



Relationship between the Empathy of Emergency Personnel and Their Approach to Acute Stroke Patients

Acil Servis Personelinde Empati ve Akut İnme Hastalara Yaklaşımları Arasındaki İlişki

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ABSTRACT

Aim: The aim of this study was to investigate the relationship between the empathy level of emergency department physicians and nurses and the referral of patients for intravenous thrombolytic and/or endovascular thrombectomy treatment.

Material and Methods: This cross-sectional study was carried out with the emergency department physicians and nurses of hospitals that did not have a stroke clinic in Bursa in July 2019, and included 198 emergency personnel. Participants' sociodemographic characteristics, professional working conditions, and stroke history in their immediate environment (friends and family) were recorded and empathy level was measured. The health professions version of the Jefferson Scale of Empathy was used in the assessment of empathy status among emergency physicians and nurses.

Results: The mean empathy score of the study group, by the Jefferson scale of empathy, was found 98.63±14.83 points. In this study, no significant relationship was found between the empathy score and the number of referrals (p=0.962). The total empathy score did not differ by the role of the participants in the hospital (p=0.161) or observation of stroke cases in their family or their friends (p=0.694). Healthcare professionals who had received emergency education (p<0.001), were older (p<0.001), spent more time in their profession (p=0.005), and had observed stroke cases in their family or friends (p=0.005) transferred more stroke cases.

Conclusion: This study suggests that interventions for increasing the empathy levels of emergency medicine specialists and nurses will not have a general effect on the referral of acute stroke cases for intravenous thrombolytic and endovascular thrombectomy treatment.

Keywords: Empathy; acute stroke; emergency medicine specialists and nurses.

ÖZ

Amaç: Bu çalışmanın amacı, acil servis hekimleri ve hemşirelerinin empati düzeyleri ile intravenöz trombolitik ve/veya endovasküler trombektomi tedavisi için hastaların sevk edilmesi arasındaki ilişkiyi araştırmaktır.

Gereç ve Yöntemler: Kesitsel tipteki bu çalışma Bursa'da inme kliniği olmayan hastanelerin acil servis hekimleri ve hemşireleri ile Temmuz 2019 tarihinde gerçekleştirilmiş ve çalışmaya toplam 198 acil servis personeli dahil edilmiştir. Katılımcıların sosyodemografik özellikleri, mesleki çalışma koşulları ve kendi yakın çevrelerindeki (aile ve arkadaşlar) inme öyküleri sorgulanarak kaydedildi ve empati düzeyleri ölçüldü. Acil servis hekimleri ve hemşirelerinin empati durumlarının değerlendirilmesinde Jefferson empati ölçeğinin sağlık çalışanları versiyonu kullanıldı.

Bulgular: Çalışma grubunun Jefferson empati ölçeği ile elde edilen ortalama empati skoru 98,63±14,83 puan olarak bulundu. Bu çalışmada empati puanı ile sevklerin sayısı arasında herhangi bir anlamlı ilişki bulunmadı (p=0,962). Toplam empati puanı, katılımcıların hastanedeki rolüne (p=0,161) veya ailelerinde ya da arkadaşları arasında inme vakası görülmesine (p=0,694) göre de bir farklılık göstermedi. Acil eğitimi almış olan (p<0,001), daha yaşlı olan (p<0,001), mesleğinde daha fazla zaman geçirmiş olan (p=0,005) ve ailesinde veya arkadaşlarında inme vakası gözlemlemiş olan (p=0,005) sağlık çalışanlarının daha fazla inme vakası sevk ettiği görüldü.

Sonuç: Bu çalışma, acil servis hekimleri ve hemşirelerinin empati düzeylerini artırmaya yönelik müdahalelerin, akut inme olgularının intravenöz trombolitik ve endovasküler trombektomi tedavisi için sevkinde genel bir etkiye sahip olmayacağını düşündürmektedir.

Anahtar kelimeler: Empati; akut inme; acil servis hekimleri ve hemşireler.

INTRODUCTION

Cerebrovascular disease is one of the most common causes of permanent disability and death in the world (1). Implementation of intravenous alteplase (intravenous thrombolytic therapy) within the first 4.5 hours in appropriate patients with acute ischemic stroke both ameliorates the clinical outcome of these patients and affects their survival (1-3). Endovascular thrombectomy is recommended in proximal artery occlusions with a low response rate to intravenous thrombolytic treatment (4-6). The concept “time is brain” emphasizes the importance of time in acute stroke treatment (7). Both intravenous thrombolytic therapy and endovascular thrombectomy should be implemented within a short therapeutic time window and better clinical outcomes are achieved in a case with earlier implementation (8,9). Therefore, early diagnosis of these patients and their rapid arrival to the stroke clinic is very important.

Empathy, which describes the ability to understand a patient's feelings and thoughts (10), can be an important factor affecting clinical outcomes, especially in patients in which swift action is necessary, such as those with stroke. It has been reported that increased empathy level in healthcare professionals is associated with better clinical outcomes and low burnout. Higher levels of empathy in healthcare professionals increase patients' belief, treatment compliance, and satisfaction, reduce anxiety, affect litigation decisions and reduce the frequency of exhaustion and complications (11-15). Interestingly, it has also been reported that the number of donor notifications is higher in the presence of intensive care nurses with high empathy levels (16).

In close cooperation with neurologists, emergency physicians and nurses are of vital importance in the rapid and accurate recognition of symptoms in stroke patients, in the prompt completion of triage, in the conduct of radiological and laboratory examinations, and in the implementation of early basic treatment protocols (1-3,5,17). In the hospital, emergency physicians and nurses, who are the first contact point of the patient, act as a team in the rapid transfer of appropriate acute stroke patients to the stroke center and their access to acute stroke treatments. Therefore, it is important to evaluate the effects of empathy levels among emergency physicians and nurses on outcomes related to the management of stroke patients.

The aim of the study was to evaluate the relationship between the empathy level of nurses and emergency physicians and the referral of acute stroke patients to comprehensive stroke units for intravenous thrombolytic and/or endovascular thrombectomy treatment.

MATERIAL AND METHODS

This cross-sectional study was carried out with the emergency physicians (emergency medicine specialists, emergency practitioners) and nurses of hospitals that did not have a stroke clinic in Bursa, Turkey. All participants had to have been employed for at least 6 months at the time of study conduct, July 2019. This study was approved by the Clinical Research Ethics Committee of Bursa Yüksek İhtisas Training and Research Hospital (Date: 10 July 2019, No: 2011-KAEK-25 2019/07-26), and necessary permissions were obtained to conduct the study. The study

was carried out in accordance with the Declaration of Helsinki.

Bursa Yüksek İhtisas Training and Research Hospital had been running a comprehensive stroke unit for two years at the time of the conduct of this research. Intravenous thrombolytic therapy and/or endovascular thrombectomy in the emergency departments of other hospitals in Bursa are considered appropriate for acute ischemic stroke cases, which are referred to our center. Within the scope of the study, we interviewed emergency physicians and nurses of 13 hospitals that referred acute stroke cases to this stroke unit for further treatment.

The questionnaire used in the study included questions about sociodemographic characteristics, professional working conditions, stroke history in participants' immediate environment (family and friends), and evaluation of empathy level.

The Jefferson Scale of Physician Empathy (JSPE) version of the Jefferson Empathy Scale (JSE), developed to measure empathy in medical and health professional groups, was used (10). The Turkish validity and reliability of the JSE was performed by Öztürk et al. (16) The JSE includes 20 items answered on a 7-point Likert type scale, with positively worded questions scored as “strongly disagree=1” to “strongly agree=7”, while negatively worded questions are inversely scored “strongly disagree=7” to “strongly agree=1”. Possible scores vary between 20 and 140 points with higher scores showing greater levels of empathy (10).

After detailed information about the purpose and scope of the study was given to all health personnel eligible for the study (26 emergency medicine specialists, 160 emergency practitioners, and 386 nurses), verbal and written consent was obtained from those who agreed to participate (13 emergency medicine specialists, 50 emergency practitioners, 135 nurses). Health personnel in the research group were asked to complete the questionnaire.

Statistical Analysis

The data were analyzed using the IBM SPSS software (IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp). The Shapiro-Wilk test was used to assess whether the data followed a normal distribution. Categorical variables were given as number and percentage, and continuous variables as mean±standard deviation or median (min-max). According to the normality test results, Kruskal-Wallis, Mann-Whitney U, or independent samples t tests were used to compare the groups. Categorical variables were compared by the Pearson chi-square and Fisher's exact test. The reliability of the JSE scale was evaluated using Cronbach's alpha coefficient. The correlation between JSE score and age, professional experience, and the monthly shift was analyzed, and the Spearman correlation coefficient was calculated. A p-value of <0.05 was considered statistically significant.

RESULTS

The study group consisted of 198 individuals, 115 (58.1%) were females and 83 (41.9%) were males. Of the study group, 13 (6.6%) were emergency medicine specialists, 50 (25.3%) were emergency practitioners, and 135 (68.1%) were nurses. The mean empathy score of the research

group, as measured by JSE, was 98.63 ± 14.83 points. The scores obtained from the 'perspective taking', 'compassionate care', and 'standing in the patient's shoes' sub-dimensions were 54.83 ± 8.62 , 34.36 ± 8.11 , and 9.44 ± 3.04 points, respectively. No significant relationship was found between the empathy levels of the health personnel in the study and variables including gender ($p=0.908$), hospital position ($p=0.161$), stroke history in the family & friends ($p=0.694$), and stroke referral ($p=0.962$, Table 1). There was a very weak negative correlation between total empathy score and the number of shifts per month ($r_s=-0.170$, $p=0.017$) while no significant correlation was found for age ($r_s=0.050$, $p=0.524$), and professional experience ($r_s=0.040$, $p=0.628$). Both the gender ($p=0.624$) and the number of monthly shifts ($p=0.458$) were not associated with stroke referral. The median age of healthcare professionals who referred patients to the comprehensive stroke unit was significantly higher than those who did not (32 vs. 26 years, $p<0.001$). Professional experience was found to be significantly longer among health personnel who had referred patients compared to those who had not (10 vs. 4 years, $p=0.005$). All ($n=13$) emergency medicine specialists, 64% ($n=32$) of emergency practitioners, and 47.4% ($n=64$) of nurses had referred patients for stroke, and thus, the distribution of professions in the referral and non-referral groups

demonstrated a significant difference ($p<0.001$). The frequency of referral by healthcare professionals with stroke history among family & friends was also significantly higher than those without (69.2% vs. 30.8%, $p=0.005$, Table 2).

DISCUSSION

In this study, possible relationships between the empathy levels of emergency physicians and nurses and their referral of patients for intravenous thrombolytic and/or endovascular thrombectomy treatment methods were investigated. Our results revealed that being an emergency medicine specialist or emergency practitioner (relative to nurses as the reference category) and age (higher age) were independently associated with requesting a stroke-related referral; however, empathy level was not associated with the likelihood of referral.

Previous studies proved that higher scores of empathy were associated with better clinical outcomes in various conditions and diseases. It was observed that diabetes control was better with high empathy scores of physicians (12). Hypertension control has also been demonstrated to be better in the presence of primary care physicians that had higher empathy scores (18). In our study, we could not observe a relationship between empathy score and patient referral for stroke.

Table 1. Relationship between empathy score and characteristics of the participants

Gender	Female (n=115)	Male (n=83)	p	
	98.76±13.99 (55-138)	98.46±15.99 (62-124)	0.908 ^a	
Role in the hospital	Specialist (n=13)	Practitioner (n=50)	Nurse (n=135)	p
	107.08±16.01 (77-138)	98.84±13.57 (66-128)	97.82±15.04 (55-125)	0.161 ^b
Stroke history in the family & friends	Yes (n=65)	No (n=133)	p	
	99.23±15.08 (55-138)	98.35±14.75 (62-128)	0.694 ^c	
Stroke referral	Yes (n=109)	No (n=89)	p	
	98.71±15.34 (62-138)	98.55±14.25 (55-125)	0.962 ^c	

Descriptive statistics were presented as mean±standard deviation (min-max), ^a: Mann-Whitney U test, ^b: Kruskal-Wallis test, ^c: Independent Samples t test

Table 2. Factors affecting stroke referral

Stroke referral	Yes (n=109)	No (n=89)	p
Gender* , n (%)			
Female	65 (56.5%)	50 (43.5%)	0.624 ^a
Male	44 (53.0%)	39 (47.0%)	
Age (years) , median (min-max)	32 (22-57)	26 (20-55)	<0.001 ^b
Professional experience (years) , median (min-max)	10 (1-33)	4 (1-32)	0.005 ^b
Number of monthly shifts , median (min-max)	10 (0-16)	10 (0-18)	0.458 ^b
Role in the hospital* , n (%)			
Emergency medicine specialist	13 (100%)	0 (0.0%)	<0.001 ^a
Emergency practitioner	32 (64.0%)	18 (36.0%)	
Nurse	64 (47.4%)	71 (52.6%)	
Stroke in the family & friends* , n (%)			
Yes	45 (69.2%)	20 (30.8%)	0.005 ^a
No	64 (48.1%)	69 (51.9%)	

*: percentage values were calculated within rows, ^a: chi-square test, ^b: Mann-Whitney U test

The mean total empathy score was reported as 104.56 ± 16.17 in a study performed with Turkish medicine students (19), whereas in a study performed with intensive care nurses in Türkiye, the mean total empathy score was reported to be 98.97 ± 12.40 (16). On the other hand, the mean total empathy score was 106 ± 16.5 in a study with oncology nurses (20). The total mean empathy score was 112.8 ± 10.2 in a study performed with family medicine doctors (21), similarly, in our study, the mean JSE of the participants was 98.63 ± 14.83 .

In our study, no relationship was detected between gender and the empathy scores of the participants. In the literature, a higher level of empathy was frequently detected in female physicians and medical students compared to their male counterparts (19,22,23). In contrast to studies showing that senior and older physicians showed higher scores of empathy (13,24), no correlation was detected in our study between the age and empathy scores of physicians or nurses.

An inverse correlation was detected in our study between the number of monthly shifts and total empathy score. In a study with emergency medicine specialists, it was observed that good quality of life was associated with a higher empathy level (25). As the healthcare staff's quality of life decreases with an increasing number of shifts, the total empathy score may decrease. This finding indicates that the empathy levels of emergency staff can be increased at a meaningful degree if the number of monthly shifts could be reduced, which would, in turn, translate into a better quality of care provided to patients.

The age and professional experience of healthcare personnel who transferred patients to the stroke center were found to be significantly higher in this study. Emergency medicine specialists declared that more acute stroke cases were transferred to the stroke clinics during their shifts for thrombolytic or endovascular thrombectomy compared to emergency practitioners and nurses. Also, it is important to note that the patient referral rate in the healthcare personnel who experienced a stroke in their family & friends was found to be higher. No difference was detected among groups in terms of gender. This outcome led us to think that emergency education, age, and professional experience, and observation of stroke in the family & friends were more effective in patient referral compared to empathy score.

Total empathy score did not vary with the role of the participants in the hospital or the presence of stroke in the family and among friends. We saw that specialist training, age (possibly associated with professional experience), and presence of stroke history among family & friends were associated with increased referrals. However, empathy level was not a factor associated with the likelihood of referral in our group of healthcare employees. We hope that these results will contribute to the literature since there has been no study analyzing the relationship between empathy levels of emergency physicians and nurses of hospitals and referrals for acute stroke treatment.

Strengths and Limitations

This was a small sample size study that was limited to our province. Thus, we cannot generalize its results. For this reason, large-scale, multi-centered studies could provide a better assessment of the relationship between empathy and referral of acute stroke patients in the emergency

department. Besides this, as several factors may have an effect on the transfer of these patients, especially stroke characteristics (e.g. stroke severity), patient characteristics (e.g. comorbidities), timing (stroke onset, potential time of the transfer to the secondary hospital, etc.), more studies are needed to stratify for these factors. In addition, nurses are not directly authorized for the referral of patients but they have an influence in accelerating the triage of acute stroke patients in the emergency department and guiding physicians' referral of patients indirectly. This can also be considered as a limitation of our study.

CONCLUSION

The findings of this study suggest that interventions for increasing the empathy levels of emergency medicine specialists and nurses will not have an increasing effect on the referral of acute stroke cases for intravenous thrombolytic and endovascular thrombectomy treatment. Transfer of appropriate patients to related hospitals by increasing the number of emergency medicine specialists in the emergency departments and providing in-service training to increase experience appear to be more promising for potentially increasing access to these treatments.

Ethics Committee Approval: The study was approved by the Clinical Research Ethics Committee of Bursa Yüksek İhtisas Training and Research Hospital (10.07.2019, 07-26).

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