Araştırma makalesi

Research article

Health Science Students' Readiness for Interprofessional Education and Affecting Factors

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ABSTRACT

Aim: The aim of this study is to determine health sciences students' readiness for interprofessional education and affecting factors.

Material and Methods: The design of this study is descriptive and comparative. The study sample consisted of 561 students from 11 departments [Nutrition and Dietetics, Child Development, Speech and Language Therapy, Dentistry, Pharmacy, Occupational Therapy, Physiotherapy and Rehabilitation, Nursing, Audiology, and Medicine (Turkish/English)] of a public university in Ankara. The data were collected with the Socio-demographic Questionnaire and the Readiness for Interprofessional Learning Scale. Numbers, percentage, mean, median, t-test, Mann-Whitney U, and Kruskal-Wallis tests were used for data analyses.

Results: The students had a median (min.-max.) Readiness for Interprofessional Learning Scale score of 73.0 (30-95). Students' readiness for interprofessional education significantly differed by department ($p<0.01$), mother's education level ($p<0.01$), willingness to take classes with students from other departments ($p<0.01$), and previous hospitalization ($p=0.04$).

Conclusion: Health science students' readiness for interprofessional education was high. The readiness of students was affected by departments and some socio-demographic characteristics of students. Further qualitative and mixed-method research should be conducted to provide more in-depth insight into the reasons for these effects.

Keywords: Health care, interdisciplinary, interprofessional education, multidisciplinary, student

ÖZ

Sağlık Bilimleri Alanında Eğitim Gören Öğrencilerin Mesleklerarası Eğitime Hazırbulunuşluklarının ve Etkileyen Faktörlerin Belirlenmesi

Amaç: Bu çalışmada sağlık bilimleri alanında eğitim gören öğrencilerin mesleklerarası öğrenmeye hazırbulunuşluklarını belirlemek ve hazırbulunuşluk düzeyleri üzerinde etkisi olabilecek değişkenleri incelemek amaçlanmıştır.

Gereç ve Yöntem: Araştırmanın deseni tanımlayıcı ve karşılaştırmalıdır. Araştırmaya Ankara'daki bir devlet üniversitesinin 11 bölümünde [Beslenme ve Diyetetik, Çocuk Gelişimi, Dil Konuşma Terapisi, Diş Hekimliği, Eczacılık, Ergoterapi, Fizyoterapi, Hemşirelik, Odyoloji, Tıp (Türkçe/ İngilizce)] eğitim gören 561 öğrenci katılmıştır. Çalışmaya katılan öğrencilerden veri toplamak için Sosyodemografik Özellikler Soru Formu ve Mesleklerarası Öğrenmeye Hazırbulunuşluk Ölçeği kullanılmıştır. Verilerin analizlerinde sayı, ortalama, ortanca, t testi, Mann-Whitney U ve Kruskall-Wallis testleri kullanılmıştır.

Bulgular: Öğrencilerin Mesleklerarası Öğrenmeye Hazırbulunuşluk Ölçeği ortanca (min-max) değeri 73 (30-95) olarak bulunmuştur. Çalışmaya katılan öğrencilerin bölümlerine ($p<0.01$), anne eğitim düzeylerine ($p<0.01$), diğer bölümdeki öğrencilerle birlikte ders almaya isteklilik ($p<0.01$) ve daha önce hastanede yatma durumlarına ($p=0.04$) göre mesleklerarası öğrenmeye hazırbulunuşluk düzeyleri arasında anlamlı fark bulunmuştur.

Sonuç: Sağlık bilimleri alanında eğitim gören öğrencilerin mesleklerarası öğrenmeye hazırbulunuşluk düzeyleri yüksektir. Öğrencilerin hazır bulunuşlukları, bölümlerinden ve bazı sosyodemografik özelliklerinden etkilenmektedir. Bu faktörlerin altında yatan nedenlerin derinlemesine anlaşılması için nitel ve karma desen çalışmaların yapılması önerilmektedir.

Anahtar kelimeler: Sağlık bakımı, interdisipliner, mesleklerarası eğitim, multidisipliner, öğrenci

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INTRODUCTION

Health science students should be professionally competent and cooperate with other health care professionals to provide quality health care[1,2]. However, students have limited opportunities to get to know and interact with other students in structured educational programs before they enter professional life. Health care professionals with limited communication and interaction have difficulty getting to know each other, obtaining knowledge of each other's tasks, and cooperating, resulting in a prolonged hospital stay and increased health care costs[1,3-6]. It is becoming increasingly important to reorganize education programs in such a way as to compensate for the shortcomings in the health care system and to improve the interaction between students before they build professional identities or walls. The World Health Organization (WHO)[1] states that interprofessional education (IPE) is the best way to increase cooperation and interaction among students.

IPE improves cooperation between health care professionals, and it also offers many benefits for patients, students, health care professionals, and the health system. Effective communication and collaboration among health care professionals increase patients' safety and quality of care, positively effect patient outcomes and reduce hospital stay and costs, resulting in an improvement in the quality of life of patients[1,7]. Cooperation and interaction improve the professional knowledge and communication skills of health care professionals[1,8]. Effective communiocation and cooperation also help health care professionals to cope with problems[8,9]. The IPE has attracted significant attention worldwide as it has many advantages, and it has been encouraged by WHO. It is also considered an indicator of the quality of the curricula of higher education institutions[10-12]. Despite all these positive developments and international incentives, IPE has been integrated into the health sciences curricula in a limited number of developed countries[1,13-15]. Both educators and students need to determine the demands and readiness of students to ensure the successful implementation and sustainability of the programs and activities for IPE. Knowing the readiness levels of the students ensures that the needs of the students are taken into consideration during the organization of the education programs, and also, it increases students' awareness about interprofessional education[16].

Although pilot studies (not addressed in the WHO report) on IPE have become widespread in recent years in Turkey, a structured education program including all health science students has not yet been developed. However, the accreditation standards stipulate that the students of different health departments should be trained together[12]. The Higher Education Council (HEC, 2004)[17] has IPE standards regarding higher education programs, and the Scientific and Technological Research Council of Turkey (TUBITAK) funds researchers in the field. Despite the support and encouragement, the pilot study conducted by Hacettepe University is the only study on IPE in Turkey to date[18-19]. IPE activities are applied by a limited number of countries as there are some problems regarding its planning, integration, and sustainability[20]. The most common issues are timing, the difference in students' competence, limited financial means, lack of state support, time constraints of teaching staff, and differences in status, power, and prestige among health science students' groups[19,21]. The elimination of these problems through an efficient management process and students' willingness and readiness to get to know other health care professionals and receive training with them ensure successful activities.

Students should have a high level of readiness to be able to benefit from IPE activities. Students with high readiness are more likely to collaborate and more willing to participate in IPE activities. Therefore, they encourage other students and contribute to a positive learning environment. Students' readiness for IPE and individual, environmental, educational, and sociocultural factors affecting it should be determined so that educators can consider the students' needs while preparing curricula and raise their awareness.

There are numerous studies on health science students' readiness for IPE[22-30]. Zorek et al. (2014) conducted a descriptive study to develop interprofessional readiness measurement tools[29]. Mafinejad Ahmady, Arabshahi and Bigdeli (2013) and Milutinovic, Lovric and Simin (2018) reported that students' readiness for IPE differed by age, gender, and grade level[2,30].

Although previous studies have determined how readiness for IPE differs across health science student populations, those included only a limited group of students in the samples[22-28]. Moreover, there are no studies that investigated the Turkish students' readiness for IPE. IPE allows students to study together and get to know each other for making positive contributions to long- term health outcomes and professional growth. It should, therefore, be included in the training programs of future health care professionals. Students' willingness and readiness for IPE programs and activities should be determined to ensure successful planning, implementation, and sustainability. IPE is a new concept for Turkey, and this is the first study investigating health sciences students' readiness for IPE and socio-demographic characteristics affecting it.

Aim

The aim of this study was to investigate health sciences students' readiness for IPE and affecting socio-demographic characteristics.

MATERIAL and METHODS

Study Design

A descriptive and comparative study design was used in this study.

Study Sample

The study population consisted of 1547 students. No sampling technic was used, and all students were invited to participate. Students who voluntarily agreed to participate in the study and completed the instruments were the sample of the study. The study sample consisted of 561 students of the Departments of Nutrition and Dietetics (57), Child Development (30), Speech and Language Therapy (33), Occupational Therapy (25), Physiotherapy and Rehabilitation (38), Audiology (30), Dentistry (39), Pharmacy

(43), Nursing (116), and Medicine (150) [English (48) and Turkish (102)]. The power analysis revealed power to be 0.939, indicating that the sample size was large enough (0.9-1). Health sciences students who participated in clinical practice for at least three weeks as part of the first vocational courses were included in the study.

Data Collection Tools

Data were collected using a Socio-demographic Questionnaire and the Readiness for Interprofessional Learning Scale (RIPLS). The Socio-demographic Questionnaire consisted of 27 questions developed by the researchers to elicit information on students' sociodemographic characteristics (age, gender, parental education level, previous hospitalization status, etc.) and teamwork experiences and factors that might affect their readiness for IPE.

The RIPLS was developed by Parsell and Bligh (1999)[31] and revised by McFadyen et al. (2005)[32]. The scale consists of 19 items and three subscales ("teamwork and cooperation", "professional belonging" and "roles and responsibilities"). Items are scored on a 5-point Likert scale (1= "Strongly Disagree" to 5= "Strongly Agree"), with the lowest score 19 and the highest score 95. A higher score on the scale means a higher readiness for IPE. The RIPLS was adapted to the Turkish language, and its validity and reliability were established by Onan et al. who reported the Cronbach's alpha coefficient as .87 (2017)[33]. In this study, Cronbach's alpha coefficient was .81. For the subscales were teamwork and collaboration (α=.87), professional identity (α=.53), and roles and responsibilities (α=.41).

Data Collection

The study was conducted between September 2017- May 2018. First, the instructors of the first vocational courses were contacted and informed about the study. Dates were set together with the instructors in a way that students attended the 3-week clinical practice. The data collection locations were classrooms or hospital meeting rooms where the students would feel comfortable and complete the data collection tools on time. Students were informed about the purpose of the study before data collection by researher. Written informed consent was obtained from those who agreed to participate. They were also informed about how to complete the data collection tools. The researcher was present during the administration of the data collection tools to answer any questions. The data collection lasted for 15 minutes.

Data Analysis

Data were analyzed using the Statistical Package for Social Sciences (IBM, SPSS, version 21) at a significance level of 0.05. Descriptive analyses were presented using median (min and max) and tables of frequencies for variables and the ordinal variables. T-test was used for normally distributed data (willingness to take classes with students of other departments). As the RIPLES scores were not normally distributed, the Kruskal Wallis tests were conducted to compare scores according to departments and their mother education levels. Mann–Whitney U test was used willingness to take classes with students from other departments and previous hospitalization. The Mann-Whitney U test was performed to test the significance of pairwise differences using Bonferroni correction to adjust for multiple comparisions.

Ethical Considerations

The study was approved by the Non-Interventional Clinical Studies Ethics Committee of the Hacettepe University (Approval No: 16969557-1294). Written permission was obtained from Onan to use the RIPLS-TR in this study and also from the faculties and departments to conduct the study. Written informed consent was obtained from the students for participation.

Limitations

A major limitation of this study is that the Cronbach's alpha coefficient values of the subscales "professional identity" (α=.53) and "roles and responsibilities" (α=.41) of the RIPLS-TR were low in this study.

RESULTS

Table 1. Socio-demographic characteristics of students

Socio-demographic Characteristics	Number	%
Age (n= 553)	**Mean= 21.69**	
Gender (n= 560)		
Female	127	22.6
Male	433	77.4
Longest be living place (n= 560)		
Vilage	41	7.3
Province	380	67.9
County	139	24.8
Family type (n=559)		
Extended Family	69	12.3
Nuclear family	473	84.6
Fragmented family	17	3.1
Mothers' Education (n=561)		
Primary education	247	44.0
High School	135	24.1
University	136	24.2
Others*	43	7.7
Fathers' Education		
Primary education	165	29.5
High School	136	24.3
University	247	44.2
Others*	11	2.0
Mothers' profession (n=560)		
Housewive	330	58.9
Worker	24	4.3
Officer	81	14.5
Retired	51	9.1
Other**	74	13.2
Fathers' Profession (n=559)		
Not working	63	11.3
Worker	163	29.2
Officer	187	33.4
Retired	80	14.3
Other**	66	11.8
Income Rate n= (555)		
Equal to income	336	60.5
Less than income	98	17.7
Income more than expense	121	21.8
Taking care status as an inpatient (n=558)		
Take care	249	44.6

***** There are mothers who are illiterate, literate, and have a master's degree
** Professions was not specified by the student

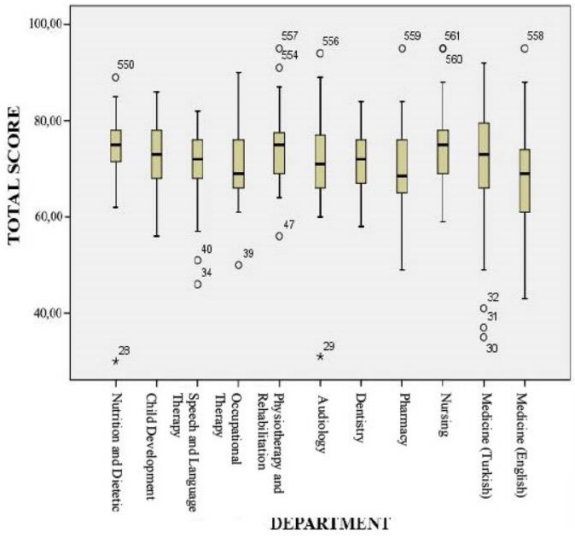
Table 1. Socio-demographic characteristics of students (continues)

Not to take care	309	55.4
Duration of taking care as an inpatient (n= 109)		
1-3 days	74	67.9
4-7 days	18	16.5
8+ days	17	15.6
Hospitalization as a Companion (n=557)		
Accompanied	178	32.0
Not to accompanied	379	68.0
Duration of hospitalization as a companion (n=82)		
1-5 days	70	85.4
6+ days	12	14.6

A total of 561 students from 11 departments participated in this study. Table 1 shows the findings regarding the socio-demographic characteritics of the students. The majority of the sample (77.3%) consists of female students, and 71% are between 21 and 24 years old. More than half (67.9%) of the students lived in the city for the longest time, and 84.6% had a nuclear family. The mothers of 44% of the students are primary school graduates, and 58.9% are housewives. Approximately half of the students' fathers (44.2%) are university graduates, and 1/3 (33.4%) are retired. More than half of the students (60.5%) think that their income is equal to their expenses. The number of students who take inpatient care (44.6%) and the number of students who are never hospitalized (55.4%) are close to each other. It was found that 67.9% of the inpatient students had a stay of 1-3 days. Approximately 1/3 (32.0%) of the students stayed at the hospital as a companion, and 85.4% of these students stated their stay as 1-5 days.

Students had a median RIPLS score of 73.0, with the lowest and highest scores being 30 and 95, respectively. Nursing, Nutrition and Dietetics, Physiotherapy, and Rehabilitation students had the highest median RIPLS score (75.0), whereas pharmacy students had the lowest (68.5) RIPLS score. There was a statistically significant difference in readiness for IPE levels between Nutrition and Dietetics students (75.0) and Medicine (English) students (69.0) (p=0.01) (See Graph 1).

Students' RIPLS scores significantly differed by mother's education level, and willingness to take classes with students of other departments and hospitalization. Students whose mothers had a primary (73.0) or high school degree (73.0) had significantly higher median RIPLS scores than those whose mothers had a bachelor's degree (70.0) (primary/college p=0.03; high school/university p<0.01). Students who were willing to take classes with other students (75.0) had a significantly higher median RIPLS score than those who were not (69.0) (p<0.01). Students who didn't have a previous hospitalization (73) had a significantly higher median RIPLS score than those who had (72.0) (p=0.04) (See Table 1.). The students' RIPLS scores did not differ by age, gender, place of residence, family type, father's education level, parents' occupations, duration of the previous hospitalization, being a carer at the hospital, and duration of being a carer at the hospital (p>0.05).



Graph 1. Box-Plot Graph of Students' RIPLS Total Score Distributions According to Departments

Table 2. Factors Affecting Students' Readiness for Interprofessional Education

	Median	Min – Max	p
Mothers' education level (n= 561)			
Primary School	73.0	30 – 90	**0.00**
High School	73.0	37 – 95	
University	70.0	31 – 95	
Others*	72.0	56 – 95	
Hospitalization (n= 558)			
Yes	72.0	31 – 95	**0.04**
No	73.0	30 – 95	
Willingness to take classes with others (n=539)			
Yes	75.0	30 – 95	**0.00**
No	69.0	35 – 95	

* There are mothers who are illiterate, literate, and have a master's degree

DISCUSSION

This study investigated health sciences students' readiness for IPE and affecting factors. The students had high median RIPLS scores significantly affected by students' department, mother's education, receiving care as a patient during the previous hospitalization, and willingness to take classes with students of other departments. In the literature, there are different results related to health sciences students' readiness levels for IPE[26,28,34]. Judge, Polifroni, and Zhu (2015) reported a significant difference in readiness for IPE among dentistry, dietetics, medical, nursing, pharmacy, and physiotherapy students, where the medical students have the lowest score[26]. Lestari et al. (2016) also reported a significant difference in readiness for IPE among medical, nursing, midwifery, and dentistry students, where the medical students have the highest and the nursing students the lowest scores[28]. In our study, nursing, nutrition and dietetics, and physiotherapy students had the highest median RIPLS score, whereas pharmacy, occupational therapy, and medical students (English) had the lowest.

There was a statistically significant difference in readiness for IPE between nutrition and dietetics students and medicine (English) students (See Graph 1.). The differences between departments may be due to the social images of the professions, the cultures of the departments, and the attitudes of their educators toward other professions.

Students whose mothers had low levels of education had significantly higher RIPLS scores than those whose mothers had high education levels. Although culture is regarded as a factor affecting IPE practices[35], no study has discussed the effect of parents' education on students' readiness for IPE. Although women are becoming increasingly visible in professional life, the Turkish society still shows patriarchal characteristics. As a consequence, mothers have more responsibility for child-rearing tasks than fathers do. Owing to gender roles, mothers have a greater impact on their children's acculturation in Turkey. Therefore, mothers' perceptions, education, and the environment they live in might affect their children's perceptions of and attitudes toward IPE. The mothers' impact on children's readiness for IPE might be the smaller scale reflection of the sociocultural dynamics of societies.

Students who had been hospitalized before had a significantly lower median RIPLS score than those who were not (See Table 2.). The duration of hospital stay did not affect their RIPLS scores. Hospitalization adversely affected participants' readiness for receiving training with other health care professionals. Although interprofessional communication and cooperation are becoming increasingly important nowadays, it is still difficult to see ideal medical teams providing health care. Patients are an essential component of health care teams, but they also interact with health care professionals individually or as a team. Therefore, our results regarding the adverse effect of hospitalization on participants' readiness for IPE may be a warning sign of the presence of a chronic problem concerning health care professionals' perceptions of and attitudes toward patients.

Students willing to take classes with other students (75.0) had a significantly higher median RIPLS score than those who were not (See Table 2.). This result suggests that encouraging students to study or take classes with students from other departments may create an opportunity to know each other better, which positively affects their perceptions of IPE. In this study, no significant difference was found between the RIPLS scores of students according to their gender. While Keshtkaran, Sharif, and Rambod (2014) reported no differences in RIPLS scores between genders[34], Talwalkar et al. (2016)[24] and Judge et al. (2015)[26] reported differences between genders in RIPLS scores. Wong et al. (2017) reported that female students had higher RIPLS scores than male students[23]. The similarity in students' readiness levels of IPE according to gender might be because of the relatively low number of male students in this study.

CONCLUSION

Health sciences students' readiness for IPE is high and differs by the department, mother's education, hospitalization, and willingness to take classes with students of other departments. Especially the negative effect of mothers' high education level on their children's willingness for cooperation warrants further research. Courses on IPE and health care team collaboration should be included in the curricula. IPE activities are crucial for health science students to improve their attitudes toward other professions, but activities such as continuing education that may enhance interprofessional collaboration among health care teams are also important to provide a collaborative atmosphere for patients and students in real health care settings. To prepare students to learn from, with and about each other, universities and departments should take responsibility and offer unconstructed (e.g., shared cafeterias, sport activities) or constructed (e.g., courses, scientific events) interaction opportunities for students from different professions.

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