



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



A SWOT analysis of the opinions of midwifery students about distance education during the Covid-19 pandemic a qualitative study

Şenay Topuz, Neslihan Yılmaz Sezer*, Menekşe Nazlı Aker, İlknur Münevver Gönenç, Hatice Öner Cengiz, Aslı Er Korucu

Ankara University Faculty of Nursing, Midwifery Department, Ankara, Turkey

ARTICLE INFO

Keywords:

Distance education
Midwifery
Pandemic
Healthcare education

ABSTRACT

Background: The COVID-19 pandemic led to the suspension of face-to-face education and its replacement with distance education. This has caused important changes in midwifery education.

Objective: To determine midwifery students' opinions about distance education.

Design: This qualitative study employed an exploratory case study design.

Setting: This study was carried out at a national university in Ankara, Turkey between December 2020 and January 2021.

Participants: The sample of the study comprised 50 students in the midwifery department.

Measurements and findings: Data were collected using a SWOT analysis interview form developed by the researchers. The research findings were grouped into four themes: *Satisfaction with distance education, barriers of distance education, facilitating aspects of distance education, and concerns about professional career.*

Key conclusions and implications for practice: Distance education in midwifery education in Turkey was found to have aspects involving obstacles and concerns in addition to many pleasing and facilitating features. Our findings suggest distance education can be used together with face-to-face education provided that its pleasing and facilitating aspects are supported and the obstacles and factors causing concerns are removed. Inclusion of distance methods in midwifery programs requires curricula to be updated and support from instructors and students for the development of the necessary infrastructure. There is a role for employing bodies to facilitate practice-based learning for new graduates to address their concerns with a lack of practical experience because of COVID-19 restrictions on placement.

Introduction

The COVID-19 pandemic has affected millions of people around the world. Important changes in business, social life, education, economy, tourism and healthcare have been made to control the spread of the virus (Demirbilek et al., 2020). One of the first measures taken to control the COVID-19 pandemic was the world-wide transition to distance education (Demirbilek et al., 2020; Hodges et al., 2020; Mian & Khan, 2020; Pather et al., 2020; Viner et al., 2020). As of March 11, 2020, when the World Health Organization declared the outbreak of the coronavirus as a pandemic, face-to-face education in Turkey was suspended. Distance education was initiated on March 16, 2020, at our university. Although theoretical courses have previously been conducted through distance education, educational activities for applied courses have been affected and changed in response to the COVID-19 pandemic (Newman & Latouf, 2020). Similarly at our university, although the midwifery curriculum contains clinical and field practices along with theoretical courses

(Yazıcı, 2009; Yazıcı, 2010; Yılmaz & Karanisoğlu, 2016), midwifery education changed to be provided through distance education.

Some studies report that in this process of moving to online education, students have had to use many digital platforms or devices that they are not used to (Mian & Khan, 2020; Morin, 2020). Students in rural areas have had difficulties in accessing technical resources such as computers and the Internet (Dewart et al., 2020; Morin, 2020). Communication skills and interactions with instructors, peers, and patients (Aslan & Pekince, 2020; Mian & Khan, 2020) have been negatively affected by these difficulties experienced by students.

Despite these disadvantages, distance education has provided flexibility and allowed students to revise lessons many times (Ayvaci & Bebek, 2016; Barış & Çankaya, 2016; Erfidan, 2019; Gürkan et al., 2020; Özköse et al., 2013). Other benefits include a suitable environment for collaboration and group work and the creation of opportunities to support learning (Gürkan et al., 2020).

* Corresponding author at: Ankara University Faculty of Nursing, Midwifery Department, Hacettepe Mahallesi Plevne Caddesi No:7 PK: 06230 Altındağ / ANKARA
E-mail address: nyilmaz@ankara.edu.tr (N. Yılmaz Sezer).

Studies focused on midwifery-nursing education during the pandemic emphasized that distance education should be supported with new tools and even conditions for graduation should be modified accordingly (Lazenby, 2020; Leigh et al., 2020). In addition to the difficulties and effects experienced during the dynamic process of the COVID-19 pandemic, positive aspects were revealed to provide opportunities for developing appropriate coping strategies (Boydak-Özan et al., 2015).

Teachers at our university observed positive and negative feedback from midwifery students about distance education. As it is important to understand the experiences and expectations of students regarding the changing education system in this period (Ramos-Morcillo et al., 2020), the teachers decided to investigate the different views of the students. This study aimed to determine the views of midwifery students about distance education carried out during the COVID-19 pandemic. The intent was to provide guidance for planning and developing midwifery education.

Methods

Design

An exploratory case study (Yin, 2014) was used to conduct this research. The exploratory case study is a critical qualitative methodology. The aim is mainly to answer the question "what" in exploration of the data for causal links of the phenomenon under investigation (Zainal, 2007). This methodology is used when the links are presumed too complex for a survey or experiment (Yin, 2014). An embedded (multiple units) single case study design was used. An embedded single case study is a research design that includes a case study containing more than one sub-unit of analysis. This study conducted based on the researcher's assumption that there is a single case that determines the midwifery students' views on distance education. The analysis unit was divided into the sub-segments of the first, second, third and fourth year students in the midwifery department of a university.

In this study, the SWOT analysis framework was employed to determine students' views on distance education. SWOT analysis refers to the assessment and evaluation of the strengths (S), weaknesses (W), opportunities (O), threats (T) and other factors that influence a specific topic and comprehensively, systematically and accurately describes a scenario for it (Stoller, 2021; Wang & Wang, 2020). The purpose of SWOT analysis is to develop plans and strategies for the future by analyzing the current situation (Boydak-Özan et al., 2015). In the analysis, internal and external factors are considered; strengths and opportunities are maximised whilst identifying threats and weaknesses to be minimised (Boydak-Özan et al., 2015).

Setting

Data were collected by the faculty of a university in Ankara, the capital city of Turkey. There were approximately 450 students from different provinces of Turkey enrolled in the midwifery program at the time of the study. Theoretical and practical courses were delivered online and recorded by the instructors utilising the distance education infrastructure of the university. The distance education system allows both educators and students to share messages, audio-visual material, videos, and educational content. All members of the faculty take part in distance midwifery education and conduct both theoretical and applied courses and were part of the research team for this study.

Participants

Midwifery students currently enrolled at the university and undertaking online education were invited to participate in the study. Interviews were held with students ($n=50$) who agreed to participate. New participants were included until data saturation was achieved. Partici-

Table 1

Demographic information of the participants.

Characteristics	Number of Participants
1 st Year of midwifery course	11
2 nd Year of midwifery course	14
3 rd Year of midwifery course	10
4 th Year of midwifery course	15
Have less income than expenses	14
Have equal income and expenses	27
Have more income than expenses	9
Live in provincial centres	29
Live in district centres	18
Live in towns or villages	3
Live with 2 people during pandemic	4
Live with 5 people during pandemic	35
Live with at least 6 people during pandemic	11
Have an appropriate place to listen to lectures	Yes 35 No 15
Have equipment needed for distance education	Yes 37 No 13

pants' ages ranged from 18 to 23 years. Students' introductory characteristics are found in Table 1 below:

Data Collection

Although it is recommended to use more than one data source (you need to put a reference here), in a case study, as in all qualitative research (reference needed here too), data collection methods can be used alone based on the nature of the problem and the expectations of the researchers (reference). Since this study was conducted to determine the opinions of midwifery students about the distance education process, compulsorily initiated in the COVID-19 pandemic, it was thought that holding in-depth semi-structured interviews with students would be enough to reveal the situation. Therefore the research team decided to use a single data source.

Data was collected using a semi-structured interview form developed by the researchers (Table 2). Open-ended questions were used in the interviews so that the interviewees could describe their experiences and personal perspectives comfortably and talk freely.

Individual interviews were conducted online from December 22, 2020 and January 20, 2021. The interviews lasted 25-30 minutes and were recorded.

Data analysis

The audio-recorded interviews were transcribed verbatim into Microsoft Word documents. Each transcript was imported to the MAXQDA project as a single document. The participants were identified as P1, P2, etc. (where P represented participants and the number participant numbers from 1 to 50). The data were analyzed using MAXQDA software, adhering to the method of content analysis described by Erlingsson and Brysiewicz (2017). Transcribed interviews were read several times to obtain a general understanding, and the contents were divided into meaning units. Condensed data were coded, and themes were elicited (Erlingsson & Brysiewicz, 2017). The coding process was carried out in three steps. In the first step, each transcript in which the general speaking subjects were identified went through descriptive coding. In the second step, the transcripts were reviewed by using initial coding, where temporary codes were applied to the data based on identified themes. This step also included in vivo coding, where direct quotes and statements from participants were used to generate codes. In the last step, the early codes were improved and analyzed more, as a third coding phase.

Internal consistency and external validity of the research

The strategies of credibility, transferability, dependability, and confirmability, which were suggested by Lincoln and Guba (1985), were

Table 2
Question included in the research.

1. What do you think are the strengths of using distance education in midwifery education?
2. What do you think are the weaknesses of using distance education in midwifery education?
3. What do you think are the opportunities provided by the use of distance education in midwifery education?
4. What do you think are the threats posed by using distance education in midwifery education?

used in the study to provide internal consistency and external validity. "Participant confirmation" and "expert review" methods were used to increase the credibility of the study. In this context, after the data were collected, they were analyzed by the researchers, and the report generated from the data was sent to the participants. The participants were asked to read this report to evaluate the completeness of the data, the adequacy of the analyses to reflect their own reality, and whether the results were related to their own perceptions and experiences and to provide written feedback to the researchers. For the expert review, an expert experienced in qualitative research, who was not in the research team, was consulted on the design of the research, the analysis method, and the reporting of the results. The "Investigator triangulation" technique was used to increase the reliability of the research. For investigator triangulation, more than one investigator was involved in all phases of the research (data collection, analysis, and interpretation, etc.). To increase the confirmability of the research, the interviews were audio-recorded. Besides, the concepts and themes that were elicited from the raw data were arranged and transferred without adding comments and without spoiling the nature of the data, and direct quotations were included. To increase transferability, the whole process of the research and the procedures done in this process were described in detail so that other researchers could use them.

Ethical approval

Permission for the study (2020-15/223) was obtained from the Ankara University Ethics Committee, and written permission was obtained from the university where the data collected. All students were informed that their research participation was voluntary; they were assured confidentiality and anonymity; whether they participated or not would definitely not affect their grades, and they could leave the research at any phase. Participants completed voluntary consent forms and gave permission for the interviews to be recorded.

All interviews were conducted by two researchers. There is no conflict of interest between the student and the researchers in the interviews. Each interview was conducted by instructors who were not responsible for the course of the interviewed student.

Findings

Based on the analysis of data obtained from the participants in our SWOT analysis study, four themes that explain students' opinions of the distance education process during the pandemic period were elicited: (1) satisfaction with distance education, (2) barriers of distance education, (3) facilitating aspects of distance education, (4) concerns about professional career.

Satisfaction with distance education

The hierarchical codes section model of the theme of satisfaction with distance education is shown in Fig. 1.

In the theme of satisfaction with distance education, the participants mentioned *replay capability, increased efficiency, time saving, accessibility and comfort, and uninterrupted education*. Replay capability, increased efficiency and time saving were the most frequently mentioned codes.

Replay capability

Participants emphasised the benefits of being able to repeat lessons on subjects that were not understood and watch courses whenever they desired, which enabled them to gain more understanding of the subject matter.

"It was very good that the lectures could be recorded on the system, since even though I could not attend the classes, I followed the course using these recordings. When there was something that I misunderstood, re-watching them was very advantageous." (P12)

Increased efficiency

Participants reported increased efficiency because it was easier to focus on the subjects, they felt as if they were watching the lesson one-one, and they thought it facilitated the understanding of the theoretical part.

"I could not attend the lectures due to the crowded environment and insufficient space, so I missed some topics. Listening the recorded videos was very advantageous and enabled me to understand the subjects more efficiently." (P15)

Time saving

The participants' statements that they spent more time on doing homework and research thanks to distance education were evaluated under the time saving code.

"We could spend more time listening to our lectures because distance education saves time." (P16)

Accessibility and comfort

Another code that the participants expressed in this theme was the *accessibility and comfort* code. Participants stated that distance education provided comfort and was more economical than face-to-face education.

"Education is more economical. We feel more comfortable because we can listen to the lessons in our own environment. We can access notebooks and books more easily." (P41)

Uninterrupted education

Participants stated that the training was not interrupted because they could follow the distance education online.

"Because of the already available distance education infrastructure, we were able to start our lessons without problem, which is one of the positive aspects of this education. I think it is beneficial even if it cannot substitute for face-to-face learning. We couldn't do the internship, but thanks to the videos, we cannot say we don't know anything." (P10)

The codes that the participants expressed less than the other codes in this theme were technological experience gain and reducing health risks.

Technological experience gain

"The strengths of distance education include enabling us to have experience in online education, making us ready for the future days when midwifery education can be given online, and facilitating technological adjustment." (P46)

Fig. 1. The codes of the theme of satisfaction with distance education.

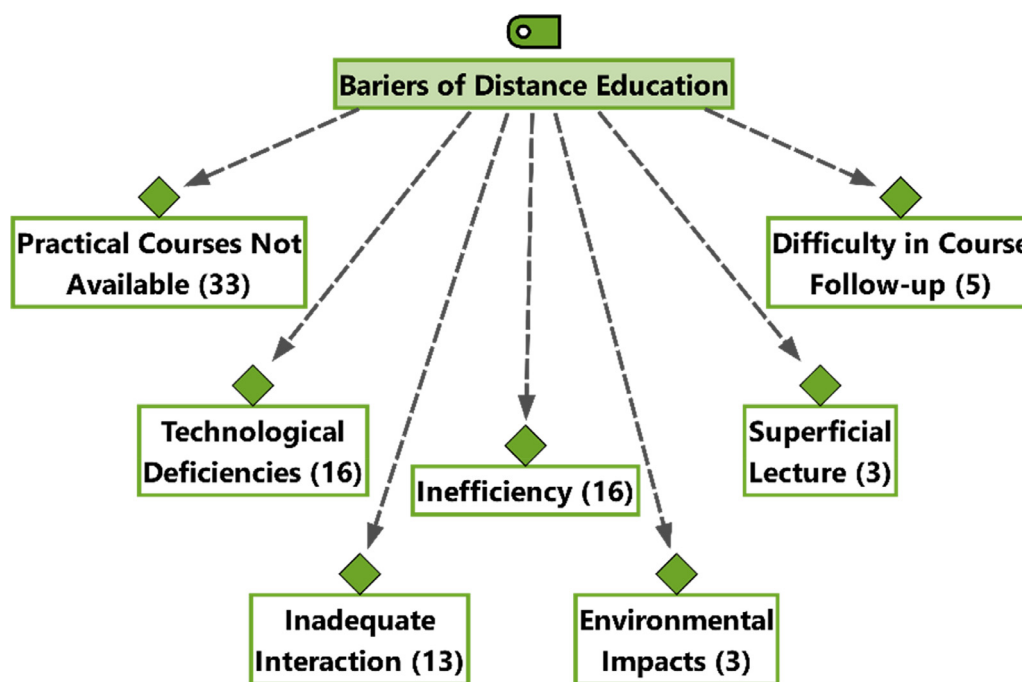
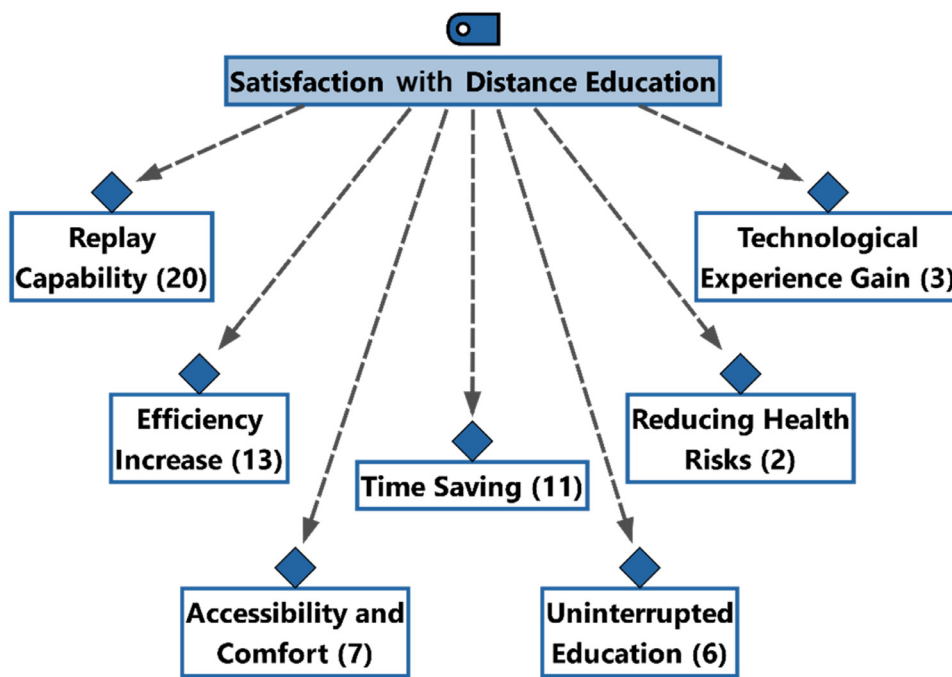


Fig. 2. The codes of the theme of barriers of distance education.

Reducing health risks

“It is advantageous in terms of protection from the disease because it helps us and our family to stay away from risky situations.” (P40)

Barriers of distance education

The hierarchical codes section model of the theme of barriers of distance education is shown in Fig. 2.

In the theme of the barriers of distance education, the participants mentioned *practical courses not available*, *technological deficiencies*, *ineffi-*

ciency, *inadequate interaction*, *difficulty in course follow-up*, *environmental impact* and *superficial lectures*.

Practical courses not available

The code most frequently expressed by the participants in this theme was practical courses not available. The participants stated that they had difficulty learning the subjects that would be easier to learn through practice.

“Midwifery is a practice-based department. I have learned it theoretically; however, since we were unable to practice in the laboratory and

hospital, my knowledge is limited to theory. After a while this makes me forget what I have learned.” (P12)

Technological deficiencies

The other code that was frequently expressed by the participants was the technological deficiencies code. They stated that they had technological deficiencies, such as not having a computer or Internet connection, Internet interruption, and connection problems.

“I had frequent internet connection problems, and that made it difficult to focus on the lectures. The electricity cut-offs negatively affected my listening to the lectures. The internet problems during the online exams left us in a difficult situation.” (P14)

Inefficiency

The next code that the participants expressed frequently was the inefficiency code. The participants stated that distance education was not so efficient as face-to-face education due to reasons, such as not attending the classes, distraction, and receiving the practical lessons theoretically.

“My concentration and the effectiveness of the education received at home suffered due to being busy and housework.” (P24)

Inadequate interaction

Another code that was frequently expressed by the participants in this theme was inadequate interaction. They stated that when they could not attend the synchronous lessons, they could not ask the teacher questions about the points that they could not understand, therefore they experienced a lack of interaction.

“The classmates who were unable to attend live classes were unable to ask the questions that came to mind while watching the lecture recordings. Our communication with the instructors was kind of limited.” (P25)

The codes that were expressed less by the participants than the other codes were *difficulty in course follow-up*, *environmental impacts*, and *superficial lecture*. Participants stated that they had difficulty in following the lessons day by day and that the topics taught were superficial due to economic reasons, environmental factors such as unsuitable time and place, time constraints, and other factors.

“We fall behind applied and practical parts, and we experienced interruptions in learning because the theoretical courses continued for a limited time.” (P29)

“At the same time, I think that distance education can be effective if it is attended day-to-day, but I think that not every student can follow the lessons on time due to the inconvenient time and place or economic reasons, which I think will affect success negatively.” (P42)

Facilitating aspects of distance education

The hierarchical codes section model of the theme of facilitating aspects of distance education is shown in Fig. 3.

In the theme of facilitating aspects of distance education, the participants mentioned *flexibility*, *success*, *time saving*, *research skills*, and *comfort*.

Flexibility

The participants' statements that they could follow the lessons, stop and study by taking notes whenever they wanted thanks to the recordings of the lessons were discussed under the flexibility code.

“Thanks to the recorded lecture system, I could listen to lectures whenever I wanted, and I could take notes more easily.” (P6)

Success

The other code that the participants expressed frequently in this theme was success. They stated that there was an increase in success because they were able to listen to the topics several times, the topics were explained more concisely, they were not exposed to the negative physical effects of the classroom environment, the topics taught were reinforced by using visuals and homework, and students had the opportunity to make presentations using the system.

“In face-to-face education, I had to sit in the back of the crowded classroom, and if there were people talking in the front rows, it was impossible to hear the instructor's voice. When I sat far from the instructor since there was no amphitheater seating in the classroom I was unable to have eye-to-eye contact with the instructor, and my attention was distracted. This problem was solved by online education. In addition, for important lectures, we had to come early in order to sit in the front rows, so I think that distance education saves time that way.” (P42)

Time saving

The other code expressed by the participants was the time saving code. Participants stated that thanks to distance education, the loss of time due to commuting to school was prevented.

“We don't have to spend time going back and forth to school. It saves time.” (P13)

Research skills

One of the codes stated by the participants was the research skills code. Participants stated that distance education helped them develop skills of searching for resources and doing research.

“It has helped me explore videos about my field and find the opportunity to research and benefit from more resources on topics other than lessons.” (P26)

Comfort

The other code expressed by the participants in this theme was the comfort code. Participants stated that it felt comfortable to wake up at any time and attend classes in a family environment.

“To be able to receive education in an environment where I feel comfortable” (P44)

Concerns about professional career

The hierarchical codes section model of the theme of concerns about professional career is shown in Fig. 4.

In the theme of concerns about professional career, the participants mentioned *inexperience*, *insufficient education*, *diffidence* and *risk of mistakes*.

Inexperience

In this theme, the most frequently expressed code by the participants was the inexperience code. They stated that they felt a lack of experience because they did not do clinical practice, they were afraid that this would negatively affect their professional life, and that distance education was inadequate for the practical aspect of midwifery education.

“We were unable to do our internship practices. So in our future professional life, even if we know things theoretically, there is a possibility of having difficulties in practice because we have not done it in practice.” (P23)

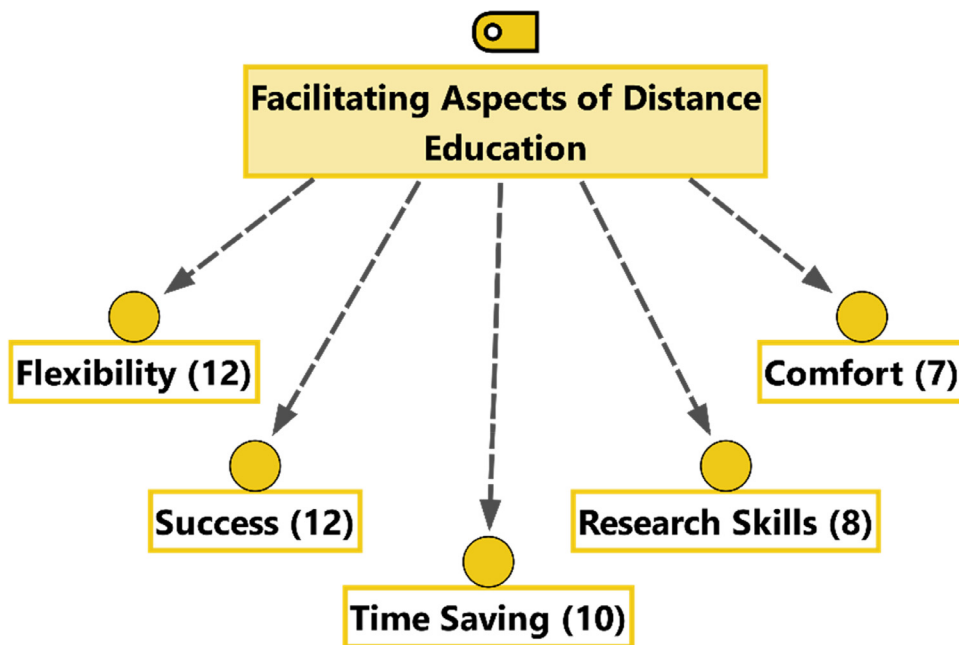


Fig. 3. The codes of the theme of the facilitating aspects of distance.

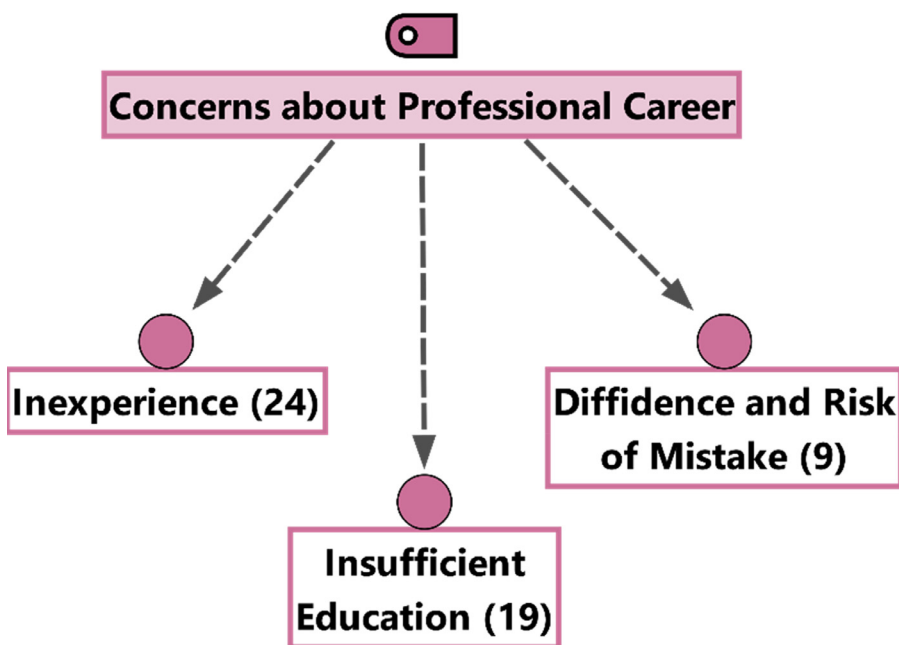


Fig. 4. The Codes of the theme of Concerns about Professional Career.

Insufficient education

The next code that was frequently expressed by the participants was the insufficient education code. They stated that they did not actively participate in the lessons due to the technological problems they experienced and lack of face-to-face interaction with the lecturer and that there was a weakness in the social dimension of university education.

“I could not consistently listen in class, and I could not have created a serious lecture environment like in school. Since I could not do my internship, I could not imagine most of the courses, so I think they were not sufficient for my education. In addition, it ends the possibility of socializing and spending time with friends at school.” (P34)

Diffidence and risk of mistake

Diffidence and risk of mistake was one of the codes that were expressed less by the participants than the other codes. Participants stated that they could not improve their self-confidence and were afraid of making mistakes because they could not do the clinical practice.

“It has caused a deficiency and a lack of self-confidence in terms of practice, so I am afraid of making mistakes.” (P31)

The participant groups focused on different codes as Table 3 shows. In the theme of satisfaction with distance education, all the participant groups frequently mentioned the code of replay capability, and the second year participant group had the most statements about it. The second

Table 3
The Distribution of the themes by Participant Group.

Code System	1st Class	2nd Class	3rd Class	4th Class
<ul style="list-style-type: none"> <ul style="list-style-type: none"> Replay Capability Efficiency Increase Time Saving Accessibility and Comfort Uninterrupted Education Technological Experience Gain Reducing Health Risks <ul style="list-style-type: none"> Practical Courses Not Available Technological Deficiencies Inefficiency Inadequate Interaction Difficulty in Course Follow-up Environmental Impacts Superficial Lecture <ul style="list-style-type: none"> Flexibility Success Time Saving Research Skills Comfort <ul style="list-style-type: none"> Inexperience Insufficient Education Diffidence and Risk of Mistake 				

year group frequently mentioned the code of increased efficiency. In the theme of barriers of distance education, all the participant groups frequently mentioned the code of practical courses not being available, and the second year participant group mentioned it very frequently. The code of inefficiency was also frequently mentioned by the second year participants. In the theme of facilitating aspects of distance education, all the participant groups except the first year students mentioned success frequently. The first year student group mentioned research skills frequently. All the participant groups mentioned inexperience frequently in the theme of concerns about professional career, and this frequency increased with the students' year of study. Insufficient education was frequently mentioned by the second year participant group.

Relationships emerge from the mutual convergence of the codes obtained from the participants' statements. The thickness of the intercodes connecting lines indicates the density of relations between codes. As Fig. 5 shows, when the participants presented their opinions regarding the code of technological deficiencies, they also frequently mentioned inadequate interaction, and they mentioned difficulty with course follow-up less frequently.

"I think that one of the negative aspects of distance education is that not everyone has computer and internet access, and it is a little less effective than face-to-face education, especially due to poor communication." (P45)

Our research found another significant relationship: the participants who mentioned increased efficiency also mentioned time saving and replay capability (Fig. 6).

"Having plenty of time to repeat the lecture recordings, to read relevant papers and to research interesting subjects in this field." (P33)

The distribution of the participants' statements by frequency is shown in Fig. 7. The font sizes increase with the frequency of the codes. The most frequently mentioned codes were practical courses not being available, inexperience and replay capability.

When the distribution of codes according to education years was examined, it was determined that second year participants strongly expressed efficiency increase and inefficiency codes. Practices related to pregnancy in midwifery education begin to be taught at the university in the spring semester of the second year. However, due to the pandemic, distance education was started in the spring period. Second year students were not able to perform pregnancy practices that they would experience for the first time. For this reason, it is thought that students put emphasis on the efficiency increase code in terms of theoretical courses and the inefficiency code in terms of practical courses.

Discussion

Midwives are healthcare professionals who have the crucial tasks of protecting, improving and maintaining maternal and infant health. To perform these tasks, it is necessary and important for midwives to attend well-organized and accredited educational programs that are developed to meet society's needs (Luyben, 2017). In Turkey, undergraduate midwifery education includes theory, laboratory work and hospital internships. Education conditions have changed due to the COVID-19 pandemic, and distance education has been implemented.

This study demonstrates that most participants found aspects of distance education satisfying. They appreciated being able to replay lessons at a time and place to suit themselves. They reported an increased effi-

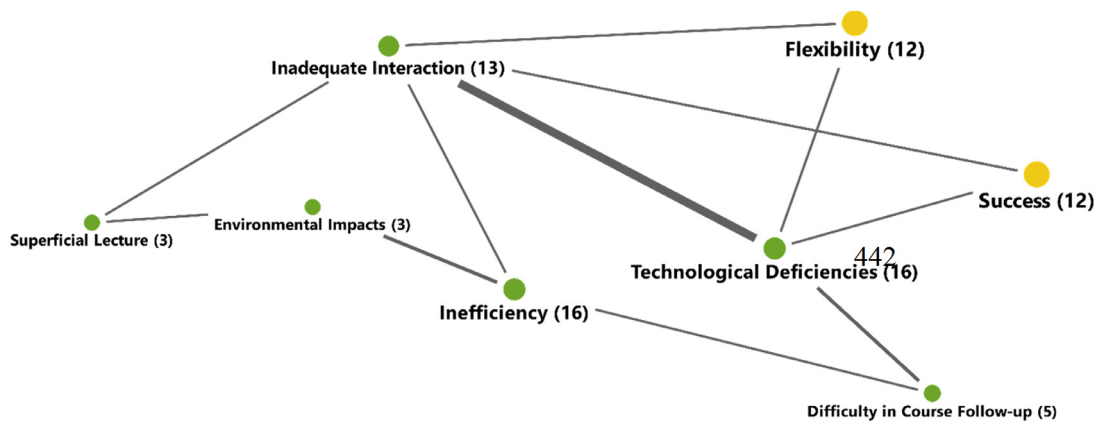


Fig. 5. Code map 1.

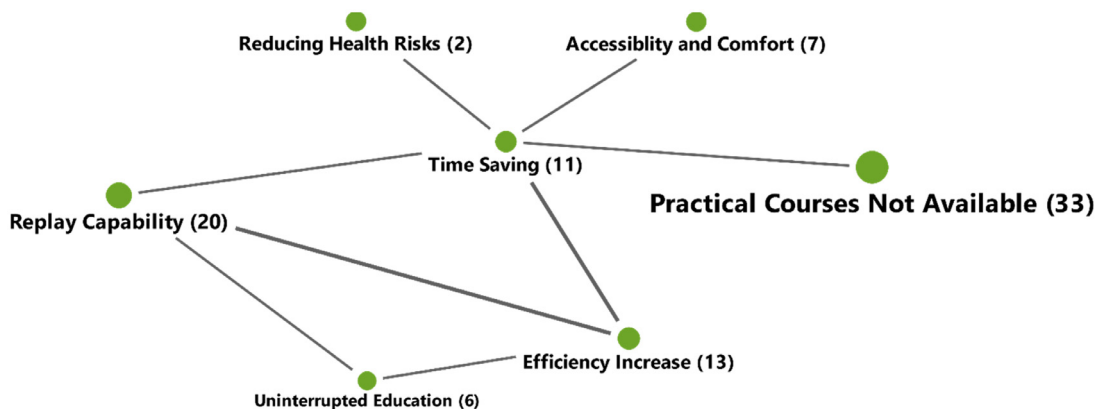


Fig. 6. Code map 2.



Fig. 7. Code clouds.

ciency and time saving aspect of having the learning resources on tap. They enjoyed the flexibility afforded by distance education and that they could learn in the comfort of their own home and undertake their own research into areas they wanted to know more about. No studies of midwifery students' opinions about distance education were found in the literature, however, studies of distance education in a variety of other disciplines support our study's findings. It has frequently been emphasized that distance education enables flexibility in education and allows students to repeat lectures (Ayvaci & Bebek, 2016; Barış & Çankaya, 2016; Erfidan, 2019; Gürkan et al., 2020; Özköse et al., 2013). Other satisfaction and facilitating aspects of distance education have also been emphasized. Gürkan et al. (2020) found that distance education creates opportunities to support learning as participants in this study have noted. Özköse et al. (2013) found that distance education provides access to students from every walk of life. The most frequently mentioned satisfaction with distance education in these studies are its independence from time/location and the ability to repeat lectures. Our findings align with

the literature. These results illustrate that the need for re-structuring both education and management was clarified and accelerated by the pandemic. Also, these results highlight the need for systems to address the changing needs, particularly in healthcare, of moving away from traditional educational models. (Gaur et al., 2020; Özçelik et al., 2020; Rajab et al., 2020).

The most frequently mentioned barriers of distance education were practical courses not being available, technological deficiencies, inefficiency, inadequate interaction. Professional career concerns were inexperience, insufficient education, diffidence and risk of mistakes.

A combination of theory and practice (laboratories, hospital internships, etc.) is necessary in midwifery education. Therefore, these codes are to be expected and appropriate. Other studies have recorded similar statements about distance education. Several studies found that inability to practice, technological deficiencies and interaction deficiencies were perceived as weaknesses and threats (Barış & Çankaya, 2016; Gürkan et al., 2020; Özköse et al., 2013), and emphasized that applied

courses require face-to-face interaction that cannot be done as distance education (Barış & Çankaya, 2016). A study (Özçelik et al. 2020) conducted with medical faculty students found videoing skills and practices and uploading them into the system was not an adequate substitute for in-person education. The researchers cautioned that distance education should only be used to support current medical education. Saltürk and Güngör (2020) determined that distance education is not appropriate for applied courses and negatively affects instructor-student interaction which supports our findings that distance education is not appropriate for applied courses due to both technological and interactional deficiencies. The entire world was caught unprepared for COVID-19, including our university, and the lack of appropriate educational infrastructure for applied courses caused some of these problems.

Available studies of the pandemic and midwifery-nurse education have highlighted that education that has to be digitalized should be supported with new tools, and that even graduation requirements should be changed accordingly (Lazenby, 2020; Leigh et al., 2020). For instance, Luyben (2020) found that all European countries are concerned about students completing all the graduation requirements. The pandemic made the digitalization of education compulsory. Therefore, new graduation requirements should be developed, for example, by changing the requirement of 100 prenatal examinations to 10 simulated and 90 prenatal examinations (Luyben, 2020). The participants in this study were concerned about their lack of practical experience caused by the move to distance education and worried that this lack would adversely affect their professional career.

Strengths and limitations

Our study has some strengths and limitations that should be considered when interpreting the results. One of the strengths of this study is that it is one of the very few qualitative studies investigating distance education in midwifery during the Covid 19 pandemic. Another strength is that participants representative of all years of the course were included in the study. A limitation is that the research was conducted at a single university which may affect the transferability of the results. Whilst not all students were included in the study, data was saturated so it is reasonable to consider the results are representative of the opinions of midwifery students at the university overall.

Implications of this study

Distance education is inadequate for midwifery practice development, but this study has found there is a place for online learning if certain criteria are met. For online learning to be effective the pleasing and facilitating aspects of distance education should be supported and the barriers and factors causing anxiety eliminated.

Conclusion

The results of this study suggest that distance education's technical infrastructure of computers, the internet and connections should be improved for students, the midwifery curricula for technology-based distance educational models should be reorganized, and graduation requirements should be updated to accommodate these changes in midwifery education. However, fourth year students in particular are concerned about their professional career and their inexperience in practice. This concern has arisen as a result of the move to online learning for practice-based courses in response to the pandemic. There is a role for employing bodies to support new graduates with practice-based learning opportunities with appropriate mentoring.

Ethical approval

Permission for the study (2020-15/223) was obtained from the Ankara University Ethics Committee, and written permission was obtained from the university where the data collected. All the students

were informed that their research participation was voluntary, that it would definitely not affect their grades, and that they could leave the research at any phase. They all filled out voluntary consent forms.

Funding sources

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

CRedit authorship contribution statement

Şenay Topuz: Conceptualization, Data curation, Investigation, Project administration, Resources, Supervision, Writing – original draft, Writing – review & editing. **Neslihan Yılmaz Sezer:** Conceptualization, Data curation, Formal analysis, Investigation, Resources, Software, Validation, Visualization, Writing – original draft. **Menekşe Nazlı Aker:** Data curation, Formal analysis, Investigation, Resources, Software, Validation, Visualization, Writing – original draft. **İlknur Münevver Gönenc:** Conceptualization, Investigation, Methodology, Resources, Writing – original draft, Writing – review & editing. **Hatice Öner Cengiz:** Data curation, Investigation, Resources, Writing – original draft, Writing – review & editing. **Aslı Er Korucu:** Data curation, Investigation, Writing – review & editing.

Acknowledgements

We would like to acknowledge all of the student who took the time to complete this interview in the COVID-19 pandemic, sharing their thought to help us understand midwifery students' opinions about distance education.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.midw.2021.103161.

References

- Aslan, H., Pekince, H., 2020. Nursing students' views on the COVID-19 pandemic and their perceived stress levels. *Perspect. Psychiatr. Care* doi:10.1111/ppc.12597.
- Ayvaci, H.Ş., Bebek, G., 2016. Determination of students' opinions about the application of general physics-II course with distance education software. In: 10th International Computer and Instructional Technologies Symposium. Recep Tayyip Erdogan University, Rize, Turkey, pp. 1–6.
- Barış, M.F., Çankaya, P., 2016. Opinion of academic staff about distance education. *Int. J. Hum. Sci.* 13 (1), 399–413. doi:10.14687/ijhs.v13i1.3378.
- Boydak-Özan et al., 2015. The SWOT analysis at the educational organizations. *Turkish J. Edu. Stud.* 2 (1), 1–28. <https://dergipark.org.tr/tr/pub/turkjes/issue/34173/377841>.
- Demirbilek, 2020. Covid-19 outbreak control, example of ministry of health of Turkey. *Turkish J. Med. Sci.* 50 (1), 489–494. doi:10.3906/sag-2004-187.
- Dewart, 2020. Nursing education in a pandemic: Academic challenges in response to COVID-19. *Nurse Educ. Today* 92, 104471. doi:10.1016/j.nedt.2020.104471.
- Erfidan, A., 2019. Perspectives of lecturers and undergraduate students on university distance education courses: the case of Balıkesir University [Unpublished Master's thesis]. Balıkesir University, Institute of Science, Balıkesir.
- Erlingsson, C., Brysiewicz, P., 2017. A hands-on guide to doing content analysis. *African journal of emergency medicine. Revue Africaine de la Medecine d'urgence* 7 (3), 93–99. doi:10.1016/j.afjem.2017.08.001.
- Gaur, U., et al., 2020. Challenges and opportunities of preclinical medical education: Covid-19 crisis and beyond. *SN Comprehensive Clinical Medicine.* 22, 1–6. doi:10.1007/s42399-020-00528-1, Advance online publication.
- Gürkan, B., 2020. The learning efforts beyond time and distance: a participant-oriented evaluation of distance education of classroom teaching by CIPP model. *J. Turkish Edu. Sci.* 18 (2), 819–852 <https://dergipark.org.tr/en/download/article-file/1204312>.
- Hodges, C., et al., 2020. The difference between emergency remote teaching and online learning. *EDUCAUSE Review*, Accessed June 9, 2020 from <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>. Advance online publication. doi:10.1037/hea0000875.

- Lazenby, M., et al., 2020. Clinical nursing and midwifery education in the pandemic age. *Int. Nurs. Rev.* 67 (3), 323–325. doi:10.1111/inr.12601.
- Leigh, J.A., 2020. Redefining undergraduate nurse teaching during the coronavirus pandemic: use of digital technologies. *Br. J. Nurs.* 29 (10), 566–569. doi:10.12968/bjon.2020.29.10.566.
- Lincoln, Y., Guba, E.G., 1985. *Naturalistic inquiry*. Sage, Newbury Park, CA.
- Luyben, A., et al., 2017. Exploring global recognition of quality midwifery education: Vision or fiction? *Women and Birth J. Aust. College of Midwives* 30 (3), 184–192. doi:10.1016/j.wombi.2017.03.001.
- Luyben, A., Fleming, V., Vermeulen, J., 2020. Midwifery education in Covid-19- time: Challenges and opportunities. *Midwifery*. 89, 102776. doi:10.1016/j.midw.2020.102776.
- Mian, A., Khan, S., 2020. Medical education during pandemics: a UK perspective. *BMC Med.* 18 (1), 100. doi:10.1186/s12916-020-01577-y.
- Morin, K.H., 2020. Nursing education after Covid-19: Same or different? *J. Clin. Nurs.* 29, 3117–3119. doi:10.1111/jocn.15322.
- Newman, N.A., Lattouf, O.M., 2020. Coalition for medical education-A call to action: A proposition to adapt clinical medical education to meet the needs of students and other healthcare learners during Covid-19. *J. Card. Surg.* 35 (6), 1174–1175. doi:10.1111/jocs.14590.
- Özçelik et al., 2020. Medical education in epidemic and disaster situations. *Bezmialem Science*. 8(4),438-443. <https://link.gale.com/apps/doc/A644228415/AONE?u=anon~49b38243&sid=googleScholar&xid=a0269433>.
- Özköse, H., Ari, S., Çakır, Ö., 2013. A SWOT analysis of distance education process. *Middle Eastern & African J. Edu. Res.* 5, 41–55.
- Pather, N., et al., 2020. Forced disruption of anatomy education in Australia and New Zealand: an acute response to the Covid-19 pandemic. *Anat. Sci. Edu.* 13 (3), 284–300. doi:10.1002/ase.1968.
- Rajab, M.H., Gazal, A.M, Alkattan, K., 2020. Challenges to online medical education during the covid-19 pandemic. *Cureus* 12 (7), e8966. doi:10.7759/cureus.8966.
- Ramos-Morcillo, A.J., et al., 2020. Experiences of nursing students during the abrupt change from face-to-face to e-learning education during the first month of confinement due to Covid-19 in Spain. *Int. J. Environ. Res. Public Health* 17 (15), 5519. doi:10.3390/ijerph17155519.
- Saltürk, A., Güngör, C., 2020. Community feeling in students during Covid-19: An investigation on online distance learning. *J. Hum. Soc. Sci. Res.* 9 (5), 4204–4221. doi:10.15869/itobiad.817937.
- Stoller, J.K, 2021. A Perspective on the Educational “SWOT” of the Coronavirus Pandemic. *Chest* 159 (2), 743–748. doi:10.1016/j.chest.2020.09.087.
- Viner, R.M., et al., 2020. School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review. *Lancet Child Adolesc. Health* 4 (5), 397–404. doi:10.1016/S2352-4642(20)30095-X.
- Wang, J., Wang, Z., 2020. Strengths, weaknesses, opportunities and threats (SWOT) analysis of china's prevention and control strategy for the COVID-19 epidemic. *Int. J. Environ. Res. Public Health* 17 (7), 2235. doi:10.3390/ijerph17072235.
- Yazıcı, S., 2009. Ebelik Mesleğini Nasıl Yok Ediyoruz? *Sağlık Düşüncesi ve Tıp Kültürü Dergisi* 12, 12–15.
- Yazıcı, S., 2010. Midwifery students' demographic characteristics and the effect of clinical education on preparation for professional life in Turkey. *Nurse Education in Practice* 10 (6), 367–373. doi:10.1016/j.nepr.2010.05.005.
- Yılmaz, T., Karanisoğlu, H., 2016. Current situation of midwifery education in Turkey. *HSP* 3 (1), 73–77. doi:10.17681/hsp.32896.
- Yin, R.K., 2014. *Case study methods: design and methods* (5. th). Thousand Oaks. Sage Publications, Inc, CA.
- Zainal, Z., 2007. Case study as a research method. *Jurnal Kemanusiaan* 9, 1–6.