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STATE AND TRAIT ANXIETY OF PATIENTS' RELATIVES IN THE EMERGENCY DEPARTMENT

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ANSIEDAD ESTADO Y ANSIEDAD RASGO DE FAMILIARES DE PACIENTES EN LA SALA DE GUARDIA

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Abstract

Objectives. Anxiety is the state of feeling uneasiness, fear, dread and distress. In busy emergency departments, patients' relatives can mediate the communication between the doctor and the patient and may reflect the frustration of the patient to the medical staff while they may also be effective in. The aims of the present study were to determine the components of anxiety and the facts that lower the anxiety levels in the patients' relatives (cases) in emergency department by using the Spielberger State-Trait Anxiety Inventory (STAI-Y-1 and STAI-Y-2, respectively). **Material and methods.** The study is conducted on cases whose patients were being monitored in the emergency observation and resuscitation rooms, 15 minutes after their admission to the emergency department. Patients and cases' demographic characteristics, the severity of the patients assessed by physicians through the Rapid Emergency Medicine (REM) score and by cases through the visual analogue scale (VAS) were recorded. STAI was filled by cases. **Results.** The mean state and trait anxiety levels were lower in male cases than female cases. There was a medium strength correlation between VAS value with the state anxiety while there was no correlation between the VAS value and cases' trait anxiety (p <0.001, r = 0.309; p = 0.055, r = 0.126 respectively). While trait anxiety levels of the cases who had been informed by the doctors (43.9 ± 7.9) and the ones not informed (45.6 ± 8.5) were similar (p = 0.205, t = 1.272), state anxiety levels of the cases who had been informed by the doctors (42.4 ± 9.3) were significantly less than those of the cases not informed (45.9 ± 10.1) (p = 0.026, t = 2.240). **Conclusion.** The only commutative way of decreasing anxiety in patients' relatives is keeping them informed. More studies are needed in order to reduce the anxiety level of patients' relatives in emergency departments.

Key words. Anxiety, emergency department.

Resumen

Objectives. *La ansiedad es un estado emocional de inquietud, temor, miedo y angustia. En los servicios de urgencias, los familiares de los pacientes pueden mediar para lograr la comunicación entre el médico y el paciente, reflejar la frustración del paciente al personal médico y ser al mismo tiempo eficaces en infundir calma. Los objetivos del presente estudio fueron determinar los componentes de la ansiedad y los hechos que disminuyen los niveles de ansiedad en los familiares de los pacientes (casos) en el servicio de urgencias utilizando el Inventario de Ansiedad Rasgo-Estado de Spielberger (STAI-Y-1 y STAI-Y-2, respectivamente).* ***Material y métodos.*** *El estudio se lleva a cabo en los pacientes que fueron monitorizados en las salas de observación de emergencias y reanimación, 15 minutos después de su ingreso en el servicio de urgencias. Se registraron las características demográficas de los pacientes y de los casos, la gravedad de los pacientes evaluada por los médicos a través de la Puntuación Rápida de Medicina de Emergencia (REMS, su sigla en inglés) y por los casos a través de la escala visual analógica (EVA). El inventario (STAI) se llenó de casos.* ***Resultados.*** *Los niveles medios de ansiedad estado y ansiedad rasgo fueron menores en los hombres que en las mujeres. Hubo una correlación de fuerza media entre el valor (de la escala) EVA y la ansiedad estado, mientras que no hubo correlación entre el valor (de la escala) EVA y la ansiedad rasgo de los casos (*p *<0,001,* r *= 0,309;* p *= 0,055,* r *= 0,126, respectivamente). Mientras que los niveles de an-*

siedad rasgo de los casos informados por los médicos (43,9 ± 7,9) y los no informados (45,6 ± 8,5) fueron similares (p = 0,205, t = 1,272), los niveles de ansiedad estado de los casos que habían sido informados por los médicos (42,4 ± 9,3) fueron significativamente menores que los correspondientes a los casos no informados (45,9 ± 10,1) (p = 0,026, t = 2,240). Conclusión. La única forma conmutativa de disminuir la ansiedad en los familiares de los pacientes es informándolos. Se necesitan más estudios para reducir el nivel de ansiedad de los familiares de los pacientes en los servicios de urgencias (salas de guardia).

Palabras clave. *Ansiedad, servicio de urgencias (sala de guardia).*

Introduction

Emergency departments are specific sections of the hospital for the patients and the patients' relatives as much as they are for medical workers. The situation patients are in, length of their stay, diagnosis and treatment process and operations, whether the procedure is painful or not, and their thoughts about the future they await and the uncertainties may result in particular uneasiness in patients and their relatives. In busy emergency services, particularly, patients' relatives can mediate the communication between doctor and patient. Whether conveying the questions and problems of the patient to the doctor or informing the patient of the diagnosis and treatment process in the emergency department. Anxiety is the state of feeling uneasiness, fear, dread, and distress. It might be temporary (state) or long lasting (trait) (1). Trait anxiety is rooted in the sense of danger caused by the feelings of impending demise and it is defined as the tendency to state anxiety. Whereas state anxiety is an affection, as a reaction to momentary dangers, which prepares the person to face danger and stress. Actually being the adaptation mechanism of an individual, it can lead to a state of panic and agitation (2).

The relatives of the patients, according to their above-mentioned role, may reflect the frustration of the patient to the medical staff while they may also be effective in placating of the patient, ensuring the cooperation of the patient during the diagnosis and treatment process and increasing the patients compliance.

Objective

In the present study our aim is to determine the anxiety levels and the factors that affect the anxiety levels of patients' relatives who are admitted to the emergency departments.

Materials and methods

This study was conducted with the approval of the ethics committee, between 2015-10-23 and 2015-11-10, in Ankara Dışkapı Yıldırım Beyazıt Training and Research Hospital Emergency Department. The study is based on the facts taken from the surveys conducted on relatives (cases) of the patients who were being monitored in the emergency observation room and resuscitation room, 15 minutes after their admission to the emergency department.

In the data form were recorded: a) patients' demographic features, emergency department admission time, respiratory rate, pulse rate, blood pressure, Glasgow Coma Scale, oxygen saturation measured with pulse oxymeter, and their diagnosis group with their status; then b) cases' age, gender, education, and degree of kinship, whether they were informed by the doctor or not, whether the patient got a diagnosis or not, cases personal assessment on the severity of the patients situation based on visual analogue scale (VAS) chart and c) State-Trait Anxiety Inventory answers. Cases' education level were grouped as illiterate, primary school graduate, middle school graduate, high school graduate,

TABLE 1. RAPİD EMERGENCY MEDİCİNE (REM) SCORE

	0	1	2	3	4	5	6
Age	<45		45-54	55-64		65-74	>74
Heart rate (bpm)	70-109		55-69 110-139	40-54 140-179	<40 >179		
Respiratory rate (bpm)	12-24	10-11 25-34	6-9	35-49	<6 >49		
Mean arterial pressure (mmHg)	70-109		50-69 110-129	130-159	<49		
Glasgow Coma Scale	>13	11-13	8-10	5-7	<5		
O_2 saturation	>89	86-89		75-85	<75		

university graduate. Their degree of kinship, as first-degree relative, second-degree relative, third degree relative, other relative, acquaintance or neighbour.

Patients' Rapid Emergency Medicine scores (REMS) were calculated according to their vital findings (Table 1) (3). The duration after the admission to the emergency department was grouped as 0-1 hour, 1-4 hours, 4-8 hours, 8-12 hours, 12-24 hours, and more than 24 hours. The diagnosis of the patients in the emergency department were grouped as trauma (surgery necessitates, intervention necessitates, no surgery or intervention necessitates) and medical (surgery necessitates, intervention necessitates, no surgery or intervention necessitates). In the patients' records, appropriate outcome was registered among observation, service stay, intensive care stay and discharge.

The anxiety levels of patients observed were determined by means of the State-Trait Anxiety Inventory, which was developed by Spielbereger to state specific anxiety and trait anxiety (4). STAI consists of STAI Y1 and STAI Y2, both composed by 20 questions. STAI Y1 addresses how the person feels at a given moment, while STAI Y2 focuses on how the person feels in general.

All questions are evaluated via 4 points Likert Scale: meaning 'not at all', 'somewhat', 'moderately', or 'very much so' for the STAI-Y-1; meaning 'almost never', 'sometimes', 'often', 'almost always' for STAI-Y-2. In STAI Y1, there are 10 negative questions, and in STAI Y2 there are 9; therefore the score is reversed for these questions. A higher point shows a more intense anxiety (5). For cases to fill the form, the Turkish version of the STAI questionnaire form was used (6). Survey form

TABLE 2. DEMOGRAFİC CHARACTERİSTİCS OF THE CASES

	Trait STAI Anxiety Score (mean ± sd)	State STAI Anxiety Score (mean ± sd)
Gender		
Female	45.52 ± 7.40	45.59 ± 9.28
Male	42.97 ± 8.35	40.71 ± 9.27
p	**<0.001**	**<0.001**
Age groups of the cases		
<18 y/o (*n* = 2)	45.00 ± 7.07	45.00 ± 18.39
18-30 y/o (*n* = 56)	41.63 ± 7.84	40.25 ± 9.95
31-45 y/o (*n* = 104)	43.84 ± 7.87	43.53 ± 8.76
46-65 y/o (*n* = 58)	47.52 ± 7.72	45.02 ± 9.71
>65 y/o (*n* = 12)	43.00 ± 6.84	42.08 ± 11.25
p	**0.003**	0.221
Education levels		
Illiterate (*n* = 12)	44.58 ± 8.43	43.92 ± 9.53
Primary school graduate (*n* = 63)	48.76 ± 7.034	45.57 ± 8.95
Secondary school graduate (*n* = 29)	45.83 ± 6.91	42.45 ± 8.50
High school graduate (*n* = 79)	42.54 ± 7.61	41.48 ± 9.69
University graduate (*n* = 46)	40.00 ± 7.22	42.89 ± 10.54
Others	38.33 ± 10.26	36.00 ± 6.25
p	**<0.001**	0.102
Cases' degree of kinship		
First degree relative or Spouse (*n* = 175)	44.47 ± 8.23	43.47 ± 9.40
Second degree relative (*n* = 23)	43.61 ± 7.16	42.13 ± 9.03
Third degree relative (*n* = 8)	46.38 ± 4.93	45.75 ± 7.65
Other degree of kinship (*n* = 15)	43.47 ± 7.88	40.40 ± 10.80
Acquaintance or Neighbour (*n* = 11)	40.36 ± 7.74	39.91 ± 12.76
p	0.500	0.479

was filled by cases. If more than one option were selected in a parameter or if there were more than three blank answers, the survey was deemed invalid.
Cases whose patients did not need to be observed or were observed for less than 15 minutes were brought to the hospital by arrest, and those who refused to participate in the study were not included.
All analyses were performed by SPSS Statistics for Windows, Version 17.0, Chicago, SPSS Inc. The continuous variables are presented as mean ± SD; categorical data are expressed as number (*n*) and percentage (%). Normal distribution of the continuous variables was evaluated by histogram and Kolmogorov Smirnov tests. Statistically significance of the difference between group averages was evaluated with the use of Student's t-test in data showing normal distribution and Mann Whitney-U test in data not showing normal distribution. Correlation of the continuous variables were evaluated with the use of Pearson Correlation in data showing normal distribution and Pearson Correlation in data not showing normal distribution. P value lower than 0.05 was considered statistically significant.

Results

With 111 females (47.8%) and 121 males (52.2%), 232 cases (patient relatives) in all were included in the study. The mean age of the cases were 40.5 ± 13.673. Cases' demographic features are given in table 2. The mean VAS value, cases' assessment of the severity of the patients, was 51.48 ± 29.23 and 62.80% of the cases (n = 148) knew the diagnosis of their patients. State and trait anxiety levels of the cases who knew their patient's diagnosis and the cases who didn't know the diagnosis of their patients were similar (p = 0.262, t = 0.490, p = 0.917, t = 0.104); while trait anxiety levels of the cases who had been informed by the doctors (43.9 ± 7.9) and the ones who had not been informed (45.6 ± 8.5) were similar (p = 0.205, t = 1.272). State anxiety levels of the cases who had been informed by the doctor (42.4 ± 9.3) were significantly less than that of the cases who had not been informed (45.9 ± 10.1) (p = 0.026, t = 2.240).
Patients' mean age was 56.18 ± 20.57. Patients' mean REMS value was 3.8147 ± 2.7907. 24.13% of the patients (n = 56) stayed for 0-1 hour, 39.65% of them (n = 92) stayed for 1-4 hours; 20.68% (n = 48), for 4-8 hours; 6.89% (n = 16) for 8-12 hours; 7.32% (n = 17), for 12-24 hours, and 1.29% of the patients (n = 3), over 24 hours in the emergency department. A significant difference between state and trait anxiety levels according to the duration after the patients' stay in the emergency department was not detected (p = 0.264 vs. 0.774). Patients' diagnosis groups and state and trait anxiety levels of the cases according to the diagnosis groups are detailed in Table 3.

There was no correlation between patients' REMS values, which show the severity of their situation, and the state and trait anxiety of the cases (respectively, p = 0.365, r = -0.600, p = 0.110, r = 0.105). Also, there was no correlation between the average VAS values and the patients' REMS values (p = 0.639, r = 0.031). However, while there was no correlation between the VAS value and the cases' trait anxiety, there was a mean strength correlation between the VAS value with the state anxiety (p = 0.055, r = 0.126, p <0.001, r = 0.309 respectively). The total item score of STAI Y1-2 is provided in Table 4.

Discussion

Anxiety is the feeling of uneasiness and distress, unearthed by the feeling of apprehension. It arises reactionally to stimuli that create a sense of danger and it attempts to dissipate that sense of danger by prompting behavioural defence mechanisms. Spielberger defines the state anxiety as a temporary emotional state which dissipates with fluctuations and changes in its intensity, and defines trait

TABLE 3. DİAGNOSİS GROUPS OF THE PATİENTS AND CASES' STATE AND TRAİT ANXİETY LEVELS ACCORDİNG TO THE DİAGNOSİS GROUPS

Diagnosis groups of the patients admitted to the Emergency Department	State STAI Anxiety Score (mean±SD)	Trait STAI Anxiety Score (mean±SD)
Trauma-Surgery needed (n = 11)	48.64 ± 8.79	47.27 ± 6.13
Trauma-Intervention needed (n = 3)	44.33 ± 6.35	47.00 ± 11.36
Trauma-Surgery or Intervention not needed (n = 16)	40.50 ± 8.56	47.13 ± 5.89
Medical-Surgery needed (n = 4)	10.34 ± 42.25	2.83 ± 36.00
Medical-Intervention needed (n = 40)	44.05 ± 8.58	43.05 ± 7.41
Medical-Intervention or surgery not needed (n = 158)	42.66 ± 9.94	44.12 ± 8.32
P	0.342	0.100

TABLE 4. MEAN, STANDARD DEVIATION AND ITEM TOTAL SCORE CORRELATION OF STAI Y1-2

	Mean	Standard deviation	Item-total score correlation
STAI-Y-1			
Item 1. I feel calm	2.87	0.985	0.610
Item 2. I feel secure	3.07	0.922	0.629
Item 3. I feel tense	1.69	0.920	0.553
Item 4. I feel strained	1.37	0.775	0.309
Item 5. I feel at ease	2.43	1.101	0.494
Item 6. I feel upset	1.86	0.924	0.198
Item 7. I am presently worrying over possible misfortunes	1.70	0.905	0.560
Item 8. I feel satisfied	1.96	0.975	0.356
Item 9. I feel frightened	1.95	0.911	0.519
Item 10. I feel comfortable	2.39	1.040	0.655
Item 11. I feel self-confident	3.00	1.038	0.473
Item 12. I feel nervous	1.69	0.855	0.618
Item 13. I am jittery	1.52	0.823	0.640
Item 14. I feel indecisive	1.58	0.813	0.576
Item 15. I am relaxed	2.28	1.028	0.522
Item 16. I feel content	2.23	1.040	0.597
Item 17. I am worried	1.86	0.928	0.490
Item 18. I feel confused	1.55	0.874	0.457
Item 19. I feel steady	1.67	0.966	0.458
Item 20. I feel pleasant	1.86	0.986	0.535
STAI-Y-2			
Item 21. I feel pleasant	2.57	0.966	0.448
Item 22. I feel nervous and restless	2.09	0.828	0.415
Item 23. I feel satisfied with myself	1.98	0.936	0.307
Item 24. I wish I could be as happy as others seem to be	2.62	1.017	0.327
Item 25. I feel like a failure	2.19	0.904	0.440
Item 26. I feel rested	2.24	0.986	0.318
Item 27. I am 'calm, cool, and collected'	2.77	1.038	0.435
Item 28. I feel that difficulties are piling up so that I cannot overcome them	2.13	0.917	0.475
Item 29. I worry too much over something that really does not matter	1.94	0.897	0.533
Item 30. I am happy	2.67	0.927	0.519
Item 31. I have disturbing thoughts	2.23	0.878	0.390
Item 32. I lack self-confidence	1.84	0.974	0.457
Item 33. I feel secure	2.74	0.992	0.252
Item 34. I make decisions easily	2.31	0.972	0.322
Item 35. I feel inadequate	2.14	0.896	0.535
Item 36. I am content	2.77	1.005	0.388
Item 37. An irrelevant thought runs through my mind and bothers me	2.13	0.885	0.464
Item 38. I take disappointments so keenly that I cannot put them out of my mind	2.21	1.008	0.542
Item 39. I am a steady person	3.11	1.015	0.304
Item 40. I get in a state of tension or turmoil as I think over my recent concerns and interests	2.24	0.964	0.588

anxiety as a reflection of the past experiences of state anxiety and a constant sensitivity to state anxiety. Anxiety may manifest itself as the feeling of apprehension against a situation in which the individual feels a sense of danger, followed by uncontrollable autonomous symptoms. Chaves et al. state that increasing anxiety may result in unexpected physical behaviour, feelings of uneasiness and uncontrollable behaviour (7). It is obvious that unrest and uncontrollable behaviour, especially in crowded emergency departments, can result in negative predicaments. Therefore in this study, we have attempted to examine the anxiety levels of the patients' relatives.

In our study, in accordance with the relevant literature, females had higher state and trait anxiety levels than male relatives (8). Aside from that, cases' age groups, education levels, their degree of kinship with the patient or their patient's age group did not change anxiety levels. The fact that there were no difference in anxiety levels amongst different age groups and different education levels is compatible with the study of Ülker et al. (9). We linked that to the fact that people do not often go to the emergency services, therefore the unfamiliarity of the emergency department naturally increases state anxiety levels. There are conflicting results on the state anxiety scores and the de-

gree of kinship in various diagnosis groups (10-11). These differences can be attributed to the groups' degree of kinship, heath centers where the study was conducted and the patient's medical diagnosis. The fact that in our study there were no difference between cases' degree of kinship can be attributed to the small number of patients from the paediatric age group and the fact that patients in those age groups were mostly admitted for minor traumatic injuries. Therefore, except from their gender, cases' state anxiety levels are not affected by the difference in demographic features.

In this study, it can be said that whether the patients who apply to the emergency departments are trauma or medical, whether they need surgical intervention or not —similarly to the study results of Ramsay et al.— they do not effect anxiety levels of the cases (12). The reason is that patients have low REMS scores and most of the trauma patients are minor injuries.

The time that patients spent in the emergency department after their admission was grouped as 0-1 hour range (too early), 1-4 hour range (early), 4-8 hour range (medium), 8-12 hour range (medium-late) and over 12 hours observation duration (late). Among time period groups, there were no significant differences in relation with state and trait anxiety levels. Kapcı et al. observed a significant correlation between the waiting period and the state anxiety levels in surgery waiting rooms: the longer the period, the higher the state anxiety levels (13). In crowded hospitals and emergency departments, it is predictable that a patient will be transferred from the emergency department to other clinics and/or will be discharged; this considered, it is expected that state anxiety levels will increase the longer the stay of the patient. The indifference of the state anxiety levels may point to the fact that the initial state anxiety decays while the state anxiety of the longer time period progressively increases, as this means the patient's relatives worry for their patient's well being is replaced by the anxiety of the longer stay in the emergency department. Therefore it was thought that there was no difference between early and late state anxiety levels while there was a difference in the cause of the anxiety but not on the level of the state anxiety of the cases.

Other than that whether cases were informed of the diagnosis or not did not affect the trait anxiety levels while decreasing state anxiety levels. This complied with the results of the study of Kiyohora et al., which was conducted on patients who were in the pre-operative period. Kiyohora et al. emphasized that any sort of information wouldn't decrease anxiety and that true and enough information was important (14). While in our study there was no correlation between the VAS value, by which cases asses the severity of their patients, and the REM score that objectively evaluate the severity of their patients; the fact that there was a medium strength and positive correlation between the VAS value and the state anxiety levels may point that patient relatives are not able to objectively evaluate the health problem their relatives are in. For the cases, it was not important what their patients health status actually was, but how they perceived it. According to them, their anxiety levels increased as the severity of the health status of their patients increased. Neither the patients, nor their relatives may know about the relevant diagnosis and this situation will arise uncertainty and anxiety. Also the patient's relatives might have information from the media that they may incorrectly perceive or interpret and that will not affect their anxiety in a positive way. It is easy to think that uncertainties for patients in emergency services are mostly related with how well they regain their health. Only having information about the diagnosis naturally will not dissipate the patients' and their relatives' subjective thoughts and uncertainties. For this reason, we think that informing patients and their relatives rationally not only about the diagnosis but also on the time period helps relieve anxiety and it is necessary. Also we think that delivery of the speech is as important as the context and the substance. Although this is not in the purpose of our study, we think that talking in a clear way and context and answering questions in a straight and true way could be more effective in relieving anxiety.

Conclusion

Emergency departments are sections where anxiety levels are naturally high and reduction of this anxiety is both a human right and a way for us, emergency service staff, to have a more comfortable working space. From the point of view that uncertainties bring anxiety and increase it, we think that knowing the diagnosis does not dissipate those reactions. It is important for patients and their relatives to know about the nature and the future of the situation besides knowing the diagnosis. Therefore the only working way of decreasing anxiety in patients' relatives is keeping them informed.

All human and animal studies have been approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. RAM

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