosen as both the respondent's trait and the one most expected from a physiotherapist [22, 23]. Therefore, it might be assumed that the lack of the contradicting temperament features along with the neat appearance are socially expected. It is also plausible that they facilitate establishing appropriate rapport, being an essential element of a physiotherapist's work [11, 17–19].

The identified and expected high levels of physical fitness and a lack of any disability stand in contrast to the insignificance of the physiotherapist's body build declared by most of the subjects and in contrast to the overall assessment of the high burden of the performed job. These loads, most often resulting in disorders in the cervical and lumbar spine, have been confirmed in numerous studies [25–27]. Therefore, it seems that such results are a sign of the society's tolerance and not a lack of knowledge of the significance of appropriate body build and the necessity to care about its condition. On the basis of literature on anthropomotricity, it can be concluded that body build, especially its components, are the basis of human motor activity which is manifested by overall physical fitness [28]. It is also commonly known that the athletic body build, which is characteristic of athletes of

many disciplines, enables them to cope with physical strains [29]. As a result, body build and the appropriate level of physiotherapist's physical fitness influences their ability to do the job [4, 20, 30]. A similar situation applies to the relatively wide acceptance of the therapist's possible disabilities. Hence, it can be assumed that the results of the research are both an effect of social sensitivity towards this group of people and an effect of the awareness of the growing part of the society that a disability does not have to mean a low level of physical fitness, and therefore it does not have to exclude people from certain jobs [31–34]. In some fields of physiotherapy, e.g. physical therapy or hydrotherapy, there are viable possibilities of professional self-fulfilment of people with some disabilities; however, they must be aware of the existing restrictions and medical contraindications. The abovementioned interpretation of the research results does not change the general view that society does not accept a physiotherapist who neglects their own fitness. As in other medical professions, physiotherapists' physical activity is also the primary prevention of cardiovascular disease [35].

The socially expected level of education is both a personal trait of a therapist and the feature characteristic of their occupation (determining the requirements of the job and a position in the social hierarchy) [36]. Medical professions, doctors in particular, are widely esteemed by the society; therefore, it is not surprising that the majority of the respondents prefer an educated therapist. Self-assessment of the physiotherapist profession prestige level is also positive, in contrast to doctors and nurses [37]. However, it is worth noticing that more than a quarter of the respondents, especially men and people with a low level of education, do not recognize the importance of this issue. It may result from the previous research findings pointing out that each physiotherapist needs to comply with the diagnosis and medical indications prescribed by the doctor [24].

The choices regarding the area of a therapist's professional activity are the key characteristics of a physiotherapist's job. Despite significant differences in percentages, therapeutics, correction of body posture and prophylaxis seem to be the most appreciated focus areas/roles. The above observation and slight indications of pedagogy, physical education and hygiene show the superiority of the acceptance of the paramedic character of the physiotherapist's work over its semi-pedagogical character [38]. A small percentage of respondents connect the work of a therapist with sport, recreation and biological regeneration, which shows marginalisation of the therapist's role in these areas and does not apply to the expectations of good physical fitness of a physiotherapist as well as to the high burden of the occupation. Most of the respondents in all test groups were in agreement that performing this job is connected with a big physical and psychological strain, which was additionally confirmed by the results of the research concerning people who perform the job of a therapist [15, 22, 39, 40]. Some studies indicate a relationship between physical workload and its influence on physical health with the physiotherapist's mental health. It can affect the efficiency of work and general health condition. However, these dependencies are often underestimated or even unnoticed [41, 42]. However, this contradicts the results of research by A. Ksykiewicz et al. [12] and our, yet unpublished, monitoring of physical loads physiotherapists and massage therapists, which show that only dynamic standard procedures performed on neurosurgical units are moderately hard work and even the most burdensome kinesiotherapy or massage procedures are the efforts of low or very low intensity [12–14, 43].

However, this contradicts the research by D. Ksykiewicz et al. [12] and the results of his own research and his, yet unpublished, monitoring of physical loads physiotherapists and massage therapists, which show that only dynamic standard procedures performed on neurosurgical units are moderately hard work and even the most burdensome kinesiotherapy or massage procedures are the efforts of low or very low intensity [12–14, 43].

It is possible that in their assessment, the subjects included the elements of the draw-backs/burden the job brings about, i.e. the duration and frequency of the undertaken effort, working position, physical condition of a patient and their health state, which might cause more significant strains of both spheres of a therapist than the one found in this research. Similarly to doctors, therapists may be subject to an additional increase in the necessity to change their reactions and behaviours in contacts with patients of different personality types [44].

The results of the research concerning the indicators of the physiotherapist's job showing that a great majority of the respondents identifies it with a field of treatment and postural correction indicate that particular, the most burdensome, therapeutic procedures may act as an impediment for those of weak body build and a low level of physical fitness.

Generally, the results of the research show that, to a larger extent, the respondents' gender differentiates preferences for the therapist's body build, while education differentiates the social opinions regarding the basic characteristics of the job. A therapist, either male or female, with any kind of body build and a sanguine temperament expected by a large part of the society should have neat physical appearance and a high level of physical fitness mainly due to a significant strain that the profession carries, despite the fact that it belongs to the medical sector. Women and people with higher education are more demanding in terms of therapist's physical traits and they assess the job burden as more significant. Moreover, the job characteristics indicated by all test groups, i.e. the preferred education level, area of professional activity and the level of physical and psychological strain, were pointed by the largest percentage of the respondents.

Summarizing the results of the study, it is worth noticing that the results confirm the main hypothesis. On the other hand, the thesis concerning the differences in the categories of a small percentage share was contradicted. As for the limitations of the research, due to the lack of literature data on the subject matter, making references and drawing some broader conclusions is difficult. It also requires of the authors to create their own questionnaire and involve more subjects with secondary and higher education, which does not reflect the ratio in the population. However, it was assumed that along with the growing level of education of the Polish society, the research results will become more plausible and will reflect the actual expectations and judgements of the society.

Despite its relative value, which all the more justifies the necessity to observe the physiotherapist's traits expected by society and indicators of their job, the presented research allows the authors to draw the certain conclusions, presented below.

### 5. Conclusions

- The differences observed in the percentage shares of the answers given by the respondents in the research indicate that gender and education of the society (main variables) still affect the preferences of physiotherapist's physical traits and the assessment of their job characteristics.
- 2. Taken the fact that more statistically significant differences were found in the characteristics of the profession when the level of the respondents' education was taken as a variable, it may be considered a relevant factor shaping the expectations/requirements of the job and preferences towards the physiotherapist's character traits.
- 3. A significant relationship of the physiotherapist's job with a field of therapeutics, correction of the posture and prophylaxis indicated by most of the subjects, with pedagogy, physical education and hygiene pointed by a relatively small percentage of the respondents show that the physiotherapist's job is viewed by the society as a paramedic occupation.

- 4. A lack of significant differences of the frequency of indications of high strain related to the physiotherapist's work pointed by the largest group of male and female respondents demonstrates that some therapeutic standards may act as an impediment in pursuing this job by people of weak body build and a low level of physical fitness.
- 5. Similar and high percentage of the preferences concerning neat appearance, a high level of physical fitness and an assessment of the level of physical strain indicate that they are the most stable characteristics of the physiotherapist's appearance and profession, which should be taken into account when choosing studies and while planning a career.
- 6. A high percentage of the preferences concerning the most important physiotherapist's physical traits and body build, followed by a high level of their physical fitness indicate a lack of social acceptance towards a physiotherapist who neglects their body and pays little attention to physical condition. This problem should be taken into account in the process of education at physiotherapy studies.

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