

Evaluation of the Efficacy of a Communication Skills Training Course for Paramedic Students in Turkey

Türkiye’de İlk ve Acil Yardım Programı Öğrencilerine Verilen İletişim Becerileri Dersinin Etkinliğinin Değerlendirilmesi

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ABSTRACT Objective: It is especially important that communication between patients and paramedics is clear and effective as they are the first healthcare professionals to arrive at the scene of a crisis and provide emergency medical services. The aim of this study was to evaluate the efficacy of a communication skills training course for paramedic students. **Material and Methods:** The study used one-group pretest-posttest research design to determine the effectiveness of a 14-week communication skills training course on second year paramedic students attending a Vocational School of Health Services. The students completed a socio-demographic information data sheet and the Communication Skills Inventory prior to and after the communication skills course. **Results:** Fifty-two paramedic students participated in the study. The age of the participants ranged from 18 to 25 years and they were predominantly female (75%). A paired-samples t-test was conducted to compare the scores prior to and after the communication skills training course. The results of the study showed that there was a significant increase in the participants’ communication skills both on the total scores after the 14-week communication skills training course ($p<0.001$) as well as on their cognition ($p=0.023$), emotion ($p=0.028$) and behaviour ($p=0.002$) subscale scores. The average of communication skills scores of participants before the training was $\bar{X}=159.88$ ($\sigma=11.46$) and $\bar{X}=165.31$ ($\sigma=11.45$) after the training. **Conclusion:** The results suggest that the communication training course offered may be effective in increasing the paramedic students’ communication skills.

Keywords: Health services; communication skills; paramedic

ÖZET Amaç: Sağlık alanında çalışan bireylerin, iyi iletişim becerilerine sahip olmaları gerekmektedir. Özellikle acil durumlarda kriz mahalline ilk ulaşan ve acil bakım hizmeti veren paramediklerin ise hastalarla aralarındaki iletişimin açık ve etkili olması önemlidir. Bu çalışmada, ilk ve acil yardım programı öğrencilerine verilen iletişim becerileri dersinin etkinliğinin değerlendirilmesi amaçlanmıştır. **Gereç ve Yöntemler:** Bu çalışmada, Sağlık Hizmetleri Meslek Yüksekokulunda öğrenim gören 2. sınıf ilk ve acil yardım öğrencilerinde 14 haftalık iletişim becerileri dersinin etkinliğini belirlemek amacıyla tek grup ön-test-son-test araştırma deseni kullanılmıştır. Öğrencilerden iletişim becerileri dersi öncesinde sosyodemografik bilgi formunu ve ders öncesi ve sonrasında ise İletişim Becerileri Envanterini doldurmaları istenmiştir. **Bulgular:** Çalışmaya 52 ilk ve acil yardım programı öğrencisi katılmıştır. Katılımcıların yaşları 18-25 arasında değişmekte olup, ağırlıklı olarak kadındır (%75). İletişim becerileri dersi öncesi ve sonrasında puanları karşılaştırmak için bağımlı örneklem t-testi uygulanmıştır. Çalışmanın sonuçları, 14 haftalık iletişim becerileri dersi sonrasında katılımcıların hem toplam iletişim becerileri puanlarında ($p<0.001$) hem de zihinsel $p=0,023$, duygusal ($p=0,028$) ve davranışsal ($p=0,002$) alt ölçek puanlarında anlamlı bir artış olduğunu göstermiştir. Eğitim öncesi katılımcıların iletişim becerileri puan ortalamaları $\bar{X}=159,88$ ($\sigma=11,465$), eğitimden sonra ise $\bar{X}=165,31$ ($\sigma=11,45$) olmuştur. **Sonuç:** Bu çalışmanın sonuçları, verilen iletişim becerileri dersinin ilk ve acil yardım programı öğrencilerinin iletişim becerilerini artırmada etkili olabileceğini göstermektedir.

Anahtar Kelimeler: Sağlık hizmetleri; iletişim becerileri; paramedic

As a health science, paramedicine gives the skills and knowledge one needs to be a paramedic and plays a crucial role in the healthcare system. It is the responsibility of paramedics to evaluate and provide any treatment that a person may require before

receiving complete medical care at a hospital. Medical knowledge and performance of tasks are not sufficient to provide patients with efficient quality care. Paramedic practice requires interpersonal as well as intellectual skills not only to communicate with pati-

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ents but also to communicate effectively with colleagues and other healthcare professionals. Communication between patients and paramedics must be clear and effective as they are the first healthcare professionals to arrive at the scene of a crisis and deliver emergency medical services effectively. Paramedics should know how to support a patient in life threatening conditions, how to act while facing a patient who is passing away and his/her family, and also how to behave towards hostile patients, how to interact with patients with disabilities, communicate with people with all ages such as children, adolescents and elderly.¹

One of the communication skills that emergency medical service providers should have is good verbal communication skills. Verbal communication involves talking or writing, as well as how something is said; whether the tone or quantity corresponds to the message; whether friendly words are spoken in an irritable pitch or one word or sentence is highlighted above others.²

Paramedics need to display good writing communication skills as well. Despite innovative types of communication, written communication remains the most widely used in the health sector. Writing patient information and reports is anticipated from paramedics, which is a very significant element of their work. Paramedics often use written communication when writing down patients' information related to their health problems. They need to use professional language and proper jargon when documenting. A comprehensive report that the paramedics create is conducive to the health practitioners who subsequently treat the patient in the hospital.

Effective communication positively affects the patient's physical and emotional state and provides better patient outcomes and satisfaction.³ Studies undertaken over the previous three centuries indicate that the capacity of the clinician to explain, listen and empathize can have a deep impact on the results of biological and mental health as well as patient satisfaction and care experience.⁴ Research conducted on the impact of communication in healthcare suggests that favourable relationships exist between the communication skills of a healthcare team member and

the ability of a patient to follow through with medical suggestions, self-manage a chronic medical condition, and undertake preventive health behaviours.⁵⁻⁷

Although there is a growing body of research regarding the impact of communication in health sciences such as nursing and medicine, the literature on the subject of communication skill levels of paramedic students appears to be scarce. Shields and Flin in a literature review indicated that the research on non-technical paramedic competence is an area that has received little attention in the past.⁸ The results of a study conducted by Wloszczak-Szubzda et al. on paramedics' communication competence indicated low efficacy in shaping paramedics communication skills based on general psychology and overall interpersonal communication education and that communication skills gained by paramedics during undergraduate education are subject to regression during practice.¹ Ross, et al. conducted a study to identify paramedic students' perceptions of their interpersonal communication competence.³ The findings of the study indicate that student paramedics' interpersonal communication abilities are extremely apart from assertiveness and listening skills. Nordby and Nøhr in a study looked at how the parents in cases of Sudden Infant Death Syndrome viewed the capacity of paramedics to interact as well as empathize and address practical elements of the situation they were in.⁹ The researchers also attempted to comprehend how paramedics perceive their position as professional health employees and how they believe they should communicate with people in crisis. One of their main results is that many of the parents surveyed were not happy with the interaction, compassion and capacity of the paramedics to take care of the situation's practical elements. The interviews also disclosed important discrepancies among paramedics over the interpersonal role of health employees in crisis-involving circumstances.

In the case of Turkey, there is also an emerging body of literature regarding the assessment of communication skills of university students from different programs.¹⁰⁻¹⁴ However, to this date, there is only one descriptive study that researched the level of communication skills of paramedic students.¹⁵ Therefore, the scarcity of literature on the subject of this

study gives this scientific research an important and unique opportunity to be conducted.

This study aimed to determine the communication skills levels of second-year paramedic students attending a Vocational School of Health Services and evaluate the efficacy of a communication skills training course provided to these students.

MATERIAL AND METHODS

SAMPLE AND PROCEDURE

The study used a one-group pretest-posttest research design to determine the effectiveness of a 14-week interpersonal communication skills training course on second-year paramedic students attending a Vocational School of Health Services who agreed to participate. The study was conducted from September 2019 to January 2020 with the permission of the Atatürk University Nursing Faculty Ethics Committee (Number: 2019-3/3, May 30, 2019). Written and informed consent was obtained from all the clients. The Communication Skills Inventory (CSI) was administered to 52 students who registered for the course. The research was carried out in accordance with the Helsinki Declaration Principles.

COMMUNICATION SKILLS COURSE

The communication skills course at the Vocational School of Health Services was incorporated within the formal curriculum of the paramedic education program in 2017. This course aims to make students aware of the psychosocial dimension of health and teach about elements and types of interpersonal communication processes and equip paramedic students to use their skills to communicate properly.

Course Content

Week 1. The Biopsychosocial approach to patient care

Week 2. Elements of interpersonal communication

Week 3. Types of interpersonal communication

Week 4. Communication styles

Week 5. Barriers to effective interpersonal communication

Week 6. Conflicts and interpersonal communication

Week 7. Conflict resolution tools

Week 8. Effective communication skills

Week 9. Communication with individuals with health problems

Week 10. Role of communication skills when dealing with family members

Week 11. Communication with individuals with disabilities

Week 12. Self-esteem and communication

Week 13. Stress management for effective communication

Week 14. Anger management for effective communication

Educational strategies included large and small group work with the standardized patient, demonstration videos, and lectures.

MEASURES

All the students were asked to complete a socio-demographic information datasheet and the CSI which is a self-report measure developed by Ersanlı and Balcı before and after the communication skills course.¹⁶

SOCIODEMOGRAPHIC INFORMATION DATA SHEET

Students completed socio-demographic information datasheets, including gender, age, marital status, level of education of the student and parents, and employment status, family income, place of residence, relationship with friends and grade point average.

THE COMMUNICATION SKILLS INVENTORY

CSI is a 45-item questionnaire using a Likert scale ranging from 1 (never) to 5 (always). The maximum score that can be obtained from the questionnaire is 225 and the minimum score is 45. Higher scores indicate good communication skills. The questionnaire is composed of three subscales: Cognition, Emotion and Behaviour. To determine the scale's internal consistency, Cronbach's alpha coefficients were analyzed. The calculated internal consistency coefficient was found to be .72.

STATISTICAL ANALYSIS

All analyses were carried out by using the IBM SPSS 20.0 package software. Descriptive statistics were used to describe the socio-demographic characteristics of the data in the study. Non-parametric tests have been used in the statistical analyses due to scores not being normally distributed. The Mann-Whitney U test was used to compare differences between two independent groups and the Kruskal-Wallis H test was used to compare the differences between three or more independent groups. The Wilcoxon signed rank test has been used for comparing the means of two samples before and after the training. The relationship between the communication skills and subscales of the students was examined by Spearman correlation analysis.

RESULTS

Participants were 39 females and 13 males aged 18 to 24 years (male: $\mu=20.92$, $\sigma=1.07$; female: $\mu=20.56$, $\sigma=1.11$). All the students were single. Approximately 58% of the students reported living in a rural area and 42.3% of them reported living in an urban area. As for the income distribution of the participants, 21.2% of the students had a family income within the range of 0-1,000 TL, 34.6% within the range of 1,001-2,000 TL, 25% within the range of 2,001-3,000 TL and 19.2% had a family income of 3,000 TL and over.

CSI used in this study is to assess the cognitive, emotional and behavioural aspects of communication. While the score obtained from CSI gives the total communication skills score, the scores obtained from the three sub-scales constitute cognitive, emotion and behaviour communication skills scores. Descriptive statistics related to CSI are shown in Table 1 (Table 1).

A Mann-Whitney U test was conducted to investigate the communication skill levels of students according to gender. The results indicated that the total CSI scores were significantly greater for females than for males ($p<0.001$). As for the subscales, the emotion subscale scores of females were significantly greater than for males ($p=0.003$). Similarly, the behavior subscale scores of female students were significantly greater than for males ($p=0.003$). No significant difference was found between the scores of female students and male students in the cognitive subscale ($p=0.313$). The communication skill levels of students by gender are shown in Table 2 (Table 2).

A Mann-Whitney U test was conducted to evaluate the communication skill level of students according to age groups. The results demonstrated that the total CSI scores were significantly greater for the 18-20 age group than for 21-25 ($p=0.016$). As for the subscales, the behavior subscale scores of the 18-20 age group were significantly greater than for the 21-25 age group ($p=0.012$). No significant difference was found between the scores of students in the 18-20 age group and students in the 21-25 age group in the emotion ($p=0.099$) and cognitive subscales ($p=0.140$). Table 4 shows the communication skills levels of the students by age groups (Table 3).

As for the communication skill levels of students by family residence, the results of a Mann-Whitney U test indicated that there was no significant relationship between the total CSI and subscale scores and family residence ($p=0.511$). Also, the results of a Kruskal-Wallis H test indicated that there was no significant relationship between the total CSI and subscale scores and family income ($p=0.740$).

The relationship between the communication skills and subscales of the students was examined by

TABLE 1: Descriptive statistics of total communication skills inventory and subscales.

	Lowest score	Highest score	Mean	SD
Cognitive	44	63	54.63	3.65
Emotion	35	65	50.92	5.98
Behavior	42	65	54.30	5.86
Total CSI score	137	186	159.88	11.46

CSI: Communication skills inventory; SD: Standard deviation.

TABLE 2: Communication skills levels of students by gender.						
	Gender	n	Mean rank	Sum of ranks	z	p value
Cognitive	Female	39	27.72	1,081.00	-1.008	0.313
	Male	13	22.85	297.00		
Emotion	Female	39	30.06	1,172.50	-2.943	0.003*
	Male	13	15.81	205.50		
Behavior	Female	39	30.05	1,172.00	-2.938	0.003*
	Male	13	15.85	206.00		
Total	Female	39	30.56	1,192.00	-3.352	0.001*
	Male	13	14.31	186.00		

*p<0.05 level of significance.

TABLE 3: Communication skills levels of students by age groups.						
	Age group	n	Mean rank	Sum of ranks	z	p value
Cognitive	18-20	41	28.10	1,152.00	-2.507	0.012*
	21-25	11	20.55	226.00		
Emotion	18-20	41	28.29	1,160.00	-1.650	0.099
	21-25	11	19.82	218.00		
Behavior	18-20	41	29.22	1,198.00	-1.474	0.140
	21-25	11	16.36	180.00		
Total	18-20	41	29.11	1,193.50	-2.399	0.016*
	21-25	11	16.77	184.50		

*p<0.05 level of significance.

Spearman Correlation Analysis. The results of the correlation analysis are presented in Table 4 (Table 4).

As seen in Table 4, there was a statistically highly positive significant relationship between cognitive ($r=0.602$, $p<0.001$), emotional ($r=0.735$, $p<0.001$) and behavioural communication skills subscale scores ($r=0.812$, $p<0.001$) and total communication skills scores.

FINDINGS RELATED TO COMMUNICATION SKILLS OF PARAMEDIC STUDENTS

The Wilcoxon signed-rank test was performed to compare the communication skills of the second year paramedic students before and after the 14-week communication skills course. The results indicated that there was a significant difference in the pretest and posttest communication skills scores of the participants in terms of the total score ($p<0.001$). There was also significant difference in the pretest and post-

test scores of the subscales of cognition ($p=0.023$), emotion ($p=0.028$) and behaviour ($p=0.002$). These results suggest that the communication course administered to the paramedic students had a positive effect on increasing their communication skills.

DISCUSSION

The present study aimed at determining the communication skills levels of second-year paramedic students attending a Vocational School of Health Services and evaluating the effectiveness of a communication skills course provided to these students. The results of this study indicated that before the communication skills course the participants had moderate skills. However, the participants showed significant improvement in outcome measures after the course.

The highest score that can be obtained from the CSI used in the study was 225 and the lowest score

TABLE 4: The relationship between communication skills and subscales.

	Cognitive	Emotional	Behavioral	Total
Cognitive	1			
Emotional	0.134	1		
Behavioral	0.415**	0.386**	1	
Total	0.602**	0.735**	0.812**	1

Correlation is significant at the 0.01 level (2-tailed).

was 45. The average communication skills score of the paramedic students in this study was 159.88.

Aşçı et al. in a study assessed the communication skills of 289 students at a University School of Health.¹⁷ Their findings indicated that the average level of communication skills of the students participating in the study were 102.54. Bingöl and Demir conducted a study on 232 nursing and midwifery students at a University School of Health and found that the students' average communication skills score was 101.69.¹⁸ Tepeköylü et al. in a study conducted with physical education students regarding their communication skill levels.¹⁹ The results of their study indicated that the mean scores of the students were found to be 4.19 out of 5 points. Other studies looking at the communication skills of students have found similar results.^{11,21-31}

The CSI used in this study consisted of three subscales: cognition, emotion and behaviour. The highest score that can be obtained from these sub-dimensions was 75 and the lowest score was 15. In the current study, the students' average scores were 54.63 for the cognitive, 50.92 for the emotion and 54.30 for the behaviour subscales. Gürşimşek, Vural, and Demirsöz in a study examined the communication skills of preschool and primary school teachers' communication skills.³² The students scored 45.43 on cognition, 47.09, on the emotion and 50.63 on the behaviour subscales. Akyurt evaluated the communication skills of the vocational school of health students.³³ The results of the study have shown that the students scored 42.15 on cognition, 32.82 on the emotion and 36.64 on the behaviour subscales. When looked at the average subscale scores of the studies presented here, it is seen that the students from different colleges and departments vary in terms of communication skills subscale scores.

In this study, there was a high degree of relationship between students' total CSI scores and the cognitive, emotional and behavioural subscales. The results of a study conducted by Erigüç and Eriş found that there was a high degree of relationship between total CSI scores and the three subscales.¹¹

The results of this study indicated that there was a significant difference in the students' total CSI and emotion and behavioural subscale scores according to their gender. These results suggest that female students' views on the total as well as emotional and behavioural communication skills levels were higher than male students. A study conducted by Erigüç and Eriş found that the female students' total and behavioural subscale scores were significantly higher than the male students.¹¹ Varişoğlu, in a study found that female students scored significantly higher than male students' in total, cognitive and behavioural subscales.³⁴ Similarly, in a study conducted by Çetinkaya, the researchers stated that female students' total CSI scores were significantly higher than male students.¹² İrak et al. in a study conducted with a vocational school of health services students found no statistically significant difference between the different gender groups in terms of communication skills level scores.¹⁵ Similarly, the results of a study conducted by Demirci and İkiç demonstrated that the average CSI scores of students did not differ significantly according to gender.³⁵ As can be seen, it would not be possible to make any generalization about the gender variable.

Another result of this study was that the total CSI and cognitive subscale scores of the students in the 18-20 age group were significantly higher than the students in the 21-25 age group. Erigüç and Eriş in their study found that there was only a statistically significant difference in behaviour subscale where the

18-20 age group had higher scores than the 21-25 age group.¹¹ The findings by İrak et al. indicated that there was no statistically significant difference between the different age groups in terms of communication skills level score.¹⁵ A study conducted by Yılmaz, Üstün, and Odacı also demonstrated that the students' communication skills scores did not significantly differ in terms of age groups.¹⁴

The results of this study showed that there was no significant relationship between the total CSI and subscale scores and family residence. Similarly, Yılmaz, Üstün and Odacı also found that there was no relationship between the total CSI and subscale scores and students' family residence.¹⁴ Erigüç and Eriş in their study found no relationship between the total CSI, cognitive and emotion scores and family residence.¹² However, they found that families of students who live in urban areas scored higher on behavioural subscale than the families of students who live in rural areas.

The results of this study showed that there was no significant relationship between the students' total CSI and subscale scores and family income. İrak et al. in their study found no significant difference between the communication skill levels of the students and the monthly income of the families.¹⁵ Erigüç and Eriş in their study concluded that the communication skills of vocational school students do not differ according to the socio-economic level of the family.¹¹ In another study Uçkun et al. concluded that there was no significant difference between the communication skills of the students and the socio-economic levels of the families.²⁰

LIMITATIONS

A limitation of the design used in this study is that it lacks a control group and randomization. Therefore, the study design may be prone to many threats to internal validity. This may mean that any other factors related to participants' communication skills could have influenced the results. However, there was only one second-year paramedics class that received the communication skills course in the spring term. Even if there were more than one class, a control group still would not have been used since this

is a mandatory course that paramedic students need to take before graduation. To minimize problems related to having no control group, the researchers measured the communication skills in one-group participants before and after the communication skills course rather than using a one-group post-test design. Since there are no studies in the literature testing the effectiveness of the communication skills course given to Turkish paramedic students, the originality of this study can be repeated by adding a control group. Other studies can also be conducted to compare the effectiveness of a communication skills course given to students in different departments of the university.

CONCLUSION

Effective communication skills play an important role in the development of individuals and societies. These are the key medical skills of paramedics and the overall goal is to achieve the best outcome and patient satisfaction which are important components of health care delivery. The results of this research have shown that the 14-week communication skills course has increased the paramedic students' total communication skills scores and cognitive, emotion and behaviour subscale scores.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Meltem Oral; Design: Meltem Oral; Control/Supervision: Meltem Oral; Data Collection and/or Processing: Meltem Oral; Analysis and/or Interpretation: Nurgül Karakurt; Literature Review: Meltem Oral, Nurgül Karakurt; Writing the Article: Meltem Oral, Nurgül Karakurt; Critical Review: Meltem Oral, Nurgül Karakurt; References and Fundings: Meltem Oral.

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