

PROFESSIONAL COMPETENCES AND CONTENT OF THE UNDEGRADUATE PUBLIC HEALTH PROGRAMMES IN EUROPE

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Abstract: Sufficient number of competent public health professionals are an important prerequisite for the normal functioning of the health systems. At present, the number and type of institutions carrying out undergraduate education and training in public health varies broadly both in Europe and the USA. There is a lack of clarity on how much the requirements for professional public health competencies are covered by the content of undergraduate public health programs in Europe. Purpose: To analyse the content of Bachelor Public Health programmes in Europe, in relation to the requirements for professional competences introduced by ASPHER in 2014 (Association of Schools of Public Health in the European Region). Methods: An online questionnaire was developed and distributed via the Internet platform Google Forms to 214 universities in Europe. The electronic survey included 50 questions clarifying availability of study subjects and topics from 7 main areas of competences proposed by ASPHER: Methods in Public Health; Population Health and Determinants; Health Policy; Economics and Management; Health Education and Health Promotion; Interdisciplinary subjects; Practical Training and Others. Similar information was extracted from the educational documentation accessible from the web pages of 74 higher educational institutions offering undergraduate programs in public health from 19 European countries. Results: Information for 59 undergraduate public health programmes was retrieved, 45 from west and 14 from east Europe. Subjects related to “Health Inequalities”, “Global Health”, “Information Technologies”, “Ageing”, “Leadership”, “Genomics” are available in less than 50% of the programmes in both west and east Europe. There is a clear difference between west and east programmes in some aspects. In the central focus of training in PH in Bulgaria and the countries from Eastern Europe are the specialized prevention disciplines related to hygiene and epidemiology of communicable diseases and a considerable number of clinical disciplines. The latter are less presented in the training in Western European programmes, which are more oriented towards health policy and management. Conclusions: There is a significant variation in the content and as a result the professional competences provided by the undergraduate PH education programmes in Europe. Both west and east European undergraduate PH programmes fail to address adequately the present global challenges in the area starting with existing health inequalities. Recommendation: There is an urgent need for regulation of public health as a basic regulated health profession in the European Union, which will entail standardization of the content of the bachelor education and will stimulate the recognition and the importance of the profession across Europe as well.

Keywords: competences, content, undergraduate programmes, public health

1. INTRODUCTION

The problems public health is facing today – worldwide pandemic, economic, social and humanitarian crisis, have proved that the availability of a sufficient in number adequately and well-educated qualified public health professionals is an important prerequisite for the normal functioning of the health systems in Europe and around the world. This constitutes a serious challenge for the higher education institutions that are carrying out the training and instruction in public health (PH), as well as necessitates development of new, specific skills of the public health professionals and specialists.

At present, the number and type of institutions carrying out education and training in undergraduate programmes in public health varies in quite a broad range both in Europe and the USA. According to the American research experts (Riegelman and Albertine, 2011), analysing the training of Bachelors in PH in the US and the contents of the PH academic curricula indicates that it is necessary:

- That higher education establishments should provide better practical training and experience in the PH realm by introducing real practical training, along with full participation of students in pre-graduation internship (Lee, et al, 2019);
- That training be founded on the five basic fields of activity in the field of PH: health policy and management, health behaviour, bio-statistics, epidemiology and environmental factors and health (4. Association of Schools and Programs of Public Health, 2014);

- That the training should build-up interdisciplinary competences related to the administrative services and activities performed by the specialists engaged in the protection of the environment (Arnold and Schneider, 2010).

As far as the Bachelor's training in PH in Europe is concerned, throughout the last decade it has become more widespread and popular (Ady, Gerber, Dyak and Kon, 2015), but several substantial differences are noticeable between the countries from Western Europe and those from Eastern (Central) Europe. For example, in Central and East-European countries there is a gradual shifting of focus from studying the hygiene and sanitary measures to the following areas: health policy and economics, promotion of health and epidemiological research. This is due to the changes that were made in the institutions related to PH control and by following the Western European trends in PH training by establishing Bachelor's, Master's and PhD programmes of training. There is not much clarity as to how far the global problems in PH are integrated into the undergraduate PH programmes in Europe. (Adany & Villerusa, 2011; Bjegovic-Mikanovic & Jovic-Vranes, 2014; Cavallo & Rimpelag 2001; Paccaud & Weihofen, 2011) This raises several major issues and highlights priorities for the attention of the PH institutions in Europe, namely:

1. Harmonization of the accreditation standards of education in Europe (with recognition of professional qualifications).
2. Modernisation of the programmes and their relatedness to the main competences in the area of PH in order to respond to the employers' requirements.
3. Development of lifelong learning skills supported by the possibilities of hybrid education and use of online technologies. (Rongère et al, 2008)
4. Integrating the priorities of global PH as main subjects in the academic PH curricula.
5. Academic education and training should be founded on the state-of-the-art accomplishments in the area of scientific research and implementation of the practical experience available and establishing of close partnerships between PH employers and instructors.

At the European level, with the assistance of the Association of Schools of Public Health in the European Region (ASPHER) certain criteria were determined in 2006 aimed at maintaining and improving the quality of educational programmes in public health. They were developed by the Association of Schools of Public Health in the European Region (ASPHER) and have been elaborated and supplemented on an ongoing basis ever since. They were further updated in 2008, 2011, 2014, 2018 and latest in 2021 г. (APHEA, 2021; APHEA, 2014; Birt & Foldspang, 2011; Foldspang & Birt, 2014; Council on Education for Public Health, 2014), but there is no research on the extent to which the requirements for professional competences overlap with the content of the undergraduate programmes in public health.

Purpose: To analyse the content of education of undergraduate programmes in public health in Europe, in relation to the requirements for professional competences introduced by ASPHER in 2014.

Materials and methods: An online questionnaire has been developed with 50 questions clarifying the availability of academic subjects and themes from 7 main areas of competences: Public health methods; Population health and determinants; Health policy, economics and management; Health education and others. The questionnaire was developed on the basis of the six basic areas formulated by ASPHER in 2014 (Council on Education for Public Health, 2014) and the disciplines included in group "Others" correspond to the uniform state requirements for the regulated specialty of Inspector of Public Health (IPH) in Bulgaria (Ordinance, State Gazette, 87/2008). The questionnaire was distributed online through the internet platform Google Forms to 214 higher education schools in Europe.

Parallel to that, an own theoretical study was performed of the academic-curriculum-related documentation published on the websites of 74 higher educational establishments with undergraduate programmes in public health from 19 European countries. The analysis of the training contents from the theoretical study encompasses 44 of a total of 74 programmes because there was no information published about the curricula of the rest of them.

The two studies were performed in the period 25.03.2019 - 25.10.2020.

The results have been analysed and presented for two groups of higher education schools: from Western Europe and Eastern/Central Europe. The countries included in the group of Western Europe were: Denmark, Germany, Ireland, Italy, the Netherlands, Norway, Switzerland and Great Britain, Austria, Turkey and Finland and Israel (one of the key members of ASPHER). In the East-European group were: Croatia, the Czech Republic, Hungary, Lithuania, Latvia, Poland, Romania, Russia, Slovakia, Albania and Bulgaria. The countries were distributed in these geographic groups provisionally both with respect to their geographic locations and to their belonging until the 1990s to the so-called Socialist Block in Europe. Descriptive statistical methods have been used in the analysis and non-parametric test for testing hypothesis for differences in the content of east and west European teaching programmes.

2. RESULTS AND DISCUSSION

The responses received to the online survey were 56 from 27 countries and training in undergraduate programmes in PH is offered in 21 programmes in 20 higher education schools from 13 countries. In addition information was derived about a total of 59 undergraduate programmes in public health, 45 of them from Western Europe and 14 from Eastern (Central) Europe. The results of the questionnaire survey and the theoretical study are presented in parallel in tables by major areas of professional competences.

First major area: “Public Health Methods”

The disciplines form the first major area “Public Health Methods” (Table 1), are widely present in the teaching curricula of Bachelors in PH programmes in both Western and in Eastern Europe. An exception is the training in “Information Technologies and Systems”, which is less prevalent in both regions. The questionnaire survey indicated that the disciplines of Demography and Qualitative Methods are present less frequently in the programmes in Eastern Europe, but the theoretical analysis registered them with the same frequency in Western Europe.

Second major area: “Population Health and Its Determinants”

The disciplines from the second major area “Population Health and Its Determinants” are systematically presented in the curricula of countries from both Eastern and Western Europe (Table 2). Exceptions are: Health Inequalities and Global Health, which are less present in both regions, especially according to the results of the theoretical study. The main difference between Eastern and Western Europe is demonstrated with the inclusion of Microbiology, Communicable Diseases and Epidemiology, and Health Risk Assessment, which are obligatory in Eastern Europe, but a much less present in Western European programmes.

Table 1. Comparative analysis in the area “PH Methods”

1.	PH Methods	Western Europe n(%)		Eastern Europe n(%)		p	p
№	Subjects/ topics	Survey	Theoretical study	Survey	Theoretical study	Survey	Theoretical study
1.1	Epidemiological methods	13 (92.9)	28 (80.0)	5(71.4)	7 (70.0)	0.186	0.502
1.2	Statistical methods	12 (85.7)	30 (88.2)	5 (71.4)	7 (70.0)	0.432	0.166
1.3	Qualitative research methods	12 (85.7)	25 (73.5)	3 (42.9)	6 (60.0)	0.04	0.410
1.4	Demography	8 (57.1)	20 (58.8)	3 (42.9)	7 (70.0)	0.537	0.523
1.5	Health informatics	10 (71.4)	8 (24.2)	5 (71.4)	9 (90.0)	0.999	0.001
1.6	Health techn. assessment	6 (42.9)	13 (39.4)	2 (28.6)	5 (50.0)	0.525	0.551

Table 2. Comparative analysis in the themes in the area „Population Health and Its Determinants“

2.	Population Health and Its Determinants	Western Europe n(%)		Източна Европа n(%)		p	p
№	Subjects/ topics	Survey	Theoretical study	Survey	Theoretical study	Survey	Theoretical study
2.1	Environmental sciences	9 (69.2)	23 (67,6)	5 (71,4)	8 (80.0)	0.919	0.452
2.2	Hygiene -nutrition, maternal and child health, occupational health	11(78.6)	21 (61.8)	7 (100.0)	7 (70.0)	0.186	0.634
2.3	Communicable diseases and epidemiology	11(78.6)	22 (64.7)	7 (100.0)	8 (80.0)	0.186	0.361
2.4	Microbiology	5 (35.7)	8 (23.5)	5 (71.4)	7 (70.0)	0.122	0.006

2.5	Epidemiology of non-communicable diseases	11(78.6)	19 (55.9)	6 (85.7)	9 (90.0)	0.694	0.049
2.6	Health risk assessment	8 (57.1)	17 (50.0)	7 (100.0)	8 (80.0)	0.04	0.092
2.7	Social and behavioral sciences	13 (92.9)	20 (58.8)	7 (100.0)	9 (90.0)	0.469	0.068
2.8	Health inequalities	10 (71.4)	5 (14.7)	4 (57.1)	1 (10.0)	0.513	0.703
2.9	Global health	10 (71.4)	10 (29.4)	4 (57.1)	20 (20.0)	0.513	0.557

Third major area: “Health Policy, Economics and Management”

The disciplines from the third major area “Health Policy, Economics and Management” (Table 3) are less prevalent in the education in PH at the Bachelor’s level in the programmes in Eastern and Western Europe. The discipline of Health Policy and Planning is included in all programmes. The least present discipline is Marketing. The survey demonstrated higher presence of some of the disciplines such as Health Projects, Financing Health Services, Organizational Theory, compared to the theoretical study.

Fourth area: “Health Education and Promotion”

In the area of “Health Education and Promotion” (Table 4) no difference was detected between Eastern and Western Europe. The disciplines related to „Health Protection and Disease Prevention are present in the training in Eastern, as well as in Western Europe. The subject of Health Education is more frequently present in Western Europe according to the results of the questionnaire survey. In Bulgaria, the topic of Health Education is not present in the training. These disciplines are not pointed out in some of the analysed programmes in Great Britain and the Netherlands either.

Table 3. Comparative analysis of the themes in the area „Health Policy, Economics and Management“

3.	Health Policy, Economics and Management	Western Europe n(%)		Eastern Europe n(%)		p	p
		Survey	Theoretical study	Survey	Theoretical study	Survey	
3.1	Health policy and planning	12 (85.7)	22 (64,7)	5 (71.4)	5 (50.0)	0.432	0.401
3.2	Financing health services	8 (57.1)	7 (20,6)	3 (42.9)	3 (30.0)	0.537	0.532
3.3	Organizational theory and health management	10 (71.4)	12 (35,3)	4 (57.1)	6 (60.0)	0.513	0.162
3.4	Health programme, planning, development and evaluation	10 (71.4)	10 (29,4)	4 (57.1)	4 (40.0)	0,513	0.527
3.5	Marketing	2 (14.3)	1 (2,9)	3 (42.9)	1 (10.0)	0,147	0.346
3.6	Economics	7 (50.0)	15 (44,1)	4 (57.1)	5 (50.0)	0.757	0.743

Table 4. Comparative analysis of themes in the area “Health Education and Promotion”

4	Health Education and Promotion	Western Europe n(%)		Eastern Europe n(%)		p	p
		Survey	Theoret. study	Survey	Theoret. study	Survey	Theoret. study
4.1	Health protection and disease prevention	9 (64.3)	25(73.5)	6 (85.7)	9 (90.0)	0.275	0.306
4.2	Health education	12(85.7)	8 (23.5)	5 (71.4)	4 (40,0)	0,304	0.432

Fifth area: “Interdisciplinary Subjects”

The interdisciplinary subjects such as: Ageing, Leadership, Genomics and Public Health and Social Anthropology are vaguely present in or are even absent from the training of Bachelors in PH in Europe. Psychology is more frequently present - in two thirds of the analysed institutions in both regions. In Eastern Europe, in all studies programmes training in Physiology is envisaged and the following disciplines are extensively presented: Ethics and Human Rights, and Health Law and Deontology. In Bulgarian higher education medical schools, the disciplines from this group not included in the training are: Social Anthropology, Leadership, and Genomics and Public Health.

Sixth area: “Practical Training”

The practical training includes two major elements: „Academic Practicum and Pre-graduation Internship“ and “Practical Exercises” to the theoretical part of the disciplines. Training in this area is more widely presented in the countries from Eastern Europe. In one third of the programmes from Western Europe, according to the questionnaire results “Practicum and Internship” is missing. These are Denmark, Great Britain and Turkey. In the same programmes the conducting of practical classes is not envisaged according to data from the questionnaire.

Others

In area seven “Others” obligatory disciplines are included according to the regulations in Bulgaria, which do not fall within the six major areas of PH according to ASPHER but are studied in the country. According to the survey, only Foreign Languages and Anatomy are studied in Western European higher education institutions. All remaining disciplines such as: Surgery, Latin, Sanitary and Technical Sciences, Sport, Radiology, Pediatrics, Internal Diseases and Disaster Medicine are almost missing in west European programmes. In Eastern Europe, disciplines most often studied are Anatomy and Foreign Languages. A large part of the remaining subjects: Pediatrics, Surgery and Latin are taught but with a small number of teaching hours. This indicates the presence of a substantial differences between the European criteria for training in PH and the regulated requirements in Bulgaria. The latter need urgent reform and updating so that they conform with the present priorities and changes in the public health sector.

3. CONCLUSION

The analysis of the contents of undergraduate programmes in PH in Europe according to the main areas recommended by ASPHER proved that all major areas are present in the programmes both in Western and in Eastern Europe. Up-to-date disciplines related to modern-day challenges such as Health Inequalities, Global Health, Information Technologies and Systems, Ageing, Leadership and Management, Qualitative Research Methods and Genomics and Public Health, are weakly present in both European regions. In the central focus of training in PH in Bulgaria and the countries from Eastern Europe are the specialized prevention disciplines related to hygiene and epidemiology of communicable diseases and a considerable number of clinical disciplines. The latter are absent from the training in Western European programmes, which are more oriented towards health policy and management.

The new goals of education in PH are that it should contribute to reducing the disease load, increasing the life expectancy, maintaining equal access to health services and coping with the global challenges in the area of PH. In this context, there is an urgent need of regulating the training in public health as a main health profession in the European Union, which will lead to standardization of the content of Bachelor’s education and will stimulate the recognizability and importance of the profession in today’s world full of challenges to the protection of our health and lives.

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