

EDUCATIONAL NEEDS IN POST GRADUATE PUBLIC HEALTH MEDICINE SPECIALTY TRAINING IN NOVEL CORONAVIRUS DISEASE (COVID-19) FIGHT

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ABSTRACT

Objective: The aim of this study was to evaluate the educational needs of public health specialists and students in training during the COVID-19 pandemic. The curriculum of the public health specialty education was assessed in terms of responsiveness to problems during a pandemic.

Material and Method: Data was collected from public health specialists and students within the context of Public Health Proficiency Board monitoring and evaluation work, using a data collection form created on a web-based platform between 12 and 31 May 2020.

Results: Among 170 participants, 57 were specialists and 133 were in training to be specialists. Of the participants, 67.6% female and 32.4% male. Participating in this

study during a time of pandemic, 89.4% stated that they worked in the frontlines in pandemic control. Of these 71.8% (n=109) stated that they faced difficulties during the pandemic. Top two difficulties were burnout (n=59) and anxiety of contracting the disease (n=58). Specialty training was sufficient according to 26% of the participants. Residents of public health specialty training program and graduates of the program differed in their views of the content of specialty training (p=0.04).

Conclusion: In conclusion, we find it advisable to organize training activities to address the educational needs of students' training in public health that emerged during the pandemic process.

Keywords: Public health, education (public health), proficiency, pandemic, COVID-19.

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YENİ KORONAVİRÜS HASTALIĞI (COVID-19) MÜCADELESİNDE MEZUNİYET SONRASI TIPTA HALK SAĞLIĞI UZMANLIK EĞİTİMİ GEREKSİNİMLERİ

ÖZET

Amaç: Bu çalışmanın amacı, COVID-19 salgını sırasında halk sağlığı uzmanlarının ve uzmanlık eğitimini sürdüren hekimlerin eğitim ihtiyaçlarını değerlendirmektir. Bu amaçla, uzmanlık eğitimi müfredatı, süreçteki sorunları tespit etmek ve çözüm önerileri geliştirmek amacıyla pandemi sırasındaki sorunlara yanıt verme açısından değerlendirilmiştir.

Materyal ve Metot: Araştırmanın verileri 12 ve 31 Mayıs 2020 tarihleri arasında web tabanlı bir platformda oluşturulan veri toplama formu kullanılarak Halk Sağlığı Yeterlilik Kurulu izleme ve değerlendirme çalışması kapsamında halk sağlığı uzmanları ve öğrencilerden toplanmıştır. 170 katılımcının 57'si uzman ve 133'ü uzmanlık öğrencisidir.

Bulgular: Katılımcıların %67,6'sı kadın ve %32,4'ü erkektir. Bu çalışmaya bir pandemi zamanında katılanların %89,4'ü pandemi kontrolünde ön saflarda çalıştıklarını belirtmişlerdir. Bunlardan %71,8'i (n=109) pandemi sürecinde zorluklarla karşılaştığını belirtmiştir. İlk iki zorluk tükenmişlik (n=59), hastalığa yakalanma kaygısı (n=58) olmuştur. Katılımcıların %26'sına göre uzmanlık eğitimi yeterlidir. Uzmanlık eğitimi alan öğrenciler ve bu eğitimi tamamlayan uzmanlar, uzmanlık eğitiminin içeriğine ilişkin görüşlerinde farklılık gösterdi. Önceki grupta eğitim içeriğini “yeterli” bulanların oranı daha düşüktü. Gruplar arasındaki fark istatistiksel olarak anlamlı bulundu ($p=0,04$).

Sonuç: Sonuç olarak, öğrencilerin pandemi sürecinde ortaya çıkan halk sağlığı eğitimi kapsamındaki eğitim ihtiyaçlarını karşılamak için eğitim etkinlikleri düzenlemeyi uygun buluyoruz.

Anahtar kelimeler: Halk sağlığı, eğitim (halk sağlığı), yeterlik, pandemi, COVID-19.

INTRODUCTION

In circumstances of a pandemic such as the Novel Coronavirus Disease (COVID-19), healthcare professionals working in the frontlines are the occupational group at the highest risk. Public health is the most important medical specialty in epidemic and pandemic management. In the process that began with the World Health Organization (WHO) declaring an emergency status by January 30, 2020 due to COVID-19 and finally declaring it a pandemic on March 11, 2020, the first case in Türkiye was reported on March 10, 2020, which was followed by the implementation of pandemic measures and the creation of pandemic boards at province level from April 13. According to the report of the Association of Public Health Specialists (HASUDER) dated April 4, 2020, public health specialists were commissioned in less than half of these Provincial Pandemic Boards.¹

In Türkiye, specialty training in public health medicine is based on a program developed according to the Public Health Specialists Core Curriculum (PH-SCC) approved by the National Council of Medical Specialization (TUK).² Infectious diseases and outbreaks constitute a special topic within the scope of this program, which defines the knowledge, skills, and attitudes a candidate must acquire at minimum for the successful completion of the specialty training.

Therefore, there are no unknowns in the core competencies expected of a graduate of this program. The purpose of this education is defined in the curriculum itself as to “provide physicians with the knowledge and skills required to protect, develop, and improve public health in communities they serve”.³ Therefore, public health specialty education gives the specialist the responsibility to protect, develop, and improve the health of the society in all matters including outbreaks. Novel Coronavirus Disease sparked debate on medical and specialty training in Türkiye, as elsewhere in the world, with a plethora of new discussions, opinions, and research taking its place in the scientific literature.^{4,5} From this point of view, evaluation of the education provided as per the PH-SCC in Türkiye by public health specialists and students under pandemic conditions can contribute objectively to any possible revisions and updates in this education.

Consequently, this study was conducted to evaluate the educational needs of public health specialists and students in training during the COVID-19 pandemic and to this end, the curriculum of the specialty education was assessed in terms of responsiveness to problems during a pandemic with a view to identifying current problems in the process and to developing solution suggestions.

| Table 1. Information on some participant characteristics and their active duty during the pandemic (May 12-31, 2020) | | |
|---|---------------|-------------------|
| Characteristics | Number | Percentage |
| Sex | | |
| Male | 55 | 32.4 |
| Female | 115 | 67.6 |
| Age | | |
| Mean±SD** | 31.7±6.7 | |
| Median | 30 | |
| Length of time in practice (years) | | |
| Mean±sd | 7.6±6.6 | |
| Median | 5 | |
| Specialty status | | |
| Specialist | 57 | 33.5 |
| In training | 113 | 66.5 |
| Active duty | | |
| No | 18 | 10.6 |
| Yes | 152 | 89.4 |
| Places of duty (n=152) | | |
| Triage, outpatient clinic, infection control committee etc. related to the pandemic | 92 | 60.5 |
| Province Health Directorate | 32 | 21.0 |
| County Health Directorate | 23 | 15.1 |
| Public Health Institution | 8 | 5.3 |
| Contact tracing (n=170) | | |
| No | 82 | 48.2 |
| Yes | 88 | 51.8 |
| Encountered any difficulty (n=152) | | |
| No | 43 | 28.2 |
| Yes | 109 | 71.8 |
| Nature of difficulty* | | |
| Burnout | 59 | 54.1 |
| Anxiety to contract disease | 58 | 53.2 |
| Anxiety to infect others | 48 | 44.0 |
| Compliance with social distance | 45 | 41.3 |
| Insufficient PPE** | 33 | 30.3 |
| Colleagues-bullying, working in another field, feelings of inadequacy, adaptation problem | 18 | 16.5 |
| Coping strategies* | | |
| Devised own solution | 89 | 81.6 |
| Solved within the organization | 22 | 20.2 |
| Unsuccessfully sought solution within the organization | 1 | 0.1 |
| *Multiple answers were allowed, **SD: standard deviation, PPE: Personal Protective Equipment | | |

MATERIAL AND METHOD

Participants

For this study, we reached public health specialists and students within the context of Public Health Proficiency Board monitoring and evaluation work, using a data collection form created and published on the platform “Survey Monkey” between May 12 and May 31, 2020. Both groups are in an electronic mail network.⁶ A total of 170 public health specialists and students participated in the study. Among these participants, 57 were specialists and 133 were training to be specialists.

Participation was voluntary and no personal information was collected through the data collection form. As this is among the routine responsibilities of the Public Health Proficiency Board performed with the aim of providing a needs-analysis for the planning of in-service trainings, ethics committee approval was not obtained for the study. Data collection forms were delivered through the internal e-mail communication groups of the Association of Public Health Specialists. Statistical analysis was performed by using Statistical Package for the Social Sciences (SPSS) v.23.0 program. Data were presented in numbers and percentages.

Comparisons between groups were performed with analysis of non-parametric test (Chi-square test). A value of $p<0.05$ was considered statistically significant.

RESULTS

The gender of the participants was 67.6% female and 32.4% male. Mean age was 31.7±6.7 and the median was 30. Mean length of time in medical practice was 7.6 years. In line with the purpose of the study, there was a high degree of participation by young public health specialists and students in specialist training (Table 1).

Participating in this study during a time of pandemic, 89.4% stated that they worked in the frontlines in pandemic control. Places of duty were the hospital environment for 60.5% (including triage, outpatient clinic, or infection control committee), Province Health Directorate (21.0%), and County Health Directorate (15.1%). The frequency of contact tracing was 51.8% in all participants (Table 1).

During the pandemic, both public health specialists and residents worked completely outside their normal

routines. While 54.1% (n=92) maintained normal and flexible working hours, 40.6% (n=69) worked 12 hours a day and had overtime duty including weekends and 14 people (8.2%) who were in the group with the most contact tracing work reported to work full time without any concept of overtime.

Of these 71.8% (n=109) stated that they faced difficulties during the pandemic process. Top three difficulties were burnout (n=59), anxiety of contracting the disease (n=58), and anxiety to infect others (n=48). These are followed by the difficulty to comply with social distancing (n=45) and insufficient PPE (personal protective equipment) (n=33).

As a way of coping with these difficulties, 89 physicians stated they had to devise their own solutions and 22 physicians were able to find solution within the institutional structure (Table 2).

110 physicians reported change of behavior in the pandemic process. Staying at home and minding social distance were the most frequent behavior changes. The frequency of staying in another place rather than home during the work was 9.8% (Table 2).

While 48.2% of the participants received adaptation training during the pandemic process, 51.8% did not receive any training. Of those who received training, 36.6% found it to be sufficient. Their opinions were also obtained on the proficiency of the specialty training for a process of pandemic. Specialty training was sufficient according to 26% of the participants and not sufficient according to 27%. Participants who had no idea about this issue were 30.5% (Table 2).

Based on their experience in the pandemic process, 71.7% of the participants expected specialist training content to be pertinent to an outbreak management in practice and studied through scenarios and simulation techniques (the content of such training should include analysis of the outbreak, surveillance and contact tracing, preparation and implementation of a pandemic plan, emergency action planning, interpretation of an outbreak curve, and crisis management). Of the participants, 11.1% stated the need for a training on mathematical modeling for the epidemiology of infectious diseases, 3.9% mentioned epidemic epidemiology, and 9.1% emphasized communication in the work environment and public health education for the community (Table 2).

| Table 2. Change of place and behavior during the pandemic process and characteristics of the training on pandemic and satisfaction with the training process (May 12-31, 2020) | | |
|---|---------------|-------------------|
| Characteristics | Number | Percentage |
| Household members (n=170) | | |
| Family (spouse, children, parents) | 116 | 68.2 |
| Alone | 44 | 25.9 |
| Roommate | 4 | 2.4 |
| Other (no details given) | 6 | 3.5 |
| Change of behavior (n=152)* | | |
| Staying at home, minding social distance | 45 | 29.6 |
| Living alone | 41 | 26.9 |
| No change of behavior | 41 | 26.9 |
| Avoiding contact with household members during the period of active work, staying outside home | 9 | 5.9 |
| Stayed outside home | 6 | 3.9 |
| Existence of a pandemic training where participants work (n=170) | | |
| No | 88 | 51.8 |
| Yes | 82 | 48.2 |
| Satisfaction status about the training (n=82) | | |
| No | 52 | 63.4 |
| Yes | 30 | 36.6 |
| Thoughts of the participants on the pandemic training content of the public health residency program where they are actively affiliated, or they have been graduated (n=170) | | |
| Not satisfied | 46 | 27.0 |
| No idea | 52 | 30.5 |
| Satisfied | 44 | 26.0 |
| Declared "no educational content" | 28 | 16.5 |
| Content expectations of the participants* | | |
| Outbreak management | 109 | 71.7 |
| Epidemiology of infectious diseases | 17 | 11.1 |
| Training to solve communication problems | 8 | 5.2 |
| Modeling | 6 | 3.9 |
| Personnel, other health worker, community education (2), work definition of the public health specialist (1), software (1), COVID-19 (1), disaster management (1) | 6 | 3.9 |
| Proficient education | 4 | 2.6 |
| Satisfaction with being a graduate or a resident of public health specialty program (n=170) | | |
| Satisfied | 98 | 57.6 |
| No idea | 44 | 25.9 |
| Unsatisfied | 28 | 16.5 |
| *Percentages were calculated over 152 people who were in active service. | | |

| Table 3. Opinion on the proficiency of the specialty training content based on specialist status (May 12-31, 2020) | | | | | | | | | | | |
|---|------------------------|------------|------------|------------|---------|------------|---------------|------------|--------|------------|-------|
| Specialty training completion status | Opinion on proficiency | | | | | | | | | | p |
| | Adequate | | Inadequate | | Neutral | | Not addressed | | Total | | 0,004 |
| | Number | Percentage | Number | Percentage | Number | Percentage | Number | Percentage | Number | Percentage | |
| Completed, public health specialist | 22 | 38.6 | 19 | 33.3 | 10 | 17.5 | 6 | 10.5 | 57 | 33.5 | |
| Not completed, still affiliated with a residency program | 22 | 19.5 | 27 | 23.9 | 42 | 37.2 | 22 | 19.5 | 113 | 65.5 | |
| Total | 44 | 25.9 | 46 | 27.1 | 52 | 30.6 | 28 | 16.5 | 170 | 100.0 | |
| Chi-square: 13.2 | | | | | | | | | | | |

Despite the difficult working conditions in the pandemic process, 57.6% of the public health professionals reported to be satisfied with their working fields, whereas 16.5% said they were not satisfied (Table 2).

Residents of public health specialty training program and graduates of the program (public health specialists) differed in their views of the content of specialty training. The percentage of those who found the training content “proficient” was lower among residents compared to the graduates. The difference between groups was found statistically significant ($p=0.04$) (Table 3).

DISCUSSION

Among the public health specialists and students in specialist training who participated in this study, 88.8% of the were in active service in the pandemic process, with about 61% gave patient care in triage or clinics, 37.6% working in institutions such as health administrations at the level of province or county or in a public health agency, and 52.4% worked in contact tracing. Almost half had to work for 12, even 24 hours without any breaks, worked overtime or full time in contact tracing and follow-up. In a study conducted with 72 healthcare workers in a hospital in Wuhan, China, it was found that weekly working hours of healthcare workers were over 54 hours during the pandemic and that they worked in high-risk circumstances for more than 10 hours a day.⁷

Of the participants, 73.5% reported to have encountered difficulties in the pandemic process, including insufficient personal protective equipment (PPE), burnout, and anxiety to contract and infect. It is important to add that 76.7% of them devised their own solutions, while only 19% sought solutions

within the organization is a noteworthy finding. Health professionals constitute the most important risk group in contracting disease on a global scale. They make up 2.5% of total infected patients and their mortality rate is 1.3%. In Spain 23.4% and in Italy 10.7% of all cases were reported to be healthcare workers. This rate is 19% in the United States.⁸ In a study conducted among 250 healthcare workers from 15 hospitals in Pakistan, it was found that 55% of the healthcare workers received no PPE for medical safety while in quarantine service. Furthermore, being cut off from relatives and close people in their lives is a factor of additional anxiety in healthcare workers mentally affecting them.⁹ It should be a top priority to recognize and solve the problems of healthcare workers in the frontlines in pandemic as a matter of urgency to overcome the pandemic and protect public health.

As regards the public health specialty training, one of the main objectives of the study, 48.2% of the participants were training in their place of duty during the pandemic. However, only 36.6% found this training proficient. Those who found the public health specialty training at a proficient level were 26%. The rate of public health specialists who found education proficient were 38.6%, while this rate dropped to 19.5% among specialty students in training ($p<0.05$). This reveals the need to support public healthcare professionals and specializing students in their education on pandemic, outbreak management, as well as the importance of continued education and professional development. Regarding the curriculum content, the Medical Specialization Council Curriculum Building and Standard Setting System Public Health Specialist Training Core Curriculum defined the surveillance system, outbreak control, surveillance and pandemic control as required

competencies the specialist training curriculum on September 9, 2019.³ In a report by the Public Health Proficiency Board, Commission for the Development of Training Programs, these topics were thoroughly discussed under the main headings of management of the surveillance system in public health competencies, management of the services related to infectious diseases and establishing a surveillance system in interventional competencies, planning services for outbreak control and evaluating programs divided further into 15-20 subthemes.¹⁰ Among the specialists and residents in specialty training who participated in the study, 72.7% stated that education on outbreak control was required, while 11.3% stated the need for an education on mathematical modeling for the epidemiology of infectious diseases and 4% for epidemic epidemiology, and 9.3% emphasized communication in the work environment and public health education for the community. They stated that education on these topics should be provided with practical means, including problem solving exercises, simulation, and scenarios. It is known that applied and participatory methods are more effective in every stage of education.^{11,12} As it cannot be expected all specialty training to coincide with a process of pandemic, it is of crucial importance for the Public Health Proficiency Board to plan and implement supportive training for the education needs of public health specialists and students in specialty training. Digital education has an increasingly predominant place in today's world. A study comparing digital and mixed education programs found no difference and Topor & Budson suggested a training based

on 12 main items in webinar applications after the COVID-19 pandemic.¹³⁻¹⁵ In a study conducted with 100 orthopedic residents in Chile, 30% stated that they wanted theoretical education to be provided online and 40% were for in-person education where the number of participants was fewer than 100.¹⁶

CONCLUSION

We find it advisable to organize webinars to address the educational needs of students training to specialize in the field of public health, and provide summer and winter schools, and congress courses for the thereafter within the scope of continuous education and professional development in the process of pandemic and with the participation of public health specialists. Moreover, providing outbreak management training based on visual aids, scenarios, and simulations can provide an effective training.

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*The authors declare that there are no conflicts of interest.



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