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Is the Hospital Anxiety and Depression Scale a Useful Tool for Evaluating Suicide Patients in Emergency Department? A Cross-sectional Study

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Abstract

Aim: Identifying patients presenting with a suicide attempt, determining risk groups, and taking appropriate precautions for risky patients can prevent injuries and death. This study determines the usability and possible benefits of the hospital anxiety and depression scale (HADS) in patients presenting to the emergency department (ED) with a suicide attempt.

Materials and Methods: This cross-sectional observational survey was conducted in the ED of a tertiary hospital. One hundred and two patients were included in the study. Cronbach's alpha coefficient was used in the reliability analysis and determined as >0.7.

Results: There was a significant difference between patients who had a previous suicide attempt in terms of HADS-anxiety (HAD-A) and HADS-depression (HAD-D) score, and HADS total scores compared to patients who had not attempted suicide before (p=0.043, p=0.031, p=0.034, respectively). HADS is a beneficial scale that can be used by emergency physicians for patients who are admitted to the ED with a suicide attempt. HADS detected that patients who attempted suicide had a significant level of anxiety and depression.

Conclusion: Besides, we concluded that patients who presented to the ED with repeated suicide attempts were in the higher risk group for anxiety and depression.

Keywords: Emergency department, HADS, suicide attempt, anxiety, depression

Introduction

Suicide is an important phenomenon that has taken place since the beginning of humanity and has been discussed by both philosophy, psychology, and social science. Although the reported rates differ, they can be seen worldwide and in people of all classes. Since it often has a "life-threatening" feature and is not limited to personal losses, it can also affect the patient's intimate or distant environment. For this reason, it is also a public health problem that needs to be emphasized (1).

Anxiety disorders increase the risk of suicide 6-10 times alone. The suicide risk of patients with major depression increases 20 times. Also, depressive symptoms intensify and suicidal thoughts indirectly increase when depression is accompanied by anxiety (1).

The World Health Organization states that suicide occurs every 40 secondsand suicide attempts occur every 3 seconds, and suicides have increased by 60% in the last 45 years worldwide (2). Suicide cases constitute approximately 0.9% of all deaths (3). Suicide-attempted patients commit suicide attempts again at a rate of

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12-20% in the following year (4). Therefore, it is essential to have an easily accessible and flexible relationship with these people for an intervention that may be required (5). According to the Turkey Statistical Institute, Turkey's crude suicide rate was 3.88 per 100 thousand (6).

Emergency departments (EDs) are the first admission departments in the hospital for those who attempt suicide, which constitutes a prominent patient group that requires a particular approach (7). For EPs, correct psychiatric evaluation, hospitalization and discharge are essential in these patients (8). Although traditional risk factors obtained from anamnesis are used in deciding, additional data are needed for the patients' outcome (9).

The hospital anxiety and depression scale (HADS) was developed by Zigmond and Snaith (10) in 1983 to screen for mood disorders. The scale has two subscales which names are HADS-anxiety (HAD-A) and HADS-depression (HAD-D). The cut-off score for HAD-A subscale is 10/11 and 7/8 for HAD-D subscale. Accordingly, those whose scores above these points are considered at risk. The scoring of each item on the scale was different. Items 1st, 3rd, 5th, 6th, 8th, 10th, 11th, and 13th have decrease severity and the scoring is 3, 2, 1, 0. However, the 2nd, 4th, 7th, 9th, 12th and 14th items are scored as 0, 1, 2, 3, respectively. The scores of the 1st, 3rd, 5th, 7th, 9th, 11th, and 13th items are calculated for the anxiety subscale. Besides, the scores of the 2nd, 4th, 6th, 8th, 10th, 12th, and 14th items are calculated for the depression subscale. The lowest score that patients and caregivers may get from both subscales is 0, and the highest score is 21 (10). The HADS can be easily used in the community and hospital areas (11). This study investigates the usability of HADS in the ED in patients presenting with a suicide attempt and the level of anxiety and depression in these patient groups.

Materials and Methods

Study Design and Patient Selection

This was a cross-sectional observational study conducted in Antalya Training and Research Hospital (AEAH) between March 2016 and November 2016. Ethical approval was obtained from the AEAH Clinical Research Ethics Committee on March 24, 2016, and the approval number was 76/18. Written informed consent was obtained from the participants. The data obtained from the study were prepared in 2 different forms. The first form included the patient's sociodemographic (age, gender, marital status, education level, place of residence) and clinical features (medical history, family history of suicide and psychiatric illness, psychiatry visits in the last six months, history of alcohol or drug use, suicide cause, patient outcome). The EP obtained the information on this form by asking the patient face to face. The second form includes HADS with 14 questions, and the patients filled out the form themselves. The study protocol did not interfere with the patients' therapeutic and diagnostic procedures and did not cause any delay. The patients included in the study were called to be evaluated using a pre-determined psychiatrist one week later for a control examination. The impulsive or depressive characteristics of the suicide attempt were evaluated at the control examination.

The study's exclusion criteria were determined as patients under 18 years of age, illiterate, with an altered state of consciousness, mental retardation, and unstable vital signs.

Hospital Anxiety and Depression Scale

HADS consists of 14 questions (7 reflecting anxiety and 7 reflecting depression) answered by the patient has four different values from 0 to 3. The response scores of each item on the scale are different. Depression and anxiety are evaluated with two subscales; HAD-D and the HAD-A. The accepted threshold values were 10 points for HAD-A and 7 points for HAD-D. Numbers above these values indicated a mood disorder. The Turkish validity and reliability of the scale was performed by Aydemir et al. (11) in 1987.

Statistical Analysis

Statistical analysis of the patients' data was performed using the Statistical Package for Social Science 22.0 program. In statistical evaluations, categorical data are shown as numbers (percentage). Whether a difference between the groups in terms of frequencies was compared using the chi-square. Cronbach's alpha coefficient was used to determine the scales' internal consistency in testing the statistical analysis's reliability. $P<0.05$ values were considered statistically significant.

Results

A total of 119 patients were included in the study. Of the excluded 17 patients, 10 were under the age of 18, and 7 were illiterate. When the sociodemographic characteristics of 102 patients included in the study were examined, 70% were female (n=71) and 30% (n=31) were male.

According to their ages, patients were divided into two groups: "18-24 years old" and "over 25 years old" because nearly half of the patients were under the age of 24. 48% of the cases (n=49) were in the "18-24 years old" group. No statistically significant difference was found in the total values of HAD-A, HAD-D, and HADS between these two groups evaluated according to their age (p=0.146 p=0.080 p=0.060, respectively).

According to their marital status, 35% (n=36) of the patients were married, and 65% (n=66) were single. There was no statistically significant difference in HAD-A, HAD-D, and HADS total values

between these two groups according to their marital status (p=0.498, p=0.893, p=0.646, respectively).

According to their educational status, the most common rate was high school graduates with 55% (n=57) when we evaluated the patients. 30% (n=30) of the patients who were admitted with suicide attempts were primary school graduates or illiterate, 15% (n=15) were university graduates. No significant difference was found between the groups in terms of HADS-A, HAD-D, and HADS total values according to education level (p=0.651, p=0.932, p=0.707, respectively) (Table 1).

The suicide reasons for the patients included in the study were 37% (n=38) family problems, 26% emotional problems (n=27), 21% somatic causes (n=21), and 16% other causes (n=16).

It was found that 20% of the patients (n=21) had attempted suicide before. The study found a significant difference between the patients with suicide attempts in HAD-A, HAD-D score, and HAD total scores compared to patients without suicide attempt (p=0.043, p=0.031, p=0.034, respectively) (Table 2).

Patients were examined according to the threshold values. 50% (n=51) were below the threshold value in the HAD-A score, and 28% (n=29) were below the threshold value in the HAD-D score (Table 3).

75% (n=77) of the patients included in the study were admitted to the psychiatry clinic for control examination after one week. The psychiatrist diagnosed 48% (n=37) of 77 patients as impulsive and 52% (n=40) as other diagnoses (anxiety disorders,

Table 1. HADS scores according to the sociodemographic characteristics of the participants

	n	HAD-A Mean±SD	HAD-D Mean±SD	HADS total Mean±SD
Age				
18-24 years of age	49	11.02±5.1	10.37±4.1	21.39±8.4
>25 years old	53	9.64±5.0	9.09±3.9	18.74±7.8
		p=0.146	p=0.080	p=0.060
Gender				
Female	71	10.51±4.8	9.66±4.0	20.17±7.8
Male	31	9.84±5.6	9.81±4.0	19.65±9.0
		p=0.482	p=0.898	p=0.498
Marital status				
Married	36	10.58±5.4	9.70±4.2	19.53±7.3
Single	66	9.81±4.5	9.72±3.7	20.27±8.6
		p=0.498	p=0.893	p=0.646
Education level				
Illiterate or elementary school	30	9.63±4.9	9.47±3.3	19.10±6.7
High school	57	10.42±5.5	9.82±4.4	20.25±9.2
University	15	11.20±3.5	9.73±4.1	20.93±6.9
		p=0.651	p=0.932	p=0.707

HADS: Hospital anxiety and depression scale, n: Number, HAD-A: HAD-anxiety subscale, HAD-D: HAD-depression subscale, SD: Standard deviation

Table 2. HADS scores according to the psychiatric-clinical characteristics of the participants

	n	HAD-A Mean±SD	HAD-D Mean±SD	HADS total Mean±SD
Suicide reasons				
Family problems	38	11.37±5.6	10.53±4.2	21.89±8.7
Emotional	27	10.19±4.6	9.59±3.9	19.78±7.6
Physical	21	10.05±3.6	10.10±4.1	20.14±7.1
Other	16	8.31±5.7	7.44±3.3	15.75±8.2
		p=0.323	p=0.063	p=0.125
Repeated suicide attempt				
Yes	21	12.50±4.3	11.45±3.7	23.95±6.9
No	81	9.77±5.1	9.27±4.09	19.04±8.2
		p=0.043	**p=0.031**	**p=0.034**
Patient outcome				
Discharged	60	11.08±4.9	10.22±3.7	21.30±7.6
Hospitalized	42	9.19±5.2	8.98±4.4	18.17±8.6
		p=0.041	p=0.119	**p=0.036**

HADS: Hospital anxiety and depression scale, n: Number, HAD-A: HAD-anxiety subscale, HAD-D: HAD-depression subscale, SD: Standard deviation

depression, schizophrenia, bipolar disorder). After the psychiatrist examination, patients with impulsive and other diagnoses were compared. There was no statistically significant difference between HAD-A scores (p=0.878); in contrast, HAD-D scores were found to be statistically significant (p=0.044) (Table 4).

59% (n=60) of the patients were discharged and 41% (n=42) were hospitalized. When discharged and hospitalized patients were compared, a significant difference was found in HADA and HADS total scores (p=0.041, p=0.036, respectively) (Table 2).

Discussion

The patients who died by suicide were admitted to EDs first. Special approaches should be provided psychologically in the ED evaluation of these patients (1). It is difficult to understand the seriousness and the possibility of recurrence of a suicide attempt for the EP. While determining this, we do not have any data other than traditional risk factors in the anamnesis (12). HADS can provide useful information about patients who have attempted suicide and facilitate the management of these patients in the ED.

Hamer et al. (13) conducted a study on the use of HADS in patients who attempted suicide. Because of this study conducted by psychiatrists, they stated that non-psychiatrists could use HADS to detect depressive disorders in patients who attempt suicide. In the study by Al Aseri et al. (14), it was concluded that HADS is an effective method used in the ED.

As HADS has become widespread, doctors with ED have increased their work in this direction (15). Soares-Filho et al. (16) published a study on the usability and usefulness of HADS in patients presenting to the ED with chest pain. The study was analyzed in two groups. In the first group, the authors analyzed anxiety and depression rates in those with chest pain due to acute coronary syndrome (ACS). In the second group, the anxiety and depression rates in those with chest pain without ACS were analyzed. They concluded that ACS complications could be reduced if patients with anxiety or depression due to ACS receive adequate psychiatric support, and reduce unnecessary repeated visits to the ED in patients with chest pain without ACS. Our study found that half of our patients had HAD-A levels above the threshold value, and 73% of them had a HAD-D score above the threshold value. Similar to the result obtained by Soares-Filho et al. (16), EPs may help reduce potential complications or re-suicide rates by giving more attention to patients with high-HAD scores.

We also analyzed whether there was a significant difference in HAD score between patients discharged from the ED and the hospitalized. Accordingly, the HAD-A scores of the discharged patients were found to be significantly higher than the HAD-A scores of hospitalized patients. This may be because the EP ignores psychiatric evaluation in patients who have attempted suicide. EPs can detect anxiety and depression before discharging patients who have attempted suicide using HADS and making a more accurate psychiatric evaluation. Moreover, we did not investigate the reasons for hospitalized patients. For instance, hospitalized patients because of intoxication were mostly hospitalized for internal reasons, not psychiatric reasons.

In our study, the rate of reattempted suicide was significantly higher. In a study questioning the repetitive suicide attempt rates admitted to the ED, the reattempt rate was found to be compatible with our study (4). In the case-control study of Karamustafalıoğlu et al. (17), they identified that HADS could help determine suicide risk. Similarly, in our research, HAD scores of patients who had attempted suicide before were found to be significantly higher than patients without a history of suicide.

Table 3. The status of the participants according to the HAD-A and HAD-D threshold values and the mean values of HAD-A and HAD-D

	n	%	Mean±SD
HAD-A Under threshold (0-10 points) Above threshold (11-21 points)	 51 51	 50.0 50.0	10.30±5.1
HAD-D Under threshold (0-7 points) Above threshold (8-21 points)	 29 73	 28.4 71.6	9.71±4.08

HADS: Hospital anxiety and depression scale, n: Number, HAD-A: HAD-anxiety subscale, HAD-D: HAD-depression subscale, SD: Standard deviation

Table 4. HADS scales and significance levels according to the diagnosis of the patients who admitted to the psychiatry clinic for control

	Impulsive (n=37) Mean±SD	Non-impulsive (n=40) (bipolar, anxious, depressive) Mean±SD	p value
HAD-A	10.22±4.5	10.55±5.4	0.878
HAD-D	9.05±4.1	11.00±4.3	**0.044**

HADS: Hospital anxiety and depression scale, n: Number, HAD-A: HAD-anxiety subscale, HAD-D: HAD-depression subscale, SD: Standard deviation

Study Limitations

This study has a few limitations. The main limitation is the scale, which is not an analysis of documented events. Information from subjective responses was obtained only after the patient was stabilized, and this may not reflect the origin of anxiety or depression. Finally, the sample size may limit the generalization of the results.

Conclusion

HADS might be used in the ED to determine the level of anxiety and depression in patients who attempt suicide. Also, HADS may guide EPs regarding identifying patients who attempt suicide and those in the risk group.

Ethics

Ethics Committee Approval: Ethical approval was obtained from the Antalya Training and Research Hospital Clinical Research Ethics Committee on March 24, 2016, and the approval number was 76/18.

Informed Consent: Consent form was filled out by all participants.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: V.Ç., M.N.B., M.K., Design: V.Ç., M.N.B., M.K., Data Collection or Processing: V.Ç., B.K., Analysis or Interpretation: R.G., Literature Search: A.K., Writing: A.K., R.G.

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