

RESEARCH ARTICLE

Personality Traits in Cancer Patients

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Abstract

Background: This study was planned to investigate the personality traits of cancer patients in different treatment settings, and to correlate the demographics with the personality features. **Materials and Methods:** A total of 237 patients referred either to Marmara University School of Medicine (MUSM) Oncology Outpatient Unit or to the private office of the faculty between March 10th and April 22nd, 2010 were enrolled in the study. The Big Five Mini Test was used to evaluate the 40 personality traits of the patients. **Results:** The study group consisted of 98 males (41.35%) and 139 females (58.65%) with a mean age of 51. Out of the 237, 73.9% had an educational level beyond the junior high school, and 47.3% of all patients reported a positive family history for cancer. A significant difference in terms of reconcilability, extraversion, and responsibility was observed between patients admitting to the university outpatient clinic and the private office ($p < 0.05$). Reconcilability and extraversion were found to differ between genders significantly ($p < 0.05$). The description of the patients by him/herself or by relatives displayed a significant difference in terms of openness ($p < 0.05$). Parameters such as educational level, family history of cancer, age and marital status showed no relevance to their characters. No discordance was observed between the self-analysis of the patient and the patient's relatives. **Conclusions:** Patients with cancer are typically highly reconcilable and responsible, moderately stable, open and extraverted.

Keywords: Cancer - patient - relative - personality trait

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Introduction

Contemporarily, cancer appears to be one of the most fatal diseases. Owing to its rates of mortality, morbidity and the economic burden, cancer has become one of the most intimidating diseases. On the other hand, it is well known that the competence of the patient to handle the disease plays an important role in the course of the disease during treatment and rehabilitation periods.

Psychological factors, such as certain personality traits, depression, and major life events, are thought to contribute to the pathogenesis of cancer (Hansen et al., 2005). The results from retrospective and prospective studies support an association between the two personality traits -neuroticism and extraversion- and cancer risk (Kissen et al., 1969; Aarstad et al., 2002). However, these findings were not consistent with outcomes from other studies of robust design, since they have access to large, random samples of the population, and prospective cohort studies (Schapiro et al., 2001; Nakaya et al., 2003).

Behaviours like smoking and alcohol consumption are associated with increased risks for cancer, the finding of an association between personality traits and cancer risk may be the result of a lack of adjustment for these and other well known risk factors. In support of this theory, several studies have found an association between personality traits and health behaviour, and few have found

no evidence for such an association (Kissen and Eysenck, 1962; Eysenck, 1988; Arai et al., 1997; Heaven et al., 2001; Van Loon et al., 2001; Mulder, 2002; Vollrath and Torgersen, 2002; Antoni et al., 2006; Nakaya et al., 2010).

Importance of the patient's personality in the challenge against cancer is undeniable. This study was planned to investigate the personality traits of cancer patients in different treatment settings, and to correlate the demographics with the personality features. Since self-perception of a person is supposed to be somewhat subjective; personality assessment was not only done by the patient, but also relatives of the patients were enrolled in the study. We hope that outcomes of this study may contribute to reveal a relationship between personality trait and cancer by examining several factors, including the socio-economical status and gender, affect the personality of patients.

Materials and Methods

The Big Five Mini Test was developed by Dr. CG Boeree, and translation of this test from English into Turkish was completed before the study. The patients and one of their relatives are asked to fill out the questionnaire while waiting to be examined at either the oncology outpatient clinic or the private office of the faculty in between March 10th to April 22nd, 2010. Two hundred thirty

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seven patients and one of their relatives have enrolled in the study. Patients and their relatives were asked to evaluate the own personality traits and psychological status of the patient. The test was designed to assess the compliance of 40 personality characteristics on a scale of 1 (none) to 9 (completely), and 5 main patterns of characters (extraversion, reconcilability, responsibility, stability, and openness) were sought from the perspective of both patients and their relatives. All data was evaluated using SPSS program.

Results

Patient group consisted of 98 (41.35%) males and 139 females (58.65%) with a mean age of 51. The education of 73.9% of patients was beyond junior high school. Family history of cancer was positive in 47.3% of the patients.

Regarding the five main personality traits, extraversion was observed to be low in 4.7%, moderate in 52.2%, high in 43.1%; reconcilability was low in 1.2%, moderate in 41.5%, and high in 57.3%; responsibility was low in 1.2%, moderate in 37.9%, and high in 60.9%; stability was low in 2.8%, moderate in 66.8%, and high in 30.4%; openness was low in 7.1%, moderate in 81.8%, and high in 11.1%.

No discordance was observed between the self-analysis of the patient and the analysis of the patient by his/her relatives (Table 1). Parameters such as educational level, family history of cancer, age and marital status showed no relevance with their characters (Table 2).

A significant difference in terms of personality traits was found between patients followed in university outpatient clinic and the private office, as well as between two genders. Patients with cancer are typically highly reconcilable and responsible, moderately stable, open and extraverted characters. Interestingly, cancer patients seen in the private office were found to be more reconcilable, extraverted and responsible in comparison to those seen in the outpatient clinic of the hospital (p<0.05) (Figures 1-3).

Patients seen in outpatient clinic in hospital and in private office were similar in terms of stability and

openness (p>0.05) (Figure 4). Female patients were found to be more reconcilable and extraverted than males (p<0.05). No significant differences were found between two genders with respect to stability and openness (p>0.05). The degree of openness described by the self-analysis of patients was significantly more than the degree of openness described by patient's relatives (p<0.05).

No discordance was shown between self-analysis provided by the patient and the analysis of the patient provided by patient's relatives according to extraversion, reconcilability, responsibility and stability (p>0.05) and

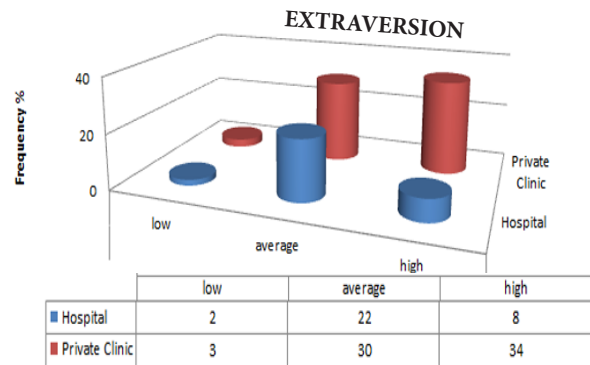


Figure 1. Extraversion Status of Patients Seen in the Hospital and Private Clinic

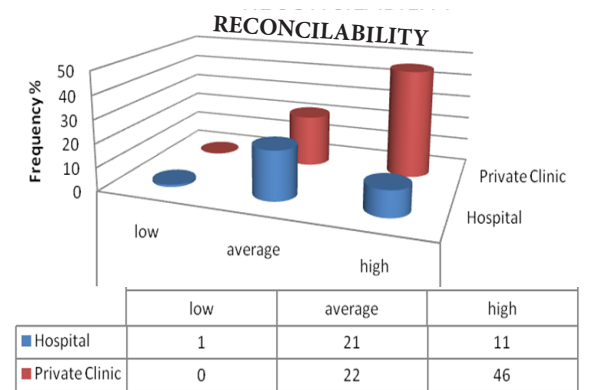


Figure 2. Reconcilability Status of Patients Seen in the Hospital and Private Clinic

Table 1. Percentage Distributions of Self-Analysis Provided by the Patient and the Analysis of the Patient Provided by Patient's Relatives

	Extraversion			Reconcilability			Responsibility			Stability		
	Low	Average	High	Low	Average	High	Low	Average	High	Low	Average	High
Patients	2	30	26	0	24	33	0	19	38	2	41	15
Relatives	3	23	16	1	18	23	0	17	25	1	28	14

Table 2. Distribution of Personality Traits According to Level of Education, Marital Status and Family Cancer History

		Extraversion			Reconcilability			Responsibility			Stability			Openness		
		L	A	H	L	A	H	L	A	H	L	A	H	L	A	H
Education	No education	0	1	1	0	1	1	0	0	2	0	1	1	0	1	1
	Primary school	0	23	15	0	16	20	0	16	20	0	28	8	4	30	4
	High school	3	14	14	1	11	20	1	10	20	1	18	12	2	26	3
	University	3	15	12	0	14	16	0	10	20	1	21	8	1	26	3
Marital status	Single	1	9	8	0	7	11	0	7	11	0	11	6	2	15	1
	Married	4	41	31	1	28	47	1	28	47	2	53	21	5	62	9
	Divorced	0	3	3	0	1	5	0	1	5	0	4	2	0	6	0
Family cancer history	Negative	2	22	19	0	19	24	0	14	28	2	28	12	3	34	5
	Positive	3	30	24	1	24	32	1	22	35	1	40	16	4	48	5

*L: Low; A: Average; H: High

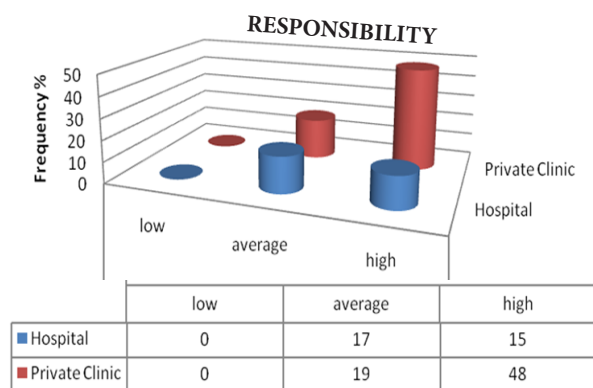


Figure 3. Responsibility Status of Patients Seen in the Hospital and Private Clinic

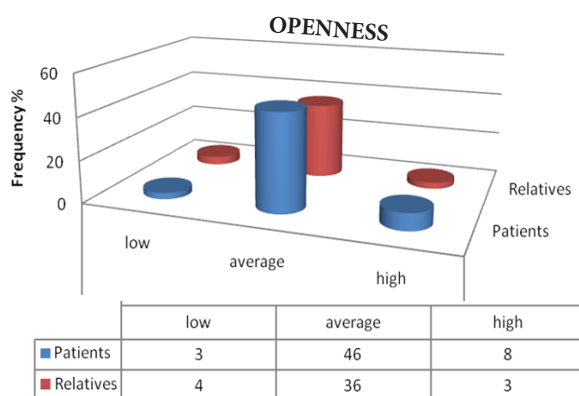


Figure 4. The Degree of Openness Described by the Patients and Relatives

there appears to be no significant relationship between characters and socio-economic status of patients' ($p>0.05$).

Discussion

Role of personality in the development and progression of cancer has long been investigated. Kissen et al reported that patients with lung cancer were more likely to be extraverted and less likely to be neurotic compared with hospital controls (Morris et al., 1981). It can be assumed that extraverts are at increased risk of cancer because they are exposed to high levels of stress since they seek stimulation. Individuals with low levels of neuroticism may be at increased risk of cancer since they accumulate emotional stress due to their reduced emotional outlet (Lillberg et al., 2002). The higher exposure to stress may increase cancer risk by interfering with immune and endocrine systems (Eysenck, 1990; Bleiker et al., 2008).

Similarly, Morris et al. (1981) reported that persons with lower levels of neuroticism and trait anxiety scores were at increased risk of breast cancer (Hislop et al., 1987). Since then, the results of several well-conducted prospective studies have not confirmed the association between personality traits such as extraversion, neuroticism, trait anxiety and cancer risk (Ratcliffe et al., 1995; Schapiro et al., 2001; Nakaya et al., 2003; 2006; Hansen et al., 2005). However, the majority of these studies had methodological limitations due to the small number of cases or the lack of powered analysis. Considering the impact of stress on cancer, an increased

risk of especially, immune- and endocrine-related cancers could be expected.

Personality is also supposed to be important in cancer progression. Individuals are grouped into Type A and Type B subtypes with respect to their personalities. Type A personalities are described as impetuous, competitive, success-focused, and ambitious individuals, while type B personalities are calm, serene, amenable, and less competitive people. Timid individuals avoid controversies and have a reconcilable condition of pathological wellness. Bleiker et al. observed that tumour thickness in breast cancer patients was positively associated with "type C" personality, which is described as "unassertive, patient, cooperative, suppressive of negative emotions, and compliant with external authorities" (Nakaya et al., 2006). Persons with low levels of extraversion and high levels of neuroticism are thought to repress their emotion, which is considered to be one of the most important aspects of type C personality (Dean et al., 1989). The hypothesis related to cancer survival could also be interpreted as being related to stress. Accumulated repression of emotions may lead to stress, that could subsequently influence cancer progression by affecting endocrine and immune functions (Greer et al., 1990; Nakaya et al., 2005).

Only a limited amount of evidence could be obtained about the role of personality traits in survival after cancer (Antoni et al., 2006). Statistically significant associations between low extraversion levels and shorter survival in breast cancer have been demonstrated (Nakaya et al., 2008). Rigid adherence to social norms, which has been suggested to be a characteristic of the cancer-prone personality) and non-Hodgkin lymphoma has been linked (Nakaya et al., 2009). An association between high levels of neuroticism and all cancer sites were postulated for women (Heaven et al., 2001). Still, no association between personality and cancer survival was found in 5 studies (Ratcliffe et al., 1995; Nakaya et al., 2005; 2006; 2008; 2009; Dean and Surtees, 1989; Greer et al., 1990). These studies had several limitations such as the small sample size and lack of sufficient statistical power to analyze individual cancer sites.

Cancer diagnosis and related events poses a variety of challenges and stressors for patients and their caregivers. It is postulated that certain psychological traits may occur more commonly in cancer patients or have an impact on coping with cancer.

Majority of cancer patients included in our study were shown to belong to type C personality group by both themselves and their relatives. Our findings confirm that patients with cancer exhibit a similar trait in Turkey, as well. Reconcilability was found to be as high as 57.3% of the patients. One of the noteworthy outcomes was the low level of openness in patients. This might be attributed to cultural factors. In Turkish culture, illness related emotional processes are hard to disclose and this fact might cause significant burden for both the patients and their caregivers.

A significant difference in reconcilability, extraversion, and responsibility was found between patients referring to private clinic and ones referring to the hospital. Private clinic setting is often associated with a higher socio-

economical status. It also provides a more comfortable zone for the staff-patient interaction. Openness was evaluated differently by patients and their caregivers. Caregivers rated patients' reported styles overall less open compared to the patients themselves. This may in part reflect a problem related to daily communication difficulties during cancer treatment. The relationship between the patient and the relative often contains several difficulties. Despite the close interaction in the treatment setting, both sides might hesitate to express their emotional experience during cancer treatment. A significant difference was also found in terms of reconcilability and extraversion between genders. Male patients seem to be less reconcilable and extraverted compared to females.

In the view of current data, the study indicated that demographics such as gender and socio-economical status of oncology patients should be taken into account during the treatment and rehabilitation periods. Because behaviours like smoking and alcohol consumption are associated with increased risks for cancer, the finding of an association between personality traits and cancer risk may be the result of a lack of adjustment for these and other well known risk factors.

This study has several limitations: First, rather than the direct impact of personality trait, behaviours such as smoking and alcohol consumption may be associated more predominantly to cancer. Therefore, an association between personality traits and cancer risk may be the result of a lack of adjustment for these. Second, all types of cancer were considered together in this study, interpretation of outcomes is difficult due to dilution effect. Third, some results may be difficult to extrapolate owing to the modest size of our sample.

In conclusion, no definitive relationship could be established between personality traits and cancer. Investigation of association between personality and risk of immune and endocrine-related cancers, such as those of the breast, corpus uteri, ovary, and prostate may reveal more interesting results. Parameters such as cancer type and demographics should be taken into account separately in the planning of further research for investigation of the relationship between cancer and personality traits.

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