

## Prevalence of Trait Anxiety in Patients with Cancer

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**Abstract:** Cancer as a life threatening disease has a huge burden on lives of people with cancer and also on their families. Persons with cancer will find that their feelings of anxiety increase or decrease at different times. In this study we reported the Trait Anxiety based on the last 20 questions of State-Trait anxiety Inventory. This study investigated trait (hidden) anxiety among 250 patients with the diagnosis of cancer in Kashan. Neither sex, age nor cancer duration was related with trait anxiety in the study population. The most common type of anxiety in the patients was moderate type. The cancer type that requires more invasive treatments can be categorized as anxiety-causing cancer types and a great attention should be paid for this fact.

**Key words:** Anxiety • Neoplasms • Prevalence

### INTRODUCTION

Psychological problems such as depression and anxiety affect lives of millions of people worldwide. It has also an influence on treatment costs and also deteriorates quality of life of patients with such problems [1, 2]. Anxiety is seen as a very uncomfortable feeling which is often vague and is associated with one or more physical feelings such as feeling an empty heart palpitations, headache and sweating [3]. Cancer as a life threatening disease has a huge burden on lives of people with cancer and also on their families. They are struggling for their lives and testing different treatment methods as they are gradually dying. The situation worsens when we found out that many of these treatments are disabling [4, 5]. With developing cancer treatments the survival of patients with cancer increases and these patients are being at the risk of many psychological problems [6]. We also should bring to mind that anxiety is a normal reaction to cancer. One may experience anxiety while undergoing a cancer screening test, waiting for test results, receiving a diagnosis of cancer, undergoing cancer treatment, or anticipating a recurrence of cancer. Anxiety associated with cancer may increase feelings of pain, interfere with one's ability to sleep, cause nausea and vomiting and interfere with the patient's (and his or her family's) quality of life. If left untreated, severe anxiety may even shorten a patient's life.

Persons with cancer will find that their feelings of anxiety increase or decrease at different times. A patient may become more anxious as cancer spreads or treatment becomes more intense. The level of anxiety experienced by one person with cancer may differ from the anxiety experienced by another person. Most patients are able to reduce their anxiety by learning more about their cancer and the treatment they can expect to receive. For some patients, particularly those who have experienced episodes of intense anxiety before their cancer diagnosis, feelings of anxiety may become overwhelming and interfere with cancer treatment. Most patients who have not had an anxiety condition before their cancer diagnosis will not develop an anxiety disorder associated with cancer [7-9].

Other symptoms of distress and sleep disturbances and can be a major factor in anticipatory nausea and vomiting. Anxiety, regardless of its degree, can substantially interfere with the quality of life of patients with cancer and of their families and should be evaluated and treated [10-12].

Anxiety in patients with confirmed diagnosis of cancer is of a great concern. So we investigated anxiety with the means of Test State-Trait anxiety Inventory (STAI). In this study we were reporting the Trait Anxiety based on the last 20 questions of STAI.

## MATERIAL AND METHODS

This cross-sectional study was conducted in the period between May 2005 and May 2013. The whole study protocol was confirmed by the Ethic Committee of Kashan Medical Science University. 266 patients with definite cancer diagnosis, referred to pathology department of ShahidBeheshti hospital were involved in our study. They were asked orally if they consented to participate in our study. They were excluded if one of these conditions existed: psychosis, bipolar disorder, cognitive impairment and substance abuse. Three patients were excluded because 2 had substance abuse and one had bipolar disorder. 263 remained patients' demographic data and cancer course information, like age, sex, type of cancer, type of treatment and duration of cancer (from diagnosis) were recorded and they were asked to complete STAI. After deleting incomplete inventories, we found that only 250 patients thoroughly completed the questionnaire and data were extracted and analyzed.

STAI contains 40 questions. Questions from 21 to 40 are - Trait Anxiety (Hidden) - have four options of 'Almost Never, Sometimes, Most of the time, Almost Always'. This part can range from 20-80. In Trait Anxiety

part, 20-31, 32-42, 43-52, 53-62, 63-72 and more than 73 is labeled mild, low moderate, moderate, high moderate, severe and very severe anxiety, respectively [13].

In assessing the concurrent validity of the trait component of the STAI, Spielberger *et al.* (1970) [14] correlated the trait form with widely used measures of trait anxiety and reported correlation coefficients ranging from 0.73 to 0.85. Spielberger *et al.* (1970) reported reliability data, by test-retest correlation, ranging from 0.73 to 0.86 for the trait form [14].

Data were studied through SPSS software version 11.5 and analyzed with chi-square test.

## RESULTS

The mean age of the 250 enrolled patients was 58 years old (SD=13). 134 patients (53.6%) were male and 116 (46.4%) were female. The mean cancer duration (at the time of diagnosis) was 11 months. Trait Anxiety severity among different sex, age and cancer duration groups can be seen at Table 1. Trait Anxiety severity in different cancer type groups can be found at Table 2 and Graph 1. Trait anxiety severity in different cancer treatment groups was presented at Graph 2.

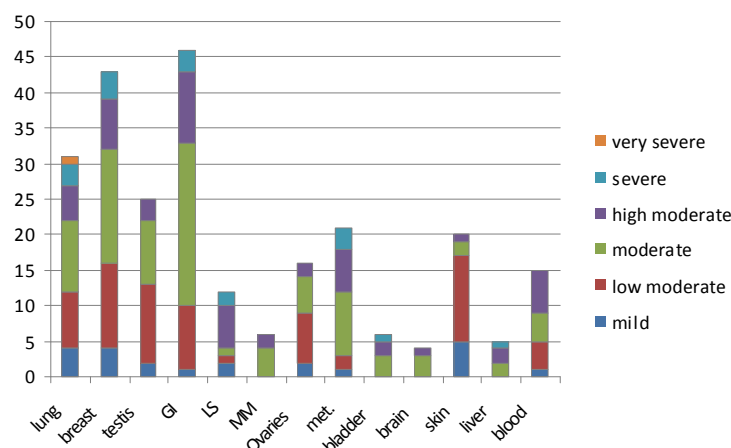
Table 1: Trait anxiety severity in different groups

State anxiety severity		Mild No.(%)	Low moderate	moderate	High moderate	severe	Very severe	sum	P value
Sex	Male	13 (9.7)	41 (30.6)	45 (33.6)	27 (20.1)	7 (5.2)	1 (0.7)	134 (53.6)	0.429
	Female	9 (7.8)	25 (21.6)	46 (39.7)	26 (22.4)	10 (8.6)	0 (0)	116 (46.4)	
Age (years)	≤39	2 (9.5)	5 (23.8)	10 (47.6)	4 (19)	0 (0)	0 (0)	21 (8.4)	0.063
	40-59	4 (3.6)	26 (23.4)	44 (39.6)	27 (24.3)	9 (8.1)	1 (0.9)	111 (44.4)	
	≥60	16 (13.6)	35 (29.7)	37 (31.4)	22 (18.6)	8 (6.8)	0 (0)	118 (47.2)	
Cancer duration (month)	≤6	9 (7.8)	26 (22.6)	46 (40)	23(20)	10 (8.7)	1 (0.9)	115 (46)	0.349
	7-11	8 (10.1)	23 (29.1)	23 (29.1)	19 (24.1)	6 (7.6)	0 (0)	79 (31.6)	
	12-23	2 (6.1)	13 (39.4)	9 (27.3)	8 (24.2)	1 (3)	0(0)	33(13.2)	
	≥24	3 (13)	4 (17.4)	13(56.5)	3 (13)	0 (0)	0 (0)	23 (9.2)	

Table 2: Trait anxiety severity in different cancer type groups

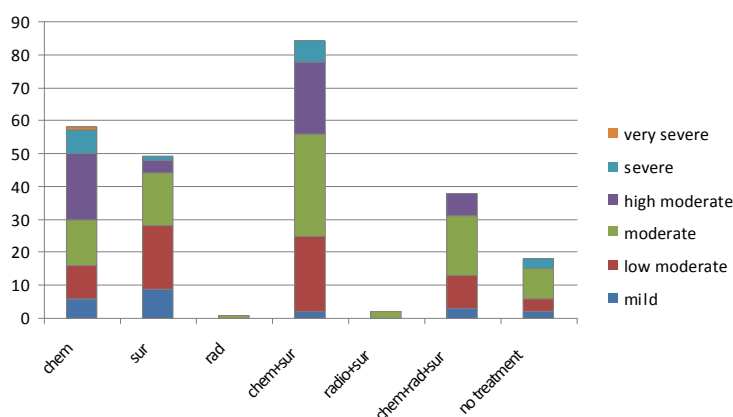
T.A.S		Lu.	Brs.	Tes.	GI.	L.S.	MM.	Ova.	Met.	Blad.	Br.	Sk.	Liv.	Blo.	Sum (%)
mild	#	4	4	2	1	2	0	2	1	0	0	5	0	1	22
	%	12.9	9.3	8	2.2	16.7	0	12.5	4.8	0	0	25	0	6.7	8.8
Low moderate	#	8	12	11	9	1	0	7	2	0	0	12	0	4	66
	%	25.8	27.9	44	19.6	8.3	0	43.8	9.5	0	0	60	0	26.7	26.4
moderate	#	10	16	9	23	1	4	5	9	3	3	2	2	4	91
	%	32.3	37.2	36	50	8.3	66.7	31.3	42.9	50	75	10	40	26.7	36.4
High moderate	#	5	7	3	10	6	2	2	6	2	1	1	2	6	53
	%	16.1	16.3	12	21.7	50	33.3	12.5	28.6	33.3	25	5	40	40	21.2
severe	#	3	4	0	3	2	0	0	3	1	0	0	1	0	17
	%	9.7	9.3	0	6.5	16.7	0	0	14.3	16.7	0	0	20	0	6.8
Very severe	#	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	%	3.2	0	0	0	0	0	0	0	0	0	0	0	0	0.4
Sum		31	43	25	46	12	6	16	21	6	4	20	5	15	250

T.A.S: Trait severity, Lu.= Lung cancer, Brs.= Breast Cancer, Tes.= Testis Cancer, L.S.= Lymphatic System malignancies, MM.= Multiple Myeloma, Ova.= Ovaries, Met.= Metastatic Cancer, Blad.= Bladder malignancies, Br.= Brain malignancies, Sk.= Skin Cancer, Liv.= Liver cancer, Blo= Blood cancer, #=Number of patients.



Graph 1: Trait anxiety severity in different cancer type groups

GI=Gastro-intestinal, LS=Lymphatic System, MM=Multiple Myeloma



Graph 2: Trait anxiety severity in different cancer treatment groups

Chem=chemo-therapy, sur=Surgery, Rad=Radiotherapy.

## DISCUSSION

This study investigated trait (hidden) anxiety among 250 patients with the diagnosis of cancer in Kashan. Neither sex, age nor cancer duration was related with trait anxiety in the study population. The most type of anxiety in the patients was moderate type. Other studies also confirmed our results [15, 16]. This shows that cancer makes most of the patients moderately anxious and this should be taken into consideration in health policies.

Chemotherapy have the greatest burden on patients anxiety level in our study, this was clear when we looked into the results and observed that the groups which had chemotherapy as treatment showed most severe types of anxiety. Results of other studies are also in accordance with our results. Lim *et al.* [17] also declared this fact that patients who undergo chemotherapy have more serious anxiety problems. This may be because of the great

burden of chemotherapy and wide side effects of this treatment method. Also we should take into consideration that cancer with more developed stages needs chemotherapy and the anxiety may be because of the stage of the disease.

Almost all cancer types showed moderate trait anxiety as the most frequent type in our study. Among all the cancer types, patients with skin cancer tended to show lower rates of trait anxiety. This may be because of the nature of slow growing and non-systemic symptoms of most skin cancers. Another reason for this result may be the treatment for this kind of cancer that mostly involve radiotherapy and not invasive treatments like radiotherapy and surgery that are proved to cause anxiety in cancer patients [17, 18]. Patients with lymphatic cancer tended to show more severe types of anxiety and can be explained with the nature of the cancer and the more invasive treatments it requires.

Tsutsumi *et al.* [18] in 2006 by studying 114 solid cancer patients observed that rate of anxiety in these patients is quite high. They related this high rate to treatment of these kinds of cancer that mostly involve chemotherapy.

We can conclude that every cancer type that requires more invasive treatments can be categorized as anxiety-causing cancer types and a great attention should be paid for this fact. Other factors like sex, age and cancer duration don't seem to be effective in anxiety severity of patients with cancer. Also we can say that a great proportion of all cancer types suffer from at least mild anxiety and this should be considered as a factor in possible policies in cancer care. Other studies, comparing patients with cancer with normal population and patients with other acute and chronic diseases are needed for increasing our knowledge about anxiety and cancer.

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