



The impact of the evaluation of summer internships on student self-assessment of and opinion on educational outcomes obtained by the second-cycle degree students of Public Health.

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ABSTRACT

INTRODUCTION: Summer internships constitute an essential component of the curriculum and have the greatest impact on preparing students for entering the labour market. Mandatory practical training for Warsaw Medical University students is usually held during summer internships. The study aimed to analyse the impact of the evaluation of summer internships on student self-assessment of and opinion on educational outcomes obtained by the second-cycle degree students of Public Health.

MATERIAL AND METHODS: The study involved 87 graduates (15 men and 72 women) from the second-cycle degree programme in Public Health at the Department of Public Health, Faculty of Health Sciences, Warsaw Medical University. The study enrolled second-cycle degree students who graduated in the academic year 2015-16. A questionnaire return rate was 97% (85/87). Mean age of the study population amounted to 25.85 years (min. 23; max. 51; SD 4.550). A voluntary questionnaire study was conducted between July and September 2016. The study used an anonymous questionnaire developed by the authors at the Department of Education and Research in Health Sciences, Faculty of Health Sciences, Warsaw Medical University, based on the the list of educational outcomes adopted by the resolution of Warsaw Medical University Senate. The default significance level was established at 0.05.

RESULTS: Most students participating in the study reported that their internships were valuable for them and had a positive impact on the level of achievement of educational outcomes included in the curriculum for the second-cycle degree programme in Public Health. Internships had significantly influenced the opinion of students participating in the study on the achievement of educational outcomes related to this area ($r_s = 0.24$, $p = 0.027$). It was shown that a better assessment of internship went hand in hand with better self-assessment of student's knowledge.

CONCLUSIONS: Despite an overall positive assessment of summer internships, they did not have a significant impact on the level of achievement of educational outcomes and student self-assessment. Therefore, there is a need for further assessment of the quality of summer internships, verification of internship placements and development of an internship database for students.

KEY WORDS: Public health, public health education, quality of education, curriculum, summer internships.

INTRODUCTION

Summer internships constitute an essential component of the curriculum and have the greatest impact on preparing students for entering the labour market. Students most often find employment in institutions where they had their internships. The quality of summer internships is of particular importance when it comes to general academic studies since this is usually the only opportunity for students to have practical classes during the entire course of the study [1,2].

In Poland, the programme in Public Health is a general academic course, which means that students are not obliged to attend any practical training during the academic year and what they attend is mostly lectures, seminars, and practical classes in a classroom run by an academic teacher [3]. Depending on the curriculum and educational outcomes listed therein, the second-cycle degree programme may offer practical training but this is not mandatory for accreditation of the curriculum for Public Health programme. Given the importance of practical training of students, the Polish Accreditation Committee grant accreditation to a faculty unit administering a degree programme and recommend providing students with an opportunity to acquire knowledge, skills, and social competence in a practical manner [4].

Mandatory practical training for Warsaw Medical University students is usually held during summer internships. Second-cycle (Master's) degree students are obliged to undergo 160 hours of practical training after completing the first year of study. Students do their practical training in the summer months (July, August, and September). They are also allowed to do it during the academic year, unless this conflicts with mandatory classes. Students are free to choose their internship placement. The scope of internship is specified in an internship referral issued by the Dean's Office. It is recommended that internships take place in a central or local government body that organises and administers health care or in a department of a local unit of the Polish National Health Fund that deals with health of the local community after the first year of the second-cycle programme. The main aim of all internship programs is to get students familiar with the organisational structure of a particular unit, its tasks, forms of employment and working methods as well as to help the employees with their office and administration functions [5].

Aim of study - The study aimed to analyse the impact of the evaluation of summer internships on student self-assessment of and opinion on educational outcomes obtained by the second-cycle degree students of Public Health.

MATERIAL AND METHODS

Study design and setting

A voluntary questionnaire study was conducted between July and September 2016. Students filled in the questionnaire after graduation while receiving the certificate evidencing completion of the programme in the Dean's Office, in a dedicated site, in order to preserve anonymity. The time required for filling the questionnaire was about 15 minutes.

Participants

Inclusion criteria: the study involved 87 graduates from the second-cycle degree programme in Public Health at the Faculty of Health Sciences, Warsaw Medical University. The study enrolled second-cycle degree students who graduated in the academic year 2015/2016.

Data sources

An original anonymous questionnaire used in the study was developed in the Department of Education and Research in Health Sciences, Faculty of Health Sciences, Warsaw Medical University based on the list of educational outcomes established by the resolution of Warsaw Medical University Senate and existing curricula in the Division of Public Health, Faculty of Health Sciences, Warsaw Medical University.

There were three parts in the questionnaire. The first part aimed to find out what students think about the level of achievement of particular educational outcomes during the first-cycle degree programme in Public Health. This part of the questionnaire comprised a total of 72 statements divided into three domains: knowledge (29 statements), skills (30 statements), and social competence (13 statements). Students rated the level of achievement of educational outcomes during the course of study on a five-point Likert scale, with 1 referring to "Strongly disagree" and 5 to "Strongly agree." The second part of the questionnaire concerned the self-assessment of students with respect to particular educational outcomes for the first-cycle degree programme in Public Health. Similarly to the first one, this part of the questionnaire comprised a total of 72 statements divided into three domains: knowledge (29 statements), skills (30 statements), and social competence (13 statements). Students rated the level of achievement of educational outcomes on a five-point Likert scale, with 1 referring to "Strongly disagree" and 5 to "Strongly agree".

In addition, educational outcomes in the fields of knowledge (29 statements) and skills (30 statements) were divided in accordance with the division included in the Main chapters of ASPHER's list of European Public Health Core Competences:

- 1) **Methods in public health** – knowledge: 4 outcomes; skills: 3 outcomes,
- 2) **Population health and its social and economic determinants** - knowledge: 4 outcomes; skills: 4 outcomes,
- 3) **Population health and its material - physical, radiological, chemical and biological-environmental determinants** - knowledge: 4 outcomes; skills: 1 outcomes,
- 4) **Health policy; economics; organizational theory and management** - knowledge: 11 outcomes; skills: 9 outcomes,
- 5) **Health promotion: health education, health protection and disease prevention** - knowledge: 2 outcomes; skills: 3 outcomes,
- 6) **Ethics** - knowledge: 4 outcomes; skills: 2 outcomes,
- 7) **Other** - knowledge: 0 outcomes; skills: 8 outcomes [6].

The third part of the questionnaire comprised 19 questions about summer internship, career plans, and continuation of studies after obtaining the Bachelor's degree in the Division of Public Health, Faculty of Health Sciences, Warsaw Medical University.

Statistical methods

A contingency table analysis was used to determine the relationship between the assessment of internship undertaken during the course of studies and the achievement of educational outcomes and graduates' self-assessment of competencies. A non-parametric Spearman coefficient of rank correlation (rho-Spearman) was applied for the analysis due to the formal nature of variables whose correlations were assessed [7]. Coefficient values range between -1 and +1. The value of zero refers to the independence of variables and is achieved if the difference between each pair of ranks equals zero. The closer to -1 or +1 the coefficient is, the stronger the correlation is [8]. All calculations were conducted with the use of STATISTICA version 13.1 (StatSoft, Inc.) in compliance with the license of Warsaw Medical University. The default significance level was established at 0.05.

Ethical considerations

According to the Ethical Review Board of Warsaw Medical University, the approval of the Board is not necessary to conduct retrospective studies, surveys, and other non-invasive activities [9].

RESULTS

Participants

The study involved 87 graduates (15 men) from the second-cycle degree programme in Public Health at the Faculty of Health Sciences, Warsaw Medical University. The study enrolled second-cycle degree students who graduated in the academic year 2015-16. A questionnaire return rate was 97% (85/87). Mean age of the study population amounted to 25.85 years (min. 23; max. 51; SD 4.550). Unmarried persons constituted the vast majority of the study participants (84%, 73 persons), followed by married ones (15%, 13 persons).

Main results

Most students participating in the study reported that their internships were valuable for them and had a positive impact on the level of achievement of educational outcomes included in the curriculum for the first-cycle degree programme in Public Health (42.5%, N = 37; 36.8%, N = 32, respectively) (Tab. 1).

In the case of one statement concerning knowledge: *Presents a profound knowledge of using information and communication technology tools for the development and implementation of health and social programmes*, internships had significantly influenced the opinion of students participating in the study on the achievement of educational outcomes related to this area ($r_s = 0.24$, $p = 0.027$). Better assessment of internship went hand in hand with better assessment of the achievement of educational outcomes at WMU and better self-assessment of competencies [all significant correlations ($p < 0.05$) were positive].

Table 1. Detailed assessment of summer internships among second-cycle degree students of Public Health.

| Assessment | Do you perceive your summer internship as valuable? | | Do you believe that your internship helped to achieve educational outcomes set in the curriculum for the second-cycle degree programme in Public Health? | |
|------------------|---|------|--|------|
| | n | % | n | % |
| Strongly no (1) | 7 | 8.0 | 10 | 11.5 |
| No (2) | 18 | 20.7 | 23 | 26.4 |
| No opinion (3) | 7 | 8.0 | 11 | 12.6 |
| Yes (4) | 37 | 42.5 | 32 | 36.8 |
| Strongly yes (5) | 18 | 20.7 | 11 | 12.6 |

See Table 2 for detailed opinions of students on the effect of the value of internships on self-assessment and achievement of educational outcomes in the area of knowledge with respect to the curriculum for the second-cycle degree programme in Public Health.

Table 2. Opinions of students on the effect of the value of internships on self-assessment and achievement of educational outcomes in the area of knowledge with respect to the curriculum for the second-cycle degree programme in Public Health.

| Educational outcomes | Assessment of achievement of educational outcomes during the course of study | | Student self-assessment | |
|--|--|-------|-------------------------|-------|
| | Spearman's rho | p | Spearman's rho | p |
| Presents a profound knowledge of human health risks associated with the quality of the environment, lifestyle and diet as well as other health risk factors. | -0.05 | 0.652 | 0.03 | 0.810 |
| Describes methods of preliminary assessment of public health risks and prevalence of diseases | -0.13 | 0.241 | -0.09 | 0.386 |
| Analyses in detail the tasks and structure of bodies providing sanitary and epidemiological surveillance | -0.08 | 0.463 | -0.05 | 0.629 |
| Synthesizes knowledge of organisation and financing of healthcare in Poland and worldwide | 0.09 | 0.423 | 0.13 | 0.227 |
| Presents a profound and extensive knowledge of legal and economic issues related to the performance of the health sector, including business entities (of different levels) operating within this sector | 0.11 | 0.296 | 0.16 | 0.134 |
| Plans to conduct research using modern data collection methods and research tools | -0.09 | 0.425 | -0.01 | 0.897 |
| Knows the principles of statistical inference methods based on the principles of the methodology of sciences | 0.12 | 0.252 | 0.00 | 0.977 |
| Defines the rules for the development and implementation of public health strategies as well as health and social policies at different levels (local, local government, national, and European). | -0.02 | 0.890 | 0.09 | 0.418 |
| Synthesizes knowledge of interpersonal processes | 0.19 | 0.086 | 0.03 | 0.762 |

| | | | | |
|---|-------|--------------|-------|-------|
| Describes theoretical foundations of actions aiming at the prevention of occupational stress and its negative effects | 0.07 | 0.494 | -0.13 | 0.218 |
| Presents a profound knowledge of using information and communication technology tools for the development and implementation of health and social programmes. | 0.24 | 0.027 | 0.14 | 0.182 |
| Defines the role and tasks of integrated crisis management systems. | 0.20 | 0.070 | -0.03 | 0.755 |
| Defines methods associated with theoretical grounds and methods used for studying health attitudes and the process of changing and shaping health behaviour | -0.06 | 0.582 | -0.17 | 0.120 |
| Synthesises profound knowledge of designing, implementing, and assessing the impact of social and prevention programmes on health | 0.10 | 0.344 | -0.11 | 0.320 |
| Analyses interactions between a political process and actions taken in favour of health | 0.00 | 0.984 | -0.03 | 0.815 |
| Based on a thorough knowledge, describes legal acts regulating local, national, and international health and social policies | -0.03 | 0.754 | -0.11 | 0.301 |
| Presents examples of environmental prevention programmes and possibilities of their application | 0.03 | 0.760 | 0.01 | 0.908 |
| Has a profound knowledge of the operation of entities responsible for prosocial activities and strategies for combating social problems pursued by these entities | -0.07 | 0.514 | -0.10 | 0.344 |
| Presents and discusses the role of health institutions dealing with the following areas: care, education, promotion, surveillance, planning | 0.04 | 0.714 | 0.12 | 0.270 |
| Critically assesses main trends and projects in public health and health promotion at the local and national levels as well as in a European and global context | 0.03 | 0.781 | 0.18 | 0.093 |
| Presents the determinants of the allocation of available resources at all organisational levels of healthcare | 0.07 | 0.497 | -0.02 | 0.854 |
| Defines strategic and tactical management tools at different organisational levels of the healthcare system | 0.08 | 0.445 | 0.00 | 0.980 |
| Presents methods, processes, and principles of quality management in healthcare and specifies accreditation procedures for medical service providers | 0.05 | 0.619 | -0.04 | 0.743 |
| Knows the rules of techniques and methods for contracting and (on-line) billing of medical services with various payers | 0.05 | 0.678 | -0.08 | 0.436 |
| Defines determinants of effective and efficient human resource management | 0.14 | 0.207 | -0.08 | 0.484 |
| Presents rules of sharing, exploitation, and protection of information resources in healthcare | 0.07 | 0.514 | 0.10 | 0.366 |
| Defines sources of scientific and professional information as well as solutions regarding health adopted in Poland | 0.16 | 0.128 | -0.04 | 0.702 |
| Discusses legal provisions covering treatment procedures, actions of sanitary and epidemiological surveillance, activities of health institutions (service providers, payers, other operators), as well as activities of national and local authorities at different levels | -0.05 | 0.634 | -0.04 | 0.684 |
| Presents definitions specified in legal provisions on document workflow system in healthcare, including electronic flow | 0.05 | 0.678 | -0.09 | 0.403 |

In the case of one educational outcome in the domain referring to skills: *Develops skills in integrating theoretical knowledge with practice in communication and teamwork*, there was a positive correlation, meaning that the better assessment of the value of internship ($r_s = 0.23$, $p = 0.033$) went hand in hand with better self-assessment of student competencies ($r_s = 0.26$, $p = 0.016$). A negative correlation was observed relating to one educational outcome: *Undertakes action to improve public awareness of health and safety at work*, which means that a better assessment of the value of internship went hand in hand with worse student self-assessment of this particular competence ($r_s = -0.24$, $p = 0.027$). See Table 3 for detailed opinions of students on the effect of the value of internships on self-assessment and achievement of educational outcomes in the area of skills with respect to the curriculum for the second-cycle degree programme in Public Health.

Table 3. Opinions of students on the effect of the value of internships on self-assessment and achievement of educational outcomes in the area of skills with respect to the curriculum for the second-cycle degree programme in Public Health.

| Educational outcomes | Assessment of achievement of educational outcomes during the course of study | | Student self-assessment | |
|--|--|--------------|-------------------------|--------------|
| | Spearman's rho | p | Spearman's rho | p |
| Develops skills in integrating theoretical knowledge with practice in communication and teamwork | 0.23 | 0.033 | 0.26 | 0.016 |
| Plans and analyses communication processes to achieve objectives and increase their effectiveness | 0.10 | 0.375 | 0.20 | 0.069 |
| Observes and explains population health phenomena, taking into account interactions between health and social and economic factors | -0.02 | 0.862 | 0.03 | 0.765 |
| Searches for and assesses information from various sources and formulates on that basis critical opinions on health problems in a particular community | 0.16 | 0.149 | 0.11 | 0.295 |
| Presents study results as an individually prepared presentation, thesis, or paper with a description and justification of its aim, methodology adopted, results and their importance among other similar studies | 0.10 | 0.349 | 0.13 | 0.247 |
| Prepares a concept, implementation, and assessment of programmes devoted to public health as well as preventive, informative, education and training activities | 0.16 | 0.136 | 0.17 | 0.106 |
| Draws correct conclusions on the impact of the national health policy on the operation of prevention programmes and other policies | 0.09 | 0.403 | 0.10 | 0.356 |
| Offers solutions to address a specific problem and conduct a decision-making procedure in that respect | -0.01 | 0.922 | 0.12 | 0.265 |
| Appreciates the variety of views and their contribution to the comprehensive picture of population health | 0.05 | 0.630 | 0.18 | 0.093 |
| Describes and discusses key health strategies of selected European countries and WHO and OECD public health strategies | -0.01 | 0.950 | 0.16 | 0.127 |
| Works effectively in a team to analyse and solve a selected public health problem | 0.18 | 0.093 | 0.17 | 0.121 |

| | | | | |
|--|-------|-------|-------|--------------|
| Plans actions to integrate prevention activities as well as provide financial and subject-related support of prevention programmes | -0.06 | 0.552 | 0.08 | 0.471 |
| Analyses available data to explain social and economic determinants of health | 0.00 | 0.966 | 0.08 | 0.451 |
| Carries out a critical analysis and interpretation of expertises and reports on health policy, economics of health, and the health of the population | -0.08 | 0.434 | 0.11 | 0.312 |
| Makes advantage of strategic analysis tools and methods for developing strategic plans for healthcare entities | -0.04 | 0.711 | 0.00 | 0.992 |
| Identifies barriers to implementing health education to population and applies adequate methods and communication skills in the teaching process | 0.08 | 0.462 | -0.15 | 0.158 |
| Undertakes action to improve public awareness of health and safety at work | -0.06 | 0.606 | -0.24 | 0.027 |
| Assesses the financial situation of a medical service provider and produces a business plan | 0.05 | 0.634 | -0.10 | 0.372 |
| Properly selects and applies IT tools used in carrying out health programmes | 0.07 | 0.498 | -0.01 | 0.891 |
| Has skills essential for the implementation of personal data security policy (including medical data) in health units | 0.01 | 0.921 | -0.09 | 0.396 |
| Speaks a foreign language - can understand the main points of complex text on both concrete and abstract topics, including public health discussions | 0.09 | 0.418 | -0.03 | 0.762 |

A positive correlation was found in the case of two educational outcomes in the domain referring to social competence: *Establishes partnerships as the basis for environmental interventions* ($r_s = 0.23$, $p = 0.034$) and *Produces clear, detailed oral and written texts, arguing for or against different options* ($r_s = 0.22$, $p = 0.040$), which means that a better assessment of the value of internship went hand in hand with better assessment of achievement of educational outcomes in the area of social competence at Warsaw Medical University. See Table 4 for detailed analysis of the issue.

Further analyses demonstrated a positive correlation for two educational outcomes referring to knowledge: *Presents a profound and extensive knowledge of legal and economic issues related to the performance of the health sector, including business entities (of different levels) operating within this sector* ($r_s = 0.24$, $p = 0.027$) and *Presents and discusses the role of health institutions dealing with the following areas: care, education, promotion, surveillance, and planning* ($r_s = 0.23$, $p = 0.033$). It was shown that a better assessment of internship went hand in hand with better self-assessment of student's knowledge. See Table 5 for detailed results. Two statistically significant correlations were found in the case of the domain related to skills. The first one was a positive correlation concerning the following educational outcome: *Searches for and assesses information from various sources and formulates on that basis critical opinions on health problems in a particular community* ($r_s = 0.30$, $p = 0.005$). This means that students who assessed their internships better, also better self-assessed their own skills related to the aforementioned educational outcome.

Table 4. Opinions of students on the effect of the value of internships on self-assessment and achievement of educational outcomes in the area of social competence with respect to the curriculum for the second-cycle degree programme in Public Health.

| Educational outcomes | Assessment of achievement of educational outcomes during the course of study | | Student self-assessment | |
|--|--|--------------|-------------------------|-------|
| | Spearman's rho | p | Spearman's rho | p |
| Knows his/her own competence and is ready to make use of external expertise, works with an interdisciplinary team in accordance with the rules of professional conduct and legal regulations | -0.01 | 0.906 | -0.02 | 0.825 |
| Is engaged in the promotion of public health and interested in the issues of social and health policies | 0.03 | 0.748 | 0.04 | 0.696 |
| Establishes partnerships as the basis for environmental interventions | 0.23 | 0.034 | 0.08 | 0.486 |
| Is aware of his/her social role | 0.08 | 0.446 | -0.01 | 0.935 |
| Works cooperatively with government and local government agencies as well as public benefit organisations | 0.03 | 0.774 | -0.09 | 0.399 |
| Effectively manages his/her own time as well as that of co-workers | 0.18 | 0.103 | 0.16 | 0.131 |
| Responsibly designs tasks for his/her own group of workers and clarifies requirements to be met by personnel | 0.01 | 0.910 | 0.05 | 0.650 |
| Appreciates the importance of good practices regarding the prevention of psychosocial risks in the workplace | 0.02 | 0.821 | -0.05 | 0.663 |
| Produces clear, detailed oral and written texts, arguing for or against different options | 0.22 | 0.040 | 0.12 | 0.278 |
| Is independent in acquiring knowledge and improving research skills using objective sources of information. | 0.16 | 0.150 | -0.05 | 0.622 |
| Is prepared to commence a third-cycle degree programme | | | | |
| Respects principles of research ethics and working arrangements of other employees, bearing in mind possible pathologies in the workplace | 0.10 | 0.372 | 0.03 | 0.799 |

Table 5. Opinions of students on the effect of internships on self-assessment and achievement of educational outcomes in the area of knowledge with respect to the curriculum for the second-cycle degree programme in Public Health.

| Educational outcomes | Assessment of achievement of educational outcomes during the course of study | | Student self-assessment | |
|--|--|-------|-------------------------|-------|
| | Spearman's rho | p | Spearman's rho | p |
| Presents a profound knowledge of human health risks associated with the quality of the environment, lifestyle and diet as well as other health risk factors. | 0.00 | 0.991 | 0.02 | 0.849 |
| Describes methods of preliminary assessment of public health risks and prevalence of diseases | -0.07 | 0.506 | 0.03 | 0.762 |
| Analyses in detail the tasks and structure of bodies providing sanitary and epidemiological surveillance | 0.00 | 0.980 | 0.02 | 0.836 |
| Synthesizes knowledge of organisation and financing of healthcare in Poland and worldwide | 0.14 | 0.210 | 0.18 | 0.104 |

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| | | | | |
|---|-------|-------|-------------|---------------------|
| Presents a profound and extensive knowledge of legal and economic issues related to the performance of the health sector, including business entities (of different levels) operating within this sector | 0.07 | 0.527 | 0.24 | <u>0.027</u> |
| Plans to conduct research using modern data collection methods and research tools | -0.16 | 0.134 | 0.09 | 0.436 |
| Knows the principles of statistical inference methods based on the principles of the methodology of sciences | 0.20 | 0.064 | 0.12 | 0.257 |
| Defines the rules for the development and implementation of public health strategies as well as health and social policies at different levels (local, local government, national, and European). | 0.06 | 0.593 | 0.11 | 0.294 |
| Synthesizes knowledge of interpersonal processes | 0.07 | 0.546 | -0.03 | 0.756 |
| Describes theoretical foundations of actions aiming at the prevention of occupational stress and its negative effects | -0.07 | 0.527 | -0.20 | 0.067 |
| Presents a profound knowledge of using information and communication technology tools for the development and implementation of health and social programmes. | 0.15 | 0.159 | 0.13 | 0.224 |
| Defines the role and tasks of integrated crisis management systems. | -0.07 | 0.538 | -0.13 | 0.245 |
| Defines methods associated with theoretical grounds and methods used for studying health attitudes and the process of changing and shaping health behaviour | 0.01 | 0.908 | -0.05 | 0.672 |
| Synthesises profound knowledge of designing, implementing, and assessing the impact of social and prevention programmes on health | -0.16 | 0.151 | 0.05 | 0.660 |
| Analyses interactions between a political process and actions taken in favour of health | 0.08 | 0.434 | 0.08 | 0.460 |
| Based on a thorough knowledge, describes legal acts regulating local, national, and international health and social policies | -0.03 | 0.803 | 0.20 | 0.070 |
| Presents examples of environmental prevention programmes and possibilities of their application | -0.12 | 0.287 | -0.05 | 0.674 |
| Has a profound knowledge of the operation of entities responsible for prosocial activities and strategies for combating social problems pursued by these entities | 0.11 | 0.322 | 0.16 | 0.128 |
| Presents and discusses the role of health institutions dealing with the following areas: care, education, promotion, surveillance, planning | -0.02 | 0.887 | 0.23 | <u>0.033</u> |
| Critically assesses main trends and projects in public health and health promotion at the local and national levels as well as in a European and global context | 0.07 | 0.494 | 0.04 | 0.704 |
| Presents the determinants of the allocation of available resources at all organisational levels of healthcare | 0.08 | 0.488 | 0.00 | 0.970 |
| Defines strategic and tactical management tools at different organisational levels of the healthcare system | -0.12 | 0.276 | -0.07 | 0.548 |
| Presents methods, processes, and principles of quality management in healthcare and specifies accreditation procedures for medical service providers | -0.03 | 0.775 | 0.00 | 0.980 |
| Knows the rules of techniques and methods for contracting and (on-line) billing of medical services with various payers | -0.04 | 0.709 | -0.11 | 0.307 |
| Defines determinants of effective and efficient human resource management | -0.03 | 0.812 | 0.05 | 0.640 |
| Presents rules of sharing, exploitation, and protection of information resources in healthcare | 0.13 | 0.225 | -0.02 | 0.819 |
| Defines sources of scientific and professional information as well as solutions regarding health adopted in Poland | -0.03 | 0.798 | 0.14 | 0.197 |
| Discusses legal provisions covering treatment procedures, actions of sanitary and epidemiological surveillance, activities of health institutions (service providers, payers, other operators), as well as activities of national and local authorities at different levels | 0.06 | 0.582 | 0.02 | 0.861 |
| Presents definitions specified in legal provisions on document workflow system in healthcare, including electronic flow | 0.03 | 0.780 | 0.11 | 0.293 |
| Develops skills in integrating theoretical knowledge with practice in communication and teamwork | -0.05 | 0.674 | 0.14 | 0.198 |

The other correlation was negative: *Makes advantage of strategic analysis tools and methods for developing strategic plans for healthcare entities* ($r_s = -0.31$, $p = 0.003$), which points to the fact that a better assessment of internships went hand in hand with worse self-assessment of this particular skill. See Table 6 for detailed results. Statistically significant results were not observed in relation to social competence.

Table 6. Opinions of students on the effect of internships on self-assessment and achievement of educational outcomes in the area of skills with respect to the curriculum for the second-cycle degree programme in Public Health.

| Educational outcomes | Assessment of achievement of educational outcomes during the course of study | | Student self-assessment | |
|--|--|-------|-------------------------|--------------|
| | Spearman's rho | p | Spearman's rho | p |
| Plans and analyses communication processes to achieve objectives and increase their effectiveness | 0.14 | 0.186 | 0.12 | 0.253 |
| Observes and explains population health phenomena, taking into account interactions between health and social and economic factors | 0.16 | 0.135 | 0.18 | 0.095 |
| Searches for and assesses information from various sources and formulates on that basis critical opinions on health problems in a particular community | 0.19 | 0.078 | 0.30 | 0.005 |
| Presents study results as an individually prepared presentation, thesis, or paper with a description and justification of its aim, methodology adopted, results and their importance among other similar studies | -0.01 | 0.907 | 0.15 | 0.160 |
| Prepares a concept, implementation, and assessment of programmes devoted to public health as well as preventive, informative, education and training activities | -0.04 | 0.689 | 0.09 | 0.400 |
| Draws correct conclusions on the impact of the national health policy on the operation of prevention programmes and other policies | 0.05 | 0.644 | 0.15 | 0.171 |
| Offers solutions to address a specific problem and conduct a decision-making procedure in that respect | -0.02 | 0.888 | 0.21 | 0.051 |
| Appreciates the variety of views and their contribution to the comprehensive picture of population health | 0.04 | 0.713 | 0.05 | 0.655 |
| Describes and discusses key health strategies of selected European countries and WHO and OECD public health strategies | -0.19 | 0.079 | 0.07 | 0.542 |
| Works effectively in a team to analyse and solve a selected public health problem | -0.07 | 0.537 | 0.11 | 0.293 |
| Plans actions to integrate prevention activities as well as financial and provide financial and subject-related support of prevention programmes | -0.01 | 0.945 | 0.19 | 0.072 |
| Analyses available data to explain social and economic determinants of health | -0.09 | 0.395 | -0.03 | 0.794 |
| Carries out a critical analysis and interpretation of expertises and reports on health policy, economics of health, and the health of the population | -0.02 | 0.863 | -0.08 | 0.481 |
| Makes advantage of strategic analysis tools and methods for developing strategic plans for healthcare entities | -0.13 | 0.219 | -0.31 | 0.003 |
| Identifies barriers to implementing health education to population and applies adequate methods and communication skills in the teaching process | -0.02 | 0.818 | -0.06 | 0.608 |
| Undertakes action to improve public awareness of health and safety at work | 0.05 | 0.671 | 0.04 | 0.727 |
| Assesses the financial situation of a medical service provider and produces a business plan | 0.10 | 0.366 | -0.02 | 0.870 |
| Properly selects and applies IT tools used in carrying out health programmes | 0.04 | 0.718 | 0.12 | 0.259 |
| Has skills essential for the implementation of personal data security policy (including medical data) in health units | -0.03 | 0.765 | 0.02 | 0.871 |
| Speaks a foreign language - can understand the main points of complex text on both concrete and abstract topics, including public health discussions | 0.15 | 0.172 | -0.01 | 0.920 |

DISCUSSION

The present study is the first one in Poland to assess the impact of summer internships on the level of achievement of educational outcomes set in the curriculum for the Public Health degree programme and student skills self-assessment. Although most study participants evaluated positively the quality of their internships (63%), the level of achievement of educational outcomes during the internships was unsatisfactory for 27% of respondents. The present authors believe that this may indicate that, on the one hand, there is a risk that staff of institutions offering summer internships for Public Health students are not aware of skills and competencies of interns and thus assign them inadequate tasks. On the other hand, a decreased level of achievement of educational outcomes during summer internships may be the result of a mismatch of the curriculum and expectations of employers. In such a case it seems advisable to develop a smooth system for exchanging data between a university offering a programme in Public Health and employers in order to set priorities in educating future public health professionals.

Assessment of internships as regards the achievement of educational outcomes and self-assessment of students relating to their skills and knowledge

Only in the case of three educational outcomes in the domain referring to knowledge, was a statistically significant correlation observed between students' opinion on internships and their impact on the achievement of educational outcomes and self-assessment. According to the present authors, this shows that the quality of internships taken by students is relatively poor, despite an overall positive assessment of internships. This may be caused either by the lack of substantive preparation of the respondents to carry out their tasks, or their little involvement in internships, or ignorance of employers about competencies of their interns.

In the case of the domain related to skills, the study group assessed positively the influence of internships on only two educational outcomes: Develops skills in integrating theoretical knowledge with practice in communication and teamwork and Searches for and assesses information from various sources and formulates on that basis critical opinions on health problems in a particular community. It is particularly worrying since the main emphasis during internships should be placed on the development of skills. Internships constitute one of the few possibilities during the entire course of studies for students to put knowledge into practice.

The present results may confirm that in the present curriculum there are too few classes when activating methods are used enabling students to develop skills crucial for prospective employers and preparing them for internships as well as for their future practice. Interestingly, a negative correlation was found for two educational outcomes referring to the domain concerned (Undertakes action to improve public awareness of health and safety at work and Makes advantage of strategic analysis tools and methods for developing strategic plans for healthcare entities). This means that the better the assessment of internships, the worse student self-assessment regarding this particular outcome.

Assessment of internships as regards the achievement of educational outcomes and self-assessment of students relating to their social competence

A statistically significant correlation in the domain related to social competence was found only in the case of two educational outcomes: Establishes partnerships as the basis for environmental interventions and Produces clear, detailed oral and written texts, arguing for or against different options. Internships should ensure that students can develop and improve their social skills which are increasingly taken into account during recruitment for the post related to public health. A study on soft and professional (hard) skills required in job advertisements for candidates of different professions demonstrated that both types of skills were equally important for employers in the medical sector in the recruitment process [10]. It is therefore very important to help students develop their social competence both during their internships and at university. The introduction of suitable courses and trainings into the curriculum constitutes one way to contribute to the development of social competence of students [11].

There are certain programmes in the world devoted to the development and improvement of social skills of students. The Latina course offered at Oslo University Collage serves as an example. Its methodology contributes to the development of the following soft skills: creativity, teamwork skills, ability to work under pressure, independence, communication, empathy, and tolerance [12]. Starting from the academic year 2017/2018, the second-cycle degree programme at Warsaw Medical University offers a unique module: *CEE! – competencies expected by employers* (Polish: *KOP! – Kompetencje oczekiwane przez pracodawców.*) The development of social competence will take place each semester during particular courses held for groups of 25 students. During three years of study students will have a total of 48 hours of social competence development during the following courses: Human resource management in health care, Social media, Building relations with customers, Burnout prevention, and Networking. The CEE module introduced at the Department of Public Health, Faculty of Health Sciences, WMU is an innovative module at the second-cycle degree programme in Public Health in Poland that responds to the needs of employers and develops social competence of students.

Limitations - A possible limitation of the presented results maybe the research tool used, which is an original nonstandardized questionnaire. Due to the characteristics of the questionnaire and the study group, the obtained results cannot be compared with any study. However, the construction of the survey and the type of questions asked allows for the introduction of specific solutions in the public health curriculum at Medical University of Warsaw.

CONCLUSIONS

Despite an overall positive assessment of summer internships, they did not have a significant impact on the level of achievement of educational outcomes and student self-assessment. Therefore, there is a need for further evaluation of the quality of summer internships, verification of internship placements and development of an internship database for students.

SUPPLEMENTARY INFORMATION

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Institutional Review Statement: The study was conducted according to the guidelines of the Declaration of Helsinki.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

Conflicts of Interest: The authors declare no conflicts of interest.

REFERENCES

- [1] Rogers SE, Miller CD, Flinchbaugh C, Giddarie M, Barker B. All internships are not created equal: Job design, satisfaction, and vocational development in paid and unpaid internships. *Human Resource Management Review* 2021; 31(1): 1-13.
doi: <https://doi.org/10.1016/j.hrmr.2019.100723>
- [2] Ramsgaard MB, Ostergaard SJ. An entrepreneurial learning approach to assessment of internships. *Education + Training* 2018; 60(7/8): 909-922.
doi: <https://doi.org/10.1108/ET-11-2016-0164>
- [3] Kolanowska E. The System of Education in Poland 2018. Foundation for the Development of The Education System: Warsaw; 2018.
- [4] Polish Accreditation Commission.
[WWW]: <https://www.pka.edu.pl/>
(accessed 10 November 2021)
- [5] Faculty of Health Sciences at the Medical University of Warsaw.
[WWW]: <https://wnoz.wum.edu.pl/pl>
(accessed 2 November 2021)
- [6] Provisional Lists of public health Core Competencies. European Public Health Core Competencies Programme (EPHCC) for Public Health Education. Phase 1.
[WWW]: <https://www.aspher.org/>
(accessed 2 November 2021)
- [7] Brzezińska J. Analiza logarytmiczno-liniowa: teoria i zastosowania z wykorzystaniem programu R. CH Beck: Warsaw; 2015.
- [8] Schober P, Boer C, Schwarte L.A. Correlation Coefficients: Appropriate Use and Interpretation. *Anesthesia & Analgesia* 2018; 126(5): 1763-1768.
doi: <https://doi.org/10.1213/ANE.0000000000002864>
- [9] Opinion of the Bioethical Commission of the Medical University of Warsaw.
[WWW]: <https://komisja-bioetyczna.wum.edu.pl/>
(accessed 2 November 2021)
- [10] Kowalska-Bobko I, Bogdan M, Badora-Musiał K, Oberska J, Dłutek A. RAPORT. Deficyty kompetencyjne kadr medycznych i okołomedycznych w placówkach medycznych, z uwzględnieniem nowych zadań związanych z epidemią COVID-19 wraz z rekomendacjami. Pracodawcy Rzeczypospolitej Polskiej 2021.
[WWW]: <http://rada.pracodawcyrp.pl/wp-content/uploads/2021/05/Deficyty-kompetencyjne-kadr-medycznych-i-okolo-medycznych-w-placowkach-medycznych-4-1.pdf>
(accessed 2 November 2021)
- [11] Wojnarska A. Uwarunkowania efektywności treningów umiejętności społecznych. *Edukacja-Technika-Informatyka* 2019; 1/27/2019: 105-112.
doi: <https://doi.org/10.15584/eti.2019.1.13>
- [12] Oslo University Collage.
[WWW]: <https://www.uio.no/english/>
(accessed 2 November 2021)