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CHALLENGES AND OPPORTUNITIES IN RESIDENTS' TRAINING DURING COVID-19 PANDEMIC: A QUALITATIVE STUDY*
COVID-19 PANDEMİSİ SIRASINDA ASİSTAN EĞİTİMİNDE KARŞILAŞILAN ZORLUKLAR VE FIRSATLAR: NİTEL BİR ÇALIŞMA

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ABSTRACT

There are limited studies reporting the opinions of residents from three main sciences which are surgical, internal medicine and basic medical sciences in Türkiye. So, we need to reveal more opinions of residents on their trainings during pandemic to manage the trainings well during emerging situations in the future. It is aimed to reveal the opinions of residents from all main sciences on their training in medicine given at Karadeniz Technical University Faculty of Medicine during the COVID-19 pandemic process. The study was designed as qualitative phenomenological study, and includes focus group interviews. It was conducted between April 2021- March 2022. Gender, department and duration of residency were taken into account in order to ensure diversity in the determination of the participants. Interviews were conducted online through the Zoom. Content analyses was done by researchers. In our study, five focus group interviews were conducted with a total of 38 residents. The five themes that emerged are as follows: changes in education; health care delivery climate; scientific activities; emotions/feelings; structural problems, in education programs. It is necessary to design the frequency, duration and content intensity of online training activities. Scientific research and thesis studies have been adversely affected by the pandemic. However, the online scientific meetings provided during the pandemic were seen as important education opportunities. 'Feeling of decreased emotional resilience' is a new emerged emotional problem. The positive developments in the attitudes and behaviors of the society towards the health professionals during the pandemic contributed positively to the emotions of the residents.

Keywords: COVID-19 pandemic, evaluation, training, qualitative study, medical residencies.

ÖZ

Türkiye'de cerrahi, dahili ve temel tıp bilimlerinde eğitim alan araştırma görevlilerinin pandemi dönemindeki eğitimlerine yönelik görüşlerini bildiren çalışmalar sınırlıdır. Bu nedenle, gelecekte ortaya çıkabilecek durumlarda eğitimleri iyi yönetebilmek için asistanların pandemi döneminde aldıkları eğitimlere ilişkin görüşlerini daha fazla ortaya koymamız gerekmektedir. Bu çalışmada, tüm bilim dallarından araştırma görevlilerinin, Karadeniz Teknik Üniversitesi Tıp Fakültesi'nde COVID-19 pandemisi sürecinde aldıkları tıp eğitimlerine ilişkin görüşlerinin ortaya çıkarılması amaçlanmıştır. Araştırma nitel fenomenolojik çalışma olarak tasarlanmış olup, odak grup görüşmelerini içermektedir. Nisan 2021-Mart 2022 tarihleri arasında gerçekleştirilen araştırmada katılımcıların belirlenmesinde çeşitliliğin sağlanması amacıyla cinsiyet, bölüm ve asistanlık süresi dikkate alınmıştır. Görüşmeler Zoom üzerinden online olarak gerçekleştirilmiştir. İçerik analizleri araştırmacılar tarafından yapılmıştır. Çalışmamızda toplamda 38 araştırma görevlisinin katılımıyla beş odak grup görüşmesi yapılmıştır. Ortaya çıkan beş tema şu şekildedir: eğitimdeki değişimler; sağlık hizmeti sunum iklimi; bilimsel faaliyetler; duygular/hisler; eğitim programlarında yapısal sorunlar. Çevrimiçi eğitim etkinliklerinin sıklığı, süresi ve içerik yoğunluğunun tasarlanması gerekmektedir. Bilimsel araştırma ve tez çalışmaları, pandeminin getirdiği ağır iş yükünden olumsuz etkilenmiştir. Ancak pandemi döneminde sağlanan online bilimsel toplantılar önemli eğitim fırsatları olarak görülmüştür. 'Duygusal dayanıklılıkta azalma hissi' yeni ortaya çıkan bir duygusal sorundur. Pandemi sürecinde toplumun sağlık çalışanlarına yönelik tutum ve davranışlarında yaşanan olumlu gelişmeler, asistanların duygularına da olumlu katkı sağladığı düşünülmektedir.

Anahtar kelimeler: COVID-19 pandemisi, değerlendirme, eğitim, nitel araştırma, tıpta uzmanlık.

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INTRODUCTION

The COVID-19 pandemic not only adversely affected medical education but also limited the execution of existing programs.¹ The medical education activities most affected by the pandemic included interventional and non-interventional skills, field-specific practices, on-the-job training activities in services and clinics, and residency trainings for gaining professional skills and attitudes.

Hospitals faced the challenge of reviewing their priorities regarding outpatient care, patient services, and surgical procedures.² Non-emergency elective surgeries and clinical consultations have been postponed or canceled to avoid hospital overcrowding, protect patient populations, and evacuate hospital beds for COVID-19 patients. This situation interrupted the training of residencies and had negative effects for the research residents who were trained in their fields of expertise.³ Theoretical training activities were carried out using video conferencing and virtual meetings with faculty members.⁴

There are some studies that address the difficulties experienced by residents and the needs they feel during the pandemic. It is seen that there are some complaints and problems related to their profession and education of the residents within the work tempo that requires intense labor.⁵ Providing health services to patients, managing extraordinary and difficult situations, supporting patients emotionally, fear of being infected and infecting others, increased workload and protective equipment that restricts the movement/freedom of the person pave the way for the burnout of health professionals and increase feelings of uncertainty.⁶ Therefore, in addition to ensuring patient safety, it is necessary to take precautions in areas such as residency training that training processes require direct contact with patients.⁷ Quantitative research has shown that frontline residents in the care of COVID-19 patients are vulnerable to greater risks of anxiety, depression, insomnia, stress and stress-related symptoms.⁸ It has been stated that residents are exposed to some physical and psychological problems such as communication difficulties, lack of peer and social support, inadequacy in physical conditions, difficulty in maintaining their well-being and meeting their basic needs (nutrition, rest, etc.) during the pandemic process.⁶

Many papers were published on different residency trainings during pandemic in Türkiye⁹⁻¹⁴. The common points of these studies were that they were cross-sectional studies and were used surveys as a method, and revealed data related to only one residency training. Only one qualitative research was published on residency training in pandemic¹⁵. The nine in-depth interviews were carried out with residents working at the healthcare services of the COVID-19 pandemic. The residents trained in basic sciences were not included in this study. However, the residents from all three main sciences were employed voluntarily or coercively during pandemic. The interviews were conducted by only one researcher. This is an important limitation for the reliability of data.

There are limited studies reporting the qualitative opinions of residents from three main sciences which are surgical, internal medicine and basic medical sciences in

Türkiye. So, we need to reveal more opinions of resident son their trainings during pandemic to manage the trainings well during emerging situations in the future.

It is aimed to reveal the opinions of residents from all main sciences on their training in medicine given at Karadeniz Technical University Faculty of Medicine during the COVID-19 pandemic. The research questions were tried to be answered:

1. What are residents experiences regarding their trainings in COVID-19 pandemic?
2. How did pandemic affect residents' trainings?

MATERIALS AND METHODS

Type of research

The study was designed as qualitative phenomenological study, and includes focus group interviews.

Research site

Karadeniz Technical University Faculty of Medicine. Research universe was consisted of a total of 475 research residents who received residency training in Internal Medicine Sciences, Surgical Sciences and Basic Medical Sciences at Karadeniz Technical University Faculty of Medicine. The distribution of residents at Karadeniz Technical University Faculty of Medicine according to April 2021 is given below:

Internal Sciences:295

Surgical Sciences: 151

Basic Medical Sciences:29

Research period

The study conducted between April 2021- March 2022.

Research sample

In line with the permission of the institution, all residents were invited to work via mobile phone or e-mail. Gender, discipline and duration of residency were taken into account in order to ensure diversity and to get different opinions in the determination of the participants. Since it was thought that data saturation was not reached in the surgery and internal sciences group, second interviews were held. The number of focus group was determined regarding to data saturation that was decided by researchers. The volunteer participants were decided by using easily accessible sampling method for qualitative focus group interviews.

Inclusion criteria for the study are as follows

- To be working as a resident at Karadeniz Technical University Faculty of Medicine for at least six months, (The period when the effects of the pandemic are felt intensely in Türkiye is between March 2020 and May 2021. Therefore, we thought that both the people who received training during this intensive period and the training processes would be better evaluated with at least six months of experience, and the orientation process regarding residency training would be completed.)

- Volunteering to participate in the study.

Data Collection and Analysis

The researchers SA and BD made a literature review related to the research question and determined the main themes separately to create the 'Semi-structured Interview Questions' to be asked in the focus group I interviews as below:

-Could you please explain the details of your residency training program?

-How has your department, where you have been

- trained, been affected by the pandemic?
- Explain the positive changes in your residency training during pandemic?
 - Explain the negative changes in your residency training during pandemic?
 - What suggestions would you have regarding the residency training you have been receiving if the pandemic process continues? Please explain.

In addition to these questions, researchers were able to obtain in-depth information by asking different questions when needed in line with the answers given by the participants.

The two researchers came together as many times as needed to find common ground in the focus group interview questions. The interviews with residents who agreed to participate in the research were conducted online through the Zoom program. The interviews lasted approximately 60 minutes and were recorded.

To ensure validity and reliability in our study, two researchers participated in the interviews. While one of the researchers conducted the interviews, the other took notes. Researcher notes and records were evaluated by two researchers. Both the transcripts of the researcher who conducted the interview and the documents of the researcher who took notes were compared. After agreement on transcription, codes, sub-categories and themes were created by three researchers (MU, YG, ADD). Meetings were held in the required number until there was a consensus on the codes and themes. Then, the themes were presented to the opinion of the experts (SA and BD) among the researchers and a consensus was reached for all themes. and the codes that could not be agreed on were decided at the meeting attended by SA and BD. Quotes from the content of the interviews regarding the common themes were also determined by three researchers (MU, YG, ADD), and it was decided which quotes would be placed in the text at the meeting attended by all researchers.

In order to carry out the study, the ethics committee approval of Karadeniz Technical University Scientific Research Ethics Committee with protocol number 24237859-289 and dated 25.03.2021 was obtained.

RESULTS

Within the scope of our study, for each main science group, 8-10 residents from different departments of science were invited to a focus group interview using an easily accessible sampling method. Since it was thought that data saturation could not be reached in the opinions obtained by the researchers in the focus group interviews, an additional focus group interview in the surgery and internal sciences groups were arranged and conducted with the same method. There fore, a total of five focus group discussions were held: two in the surgical sciences group, two in the internal sciences group, and one in the basic sciences group. The surgery group included departments of thoracic surgery, general surgery, gynecology and obstetrics, Ear-Nose-Throat, urology, anesthesiology, and pathology residents. The internal medicine group included departments of internal medicine, infectious diseases, pulmonary diseases, cardiology, and pediatrics residents. The basic medical sciences group included residents from medical microbiology, histology and embryology, anat-

omy, biophysics and physiology departments.

The total number of participants was 38 (internal medicine group: 14, surgery group: 16, basic medical science group: eight).

The five themes that emerged as a result of our research are as follows: changes in education; health care delivery climate; scientific activities; emotions/feelings; structural problems in education programs.

Under the theme of 'changes in education', there are activities and situations that shape the resident training process in the pandemic, especially the use of new training methods or the application of old training methods in different ways, educational environments and training opportunities.

Under the theme of 'health care delivery climate', there are issues regarding changing working conditions, changes in the roles of health professionals, and interactions within and between teams, specific to the pandemic.

Under the theme of 'scientific activities', there are headings related to the academic activities carried out during the resident education process throughout the pandemic.

Under the theme of 'emotions/feelings', there are positive or negative emotions and feelings caused by the pandemic in residents such as emotional flexibility and fatigue.

In the theme of "structural problems in the education program", there are topics that emerge from the views on the details of the program, such as the content of the program, its sharing with the residents, the definition of the roles of the residents, and the evaluations in the residency process.

The resulting categories (sub-themes), themes, and excerpts from the interview contents related to the themes are presented in Table 1.

The challenges and opportunities regarding themes are presented at Figure 1.

DISCUSSION

The results were discussed based on challenges and opportunities of five themes emerged in our study: changes in education; healthcare delivery climate; scientific activities; emotions/feelings; and structural problems in education programs.

The postponement of theoretical lessons, article presentations and case discussions during the COVID-19 pandemic period adversely affected the residency training. During this period, problems such as irregular theoretical training, lack of rapid reaction to online training, and inability to focus on online processes were experienced. Decreased interaction between trainers and residents and, accordingly, disruptions in on-the-job evaluations are other important problems.¹⁶ In addition, the decrease in the number of patients, the postponement of planned surgeries and the prioritization of surgical interventions only for emergency cases caused surgical residents to gain experience with fewer cases and on-the-job trainings were seriously affected.^{1,2} However, methods such as teleconferences, webinars, online learning activities, social media sharing, virtual consultations, telemedicine, simulations and virtual reality have been used to reduce the negative impact of the pandemic on the training of resi-

Table 1. The categories (sub-themes), themes, and excerpts revealed from the interview contents.

| Quotations | Categories | Themes |
|---|--|---|
| <p>"We can listen in a more comfortable environment in online education. However, the number, duration and intensity of the training we received increased, it was very difficult to follow on the screen, it is debatable how useful and effective the online trainings are." K2</p> | <ul style="list-style-type: none"> -The continuation of education on using online education, -Equality of opportunity in education, - Interdisciplinary training activities, -New experiences of trainings in different context (intensive care, etc.), | <p>Changes in education</p> |
| <p>"At the beginning of the pandemic, we felt a bit lonely, frankly, I can say that, during the epidemic, everyone actually knows nothing. We all tried to make a way by looking at the guidelines of the ministry of health. It was our guide. We were stunned at first, both in terms of stress management and crisis management, because we did not know anything." K3</p> <p>"The best part of the pandemic is that we were able to access a lot of magazine publications that we could not reach more easily in many ways. For example, the contents of the Turkish Clinics magazine are offered to us free of charge due to the pandemic. Apart from this, the online education frenzy that came with zoom enabled us to reach education and science more. In the past, it was possible to go to congresses by paying great amount of money. An academic year could be completed with attending only 2-3 congresses. However, at the moment, we can reach very good presentations by 5-10 very important and successful lecturers just in a week." K4</p> | <ul style="list-style-type: none"> -Lack of interactions in online education, -Uncertainties in education, -The decrease of diversity of training methods, -Lac of on-the-job training and assessments, -The workload of compensation programs, | <p>Healthcare delivery climate</p> |
| <p>"We faced many troublesome processes such as waiting for the COVID-19 result, taking the surgery, a different operating room environment, and dressing in layers." K11</p> | <ul style="list-style-type: none"> -Opportunity to get to know other disciplines closely, -Working in different conditions during pandemic(crisis, emergencies, etc.) | <p>Healthcare delivery climate</p> |
| <p>"In this process, we tried not to postpone emergency and elective cases. However, our face-to-face trainings once a week were interrupted and we could not continue online." K12</p> <p>"I had friends assigned to COVID-19 services. As the number of our assistants has decreased, our workload has increased in the service, outpatient clinic and operating room." K13</p> | <ul style="list-style-type: none"> -Working in unfamiliar units without any orientations -Different roles defined for residents -Communication problems with trainers and peers -Mobbing | <p>Healthcare delivery climate</p> |
| <p>"There is a practical influence, but I do not think that there is much influence in terms of accessing educational and scientific knowledge. Because we are presenting more articles than usual and discussing different topics." K2</p> | <ul style="list-style-type: none"> -Easy attendance to scientific meetings (congresses, conferences and symposiums) | <p>Scientific activities</p> |
| <p>"There has been a positive effect due to the fact that many activities take place online, our time has increased, which we can devote to our own thesis." K4</p> | <ul style="list-style-type: none"> -The experiences on new treatment approach | <p>Scientific activities</p> |
| <p>"But my laboratory experiments were disrupted, I had a lot of trouble with my thesis and paperwork" K9</p> | <ul style="list-style-type: none"> -Research-oriented studies | <p>Scientific activities</p> |
| <p>"We had to make an arrangement, get permission to attend face-to-face training. When this situation disappeared, online participation also increased. Frankly, we were able to attend more trainings, more symposiums and webinars." K13</p> | <ul style="list-style-type: none"> -Problems in designed researches | <p>Scientific activities</p> |

Table 1. Continued

| | |
|---|--|
| <p>"Since we were working on guard duty, our shift continued after the shift. For this reason, we were experiencing difficulties and intensities in cases where its rotation continued." K29</p> <p>"At first, of course, there was more fear, now we feel psychologically tense. In this process, the approach to the patient has changed a lot. We started to protect ourselves and put social distance." K20</p> <p>"I worked in COVID-19 intensive care for 6 months. This virus does not take into account the age factor or additional diseases. Actually, I'd say it doesn't take anything into account. I mean, we could have been each and every one of us in that bed..." K17</p> <p>"Giving some positive messages in favor of doctors in the public has had a positive impact on our communication with families.... I have seen improvement in respect for the physician from my point of view." K8</p> | <p>-Positive communication atmosphere with patients and their relatives,</p> <p>-Emotional flexibility,</p> <p>-The increase of supports from society to health professions,</p> <p>-Developing individual coping strategies,</p> <p>- Fatigue,</p> <p>-Psychological problems, depression,</p> <p>- Concerns for the future,</p> <p>-Learned helplessness,</p> <p>Emotions/ Feelings</p> |
| <p>"After the pandemic started, all of our rotations stopped. We also closed the clinic. Because we only worked in the COVID-19 clinics at that time." K21</p> <p>"I had COVID-19 intensive care experience. We have also evaluated the patient by approaching him from a different point of view." K32</p> <p>"There is an order that goes by learning more from the senior to the novice. It is not possible to say the same thing for all instructors, but most of them remained more passive. This affects education negatively." K26</p> <p>"It would be great if trainings were organized within the standards on consents, pre-operative information, post-op patient care, communication with the patient" K12</p> <p>"The service burden on the residents completely outstrips the training activities." K20</p> <p>"To be honest, since I came here, I have been asking myself questions such as "Is there a program? What will I do now? How many times do I need to do which process so that I can be sufficient?" I was not offered a program where I could find answers to such questions." K22</p> <p>"We learn more if the senior residents show or teaches something. Since I started, there is no program like the 1st year resident does this, the 2nd year resident does that." K10</p> <p>"We don't have teachers with us in the clinic, we look after patients on our own. We consult with our teachers over the phone when we are either stuck in the middle or we can't get out of the work." K6</p> <p>"Obviously, what is required of us in residency training is to carry out the work in a large department such as pediatrics, that is, to bring the end of the month and end it with less problems. Frankly, our instructors do not have a lot of time to spare for a resident for reasons such as emergency patients, clinic patients, their private patients, or their private issues." K19</p> <p>"We asked our instructors for the missing training during the pandemic process. I was really stressed about my shortcomings. We always wanted this in the process.... maybe there wasn't much effort in this period not to put us at risk." K6</p> <p>"Our academic advisor is announced at the end of one year. The advisors of some of my friends who have been working as residents for 13-14 months have just been announced. So I think 1-1.5 years is a huge time wasted. At least right now, I would like to talk with my teachers about what I plan to do, my dreams, or the things I want to achieve academically." K20</p> <p>"I think we strive to get things done on time rather than training. The professors put pressure on them with sentences like "We have too many patients, we need to finish the patient procedures as soon as possible." K19</p> | <p>- Problems related to training content and design,</p> <p>-Not defining/declaring the competencies aimed to be acquired through residency training,</p> <p>-Inadequate operation of evaluation and feedback processes,</p> <p>-The assistant's duties and responsibilities are not clearly defined</p> <p>Structural Problems in education programs</p> |

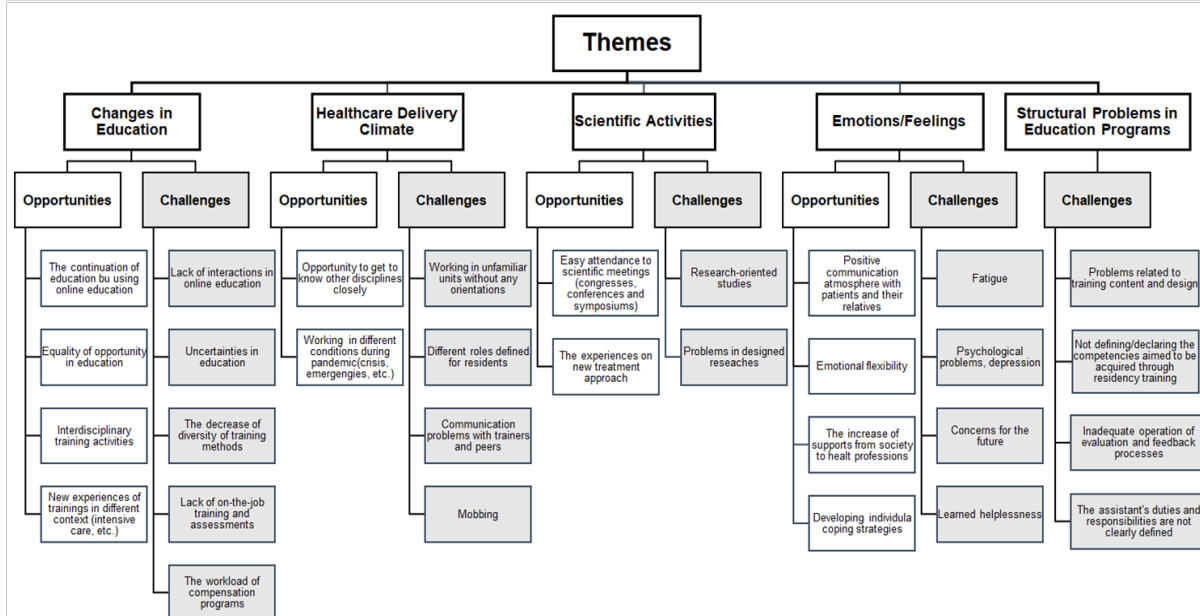


Figure 1. The challenges and opportunities regarding themes.

dents.¹⁷ It is predicted that most of these methods will continue after the pandemic.¹⁸ It has been determined that online theoretical training given during the pandemic period is as effective as face-to-face training.³ In our study, the participation of resident physicians in various fields such as the intensive care unit, COVID-19 clinic, and PCR laboratory and their departure from educational environments were considered as factors that negatively affect education. The participants stated that, in parallel with the findings in the literature, the training activities with the intense online presentations of the trainers increased, but the frequency, number and duration of the online trainings were intense. For this reason, the participants stated that with the addition of screen fatigue, the online education climate increased the fatigue already caused by the pandemic and the workload it caused. As researchers, considering that some online training activities will continue after the pandemic and that the pandemic is expected to escalate again, we believe that it is necessary to design the frequency, duration and content intensity of online training activities by taking into account the fatigue, stress and anxiety states of the residents as well as their rest needs. The unexpected global crisis caused by the pandemic has caused COVID-19 to become the focus of scientific studies. Most of the studies not related to COVID-19 have been cancelled, making it difficult to find support for non-COVID-19 research.¹⁹ The limitations of social distance, researchers' being at the risk of being affected by the epidemic, and the active involvement of researchers in the fight against the pandemic have caused problems in reaching sufficient manpower in scientific research.²⁰ Despite all these negativities, scientific congresses and symposiums were organized on online platforms and scientific activities were continued during the pandemic. Due to the removal of COVID-19 related restrictions and increased accessibility, it has been observed that participation in these activities is high during the pandemic.²¹ It is foreseen that online or hybrid congresses and symposiums will be important

platforms in the conduct of scientific activities in the future.²² In the data revealed in our study, the positive effects of online tools and training opportunities on resident training and scientificness were more prominent, and the importance of continuing these training opportunities after the pandemic was emphasized. However, it has been revealed that activities such as scientific research and thesis studies have been adversely affected by the heavy workload caused by the pandemic, the change of priorities in health services, health concerns and restrictions. Although research activities were affected, participants stated that online symposiums and congresses eliminate travel and accommodation fees, and participation fees are at levels that a resident can pay. In addition, opinions emerged that the online scientific meetings provided during the pandemic were interiorized by the participant residents and seen as important scientific opportunities.

In recent years, there has been a rapid change and transformation in the field of health all over the world. Increasing financial constraints in the health system, new developments in the medical field and changing expectations regarding service delivery constitute the driving force behind this change.²³ In this process of change, the increase in workload, the work done beyond the duties and responsibilities of the professionals, the weakening of the quality of the education and the burn-out of the residents have brought along many problems in the context of the resident education carried out in the medical faculties.²⁴ In the study conducted by Tan et al. (2012) in Türkiye, it was determined that one-fourth of the residents did not attend a scientific meeting, but mostly in the field of service. In today's world where information in medical sciences changes rapidly, resident physicians state that they can find the opportunity to update their knowledge thanks to continuous medical education hours.²⁵ It is suggested that residency training should include many academic activities such as evidence-based medicine practices, self-directed learning, activities to determine career choices, and other

academic inputs.²⁶ In addition, it is stated that the reflection approach of research residents on the experiences they have gained in their specialization training will positively support their development in their professional life.²⁷ Another issue that is thought to affect residency training is defined as 'implicit learning' in the literature. This concept includes unwritten observations and experiences that residents encounter in the learning and health care settings that affect their professional behavior and attitudes. Implicit learning can also cause negative effects on the professional development of residents, such as receiving undesired messages and observing unprofessional behavior.²⁸ In addition, implicit learning not only reveals how concepts of appropriate behavior are transferred, rewarded and punished, but also reveals how professional behavior is taught. Thus, it allows residents to express their opinion on what needs to be maintained and what needs to be changed.²⁹ In our study, data on the attitudes and behaviors exhibited by negative role models, especially in health service delivery and education processes, were obtained. As it can be understood from the opinions about the mobbing and negative communication experiences of the residents, we think that these problems experienced during training and service delivery are not specific to the pandemic period. Therefore, we think that trainings and incentives should be planned to increase the awareness of trainers about the attitudes and behaviors that a suitable role model should exhibit.

Accreditation activities specific to each specialty, whose number has been increasing in the world recently, are an important driving force for the development of residency training and the solution of structural problems in education.³⁰ Encouraging the relevant units to be included in the accreditation processes in the institutions providing residency training, effective follow-up and taking responsibility of the decision makers in providing consultancy services to these units will reduce the structural problems in education. Activities for the development, standardization and accreditation of specialization training programs have also increased the awareness of residents about the quality of their training.³¹ The activities of the specialty associations and departments providing specialization training, which have gained a serious momentum in the direction of standardization and accreditation in recent years, have been adversely affected by the COVID-19 pandemic that emerged at the end of 2019.¹ The findings obtained from the opinions of the participants included in our study revealed that the training activities carried out during the pandemic were seriously interrupted, and especially on-the-job training and evaluation processes could not be carried out. In addition, it is revealed that health concerns and increased workload seen in trainers negatively affect their performance regarding their duties and responsibilities in residency training. Therefore, we recommend that collaborations on training programs be designed in addition to national strategies to fill the deficiencies of residents, and that the designed trainings should be offered to residents who are still continuing their education and to graduates who graduated during the pandemic but whose education was adversely affected.

The negative effects of the pandemic on the mental

health of residents have been demonstrated, as well as in the general population. Fear, increase in anxiety level, increase in stress and depressive mood are the most common problems among residents.³² While data similar to the literature emerged in our study, such as anxiety, helplessness and depression, there were also results that we did not encounter in the literature, such as 'feeling of decreased emotional resilience'. In the opinions of the participants, it was revealed that the positive developments in the attitudes and behaviors of the patients and their relatives towards the health professionals during the pandemic process contributed positively to the emotions of the residents.

We advocate the necessity of a holistic approach to the protection of not only the mental health of residents but also their well-being during the pandemic. It is a common misconception that well-being and psychological well-being are perceived as similar concepts. However, well-being is a concept that is directly affected by the physical and social environment of the individual, such as happiness, functionality, quality of life, and life satisfaction. It is emphasized that well-being is a way of life. It is thought that physical, social, psychological and cognitive indicators can mediate the prediction of a person's well-being.³³ It is predicted that the effects of the pandemic on the well-being of the society will continue for many years.³⁴ Therefore, we recommend that each institution establish units and organizations to support the residents for the parameters related to all these topics.

Since the study was conducted during the COVID-19 pandemic, a small number of residents (six in total) did not have experience in residency trainings before the pandemic. Therefore, it was observed that they had limitations in evaluating the education they received during the pandemic period because they did not experience the pre-pandemic period. This might be a limitation of the study.

CONCLUSIONS

As it is considering that some online training activities will continue after the pandemic, it is necessary to design the frequency, duration and content intensity of online training activities by taking into account the fatigue, stress and anxiety states of the residents as well as their rest needs. It has been revealed that activities such as scientific research and thesis studies have been adversely affected by the heavy workload caused by the pandemic, the change of priorities in health services, health concerns and restrictions. Although research activities were affected, participants stated that scientific opportunities such as online symposiums, congresses and scientific meetings eliminate travel and accommodation fees, and participation fees are at levels that a resident can pay. 'Feeling of decreased emotional resilience' is a new emerged emotional problem in this study. Finally, the researchers recommend that each institution establish units and organizations to support wellbeing of the residents.

Ethics Committee Approval: In order to carry out the study, the ethics committee approval of Karadeniz Technical University Scientific Research Ethics Committee with protocol number 24237859-289 and

dated 25.03.2021 was obtained.

Informed Consent: Verbal consent was obtained from the participants.

Peer-review: Externally peer-reviewed.

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