The trait anxiety as a predictor of the suicidal risk in patients with cancer

İpek Sönmez, Kuzeymen Balıkçı, Tuğçe Denizgil, Orkun Aydın¹, Meltem Naça Andrieu²
Departments of Psychiatry and ²Radiation Oncology, Faculty of Medicine, Near East University, Nicosia, Cyprus, ¹Department of Psychology, Faculty of Arts and Social Sciences, International University of Sarajevo, Sarajevo, Bosnia-Herzegovina

INTRODUCTION

It is well known that cancer is a difficult illness that affects the patient and the family physically and emotionally. The coping of the patient with this stress depends on a variety of factors. These factors include medical (type, duration, and prognosis of the illness), psychological (capacity for physical and psychological rehabilitation), and interpersonal (the presence or absence of individuals providing emotional support) aspects.¹ ² Psychological symptoms that develop after cancer diagnosis are important for their effect on the severity of medical condition, duration, response to treatment, quality of life, and compliance with treatment.³

In cancer patients, the most common psychiatric disorders are major depression, anxiety disorders, adjustment disorders accompanied by depressive symptoms, and depression related to a medical condition. In cancer patients, the rates of depression and anxiety in cancer patients were examined, but the risk of suicide had not been examined. This study investigated the psychiatric diagnoses of depression, anxiety, and suicide risk in cancer patients. Eighty patients who met the inclusion criteria were administered the Beck Depression Inventory, State-Trait Anxiety Inventory, Structured Clinical Interview for DSM (SCID), and Suicide Probability Scale. The examination of the relationships across variables was assessed with Pearson’s correlation analysis and stepwise multiple regression analysis. Due to SCID assessment, 45% of patients were found to have depression diagnosis, and 11.25% were found to have anxiety diagnosis. In the patients who had previous psychiatric diagnosis and treatment, total suicide probability scores demonstrated statistically significant differences. The frequency of depressive disorders and anxiety disorders in cancer patients is high. The studies investigating that suicide are rare, and in our findings, previous psychiatric diagnosis and treatment were risk factors. In the past studies, depression has been reported to be the most important factor in increasing the risk of suicide in cancer. Contrary to previous findings, according to the data obtained from this study, anxiety is the most important predictor of suicidal risk among all the determinants.

Key words: Anxiety, cancer, depression, suicide

ABSTRACT

Studies investigating the psychological aspects of cancer have gained importance in recent years. In these studies, the rates of depression and anxiety in cancer patients were examined, but the risk of suicide had not been examined. This study investigated the psychiatric diagnoses of depression, anxiety, and suicide risk in cancer patients. Eighty patients who met the inclusion criteria were administered the Beck Depression Inventory, State-Trait Anxiety Inventory, Structured Clinical Interview for DSM (SCID), and Suicide Probability Scale. The examination of the relationships across variables was assessed with Pearson’s correlation analysis and stepwise multiple regression analysis. Due to SCID assessment, 45% of patients were found to have depression diagnosis, and 11.25% were found to have anxiety diagnosis. In the patients who had previous psychiatric diagnosis and treatment, total suicide probability scores demonstrated statistically significant differences. The frequency of depressive disorders and anxiety disorders in cancer patients is high. The studies investigating that suicide are rare, and in our findings, previous psychiatric diagnosis and treatment were risk factors. In the past studies, depression has been reported to be the most important factor in increasing the risk of suicide in cancer. Contrary to previous findings, according to the data obtained from this study, anxiety is the most important predictor of suicidal risk among all the determinants.

How to cite this article: Sönmez İ, Balıkçı K, Denizgil T, Aydın O, Andrieu MN. The trait anxiety as a predictor of the suicidal risk in patients with cancer. Indian J Psychiatry 2020;62:87-90.
depression ranges from isolated depressive symptoms to major depressive disorder. In a variety of studies, the cancer diagnosis has been reported to be a risk factor for suicide. According to the population-based cancer studies, suicide risk in cancer patients is 1.3–2.6 fold (2 fold on average) higher compared to the general population. While this risk is at the highest level in early times of the diagnosis, a study showed that the risk for suicide continued even after 30 years after a breast cancer diagnosis. Furthermore, it was reported that suicidal ideation and attempts were frequent in childhood cancer patients after 20 years from the treatment.

Several factors that are related with suicide in cancer patients are diagnosis of cancer at an early age, application of radiotherapy on the head, worsening of physical appearance, and impairment in memory and cognitive functions. As for cancer survivors, there are problems associated with being exposed to medical treatments such as chronic pain, possible infertility, heart problems, and cognitive disability.

In addition, suicide risk increases in the advanced stage of the illness, bad prognosis, mild delirium condition that causes impulse control problems, insufficiently controlled pain, depression, history of psychiatric or personality disorder, physical and emotional burnout, and detachment from the society. The aim of this study is to investigate the predictors of suicidal risk in cancer patients.

PROCEDURE

Participants
Patients who applied to radiation oncology polyclinics at the Near East University Hospital with the diagnosis of cancer between May 2015 and May 2016 and who volunteered to participate were included in the study. Necessary permission and approval were obtained from the ethical committee of medical faculty before the study (YDU/2013/17-91). Written informed consents were obtained from all the participants. Patients were in the age range of 33–79 years. In patients, the presence of mental retardation, presence of neurological disorder, presence of psychotic disorder, unawareness of cancer diagnosis, presence of alcohol, and substance dependence constituted the exclusion criteria. Patients were administered Beck Depression Inventory (BDI), State-Trait Anxiety Inventory (STAI), Structured Clinical Interview for DSM (SCID), and Suicide Probability Scale (SPS).

Instruments
Clinical measures
Beck Depression Inventory
It measures bodily, emotional, and cognitive symptoms that are seen in depression. It is a 4-point Likert type 21-item self-assessment scale. The highest score that can be obtained is 63. Higher scores indicate the severity of depression. Turkish reliability and validity were investigated by Hisli.

Structured Clinical Interview for DSM
SCID-I is a structured clinical interview developed in 1997 for DSM-IV disorders. It is an interview chart covering DSM-IV diagnoses, and its Turkish reliability and validity analysis were conducted by Çorapçıoğlu et al.

State-Trait Anxiety Inventory
The scale which measures state and trait anxiety levels with 20 items was developed by Spielberger et al. in 1970, and Turkish adaptation was performed by Oner and Le Compte in 1985. Higher scores indicate high anxiety levels, whereas low scores indicate lower anxiety.

Suicide Probability Scale
It is a four-point Likert-type self-assessment scale with 36 items, and it was developed by Cull and Gill. Adaptation to Turkish, validity and reliability studies were carried out by Ath et al. The aim of the scale is to assess suicide risk in adolescents and adults. The higher scores obtained from the scale indicate a higher probability of suicide.

Statistical analysis
The analysis of the data obtained from the patient groups was performed using the “SPSS Statistics 21.0 (IBM Corp., Armonk, NY, USA)” statistical package program. In the preliminary step, variables were checked for the assumptions of parametric statistical testing by the visual analyses of distribution plots and Wilks–Shapiro tests. The Chi-square test was used to compare the categorical data, and the independent t-test and one-way ANOVA from the parametric tests were used to compare the numerical variables of groups, and the relations between variables were examined by the Pearson’s correlation tests. We hypothesized that significant correlations identified possible predictors, and therefore, a stepwise multiple regression analysis was conducted with these possible predictors to determine the best predictors of suicide probability. Each variable was entered into the multiple regression analysis if its F value was >4. P <0.05 was considered statistically significant.

RESULTS

Descriptive characteristics of the patients
The patients’ distributions regarding their cancer diagnosis are 4 hematologic cancer, 6 genital cancer, 11 with gastrointestinal cancer, 4 lung cancer, 28 breast cancer, 8 head-and-neck cancer, 1 skin cancer, 6 brain cancer, and 8 cancer with primary unknown, respectively. The mean age of the participants is 54.41 ± 11.02 years. It was determined that there was no statistically significant difference between scores obtained from the scales with respect to age groups. Similarly, it was determined that there was no statistically significant difference between scores obtained from the scales
with respect to marital status groups. Moreover, we estimated that there was no statistically significant difference between scores obtained from the scales with respect to educational status. Finally, it was found that there was no statistically significant difference between scores obtained from the scales with respect to the duration in which patients learned their diagnosis. Descriptive characteristics of the patients are outlined in Table 1. The mean scores of the cancer patients were 17.46 ± 14.28 for BDI, 43.54 ± 11.85 for state anxiety, 52.95 ± 15.15 for trait anxiety, and 64.14 ± 13.14 for SPS.

The Differences between assessed variables across groups
The comparison of suicide probability of patients with respect to patients’ descriptive characteristics and SCID diagnosis is presented in Tables 1 and 2, respectively.

Predictors of suicidal risk
The correlational analyses revealed that there was significant relationship between SPS and BDI (r = 0.27, P = 0.01) and state anxiety (r = 0.56, P < 0.01) with trait anxiety (r = 0.58, P = 0.05). For the second step, SPS was regressed on the significant variables. Neither state anxiety (F[3,76] = 22.33, P = 0.21) nor BDI scores (F[3,76] = 14.71, P = 0.08) were significant. Only the trait anxiety subtest (F[3,76] = 34.84, P = 0.04) was significant. As a result, trait anxiety subtest predicted the SPS.

Table 1: Descriptive characteristics of patients and the comparison of suicide probability of patients with respect to patients’ descriptive characteristics

| Characteristics                        | Variable | n   | X   | s   | t    | P    |
|----------------------------------------|----------|-----|-----|-----|------|------|
| Gender                                 | Women    | 51  | 61.39 | 13.45 | 1.28 | 0.20 |
|                                        | Men      | 29  | 65.24 | 11.85 |     |      |
| Education (years)                      | 8 and less| 44  | 60.59 | 12.09 | −1.69| 0.94 |
|                                        | 8 and over| 36  | 65.47 | 13.62 |     |      |
| Surgery                                | No       | 16  | 66.93 | 11.69 | 1.44 | 0.15 |
|                                        | Yes      | 64  | 61.75 | 13.13 |     |      |
| Radiotherapy                           | No       | 1   | 68.00 |       | −0.40| 0.68 |
|                                        | Yes      | 79  | 62.72 | 13.02 |     |      |
| Chemotherapy                           | No       | 13  | 61.53 | 13.43 | −0.37| 0.70 |
|                                        | Yes      | 67  | 63.02 | 12.95 |     |      |
| Time of diagnosis (months)             | >6       | 46  | 64.60 | 12.46 | 1.47 | 0.14 |
|                                        | <6       | 34  | 60.32 | 13.38 |     |      |
| Metastasis                             | No       | 72  | 62.45 | 13.10 | −0.67| 0.49 |
|                                        | Yes      | 8   | 65.75 | 11.85 |     |      |
| Marital status                         | Married  | 60  | 62.88 | 13.31 | 0.11 | 0.91 |
|                                        | Single   | 20  | 62.50 | 12.14 |     |      |
| Stage of cancer                        | Low      | 52  | 61.78 | 12.62 | −0.93| 0.35 |
|                                        | High     | 28  | 64.64 | 13.58 |     |      |
| Previous psychiatric diagnosis and treatment | No | 61 | 61.00 | 9.75  | 2.26*| 0.02 |
|                                        | Yes      | 19  | 68.52 | 10.98 |     |      |

*P<0.05

Table 2: Comparison of patients suicide probability scale scores with respect to diagnosis

| Scale            | SCID    | n | X   | s   | Sum of squares | df | Mean square | F      | Significant | Suicide risk |
|------------------|---------|---|-----|-----|----------------|----|-------------|--------|-------------|--------------|
| SPS              | No diagnosis | 35| 57.17 | 13.24 | 2439.44        | 2  | 1219.72     | 8.67** | 0.005       | No diagnosis < depression |
|                 | Depression | 36| 65.52 | 11.46 |                |    |             |        |             | No diagnosis < anxiety    |
|                 | Anxiety    | 9 | 73.66 | 5.70  |                |    |             |        |             | Depression<anxiety        |

**P=0.01. SCID – Structured clinical interview for DSM; SPS – Suicide probability scale

CONCLUSION

In this study, there was a statistically significant difference between scores obtained from the suicidal probability scale in patients with and without previous psychiatric diagnosis; and a significant difference was determined in depression and anxiety scores. The variable of having psychiatric history was also considered as a risk factor in previous studies. As previous studies found that anxiety and depression are common emotional experiences of progressed cancer patients, the levels of these features should be continuously observed. High anxiety and depression reduce people’s quality of life and may lead to negative outcomes, such as suicidal thoughts and suicide-related behaviors. In this study, there was a positive correlation between suicide probability, depression, and anxiety. However, the final statistical analyses revealed that the trait anxiety is the most important predictor of suicidal risk among all these determinants. Consequently, anxiety disorders need to be investigated more in cancer patients.

It was reported that in cancer patients, suicide attempt is associated with depression, hopelessness, prior psychiatric illness and suicidal act, alcohol and substance abuse, history of suicide in the family, uncontrollable pain, multiple physical symptoms, advanced stage of the illness, bad prognosis, delirium, male gender, being single, being unemployed, isolation, and lack of social support. Despite previous findings, we did not find any differences between female and male patients’ scores of depression and anxiety. In addition, with respect to age groups, marital status, and educational status, there was no difference in the suicidal probability scale. There was no difference with respect to stage of the illness. More studies are required to identify risk factors for suicide. Our findings suggested that the identification and treatment of mental disorders may not only improve a cancer patient’s quality of life but also contribute to reducing the risk of suicide.

Acknowledgments
The authors would like to acknowledge Dr. Giovanni Micose for his contribution to the last review of the article.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.
REFERENCES

1. Çevik A. The psychosomatic aspects of oncologic illnesses. Ankara: Hekimler Yayın Birliği; 1996.
2. Kübler-Ross E. Death and dying. Istanbul: Boyner Holding Yayınları; 1997.
3. Kadan-Lottick NS, Vanderwerker LC, Block SD, Zhang B, Prigerson HG. Psychiatric disorders and mental health service use in patients with advanced cancer: A report from the coping with cancer study. Cancer 2005;104:2872-81.
4. Yazıcı A, Uygun K, Aker T. The prevalence of posttraumatic stress disorder and posttraumatic growth in patients with cancer. Yeni Siy 2008;46:51-61.
5. Nelson CJ, Cho C, Berk AR, Holland J, Roth AJ. Are gold standard depression measures appropriate for use in geriatric cancer patients? A systematic evaluation of self-report depression instruments used with geriatric, cancer, and geriatric cancer samples. J Clin Oncol 2010;28:348-55.
6. Aydemir Ö, Koroğlu E. The clinical assessment tools used in psychiatry. Ankara: Hekimler Yayın Birliği; 2012.
7. Cull JG, Gill WS. Suicide Probability Scale (SPS). Los Angeles: Western Psychological Services; 1989.
8. Twombly R. Decades after cancer, suicide risk remains high. J Natl Cancer Inst 2006;98:1356-8.
9. Hisli N. The study upon the validity of the Beck depression inventory. Turk J Psychol 1988;6:118-22.
10. First MB, Spitzer RL, Gibbon M, Williams JB. Structured Clinical Interview for DSM-IV Axis I Disorders. New York: New York State Psychiatric Institute; 1995.
11. Çorapçıoğlu A, Aydemir Ö, Yıldız M. The reliability study of the Turkish structured clinical assessment tool in terms of DSM-IV Axis I disorders. İlaç Tedavi Derg 1999;12:33-6.
12. Atli Z, Eskin M, Dereboy Ç. The reliability and validity study of the Suicide probability scale among clinical sample. Klin Psikiyatr Derg 2009;12:111-24.
13. Goebel S, von Harscher M, Mehdorn HM. Comorbid mental disorders and psychosocial distress in patients with brain tumours and their spouses in the early treatment phase. Support Care Cancer 2011;19:1797-805.
14. Gouveia L, Lelorain S, Brédart A, Doibaut S, Bonnau-Antignac A, Cousson-Gélie F, et al. Oncologists' perception of depressive symptoms in patients with advanced cancer: Accuracy and relational correlates. BMC Psychol 2015;3:6.
15. Weber D, Gründel M, Meinert A. Psycho-oncology and palliative care: Two concepts that fit into comprehensive cancer care. Palliative Care in Oncology. Berlin: Springer; 2015. p. 229-45.
16. Faller H, Brähler E, Härter M, Keller M, Schulz H, Wagscheider K, et al. Performance status and depressive symptoms as predictors of quality of life in cancer patients. A structural equation modeling analysis. Psychooncology 2015;24:1456-62.
17. Anderson ME, Myhre MR, Suckow D, McCabe A. Screening and assessment of suicide risk in oncology. In: Christ G, Messner C, Behar L, editors. Handbook of Oncology Social Work: Psychosocial Care for People with Cancer. 1st ed. New York: Oxford University Press; 2015. p.147-54.
18. Chochinov HM, Wilson KG, Enns M, Mowchun N, Lander S, Levitt M, et al. Desire for death in the terminally ill. Am J Psychiatry 1995;152:1185-91.