RESEARCH ARTICLE

COMPARISON OF THE PROBLEM SOLVING SKILLS LEVELS OF HEALTH DEPARTMENT STUDENTS EDUCED AT UNDERGRADUATE AND ASSOCIATE DEGREE LEVEL

***Colak T*[*], *Erdogan M*[**], *Acar D*[***], *Rahova G*[*], *Colak S*[****]**

[*]Department of Anatomy, Kocaeli University, Kocaeli, Turkey
[**]Department of Anatomy, Kocaeli University, Kocaeli, Turkey and Department of Anatomy, Sakarya University, Sakarya, Turkey
[***]Department of Anatomy, Kocaeli University, Faculty of Medicine, Kocaeli, Turkey and Department of Anatomy Karabuk University, Karabuk, Turkey
[****] Department of Anatomy, Kocaeli University, Kocaeli, Turkey
[*****]Kocaeli University, Faculty of Sport Sciences , Department of Sports Management, Kocaeli, Turkey.

Abstract

Our study was conducted with the aim of comparing the parameters such as personal control, self-care level, academic achievement and family characteristics that affect the problem solving skill levels of undergraduate and associate degree students studying in health departments. Our research is cross-sectional; those who study at the same university in one year; It was carried out on 200 students, 100 of whom are at undergraduate level and 100 of whom are at associate degree level. In order to obtain the demographic information of the students; the personal data collection form created by the researchers was used and the "Problem Solving Inventory (PSI)" was used to determine problem solving skill levels. Data collection forms and questionnaires were applied with one-on-one interview technique. The voluntariness of the participants was taken as a basis in filling out the questionnaires. After the descriptive statistics (frequency, mean, standard deviation) of the socio-demographic data obtained and the scale scores and sub-dimension scores were made, two independent groups were compared by looking at their normal distribution conformity. The mean age of associate degree students participating in our study was 20.6 ± 1.26, and 20.8 ± 3.07 for undergraduate students. In comparisons made with PSI, which consists of three different sub-parameters, associate degree students are significantly more successful than undergraduate students in terms of "approach-avoidance", "personal control" and "problem solving questionnaire total score" ($p<0.05$). No difference was found in terms of "confidence in problem solving ability" sub-dimension. In the comparison of the Problem Solving Questionnaire by gender; no significant difference was found in sub-dimensions and total score ($p>0.05$). As a result; In all comparisons, problem solving abilities do not differ according to gender. The problem solving skill level was found to be moderate for both genders. As the education level increases; The psychological state, which has an effect on the quality of life, increases in the negative direction. In terms of problem solving abilities, a negative correlation was found with education level in all sub-categories.

Keywords: Personal control, Health sciences, Undergraduate student, Associate student, Problem solving skill, Problem solving inventory

Introduction

In social life, every individual faces many problems, big or small. Personally developed strategies are of great importance in order to cope with problems [1]. In a study, individuals who are more sociable in human relations in social life, more successful academically and have more positive self-esteem; determined as those who believe that they have sufficient problem-solving skills [2]. According to Heppner, one's problem-solving skills depend on the level of focus on the problem and individual's level of perception of problems [3].

The individual in the university period has to cope with many changes. Some features of this stage, which is the transition period to adulthood, are an increase in the effort to prove oneself, and completion in self-integrity. The individual has to cope with the problems brought about by being a university student and adapt to the changing social environment. If the young person in the mentioned period cannot cope with all these problems, they feel inadequate and powerless. They may also experience psychological and physical problems [4,5].

Health department students are constantly exposed to stress factors throughout their education process [6,7]. As the education level of health students increases, their psychological problems also increase [8]. The stress levels of health department graduates are significantly higher than those of health education students [9].

Youth period is a critical period in terms of self-care needs. Problem solving abilities of individuals in the youth period; It is affected by many factors such as self-care competencies. Students in this period studying in health departments are expected to have good problem-solving skills. Because students studying in these departments will serve a sensitive group when they graduate. In this context, university programs providing education in these departments also aim to gain this skill [10-14].

It is known that this skill increases positively with the trainings on problem solving skills. Therefore, it is important to provide training on problem-solving skills in health departments. The increase in the rate of health department graduates with high problem-solving skills causes an increase in the rate of health workers who can produce healthy solutions in the future and increase the quality of the health service provided [12,15].

For this purpose, our study was carried out to compare the problem-solving skills of undergraduate and associate degree students studying in health departments and to contribute to the curriculum arrangements to be made in the future by revealing the parameters affecting this skill.

Material and Methods

Our study was carried out cross-sectionally in two-year associate degree and 4-year undergraduate departments in health sciences. A total of 200 students, 100 each, were selected by simple random sampling method from the students studying in the aforementioned departments. Data collection was carried out through a questionnaire study conducted by face-to-face interviews with the students included in the study.

As a data collection tool, the PSI consisting of 35 questions developed by Heppner and Peterson was used [16]. The validity and reliability of the PSI in our country was determined by Taylan et al. [17] in 1990, and Turkish translation of the inventory was provided by Şahin et al. in 1993 by [2].

The PSI is a Likert-type scale consisting of 35 questions that measures the problem solving levels of young/adolescents and adults, and their own perception levels. Respondents to each question were as follows: “I sometimes act like this”, “I rarely act like this” and “I never act like this”, “I always act like this”, “I often act like this”, “I often act like this”, selects one of the options. 9.,22. and 29. questions are excluded from the scoring, and

each question is scored between 1-6. The lowest score that can be obtained from this scale is 32, and the highest score is 192 [18].

SPSS-22 program was used for statistical analysis. After the descriptive statistics (frequency, mean, standard deviation) of the socio-demographic data obtained and the scale scores and sub-dimension scores were made, two independent groups were compared by looking at their normal distribution conformity.

Results

A total of 200 students participated in our research study. Of these, 100 were at the associate degree and 100 at the undergraduate level. The socio-demographic information of the participants in our study, including their education levels, gender and age distribution, is shown in Table 1. According to this table, 13% of associate degree students are male and 87% are female students. All undergraduate students with an average age of 20.8 are female students. The average age of associate degree students is 20,6.

Table 1. Sociodemo Graphic Data

Educational Status	Gender	Age-Standard deviation (SD)
Associate Degree	87 Female/13 Male	20,6 ± 1,26
Undergraduate	100 Female/0 Male	20,8 ± 3,07

Table 2 shows the percentage distribution of the inventory made to measure the problem-solving skills of undergraduate and associate degree students. PSI consists of three different sub-parameters.These parameters are; “Confidence in problem solving ability”, which expresses the feelings of confidence in the ability of individuals to solve the problems they encounter for the first time, “approach-avoidance” parameter, in which they review their first problem-solving attempts after the experiences they have gained, and self-control, which refers to an individual's ability to maintain self-control in troubled times.

According to Table 2, which is created from the comparison of undergraduate and associate degree student data, the higher the score, the more unsuccessful the participant is in problem solving. Therefore, associate degree students are significantly more successful than undergraduate students in terms of "approach-avoidance", "personal control" and "problem solving questionnaire total score”. No difference was found in terms of "confidence in problem solving ability" sub-dimension.

Table 2: Comparison of Problem Solving Questionnaire Sub-Dimensions and Total Score According To Education Level

	Associate Degree	Undergraduate	p
CPSA	29,42 ± 7,58	31,37 ± 6,80	,052
AA	51,29 ± 7,39	55,19 ± 6,70	,001
PC	17,97 ± 4,93	20,01 ± 5,24	,007
T	98,68 ± 14,23	106,57 ± 13,18	,001

CPSA: Confidence in Problem Solving Ability, AA: Approach-Avoidance, PC: Personal Control, T: Total Score

According to, which we created by comparing the sub-dimensions and total score of the Problem Solving Questionnaire by gender; There was no significant gender difference in sub-dimensions and total score ($p>0.05$). The problem solving skill level was found to be moderate for both genders (Table 3).

Table 3: Comparison of Problem Solving Questionnaire Sub-Dimensions And Total Score According To Gender

	Male	Female	p
CPSA	32.62 ± 9.26	30.24 ± 7.10	0.597
AA	51.85 ± 7.31	53.34 ± 7.31	0.480
PC	20.23 ± 3.63	18.90 ± 5.27	0.389
T	10.69 ± 9.24	102.48 ± 14.53	0.524

CPSA: Confidence in Problem Solving Ability, AA: Approach-Avoidance, PC: Personal Control, T: Total Score

Discussion

The parameters that affect the quality of life of students studying in health departments, especially their problem-solving skills and psychological resilience, were evaluated with the findings we obtained from our study. Considering the socio-demographic characteristics of the students included in our study, the majority of students who prefer health departments are female students. The mean age in both groups is similar.

Healthcare professionals need to have advanced problem-solving skills in order to plan and implement the right health interventions. In a study conducted on South Korean health students in 2017, it was revealed that students' resilience had an effect on the relationship between their problem-solving skills and social anxiety [19].

According to the PSI results of our study, the problem solving skills of male and female students were found to be moderate. This result is similar to many studies conducted on health students in the literature [18,20-23]. In our study, no statistically significant difference was found between problem solving skills and gender comparisons ($p>0.05$). However, it was determined that female students had better problem-solving skills in total problem-solving skills, confidence in problem solving ability (CPSA) and personal control (PC) sub-dimensions, and male students in approach-avoidance (AA) sub-dimensions 9 (Table 3).

Based on these findings, it can be said that female students are better in self-control, self-confidence and self-perception capacity than male students. Similarly, in a study in 2005 in which students' problem-solving skills were compared between genders, it was found that female students' problem-solving skills were higher in the aforementioned sub-dimensions [24]. In the literature research, there are also studies in which the problem solving skills of female students are found to be lower [25]. In another study, similar to our study, no statistically significant difference was found in the comparison of problem solving skills between male and female students [26].

When the problem solving levels were compared according to their educational status, the problem solving skills of associate degree students (98.68 ± 14,23) were found to be significantly higher than those of undergraduate students (106.57 ± 13,18). In addition, the score values of associate undergraduate students in all sub-dimensions (CPSA, PC, AA) were lower, that is, their problem solving skills were more developed. In some studies in the literature, there are studies in which problem solving skills are higher as the duration of education in health schools increases. However, in our study, this rate was found to be higher in health students studying at the associate degree level. In this respect, our study differs from some studies in the literature.

There are studies that increase the problem-solving skills of preschool students with different approaches [26]. Its contribution to problem solving skills can be investigated with similar studies to be carried out with university level students. In a study examining the relationship between digital addiction and problem-solving skills, it was determined that the problem-solving skills of young individuals who spend time in the digital environment for a long time increase positively [27]. As a result, the problem-solving skills of young individuals can be increased with new studies to be carried out in this direction.

Conclusion

University period is a critical period as it is both the transition period of young people to adulthood and the period of adapting to their differentiated social environment. In addition, university students studying in health departments; this period becomes more difficult for them as they practice their practice in one-to-one health institutions and found to be lower [17,22]. In another study, similar to our study, no statistically significant difference was found in the comparison of problem solving skills between male and female students [25] are exposed to different problems. Considering the experiences of professions serving in the health sector in all societies, the need to be able to produce graduates with a high level of coping with problems is essential. In this context, various arrangements can be made to increase the problem-solving skills of health department students so that they grow up as more beneficial individuals both for themselves and for their environment.

References

1. Posamentier AS. Problem-solving strategies for efficient and elegant solutions. A Researce for the Mathematics Teacher. California: Corwin Press1998; Inc.
2. Şahin N, Şahin NH, ve Heppner PP. The psychometric properties of the Problem Solving Inventory. Cognitive Therapy and Research. 1993; 17: 379-396.
3. Heppner PP, Baumgardner AH, ve Jakson J. Depression and attributional style: Are they related?. Cognitive Therapy and Research 1985; 9: 105-113.
4. Rickwood D, Deane FP, Wilson CJ, Ciarrochi J. Young people's helpseeking for mental health problems. Australian E-Journal for the Advancement of Mental Health. 2005; 4(3): 218-251.
5. Terzi Ş. Üniversite öğrencilerinin psikolojik dayanıklılıkları ve algıladıkları sosyal destek

arasındaki ilişki. Türk Psikolojik Danışma ve Rehberlik Dergisi. 2016; 3(29): 1-11.

6. Manzano GG, Calvo A, Carlos J. Emotional exhaustion of nursing staff: influence of emotional annoyance and resilience. International Nursing Review 2012; 59(1): 101-107.
7. Magnussen L, Amundson MJ. Undergraduate nursing student experience. Nursing & Health Sciences 2003; 5(4): 261-267.
8. Deary IJ, Watson R, Hogston RA. Longitudinal cohort study of burnout and attrition in nursing students. Journal of Advanced Nursing 2003; 43(1): 71-81.
9. Storrie K, Ahern K, Tuckett A. A systematic review: Students with mental health problems-a growing problem. International Journal of Nursing Practice 2010; 16(1): 1-6.
10. Hedberg B, Larsson US. Environmental elements affecting the decision-making process in nursing practice. Journal of clinical nursing. 2004; 13(3): 316-24.
11. Velioğlu P. Hemşireliğin Düşünsel Temelleri. Alaş Ofset matbaası. İstanbul. 1994.
12. Roberts JD. Problem-solving skills of senior student nurses: an exploratory study using simulation. International Journal of Nursing Studies 2000; 37(2): 135-143.
13. Choi H. The Effects of PBL (Problem Based Learning) on The Metacognition, Critical Thinking and Problem Solving Process of Nursing Students. Taehan Kanho Hakhoe Chi. 2004; 34(5): 712-721.
14. Shamian J. Effect of teaching decision analysis on student nurses' clinical intervention decision making. Research in Nursing & Health. 2007; 14(1): 59-66.
15. Heppner PP, Krauskopf CJ. An Information-Processing Approach to Personal Problem Solving. The Counseling Psychologist. 1987; 15(3): 371-447.
16. Heppner PP, ve Peterson CH. The development and implications of a personal-problem solving inventory. Journal of Counseling Psychology. 1982; 29: 66-75.
17. Taylan S. Heppner'in problem çözme envanterinin uyarlama, güvenlik ve geçerlik çalişmalari. yayinlanmamiş yüksek lisans tezi. Ankara Üniversitesi. 1990.
18. Durmuş M, Gerçek A, Çiftci N. Sağlık çalışanlarının problem çözme becerilerinin kanıta dayalı tutum algıları üzerindeki etkisi. Akademik Sosyal Araştırmalar Dergisi. 2017; 5(53): 648-661.
19. Jun WH, Lee G. The role of ego-resiliency in the relationship between social anxiety and problem solving ability among South Korean nursing students. Nurse education today. 2017; 49: 17-21.
20. Kelleci M, Gölbaşı Z. Bir üniversite hastanesinde çalışan hemşirelerin problem çözme becerilerinin bazı değişkenler açısından incelenmesi. Cumhuriyet Üniversitesi Hemşirelik Yüksekokulu Dergisi. 2004; 8(2): 1-8.
21. Durmaz Ş, Kaçar Z, Can S, Koca R, Yeşilova D. Çanakkale sağlık yüksekokulu öğrencilerinin problem çözme becerileri (PÇB) ve etkileyen bazı faktörler. Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi 2007; 10(4): 63-71.
22. Öztürk Can H, Öner İÖ, Çelebi E. Üniversite öğrencilerinde eğitimin sorun çözme becerisine etkisinin incelenmesi. Fırat Sağlık Hizmetleri Dergisi. 2009; 4(10): 35-58.
23. Yılmaz E, Karaca F, Yılmaz E. Sağlık Yüksekokulu öğrencilerinin problem çözme becerilerinin bazi değişkenler açisindan incelenmesi. Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi 2009; 12(1): 38-48.
24. Danışık ND. Ergenlerin sürekli öfke-öfke ifade tarzlari ile problem çözme becerileri arasindaki ilişki, abant izzet baysal üniversitesi sosyal bilimler enstitüsü yayinlanmamiş. Yüksek Lisans Tezi, Bolu. 2005.
25. ztürk Can H, Öner İÖ, Çelebi E. Üniversite öğrencilerinde eğitimin sorun çözme becerisine etkisinin incelenmesi. Fırat Sağlık Hizmetleri Dergisi. 2009; 4(10): 35-58.

26. Gültekin A. Psikolojik danişmanlik ve rehberlik öğrencilerinin problem çözme becerilerinin incelenmesi, atatürk üniversitesi sosyal bilimler enstitüsü, Yayınlanmamış Yüksek Lisans Tezi, Erzurum. 2006.
27. Anlıak S, Dincer C. The evaluation of the interpersonal problem solving skills of the children attending to the preschools applying different educational approaches. Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi 2005; 38 (1): 149-166.
28. Deveci Topal A, Colak S. Investigation of digital addiction levels, digital games playing status and interpersonal problem solving skills of university students pamukkale university. Journal of Educatıon 2021; 52: 326-358.

Corresponding Author: Mehtap Erdogan, Kocaeli University, Faculty of Medicine, Department of Anatomy, Kocaeli, Turkey.
E-mail: *mehtaperdogan@sakary.edu.tr*

Received: 25 August 2021 Accepted: 15 September 2021