

Psychological Changes in Cancer Patient; A Single Center Cross Sectional Study

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Abstract: Cancer is one of death leading causes. As a chronic and invasive disease will cause variety of psychological changes among cancer patients. Through this study, we aim to determine the psychological changes among them, identify various types of cancer that has strong psychological impact, determine the factors that affects the psychological state in cancer patients as well as to recommend some solutions on the need for psychological support for cancer patients.

Materials and Methods: This is a cross-sectional observational, questionnaire-based study. Conducted in King Faisal Specialist Hospital - King Faisal Cancer Centre. By using a translated copy of disease-specific questionnaire QSC-R23 'Questionnaire on Stress in Cancer Patients revised version' to assess psychosocial stress in cancer patients. We conducted 80 patients, sample. All of them voluntarily accepted to participate. Patients were informed clearly about the study objectives and instructions to fill up the questionnaire. Fifty patients fill it in his/her own and thirty patients were interviewed to fill the questionnaire. **Statistical analysis:** The demographic and clinical characteristics were summarized using chi-square for categorical data. Psychological state was measured using Likert-scale (0 to 5) and summarized using medians and ranges. Differences of Psychological state among different diagnosis were tested using Wilcoxon test. The effect of different risk factors on Psychological state was evaluated using linear logistic regression.

Results: Patient's demographic data is summarized (table 1). The median psychological for all questions was 48 (41, 63%). Illustration the median score and rang for each of the psychological question separately (table 2). Univariate analysis showed that gender was the only factor that has significant impact on the psychological score. Wilcoxon test showed that there is no difference in the median scores among different types diseases (p-value=0.09).

Discussion: This study supports the hypothesis that cancer will cause some psychological changes among the patients. Obviously, all different types of cancers will influence psychological state. Going out less account for 48.8%, which is the most significant change among them. It might indicate depression. Not being able to follow one's hobbies, being afraid of developing pain and Feeling tired and weak are the most changes concerning the patients. Gender is the only variable factor has a psychological impact. As a female will have higher probability to have change in psychological state.

Conclusion: Cancer causes variety of psychological changes. Extensive multi-aspects treatment should be conducted to all cancer patients.

Keywords: Cancer, Psychology, psychiatry, depression, anxiety, fear of progression and support cancer patients.

1. INTRODUCTION

Cancer is one of the leading causes of death worldwide. In 2008 WHO states that trachea, bronchus and lung cancers cause 2.4% of death worldwide and 5.9% of death in high-income countries in 2008. Colorectal cancers cause 3.3% of death in high-income countries.⁽¹⁾ It is plausible to think that it cause an emotional, psychological and social disturbance for the patients. Most patients, families, and caregivers face some degree of depression, anxiety, and fear when cancer becomes

part of their lives. These feelings are normal response to such a life-changing experience.⁽²⁾ Physical effects of cancer and Chemotherapy influence psychological states of patients such as infection of different, feeling tired, nausea, loss of appetite, diarrhea, hair loss, loss of fertility and sexual potency, disorders of the central nervous system, and changes in weight.^{(3),(4)} The prevalence of psychological distress by cancer site was reviewed by James Zaboraet al who found out that the. In this study. The failure to detect and treat it elevates the levels of distress, decreases the outcomes of cancer therapies, decreases patients' quality of life, and increases health care costs. Prevalence of psychological distress among large sample of cancer patients (n= 4496) is 35.1%, varied from 43.4 % for lung cancer to 29.6% for gynecological cancers. Pancreatic cancer patients produced high scores for symptoms such as anxiety and depression, while Hodgkin's patients shows high scores for hostility. The study suggested the need to identify high-risk patients through psychosocial screening in order to provide early intervention⁽⁵⁾. Another study assessed the psychological distress of cancer patients in a disease- specific manner as well as the demographic and medical variables that have an impact on the distress. Psychological distress was assessed with the 'Questionnaire on Stress in Cancer Patients revised version', which has been developed and psychometrically evaluated in Germany. It consists of items about 23 cancer-specific stress situations, which have to be answered in terms of relevance and amount of distress. A heterogeneous sample of 1721 cancer in- and outpatients was assessed. For the total group, the most important distress is the fear of disease progression. They consider between 23.4% (cancer of the upper gastrointestinal tract) and 40.9% (breast cancer patients) as highly distressed. The most distressed diagnostic subgroups are patients with soft tissue tumors and breast cancer patients⁽⁶⁾. Some studies have concluded that psychological therapies may help cancer patients in various ways, ranging from reducing the side effects of cancer treatments to improving patients' immune function and longevity.⁽⁷⁾

Depending on these facts, we did our study of psychological changes in cancer patients in King Faisal Specialist Hospital that have the largest cancer facility in the Gulf region where more than 2,800 patients are treated annually. The King Faisal Cancer Centre (KFCC) is a newly established structure for care of adult cancer patients with a mission of providing excellent cancer treatment, education and research⁽⁸⁾. We aim to determine the psychological changes among cancer patients, and the factors that affect the psychological state in cancer patients. As well as, to identify various types of cancer that has strong psychological impact on cancer patients, and to recommend some solution on the need for psychological support for cancer patients.

Background:

- The study will apply upon patients suffering from cancer in King Faisal Specialist Hospital & Research Centre within 2012.
- 100 patients supposed to be in the study and the data collection questionnaire form will be filled either by patients themselves or by interview.
- The patient will be informed of the aim of the study and the instructions of how they fill the questionnaire form on their own.

2. MATERIALS AND METHODS

Subjects and procedure:

The total 80 samples from King Faisal Specialist Hospital & Research Centre. We informed all the patients about the study objectives and they were voluntarily accepted to participate in the study then we gave them the instructions for the questionnaire then fifty patients fill it in his/her own and thirty were interviewed to fill the questionnaire.

The type of study is retrospective observational study in King Faisal Specialist Hospital & Research Centre

Data collection:

Psychological distress was assessed using a disease-specific questionnaire QSC-R23 'Questionnaire on Stress in Cancer Patients revised version' to assess psychosocial stress in cancer patients. The questionnaire contains 23 items that describe potential everyday stress in all areas of life in detail. Each item should be answered in a scale of 5 representing the application of the problem to the sample and causing distress as 0 (the problem does not apply to me) to 5 (the problem applies to me strongly and making a big problem affecting me). We translated the questionnaire to Arabic and changed the scale from 1 to 5 as 1 represents that the problem does not apply to the patient (replacing 0 in the English version). The items are grouped into five homogeneous scales: psychosomatic complaints, fears, information deficits, everyday life restrictions and social strains.⁽⁷⁾

Statistical analyses:

Statistical evaluation was performed using the Statistical Package for Social Sciences program (SPSS; Version 20).

We started by calculating the stress score for each patient by calculating the total score of each item in the questionnaire, then we analyzed the total stress scores for the all samples, we calculated the median, 25th percentile, and the 75th percentile.

We divided the diagnostic subgroups in to the most representative sample size to the following groups: lymphoma, hematological neoplasias, breast cancers and bone tumors. The less sample size diagnostic subgroups was gathered in a group titled “others”.

We did a linear regression analysis for the different variables to look for the variable or the most variables affecting the stress score for our sample.

3. RESULTS

The demographic and clinical characteristics were summarized using median and ranges for conations data and chi-square for categorical data. Psychological state measured using Likert-scale (0 to 5) and summarized using medians and ranges. Differences of Psychological state among different diagnosis tested using Wilcoxon test. The effect of different risk factors on Psychological state evaluated using linear logistic regression. Patient’s demographic data is summarized in table1. Table 2 illustrates the median score and rang for each of the psychological question separately. The median psychological for all questions was 48 (41, 63). Univariate analysis showed that gender was the only factor that has significant impact on the psychological score. Table 3 illustrates results of univariate analysis. Wilcoxon test showed that there is no difference in the median scores among different types diseases (p-value=0.09). (Below, Figures and tables of result after analysis of data).

Table 1: patient’s characteristics

Variable	Freq.	%
Gender		
Male	42	52.5
Female	38	47.5
Age		
<40	30	37.5
40-49	12	15
50-59	10	12.5
60-69	13	16.3
>69	8	10
Missing	7	8.8
Nationality		
Saudi	67	83.8
Non-Saudi	8	10
Missing	5	6.3
Level of education		
Primary school	11	13.8
Intermediate school	10	12.5
High school	16	20
Higher education	18	22.5
Missing	25	31.3
Employment		
Employed	23	28.7
Unemployed	40	50
Missing	17	21.3
Marital status		
Single	21	26.3
Married	45	56.3
Divorced	2	2.5
Missing	12	15
Type of cancer		

	Lymphoma	13	16.3
	Hematological neoplasia	11	13.8
	Breast cancer	9	11.3
	Bone tumors	6	7.5
	Others	23	28.7
	Missing	18	22.5
Total		80	100

Table 2: median score and rang for each question

Statement	N	Mean	Std. Deviation	Median	4/5 %
PSY_SCORE	80	51.31	15.363	47	-
Going out less	74	3.22	1.426	4	48.8
Not being able to follow one's hobbies	76	2.97	1.385	3.50	47.5
Being afraid of developing pain	78	2.94	1.436	3.00	38.8
Feeling tired and weak	79	2.89	1.187	3.00	37.6
Having sex less frequently	53	2.85	1.277	3.00	
Being afraid of disease progression	79	2.81	1.460	3.0	
Having too few opportunities to talk about emotional problems	78	2.51	1.475	2.00	
Suffering pain due to unknown causes	77	2.49	1.334	2.00	
Feeling often tense and nervous	77	2.47	1.420	2.00	
Being afraid of having to go to the hospital again	75	2.47	1.339	2.00	
Having trouble sleeping	80	2.36	1.245	2.00	
Being afraid of not being able to work anymore	74	2.35	1.428	2.00	
Feeling not well informed about illness/treatment	77	2.32	1.342	2.00	
Different information from different doctors	76	2.22	1.457	2.00	
Body care has become difficult	76	2.18	1.383	2.00	
Feeling not adequately informed about social support	76	2.17	1.399	1.00	
Feeling physically imperfect	77	2.14	1.254	2.00	
Difficulty for partner to empathise my situation	78	2.05	1.298	1.00	
Suffering pain due to surgery	68	1.97	1.146	2.00	
Feeling unconfident in relationships with other people	74	1.93	1.275	1.00	
Difficulty in talking with the family	78	1.88	1.289	1.00	
Other poeple often react incinsiderate/unsympathetic	70	1.79	1.153	1.00	
Having the feeling of being less value for other people	77	1.71	.971	1.00	

Table 3: Hypothesis test summary

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The medians of PSY_SCORE are the same across categories of VAR00003.	Independent-Samples Median Test	.092	Retain the null hypothesis.
2	The distribution of PSY_SCORE is the same across categories of VAR00003.	Independent-Samples Kruskal-Wallis Test	.699	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Appendix 1: SD and Median for each statement (question) of questionnaire

s.t	m		4/5 %
Going out less	2.9	1.6	48
Not being able to follow one's hobbies	2.8	1.5	47
Being afraid of developing pain	2.8	1.5	37
Feeling tired and weak	2.8	1.2	36
Being afraid of disease progression	2.7	1.5	29.9
Being afraid of having to go to the hospital again	2.2	1.4	
Having trouble sleeping	2.3	1.2	
Feeling often tense and nervous	2.3	1.4	
Being afraid of not being able to work anymore	2	1.5	
Having sex less frequently	1.8	1.7	
Feeling physically imperfect	2	1.3	
Suffering pain due to surgery	1.6	1.2	
Suffering pain due to unknown causes	2.3	1.4	
Feeling not adequately informed about social support	2	1.4	
Feeling not well informed about illness/treatment	2.2	1.4	
Body care has become difficult	2	1.4	
Difficulty for partner to empathies my situation	1.98	1.33	
Having too few opportunities to talk about emotional problems	2.4	1.5	
Different information from different doctors	2.09	1.5	
Feeling unconfident in relationships with other people	1.7	1.3	
Having the feeling of being less value for other people	1.6	1	
Difficulty in talking with the family	1.8	1.3	
Other people react inconsiderately/unsympathetically	1.5	1.2	

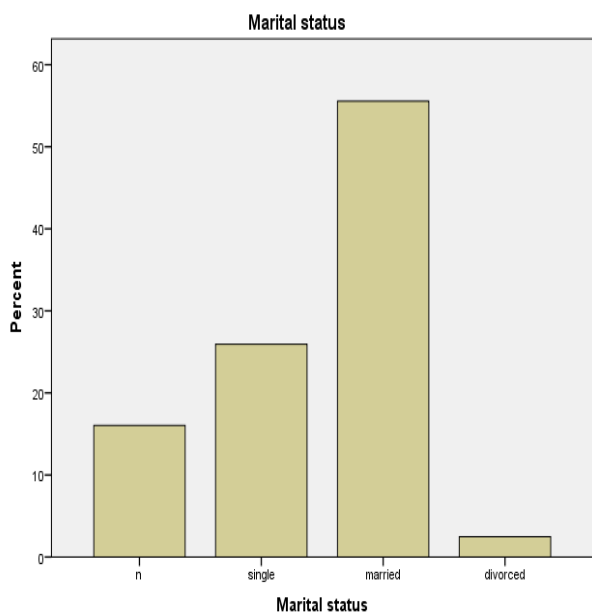


Figure 1: percentage of Marital status

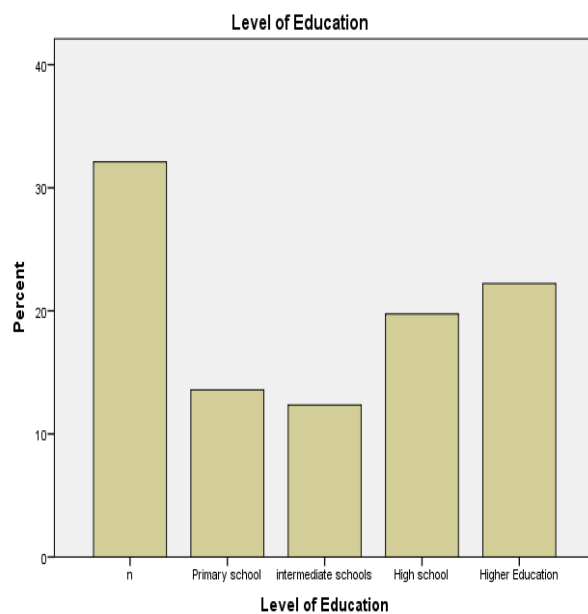


Figure 2: percentage of Level of education

Table 4: Ages of patients

Age	Frequency	Percent	Valid Percent	Cumulative Percent
n	8	9.9	9.9	9.9
< 40	30	37.0	37.0	46.9
40-49	12	14.8	14.8	61.7
Valid 50-59	10	12.3	12.3	74.1
60-69	13	16.0	16.0	90.1
> 69	8	9.9	9.9	100.0
Total	81	100.0	100.0	

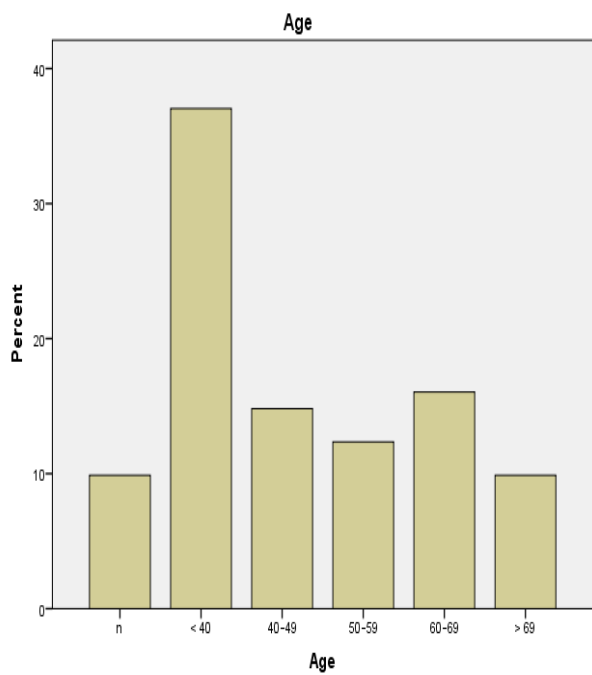


Figure 3: percentage of cancer patients' ages

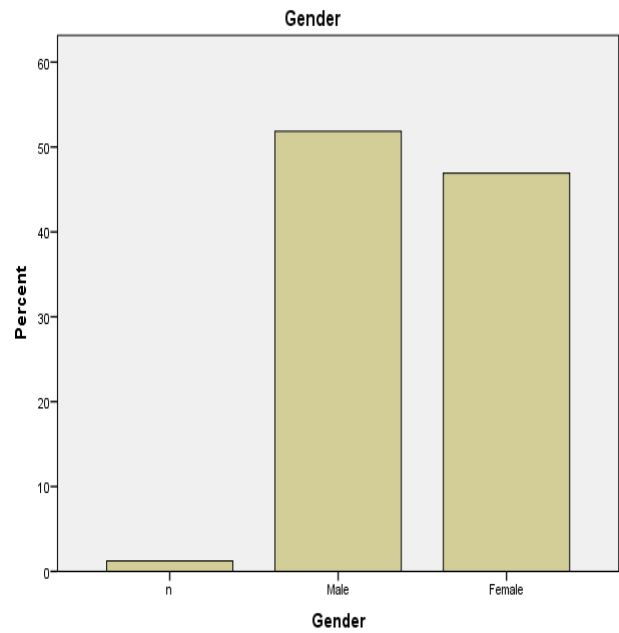


Figure 4: percentage of cancer patients' gender

Table 5: Gender of patients

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
n	1	1.2	1.2	1.2
Valid Male	42	51.9	51.9	53.1
Female	38	46.9	46.9	100.0
Total	81	100.0	100.0	

Table 6: Types of cancers included in the study

Type of Cancer	Frequency	Percent	Valid Percent	Cumulative Percent
Breast	9	11.1	11.1	11.1
Haematologicalneoplasias	11	13.6	13.6	24.7
Upper gastrointestinal tract	4	4.9	4.9	29.6
Respiratory tract	2	2.5	2.5	32.1
ENT carcinomas	3	3.7	3.7	35.8
Lower gastrointestinal tract	5	6.2	6.2	42.0
Male genitourinary tract	3	3.7	3.7	45.7
Brain tumours	3	3.7	3.7	49.4
Soft tissue tumours	2	2.5	2.5	51.9
Thyroid carcinomas	1	1.2	1.2	53.1
Missing diagnoses	19	23.5	23.5	76.5
Bone Tumurs	6	7.4	7.4	84.0
Lymphoma	13	16.0	16.0	100.0
Total	81	100.0	100.0	

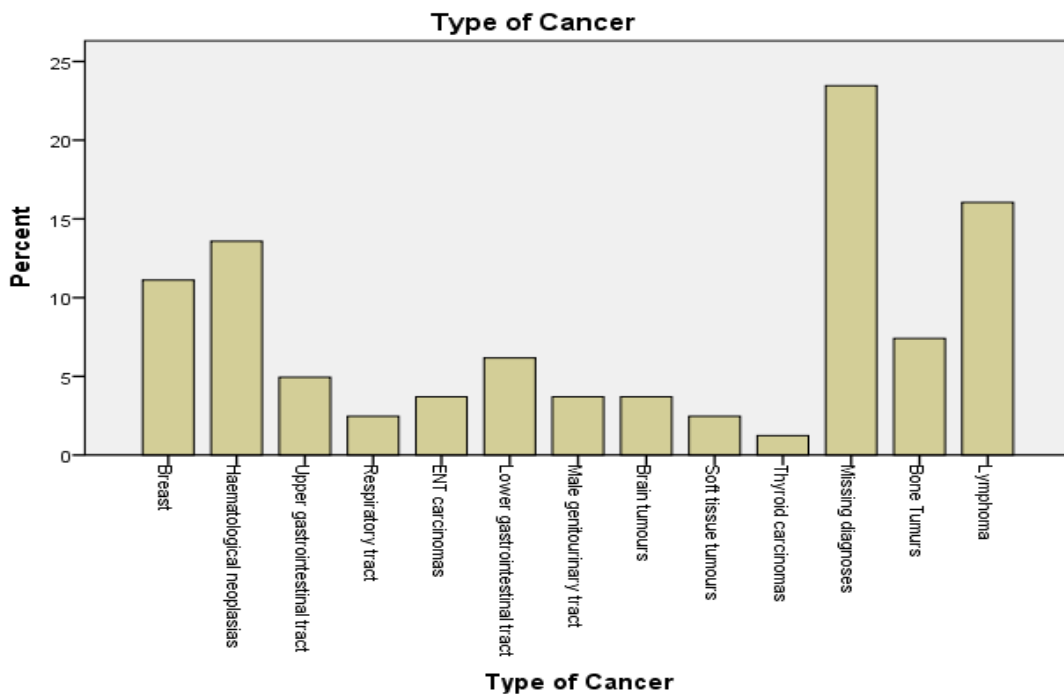


Figure 5: percentage of types of cancers

Table 7: Most frequent question agreed by patients with diagnosed cancer

Question #	Percentage 4/5	Diagnosis		
		Lymphoma	Hematological neoplasia	Breast cancer
20	48	6	4	4
12	47	6	5	4
8	37	3	6	3
1	36	5	5	5
5	29.9	4	6	3

Table 8: Having too few opportunities to talk about emotional problems Gender Cross tabulation

	n	Gender		Total
		Male	Female	
Having too few opportunities to talk about emotional problems	0	3	0	3
NO	0	14	15	29
Not so Mutch	0	7	6	13
No comment	0	7	8	15
Agree	1	4	4	9
Strongly Agree	0	7	5	12
Total	1	42	38	81

Table 9: Level of Education of patients in our study

	Frequency	Percent	Valid Percent	Cumulative Percent
n	26	32.1	32.1	32.1
Primary school	11	13.6	13.6	45.7
intermediate schools	10	12.3	12.3	58.0
High school	16	19.8	19.8	77.8
Higher Education	18	22.2	22.2	100.0
Total	81	100.0	100.0	

4. DISCUSSION

This study supports the hypothesis that cancer will cause some psychological changes among the patients. As well as, the aim of this cross-sectional study is to screen out the most important psychological changes in cancer patients.

Our results included an 80 sample. Analyzing the distress profile for the deferent distress risk factors affecting each diagnostic subgroup. Twenty out of hundred samples dropped due to incomplete questionnaire. We found, the most important single distress is (going out less) since the patient was diagnosed with the cancer. Which indicate variant degree of depression. That meets with one of the psychiatric-psychological problems among oncology patient is depression disorders⁽⁹⁾.

As expected prognosis of cancer that will limits lifestyle of the patients. So, not being able to follow one's hobbies expected among them. It shows the second most affecting statement based on our questionnaire. Followed by being afraid of developing pain. 50%–70% of people with cancer experience some degree of pain⁽¹⁰⁾. Pain caused either directly by the disease or by invasive procedures, treatment or psychological distress⁽¹¹⁾. Probably, the most fearsome symptom regardless of cancer type will be the pain⁽¹²⁾. Although, patients go under plans of pain management, they still have fearing of being in pain. Studies shows, more than half of cancer patients have insufficient pain control, and about quarter of them actually die in pain⁽¹³⁾. So, treating doctor should be aware that pain must be adequately controlled. We believe involving pain management team is essential during treating cancer patient.

Fatigue is one of the common symptoms in cancer⁽¹⁴⁾. Caused by cancer itself or treatment. Approximately, 36% experience fatigue in our study. The prevalence of fatigue in palliative care setting is in the range of 48-78%⁽¹⁵⁾. Actually, fatigue is fluctuating in appearance depends on the stage of the disease. As we investigated our sample in different setting – early stages of the diseases, undergoing surgery, chemotherapy or radiation – in one time, without following up them. We cannot determine which stage is showing the peak of fatigue among them. However, fatigue reported especially in lymphoma, hematological and breast cancers. It's a side effect associated with a number of blood cancer therapies⁽¹⁶⁾.

Being afraid of disease progression is one of important issues related to cancer. When we talk about disease progression, we should also put in mind fear of disease recurrence. Both are anxiety related cancer. Fear of progression (FoP) should be differentiated from the psychiatric concept of anxiety disorders. A central and common characteristic of neurotic anxiety disorders (such as generalized anxiety disorder, panic disorder, and agoraphobia) is that these problems are unreal or irrational. In the context of cancer, however, patients are confronted with real threats; their reactions are neither irrational nor inappropriate. Yet, patients can experience long lasting and exaggerated realistic fears that affect their well-being and quality of life⁽¹⁷⁾. 68.3% suffered neither from clinical FoP nor from any anxiety disorder, Patients with a pure FoP did not differ from patients with a pure anxiety disorder on nearly all symptom measures. Only a few associations between the

comorbidity pattern and sociodemographic and clinical variables emerged, So as a conclusion for FoP and anxiety, clinical FoP appears to be a distinct phenomenon. It does not differ from anxiety disorders in its psychological and somatic burdens⁽¹⁸⁾. CBT uses to be one of modalities of treating FoP especially with chronicity of any type of diseases including cancers⁽¹⁹⁾.

In addition, variables (age, gender, illness duration, marital status and diagnoses) have a significant effect on the distress profile. Gender plays major role. Females have a higher distress profile than males. In breast cancer as the gender is confounded to female gender, thus probably the reason of the high distress profile in this diagnostic subgroup. Usually, female patients and younger patients suffer more stress than male or older patients, as shown also in Härter's and Zabora's study^{(20),(21)}. Illness duration is one of the important risk factor for the patients with lymphoma and hematological neoplasia. The critical period is the first 6 months after diagnosis for the first group. The time might be considered is a critical marker for the further prognosis, while the hematological patients with much longer treatment durations seem to orientate themselves more to the conventional 5-year survival rate criteria. 23.5% of the samples are missed diagnosed which associated with different information from different doctors as a distress factor. That shows conflict of management as well as loss of trust in doctors. Trust is considered to be an important outcome in its own right. The elements of physician behavior that foster trust can continue to reflect the instincts of physician-theorists: competence, compassion, reliability, integrity, and open communication⁽²²⁾. So, making a good communication with the patient, reaching the diagnosis especially determining a clear treatment plan will decrease the distress level and fear feeling in cancer patient. Being married or in socialized environment apparently, helpful for cancer patient. Feeling unconfident in relationships with other people, having the feeling of being less value for other people, difficulty in talking with the family, and other people react inconsiderately/unsympathetically, these statements of our study questions earned least values among the patients. Therefore, involving in lovely and social atmosphere will decrease distress profile. Prevention /intervention efforts provided by family well-being in the United States would improve, and children living with partnered couples may find themselves in families marked by less tension and depression⁽²³⁾. Although, being married decreases distress profile. One important issue can highly influence the relationship and distressing the patient, which is having sex less frequently. Associations between lifetime depression history and lower levels of physical pleasure within partnered sexual relationships and higher rates of masturbation remained significant following control for current depressive symptoms⁽²⁴⁾.

As nature of cancers, chronicity, progression, and different modalities of treating it will cause variant degrees of psychological changes. Found to have high association with early detection of the cancer, treating with decrease distress profile. Therefore, we advise to involve psychiatric management to cancer treatment.

5. CONCLUSION

Psychosocial disturbance are common in cancer patients. Our results offer support for the need to identify high-risk patients through psychosocial screening in order to provide early intervention. We consider cancer patients suffer from psychological stress, fear, depression, anxiety, and insomnia that can affect the social life, physical activity and exacerbate the progression of disease.

6. RECOMMENDATION

The cancer patients should have an adequate psychological course as a part of management.

The family should believe their role in this process.

The government should support them in financial issues.

The doctors should not escape complains of the patients and have to be considered.

7. LIMITATION

We had some delay by the training and development management in King Faisal Specialist Hospital & Research Centre to approve this research in the hospital

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