Comparison of Professional Awareness and Anxiety Levels of Physiotherapy and Rehabilitation Students According to Socio-Demographic and Educational Parameters: A Cross-Sectional Study

Fizyoterapi ve Rehabilitasyon Öğrencilerinin Mesleki Farkındalık ve Kaygı Düzeylerinin Sosyodemografik ve Eğitimsel Parametrelere Göre Karşılaştırılması: Kesitsel Bir Çalışma

Erhan SEÇER[a], Derya ÖZER KAYA[b]

[a]Department of Physiotherapy and Rehabilitation, Manisa Celal Bayar University Faculty of Health Sciences, Manisa, Türkiye
[b]Department of Physiotherapy and Rehabilitation, İzmir Kâtip Celebi University Faculty of Health Sciences, İzmir, Türkiye

ABSTRACT Objective: This study aimed to compare the professional awareness and anxiety levels of physiotherapy and rehabilitation students according to socio-demographic and educational parameters. **Material and Methods:** Four hundred eighty-one students were included in the study. Professional awareness levels with the Professional Awareness Level Questionnaire and professional anxiety levels with the Professional Anxiety Questionnaire were assessed. **Results:** First-grade students gave correct answer to the question about "Total European Credit Transfer System value that can be taken in one semester in the department" at a higher rate. Second-grade students gave correct answer to the question about "total graduation credits of department" at a lower rate. Third-grade students gave correct answers to the questions about "physiotherapist profession law" and "the professional disease that physiotherapists are most frequently exposed to in their professional life" at a lower rate. Fourth-grade students gave correct answers to the questions about "Turkey Physiotherapists Day", "which university started physiotherapy and rehabilitation education in Turkey for the first time", and "requirements for a master's degree and doctorate in the field of physiotherapy and rehabilitation" at a higher rate. The levels of professional anxiety of female students, students with a protective family and who had difficulties in interpersonal relationships were higher (p<0.05). First-grade students, students with higher average income and students who had higher socio-economic levels had lower professional anxiety levels (p<0.05). **Conclusion:** It may be important to enrich the content of the physiotherapy and rehabilitation department's curricula in terms of professional courses aimed at improving students' awareness and anxiety levels.

Keywords: Education; health occupations; psychology

ÖZET Amaç: Bu çalışma, fizyoterapi ve rehabilitasyon öğrencilerinin mesleki farkındalık ve kaygı düzeylerinin sosyo-demografik ve eğitimsel parametrelere göre karşılaştırılmasını amaçladı. **Gereç ve Yöntemler:** Çalışmaya 481 öğrenci dâhil edildi. Mesleki kaygı düzeyleri Mesleki Farkındalık Düzeyi Anketi ile, mesleki farkındalık düzeyleri ise Mesleki Kaygı Anketi ile değerlendirildi. **Bulgular:** Birinci sınıf öğrencileri "bölümde bir dönemde alınabilecek toplam Avrupa Kredi Transfer Sistemi değeri" ile ilgili soruya daha yüksek oranda doğru cevap verdi. İkinci sınıf öğrencileri "bölümün toplam mezuniyet kredisi" ile ilgili soruya daha düşük oranda doğru cevap verdi. Üçüncü sınıf öğrencileri "fizyoterapist meslek yasası" ve "fizyoterapistlerin meslek hayatlarında en sık maruz kaldıkları meslek hastalığı" ile ilgili sorulara daha düşük oranda doğru cevap verdi. Dördüncü sınıf öğrencileri "Türkiye fizyoterapistler günü", "Türkiye'de ilk defa fizyoterapi ve rehabilitasyon eğitimine başlayan üniversite" ve "fizyoterapi ve rehabilitasyon alanında yüksek lisans ve doktora derecesi için gerekli şartlar" ile ilgili sorulara daha yüksek oranda doğru cevap verdi. Kız öğrencilerin, koruyucu aileye sahip olan ve kişilerarası ilişkilerde güçlük çeken öğrencilerin mesleki kaygı düzeyleri daha yüksekti (p<0,05). Birinci sınıf öğrencilerinin, gelir ortalaması ve sosyo-ekonomik düzeyi daha yüksek olan öğrencilerin mesleki kaygı düzeyleri daha düşüktü (p<0,05). **Sonuç:** Fizyoterapi ve rehabilitasyon bölümü müfredat içeriğinin öğrencilerin farkındalık ve kaygı düzeylerini geliştirmeyi amaçlayan mesleki dersler açısından zenginleştirilmesi önemli olabilir.

Anahtar Kelimeler: Eğitim; sağlık meslekleri; psikoloji

A profession is defined as a job that individuals perform in order to maintain their lives and that requires education, work, knowledge, and skill development.[1] Also, it is the most important source of the individual's identity, and it is an activity area that allows him or her to be respected by the environment, establish relations with others, have a place in society, and experience the feeling of being useful.[2] Choosing the profession is one of the most important choices that will shape the lifestyle of the individual. Therefore, in order to be successful, individuals should decide by taking into account their interests and wishes when choosing a profession. Accordingly, when individuals make a choice considering their personal interests and skill levels, they will both be able to take their vocational education to the next level and be more successful in their professional life.[1]

The profession called "physiotherapist" includes the implementation of physiotherapy-specific evaluation methods and treatment approaches in case of all kinds of injuries, diseases, congenital, and acquired disabilities that cause movement disorders.[1] In this context, physiotherapists are the professional group that provides health services to individuals of all age groups for the development, protection, and if necessary, treatment and rehabilitation of individual and community health.[3] Also, they play a role as a member of the rehabilitation team in bringing various population groups into the labor market, increasing their quality of life and integrating their participation in social life.[4]

Physiotherapy and rehabilitation students, who will provide health services to individuals of all ages following their graduation, are expected to be physiotherapists with clinical skills, adopting lifelong learning, thinking, interpreting, and decision-making at a good level.[5,6] However, it is an important requirement to provide professional awareness to students studying in a field such as health, which is very important for the happiness, economic efficiency, and welfare of individuals in society.[1] In addition, professional awareness parameter is very important in order to gain physiotherapists who are aware of their responsibilities under the name of "Physiothepist."[1,4] Hence, the professional awareness formed in the stu-

dents will also ensure the development of a sense of professional belonging and this will positively reflect on the happiness, economic efficiency, and welfare level of the individuals receiving health services in society.[4] Therefore, it is very important to determine the professional awareness levels of physiotherapy and rehabilitation students and to compare according to socio-demographic and educational parameters. As a matter of fact, students' professional awareness levels may vary according to socio-demographic and educational parameters, or these parameters may affect their professional awareness levels.

The professional anxiety level of physiotherapy and rehabilitation students is another important issue that needs to be investigated.[7] Difficulties in adapting to the clinical environment and lack of clinical experience can cause high levels of anxiety by increasing the uncertainty experienced. Also, students experience intense anxiety and stress at the beginning of clinical practice due to thoughts such as making mistakes, harming the patient, encountering negative reactions, and having low self-confidence. High levels of anxiety and stress may cause difficulties in developing relationships with health professionals, a decrease in the ability to cope with problems and social relations in students.[7]

There are many studies in the literature investigating physiotherapy and rehabilitation awareness of different populations.[8-10] However, it was seen that there are few studies investigating the professional awareness levels of physiotherapy and rehabilitation students, and the results obtained from the studies varied.[4,5,11] Also, it was observed that previous studies mostly focused on stress, depression, and anxiety levels of physiotherapy and rehabilitation students.[12,13] Finally, it was concluded that the studies investigating the anxiety levels of physiotherapy and rehabilitation students towards clinical practice, unemployment and profession were carried out only on students studying in the fourth-grade or in the first and fourth-grade.[7,14,15]

It is an important requirement to increase the number of studies examining the professional awareness and anxiety levels of physiotherapy and rehabilitation students and include all physiotherapy and rehabilitation students studying in different grades

(1st, 2nd, 3rd, and 4th) in the studies. Therefore, the aim of this study was to compare the professional awareness and anxiety levels of physiotherapy and rehabilitation students according to socio-demographic and educational parameters. Also, we hypothesized that professional awareness and anxiety levels of the physiotherapy and rehabilitation students varied according to their socio-demographic and educational parameters.

◾ MATERIAL AND METHODS

This study, which was planned as a cross-sectional study, was carried out between 2-13 January 2023. The population of the study consisted of students (n=670) studying in the physiotherapy and rehabilitation department of a governmental university in Manisa. The sample of the study consisted of 481 students who accessed the structured questionnaire form sent via the internet (via message and e-mail) and filled out the questionnaire and returned to us. As a result of the post-hoc analysis (G*Power 3.1.9.2 version, Heinrich-HeineUniversität, Düsseldorf, Germany) using the data obtained (mean and standard deviations of the Professional Anxiety Questionnaire total scores of students with and without difficulties in interpersonal relationships), the power of the study was found to be 97% with an effect size of 0.4 and a Type 1 error level of 0.05.[16] Inclusion criteria of the study were as follow; to be able to read and understand Turkish, to be volunteer to participate in the study, and to be students studying at the physiotherapy and rehabilitation department of the governmental university where the study was conducted. Ethical approval was obtained from the İzmir Kâtip Çelebi University Social Research Ethics Committee (date: December 27, 2022, no: 2022/21-03). The study was conducted in accordance with the Declaration of Helsinki. A consent was obtained from the students who participated in the study via the structured questionnaire form.

"Google Forms" application was used in the study (Google, California, United States of America). The questionnaire form structured with this application was sent to the students via the internet (via message and e-mail) using the link. The first section of the questionnaire consisted of a general informa-

tion text about the study and 2 options as follows: "I want to participate in this study" and "I do not want to participate in this study." Students who chose the option "I want to participate in this study" were able to move on to the other sections of the form. The other sections of the form consisted of questions about the socio-demographic (gender, family structure, difficulty in interpersonal relations, average level of income, and perceived socio-economic level) and academic (grade level, practical course/internship) parameters of the students, the questions in the Professional Awareness Level Questionnaire, and Professional Anxiety Questionnaire, respectively.

The Professional Awareness Level Questionnaire was prepared by the researchers in line with the previous studies in the literature and the information available on the official website of the Turkish Physiotherapists Association.[4,17] The questionnaire consisted of 15 questions aiming to determine the level of awareness of the students about the "Physiotherapist professional law", "World Physiotherapy Day", "Turkish Physiotherapists Day", "Turkish Physiotherapists Association", "physiotherapist education", "the necessary conditions for a master's and doctorate in physiotherapy and rehabilitation", "physiotherapist profession", and "total graduation credit of department of physiotherapy and rehabilitation."

The Professional Anxiety Questionnaire, developed by Özdinç et al., consists of questions aiming to determine the factors that may cause anxiety about the working environment, working conditions, job placement, professional competence, and professional satisfaction (Appendix 1).[15] The questionnaire is a 5-point Likert-type questionnaire (1=Not at all Anxious, 2=Not Anxious, 3=I am Partially Anxious, 4=I am Anxious, 5=I am Very Anxious) and consists of 18 questions. The lowest score is 18 and the highest score is 90 that can be obtained from the questionnaire, and a high score indicates a high level of anxiety.[15]

Statistical analysis of the data was performed with the statistical package program IBM SPSS Statistics Standard Concurrent User V 26 (IBM., Armonk, New York, USA). Descriptive statistics were given as number of units (n), percent (%), mean and standard devi-

APPENDIX 1: Professional Anxiety Questionnaire.					
Below are questions about situations that you might be worried about. Tick the rating that suits you. (1) I'm not anxiety at all (2) I am not anxiety (3) I am partially anxiety (4) I am anxiety (5) I am very anxiety					
1. Cannot be appointed with "KPSS"	1	2	3	4	5
2. Unwanted assignment					
3. Working in the private sector					
4. Being unemployed					
5. Getting away from the university environment					
6. Inadequate clinical skills in professional life					
7. Coping with the patient alone in professional life					
8. Failure to diversify exercise in professional life					
9. Inadvertently harming patients in their professional life					
10. Worrying about bodily health in professional life					
11. Communicating with staff working in their professional life					
12. Difficulty communicating with patient relatives					
13. Insufficient salary					
14. Inability to benefit from vocational development courses					
15. Insufficient electrophysical agents and exercise materials in the institution					
16. Inadequate hygiene environment in the workplace					
17. Insufficient theoretical knowledge during the training					
18. Inability to take time for oneself in professional life					

ation (mean±SD), minimum (min), and maximum (max) values. The normal distribution of data for numerical variables was determined by the Shapiro-Wilk test. Comparison of 2 independent groups means was performed with the independent samples t-test, comparison of more than 2 independent groups means with the one-way analysis of variance and comparison of more than 2 groups ratio with the chi-square test. The significance level (α) was set at 0.05.

RESULTS

The socio-demographic and educational parameters of the students (mean age; 20.75±2.10 years) included in the study were given in Table 1.

The comparison of the correct answers the students gave to the questions in the Professional Awareness Level Questionnaire according to their grade level were given in Table 2. Accordingly, first-grade students gave the correct answer to the question about "Total European Credit Transfer System (ECTS) value that can be taken in one semester in the department" at

a higher rate (p=0.016). Second-grade students gave the correct answer to the question about "total graduation credits of department" at a lower rate (p=0.007). Third-grade students gave the correct answers to the questions about "physiotherapist profession law" and "the professional disease that physiotherapists are most frequently exposed to in their professional life" at a lower rate (p=0.008, p=0.004, respectively). Fourth-grade students gave the correct answers to the questions about "Türkiye Physiotherapists Day", "Which university started physiotherapy and rehabilitation education in Türkiye for the first time?", and "Requirements for a master's degree and doctorate in the field of physiotherapy and rehabilitation" at a higher rate (p=0.017, p=0.010, p<0.001, respectively). However, there was no significant difference between the ratio of correct answers given by the students to the other questions in the Professional Awareness Level Questionnaire according to their grade level (p>0.050).

The comparison of the Professional Anxiety Questionnaire total scores according to the socio-

TABLE 1: Socio-demographic and educational parameters of the students.		
Variables	**Minimum/maximum**	**Mean±SD**
Age (year)	17.00/37.00	20.75±2.10
	n	**%**
Socio-demographic parameters		
Gender		
Female	343	71.3
Male	138	28.7
Family structure		
Authoritative	72	15.0
Democratic	196	40.7
Protective	213	44.3
Difficulty in interpersonal relations		
Yes	111	23.1
No	370	76.9
Average level of income		
5.500 TL and below	70	14.6
Between 5.501 TL and 9.000 TL	177	36.7
Between 9,001 TL and 15.000 TL	136	28.3
15.001 TL and above	98	20.4
Perceived socio-economic level		
Low	76	15.8
Moderate	374	77.8
High	31	6.4
Academic parameters		
Grade level		
First-grade	119	24.7
Second-grade	124	25.8
Third-grade	122	25.4
Fourth-grade	116	24.1
Practical course		
Yes	362	75.2
No	119	24.8
Practical internship		
Yes	238	49.4
No	243	50.6

SD: Standard deviation; n: Number.

demographic and educational parameters of the students were given in Table 3. Accordingly, a significant difference was found between the Professional Anxiety Questionnaire total scores of the students according to their gender, grade level, family structure, difficulty in interpersonal relationships, average income level and perceived socio-economic level (p<0.001, p=0.041, p=0.001, p<0.001, p<0.001, p<0.001, respectively). However, there was no significant difference between the Professional Anxiety Questionnaire total scores of the stu-

dents according to the status of taking/not taking practical course/internship.

DISCUSSION

The present study aimed to compare the professional awareness and anxiety levels of physiotherapy and rehabilitation students according to socio-demographic and educational parameters. As a result of the study, it was seen that the awareness levels of the students studying in different grades varied regarding the physiotherapist profession and department and the professional anxiety levels of the students varied regarding different socio- demographic and educational parameters.

In the current literature, it was seen that there were few studies investigating the professional awareness levels of physiotherapy and rehabilitation students by the terms of different variables.[4,5,11] Accordingly, Erel et al., included in their study the students of the fourth-grade of 10 physiotherapy and rehabilitation departments in Türkiye and reported that the students had a medium to high level of professional awareness and the levels didn't differ whether they willingly or unwillingly preferred the physiotherapy and rehabilitation department.[5] Also, Horata et al. found that fourth-grade students gave more correct answers to questions questioning the level of professional awareness and professional awareness could be affected by individual differences.[11] Lastly, Özdinçler et al. compared the correct answers given by the physiotherapy and rehabilitation students to the questions about their education and professional awareness, according to the grade level of the students.[4] Accordingly, they reported that the rate of correct answers to all the questions in the questionnaire was high, and the rate of correct answers given by the students in the following grades to the questions about "collaborative physician groups" and "professional law" was lower than expected. Also, they concluded that as the grade level increased, the rate of correct answers to the questions about "graduation requirements of the department" and "graduate education" also increased. Similar to the previous study, the professional awareness levels of the physiotherapy and rehabilitation department students were compared according to the grade level

TABLE 2: Comparison of the correct answers of the students from different grades to the questions in the Professional Awareness Level Questionnaire.

Correct answers Professional awareness level questionnaire	1st grade		2nd grade		3rd grade		4th grade		p value
	n	%	n	%	n	%	n	%	
1. In which year was the Physiotherapist professional law accepted and published in the official newspaper?	56a	48.3	61a	49.2	39b	32.0	64a	53.8	**0.008***
2. When is world physiotherapy day celebrated?	77a	64.7	74a	59.7	86a	70.5	78a	67.2	0.174
3. When is the Turkish physiotherapists day celebrated?	48a	40.3	45a	36.3	62a,b	50.8	70b	60.3	**0.017***
4. In which year was the Turkish Physiotherapists Association established?	58a	48.7	55a	44.4	46a	37.7	53a	45.7	0.071
5. In which university was physiotherapist education first given in Türkiye?	81a	68.1	79a	63.7	83a	68.0	100b	86.2	**0.010***
6. What is the name of organization that the Turkish Physiotherapists Association is the member of?	70a	58.8	65a	52.4	73a	59.8	66a	56.9	0.488
7. What are the necessary conditions for a master's and doctorate in physiotherapy and rehabilitation?	44a	37.0	56a,b	45.2	47a	38.5	68b	58.6	**0.001***
8. What professions can physiotherapists work in collaboration with?	92a	77.3	103a	83.1	108a	88.5	96a	82.8	0.121
9. What age range can physiotherapists work between?	116a	97.5	120a	96.8	118a	96.7	112a	96.6	0.532
10. In which institutions can physiotherapists work?	112a	94.1	120a	96.8	118a	96.7	110a	94.8	0.924
11. Which professional diseases are physiotherapists most frequently exposed to in their professional life?	109a	91.6	103a,b	83.1	91b	74.6	99a,b	85.3	**0.004***
12. In which year was Manisa Celal Bayar University Manisa School of Health Department of Physiotherapy and Rehabilitation established?	44a	37.0	39a	31.5	39a	32.0	39a	33.6	0.951
13. In which year was Manisa Celal Bayar University Manisa School of Health Department of Physiotherapy and Rehabilitation named as Faculty of Health Sciences Department of Physiotherapy and Rehabilitation?	44a	37.0	52a	41.9	51a	41.8	43a	37.1	0.066
14. What is the total graduation credit of Manisa Celal Bayar University, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation?	82a	68.9	63b	50.8	66a,b	54.1	79a	68.1	**0.007***
15. How many ECTS courses can students of Manisa Celal Bayar University, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation take each term?	87a	73.1	63b	50.8	61b	50.0	73a,b	62.9	**0.016***

p*: Comparison between more than two groups; *p<0.050; ECTS: European Credit Transfer System. The superscripts "a" and "b" indicate the difference between the answers to the questions.

of the students in the present study. As a result of the present study, it was seen that the first-grade students correctly answered the question about the "total ECTS value that can be taken in a semester in department" at a higher rate, and the second-grade students correctly answered the question about "total graduation credits of department" at a lower rate. This result showed that students who are just at the beginning of their undergraduate education in the physiotherapy and rehabilitation department are more careful about the requirements of undergraduate education. Interestingly, it was concluded that the third-grade students correctly answered the questions about the "physiotherapist professional law" and "the professional disease that physiotherapists are most frequently exposed to in their professional life" at a lower rate. This result may be due to the fact that the third-grade curriculum of the physiotherapy and rehabilitation department is more intense in terms of practical courses and the third-grade students concentrate more on the courses and exams. In addition, it was seen that the fourth-grade students correctly answered the questions about "Türkiye Physiotherapists Day", "Which university started physiotherapy and rehabilitation education in Türkiye for the first time", and "Requirements for a master's degree and doctorate in the field of physiotherapy and rehabilita-

TABLE 3: Comparison of Professional Anxiety Questionnaire scores according to students' socio-demographic and academic parameters.

Variables	Mean±SD	p value
Socio-demographic parameters		
Gender		
Female	**62.20±11.86**	**<0.001***
Male	55.64±13.16	
Family structure		
Authoritative	58.55±14.02	
Democratic	58.35±12.08	**0.001ᵀ**
Protective	**62.73±12.18**	
Difficulty in interpersonal relations		
Yes	**64.10±12.10**	**<0.001***
No	59.17±12.53	
Average level of income		
5.500 TL and below	63.95±11.15	
Between 5.501 TL and 9.000 TL	61.60±11.76	**<0.001ᵀ**
Between 9,001 TL and 15.000 TL	59.94±12.28	
15.001 TL and above	**55.92±14.25**	
Perceived socio-economic level		
Low	63.46±12.64	
Moderate	60.45±12.04	**<0.001ᵀ**
High	**51.03±14.86**	
Academic parameters		
Grade level		
First-grade	**57.66±12.18**	
Second-grade	60.48±11.71	**0.041ᵀ**
Third-grade	62.22±12.05	
Fourth-grade	60.83±14.09	
Practical course		
Yes	60.63±12.55	0.135
No	58.00±12.75	
Practical internship		
Yes	61.62±12.57	0.071
No	59.49±12.55	

SD: Standard deviation; p*: Comparison between two groups; pᵀ: Comparison between more than two groups; *p<0.050; ᵀp<0.050.

tion" at a higher rate. This result indicated that the level of awareness of the fourth-grade students about the importance and requirements of the physiotherapist profession is high. This may be due to the fact that the students studying in the fourth-grade do practical internships in different health settings for a longer period of time than students studying in other grades. Lastly, considering the results of the studies in the current literature, it was thought that this variability in the results obtained the level of awareness about the physiotherapist profession and the department may

also be related to the individual interests and curiosity of the students.[4]

On the other hand, it was seen that different types of anxiety levels in physiotherapy and rehabilitation students were investigated in the current literature. High levels of anxiety may cause difficulties in developing relationships with health professionals and a decrease in the ability to cope with problems and social relations in students.[7,18] Therefore, it is very important to investigate the anxiety levels of physiotherapy and rehabilitation students. Accordingly, Syed et al. concluded that the physiotherapy and rehabilitation students had high levels of anxiety as analyzed by the Depression, Anxiety and Stress Scale.[12] Shah et al. concluded that maximum number of students in the normal category and some student's in raised level of anxiety and stress among undergraduate Physiotherapy students.[19] Malani et al. included 412 physiotherapy and rehabilitation students in their study and found that 64% of the students had a high level of anxiety.[13] However, Telci et al. investigated unemployment anxiety of fourth-grade physiotherapy and rehabilitation students.[14] They reported that as academic success increased, unemployment anxiety level also increased, unemployment anxiety levels were similar in female and male students, and unemployment anxiety levels of students studying at governmental universities were higher than students studying at foundation universities.[14] Lastly, Oruk et al. investigated the anxiety levels of fourth-grade physiotherapy and rehabilitation students about clinical practice in their study and reported that students' anxiety levels decreased after clinical practice.[7] However, it was observed that the professional anxiety level of the physiotherapy and rehabilitation students was not sufficiently focused on. Accordingly, Özdinç et al. investigated the professional anxiety levels of first and fourth-grade physiotherapy and rehabilitation students.[8] As a result of their study, they reported that the professional anxiety levels of the students did not differ in terms of gender, and the professional anxiety levels of the first and fourth-grade students were similar.[8]

In the present study, professional anxiety levels of physiotherapy and rehabilitation students were investigated in terms of various socio-demographic and educational parameters. As a result of the present

study, it was seen that the level of professional anxiety of female students, students who had a protective family, and difficulties in interpersonal relationships were higher. Also, it was concluded that first-grade students, students with higher average income and socio-economic level had lower professional anxiety levels. The fact that the professional anxiety level of physiotherapy and rehabilitation students has not been investigated in terms of socio-demographic characteristics other than gender and grade level in the current literature prevents us to make discussion of the results we obtained from the present study. However, the higher professional anxiety level of female students may be related to the tendency of the female gender to react more to difficulties in society.[20] In addition, there may be other factors causing this result. On the other hand, students who have a protective family and have difficulties in interpersonal relationships had a higher professional anxiety level can be explained by the fact that students with such characteristics have difficulties in adapting to the external environment and life, exhibit an insecure attitude towards the individuals around them, and this situation has a negative reflection on the level of general anxiety.[21] Also, considering that the thought of facing unemployment after undergraduate students' graduation is an important cause of anxiety, the fact that the professional anxiety level of first-grade students were low, while the level of second, third, and fourth-grade students were high, suggested that this situation is related to future anxiety.[15,22] Lastly, the lower professional anxiety level of students with higher average income and higher perceived socio-economic level can be explained by the fact that they are aware of the financial support to be provided by their families in any unfavorable condition and this situation creates comfort and confidence in students.[23] On the other hand, in the present study, it was observed that the professional anxiety levels of the students who took and did not take the practical course/internship were similar. This result indicates that the content of practical courses and internships in the curriculum of the physiotherapy and rehabilitation department should be enriched in order to reduce the professional anxiety levels of the students.

This study had some limitations. Firstly, the inclusion of only students studying at a governmental university in the study is an important limitation for the generalizability of the results obtained. Secondly, the fact that the groups formed according to some socio-demographic characteristics were not homogeneously distributed may have affected the results obtained. Thirdly, a limited number of socio-demographic variables were compared in the present study. Fourthly, the Professional Awareness Level Questionnaire used in the present study may have been insufficient in analyzing the professional awareness levels of the students. Fifthly, the professional awareness levels of the students were compared only according to grade level. Lastly, this study was planned as a cross-sectional study. Accordingly, it is recommended to monitor students during their undergraduate education, analyze possible changes in professional awareness and anxiety levels, identify related factors, and share the inferences obtained with the literature, within the scope of longitudinal studies to be carried out in the future.

CONCLUSION

It was thought that the level of professional awareness of the students was related to their individual interests and curiosity. Also, it was observed that the professional anxiety levels of the students varied according to their socio-demographic characteristics. However, it was concluded that the undergraduate education process of the physiotherapy and rehabilitation did not improve the professional awareness and anxiety levels of the students in general. Accordingly, it may be important to enrich the content of the physiotherapy and rehabilitation department's curricula to increase students' professional awareness and reduce their professional anxiety levels.

Authorship Contributions

Idea/Concept: *Erhan Seçer, Derya Özer Kaya;* **Design:** *Erhan Seçer, Derya Özer Kaya;* **Control/Supervision:** *Derya Özer Kaya;* **Data Collection and/or Processing:** *Erhan Seçer, Derya Özer*

Kaya; *Analysis and/or Interpretation:* *Erhan Seçer, Derya Özer Kaya;* **Literature Review:** *Erhan Seçer, Derya Özer Kaya;* **Writing the Article:** *Erhan Seçer;* **Critical Review:** *Derya Özer Kaya;* **Materials:** *Erhan Seçer.*

REFERENCES

1. Kunduracılar Z, Akbaş E, Büyükuysal Ç, Biçki D, Erdem EU. Fizyoterapi ve rehabilitasyon bölümü öğrencilerinde mesleki farkındalığın değerlendirilmesi [Assessment of job awareness in department of physical therapy and rehabilitation students]. J Higher Educ Sci. 2012;(3):186-92. [Link]

2. Sarikaya T, Khorshid L. Examining the factors affecting the career choice of university students: Career choice of university students. J Turk Educ Sci. 2009;7(2):393-423. [Link]

3. Yazıcı M, Terzioğlu C. Fizyoterapi ve rehabilitasyon öğrencilerinin benlik saygısı, atılganlık ve empati düzeylerinin araştırılması [An investigation of self esteem, assertiveness and empathy levels in physiotherapy and rehabilitation students]. J Exercise Ther Rehabil. 2019;6(3):171-9. [Link]

4. Özdinçler A, Tarakçı E, Aslan Y. Fizyoterapi ve rehabilitasyon bölümü öğrencilerinin mesleki farkındalık düzeylerinin incelenmesi [Investigation of professional awareness of students in physiotherapy and rehabilitation division]. J Health Sci Prof. 2015;2(2):217-22. [Crossref]

5. Erel S, Horata ET, Cavlak U, Çınar MA, Tomruk MS, Kırmacı ZİK, et al. Türkiye'de lisans eğitimi veren fizyoterapi ve rehabilitasyon okullarındaki son sınıf öğrencilerinin mesleki farkındalık düzeylerinin değerlendirilmesi [An assessment of professional awareness of senior undergraduate students in physiotherapy and rehabilitation schools in Turkey]. Turk J Physiother and Rehabil. 2019;30(3):199-205. [Crossref]

6. Seçer E, Korucu TŞ, Uzunlar H, Dinç G, Kaya DÖ. Sağlık alanında öğrenim gören üniversite öğrencilerinin akademik öz-yeterlik düzeyleri ve problem çözme becerileri ile karar vermede öz-saygı ve karar verme stilleri arasındaki ilişkinin incelenmesi [Investigation of the relationship between academic self-efficacy, problem solving skills and self-esteem in decision making and decision-making styles of university students studying in the field of health]. Hacettepe Univ Fac Health Sci J. 2022;9(1):223-35. [Link]

7. Oruk DÖ, Güp AA, Dongaz Öİ, Bayar K, Bayar B. Fizyoterapi ve rehabilitasyon bölümü öğrencilerinin klinik uygulamaya yönelik kaygı düzeyleri ve kişilik tiplerinin incelenmesi: Bir pilot çalışma [Examination of physiotherapy and rehabilitation students' anxiety levels intended for clinical practice and types of personality- a pilot study]. J Zeugma Health Res. 2020;2(2):51-60. [Crossref]

8. Vincent-Onabajo GO, Mustapha A, Oyeyemi AY. Medical students' awareness of the role of physiotherapists in multidisciplinary healthcare. Physiother Theory Pract. 2014;30(5):338-44. [Crossref] [PubMed]

9. Pachpor R, Athavale N, Dabadghav R, Shyam A, Sancheti P. Perception and awareness of physiotherapy in junior college students. Int J Health Sci Res. 2021;11(7):243-8. [Crossref]

10. Ebenezer CM, Goh CXH, Jemeela S, Abraham MM, Jabbar MS. Awareness and knowledge of physiotherapy among medical and health sciences students: A Cross-Sectional Study. Res J Pharm Technol. 2019;12(4):1695-706. [Crossref]

11. Horata ET, Erel S. Evaluation of professional awareness in physiotherapy and rehabilitation students of Afyon Kocatepe University. ERPA International Congresses On Education. 2017;37:1-6. [Crossref]

12. Syed A, Ali SS, Khan M. Frequency of depression, anxiety and stress among the undergraduate physiotherapy students. Pak J Med Sci. 2018;34(2):468-71. [Crossref] [PubMed] [PMC]

13. Malani R, Nagarwala R, Shyam AK, Sancheti PK. Frequency of depression, anxiety and stress in physiotherapy students and their coping strategies. Int J Indian Psychol. 2020;8(2):626-33. [Link]

14. Telci EA, Şekeröz S, Karagöz B, Cavlak U, Tomruk MS, Başkurt F, et al. Fizyoterapi ve rehabilitasyon eğitimi alan son sınıf öğrencilerinin işsizlik kaygılarının incelenmesi [Examination of unemployment anxiety of senior undergraduate students in physiotherapy and rehabilitation schools]. Turk J Physiother Rehabil. 2022;33(1):16-22. [Crossref]

15. Özdinç S, Biçici Y, Çamur M, Tufan FN. Fizyoterapi ve rehabilitasyon eğitimi alan lisans öğrencilerinin mesleki kaygı düzeylerinin belirlenmesi [Determination of professional anxiety levels of undergraduate students who have physiotherapy and rehabilitation education]. J Higher Educ Sci. 2018;(3):471-9. [Link]

16. Faul F, Erdfelder E, Lang AG, Buchner A. G*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behav Res Methods. 2007;39(2):175-91. [Crossref] [PubMed]

17. Türkiye Fizyoterapistler Derneği. © 2022 Türkiye Fizyoterapistler Derneği - TFD. Erişim tarihi: 06.04.2023. Erişim linki: [Link]

18. Owczarek JE, Lion KM, Radwan-Oczko M. The impact of stress, anxiety and depression on stomatognathic system of physiotherapy and dentistry first-year students. Brain Behav. 2020;10(10):e01797. [Crossref] [PubMed] [PMC]

19. Shah T, Patel MD, Shah H. A study to evaluate depression, anxiety and stress among undergraduate physiotherapy students-an institution based pilot study. Int J Curr Res Rev. 2016;8(20):20-4. [Link]

20. Ergin A, Uzun SU, Topaloğlu S. Pamukkale Üniversitesi Tıp Fakültesi 5. ve 6. sınıf öğrencilerinin sürekli kaygı ve mesleki kaygı düzeyleri ve bunları etkileyen etkenler [Future occupational anxiety and trait anxiety levels of 5th and 6th year medical students at Pamukkale University and their contributing factors]. Med J Muğla Sıtkı Koçman Univ. 2016;3(3):16-21. [Link]

21. Kaya A, Bozaslan H, Genç G. Üniversite öğrencilerinin anne-baba tutumlarının problem çözme becerilerine, sosyal kaygı düzeylerine ve akademik başarılarına etkisi [The effect of the parents' attitudes on university students' problem-solving skills, social concerns and academic achievement]. J Dicle Univ Ziya Gökalp Fac Educ. 2012;(18):208-25. [Link]

22. Tayfun ANT, Korkmaz A. Üniversite öğrencilerinde işsizlik kaygısı: Süleyman Demirel Üniversitesi öğrencileri üzerinde bir araştırma [The unemployment anxiety of university students: a research on Süleyman Demirel University students]. Mehmet Akif Ersoy Univ J Social Sci Inst. 2016;8(17):534-58. [Link]

23. Dilmaç O. Görsel sanatlar öğretmeni adaylarının kaygı düzeylerinin çeşitli değişkenler açısından incelenmesi [Visual arts teacher candidates from the anxiety levels angle investigation of several variables]. J Inst Fine Arts. 2010;(24):49-65. [Link]