Self-Esteem, Pain and Suicidal Thoughts in a Sample of Cancer Patients

Filiz Ozdemiroglu[1], Cagdas Oyku Memis[2], Nezih Meydan[3], Bilge Dogan[2], Sanem Mersin Kilic[4], Levent Sevincok[2], Kadir Karakus[5]

ABSTRACT:
Self-esteem, pain and suicidal thoughts in a sample of cancer patients

Objective: Our primary aim was to assess the relationship between self-esteem and pain and suicidal thoughts in a sample of patients with various kinds of cancer.
Method: A total of 117 adult cancer patients were assessed with respect to several sociodemographic variables, the severity of pain, depression, and anxiety, current suicidal thoughts, hopelessness and self-esteem. Turkish versions of Visual Analog Scale, Hospital Anxiety and Depression Scale, Beck Hopelessness Scale, Beck Scale for Suicide Ideation, Rosenberg Self-Esteem Scale were used in this study.
Results: The severity of depression, anxiety, hopelessness, and current suicidal thoughts were significantly higher in patients with pain compared to patients without pain. Self-esteem was significantly reduced in subjects with pain. Previous history of psychiatric disorder and pain significantly predicted current suicidal thoughts status. Reduced self-esteem was significantly correlated with depression, anxiety, hopelessness, pain, and current suicidal thoughts.
Conclusions: Reduced self-esteem among cancer patients was particularly associated with a more severe pain, higher levels of depression, stronger feelings of hopelessness and current suicidal thoughts. Our findings might indicate that pain in cancer patients might have a negative influence on self-esteem leading to suicidal thoughts along with depression, anxiety, and hopelessness. Therefore, reduced self-esteem in cancer patients might be associated with suicidal ideations through pain, depression, anxiety, and hopelessness.

Keywords: cancer, self-esteem, pain, suicide, depression, anxiety

[1]MD, Psychiatrist, Aydin, Turkey
[2]Adnan Menderes University, Department of Psychiatry, Aydin - Turkey
[3]Department of Oncology, Adnan Menderes University, Aydin - Turkey
[4]State Hospital of Psychiatry, Department of Psychiatry, İzmir - Turkey
[5]MD, Psychiatrist, Antalya - Turkey

Corresponding Author:
Levent Sevincok,
Adnan Menderes University, Department of Psychiatry, Aydin, Turkey

E-mail address:
lsevincok@adu.edu.tr

INTRODUCTION

People with cancer suffer from several emotional, cognitive, social and functional problems during the entire course of the disease (1). Depression, anxiety and adjustment disorders are among the most frequent emotional disturbances in patients with various kinds of cancer (2). Sociodemographic factors such as age, level of education, economic and marital status, employment, social support are associated with mood and anxiety disorders (3).

Pain is very prevalent among cancer patients and can present during any phase of illness. A meta-analysis described pain in 59% of patients in active treatment, 33% of survivors after treatment, and 64% of those with metastatic, advanced, or terminal disease (4). Because cancer pain impairs daily activities and is associated with anxiety, depression, and sleep disturbances, it strongly influences patients' Health Related Quality of Life (HRQoL) and sense of well-being (5). Pain is also suggested as a strong indicator for vulnerability to suicide in cancer patients (6). Suicide is nearly twice as prevalent among patients with cancer than in the general population (7). Several studies have reported that suicide risk is the highest during the first year after cancer diagnosis and that risk decreases with time (8). In cancer patients, depression and hopelessness have been identified to be major triggers for

suicidal ideas (9,10). Several other factors, such as loss of control, impairment of physical functioning, loss of independence and loss of autonomy are suggested as suicide vulnerability in cancer patients (11). Studies have also shown a negative relationship between self-esteem and suicide ideation (12).

Self-esteem is how an individual views the self, and a positive self-esteem has been reported to protect against the damaging effects of a wide variety of risk factors, such as stress and depression. A positive self-concept is a significant factor influencing overall good mental health and psychological well-being (13,14). Reduced self-esteem and increased emotional distress in cancer patients may negatively affect HRQoL (15). The potential psychosocial problems for cancer survivors such as difficulties in forming relationships and adverse changes in appearance can result in a possible lack of self-esteem. A higher self-esteem and self-worth are helpful for coping with the stress associated with the disease (16). To the best of our knowledge, no study to date has examined the associations of self-esteem with pain and suicide in cancer patients. In the present study, our primary aim was to assess the relationships of self-esteem with pain and suicidal thoughts in a sample of patients with various kinds of cancer. We hypothesized that pain would have a negative impact on self-esteem in cancer patients, and therefore a lower self-esteem would lead to suicidal thoughts as well as depression and/or anxiety.

METHODS

A total of 117 adult cancer patients including gastrointestinal, lung, liver, gynecological, hematological and breast cancers at the oncology clinics of Adnan Menderes University were consecutively recruited during routine outpatient visits between November 2014 and January 2016. Eligible patients had to be aged 18 years and above. The study inclusion criterion involved a definite diagnosis of cancer based on the pathological results. Exclusion criteria were difficulty understanding the questionnaires, or refusal to participate. Patients who were not aware of their cancer diagnosis were not included into study. Medical records were reviewed for disease and treatment information. A patient information form was used to gather demographic, medical, and clinical information regarding cancer diagnosis, stage of disease, presence of any metastasis, and duration of pain. Three

trained psychiatrists conducted all interviews on a one-to-one basis. All participants provided written informed consents prior to their inclusion in the study. This study was approved by the Medical Ethics Committee of Adnan Menderes University.

The presence and severity of the pain of the patients were assessed using Visual Analog Scale (VAS) (17) which is a validated self-report scale to characterize, rate, and monitor a patient's pain. The subjects who have scores of at least 1 on VAS were considered as with pain (n=58). Turkish version (18) of Hospital Anxiety and Depression Scale (HADS), the most widely used tool for assessing psychological morbidity in cancer patients was administered to measure the severity of anxiety and depression (19,20). HADS consists of 14 brief items divided into two subscales designed to screen for anxiety and depressive symptoms. On each subscale, the maximum score is 21, with a score of 0 to 7 considered normal, 8 to 10 as mild distress and 11 to 21 as severe distress, respectively.

To assess level of negative expectations about the future, we used the Turkish version (21) of Beck Hopelessness Scale (BHS) (22). The evaluation of suicidal ideation was performed through Turkish version (23) of Beck Scale for Suicide Ideation (BSSI) (24) based on the question "Have you had suicidal thoughts since your diagnosis?" with the answer alternatives none, sometimes, often, and always. Self-esteem was measured by the Turkish version (25) of Rosenberg Self-Esteem Scale (RSES) (26). A factor analysis on the 10 items of the scale yielded two independent factors based on the five negatively worded items (e.g. I think I'm no good at all, I feel useless, I feel like a failure) and the five positively formulated items (e.g. I feel satisfied with myself and I feel positive about myself). In the present study, we included both positive (reversed score) and negative self-esteem. Items are scored on a 4-point scale: 1=totally agree, 2=agree, 3=disagree, and 4=totally disagree. The scoring direction on five negatively phrased items was reversed, so higher scores was indicative of lower self-esteem.

Statistical Analysis

The Statistical Package for Social Sciences (SPSS) Windows version 15.0 was used for all statistical analyses. Descriptive statistics were performed for all of the variables. Univariate inter-relationships between several clinical scores were

assessed by Pearson's correlation coefficients. Logistic regression analysis was used to predict an outcome of suicidal thoughts order among 117 participants. The model was found to fit the data adequately (Hosmer and Lemeshow's χ^2=4.040, p=0.854), and was able to predict depression status (Omnibus χ^2 (8)=33.553, p<0.001). Overall, the model was able to correctly predict 89.5% of all cases.

RESULTS

Table 1 indicates the general sociodemographic and clinical characteristics of the whole sample. Among 117 cancer patients, 51.8% were women and 49.1% were men. The mean age of cancer patients ranged from 18 to 79 (M = 49.9).

As shown in Table 2, there are some significant differences between cancer patients with and without pain in terms of various sociodemographic and clinical variables. Educational level was significantly lower in patients with pain than in those without pain (p=0.016). Total (p<0.001) and subscale scores of anxiety (p<0.001) and depression (p=0.001) of HADS were significantly higher in patients with pain compared to patients without pain. We have also found that the patients with pain had significantly higher

scores of BHS (p=0.036), and BSSI (p=0.001) than the other group. The higher scores of RSES in patients with pain indicated that self-esteem was significantly reduced in comparison to patients without pain (p=0.036).

We found many significant correlations between the scores of HADS, BHS, BSSI, VAS, and RSES (Table 3). The scores of RSES were inversely correlated with the total (r=0.56, p<0.0001), anxiety (r=0.61, p<0.0001) and depression (r=0.47, p<0.0001) subscale scores of HADS; with the scores of BHS (r=0.54, p<0.0001), BSSI (r=0.33, p<0.0001), and VAS (r=0.32, p<0.0001). The scores of VAS was positively correlated with the scores of total (r=0.40, p<0.0001), anxiety (r=0.38, p<0.0001) and depression (r=0.37, p<0.0001) subscale scores of HADS; with the scores of BHS (r=0.29, p=0.001), and BSSI (r=0.39, p<0.0001).

Eight predictors were entered into logistic regression analyses, using the enter method. Two of these successfully predicted suicidal thoughts status (squared Wald statistics are displayed in Table 3). Participants with previous history of psychiatric disorder were more than seven times, patient who have pain were more ten times as likely to have suicidal thoughts (OR 7.033 and 10.576 respectively). The final model for suicidal thoughts was able to explain between 25.5% and 42.9% of variance.

Table 1: General description of the total sample				
Variables	**(n=117)**			
	n	**%**		
Gender				
Female	57	48.7		
Male	60	51.3		
Marital Status				
Single	19	16.2		
Married	98	83.8		
Personal history of psychiatric disorder	24	20.5		
Previous history of suicidal attempt	5	4.3		
Any metastasis	66	56.4		
	Mean	**SD**	**Min**	**Max**
Age	56.99	12.53	28	83
Educational level (years)	7.17	4.09	0	15
HADS				
Total	17.06	8.906	1	36
Depression	9.39	5.58	0	21
Anxiety	7.68	3.94	0	17
RSES	1.03	0.84	0	3,4
BHS	8.59	5.86	0	20
BSSI	0.93	2.54	0	29
VAS	3.03	3.725	0	10

RSES: Rosenberg Self-Esteem Scale, BHS: Beck Hopelessness Scale, BSSI: Beck Scale for Suicidal Ideation, VAS: Visual Analog Scale

Table 2: Comparison of cancer subjects with and without pain.

Variables	Without pain (n=59)		With pain (n=58)		Statistical analyses		
	n	%	n	%	χ^2	df	P
Gender							
Female	27	45.8	30	53.3	0.416	1	0.519
Male	32	54.2	28	46.7			
Marital Status							
Single	6	31.6	13	68.4	3.224	1	0.073
Married	53	54.1	45	45.9			
Personal history of psychiatric disorder	11	18.6	13	22.4	0.306	1	0.580
Previous history of suicidal attempt	0	0	5	8.6	5.225a	1	0.022*
Family history of suicidal attempt	0	0	3	5.2	3.188	1	0.115
Any metastasis	29	51.8	34	61.8	1.138	1	0.286
	Mean	SS	Mean	SD	t	df	P
Age	56.46	12.91	56.50	12.99	-0.018	115	0.986
Educational level (years)	8.14	4.55	6.27	3.43	2.439	109	0.016*
HADS							
Total	13.64	8.39	19.86	8.30	-4.029	115	<0.001*
Depression	7.47	4.90	10.88	5.68	-3.473	115	0.001*
Anxiety	6.17	3.90	8.98	3.48	-4.113	115	<0.001*
RSES	0.86	0.83	1.18	0.82	-2.122	114	0.036*

Table 3: Correlations Between the Predictor Variables (n=117)

	VAS	RSES
HADS Depression	0.373***	0.474***
HADS Anxiety	0.388***	0.613***
HADS Total	0.405***	0.569***
BHS	0.297**	0.542***
BSSI	0.392***	0.337***
VAS	—	0.327***

*p<0.05, **p<0.01, ***p<0.001

Table 4: Logistic Regression Analyses of Suicidal Thoughts (n=117)

Predictor Variable	Cox &Snell R²	Nagelkerte R²	HL χ^2	Sig	Wald²	df	p	Exp (B) (%95 CI)
Model	0.255	0.429	4.040	0.854				
Age					0.392	1	0.531	0.983 (0.933-1.037)
Marital Status					3.208	1	0.073	4.034 (0.877-18.564)
Previous history of psychiatric disorder					6.970	1	0.008	7.033 (1.653-29.928)
HAD-A					1.287	1	0.257	0.857 (0.657-1.119)
HAD-D					0.193	1	0.660	0.957 (0.787-1.164)
BHS					2.369	1	0.124	1.169 (0.958-1.426)
RSES					2.571	1	0.109	2.051 (0.852-4.932)
Pain					7.658	1	0.006	10.576 (1.990-56.203)
Constant					4.661	1	0.031	0.021

RSES: Rosenberg Self-Esteem Scale, BHS: Beck Hopelessness Scale, SSI: Beck Scale for Suicidal Ideation

DISCUSSION

A higher self-esteem and self-worth are helpful for coping with the stress associated with cancer (27). Several studies emphasized the importance of the self-esteem in cancer patients. For instance, following a breast cancer diagnosis, self-esteem often declines which may be due in part to physical changes from surgery and chemotherapy including scarring, hair loss, and weight gain (28). Higher self-esteem is related to better well-being in women with breast cancer (25,27,28). Women with gynecological cancer had poorer body image and lower self-esteem than healthy women (16). Self-esteem of cervical cancer survivors has been shown to be affected by the cancer and its treatment due to changes in their bodies, self-image, and relationships especially changes in the uterus, ovaries, vagina, and vulva, which are associated with femininity, sexuality, and fertility (29). The self-esteem of patients in the acute phase of cancer and those who had been cancer-free for three years or more was significantly, positively related to their overall HRQoL (30).

Because most studies among cancer patients studied self-esteem as an outcome variable, little is known about the role of self-esteem in cancer patients' pain experience and suicidal tendencies. Therefore, in the present study, we primarily aimed to examine the reciprocal relationships of self-esteem, pain and current suicidal thoughts in a sample of patients with various kinds of cancer. We hypothesized that pain scores would decrease self-esteem level in cancer patients, and therefore lower self-esteem would lead to suicidal thoughts as well as clinical depression and/or anxiety.

According to cognitive theorists, distorted evaluations of the sensation of pain are considered to lead to feelings of hopelessness, low self-efficacy, and a lack of control and turn an acute problem into a chronic one (31). Previously, it was reported that chronic pain was related to depression and low self-esteem (32). Pain is identified as one of most distressing symptoms among cancer patients. Pain associated with cancer increases with progression of the disease. Around a third of patients with cancer report pain, rising to three quarters in the advanced stages of cancer (33). Cancer pain has many dimensions including psychological, physical and social which must be addressed in order to improve quality of life and functional ability. Pain in cancer patients may lead to avoiding from rewarding and enjoyable activities which in turn may result in loss of self-esteem (34). In our study, half of the sample suffered pain at the assessment period. The patients with pain had considerably higher scores on HADS, BHS, BSSI compared to patients without pain. Also, their self-esteems were significantly reduced. Correlation analyses revealed that pain had a negative effect on self-esteem among our sample. Also, higher levels of depression, anxiety, and hopelessness were associated with pain experience and reduced self-esteem in cancer patients. Therefore, we might suggest that as pain negatively influenced the self-esteem in cancer patients, the risk of depression, anxiety and hopelessness would increase.

Oncology patients may present an enhanced vulnerability to psychological issues and suicidal ideations. As stated in previous studies, suicide might be considered as a permanent solution to a problem, related to hopelessness (35). There is great evidence from longitudinal studies that relatively low self-esteem is a risk factor for health problems, including social isolation (36), depression (37), suicide ideation, suicide attempts, and completed suicide (38). In accordance with results of some of the previous studies (10), our findings strongly indicated that previous history of any psychiatric disorders and pain were associated with suicidal ideation in cancer patients. We have also found that depression, anxiety and hopelessness were significantly correlated with current suicidal thoughts, in consistent with findings of previous studies (39). One of the major finding of the present study was that reduced self-esteem was closely related to current suicidal thoughts. It is known that low self-esteem contribution is associated with a vulnerability for developing suicidal behaviors (40). Taken into consideration that reduced self-esteem was also strongly correlated with hopelessness, depression and anxiety, we might suggest that suicide risk in cancer patients increases in association with a vulnerability to development of psychiatric disorders with severity of pain and a reduced self-esteem. We might also suppose that the association between self-esteem and suicidal ideation in cancer patients is mediated by pain, depression, anxiety, and hopelessness.

The major limitation of this study is that our sample included patients with various kinds of cancer. Therefore, since different types of cancer have different staging systems, we did not examine the influence of cancer stages on clinical variables.

CONCLUSION

In the present study, we have found that reduced self-esteem among cancer patients is particularly associated with pain experience, higher levels of depression, stronger feelings of hopelessness and current suicidal thoughts. Our findings might indicate that pain in cancer patients might have a negative influence on self-esteem leading to suicidal thoughts along with depression, anxiety and hopelessness. Therefore, we might conclude reduced self-esteem in cancer patients is associated with suicidal ideations through pain, depression, anxiety, and hopelessness.

References:

1. Weis J. Psychosocial care for cancer patients. Breast Care(Basel). 2015;10(2):84-6. **[CrossRef]**

2. Brown ML, Lipscomb J, Snyder C. The burden of illness of cancer: economic cost and quality of life. Annu Rev Public Health. 2001;22:91-113. **[CrossRef]**

3. Burgess C, Cornelius V, Love S, Graham J, Richards M, Ramirez A. Depression and anxiety in women with early breast cancer: five year observational cohort study. BMJ 2005;26:330-42. **[CrossRef]**

4. Cipta AM, Pietras CJ, Weiss TE, Strouse TB. Cancer-related pain management in clinical oncology. J Community Support Oncol. 2015;13(10):347-55. **[CrossRef]**

5. Weingart SN, Cleary A, Stuver SO, Lynch M, Brandoff D, Schaefer KG, et al. Assessing the quality of pain care in ambulatory patients with advanced stage cancer. J Pain Symptom Manage. 2012;43(6):1072-81. **[CrossRef]**

6. Akechi T, Nakano T, Akizuki N, Nakanishi T, Yoshikawa E, Okamura H, et al. Clinical factors associated with suicidality in cancer patients. Jpn J Clin Oncol. 2002;32(12):506-11. **[CrossRef]**

7. Balci Sengul MC, Kaya V, Sen CA, Kaya K. Association between suicidal ideation and behavior, and depression, anxiety, and perceived social support in cancer patients. Med Sci Monit 2014;20:329-36. **[CrossRef]**

8. Robinson D, Renshaw C, Okello C, Moller H, Davies EA. Suicide in cancer patients in South East England from 1996 to 2005: a apopulation-based study. Br J Cancer. 2009;101(1):198-201. **[CrossRef]**

9. Fegg M, Kraus S, Graw M, Bausewein C. Physical compared to mental diseases as reasons for committing suicide: a retrospective study. BMC Palliative Care. 2016;9:15-1. **[CrossRef]**

10. Breitbart W, Rosenfeld B, Pessin H, Kaum M, Funesti-Esch J, Galietta M, et al. Depression, hopelessness, and desire for hastened death in terminally ill patients with cancer. JAMA. 2000;284(22):2907-11. **[CrossRef]**

11. Akechi T, Kugaya A, Okamura H, Nakano T, Okuyama T, Mikami I, et al. Suicidal thoughts in cancer patients: clinical experience in psycho-oncology. Psychiatry Clin Neurosci. 1999;53(5):569-73. **[CrossRef]**

12. McGee R, Williams S, Nada-Raja S. Low self-esteem and hopelessness in childhood and suicidal ideation in early adulthood. J Abnormal Child Psychology. 2001;29(4):281-91. **[CrossRef]**

13. Mustian KM, Katula JA, Gill DL, Roscoe JA, Lang D, Murphy K. Tai Chi Chuan, health-related quality of life and self-esteem: a randomized trial with breast cancer survivors. Support Care Cancer. 2004; 12(12):871-6. **[CrossRef]**

14. Carpenter JS. Self-esteem and well-being among women with breast cancer and women in an age-matched comparison group. J Psychosoc Oncol. 1997;15(3-4):59-81. **[CrossRef]**

15. van Nieuwenhuizen AJ, Buffart LM, Brug J, Leemans CR, Verdonck-de Leeuw IM. The association between health related quality of life and survival in patients with head and neck cancer: a systematic review. Oral Oncol. 2015;51(1):1-11. **[CrossRef]**

16. Pinar G, Okdem S, Dogan N, Buyukgonenc L, Ayhan A. The effects of hysterectomy on body image, self-esteem, and marital adjustment in Turkish women with gynecologic cancer. Clin J Oncol Nurs. 2012;16(3):E99-E104. **[CrossRef]**

17. Carlsson AM. Assessment of chronic pain. I. Aspects of the reliability and validity of the visual analogue scale. Pain. 1983;16(1):87-101. **[CrossRef]**

18. Aydemir O. Validity and Reliability of Turkish Version of Hospital Anxiety and Depression Scale. Turk Psikiyatri Derg. 1997;8(4):280-7.

19. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiatr Scand. 1983;67(6):361-70. **[CrossRef]**

20. Singer S, Kuhnt S, Gotze H, Hauss J, Hinz A, Liebmann A, et al. Hospital anxiety and depression scale cutoff scores for cancer patients in acute care. Br J Cancer. 2009;100(6):908-12. **[CrossRef]**

21. Durak A. Beck Umutsuzluk Ölçeginin geçerlik ve güvenirlik çalışması Beck Hopelessness Scale, reliability and validity study. Türk Psikoloji Dergisi 1994; 9(31):1-11. (Turkish)

22. Beck AT, Weissman A, Lester D, Trexler L. The measurement of pessimism: the hopelessness scale. J Consult Clin Psychol. 1974;42(6):861-5. **[CrossRef]**

23. Ozcelik HS, Ozdel K, Bulut SD, Orsel S. The reliability and validity of the Turkish version of the Beck Scale for Suicide Ideation (Turkish BSSI). Klinik Psikofarmakoloji Bulteni - Bulletin of Clinical Psychopharmacology. 2015;25(2):141-50. **[CrossRef]**

24. Beck AT, Kovacs M, Weissman A. Assessment of suicidal intention: the Scale for Suicide Ideation. J Consult Clin Psychol. 1979;47(2):343-52. **[CrossRef]**

25. Cuhadaroglu F. Adolesanlarda benlik saygısı. Self-esteem in the adolescent. Unpublished doctoral dissertation, Hacettepe University, Ankara, Turkey, 1986. (Turkish)

26. Rosenberg, M. Society and the adolescent self-image. Princeton, NJ: Princeton University Press, 1965. [CrossRef]

27. Li CC, Chen ML, Chang TC, Chou HH, Chen MY. Social support buffers the effect of self-esteem on quality of life of early-stage cervical cancer survivors in Taiwan. Eur J Oncol Nurs. 2015;19(5):486-94. [CrossRef]

28. Curbow B, Somerfield M, Legro M, Sonnega J. Self-concept and cancer in adults: theoretical and methodological issues. Soc Sci Med. 1990;31(2):115-28. [CrossRef]

29. Molassiotis A, Chan CW, Yam BM, Chan ES, Lam CS. Life after cancer: Adaptation issues faced by Chinese gynaecological cancer survivors in Hong Kong. Psychooncology. 2002;11(2):114-23. [CrossRef]

30. Bartoces MG, Severson RK, Rusin BA, Schwartz KL, Ruterbusch JJ, Neale AV. Quality of life and self-esteem of long-term survivors of invasive and noninvasive cervical cancer. J Womens Health (Larchmt). 2009;18(5):655-61. [CrossRef]

31. Turk DC, Rudy TE. Cognitive factors and persistent pain: a glimpse into Pandora's box. Cognitive Therapy and Research. 1992;16(2):99-122. [CrossRef]

32. Dysvik E, Natvig GK, Eikeland O, Lindstrom TC. Coping with chronic pain. Int J Nurs Stud. 2005;42(3):297-305. [CrossRef]

33. Portenoy RK. Cancer pain. Epidemiology and syndromes. Cancer. 1989;63(Suppl.11):S2298-S307. [CrossRef]

34. Raphael J, Ahmedzai S, Hester J, Urch C, Barrie J, Williams J, et al. Cancer Pain: part 1: Pathophysiology; oncological, pharmacological, and psychological treatments: a perspective from the british pain society endorsed by the UK Association of Palliative Medicine and the Royal College of General Practitioners. Pain Med. 2010;11(5):742-64. [CrossRef]

35. Vyssoki B, Gleiss A, Rockett IR, Hackl M, Leitner B, Sonneck G, et al. Suicide among 915,303 Austrian cancer patients: who is at risk? J Affect Disord. 2015;175:287-91. [CrossRef]

36. Stinson DA, Logel C, Zanna MP, Holmes JG, Cameron JJ, Wood JV, et al. The cost of lower self-esteem: testing a self- and social-bonds model of health. J Pers Soc Psychol. 2008; 94(3):412-28. [CrossRef]

37. Orth U, Robins RW, Roberts BW. Low self-esteem prospectively predicts depression in adolescence and young adulthood. J Pers Soc Psychol. 2008;95(3):695-708. [CrossRef]

38. Kjelsberg E, Neegaard E, Dahl AA. Suicide in adolescent psychiatric inpatients: incidence and predictive factors. Acta Psychiatr Scand. 1994;89(4):235-41. [CrossRef]

39. Reiche EM, Nunes SO, Morimoto HK. Stress, depression, the immune system, and cancer. Lancet Oncol. 2004;5(10):617-25. [CrossRef]

40. Bhar S, Ghahramanlou-Holloway M, Brown G, Beck AT. Self-esteem and suicide ideation in psychiatric outpatients. Suicide Life Threat Behav. 2008;38(5):511-16. [CrossRef]