H.Ü. Sağlık Bilimleri Fakültesi Dergisi
Cilt:11, Sayı:1, 2024
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Özgün Araştırma

Sağlık Bilimleri Öğrencilerinde Problem Çözme Becerileri ile İletişim Becerileri Arasındaki İlişkinin İncelenmesi

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Öz

Amaç: Sağlık profesyonelleri için iletişim ve problem çözme yeteneği, mesleki uygulamada sık kullanılan beceriler olması açısından oldukça önemlidir. Bu araştırma, sağlık bilimleri alanında son sınıf öğrencilerinin problem çözme ve iletişim becerileri arasındaki ilişkiyi değerlendirmek amacıyla planlanmıştır.
Gereç ve Yöntem: Çalışmaya yaş ortalaması 22.64 ± 1,60 yıl olan toplam 171 sağlık bilimleri öğrencisi (135 kadın, 36 erkek) dahil edilmiştir. Bu bireylerin iletişim becerileri İletişim Becerileri Envanteri ile problem çözme becerileri ise Problem Çözme Envanteri ile değerlendirilmiştir. İki envanter arasındaki ilişki Pearson korelasyon analizi ile değerlendirilmiştir.
Bulgular: Problem Çözme Envanteri ile İletişim Becerileri Envanteri bilişsel alt ölçek ($r=-0,39$, $p<0,01$), davranışsal alt ölçek ($r=-0,32$, $p<0,01$) puanları ve toplam puanı ($r=-0,33$, $p<0,01$) arasında istatistiksel olarak anlamlı bir ilişki bulunmuştur.
Sonuç: Bu bulgular ışığında, sağlık bilimleri öğrencilerinin eğitiminde meslek hayatına geçişte ihtiyaç duyulacak problem çözme ve iletişim becerilerinin birbiriyle ilişkili olduğu ve birlikte düşünülmesi gerektiği düşünülmektedir. İleriki çalışmalarda sağlık bilimleri öğrencilerinin problem çözme ve iletişim becerilerini etkileyebilecek faktörlerin ve bunların müfredatla ilişkisini inceleyen çalışmaların yapılmasını önermekteyiz.

Anahtar kelimeler: *problem çözme, öğrenciler, iletişim*

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H.Ü. Sağlık Bilimleri Fakültesi Dergisi
Cilt:11, Sayı:1, 2024
Doi:10.21020/husbfd.1264584

Original Research

Investigation of the Relationship between Problem-Solving Skills and Communication Skills in Health Sciences Students

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Abstract

Objectives: Communication and problem-solving skills are very important for health professionals as they are frequently used skills in professional practice. This study was planned to evaluate the relationship between the problem-solving and communication skills of final-year students studying in the field of health sciences.
Materials and Methods: A total of 171 health sciences students (135 females, 36 males) with a mean age of 22.64 ± 1.60 years were included in the study. The communication skills of these individuals were evaluated with the Communication Skills Inventory, and their problem-solving skills were evaluated with the Problem Solving Inventory. The relationship between the two inventories was evaluated by Pearson correlation analysis.
Results: A statistically significant relationship was found between the Problem Solving Inventory and Communication Skills Inventory cognitive subscale ($r=-0.39$, $p<0.01$), behavioral subscale ($r=-0.32$, $p<0.01$) scores and total score ($r=-0.33$, $p<0.01$).
Conclusion: In light of these findings, it is thought that the problem-solving and communication skills that will be needed in the transition to professional life are associated with each other and should be considered together in the education of health sciences students. In future studies, we suggest that studies examine the factors that may affect the problem-solving and communication skills of health science students and their relationship with the curriculum.

Keywords: *problem-solving, students, communication*

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H.Ü. Sağlık Bilimleri Fakültesi Dergisi
Cilt:11, Sayı:1, 2024
Doi:10.21020/husbfd.1264584

Introduction

Communication skills play an important role in professions that are based on helping people. In professions covering health sciences, people are directly serviced, and an intensive communication network is formed in this process. It is known that increasing the quality of treatment in health-related professions is possible by establishing effective communication with patients (Isobel & Delgado, 2018; Fallowfield & Jenkins, 1999). In this context, health professionals who can motivate, manage, and control their relationships can provide better quality treatment and care services with effective communication skills (Kuzu & Eker, 2020). It is important for individuals who are health professionals to know the communication techniques at a good level and to use them effectively (Sargeant, Maclead & Murray, 2011).

Problem-solving skill is an important factor in making correct, reliable, and appropriate decisions about the treatment or care in the health service and improving the quality of the service, in addition to being an important predictor of the physical and mental health of the person (Largo-Wight, Peterson & Chen, 2005; Oermann, Truesdell & Ziolkowski, 2000). This skill allows students to learn how to apply knowledge rather than memorize it (Michaelsen & Sweet, 2008; Sweet & Michaelsan, 2012).

The communication skills and problem-solving skills of health sciences students are deemed necessary in terms of maintaining and increasing the quality of health care services. The problem-solving skills of the students may also affect the quality of their communication with the patient (Özyazıcıoğlu, Aydınoğlu & Aytekin, 2009). When the studies on the students from different professional groups studying in the field of health are examined, it is emphasized that problem-solving and communication skills are very important for these professional groups in terms of providing more acceptable and ethical health care (Hagameier, Hess, Hagen & Sorah, 2014; Levinson, Lesser & Epstein, 2010; Ji, Bang & Jeon, 2013; Xie, Ding, Wang & Liu, 2013). However, there are limited studies investigating the relationship of these skills among health sciences students. This study aimed to investigate the relationship between problem-solving and communication skills among university students studying in the faculty of health sciences.

H.Ü. Sağlık Bilimleri Fakültesi Dergisi
Cilt:11, Sayı:1, 2024
Doi:10.21020/husbfd.1264584

Material and Methods

Study design and ethical considerations

A cross-sectional, descriptive survey design was used to determine the relationship between problem-solving and communication skills among health sciences students. The study was performed following the ethical codes of the World Medical Association (Declaration of Helsinki) and was approved by the Hacettepe University Ethics Commission (Number: 35853172-772.02). All participants gave written informed consent.

Participants

Inclusion criteria were; studying in the faculty of health sciences at a university, being a senior student, and being a volunteer to participate in the study. The exclusion criteria were working and studying in a second department at the university. A total of 171 (135 female, 36 male) senior university students studying in the faculty of health sciences at a state university were recruited with simple random sampling. After giving written consent, participants were asked to fill in the questionnaires.

Data collection tools

Demographics

The demographic characteristics of the university students, including age, gender, and the department they studied, were recorded.

Problem-Solving Skills

The Problem Solving Inventory (PSI), which was developed by Heppner and Petersen, was used to evaluate how people perceive their problem-solving behaviors (Heppner & Petersen, 1982). The scale has 35 items, which constitute three subscales: problem-solving confidence, approach-avoidance style, and personal control. The problem-solving confidence subscale evaluates the individual's belief and confidence in the ability to solve problems, the approach-avoidance style subscale evaluates the desire and effort to cope when the problem is encountered, and the personal control subscale evaluates the ability to maintain control in the problematic situation. Individuals are asked how often they behave as in the scale items. Items are rated on a six-point Likert scale ranging from 1 to 6. Answers to the questions are “1-I always behave like this”, “2-I usually behave like this”, “3-I often behave like this”, “4-I sometimes behave like this”,“ 5-I rarely behave like this” and “6- I never behave like this ”. The total score on the scale is between 32-192, and the high

H.Ü. Sağlık Bilimleri Fakültesi Dergisi
Cilt:11, Sayı:1, 2024
Doi:10.21020/husbfd.1264584

scores indicate that the individual feels insufficient about his / her problem-solving skills. The Turkish validity and reliability study of the scale was conducted by Taylan in 1990 (Heppner & Petersen, 1982; Taylan, 1990).

Communication Skills

In order to evaluate communication skills, the Communication Skills Inventory (CSI) developed by Ersanlı and Balcı (Ersanlı & Balcı, 1998) was used. The instrument consists of 45 items rated on a five-point Likert and evaluates communication skills in three subscales: behavioral, cognitive, and emotional. The answers given to the scale are; always-5, usually-4, sometimes-3, rarely-2 , and never-1. The lowest score that can be obtained from the whole scale is 45, and the highest score is 225. As each subscale is to be evaluated separately, the general communication skills level of the individual can be evaluated by calculating the total score of the scale. High scores obtained from the scale indicate good communication skills (Ersanlı & Balcı, 1998).

Statistical Analysis

The Statistical Package for the Social Sciences (SPSS) Version 23.0 was used to analyze the data. Means, standard deviations, frequencies, and percentages were calculated for demographic variables. Normality tests were used to determine whether the data were normally distributed. The relationship between independent variables was analyzed with Pearson's Correlation Coefficient. A p-value of <0.05 was considered as significant statistically.

Results

The demographic characteristics of the participants, including age, gender, and the department they studied, are given in Table 1. The mean age of the participants was 22.64±1.60 years. 135 (78.9%) of the individuals were female and 36 (21.1%) were male.

The problem-solving confidence subscale scores of the PSI were 28.95±8.10, approach-avoidance style subscale scores were 43.43±10.86, and personal control subscale scores were 16.00±2.97. The total mean score of the PSI was 88.39±18.84 (Table 2).

The results showed that there were significant relationships between the PSI's confidence in problem-solving ability, approach-avoidance style subscales and total scores, and cognitive and behavioral subscales and total scores of the CSI. Table 2 presents the mean and standard deviations

H.Ü. Sağlık Bilimleri Fakültesi Dergisi
Cilt:11, Sayı:1, 2024
Doi:10.21020/husbfd.1264584

of the participants' scores on the problem-solving and communication skills scales and the relationship between these variables.

Table 1. Demographics of the participants

Characteristics	**X±SD**
Age (year)	22.64 ±1.60
	n (%)
Gender	
Female	135 (78.9)
Male	36 (21.1)
Department	
Occupational Therapy	32 (18.7)
Physiotherapy and Rehabilitation	48 (28.1)
Speech Language Therapy	39 (22.8)
Child Development	29 (17.0)
Audiology	23 (13.5)

X: mean, SD: standard deviation, n: number of participants.

Table 2. The means, standard deviations, and the results of correlation analysis

		X	**SS**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	PSI-confidence	28.95	8.01								
2	PSI-approach-avoidance	43.43	10.86	.69**							
3	PSI-personal control	16.00	2.97	.40**	.40**						
4	PSI-total	88.39	18.84	.89**	.93**	.55**					
5	CSI-cognitive	58.15	6.11	-.36**	-.36**	-.18*	-.39**				
6	CSI-emotional	53.35	5.03	-.05	-.05	.04	-.04	.46**			
7	CSI-behavioral	57.19	7.21	-.27**	-.31**	-.18*	-.32**	.61**	.39**		
8	CSI-total	168.68	15.00	-.30**	-.31**	-.15	-.33**	.86**	.71**	.86**	

PSI: Problem Solving Inventory CSI: Communication Skills Inventory
*p<.05. ** p<.01. (two-tailed)

Discussion

In this research, the relationship between problem-solving and communication skills of senior university students studying in the field of health sciences was examined. There is evidence that good healthcare workers' cooperation and problem-solving skills provide better health outcomes and reduce healthcare costs (Titzer, Swenty & Hoehn, 2012). As a result of the study, it was seen that the students in the last year of health sciences found their problem-solving skills to be moderate enough. Research on problem-solving skills generally includes nursing students, and it is found that these students have moderate problem-solving skills in most studies similar to our research (Altun, 2003; Bayindir & Olgun, 2015; Ergün & Arslan, 2017; Sayin & Farimaz, 2011).

H.Ü. Sağlık Bilimleri Fakültesi Dergisi
Cilt:11, Sayı:1, 2024
Doi:10.21020/husbfd.1264584

In most healthcare disciplines, professionals are required to work in teams in the workplace. As a result of our study, it was found that there is a significant relationship between problem-solving and communication skills of university students studying in the field of health sciences. This situation shows that communication skills may be increased by improving health sciences students' problem-solving skills. Therefore, continuing the education program with methods that will increase the problem-solving skills of health sciences students is important for them to become health professionals who provide quality health services with effective communication in the future (Titzer, Swenty & Hoehn, 2012; L'Ecuyer, Pole & Leander, 2015).

The relationship between the communication skills of senior health students and their self-confidence in problem-solving and their efforts to cope with the problems is seen in our study. Health sciences students' self-confidence in problem-solving and their efforts in this field can be provided by the evidence-based knowledge, skills, and experiences of the students. Increasing health skills and experience also increases the effectiveness of communication with patients (Bennett, Hoffman & Arkins, 2011; Harrell, Kearl, Reed, Grigsby & Caudill, 1993). In our study, it was concluded that especially mental and behavioral communication skills were related to confidence in problem-solving and approach to problem-solving. From this point of view, we think that senior health sciences students who have opportunities to solve problems in their clinical practice can communicate more effectively with patients.

It is inevitable for health professionals to have effective communication and clinical problem-solving skills with patients. In our study, the relationship between these two skills was shown in senior health students. Health sciences students need to have various skills in order to form the intervention plan for individuals receiving clinical service and to cope with their anxiety and needs. Students' attitudes towards communication skills can improve patient satisfaction and safety by ensuring the accuracy of assessment and intervention processes. Therefore, in order to increase the problem-solving and communication skills, it is very important to develop health education programs that will enable the development of these skills. For this purpose, many methods have been mentioned in the literature. Team-based learning, problem-based learning, and interprofessional simulation are some of these methods. It is known that team-based learning increases knowledge, clinical performance, and problem-solving skills in health science students (Corbridge et al., 2013; Kim et al., 2016). Problem-based learning, on the other hand, facilitates students' learning by researching assessment and treatment methods for a clinical problem, and

H.Ü. Sağlık Bilimleri Fakültesi Dergisi
Cilt:11, Sayı:1, 2024
Doi:10.21020/husbfd.1264584

increases students' self-efficacy and problem-solving abilities (Zaidi et al., 2017). The interprofessional simulation method is used as an effective learning method for students to get to know other disciplines and increase their communication skills (Titzer et al., 2012). Therefore, we think that the presence of such methods in the curriculum of health sciences students means to improve their communication and problem-solving skills.

Conclusion

The results of this study make significant contributions to the literature in terms of evidence-based collaborative professional approaches in the field of health sciences education. However, there is a need for a comprehensive analysis of the factors that may affect the problem-solving and communication skills of health sciences students and the studies examining their relationship with the curriculum.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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References

Altun I. The perceived problem solving ability and values of student nurses and midwives. Nurse Education Today. 2003 Nov 1;23(8):575-84.

Bayindir Çevik, A., & Olgun, N. (2015). Do Problem ‐ Solving Skills Affect Success in Nursing Process Applications? An Application Among Turkish Nursing Students. International Journal of Nursing Knowledge, 26(2), 90-95.

H.Ü. Sağlık Bilimleri Fakültesi Dergisi
Cilt:11, Sayı:1, 2024
Doi:10.21020/husbfd.1264584

Bennett, S., Hoffmann, T., & Arkins, M. (2011). A multi‐professional evidence‐based practice course improved allied health students' confidence and knowledge. Journal of Evaluation in Clinical Practice, 17(4), 635-9.

Corbridge, S. J., Corbridge, T., Tiffen, J., & Carlucci, M. (2013). Implementing team-based learning in a nurse practitioner curriculum. Nurse educator, 38(5), 202-205.

Ergün, G., & Arslan, B. Ş. (2017). Reviewing the relation between the problem solving skills of school of health students and their social skill levels. Journal of Human Sciences, 14(1), 902-913.

Ersanlı, K. & Balcı, S. (1998). İletişim Becerileri Envanterinin Geliştirilmesi:Geçerlik ve Güvenirlik Çalışması . Turkish Psychological Counseling and Guidance Journal, 2(10) , 7-12 .

Fallowfield, L., & Jenkins, V. (1999). Effective communication skills are the key to good cancer care. European Journal of Cancer, 35(11), 1592-1597.

Hagemeier, N. E., Hess, R., Hagen, K. S., & Sorah, E. L. (2014). Impact of an interprofessional communication course on nursing, medical, and pharmacy students' communication skill self-efficacy beliefs. American Journal of Pharmaceutical Education, 78(10).

Harrell, P. L., Kearl, G. W., Reed, E. L., Grigsby, D. G., & Caudill, T. S. (1993). Medical students' confidence and the characteristics of their clinical experiences in a primary care clerkship. Academic Medicine: Journal of The Association of American Medical Colleges, 68(7), 577-9.

Heppner, P. P., & Petersen, C. H. (1982). The development and implications of a personal problem-solving inventory. Journal of Counseling Psychology, 29(1), 66.

Isobel, S., & Delgado, C. (2018). Safe and collaborative communication skills: A step towards mental health nurses implementing trauma informed care. Archives of Psychiatric Nursing, 32(2), 291-296.

Ji EJ, Bang MR, Jeon HJ. Ego resilience, communication ability and problem-solving ability in nursing students. J Korean Acad Soc Nurs Educ. 2013; 19(4):571-9.

Kim, H.-R., Song, Y., Lindquist, R., & Kang, H.-Y. (2016). Effects of team-based learning on problem-solving, knowledge and clinical performance of Korean nursing students. Nurse education today, 38, 115-118.

Kuzu, A., & Eker, F. (2010). The evaluation of emotional intelligence and communication skills of nursing students and the other university students in comparative way. Journal of Search Development in Nursing, 3(1), 14-29.

Largo-Wight, E., Peterson, P. M., & Chen, W. W. (2005). Perceived problem solving, stress, and health among college students. American Journal of Health Behavior, 29(4), 360-370.

L'Ecuyer, K. M., Pole, D., & Leander, S. A. (2015). The use of PBL in an interprofessional education course for health care professional students. Interdisciplinary Journal of Problem-Based Learning, 9(1), 6.

Levinson, W., Lesser, C. S., & Epstein, R. M. (2010). Developing physician communication skills for patient-centered care. Health Affairs, 29(7), 1310-1318.

Michaelsen, L.K. & Sweet, M. (2008), The essential elements of team-based learning. New Directions for Teaching and Learning, 116: 7-27.

Oermann, M., Truesdell, S., & Ziolkowski, L. (2000). Strategy to assess, develop, and evaluate critical thinking. The journal of continuing education in nursing, 31(4), 155-160.

Özyazıcıoğlu, N., Aydınoğlu, N., & Aytekin, G. (2009). Sağlik Yüksekokulu Öğrencilerinin Empatik ve Problem Çözme Becerilerinin İncelenmesi. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi, 12(3), 46-53.

Sargeant, J., MacLeod, T., & Murray, A. (2011). An interprofessional approach to teaching communication skills. Journal of Continuing Education in the Health Professions, 31(4), 265-267.

Sayin, Y., & Farimaz, M. (2011). P02-287-Problem solving skills of the 1st year and 4th year nursing students. European Psychiatry, 26, 883.

Sweet, M., & Michaelsen, L. K. (Eds.). (2012). Team-based learning in the social sciences and humanities: Group work that works to generate critical thinking and engagement. Sterling VA: Stylus Publishing.

Taylan, S. (1990). Heppner'in Problem Çözme Envanterinin Uyarlama, Güvenirlik ve Geçerlik Çalışmaları. (Yayımlanmamış yüksek lisans tezi) Ankara Üniversitesi Sosyal Bilimler Enstitüsü.

H.Ü. Sağlık Bilimleri Fakültesi Dergisi
Cilt:11, Sayı:1, 2024
Doi:10.21020/husbfd.1264584

Titzer, J. L., Swenty, C. F., & Hoehn, W. G. (2012). An interprofessional simulation promoting collaboration and problem solving among nursing and allied health professional students. Clinical Simulation in Nursing, 8(8), e325-e333.

Xie, J., Ding, S., Wang, C., & Liu, A. (2013). An evaluation of nursing students' communication ability during practical clinical training. Nurse Education Today, 33(8), 823-827.

Zaidi, U., Hammad, L. F., Awad, S. S., Qasem, H. D., & Al-Mahdi, N. A. (2017). Problem-based learning vs. Traditional teaching methods: Self-efficacy and academic performance among students of Health and Rehabilitation Sciences College, PNU. Rehabilitation, 55, 38-35.