

Evaluation of stress levels in adult patients waiting for ultrasonography examination in radiology unit

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ABSTRACT

Aims: In this study, we aimed to reveal the level of anxiety and depression of patients waiting in line for ultrasonography in the Radiology unit with the hospital anxiety and depression scale (HAD) and to reveal its relationship with patient characteristics and waiting characteristics.

Methods: The study was conducted with 105 patients waiting for ultrasonography in Kırıkkale University Faculty of Medicine, Department of Radiology between January 2024 and March 2024. Data were collected from the patients before the procedure using a patient identification form and the hospital anxiety and depression scale.

Results: No significant correlation was found between the gender and age of the patients, the internal and surgical departments, the time waiting in the hall, the number of days waiting for the appointment and the results of the hospital anxiety and depression scale ($p>0.05$). We found a significant correlation between the educational level of the patients and the hospital anxiety depression scale score ($p<0.05$). People with basic education had higher HAD scale scores than other educational groups. In this study, we found a relationship between patient education levels and hospital anxiety depression scale.

Conclusion: Hospitals are places that can cause stress, anxiety and depression in patients. The management of these emotions is, of course, closely related to our personal characteristics and educational status. It should be kept in mind that unnecessary anxiety and long-lasting concerns of patients can be eliminated with analytical approaches and understanding the etiology.

Keywords: Ultrasonography; stress; anxiety; depression; HAD.

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INTRODUCTION

Stress describes a series of reactions that arise from the human emotional state, which can be triggered by external factors, to maintain homeostatic balance. Anxiety occurs when individuals are exposed to stress for a prolonged period of time.¹ Anxiety and depression are two emotional states that sometimes share basic components. Anxiety is a multi-systemic response that is perceived as a threat by individuals.² Unlike stress, anxiety is not a momentary but an ongoing experience. If this continuous state of stress is not eliminated, it may result in depression. Depression involves a negative mood accompanied by negative perceptions of self, often resulting in withdrawal from interpersonal relationships and life, and may result in uncontrolled behaviors aimed at harming self and others.³ Anxiety and depression are comorbid conditions in terms of health risks. Anxiety and depression are co-morbid conditions in terms of health risks. If their diagnosis and treatment are inadequate, they may predispose to comorbid conditions that may be fatal in

the long term.⁴ Therefore, it is important for public health that the causes of anxiety and depression are identified and eliminated if possible. We think that hospitals trigger anxiety and depression as one of the conditions that lead to this condition. In this study, we aimed to reveal the level of anxiety and depression in patients waiting in line for ultrasonography in the Radiology unit by using a previously defined scale (Hospital Anxiety and Depression Scale, HAD) and to reveal its relationship with patient characteristics and waiting characteristics.⁵

METHODS

The study was carried out with the permission of Kırıkkale University Non-interventional Researches Ethics Committee (Date: 14.02.2024, Decision No:2024.02.12). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki. Informed consent



was obtained from all patients participating in the survey study.

Patient Selection

Patients who were waiting for ultrasonography at Kırıkkale University Faculty of Medicine, Department of Radiology between January and March 2024 were selected to participate in our study. Exclusion criteria were determined. These were determined as patients under 18 years of age, patients with stretchers, patients with confusion, inpatients, and patients referred from the emergency department. Patients who did not meet the exclusion criteria were informed in the waiting room and those who wanted to participate were randomly selected and included in the study.

Data Collection

Among the patients waiting in the ultrasonography waiting room at Kırıkkale University Faculty of Medicine, Department of Radiology, those who did not meet the exclusion criteria were randomly informed and a patient information form was filled out for those who agreed to participate in the study. Afterwards, demographic data of the patients were noted. First, a patient identification form was filled out and then the HAD was administered. In the patient information form; the patient's age, gender, education level (no education, basic education, university and higher education level), occupation (student, working, not working), the department to which the patient was referred to Radiology for USG (Internal departments, Surgical departments), time taken to reach the appointment (unit: day), waiting time in the hall (unit: minute) were filled in. Data collection was terminated after reaching the desired number of patients. The scoring of the HAD questionnaire results was summed and a grouping of 1-4 was created and recorded in the table with other information.

Statistical Analysis

SPSS for 21.0 (SPSS; IBM Inc, Chicago, IL) was used for statistical analysis. Mann whitney U test was used to compare between two groups. Chi-square test was used to compare nominally classified data in groups. $p < 0.05$ was considered statistically significant.

RESULTS

A total of 105 patients were included in our study. There were 61 female (58%) and 44 male (42%) patients. Patient ages ranged between 21-76 years. We found no significant correlation between the gender and age of the patients and the results of the hospital anxiety depression scale ($p > 0.05$).

We did not find a significant relationship between the occupation of the patients and the results of the hospital anxiety depression scale ($p > 0.05$). We did not find a significant relationship between the internal and surgical departments the patients came from and the results of the hospital anxiety and depression scale ($p > 0.05$).

We did not find a significant correlation between the time the patients waited in the hall and the hospital anxiety depression scale result ($p > 0.05$). We did not find a significant correlation between the number of days patients waited for

an appointment and the results of the hospital anxiety and depression scale ($p > 0.05$).

We found a significant correlation between the educational level of the patients and the hospital anxiety depression scale score ($p < 0.05$). People with basic education had higher HAD scale scores than other educational groups (Figure).

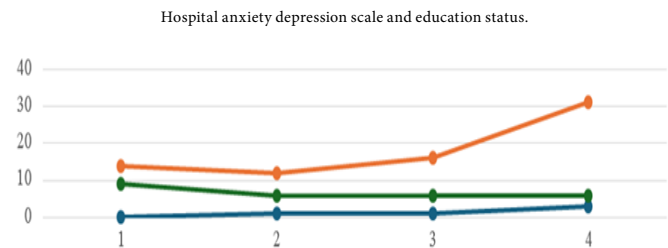


Figure. The relationship between the CFS scale and education level
*Red: Basic Education, Blue: None, Green: Higher Education

DISCUSSION

Stress is one of the most fought public health problems today. In addition, anxiety and depression accompanying the stress of patients affect both mental and physical conditions, causing psychophysiological stress reactions and various reactions. This impairs mental health as well as physical health and affects many conditions, especially the recovery period. It also causes violence in hospitals.⁶ It is important to understand the cause of these undesirable situations that cause stress in healthcare workers in order to prevent them. Various studies have shown that hospitals increase the stress levels of patients.⁷ In this study, in which we aimed to reveal the level of anxiety and depression of patients waiting in the radiology unit with the previously defined scale (Hospital Anxiety and Depression Scale) and to reveal its relationship with the department requested, gender, age, educational status, appointment time and waiting time; we obtained significant results between the education levels of the patients and their anxiety levels. As a result of our study, it was found that patients with basic education had much higher anxiety levels than patients without basic education and patients with higher education. In the study conducted by Samudio-Cruz et al.,⁸ they discussed that the level of education regulates the presence of depression and anxiety in post-stroke patients. The hospital anxiety and depression scale, which we also used in our study, is one of the scales used and a negative relationship was found between education and anxiety score and depression score. As a result, they obtained data suggesting that higher education level decreased the risk of depression and anxiety. In a study conducted by Arslantaş et al., the level of hopelessness and social support and the factors affecting them were investigated in inpatients, and as a result, it was found that low educational level increased the hopelessness score. Kılınç et al.⁹ conducted a study on anxiety and depression in patients with Familial Mediterranean Fever (FMF). As a result of the study, it was found that patients with FMF had mild depression and moderate anxiety scores and higher education level was associated with lower anxiety level.¹⁰ In the study by Liang et al.¹¹ on the evaluation of preoperative psychological status of patients undergoing liver transplantation, no correlation was

found between educational level and preoperative anxiety and depression levels in contrast to our study. Increasing the level of education is of course very important in coping with negative emotions and these results tell us that there is a relationship between the level of education and mental and physical health in societies.

In our study, we did not obtain significant results between the departments requested and anxiety levels. This made us think that other sociodemographic reasons such as anxiety, stress due to not knowing what to expect, and the importance of coming for diagnosis or control may affect our mood in the foreground rather than which department the patients come from. Kayahan and Sertbaş examined the relationship between anxiety-depression levels and stress coping styles in patients hospitalized in internal and surgical clinics. As a result, unlike our study, the mean score of patients hospitalized in surgical clinics was found to be significantly higher than that of patients hospitalized in internal clinics.⁷ This finding is compatible with the findings of Kırkpınar et al.¹²

In our study, we could not define any correlation between the gender of the patients and their anxiety levels. In the study conducted by Karadeniz et al. no correlation was found between gender and anxiety levels.¹³ In the study conducted by Arslantaş et al.¹⁴ scales such as Becker hopelessness scale (BHS) and multidimensional perceived social support scale (MSPSS) were used, and in both of these scales, the relationship between gender and anxiety levels of patients could not be shown. In the study conducted by Çelik et al.⁹ we found that anxiety levels in women were higher than in men according to BHS, but there was no significant difference. We did not find a significant result between the occupations and anxiety levels of the patients. In the study conducted by Karadeniz et al.¹³ we found that there was no significant relationship between the occupations and anxiety levels of the patients. This may be due to the lack of diversification of occupational groups. Studies with wider participation are needed.

In the study by Khairy Gad et al. on the prevalence and related determinants of depression, anxiety and stress in COVID-19 patients in South Sinai, Egypt, no significant relationship was found between anxiety and age, similar to ours.¹⁵ Again, in the study titled factors affecting anxiety, depression and stress in patients with hepatocellular carcinoma during the COVID-19 Outbreak by Akbulut et al.¹⁶ Depression anxiety stress scale (DASS-21) and Coronavirus anxiety scale (CAS) were applied to the patients. In their results, in contrast to our study, determinants including the age factor were found to be significant for the DASS total. The data obtained in the Anxiety in Patients with Neovascular Age-Related Macular Degeneration study by Orly Weinstein et al.¹⁷ The rates of patients with anxiety were compared between groups using univariate analysis and multivariate logistic regression model. As a result, they found that the age factor had a significant relationship with anxiety level in contrast to our study. In the study conducted by Oflaz et al.¹⁸ it was aimed to determine the frequency of anxiety and depression symptoms in inpatients and contrary to our study, waiting time was found to be more anxiety and depressive especially in inpatients. In

our study, we did not find a significant correlation between waiting time and anxiety and depression scale results. This may be related to the short waiting time for appointments for ultrasonography in our hospital. Wu et al. examined the effect of different preoperative waiting times on anxiety and pain levels in patients undergoing outpatient surgery for breast diseases and found that preoperative anxiety and pain levels of patients undergoing outpatient breast surgery increased with the prolongation of preoperative waiting time.¹⁹ Pontone et al.²⁰ examined the tolerance and anxiety levels of patients waiting for endoscopy depending on the waiting time and showed that there was no significant relationship as a result of this study. Silva et al.²¹ evaluated the relationship between anxiety symptoms and stress in patients waiting for kidney transplantation and found that stress and anxiety were common in patients on the waiting list. Lamba et al.²² examined the relationship between waiting time for radiation therapy appointment and patient-reported pain and anxiety and found that daily waiting time may play a role in the pain and/or anxiety experienced by cancer patients during radiotherapy.

Limitations

Of the study are including the small number of patients, and the fact that we did not elaborate in detail on the clinical section in which they referred. In addition, the fact that they did not undergo psychiatric examination can also be counted among the limitations. Different contributions to the literature can be made with a larger number of patients.

CONCLUSION

In this study, we found a relationship between patients' education levels and the hospital anxiety and depression scale. Hospitals are places that can cause stress, anxiety and depression in patients. The management of these emotions is, of course, closely related to our personal characteristics and educational status. It should be kept in mind that unnecessary anxiety and long-lasting concerns of patients can be eliminated with analytical approaches and understanding the etiology.

ETHICAL DECLARATIONS

Ethics Committee Approval

The study was carried out with the permission of Kırıkkale University Non-interventional Researches Ethics Committee (Date: 14.02.2024, Decision No:2024.02.12).

Informed Consent

All patients signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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