

From the training of paramedics to the training of public health inspectors at the Faculty of Health Sciences of the Semmelweis University and in its legal predecessor institutions

Doctoral theses

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1 INTRODUCTION

Several research findings report diseases related to the unsatisfactory public health and epidemiological situation experienced during the history of the world and of Hungary, their prevention and the evolution of health maintenance and public health services, and the results achieved. These give details of the most significant events that affected public health in the previous periods and urged dedicated physicians and government officials of the given era to act to improve public health. In their findings they reveal the goals and duties of associations, organisations and societies engaged in or linked to public health through professional or organisational ties, approaching the topic from the perspective of the more significant physician representatives and medical officers of public health. In Hungary the training of public health professionals without a physician's degree has a history of over 60 years. However, little has been written about these public health professionals, – the conditions of the evolution of this profession, the training of these specialists and the development in such education, as well as changes in the competences of the qualified professionals – who assisted public health physicians in their work with thorough theoretical background and practical skills and undoubtedly contributed to and became part of Hungarian public health achievements.

The training of professionals previously coined as “public health and epidemiology inspectors”, then as “public health epidemiology supervisors”, and today know as “public health inspectors” was raised to the level of higher education in 1975, thus gaining the place it deserves in vocational education.

2. OBJECTIVES

The fundamental objective of my research is to process and sum up the history of training public health professionals at a secondary, and then higher level at the Faculty of Health Sciences of the Semmelweis University and in its legal predecessor institutions from the start of education to this day.

I describe the circumstances that justified changes in training, and the compliance of these changes with the professional requirements expected in the relevant periods.

Another aim was to analyse the concepts of students who participated in public health training in the 2012-2013 schoolyear about their profession after their graduation.

To accomplish the task, I set the following goals:

1. to examine the processing and analyses of changes in the training conditions and curricula, and the conclusions drawn, in view of the legislative changes in the various periods, in order to clarify the reasons that triggered changes in the content and duration of the training. In order to reveal how far the outcomes of such changes meet the current professional expectations, I analysed:
 - a) the criteria of admission to start such studies,
 - b) changes in the curricula structure,
 - c) the modifications in the subjects taught and in their content,
 - d) changes in the ratio of the number of theoretical and practical classes,
 - e) changes in the form and proportions of exams,

2. with a view to changes in the legislation regulating public health tasks, to analyse the Training Outcome Competencies over the course of training,
3. to examine and analyse if the performance of the statutory duties and the competencies of the graduates are in agreement with the current requirements and the extent to which training serves the professional expectations, and draw conclusions,
4. to assess, analyse and draw conclusions about the ideas of the students who participated in the 2012-2013 public health inspector training of the Faculty of Health Sciences, Semmelweis University (FHS-SU), concerning postgraduate studies and their intentions to find a job.

3. METHOD

3.1 Study of the History of Training Public Health Professionals

I revealed past events and accomplished my fundamental goal using a secondary information gathering method, i.e. qualitative analysis, which included the collection, classification, substantive and comparative analysis of literature data. In addition to the materials found in libraries and archives (books and journals), I also consider the archive materials of the predecessors of FHS-SU, training curricula, the statues determining the training outcome competences, the act about Hungarian higher education and its enacting government decree, the provisions of the Bologna Declaration as well as any other legal materials related to the topic as reference sources.

3.1.1. Phases

- Information gathering.

- Literature analysis, classification and processing.
- Information and data analysis and evaluation.
- Summary and conclusions.

In this study I use the terms “training school for physician assistants” and “school for physician assistants” based on the text on the school’s official stamp and the “Transcript of Records” document, and the term “physician assistant” as it is used in them. The spelling of the words *hygienic* (in Hungarian) follows the original spelling used in the sources. The majority of the materials in the Library and Archives of the Semmelweis Museum of Medical History is moderately organised.

Materials studied: Two of the documents can be considered fundamental and decisive in starting physician assistant training.

- One of them is the “Data for the Organisational Resolutions on Feldshers”, or the “soviet material”.
- The material entitled “Instruction for Training Physician Assistants”, compiled by the secretary of state of the Ministry of Health of the Government of the German Democratic Republic after their 20 June 1952 decision.

3.2 Questionnaire Test of Public Health Inspector Students

Primary data collection included the questionnaire method. All students participating in the FHS-SU public health inspector training with an active status in the second term of the 2012-2013 schoolyear were included in the test. As data from the voluntarily completed questionnaire were managed and processed anonymously, the questionnaire did not contain any sign or reference suitable for identifica-

tion. The questionnaire was completely developed by myself and included 35 questions in the following structure:

- A group of general questions about social and demographic data.
- A group of questions related to studies.
- A group of questions concerning ideas about plans after the completion of studies.

The overwhelming majority of the questions were closed, and some questions could be given several responses. In the latter question types, this information appeared next to the question.

3.2.1. Method of analysis

The data was analysed by descriptive statistical methods and statistical tests suitable for the demonstration of correlations. In the case of categorical variables, the number (N) and frequency (%) of cases were specified. In the case of continuous variables, I used the number of elements, the average, the standard deviation, the 95% confidence interval and the minimum and maximum values. I checked the significance of the test hypothesis by Fisher's exact test or Chi-square test in the case of 2x2 cross tables. If during the analysis of a correlation, the expected number of elements in any cell of the cross table falls below $N=5$, I combined the variables in a lower category until the expected number of elements was at least 5 persons in a cell, or the cross table was not bigger than 2x2. For the purposes of statistical analysis, I used the IBM-SPSS v. 19.0 software package. The figures of the study were made with the help of Microsoft Excel 2007.

4. FINDINGS

4.1. Training Public Health Professionals at the FHS-SU and at its Legal Predecessors

4.1.1. Training Physician Assistants

Pursuant to Resolution No. 506/15/1953 of the Council of Ministers of the Hungarian People's Republic, a 3-year "boarding" school officially named as "School for Physician Assistants" was opened at 48 San Marco Street, District 3 of Budapest, Hungary. The purpose of the training was, among others, to familiarise students with subjects of common knowledge, including general knowledge and specific skills for physician assistants with the aim to make this physician assistant certificate "equivalent" to a "grammar school leaving certificate". The training objectives included the transfer of duties not conditional on medical qualifications to relieve practitioners; the performance of healthcare duties under the supervision of physicians in areas without doctors, and participation in the activities of Public Health and Epidemiological Stations, the healthcare groups of district offices and county healthcare departments. When the training was launched, the rights and obligations of physician assistants, the general duties of physician assistants, the interventions they were allowed to make and the duties of hygienists were determined. In 1953, the training could be started by anyone who had completed 8 years in the elementary school. In 1954 this requirement was completed with an entrance exam (written and oral), and in 1955 the training was already made subject to a successful secondary school leaving examination. However, barely two years after the start of this training programme, several options were available for training phy-

sician assistants. Qualifications and certifications changed according to the diversity of training programmes. During the short period of physician assistant training, a total of 181 students were granted certificates.

4.1.2. Two-Year Public Health and Epidemiology Inspector Training

Instruction No. 42/1960 (Health Bulletin 24) of the Minister of Health on the registration of physician feldshers transformed physician assistant training programs into public health and epidemiology inspector training. Having re-organised physician assistant training, the training of public health inspectors started in Hungary in the 1956-1957 school year at an unchanged venue, but the school was renamed “Fodor József Vocational State School of Healthcare”. The requirements of training public health inspectors were given in Instruction No. 42/1960 (Health Bulletin 24) of the Minister of Health on the “Registration of Public Health Inspectors”. The statute set the duration of training at 2 years in the case of full-time education and at 3 years for training parallel to work. The preconditions of starting the training included a secondary-school leaving certificate and an entrance exam. The subjects taught and the exam included professional subjects. Following a successful qualification exam, the students could use the title “chartered public health inspector”.

4.1.3. College-Level Training at FHS-SU and its Predecessor Institutions

The higher-level training of public health professionals could start at the College of Healthcare in Hungary in September 1975, pursuant

to Section 3 c) of Law-Decree 32 of the Presidential Council of the People's Republic of Hungary and to Decision No. 1046/1973 (XII. 29.) of the Council of Ministers on faculties operating within the framework of the Continuing Medical Education Institute. The College remained the single institute in Hungary that trained people in this profession, at an unchanged place. The objectives of training public health and epidemiology inspectors and their duties were specified in detail in the first curriculum. Those who had obtained vocational school certificates could enrol for supplementary training from 1977, and 1211 persons were granted college degrees in this framework. After Act XI of 1991 on the National Public Health and Medical Officer Service and Decree No. 7/1991 (IV. 26.) of the Minister for Public Welfare on the Organisation and Operation of the Public Health and Medical Service were promulgated, in the degree obtained by the graduates the name of the profession was changed from "public health inspector" to "public health supervisor". From the 1993-1994 school year, the duration of the training was increased to four years. Credit-based training was introduced in the 2002-2003 school year in a phasing-out system. A two-cycle training corresponding to the Bologna System started in the 2006-2007 school year, and the traditional basic college training was simultaneously phased out. In the two-cycle training, the degree obtained after a basic level training is called a Bachelor of Science (hereinafter: Bsc). The new training system includes majors broken down to specialisations. As a result, the training of public health professionals started at the Healthcare and Prevention major, Public Health Inspector spe-

cialisation (basic training / basic degree), in a phase-out system, through changes in the curriculum.

4.2. The Competency Level and Employment Opportunities of Public Health Professionals

During the time of physician assistant training, the training plan failed to specify the graduates' competencies. Nevertheless, based on the activities, the duties of physician assistants were accurately set and easy to define. At the start of the training, the term "physician assistant" became specialised, as the prevailing health policy concepts tended to split into three distinct jobs: hygienist, plant physician assistant and emergency physician assistant. However, from the 1956-1957 school year, Instruction No. 23/1957 (EÜ.K.11) of the Minister of Health clearly specified, among others, the jobs the holder ("physician feldsher") of a certificate of competency (literally called "physician feldsher's warrant") was entitled to fill. On completion of studies, they primarily found jobs in public healthcare, with the exception of those who obtained a degree as emergency physician assistants. Regarding public health and epidemiology inspectors, Instruction No. 42/1960. (Eü.K.24.) of the Minister of Health about the qualification of public health and epidemiology inspectors failed to specify the purpose of the training and the duties to be accomplished during training, or to define the competencies, but the description of the qualification referred precisely to the job that could be filled. The eligibility for filling a job as a public health and epidemiology inspector trained under the completely different name of "physician assistant" was clarified in Instruction N. 43/1960. (Eü.K.24) of the Minister of Health on the registration of physician

feldshers. As according to the final Organisational and Operating Rules, a public health and epidemiology inspector holding a secondary qualification did not have independent authority powers, such inspectors only attended to operative, public health, epidemiological and health preservation duties. Thus, professionals for the public health authority, which had undergone several organisational transformations, continued to be trained at the secondary public health and epidemiology inspectors' training. When college-level training started, in addition to objectives, the knowledge and the aptitude criteria were also formulated. The graduates' competencies, training and output requirements were defined for the first time in College Curriculum No. 53.389/1975. (No. X.), issued in agreement with the Ministry of Education. The graduates had extensive knowledge, but only peers were aware of this fact, and so in the period between 1975 and 1991 they were predominantly employed in the organisational units responsible for public health authority duties as well as in hospitals. The 1991 Act also modified the authority powers of public health supervisors and subsequently, as stipulated in Section 5 (2) of Decree No. 7/1991 (IV. 26.) of the Minister of Public Welfare, the public health supervisor was authorised to exercise authority powers during the performance of the tasks specified by the county and city medical officer, but (set out in three sub-sections,) he was not entitled to proceed in matters that only come under the medical officer's powers. For the very first time, the content elements of the current sense of the "knowledge" and "skills" obtained in the course of the training were set in a statute in Government Decree No. 36/1996. (III.5.) on the criteria of the various basic training specialisations in

public healthcare higher education. Following the start of two-cycle education, Decree No.15/2006. (IV.3.) of the Minister of Education on the training and output requirements of degree and master's courses set the specific competencies expected in the degree courses of public healthcare and prevention irrespectively of the specialisation. At present training and output requirements are specified in the Decree No. 18/2016 (VIII.5.) of the Minister of Human Resources, amending Decree No. 8/2013 (I. 30.) of the Minister of Human Resources on the common requirements of teacher training and output requirements for individual degree courses for teachers. The latter statute, concepts "knowledge", "ability" and "suitability" defined Decree No. 15/2006 (IV. 3.) of the Minister of Education are replaced by the terms "knowledge", "skills", "attitudes", "autonomy" and "responsibility", also defined in Government Decree No. 1229/2012.(VII.6.). The changes that took place in the set-up of the health administration authority in the years to follow the turn of the millennia had an impact on the fields and opportunities of work. Meanwhile, demand for people with public health and epidemiology inspector qualifications (knowledge and ability) also appeared in the private economy, offering alternative opportunities additional to hospital epidemiology at authorities and healthcare institutions.

4.3. Views of FHS-SU Public Health Inspector Students About Continuing Studies and Undertaking Employment

The research findings reflect the opinions of public health inspector students of an *active status* in the second term of the 2012-2013 school year. The total number of students was 297 (full-time students: n=190, part-time training: n=107). Of this headcount, 220

full-time and part-time students participated in the survey, representing 74.1% of the active students. The average age of all the respondents was 26.06 years, with the youngest being 18 and the oldest 58 years of age. According to gender distribution (N=215), 89.3% of the respondents were female and 10.7% were male. The main motivational factor of application (N=220) was interest in the topic (84.4%), followed by “labour market prospects” (49.1%), and only 17.4% of the respondents (38 persons) indicated that the reason why they studied this subject was that this was the place they were admitted to. In relation to the subsequent evaluation of the grounding of motivational factors (N=218), more than half of the students thought that the motives they specified were confirmed during the training period. 84.9% (185 persons) of all the student asked and all the respondents (N=218) thought that based on their studies and experiences gained so far, the motivational factors attracting them to the profession have increased. Only 15.1% (33 persons) of the responding students said that their motives towards the profession have not increased. A significantly higher ratio of the respondents who had specified interest in the topic among the motivational factors responded that their motivational factors were – at least partly – grounded, and the significance level of the Fisher exact test was $p=0.001$, representing a medium strong correlation ($\Phi=-0.280$). The separate analyses of the correlation between the various motivational factors of application to this major and increase in the number of motivational factors fail to reveal any significant correlation in any of the cases, the significance level of the Fisher exact test was $p=0.334$, $p=0.941$, $p=0.678$, $p=0.263$, respectively. Most of those

who clearly plan to continue their studies (N=114) wish to stay in Hungary (96=84.2%), and only a very small ratio (3=2.6%) are willing to continue their studies abroad. Based on their ideas about the planned place of work, 72.8% (N=158) of all the respondents (N=217) intend to stay in Hungary. Employment abroad is planned by 9.2% (N=20) and 18.0% (N=39) have not made up their minds yet. In the case of employment in Hungary, the highest ratio of the students (46.2%, N=73) would find employment in public service. After finishing their studies, 72.4% (N=157) of the students want to be employed in a job corresponding to the profession they have studied, whether full-time or part-time students. A significantly higher ratio of the students who experienced an increase in their motivational factors during their studies intend to undertake employment corresponding to their qualifications. The significance level of the Fisher exact test is $p=0.015$; the correlation is medium strong ($\Phi=0.219$). However, no significant correlation can be demonstrated between the number of students who experienced an increase in their motivational factors during their studies and the plans to continue studies in topics related to the studies done so far. The significance level of the Fisher exact test is $p=0.171$. The students who intend to choose a job corresponding to their current studies (N=156) specified extremely diverse employers. The highest proportion (35.9%, N=56) would choose the Public Health Administration Organisation of Government Offices (Kormányhivatalok Népegészségügyi Szakigazgatási Szerve). Another 10.3% (N=16) preferred the National Food Chain - Safety Office (Nemzeti Élelmiszerlánc - biztonsági Hivatal), and 20.5% (N=32) opted for the private

sector. An analysis of the correlation between the factors of motives for applying to this major, separately, and plans for an employment in a job corresponding to the current studies, no significant correlation was found in any case. The significance level of the Fisher exact test was $p=0.114$, $p=0.656$, $p=0.128$, and $p=0.604$, respectively.

5. CONCLUSIONS

Training Public Health Professionals

I. The start of physician assistant (feldsher) training correlates with the demand arising from the epidemiological conditions that followed World War II, but it was also due to a health policy intention. The purpose of physician assistant training and the duties of these professionals were specified primarily on the basis of the experiences obtained in the Soviet Union.

In addition to the numerous identical features between the soviet pattern used as the primary example and the practice of Hungarian training (in general, the rights and the purpose and duties of the training), the fundamental differences included the term “physician assistant” and the division of physician assistant rights of into several specialisations.

In the period between 1953 and 1957, changes can be established in the training of physician assistants with the aim to improve quality, and a kind of reflection period can be detected in differentiation in order to set up the appropriate form of training.

II. Training public health and epidemiology inspectors: The fact that – in contrast to physician assistant training – every element in the training of public health and epidemiology inspectors was regulated in a statute, namely Decree No. 42/1960. (E. K.24.) of the Minister

of Health suggests the restoration of professionalism in public administration.

The compilation of subjects taught was expressly directed at the performance of prevention public health activities. Increase in their number confirmed continuous development in the training, in adjustment to the requirements of the profession and practical work.

III. College training: The introduction of college-level training in healthcare also represented meeting a social demand.

A comparison of the fundamental expectations from the physician–feldsher training, from the two-year training and from college-graduate public health and epidemiology inspectors, one of the *most important identical features* includes independent work under a physician’s supervision. *However, additional expectations from college graduates* also included the independent organisation of work, the management of work done by the staff reporting to them, and the ability to assume and accomplish tasks from university graduates. The criterion of assuming “independent responsibility” was formulated as a fundamental expectation from higher education.

During the 40 years of college training, the training was characterised by the uninterrupted upgrading of theoretical and practical knowledge.

The regular reviews of curricular and subject description made in the past few years and the multiple-cycle training served the aim of the more successful and more efficient achievement of the objectives of the Bologna process well.

When the training of professionals started, the training programme was compiled intuitively. Hungary’s joining the Bologna process of

the European Union, and the standards compiled as a result of the work done by higher education movements resulted in the materialisation of systemic approach in the compilation of training programmes, educational programmes are made in accordance with the provisions of these standards.

Graduate Competencies

In the cases of the physician assistant training and the two-year training, all that can be considered feasible from among the objectives and the duties of graduates (in the current sense of the term) are the competencies required of them. Having analysed the objectives, the duties of graduates and the subjects taught, I established that the extent of knowledge, the skills and abilities were also determined by expectations of the era, despite the fact that these were not laid down in statutes or other written materials.

The features characterising the various levels of qualification and set out in statutes (Government Decree No. 36/1996.(III.5.), Decree No. 15/2006.(IV.3.) of the Minister of Education and Decree No. 18/2006 of the Minister of Human Resources) changed and were expanded. Their content elements improved in order to meet the professional expectations arising from the statutory changes. On the one hand, the content elements of the 2006 decree followed the statutory changes and professional expectations serving as a basis for the public health activity. On the other, qualified public health inspectors were expected to have the competencies necessary for participation in the management of and solution for the altered epidemiological situation.

In the course of secondary school training, on completion of higher education, a semi-skilled specialist becomes an expert capable of independent professional thinking and decision-making, who can be considered as a peer in the supply system.

For the specialists who graduated between 1975 and 1991, the various employment areas included organisational units and hospitals also engaged in public health authority tasks. However, during the years to follow the change of regime, demand for qualified professionals also emerged in the private sector.

The problems to be solved in the next period include the task of making graduates capable - based on their competencies - of performing several tasks not yet regulated in statutes.

Students Involved in the Research

Their overwhelming majority (84%) applied for the training because they were interested in this profession. After I have processed the history of this training, in my opinion this is a positive fact.

According to the answers given by 30% of the respondents, one of the motivational factors was that they “heard good things about the training”. This should be taken into consideration in the FHS-SU’s future plans. The future plan should reasonably demonstrate developments that result in more than the current 57% of the students saying that “each factor that prompted application to this training was grounded”. As an additional positive feature in terms of the success and efficiency of the training is the fact that more than half of the students who participated in the survey plans to continue his or her studies in relation to their current studies.

Based on the survey, planning work abroad is not characteristic.

After the examinations, 72.4% of the students intend to work in a job corresponding to their current studies.

Employment by public health authorities remains in the focus of students' thinking, as 35.9% of them (N=56) chose the Public Health Administration Organisation of Government Offices.

5.1. New Findings in this Study

1. I was the first to process the evolution of the profession termed as “public health and epidemiology inspector / supervisor”, and the conditions and justification of its formation.
2. I was the first to sum up the various phases in training public health inspectors / supervisors, in respect, primarily, of the statutory changes influencing them.
3. Through the demonstration and analysis of changes in the curricula, I described the way the training complied with the requirements set for qualified experts during the past 60 years as a result of the social, economic and primarily statutory changes. Regarding the training of public health and epidemiology inspectors, I am not aware of any analysis of this duration and these correlations.
4. I detailed the input concepts/requirements of the various phases of training public health professionals, looking back to a 63 years long history in 2016, the reasons for the changes, and the output concepts/requirements about which a summary of this type has not been made.
5. I was the first to give a summary of the changes in the competencies, with special focus on the statutory changes concerning the job opportunities of public health professionals and on the actual oppor-

tunities. I did not find any previously published analysis made in this perspective.

6. I was the first to conduct a representative test among the students of public health inspector training at FHS-SU about the application motives and their ideas about their future after completion of their studies, with special focus on the studied specialisation.

6 AUTHOR'S PUBLICATIONS

Other original publications on topics related to the thesis

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