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Opportunities and constraints in the job search by public health graduates in their opinion

Abstract

Strengthening of the professionalism of public health (PH) specialists may be the response to changes in health care systems. The aim of the study was to explore the potential and restrictions associated with job search by PH graduates, as well as to examine their opinions on their position on the labor market. The survey was conducted using questionnaire (CAWI) on 107 respondents from two medical universities in 2019. The average age of the respondents was 24.5. 5.61% and 17.76% of graduates from both universities respectively declared that the university prepared students well. Most respondents indicate internships, apprenticeships organized by employers (78%) and accepting graduates without professional experience (64%) as employers' activities which facilitate entering the labor market. Graduates considered the most important obstacles in finding work to be: low interest in PH graduates work, insufficient contacts and relationships and insufficient professional experience. Their competencies do not coincide with the expectations of employers. Employers and universities do not establish sufficient cooperation. Although the dependency between the place of study and the graduates' perception of the role of university and employers facilitating entry into the labor market and re-selection of the study is not strong, it should not be ignored in shaping education programs.

Keywords: public health, graduates, employment, workforce.

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INTRODUCTION

Competencies of public health (PH) specialists are a subject of analyses and discussions by international organizations and individual countries bodies [1,2]. Their goal is to continuously improve the knowledge and skills in the context of changing population needs [3,4]. The ASPHER's European Program on Public Health Core Competences initiated in 2006 has gathered many specialists in order to establish a list of PH competencies [5,6]. A synthesis of conducted works emphasized the need to redefine the competencies, which should be oriented towards the health policy priorities. The strengthening of activities intended to develop PH specialists is seen in the governments' activities, which include, among others:

- emphasizing multi-disciplinary approaches in personnel training processes,
- supervision over education curricula, taking into account key competencies recommended by ASPHER,
- impact on the development of the ability to work with various entities in order to better react to the needs of the population [7].

In order to develop education curricula, which would enable better engagement in PH activities, it is necessary to continue research which provides a basis for the dissemination of knowledge and support of evidence-based policy making in the scope of cost-effective public health interventions. In the context of the results of own research, it is necessary to point out limits on the employees, which apply to the adaptation of their competencies to the changing needs of the population and the expectations of employers. A glaring example of new challenges is the COVID-19 pandemic, which has made us conscious of the competencies to which special care should be paid in the context of a health crisis and reacting to it [8-10].

The professional performance of PH specialists, including graduates, depends on the needs of employers reported on the labor market for this professional group. The opinions of employers group around two opposites: on one of them there are employers who value graduates with general skills, motivated to work, ready to take on responsibility and to learn over graduates with theoretical or technical knowledge; other employers look for employees who combine theoretical knowledge and specialized practical skills adapted to a specific work position. Employers also present different needs concerning hard skills and soft skills of the future employees. That is why one of key conditions to ensure compatibility of competencies of employees with the needs reported by employers is a partnership between educational institutions and employers [11,12].

According to ASPHER's core competencies list, PH graduates should have interdisciplinary knowledge in the following fields: methods in public health; population health and its social and economic determinants; population health and its

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material – physical, radiological, chemical and biological – environmental determinants; health policy; economics; organizational theory, leadership and management; health promotion, health protection and disease prevention; ethics [13,14].

The Polish law establishes PH tasks performed by institutions appointed for this purpose, but does not directly define the graduate's workplace and his role in the system [15]. In accordance with the legal act, PH tasks include:

1. monitoring and assessing the health of society, health risks and quality of life related to the health of society;
2. health education adapted to the needs of various groups of society, in particular children, teenagers and the elderly;
3. health promotion;
4. disease prevention;
5. actions intended to diagnose, eliminate or mitigate threats and harms to physical and mental health at the places of residence, education, work and recreation;
6. analysis of relevance and effectiveness of health care services provided in reference to the diagnosed health needs of the society;
7. initiating and conducting: scientific activities, international cooperation on matters of scientific research; development of human resources participating in the performance of PH tasks; reducing health inequalities resulting from socio-economic conditions; activities in the area of physical activity.

The listed tasks may be performed by public institutions indicated in the legal act, which potentially may employ PH graduates. They involve: government institutions, state organizational units, including the institution of compulsory health insurance – National Health Fund, and local government units at the voivodeship, district and commune level. Non-governmental organizations may also participate in the performance of tasks. PH graduates may also follow a scientific career path. The framework specializations of graduates indicated by the Polish universities include, in particular: health promotion, emergency medicine, health insurance and long-term care insurance, organization and management, epidemiology, statistics and medical IT. Each PH university presents the "professional profile" of its graduates on its Internet website.

The labor market in Poland offers a wide range of opportunities to graduates, ranging from running their own business, to working in the public sector (e.g. health care, state/local administration) and in the extensive private sector (health care entities, private health insurance).

Every year, about 500-600 graduates of PH graduate from medical universities in Poland. In the years 2003-2008 the number of students achieved greatest increases, from 4 773 to 12 352 people. In the following years, the number began to systematically decline, in 2013 it was twice as low as in 2008 and amounted to only 7034 students [16]. Currently, a decline in the number of PH students in Poland is still observed. However, the reasons for such a state may not be generalized for the entire country and presented as a universal list for all universities which educate students in Poland. That is why their analysis should be conducted for individual universities. Despite a theoretically wide range of opportunities to find a job in various sectors, many graduates do not take up jobs consistent with their education (e.g. as salesmen in supermarkets), which is a problem in various countries [17-19]. Whether graduates will find a job is determined by many factors, both positive and negative [20]. They encounter numerous limitations on their professional path, but it should not completely obscure the enormous potential and wide opportunities for specialists in this field [21-23].

The main objective of this study was to explore the potential and restrictions associated with job search from graduates' perspective, as well as to examine their opinions on their position on the labor market and their preferred future career path in terms of factors influencing their situation after graduation. The study was conducted in 2019 and covered graduates of the PH faculties at two medical universities in the Central Region of Poland for which the following abbreviations were adopted: Medical University of Lodz (MUL) and Medical University of Warsaw (MUW). The results show that the graduates highly appreciate the chances from the perspective of interdisciplinary knowledge gained during their studies. They appreciate the creation of the Central Register of Public Health Graduates in Poland (CR), which is the basis for conducting a dialogue with legal entities and for setting health care standards in Poland, because a graduate who registers in the system obtains access to information on important PH events, job offers and training. Determining the role of a PH graduate in the health care system requires data and constant contact with them [24,25]. However, in the opinions of graduates, there is an element of insufficient adaptation of their competencies to the requirements of employers. Depending on the specialization chosen during the studies, graduates have different education profiles despite having completed the same field of study (faculties named "public health"). In the opinions of graduates, there is also a factor of insufficiently close cooperation between universities and employers.

MATERIAL AND METHODS

The study was a pilot and was conducted in 2019. The number of 107 respondents participated in it, of whom 89 are women (83.18% of the total number of respondents) and 18 are men (16.82% of the total number of respondents), aged 20-34, with the largest number of respondents being graduates aged 24-25 (61.69%). Over half of respondents (52.34%) were enrolled at MUL, whereas 47.66% – at the MUW. The survey was carried out in a group of selected respondents who met the following criteria: first and second degree graduates of PH in all specialties (health promotion, organization and management in health care, epidemiology, statistics and medical IT, health and nursing insurance, medical law in protection health, medical research and health technology assessment), undergoing education as part of full-time and part-time studies. All graduates agreed to participate in the study, were informed about its purpose, voluntary and anonymous participation and the possibility of resignation at any time. The study was designed as the first stage and aimed at improving the research tool and involved obtaining the highest possible number of answers within the existing personnel, organizational and financial constraints before the further research steps on randomly selected group of graduates (the study was not supported by external funds).

An original author's questionnaire as a research tool was used to obtain the data in the form of an internet questionnaire (CAWI). The anonymous questionnaire consisted of 33 closed questions. Questions regarding the possibilities and limitations of PH graduates on the labor market were grouped according to the following topics:

- preparation by the university for entering the labor market in terms of good practices, the curriculum in terms of the requirements of the labor market, knowledge and competencies,
- provision of apprenticeships and training by the university,
- preparation for entering the labor market outside the university,
- employment preferences in terms of expectations regarding working conditions and knowledge obtained during the studies,
- activities of employers facilitating entry into the labor market,
- knowledge about the available forms of development of professional competencies and the graduates' opinions on the role of universities in education.

For the age of the respondents, measures of descriptive statistics were used: arithmetic mean, standard deviation, second quartile (median), mode, coefficient of variation and measure of asymmetry. Due to different requirements concerning wages expected by MUL and MUW students, structural indicators were established in order to compare the structure of wages at both universities. Moreover, in order to establish the similarity of the graduates of both universities in respect to these expectations, a structure similarity indicator was used.

Due to the character of the study, correlations between qualitative variables were also examined, which, according to the authors, were very important when analyzing the preparation for entering the labor market and the usefulness of internships and apprenticeships in the development of personal competencies. In order to check whether the variables are dependent or independent, a statistical inference method was used, a chi-square test of independence to be more precise. Its use enabled the verification of the null hypothesis, which assumes the independence of variables and to check it by presenting an alternative hypothesis that the investigated variables are not independent. The strength of dependency was analyzed with the use of the following measures: Pearson's contingency coefficient C, Cramer's V, Tschuprow's T. Whereas when examining the choice of university and the field of study on a 2x2 contingency table, Yule's Q coefficient was also used. The most frequently used among these indicators is the Cramer's V, while the remaining ones were established in order to confirm the information obtained using this indicator. Analyses were conducted in STAD-STUD and Statistica software.

RESULTS

Characteristics of the respondents

The respondents were on the average 24.5 years old, with an average deviation of individual persons' age being 1.9 year. The share of the tested deviation on the average was on a low level (7.69%). Median age was 24 years, similar to the age of most frequently surveyed persons.

The vast majority of the respondents did not clearly state whether the university had prepared them well to enter the labor market. Only 5.61% of MUL graduates and 17.76% of MUW graduates declared that the university prepared students well.

Facilitating the graduates' entry into the labor market by universities

Regarding good practices and activities on the part of the universities that facilitate entering the labor market, internships and apprenticeships (60% of respondents in total, 62% of which are MUL graduates, and 38% MUW graduates) and the activities of the career office (35% of respondents in total, 52% MUL respondents and 48% MUW respondents) are the most frequently indicated examples. Workshops, international programs and scholarships, trainings and courses, as well as meetings with employers have been indicated by one fifth of the graduates.

The role of additional internships/apprenticeships in entering the labor market

Most of the respondents (57%) did not participate in internships, additional internships (not resulting from the curriculum), while 43% declared such activity. Graduates participating in additional internships/apprenticeships assessed them as helpful in developing competencies, more than 9% of MUL graduates and almost 16% of MUW graduates answered "definitely yes". Respondents assessed that participation in additional internships/apprenticeships increases their chances on the labor market, more than 36% of MUL graduates answered "generally yes" and almost 17% of MUW graduates answered "generally yes" and 21.5% of MUW graduates answered "definitely yes". In the case of participation in compulsory internships resulting from the curriculum, MUL graduates expressed a positive opinion in 24%, MUW graduates – in almost 29% (Table 1).

TABLE 1. Indicators of conformism level in the investigated groups (by Leary interpersonal communication skills test).

Answer / Question	MUL					MUW				
	A	B	C	D	E	A	B	C	D	E
	in %									
Were apprenticeships /internships (not resulting from the curriculum) helpful in developing your own competencies?	3.74	1.87	25.23	9.35	12.15	11.21	3.74	9.35	15.89	7.48
Does participation in additional internships /apprenticeships increase in your opinion chances on the labor market?	1.87	0.00	36.45	5.61	8.41	0.00	3.74	16.82	21.50	5.61
Does participation in obligatory internships resulting from the curriculum increase chances on the labor market, in your opinion?	4.44	0.00	18.89	5.56	15.56	17.78	2.22	14.44	14.44	6.67

Note: A – No, B – Definitely no, C – Generally yes, D – Definitely yes, E – Difficult to say

Re-selection of studies and universities

The respondents expressed divided opinions on choosing their field of study and university again. MUL graduates most often indicated the answer "Another field of study at the same university" – more than 19%, while almost 30% of MUW graduates chose the answer "The same field of study and the same university" (Fig.1).

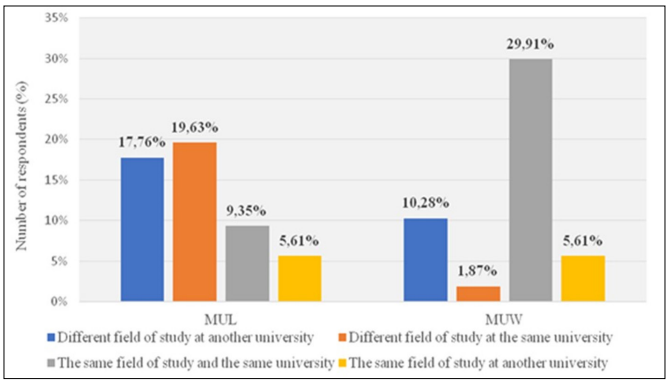

FIGURE 1. Opinions of graduates on choosing the field of study and university again (in %).

Dependency between the place of study and the opinion on being prepared to enter the labor market, on internships/apprenticeships which do not result from the curriculum and on re-selection of the field of study

Analyzing the preparation by the university for entering the labor market (question a), it can be stated that there is a dependency between studying at a chosen university and being prepared to enter the labor market. This dependency is weak, however, and amounts on the average to approx. 0.33 (Table 2). When examining the opinions of MUL and MUW students concerning internships/apprenticeships, which do not result from the curriculum and which impacted the development of their own competencies (question b), a dependency between the studying at a specific university and the assessment by students may also be observed. This dependency is, however, very weak. It amounts on the average to approx. 0.24. Whereas when considering the choice of the field of study, if it was possible again (question c), a dependency may be also noticed between the study location and the student's assessment in this scope. This dependency is moderate, therefore much stronger than in two previous cases, and amounts on the average to approx. 0.45 (Table 2).

TABLE 2. Results of the test of independence and the value of correlation coefficients.

Question	χ^2 statistic value	Number of degrees of freedom	Critical value for p=0.05	Correlation coefficients			
				Pearson's C	Cramer's V	Tschuprow's T	Yule's Q
a	13.85	2	5.99	0.34	0.36	0.30	-
b	7.08	2	5.99	0.25	0.26	0.22	-
c	22.53	1	3.84	0.42	0.46	0.46	0.46

Competencies required by employers, factors determining success and barriers to entry into the labor market

Among the competencies required by employers, the respondents indicated the most important to be: computer skills, good organization of own work, independence, resistance to stress, problem solving skills, active knowledge of a foreign language. In order to obtain this information, a scale from 1 to 6 was used - the number 1 stands for the least desired skills and the number 6 for the most desired ones (Table 3).

Among the factors determining success in the labor market, the respondents included: "own hard work" – a score of 6 was given by 30% of MUL graduates and 18% of MUW graduates, "ambitions" – a grade of 5 was given by 22% of MUL graduates and 22% of MUW graduates (Table 3). The analysis indicates that 37.4% of MUL respondents and 44% from MUW consider the possibility of working in various sectors to be an advantage of studying PH. Graduates considered the most important obstacles in finding work to be: low demand for PH graduates, insufficient contacts and relationships and insufficient professional experience (Table 3).

Most respondents (78%) have chosen "internships, apprenticeships organized by employers" and "accepting graduates without professional experience" (64%) as examples of employers' activities which facilitate entering the labor market.

Knowledge on the available forms of professional competences development

Over 35% of MUW graduates and 29% of MUL graduates have knowledge about the existence of CR, but as many as 23% of MUL graduates gave a negative answer. The majority of respondents, over 60%, both from MUL and MUW, consider it appropriate to create CR. Over 30% of MUL graduates and 18% of MUW graduates did not register with CR, only 8% of MUL graduates and 13% of MUW graduates registered. Almost all respondents chose the "Internet" as their main job search.

Expectation of graduates regarding remuneration

Due to different perception of wages expected by the graduates, structural indicators were established in order to compare the structure of wages at both universities. Moreover, a measure of similarity of structures is the structure similarity indicator, which amounts to 0.80. This demonstrates the high degree of similarity of examined structures. Thus, MUL and MUW may be considered similar in the aspect of expected wages. Both on MUL and on MUW the most frequently chosen was wage above PLN 3500, although on MUL most answers were given to a wage in the range of PLN 3000-3500. When it comes to 37% of respondents from MUL and 53.2% from MUW, they expect payments up to an amount of PLN 3000. Satisfactory earnings are the most important criterion for graduates when looking for a job, and these results are also confirmed by other studies [26].

TABLE 3. Graduates' opinion on the competencies most required by employers, factors determining the success and barriers in entering labor market (%).

	1	2	3	4	5	6	1	2	3	4	5	6
Competencies required by employers				**MUL**						**MUW**		
Using theory in practice	0	3	4	16	19	11	0	7	7	5	21	4
Creativity	0	1	4	15	14	19	0	7	7	7	7	14
Active command of a foreign language	0	1	4	9	21	17	0	0	12	4	11	15
Specialized professional skills	0	1	2	21	16	13	0	0	12	8	10	13
Troubleshooting	0	1	0	17	21	14	0	0	7	4	21	12
Effective communication	0	1	2	7	15	27	0	0	5	11	14	14
Teamwork	0	1	2	10	21	18	0	0	5	18	9	12
Negotiation skills	0	1	6	13	21	12	0	2	7	9	19	7
Presentation skills	0	1	0	11	23	15	0	0	7	13	9	14
Good organization of own work	0	1	0	11	13	27	0	0	6	9	9	20
Self-reliance	0	1	2	9	17	23	0	0	7	4	9	23
Self-education	0	1	2	15	19	16	0	0	12	10	13	8
Innovation	0	1	4	17	20	11	0	0	7	11	15	11
Computer skills (e.g. MS Office)	0	3	0	9	11	29	0	2	5	7	11	20
Knowledge of specialized software	0	5	4	19	13	12	2	4	15	12	9	2
Resistance to stress	0	1	4	7	28	13	0	2	7	6	14	16
Management ability	0	1	7	5	21	18	0	2	8	15	5	14
Assertiveness	0	3	2	16	18	14	0	6	7	13	5	13
Analytical thinking	0	3	4	13	18	15	0	2	8	6	12	16
Factors determining success				**MUL**						**MUW**		
Own hard work	0	3	6	6	8	30	0	0	9	2	15	18
Ambitions	3	3	2	5	22	18	3	3	2	5	22	18
Having connections	3	1	6	8	10	24	0	1	4	13	24	6
Help from loved ones	0	1	4	19	15	14	2	0	14	13	4	14
Random event	5	3	6	17	10	12	0	0	12	18	10	7
State policy, state activities	5	3	11	8	17	8	0	10	6	21	7	5
Help from institutions	5	1	22	7	14	3	2	12	7	17	8	1
Barriers on the labor market				**MUL**						**MUW**		
Insufficient professional experience	0	9	9	5	12	15	0	0	16	7	13	11
Lack of appropriate competencies	0	7	10	9	16	6	0	0	13	17	13	5
Insufficient contacts and relationships	0	5	8	6	13	20	4	4	7	11	12	9
Available positions are not paid enough	0	6	11	20	9	7	4	4	7	7	15	10
Employers do not need new employees	4	8	7	10	15	7	13	9	12	6	2	6
No information about free positions	0	7	7	14	14	8	9	4	14	9	4	7
Employees are not looking for university graduates	2	7	10	6	13	14	9	2	27	0	2	7
Insufficient independence of graduates	2	13	13	8	11	5	0	11	18	8	2	8
Inability to search for work of graduates	2	11	11	7	15	5	0	6	19	11	4	8
Graduates are overqualified for available positions	2	11	11	13	9	6	11	6	10	6	6	6
Low demand on the labor market for public health graduates	0	7	10	4	14	18	4	7	10	6	4	14

DISCUSSION

Graduates recognize the competencies that are most required by employers: computer skills, good work organization, independence, resistance to stress, problem-solving skills, active knowledge of a foreign language. There are visible discrepancies here, graduates do not perceive soft skills as important skills that employers pay attention to [27-29]. Another study in the field of determinants of employment opportunities for graduates and of the PH graduates' competencies includes in its summary the most important competencies of a PH graduate employed in local government administration, among which the ability to work under pressure and coping with stress was placed first on the list [30]. However, these factors may differ in a given countries. Among them ability to innovate, competitive salary or employee empowerment may be dominant [31,32].The respondents of the author's study also assessed these competencies as very important.

The analysis of qualifications and key competencies for increasing the graduates' chances on the labor market shows the role of employer's activities for graduates and the importance of cooperation between the university and the employer in the organization of internships. The results of the author's study include unequivocal opinions of graduates that internships organized by employers make it easier to enter the labor market. The need of strengthening the ties between the system of educating and the expectations of employers also appeared as the conclusion of a study conducted in several dozen European countries [33]. The expectations of the employers at various levels of the national economy also concern the active attitude and impact of graduates' work on the work environment [34].

Graduates considered the lack of professional experience as the main obstacle in finding a job, and this opinion was also shared by the participants of another study, who distinguished this factor as the main barrier, the next one being the lack of appropriate competencies of graduates and lack of knowledge, which also coincides with the results of the author's research. The graduates' opinions are unambiguously consistent.

PH interdisciplinary knowledge allows graduates to balance job search between the private and public sector, which is visible not only among Polish graduates but in other countries as well [35,36]. The surveyed graduates emphasized that the flexibility of their field is a huge benefit. However, a question arises whether they can use it properly.

Opportunities for graduates may also be created by CR, which would enable an appropriate examination of the distribution of specialists and the creation of a system tool integrated with real needs for planning tasks consistent with the labor market needs. According to the authors of this article, it is necessary to link the existing register of graduates in the public health sector with the review of their professional career development and the monitoring of the needs of the labor market in order to ensure a high quality education of PH students. The model should involve multi-level cooperation between universities, NIPH (National Institute of Public Health) and employers. Example model assumptions are shown in Figure 2.

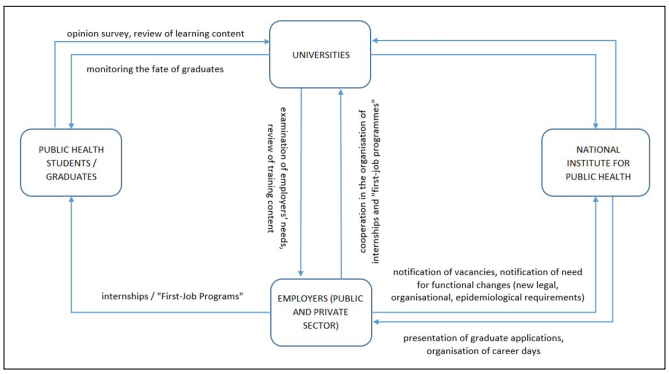

FIGURE 2. Model of cooperation.

The multifaceted cooperation between universities, employers and the National Institute of Public Health, which maintains a register of public health graduates, should include the design of educational content, taking into account the needs of the changing labor market, the monitoring of graduates' career development and the co-organizing of traineeships, and the successful recruitment of graduates as well as carrying out projects such as the "first job".

Taking into account the limitations in employment, it is important to set the directions for further surveys of graduates' opinions in the fields of specialization for the needs of the reported demand on the labor market. Their results may support the formulation of actions reducing these limitations. An important issue is undertaking further education by graduates in the context of the current and future needs of the labor market. One of the possibilities is the second-cycle studies at universities, which constitute a substantive continuation of the education profile. Another option is to participate in refresher courses and postgraduate studies, which give PH graduates the opportunity to specialize (including in the field of social marketing), for example in the construction and running of health campaigns/programs [37-40]. It is worth noting that the expectations of employers change over time. In view of the changing conditions of PH, such as new health threats resulting from infections, changes in working conditions or climate change, the opinions of graduates and other interested participants of the education system and the labor market could inspire taking forward-looking actions in this area [41,42]. Considering the specificity of different societies in different countries and cross-border, epidemiological and demographic conditions, the competencies of PH graduates of great importance are educational/communication skills in various areas of PH and the ability to formulate health programs. They should be shaped by universities and acquired by students, in line with the needs of the society and in harmony with the employment structure in the national economy [43]. The preparation of future PH professionals should be based on the diversity of public health activities that are changing over time with taking into account the possibility of graduates' work in a number of different organizations and with the possibility of performing various professions [44-46]. The importance of the location of studying should be also considered as an element which has an impact on the offers presented to universities by the employer. The options available to the university are, as a rule, limited by the offers filed by the companies, which frequently look for future employees among interns. Requirements posed on the labor market thus focus frequently on the issue whether the candidates for a given position possess specific knowledge and communication skills, commitment, flexibility in adapting to rapidly changing conditions of the environment [47,48]. For these last ones, the amount of proposed and expected wage and career path certainly play an important role [49-50].

CONCLUSIONS

The survey provides knowledge on graduates' opinions in the context of the possibilities and limitations of entering the labor market and some opinions about the factors influencing the employment of graduates. Our research found that the vast majority of the respondents did not clearly state whether the university had prepared them well to enter the labor market but the answers differ between universities. The most frequently indicated good practices on the part of universities facilitating the entry into the labor market are internships, apprenticeships and activities of the career offices but dependency with the place of the study is weak. Dependency, however very weak, between the studying at a specific university and the assessment by students may be observed when taking the opinions on internships/apprenticeships which do not result from the curriculum. It seems to note the role of employer's activities

for graduates and the importance of cooperation between the university and the employers. Considering the choice of the field of study, a dependency may be also noticed between the study location and the student's assessment in this scope. This dependency is moderate. The most frequently success factors indicated by the graduates are own hard work and ambitions. They consider the possibility of working in various sectors to be an advantage of studying public health but the most important obstacles in finding work are: low demand for PH graduates, insufficient contacts and relationships and insufficient professional experience. Most respondents stated that internships/apprenticeships organized by employers and accepting graduates without professional experience facilitate entering the labor market.

Comparing the structure of expected wages demonstrates the high degree of similarity of examined structures. Satisfactory earnings are the most important criterion for graduates when looking for a job.

Taking into account the quality of education, the results of the research may inspire the further empirical studies which could compare the PH graduates opinions from different universities in order to share their views/expectations with different factors influencing the university studies in PH field. The conclusions of the presented and future research may support the determination of the proportion of knowledge transferred to students depending on local and general employment needs. Continuation of research on randomly selected groups of graduates may contribute to the improvement of research methods which seems to be particularly important in the time of the emerge of new semimedical professions.

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