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Makale Başlığı/Article Name

Academic Development of Physiotherapy and Rehabilitation Students in Post-Earthquake Hybrid Education****

Deprem Sonrası Hibrit Eğitimde Fizyoterapi ve Rehabilitasyon Öğrencilerinin Akademik Gelişimi

ÖZ

Kahramanmaraş'ta 6 Şubat (2023) tarihinde meydana gelen yıkıcı deprem, hayatın tüm alanlarında derin izler bıraktığı gibi eğitim hayatının da ciddi şekilde etkilenmesine neden olmuştur. Deprem sonrası eğitim hayatının aksamaması için üniversiteler önemli ölçüde hibrit eğitime geçiş yapmıştır. Bu çalışmada, hibrit eğitimin fizyoterapi ve rehabilitasyon öğrencileri üzerindeki akademik gelişim açısından etkilerinin değerlendirilmesi amaçlanmıştır. Bu çalışmaya Iğdır Üniversitesi Fizyoterapi ve Rehabilitasyon Bölümü'nden toplam 156 öğrenci dâhil edildi. Sorular Google Formlar kullanılarak cevaplandı. Elde edilen sonuçların frekansları ve yüzdeleri hesaplandı. Bu süreçte öğrencilerin %14'ü yabancı dil kursuna katılmış, %22'si staj için gözlem yapmış, %36'sı mesleki gelişim kurslarına katılmış, %60'ı lisansüstü programları araştırmış, %62'si çevrimiçi lisans derslerine katılmış, %85'i yüz yüze lisans derslerine gönüllü olarak katılmıştır. Bunların yanında öğrencilerin %49'unun fizyoterapi alanını keşfetmeye yöneldiği, %67'sinin fizyoterapistlik mesleği hakkında olumlu fikir değişikliğine sahip olduğu, %57'sinin akademisyenler ile iletişime geçebildiği, %20'sinin online sempozyum ve kongreye katıldığı, %44'ünün düzenli egzersiz yaptığı ve %63'ünün hibrit eğitimde online derslerin bir bölümünde kas-iskelet ağrısı yaşadığı tespit edilmiştir. Ayrıca öğrencilerin bu süreçte %80'inin uzaktan eğitim süreci ile ilgili endişe duyduğu görülmüştür. Sonuçlar, hibrit eğitim alan öğrencilerin eğitim sürecine ilişkin kaygılarını da içeren olumsuz durumlarla karşılaştığını gösterse de, bu eğitim sürecinin öğrencilerin akademik gelişim açısından çeşitli fırsatlar sunduğunu da gözler önüne sermiştir.

Anahtar Kelimeler: Uzaktan Eğitim, Deprem, Sağlık Eğitimi, Sağlık Meslekleri Öğrencileri.

ABSTRACT

The devastating earthquake that occurred in the Kahramanmaraş on February 6 (2023) left deep traces in all areas of life and had a serious impact on educational life. In order to prevent the disruption of educational life after the earthquake, universities have made a significant transition to hybrid education. This study aimed to evaluate the effects of hybrid education on physiotherapy and rehabilitation students' academic development. A total of 156 students from Iğdır University, Department of Physiotherapy and Rehabilitation were included in this study. The questions were answered using Google Forms. The frequencies and percentages of the results obtained were calculated. In this process, 14% of the students attended a foreign language course, 22% made observations for internship, 36% attended professional development courses, 60% researched postgraduate programmes, 62% attended online undergraduate courses, 85% voluntarily attended face-to-face undergraduate courses. In addition, it was found that 49% of the students were inclined to explore the field of physiotherapy, 67% had a positive change of opinion about the physiotherapy profession, 57% could communicate with their academic lecturers, 20% participated in online symposia and congresses, 44% exercised regularly and 63% experienced musculoskeletal pain in part of the online courses in hybrid education. It was also found that 80% of students were concerned about the distance learning process. Although the results show that students receiving hybrid education encounter negative situations, including their concerns about the educational process, it has also been shown that this educational process offers various opportunities for students' academic development.

Keywords: Distance Learning, Earthquake, Health Education, Health Occupations Students.

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Introduction

Online or distance learning methods have partially started in higher education institutions with the development of technology, but pandemics, earthquakes and environmental disasters have accelerated this process (Ødegaard et al., 2021). In particular, the completion of technological studies related to the distance learning process by universities has supported this situation. This process has been tried both internally with computers and smartphones owned by students. Some studies have been conducted on students and academics in the distance education process, looking at both musculoskeletal health and psychological factors (Camargo et al., 2020; Salameh et al., 2022). These studies have identified musculoskeletal and psychological deformities and proposed alternative solutions. When examining the distance learning process, reasons such as access to internet infrastructure or technical equipment and social isolation are seen as disadvantages, while easy access from home is considered an advantage (Bączek et al., 2021).

The high intensity earthquakes in the Southeast Anatolia on 6 February caused some changes in the educational process in Turkey (Dal Zilio et al., 2023). After the earthquake, distance education was started in universities. Subsequently, theoretical courses were started to be taught through online distance method and applied courses were started to be taught face-to-face (Ozer, 2023). Later, due to the large area affected by the earthquake, some students attended distance education while others attended face-to-face classes (Elhaty & Elhadary, 2023). This form of education is known as hybrid education. Hybrid education, which is based on the combination of traditional face-to-face and online teaching-learning models, has become popular with the development of technology (Kazu & Yalcin, 2022). The learning environment depends on whether the learners are physically present and therefore attend the class face-to-face or remotely, and whether the environment is the same for all learners or hybrid (Raes et al., 2020).

The advantage of hybrid education is that theoretical courses are taught remotely, and practical courses are taught face-to-face, and this situation seems to work both in terms of time and cost table. However, this variable process has had some effects on the students. It seems likely that this situation will change students' perspectives on the department they are studying and the profession they will represent in the future. In particular, the perspective of students studying applied health sciences through distance learning differs from that of students studying basic sciences (Singh et al., 2021). As physiotherapy and rehabilitation is a department that requires palpation, inspection, and manual assessment skills, among other health departments, other studies have been conducted on the views of students in this field on distance education (Etoom et al., 2023; Şavkın et al., 2021).

Various studies were found in the national database that examined physiotherapy and rehabilitation students' perspectives on distance learning and learning processes during the Covid-19 pandemic, but the fact that the results were controversial which highlighted the need for this study. Bezin et al. (2023) investigated the perspective of physiotherapy and rehabilitation students in the hybrid education model on the learning process, and the study was carried out using a questionnaire consisting of twenty-eight questions. As a result of the study, it was found that the frequent repetitions they made with the videos recorded during the distance learning period created permanence in learning and that the lack of obligation to attend classes had a facilitating effect on the learning process. Yılmaz et al. (2020) investigated the learning attitudes of distance education students in department of physiotherapy and rehabilitation during the Covid-19 pandemic, 87% of the students found the efficiency of distance education low for

applied courses and 78% for theoretical courses. 90% of students preferred face-to-face and 9% preferred distance learning.

The aim of this study was to identify the educational process and professional development perspectives of physiotherapy and rehabilitation students who received hybrid education after the earthquake.

This study provides answers to the following questions:

1. What are the students' perceptions of hybrid training in a health education programme requiring palpation and manual skills?
2. Are students able to change their learning habits positively during the hybrid education period?

1. Materials and Methods

1.1. Study design

This descriptive, single-centre study was conducted at Iğdir University Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation on July 2023 according to the Declaration of Helsinki. Informed consent was obtained from the participants of the study.

1.2. Participants

A total of 156 students were recruited for this study. Inclusion criteria were being aged 18 years and older. The participants included were first- and second-year students studying in the Department of Physiotherapy and Rehabilitation.

1.3. Data collection and analysis

The study was completed by establishing a connection through Google Forms. The questionnaire asked about demographic information, frequency, and type of participation in the courses, the effect of hybrid education from a professional perspective and whether the participants involved in activities that would contribute to their personal development in this study. The questionnaire created by the authors consisted of nineteen questions in total. The prepared questions were checked for scope, content and language by a total of five experts, three of whom were researchers and the other two were physiotherapist academics. The introductory part of the questionnaire provided information about the title, content and research of the study, as well as information about the confidentiality of the answers and the right to withdraw. All questions in the questionnaire were multiple choice. The questionnaire and invitation were sent by e-mail to all students in the Department of Physiotherapy and Rehabilitation. The survey continued for fifteen days to ensure maximum participation.

1.4. Statistical analysis

The Statistical Package for the Social Sciences (version 28.0.1 MAC) program was used for the responses of the participants, which were calculated as percentages. The data obtained from the survey were interpreted by stating the number (n) and percentage frequency distributions (%). Researchers contributed equally to the article from beginning to end.

2. Results

The demographic data of the participants are shown in Table 1.

Table 1. Demographic Data of the Participants

Variable	Levels	n (%)
Gender	Male	32 (21%)
	Female	124 (79%)
Age (years)	18-25	144 (92%)
	25-32	10 (7%)
	33+	2 (1%)
Academic Year	1st year	68 (44%)
	2nd year	88 (56%)
Mode of participation in the education	Online	112 (72%)
	Face to face education	4 (3%)
	Theoretical courses online practice courses face to face	32 (20%)
	Not participated	8 (5%)
Duration of participation in education	Participated 14 weeks	30 (19%)
	More than 7 weeks	98 (63%)
	Less than 7 weeks	28 (18%)

Note. n: Number of participants

Almost a quarter of the participants in our study were male (21%), while more than three quarters were female (79%). Most of the participants were in the 18-25 years age group (92%). When comparing the academic years of the participants, second year students were more likely to participate (56%). In the context of hybrid education, most participants attended the courses via distance learning (72%), while participation in both theoretical and practical courses remained lower (20%). An analysis of participants' attendance showed that more than half of the participants (63%) only attended the courses for more than 7 weeks.

Table 2 shows the participants' academic approaches and their perceptions of this process.

Table 2. Students' academic approaches

Questions	Yes- n(%)	No- n(%)
Have you attend a foreign language course during the hybrid training?	22 (14%)	134 (86%)
Have you participated in any professional internship or observation during the hybrid training?	34 (22%)	122 (78%)
Have you researched any professional development courses during the hybrid training?	54 (35%)	102 (65%)
Have you researched postgraduate education programmes during hybrid education?	94 (60%)	62 (40%)
Do you think that online courses make an academic contribution to you?	98 (63%)	58 (37%)
Do you think that face-to-face courses make an academic contribution to you?	132 (85%)	24 (15%)
Have you worried about your educational life during hybrid education?	124 (80%)	32 (20%)
During the hybrid training period, did you think about which area of physiotherapy you will work in the future (sports physiotherapy, neurological physiotherapy, etc.)?	76 (49%)	80 (51%)
Have your thoughts about the profession of physiotherapist changed positively during the hybrid education?	106 (68%)	50 (32%)

Were you able to communicate with the academics who taught you during hybrid education?	90 (57%)	66 (42%)
Were you able to participate in any online symposia or congresses during the hybrid training?	32 (20%)	124(80%)
Did you exercise regularly to maintain physical well-being during hybrid training?	68 (44%)	88 (56%)
Did you experience musculoskeletal pain during the online part of the hybrid training?	98 (63%)	58 (37%)

n: Number of participants

Most of the participants did not attend a foreign language course for personal development during this period (86%). When asked whether the participants had participated as observers in a clinical setting or rehabilitation centre, it was found that most of them had not participated in an observation placement (78%). More than half of the participants (65%) answered no when asked if they had researched continuing education courses. During this period, interest in Masters and Doctoral education increased (60%). In terms of how the courses were delivered, both online courses (63%) and face-to-face courses (85%) contributed to academic development. When participants first encountered distance learning, most of them were concerned about these processes (80%). In this process, almost half of the students decided which field of physiotherapy (sports physiotherapy, neurological physiotherapy, or pediatric physiotherapy) they wanted to work in in the future (49%), while the other half stated that they had not decided which field they wanted to work in (51%). Regarding the profession of physical therapists, it was found that many participants' views of the profession had changed in a positive way during this period (68%). Most participants indicated that they were able to communicate with the academician in charge of the course and their academic advisors during this period (57%). Most participants indicated that they did not attend any lectures, symposia or congresses during this term (80%). Finally, more than half of the participants (56%) did not participate in any sports or sports competitions during this academic year and the majority (63%) experienced musculoskeletal pain during this period.

The change in the academic grade point average (GPA) of the participants included in the study during the period of hybrid education is shown in Table-3.

Table 3. Change in the academic grade point average (GPA).

Variable	Changing	n (%)
GPA	Ascent	54 (35%)
	Unchanged	50 (32%)
	Descent	52 (33%)

Note. n: Number of participants

The GPA increased for 35% of the students, remained unchanged for 32% of the students and decreased for 33% of the students.

3. Discussion

The fact that physiotherapy education involves clinical applications raises the possibility that some students may not be proficient if the education is delivered online.

Lorenzo-Lledo et al. (2021) reported that university students who received hybrid education related to the COVID-19 pandemic experienced numerous difficulties in adapting to the hybrid teaching model. In this sense, decreases in motivation, feelings of loneliness, technical connection problems and less interaction with teaching staff and other students were emphasized in this study,

and as a result, the level of satisfaction with the education received was also revealed to be moderate (Lorenzo-Lledó et al., 2021).

Wut et al. (2022) investigated the readiness of university students to learn both face-to-face and online during the pandemic. The lectures were conducted in a hybrid manner where the two groups of students were treated the same. The results show that the intention to participate in the classroom environment is related to readiness and perceived control. Such an intention is also the same regardless of the learning mode. Perceived behavioral control is a partial mediator between students' readiness and intention to participate in class (Wut et al., 2022). Erliza and Septianingsih (2022) investigated undergraduate students' perceptions of the hybrid learning system in the pandemic era. The participants were 45 undergraduate students in the English department at Malang State University. The results of the study revealed that undergraduate students had positive perceptions of hybrid learning from pedagogical, social and technical perspectives (Erliza & Septianingsih, 2022).

Li et al. (2021) investigated how hybrid learning has impacted performing arts education at the Hong Kong Academy of Performing Arts during the COVID-19 pandemic. The survey results from both educators and students show positive evidence of the validity of using a hybrid education method (Li et al., 2021). Van der Rijst et al. (2023) investigated the effects of hybrid education, and measured student engagement and motivation through questionnaires. As a result, both campus and online students who attended classes with intense motivation showed greater class participation and more class interaction than did students with less motivation (Van der Rijst et al., 2023).

Rossetini et al. (2021) assessed student performance and satisfaction in an online course during the epidemic, and no difference was found between face-to-face and online education in terms of course satisfaction. In the same study, a statistically significant difference in favour of online teaching was found when students' performance after the course was assessed (Rossetini et al., 2021). Although Dario and Simic (2021) found many advantages in that they listed the advantages and disadvantages of physiotherapy education delivered through online education, they also focused on many disadvantages of this situation. Bampton et al. (2022) reported that physiotherapy education requires time to prepare effective online content and that face-to-face education is essential in some areas of physiotherapy. They suggested that delivering future physiotherapy education in a hybrid way would be the most effective method (Bampton et al., 2022).

Elemam et al. (2023) investigated the effects of hybrid and face-to-face education on course perception and examination performance in endodontic students. As a result of the study, no significant difference was found between the GPAs and course perceptions of the students who participated in face-to-face and hybrid education (Elemam et al., 2023). Similarly, the percentages of students whose GPAs decreased, remained the same and increased were found to be similar in our study.

Gagnon et al. (2020) stated that curriculum development using distance or hybrid education in the Department of Physical Therapy and Rehabilitation should include not only the delivery of presentations designed to be taught face-to-face to students. They also argued that deep and meaningful learning, connections with new information and clinical reasoning skills should be provided (Gagnon et al., 2020). Therefore, it is important to understand what this group of students think about hybrid education and to develop a roadmap accordingly. It is important to develop the ability to think in more than one dimension in a professional classroom where

palpation and manual techniques are at the forefront. One of the forms of hybrid education is the technique of watching lectures online beforehand and then practicing face-to-face. This technique is referred to as the flipped classroom model (Ozdamli & Asiksoy, 2016). Boucher et al. (2013) applied the flipped classroom model to physiotherapy students, a satisfaction questionnaire was administered to the students regarding the course outcomes and positive feedback was received as a result.

The incorporation of online education into the physiotherapy profession has also occurred worldwide during the COVID-19 pandemic. We believe that most studies on this topic will follow the same direction as online applications during the pandemic period. Most of the studies examining different headings show that students and professionals have positive concerns about online education as well as about different headings (Phadke et al., 2021; Evans et al., 2014; Alexander et al., 2019). However, several studies have shown that online training can be incorporated into physiotherapy departments to meet the challenges of the modern era, and the hybrid training model removes most of the question marks.

4. Conclusion

Situations that affect students directly, such as earthquakes and pandemics, may require immediate changes in training. To minimize the impact of the disaster experienced, one of the first steps is to adapt technological resources to the classical education model to continue education and training activities. At the end of the process, some of the students can adapt to online education and continue the self-learning model required by the studentship, while others cannot fully manage the process. This situation may be caused by the psychological state of the students and is related to various factors. For this reason, our determination as authors is to give students every opportunity to be as actively involved in the process as possible, to encourage educational activities by following students individually, and to receive the support of educational institutions to provide the necessary psychological support to students.

5. Strengths and limitations

Students are among the individuals most affected by natural disasters today. With the development of technology, hybrid education has become important for minimizing the effects of natural disasters. In this sense, it has become important to understand students' perspectives on hybrid education. The fact that this research was conducted especially on physiotherapy and rehabilitation students who have many practical courses is a strength of the research. In this study, a questionnaire was used to determine the opinions of the students and qualitative analysis may be necessary to better understand the students' opinions. This situation meant that the students' ideas emerged within a certain framework and were seen as a limitation.

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