The Impact of Cancer on Mental Health

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Abstract: Cancer cases have grown significantly more dangerous as people's life expectancies have increased. In addition, cancer patients may experience serious mental health issues that hinder their recovery. There is a gap in cancer treatment where patients are frequently only treated for their cancer and the effects of cancer on mental health are usually ignored. Several psychiatric care programs are available to patients, but few people are aware of them, and cancer patients are not questioned regarding their attraction to these programs. The aim of the study is to analyze the impact of cancer on anxiety and depression level of cancer patients and to understand which prevention program is found more interesting by cancer patients. Seventy patients participated in this study. Hospital Anxiety and Depression Scale (HADS) has been used to measure anxiety and depression. According to the results, the average anxiety level was 9.36 ± 4.33, and the average depression level was 10.49 ± 3.50. Based on the program selection, the majority of participants selected "Support Groups" with a rate of 41.40%, and "Educational Programs" with a rate of 31.40%. In conclusion, the average anxiety level was at the borderline, and the average depression level was abnormal. This study shows that the mental health of cancer patients is neglected, and this issue is not sufficiently addressed. Future studies may focus on how to solve this problem more effectively and how to raise more awareness about the mental health of cancer patients.

Keywords: Anxiety, Depression, Impact of cancer, Psych-care programs.

1. INTRODUCTION

During the last decades, the healthcare system impressively improved and life expectancy became longer with it. As life expectancy has increased, cancer cases have become a serious threat, especially in developed and developing countries. According to statistics in 2019, with 10.08 million deaths, cancer is the second biggest cause of death [24]. Most of the time, being diagnosed with cancer is very different from being diagnosed with other diseases, especially because of one thing; cancer can bring with it some serious mental health problems that can directly affect cancer patients' progress. Studies showed that patients with cancer are more likely to experience mental health issues, compared to the healthy population [25]. In addition, it is known that suicide is more likely to occur in cancer patients than in the general population [26]. To increase the survival rate and life quality for cancer patients it is fundamental to understand the impact of cancer on mental health and psychosocial functioning. So, we can reduce this impact and improve cancer patients' life.

In many countries, the approach to cancer is only one-sided, and other effects of cancer on the patient are neglected, especially the mental health of cancer patients. Although not common, various psychological support and programs recommended to solve these problems are offered in some places. However, many cancer patients are unaware of their existence even if they need this psychological support. In this study, we aimed to analyze the impact of cancer on mental health and to evaluate which prevention program cancer patients would choose if they had a choice. Because the interest and participation of patients directly affects the success of these programs.

2. LITERATURE REVIEW

The literature review has been conducted on studies that focus on evaluating the impact of cancer on mental health and studies that evaluates the effectiveness of prevention programs that aims to reduce this impact. Most of the studies used anxiety, depression, and quality of life as measurement tools for mental health. For instance, Patricia A. Ganz et al. analyze the impact of variable predictors on QOL (Quality of Life) including the physical, mental, and social well-being of breast cancer patients after breast cancer surgery and found significant reductions in older women's physical and mental health state after breast cancer surgery [2]. H. Boer et al. analyzed the relationship between psychosocial factors and mental health among cancer patients and found that self-efficacy and loneliness are the two

main determinants of the variances in the mental health of cancer survivors [1]. On the other hand, Kate Gunn et al. wanted to analyze what kind of problems cancer patients who live in rural areas are encountering and the author discusses how psychosocial interventions can be improved in their study and found that patients are not sufficiently aware of psychosocial care and programs [3]. Lack of information distribution and lack of communication between healthcare providers and cancer patients were the main key points that need to be improved [3]. In another study, Ju Youn Jung et al. evaluates the predictors of suicide ideation among cancer patients, and according to the results social and existential health were highly connected with social ideation [4]. Another study, aimed to evaluate QOL and to identify psychosocial determinants of QOL among cancer patients, and results showed that regardless of demographic and medical factors, patients who received greater support reported lower levels of anxiety and sadness, as well as better QOL in the area of mental health [5]. In another study, the effect of cancer diagnoses on the rate of suicide among young people has been evaluated and according to the results after being diagnosed with cancer, adolescents and young adults are significantly more likely to engage in suicidal behavior, especially in the first year [6].

There are different psycho-care support programs to mitigate this impact. Most common prevention programs and their effectiveness in reducing the impact of cancer on mental health have been reviewed. For example, music-based interventions can be used to reduce anxiety and, or depression and improve well-being among cancer patients as in [7] and [8]. Music programs includes singing, playing instruments, listening to music as a therapy. According to the literature, phone-based interventions can also be useful in lowering depression or anxiety symptoms in cancer patients as in [9] and [10]. Phone based interventions were, applications that you can have on your phone, or these interventions can be regular informative phone calls. Phone based programs can contain various trainings, videos, games for cancer and mental health. On the other hand, educational and online interventions were very popular and effective in reducing the mental health problems of cancer patients as you can see in [11], [12], [13], [14], [15], [16], [17], [18], and [19]. Educational programs were informative programs about cancer disease, treatment and side effects. Additionally, these programs provide information about cancer patients' worries, concerns and other mental problems related to cancer. Support groups [22] were also efficient in improving mental health of cancer patients. Support groups were groups where patients could share their concerns, their experiments with cancer and make friends with other cancer patients. There are other studies that used different techniques such as radiotherapy [20], and hypnotherapy [21] to improve the mental health of cancer patients.

3. METHODOLOGY

Survey methodology has been used for this study and the Turkish version of the Hospital Anxiety and Depression Scale (HADS) has been used to measure the anxiety and depression scores of participants. Validity and reliability of the Turkish version of HADS have been proved as in [23]. On top of HADS, seven additional questions have been added to the survey. Various demographic questions were asked to find out the age, gender, and educational status of the participants in these seven questions. In addition, participants were asked how long they had been diagnosed with cancer, whether they had received any psychological treatment, and whether they found psychological treatment useful in addition to cancer treatment. Finally, a brief description of the most common prevention programs has been added in the survey and participants were asked which of these intervention programs they would choose if they had a choice. The survey was in Turkish, and it was printed on paper. It has been conducted by doctors after the patients' regular control visit or regular treatment visit and the sample selection was completely randomized. A five-minute brief description of the survey has given to each patient, and they have been asked if they wanted to join to the survey. During the survey, doctors assisted the participants if they had any questions or confusion. After they answered all survey questions, a number was given for each filled survey to protect patient confidentiality and anonymity. Surveys collected and digitally documented. Results and scores were calculated from each survey and analyses has been made by software IBM SPSS 28.

70 patients were accepted to participate in this study. The study has been conducted in the oncology and hematology clinics of Akdeniz University, Antalya / Turkey. Both inpatients and outpatients have been included in the study. Only patients who were 18 or above years old have been accepted into the study. The ethnicity of the participants was Turkish. Only cancer patients have been accepted to the study. However, there was no separation regarding the participants' cancer type. Both male and female patients were included in this study.

4. RESULTS

41 participants were male (58.60%) and 29 participants were female (41.40%) in 70 participants. 46 participants which was also consist of 65.70% of all participants were 55 years old and above. The second largest group's age was between 46-54 years old with 20.00% (14 participants). Most of the participants were high school (38.60%) and primary school graduates (32.90%) which is 71.5% of total participants. Patients who were diagnosed with cancer more than 2 years ago were the largest group with 57.10%. Patients who were diagnosed less than 6 months ago were the second largest group with 24.30%. Only one participant has currently finished their cancer treatment. 97.10% of participants were not receiving any psychological treatment or support. However, 82.8% of participants agreed that receiving any psychological support or treatment as an addition to their cancer treatment would be helpful to them. 10.0% of participants were neutral and 7.10% of participants disagreed with this statement. In Table I, you can see all information from the survey.

Table I: Distribution of the results from the survey

Features	Group	n	%
Sex	Male	41	58.60
	Female	29	41.40
Age ranges	18-27	4	5.70
	28-36	4	5.70
	37-45	2	2.90
	46-54	14	20.00
	55	46	65.70
Education level	Primary school	23	32.90
	Highschool	27	38.60
	University	11	15.70
	Never went to school	5	7.10
	Others (master's degree and above)	4	5.70
Cancer diagnosis time	Less than 6 months	17	24.30
	6 month - 1 year	3	4.30
	1 year - 2 years	9	12.90
	+2 years	40	57.10
	I am cancer free right now	1	1.40
Having any psychological treatment	Yes	2	2.90
	No	68	97.10
Finding helpful to receive psychological support	I completely agree	22	31.40
	I agree	36	51.40
	Neutral	7	10.00
	I disagree	5	7.10
Program selection	Educational Program	22	31.40
	Support Groups	29	41.40
	Music Groups	5	7.10
	Phone and websites	2	2.90
	I need more information	5	7.10
	These programs are not interesting	7	10.00
Anxiety	9.36 ± 4.33		
Depression	10.49 ± 3.50		

The first objective was to understand if cancer patients had high anxiety and depression level. According to the results, the average anxiety level was 9.36 ± 4.33 and the average depression level was 10.49 ± 3.50. According to HADS, the anxiety level of participants was at the border and the depression level of participants was abnormal. The standard deviation shows that the level of participants' anxiety level may vary more than their depression level.

The second objective was to understand participants' preferences when it comes to choosing a prevention program as an addition to their cancer treatment for themselves. 41.40% of patients preferred "Support Groups" as an intervention program and 31.40% preferred "Educational Programs" as an intervention program. 10.0% of participants didn't find offered programs interesting and 7.10% of participants needed more information about these prevention programs. In addition, 7.10% of participants selected "Music Groups" and 2.90% of participants selected "Phone and websites" as intervention programs. The relationship between anxiety and depression level and program selection has been analyzed and no relation has been found between anxiety level and program preference (p=0.45 > 0.05) and no relation has been found between depression and program preference (p= 0.18 > 0.05). Lastly, according to the Pearson correlation test, a low-level correlation (r=0.362) has been found between anxiety and depression scores (p= 0.002 < 0.05).

Table II: Comparison of anxiety and depression according to cancer diagnosis times

Scale	Cancer diagnosis time	Mean	SD	Min	Max	F	p
Anxiety	Less than 6 months	7.82 (ab)	4.65	1.00	18.00	3.504	**0.020**
	6 month - 1 year	3.67 (b)	3.79	1.00	8.00		
	1 year - 2 years	9.22 (ab)	3.70	3.00	15.00		
	+2 years	10.38 (a)	3.99	0.00	19.00		
Depression	Less than 6 months	9.53	3.96	2.00	16.00	2.122	0.173
	6 month - 1 year	7.00	8.66	2.00	17.00		
	1 year - 2 years	9.67	1.66	7.00	12.00		
	+2 years	11.37	2.92	4.00	19.00		

Mean: Average, SD: Standard Deviation, Min: Minimum, Max: Maximum *ANOVA test was applied in comparisons. There is no significant difference between the groups with the same letter in terms of scale scores.

According to the comparison between cancer diagnosis time and anxiety, and depression levels as you can see in Table II, there was a significant difference between the anxiety level of participants and the time period when they have been diagnosed with cancer (p=0.020 < 0.05). However, there was no statistical difference between their depression level p= 0.173 > 0.05). The anxiety level of patients who had been diagnosed more than 2 years ago was significantly higher than the anxiety level of patients who had been diagnosed 6 months to 1 year ago. However, no statistically significant differences were observed between the group diagnosed less than 6 months ago and the group diagnosed 1 to 2 years ago.

5. DISCUSSION

As the primary outcome, the results indicated that the level of anxiety (9.36 ± 4.33) was at the borderline, and the level of depression (10.49 ± 3.50) was abnormal within the sample. Which can prove the hypothesis that cancer patients have high anxiety and depression level. However, we cannot attribute these results solely to cancer. To understand if this effect has been caused by cancer or another factor, it is necessary to have a control group who do not have cancer or another study that measure cancer patients' anxiety and depression level before and after their cancer diagnosis. Therefore, even though anxiety and depression scores were high, we cannot definitively attribute them to cancer.

As the second outcome, the most preferred prevention program was "Support Groups" with a preference rate of 41.40%, followed by "Educational Programs" with a preference rate of 31.40%. Analysis showed that there was no relation between participants' anxiety and depression levels and their preferences. The choice of program can be associated with culture, age, education and many other factors. However, before any preventive program is

undertaken, it is important to ask the target group what kind of programs they would prefer. Because the interest in the program is as important as the effectiveness of the program, as it will increase the participation rate hence the success of the program.

On top of that, an unexpected relationship has been found between diagnosis time and anxiety level (p=0.020< 0.05). The findings showed that individuals with diagnoses more than two years ago had considerably higher levels of anxiety than patients with diagnoses between six months - a year ago. The reason for this result might be that in cancer treatment, the longer the treatment period, the more challenging it becomes, and there may be limited alternative solutions available. Therefore, patients may become more despondent and nervous.

During the survey, the patients were very interested with the topic and in addition to the survey, many patients verbally stated that mental health of cancer patients is a neglected problem and that it should be addressed more. Some patients verbally stated that they especially needed mental support and more information about cancer and their treatment. It is a fact that many cancer patients need support for their mental health during their cancer treatment. Treating patients not only for cancer but also addressing their overall well-being and taking care of their mental health can increase the chances of patients surviving cancer.

6. CONCLUSION

Even though the results showed that the level of anxiety and depression were high, it cannot be attributed to cancer only in our study. More research is needed to understand if cancer caused this impact. In this study, participants preferred "Support Groups" as an intervention program; however, this preference cannot be generalized to the entire population. It is crucial to analyze the patients' needs before deciding on a prevention program.

In conclusion, it is fundamental for cancer patients to have psychological support or prevention programs as an addition to their cancer treatment and these programs should be a part of clinical treatment in the future.

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