Assessment of Post-traumatic Stress Symptoms and Psychological Resilience among Recently Diagnosed Cancer Patients

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Abstract

Background: Cancer is a serious health problem that requires long-term struggle in all societies. Despite the improvement in survival rates due to diagnostic and therapeutic advances, cancer remains the second leading cause of death worldwide. **Aim of the study:** Assess post-traumatic stress symptoms and psychological resilience among recently diagnosed cancer patients. **Design:** A descriptive study design was used. **Setting:** The study conducted in the following hospitals at Ismailia city: Suez Canal University Hospitals (oncology outpatient clinics and inpatient oncology departments) and Ismailia Oncology Hospital include (oncology outpatient clinics and inpatient departments).**Subjects:** A sample of 52 recently diagnosed cancer patients (18 male and 34 female).**Tools of data collection:** Three tools were used for data collection: Tool (I) Demographic characteristics and medical background. Tool (II) Impact of Event Scale Revised (IES-R). Tool (III): Connor-Davidson Resilience scale (CD-RISC). **Results:** It was found that, recently diagnosed cancer patients had sever post-traumatic stress symptoms, and moderate level of psychological resilience. Additionally, there was negative statistically significant correlation between post-traumatic stress symptoms and psychological resilience. **Conclusion:** Cancer diagnosis has a great negative effect on the patient's (physical, social, psychological) life. Accordingly, recently diagnosed cancer patients had sever post-traumatic stress symptoms, and moderate level of psychological resilience. **Recommendation:** A structured training program should be conducted through periodical workshops for nurses dealing with cancer patients focusing on the associated psycho-social problems that may occur and how to deal with them.

Key words: Cancer, Post-traumatic stress, Resilience.

1. Introduction

Cancer is a serious health problem that requires long-term struggle physically, psychologically, financially and spiritually in all societies. Despite the improvement in survival rates over the past two decades

due to diagnostic and therapeutic advances, cancer remains the second leading cause of death worldwide. Cancer involves uncontrolled and abnormal cell growth, spreading through circulatory and lymphatic systems ***(Şirin & Göksel, 2021; Fung et al., 2022; Siegel et al., 2022)***.

Especially, for recently diagnosed cancer patients, cancer is a major life stressor and traumatic event, which is accompanied by negative symptoms and consequences such as anxiety and depression, fear of cancer recurrence and its progression to other organs, fear of the future, fatigue, pain, physical limitations, possible social isolation, invasive medical procedures and their side effects, as well as changes in social roles and interpersonal relationships ***(Benli et al., 2022)***.

Post-traumatic stress disorder (PTSD) is a psychiatric disorder, which develops after a traumatic event that threatens the patient's psychological and/or physiological integrity. As the number of people diagnosed with cancer increases and cancer survivorship improves, cancer related post-traumatic stress (PTSS) becomes a more prominent issue, therefore, providing physical and psychological needs for cancer patients' becomes increasingly important ***(Dimitrov, Moschopoulou, & Korszun, 2019***; ***Unseld et al., 2019)***.

In the context of cancer, a vast body of research shows that the majority of people who have been exposed to a potentially traumatic event are resilient. , resilience refers to an individual's protective attributes and/or personal characteristics, which are thought to be modifiable and to promote successful adaptation to cancer, including, among others, meaning and purpose in life, sense of coherence, optimism, positive emotions, self-esteem, self-efficacy, cognitive flexibility, coping, social support, and spirituality ***(Seiler & Jenewein, 2019)***

Recently, considerable attention has been paid to complementary and alternative medicine (CAM) as a safe nursing intervention in patients with different types of cancer. Psycho-oncology nurses play an important role in providing supportive care based on CAM in cancer patients in daily clinical practice ***(Harorani et al., 2020)***.

Therefore, psycho-oncology nurses can identify urgent and basic needs of individuals experiencing intense stress, using a supportive, psychological, and

compassionate approach. Thus, they can provide the appropriate physical and psychological support most acutely needed by the affected individuals. Thanks to their communication knowledge and skills, nurses can help cancer patients use rational coping behaviors in difficult situations, and to recover their strengths ***(Kilic & Şimşek, 2018)***.

Significance of the study:

From diagnosis to survivorship, cancer is a challenging experience. Because of the high incidence and mortality rates of cancer, this disease is considered a health problem of the first magnitude. Patients with cancer face numerous stressors, including not only the life-threatening nature of the disease, disability, pain, and treatment related side effects but also psychological distress. Therefore, recently diagnosed cancer patients are considered a vulnerable segment of the population suffering the action of many stressors **(*Priede et al., 2019; Öcalan & Üzar-Özçetin, 2021; Pinto et al., 2022)***.

Therefore, the present study aimed to assess post-traumatic stress symptoms and psychological resilience among recently diagnosed cancer patients.

Research question:

- Does cancer diagnosis associate with post-traumatic stress symptoms?

- Does cancer diagnosis affect patient's psychological resilience?

- Are there correlations between post-traumatic stress symptoms and psychological resilience among recently diagnosed cancer patients?

2. Subjects and Method

Study design: Descriptive research design was used in this study.

The subjects of study: Purposive sample of 52 recently diagnosed cancer patients (18 male and 34 female)**.**

Study setting: The study conducted in the following hospitals at Ismailia city: Suez Canal University Hospitals (oncology outpatient clinics and inpatient oncology departments) and Ismailia Oncology Hospital include (oncology outpatient clinics and inpatient departments)**.**

Tools of data collection:

Data were collected using the three following tools:

Tool (I): Demographic characteristics and medical background:

Demographic characteristics included (Age, gender, marital status, level of

education, place of residence, etc). Where, the medical background included: (Type of cancer, duration of the disease, disease stage, …etc).

Tool (II): Impact of Event Scale Revised (IES-R):

The Impact of Event Scale Revised (IES-R) was developed by ***(Weiss et al., 1997)*** and translated from English language into Arabic language by ***(Abd el-fadeel & Abou-abdou, 2018)***. The scale consisted of 22-item to assess post-traumatic stress symptoms based on three clusters of symptoms (intrusion, avoidance, and hyper-arousal symptoms) identified in the Diagnostic and Statistical Manual of Mental Disorder (DSM-5), as indicators of post-traumatic stress disorder.

Intrusion symptoms include eight items (1, 2, 3, 6, 9, 14, 16, 20), avoidance symptoms include eight items (5, 7, 8, 11, 12, 13, 17, 22), and hyper-arousal symptoms include six items (4, 10, 15, 18, 19, 21). Scale items are rated on a 5-point scale ranged from 0 ("not at all") to 4 ("extremely"). The IES-R yields a total score (ranging from 0 to 88).

Scoring system of Impact of Event Scale Revised (IES-R):

The cut-off point of 33 and above was found to provide the best diagnostic accuracy of sever post- traumatic stress symptoms and cut-off point of 24 to 32 was found to provide the best diagnostic accuracy of partial post-traumatic stress symptoms ***(Asukai et al., 2002; Creamer et al., 2003).***

Validity and reliability of the Tool:

The tool was clear, relevance, applicable, comprehensive, understandable, and ease for implementation. Reliability of scores on the Impact of Event Scale Revised (IES-R) estimated using Cronbach's α was (0.830) ***(Abd el-fadeel & Abou-abdou, 2018).***

Tool (III): The Connor-Davidson Resilience scale (CD-RISC):

The Connor-Davidson Resilience scale (CD-RISC) was developed by ***(Connor et al., 2003)*** and translated from English language to Arabic language by ***(ALaseme et al., 2018)***, to measure psychological resilience, focusing on the individuals coping ability with stressors. It comprised of 25 items, each rated on a 5-point scale rating from 0 "not true at all" to 4 "true nearly all the time".

Scoring system Connor-Davidson Resilience scale (CD-RISC):

According to, ***Davidson, (2018),*** there are median and quartile scores of the scale

as follows: the median score describes the midpoint of the frequency distribution. Therefore, the scoring of CD-RISC-25 in the present study as following: the median score is 62 that considered the cut of point of the scale, with Q1= 0-53, that indicate low resilience, Q2 & Q3 = 54-62 & 63-71, that indicate intermediate (moderate) resilience and Q4= 72-100 that indicate high resilience.

Validity and reliability of the tool:

The tool was clear, relevance, applicable, comprehensive, understandable, and ease for implementation. Reliability of scores on the CD-RISC estimated using Cronbach's α was (0.70) ***(ALaseme & Badrea, 2018)***.

Administrative design:

An official approval letters explaining the aim of the study were directed from the Dean of the faculty of Nursing, Suez Canal University to the directors of selected settings (Suez Canal University hospitals and Ismailia Oncology hospital) to obtain their permission and cooperation to conduct the study.

Ethical consideration:

The study proposal approved by the Research Ethics Committee at Faculty of Nursing, Suez Canal University code number (64/8-2019). Each patient was asked to give written consent to participate in the study after full explanation of the nature and the main aim of the study and its expected outcomes. The patient had the right to withdraw from the study at any time without any rationale, also they were informed that data not included in any further researches without another new consent from them. The gathered data were assured through coding of all data for confidentiality.

Field of Work:

The data were collected by the researcher within 3 months from January 2021 to March 2021. Data was collected two days / week, from two to three cancer patients were interviewed every day. Each interview the researcher introduces self and gives a brief explanation about the purpose of the study. Oral and written consent was obtained from each cancer patient to participate in the study before data collection. Each interview takes from 30 to 40 minutes.

Statistical design:

The collected data was organized, categorized, tabulated, entered, and analyzed by using SPSS, (Statistical Package for Social Sciences), soft-ware program version 20.

-Tables and figures used for data

presentation.

- Frequency, percent, mean and standard deviation were used for descriptive data.
- Mann-Whitney, and Kruskal Wallis tests used for relation between demographic data and study variables.
-Spearman test (rho) for correlation between study variables.

3. Results

Table (1) shows demographic characteristics of the studied subjects, the mean age of the studied subjects was (50.96 ±12.641), most of them (96.2%) were married and (94.2%) of them had children. Concerning their education, the majority of them (80.8%) had basic education and nearly two third of them (71.2%) were living in urban areas. Regarding their work status, half of the studied subjects (50%) were house wives.

Figure (1) Illustrates that; nearly two thirds (65%) of the studied subjects were female, while nearly one third (35%) of them were male.

Table (2) shows medical background of the studied subjects; in which nearly one quarter of them (42.3%) had stage two of the disease. The mean score of disease duration in months was (2.375±.585). Regarding current treatment, nearly one third of the studied subjects (36.5%) were receiving surgical management. Concerning family support, the majority of the studied subjects (86.5%) were receiving family support**.**

Figure (2): shows that; (42.3%) of the studied subjects had breast cancer, while (1.9%) of them had brain, scalp, and pancreatic cancer.

Table (3) Illustrates; the total mean of intrusion symptoms, was (21.31±5.109). Concerning avoidance symptoms, the total mean was (21.63±4.640). Regarding, hyper-arousal symptoms the total mean was (10.06±3.472). Furthermore, this table also shows the total mean of post-traumatic stress symptoms was (53.00 ± 12.481) that indicate sever post-traumatic stress symptoms.

Table (4) shows the total mean of psychological resilience was (55.94±8.055) that indicate moderate resilience. Regarding the highest item score was (3.10±.409), that was related to patients feelings that sometimes god can help them. Concerning the lowest item score was (1.35±.520), that was related to patients feelings that under pressure they focus and think clearly.

Table (5) shows negative statistical significant correlation between post-

traumatic stress symptoms and psychological resilience *p* value = (<.001).

Table (6) shows negative statistically significant correlation between post-traumatic stress symptoms (PTSS) and age (*p* value = -.003). Also, there was statistical significant relation between (PTSS) and gender (*P* value = .007). In addition there was statistical significant relation between (PTSS) and level of education (*p* value = .049). Regarding, psychological resilience; there was statistical significant correlation between psychological resilience and age (*p* value = .05). Also, there was statistical significant relation between resilience and gender (*p* value = <.001). In addition there was statistical significant relation between resilience and place of residence (*p* value =.045). Furthermore, there was statistical significant relation between resilience and work status (*p* value =.010).

Table (7) shows statistical significant relation between post-traumatic stress symptoms and family support (*p* value = .029). Also, shows statistical significant relation between psychological resilience and family support (*P* value = .048).

4. Discussion

Cancer is a major public health problem and the second leading cause of death worldwide. Cancer diagnosis is considered one of the most painful events in human life, which cause a serious crisis in the lives of patients, their families, and those around them ***(Roohi et al., 2020; Siegel et al., 2022)***.

Diagnosis and treatment of cancer is acknowledged as a potential stressor that can lead to significant psychological distress including symptoms of posttraumatic stress. Experiencing distress in response to cancer is common and can occur at critical times throughout the course of the disease. Patients' emotional reactions may range from normal feelings of fear and vulnerability to more psychopathologies. ***(Dimitrov et al., 2019)***.

Although, cancer patients face many psychological problems, patients with higher psychological resilience show better psychological adaptability and psychological state, as well as higher quality of life ***(Dong et al., 2022)***. Therefore, the current study aimed to assess post-traumatic stress symptoms and psychological resilience among recently diagnosed cancer patients.

Findings of the present study revealed that recently diagnosed cancer patients had sever post-traumatic stress symptoms. This result may be due to, from the moment

patients diagnosed with cancer, they were shocked due to the upheaval and sense of helplessness they feel. Cancer diagnosis usually associated with patient's thoughts that their life will soon ended, fear of death, long term management and the adverse effect and difficulties of treatment as chemotherapy or radiotherapy and their financial burden.

In this respect, ***Ochoa Arnedo et al., (2019)*** demonstrated that, the shock of cancer diagnosis and post-traumatic stress symptoms have been linked to non-adjusted coping strategies, such as anxious worrying cognitive avoidance, helplessness, fatalism, self-blame, denial, and behavioral disengagement.

The preceding results goes along with, ***(Hahn et al., (2015); Dimitrov et al., (2019)*** added that a proportion of cancer patients exhibit symptoms of cancer related post-traumatic stress. Furthermore, ***Cordova et al., (2017)***; ***Unseld et al., (2019)*** mentioned that, being diagnosed with and treated for cancer is highly stressful and potentially traumatic. Emotional responses to this experience can range from acute fear, sadness, and anger to enduring adjustment difficulties, and traumatic stress symptoms (e.g., intrusive ideation, reactivity to reminders, avoidance).

From another point of view, one of the important reason that may be associated with the severity of post-traumatic stress symptoms in the current study was the presence of the pandemic of (COVID19) during the period of study implementation, as the fear of infection alone without any physical problem was associated with high level of stress and anxiety symptoms especially that, cancer patients were considered from the high risk groups for infection.

In agreement with the prior results and interpretation, ***Bastien et al., (2022)*** study on "Post-traumatic stress symptoms in cancer patients during the COVID-19 pandemic" demonstrated that, the high levels of PTSD symptoms over the repeated waves of infections and associated lockdown periods, affecting almost one quarter of patients. Especially, females patients, patients who felt socially isolated during the first lockdown, patients who had fears of COVID-19 infection, and those with increased use of psychotropic drugs during this period presented more PTSD symptoms.

Interestingly, nearly two thirds (65%)

of present study were female, and (42.3%) of them had breast cancer. These results may demonstrate in general the severity of traumatic symptoms in present study. According to ***Unseld et al., (2019)*** study, women showed a higher prevalence of symptoms for PTSD (38.9% vs 24.5%, $P <$ .001) when compared with male patients. This fits to the fact that especially in breast cancer, patients show a higher incidence.

Regarding psychological resilience, results of the present study revealed that; recently diagnosed cancer patients had intermediate (moderate) psychological resilience. This may be due to, resilience has served as a mediator in the relationship between coping and psychological distress in the cancer population ***(Martin et al., 2022)***.

Therefore recently diagnosed cancer patients in their response to psychological distress and traumatic stress after diagnosis try to formulate the adverse reaction to these negative responses in form of coping. As they start to accept the disease after the period of shocking and denial, they start to search about the best treatment and intervention regarding their type of cancer, their disease stage and so on.

In agreement with this findings, studies by ***Kavak et al., (2021)*** study on "The relationships between fear of cancer recurrence, spiritual well-being and psychological resilience" and ***Fradelos et al., (2017)*** on "Psychological distress and resilience in women diagnosed with breast cancer in Greece" revealed that the psychological resilience levels of the patients were found to be at moderate level.

At the same line with previous results, ***Gordon et al., (2022)*** study demonstrated that lower levels of resilience in women during the year following curative treatment for breast cancer are associated with a tendency to make more negative cancer-related interpretations and these interpretations maintain lower levels of resilience in the longer term in this population.

Focusing on the correlation between post-traumatic stress and psychological resilience, the present study revealed that there was negative statistically significant correlation between post-traumatic stress and psychological resilience of the studied subjects.

This may be due to; psychological resilience has the potential to act as a

protective factor in relieving stress response. Specifically, psychological resilience has been observed to associate with higher levels of hope, perceived social support, symptom control, spirituality and, lower levels of fatigue during early stages of cancer therapy. These outcomes are in turn associated with better psychological outcomes and quality of life ***(Lau et al., 2021).***

In agreement with preceding results, ***Koral & Cirak, (2021)*** mentioned that, psychological resilience and spirituality are negatively correlated with psychological distress, individuals with psychological resilience higher and spiritual well-being are expected to be easier to cope with stressors encountered in life.

In similarity ***Gordon et al., (2022); Dong, Nie, Liu, & Zheng, (2022)*** stated that**,** resilience in cancer patients is associated with lower levels of distress, as well as better quality of life. Furthermore ***Ye et al., (2017); Martin et al., (2022)*** added that increased resilience was a critical predictor of lower emotional distress and better QOL in patients with cancer.

Focusing on the statistical relation between post-traumatic stress symptoms PTSS with demographic data and medical background. The findings of the present study revealed that, there was negative statistical significant relation between PTSS and the age of the studied subjects, in which the higher the age the lowest of PTSS.

This result may be due to; the young adult patients with cancer deal with issues related to normative developmental tasks and the need to cope with life threatening illnesses at the same time, these complex situations contribute to greater difficulties in reference to psychological adjustment. Such difficulties may exacerbate their perceptions and experiences of their diagnoses of cancer and cancer-related treatments as traumatic events. Therefore, they had a greater degree of vulnerability to traumatic stress during stages of young adulthood ***(Kwak et al., 2013).***

In agreement with preceding results, ***Matzka et al., (2016); Vachon et al., (2021)*** reported that**,** comparing age groups shows that young adult have increased psychological symptoms and needs. In addition young adult experienced significantly higher levels of depression, anxiety, sleep disturbance, social

constraints, worse attention function, worse body image, worse martial satisfaction, and lower QOL than older adult. In addition, mentioned that, older cancer patients experience less distress and are better adapted than younger patients.

Regarding the relation between PTSS and the gender of studied subjects. Findings of the current study revealed that; there was statistical significant relation between PTSS and the gender of the studied subjects, in which female patients had a higher PTSS than male patients.

This result may be due to, nearly two thirds (65%) of present subjects were female, and (42.3%) of them had breast cancer. According to ***Hassani et al., (2018)*** most of the breast cancer patients are affected by pessimistic thoughts, hopelessness, despair, loneliness, and fear of death because of suppressing their feelings about their illness. Also, all aspects of their lives are significantly influenced by the traumatic experience of losing the breasts, which are the attributes of femininity.

In agreement with this result, ***Asuzu et al., (2015); Esplen et al., (2020)*** mentioned that women who have had mastectomy as a result of breast cancer may experience distress and depression due to feeling mutilation, losing sense of femininity, mourning the loss of the breast, or worrying about the possibility of still retaining their husbands' affection after surgery.

From another hand, ***Xunlin et al., (2020); Fung, Lim, Vongsirimas, & Klainin-Yobas, (2022)*** reported that, male participants might be less likely to open up and share their issues/emotions during session. In addition, male participants were more reluctant in verbalizing their emotional concerns and were less emotionally expressive.

Regarding the relation between PTSS and the level of education of studied subjects. Findings of the current study revealed that; there was statistical significant relation between PTSS and the level of education of the studied subjects, in which patients with high education had higher PTSS than patients with basic education.

This result may be due to, patients with higher level of education might have more access to information about cancer diagnosis and its treatment modalities and

their adverse effects through various channels, such as communication with other patients or medical staff and searching the internet. Therefore, some patients when become more oriented with the disease and the side effects of medication their anxiety, fear and stress level increased.

In congruent with the prior results, studies by ***Hahn et al., (2015)*** on " Post-traumatic stress symptoms in cancer survivors: relationship to the impact of cancer scale and other associated risk factors" revealed that, education was significantly associated with PTSD in five of 10 studies that included education as a variable.

Concerning family support, findings of the current study revealed that; there was statistical significant relation between PTSS and family support in which, patients who received family support during their diagnosis and treatment had less PTSS than those didn't receive.

This may be due to, family and friends may help cancer patients to process their cancer-related traumatic experiences and may be involved in meaning finding, efforts that could lead to improved interpersonal relationships as well as, the perception that one is loved, esteemed, and valued by others. That in turn helped them to successfully adapt and passed this difficult period.

In congruent with previous results, ***Seiler & Jenewein, (2019)*** study on "The Effectiveness of Counseling With Cognitive Restructuring technique to Improve the Coping Stress of Cancer Patients" mentioned that, Patients with different types of cancer who perceive a sustainable availability of social support appear to be more likely to report lower levels of distress. At the same line, ***Shand et al., (2015)*** reported that, there was a significant moderate and negative association between social support and PTSS.

Focusing on statistical relation between psychological resilience with demographic data and medical background. The findings of the present study revealed that, there was positive statistical significant relation between psychological resilience and the age of the studied subjects, in which the higher the age the higher of psychological resilience.

This result may be due to; young adults with cancer face many challenges resulting from cancer diagnosis and treatment.

Disruptions to relational activities (e.g., marriage and family planning) and developmental milestones (e.g., educational/vocational attainment), alternations in social relationships, fear of cancer recurrence, and physical changes from cancer treatment contribute to the psychological burden of a cancer diagnosis during young adulthood ***(Darabos et al., 2021).***

In agreement with this result, ***Matzka et al., (2016)*** mentioned that, resilience has been viewed as a capacity that developed over time in response to stressors and hardships of life. From this perspective, older patients may have developed a broader spectrum of skills and resources during their lifetime or they may use them more efficiently to ward off psychological distress compared to younger patients. Thus, younger cancer patients may be in particular need of interventions to facilitate resilience and decrease psychological distress during cancer treatment.

Regarding the relation between psychological resilience and the gender of studied subjects. Findings of the current study revealed that; there was statistical significant relation between psychological resilience and the gender of the studied subjects, in which male patients had a higher psychological resilience than female patients.

This result may be due to; in our society and cultures men usually need to appear and stand strong in front of their families and society. This difference may be related to male personality trait that seemed to be different from females.

Accordingly, ***Seiler & Jenewein, (2019)***, personality traits that are relevant to controlling and regulating mental and emotional states are likely central in resilience pathways. Among others, a coherent self-concept, self-esteem, optimism, positive emotions, and personal control have been discussed as being important personality-related factors that aid in building resilience in cancer patients.

In congruent with previous results, ***Dong et al., (2022)*** reported that, male patients have higher psychological resilience, as men play a main role in shouldering the responsibility of family, and have a larger social sphere than women. More social experience makes it easier for men to cope with difficult situation, including illness. Therefore, male patients

usually had higher level of resilience.

Cornering the relation between psychological resilience and place of residence of studied subjects. Findings of the current study revealed that; there was statistical significant relation between psychological resilience and place of residence of studied subjects, in which patients who lived in urban areas had higher psychological resilience than those lived in rural areas.

This may be due to patients who lived in urban areas usually have easier access and facilities to reach health care services and their education and income usually higher than who lived in rural areas and these factors are considered important predictor for psychological resilience.

In consistent with previous results, ***Dong, Nie, Liu, & Zheng, (2022)*** study titled " Psychological resilience of patients with bladder cancer" reported that, patients with high income, high education, living in cities, have medical insurance and regular exercise might showed higher resilience. In addition, cultures differences also are considered important factor on this difference.

Regarding work status, findings of the current study revealed that; there was statistically significant relation between psychological resilience and work status of studied subjects, in which patients who were working and having jobs had higher psychological resilience. This may be due to; most of jobs provide medical insurance and stabilized income. Moreover, according to the nature and type of their work usually working people are more resilient and their coping abilities with adversities are higher.

At the same line, ***Zhang et al., (2020)*** demonstrated that, work enhances individuals' sense of presence and value and increases their positive beliefs. Moreover, the income of retirees and employees is higher than that of unemployed individuals, which can alleviate economic burden and reduce psychological pressure. Furthermore ***Chen et al., (2020)*** mentioned that, environment and medical insurance, more stable work, higher education level and average income showed higher psychological resilience.

Concerning family support, findings of the current study revealed that; there was statistically significant relation between psychological resilience and family support,

in which patients who were receiving family support had higher psychological resilience.

This may be due to; family and friends may help cancer patients to process their cancer-related traumatic experiences and may be involved in meaning finding, efforts that could lead to improved interpersonal relationships. Therefore, patients with different types of cancer who perceive a sustainable availability of social support appear to be more likely to report high levels of resilience and lower levels of distress ***(Seiler & Jenewein, 2019)***.

In addition, family, friends, and society provide subjective feelings of affection and care for cancer patients, such as the close companionship from family members, the encouragement, and support from friends, and the attention from social groups. All factors may be social support for the positive adjustment of cancer resilience ***(Dong, Nie, Liu, & Zheng, 2022).***

In agreement with prior results, ***Seiler & Jenewein, (2019); Dong, Nie, Liu, & Zheng, (2022)*** reported that, for all phases of a cancer's outcome trajectory, resilience is constructed from preexisting baseline characteristics, like personal attributes (e.g., social support, hope, optimism). In addition, social support was recognized as an important factor in reducing the risk of psychological distress among cancer patients and could positively predict resilience.

5. Conclusion.

Based on the findings of the present study, it can be concluded that, recently diagnosed cancer patients had sever level of post-traumatic stress symptoms, and moderate level of psychological resilience. In addition there was negative statistically significant correlation between post-traumatic stress symptoms and psychological resilience.

6. Recommendation.

1- A structured training program should be conducted through periodical workshops for nurses dealing with cancer patients focusing on the associated psycho-social problems that may occur and how to deal with them.
2- Psycho-oncology services should be generalized to all hospitals dealing with cancer patients especially oncology hospitals. In which psychological interventions are critically important.

Table (1): Distribution of studied subjects according to their demographic characteristics (n=52):

Demographic characteristics	No N=52	%
Age (in years)		
≤ 40	11	21.2
> 40	41	78.8
Mean ± SD 50.96 ± 12.641		
Marital status		
Married	50	96.2
Un married	2	3.8
Children		
Yes	49	94.2
No	3	5.8
Educational Level		
Basic education	42	80.8
High	10	19.2
Residence		
Rural	15	28.8
Urban	37	71.2
Work status		
Working	20	38.5
Not work	6	11.5
House wife	26	50

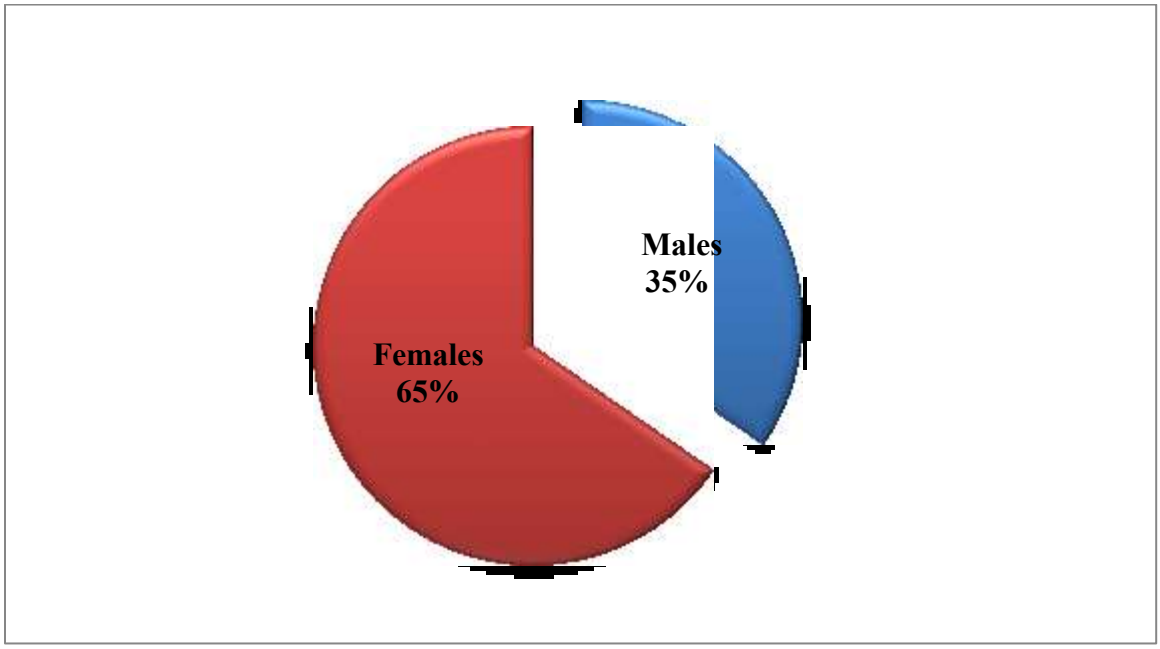

Figure (1) Distribution of studied subjects according their gender (n=52)

Table (2): Distribution of studied subjects according to their medical background (n=52):

Medical background items	No N=52	%
Disease stage		
Stage I	11	21.2
Stage II	22	42.3
Stage III	14	26.9
Stage IV	5	9.6
Duration of diagnosis (in months): **Mean ± SD** 2.375 ± .585		
Type of current treatment		
Chemotherapy	17	32.7
Radiotherapy	6	11.5
Surgery	19	36.5
Not determined	10	19.2
Family support		
Yes	45	86.5
No	7	13.5

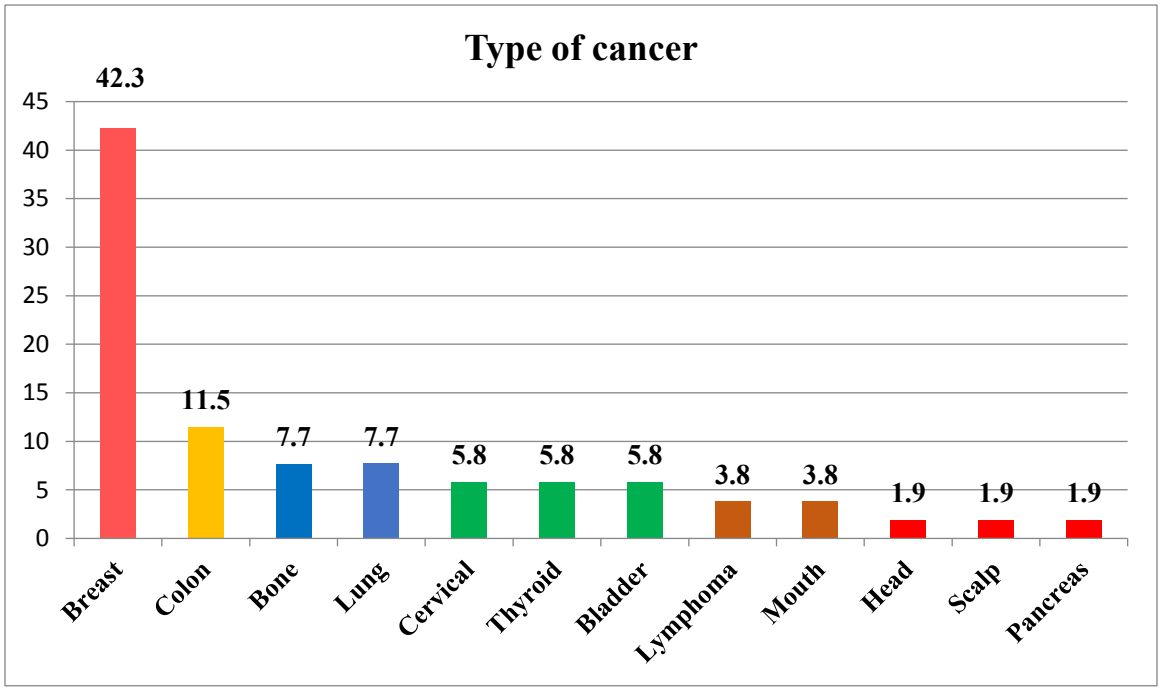

Figure (2) Distribution of studied subjects according to their type of cancer (n=52)

Table (3): Distribution of the studied subjects according post-traumatic stress symptoms (n=52):

Post-traumatic stress symptoms subscales	**Mean ± SD**
Intrusion symptoms	21.31 ± 5.109
Avoidance symptoms	21.63 ± 4.640
Hyper-arousal symptoms	10.06 ± 3.472
Total mean of impact of event scale	**53.00 ± 12.481**

Table (4): Distribution of the studied subjects according to psychological resilience scale (n=52):

Psychological resilience scale items	Mean ± SD
1. I am able to adapt to change.	2.12 ± .471
2. I have close and secure relationships.	2.88± .427
3. Sometimes fate or God can help.	3.10 ± .409
4. I can deal with whatever comes.	2.12 ± .511
5. Past success gives me confidence for new challenges.	2.44 ± .574
6. I see the humorous side of things.	1.65 ± .480
7. Dealing with stressful life situations makes me stronger.	1.71 ± .696
8. I tend to bounce back after illness or hardship.	2.02 ± .464
9. Things happen for a reason	2.40 ± .569
10. I give my best effort no matter what	2.75 ± .480
11. I can achieve my goals.	2.46 ±.503
12. When things look hopeless, I don't give up.	2.04 ± .394
13. I know where to turn for help.	2.37 ± .525
14. Under pressure, I focus and think clearly.	1.35 ± .520
15. I prefer to take the lead in problem solving.	2.13 ± .486
16. I am not easily discouraged by failure	2.08 ± .518
17. I think of myself as a strong person.	2.27 ± .448
18. I can make unpopular or difficult decisions	2.06 ± .235
19. I can handle unpleasant feelings	1.81 ± .715
20. I have to act on a hunch	2.29 ± .498
21. I have a strong sense of purpose	2.48 ± .671
22. I have few regrets in life	2.29 ± .498
23. I like challenges	1.73 ± .660
24. I work to attain my goals	2.62 ± .565
25. I have pride in my achievements	2.79 ± .498
Total mean	**55.94 ± 8.055**

Table (5) Correlation between post-traumatic stress symptoms and psychological resilience of the studied subjects (n= 52):

Scale	Psychological resilience	
	rho	***P* value**
Post-traumatic stress	**-.537****	**<.001**

** Significant p –value ≤ 0.05 insignificant p –value > 0.05
rho. Spearman correlation coefficient

Table (6) Relation between demographic characteristics with post-traumatic stress symptoms and psychological resilience of the studied subjects (n= 52):

Demographic characteristics	Post-traumatic stress symptoms		Psychological resilience	
	Mean ± SD	*P*- value	Mean ± SD	*P*- value
Age	53.00 ± 12.481	-.003[h]	55.94 ± 8.055	.05[h]
Gender		.007[u]		<.001[u]
Males	46.44 ± 11.263		62.39 ± 6.818	
Females	56.47 ± 11.812		52.53 ± 6.454	
Marital status		.685[u]		.324[u]
Married	53.18 ± 12.356		55.72 ± 8.031	
Unmarried	48.50 ± 20.506		61.50 ± 9.192	
Children		.151[u]		.175[u]
Yes	53.63 ± 12.208		55.53 ± 7.898	
No	42.67 ± 15.011		62.67 ± 9.238	
Educational Level		.049[u]		.553[u]
Basic education	51.14 ± 10.878		55.67 ± 8.219	
High education	60.80 ± 16.123		57.10 ± 7.622	
Residence		.312[u]		.045[u]
Rural	56.33 ± 10.991		53.33 ± 7.816	
Urban	51.65 ± 12.930		57.00 ± 8.010	
Work status		.445[k]		.010[k]
Working	52.25 ± 13.110		59.40 ± 9.762	
Not work	47.00 ± 11.866		57.00 ± 6.033	
House wife	54.96 ± 12.078		52.77 ± 5.631	

Significant *P* –value ≤ 0.05 **insignificant *P* –value > 0.05**

h. Spearman correlation coefficient **u. Mann-Whitney Test**

k. Kruskal Wallis Test

Table (7): Relation between medical background with post-traumatic stress symptoms and psychological resilience of the studied subjects (n= 52):

Medical background	Post-traumatic stress symptoms		Psychological resilience	
	Mean ± SD	*P*-Value	Mean ± SD	*P*-Value
Disease stage		.509 [k]		.340 [k]
Stage I	50.09 ± 17.178		58.64 ± 8.880	
Stage II	53.32 ± 9.863		55.55 ± 6.523	
Stage III	56.64 ± 10.746		53.64 ± 8.363	
Stage IV	47.80 ± 16.069		58.20 ± 11.563	
Duration of diagnosis	53.00 ± 12.481	-.623[h]	55.94 ± 8.055	.465[h]
Current Treatment		.472[k]		.253[k]
Chemotherapy	55.74 ± 9.273		52.89 ± 5.906	
Radiotherapy	49.18 ± 14.222		57.12 ± 9.823	
Surgery	53.50 ± 9.116		59.50 ± 7.662	
Not determined	54.00 ± 16.131		57.60 ± 7.749	
Family support		.029[u]		.048[u]
Yes	51.29 ± 11.731		56.82 ± 7.981	
No	64.00 ± 12.315		53.25 ± 5.058	

Significant *P* –value ≤ 0.05 **insignificant *P* –value > 0.05**

h. Spearman correlation coefficient **u. Mann-Whitney Test**

k. Kruskal Wallis Test

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