Scientific Research Publishing

Open Journal of Social Sciences, 2026, 14(6), 280-292
https://www.scirp.org/journal/jss
ISSN Online: 2327-5960
ISSN Print: 2327-5952

Defence Mechanisms among Cancer Patients

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How to cite this paper: Banat, B. Y. I., Halabiyah, F., & Edkadek, H. (2026). Defence Mechanisms among Cancer Patients. *Open Journal of Social Sciences, 14,* 280-292.
https://doi.org/10.4236/jss.2026.146016

Received: May 1, 2026
Accepted: June 15, 2026
Published: June 18, 2026

Abstract

This study addressed the prevalence of defence mechanisms among patients during their journey with cancer. The study approached the literature as a multi-dimensional phenomenon, which addressed both theoretical and applied research. The significance of this recent study is that it is the first, to the authors' knowledge, to deal with this theme, which in turn encourages other researchers to work on further research on this important topic. The study used the quantitative approach, in a cross-sectional study, using the sampling survey method. The questionnaire is appropriate for the exploratory nature of the research. Prevalence of defence mechanisms among cancer patients was evaluated using an index of a 20-item scale that was developed by the research team, and was administered to five hundred seventy-nine cancer patients in the West Bank, who were selected using the purposive sampling method and stratified. Findings revealed that (69.8%) of the patients had moderately employed unconscious defense mechanisms during their journey with cancer, mostly, denial, repression, displacement, rationalization, and sublimation. The study's findings confirmed the value of employing unconscious defence mechanisms in decreasing the psychological distress among patients during their journey with cancer.

Keywords

Defence Mechanisms, Copying Strategies, Cancer Patients, Palestine

1. Background

The concept of defense mechanisms has undergone extensive revision and expansion since Sigmund Freud (1894) first described these processes in his paper "The Neuro-Pschoses of Defence" (1894). In his psychological theory, Freud explained that a defence mechanism is a tactic developed by Ego to protect against anxiety

(Freud, 1894; Mcleod, 2009; Weber et al., 2021).

Freud (1894) identifies the basic characteristics of defence mechanism as the unconscious process that defends or protects a person against anxiety, shame, loss of self-esteem, and conflict or unacceptable feelings. According to Freud, when Id is in serious conflict with Ego and superego, the individual suffers from tension or anxiety. Defence mechanism enables a person to resolve conflict and reduce the stress and anxiety, taking into consideration that all defence mechanisms are operated at an unconscious level (Carmer, 2006; Mcleod, 2009).

Using psychoanalytic theory, a defence mechanism is defined as mental operations, generally unconscious and automatic, which aim to reduce or eliminate anxiety arising from unacceptable or potential conflicts or stressful situations (Carmer, 2006; Gori et al., 2020; Walker & McCabe, 2020).

Coping styles and defense mechanisms were classified as two independent key resources for stress-adaptation processes (Maricutoiu & Crasovan, 2016; Gori et al., 2020). Coping strategies could be defined as basic categories used to classify how people react to or handle stress (Rabenu et al., 2017: p. 875; Gori et al., 2020).

Freud (1894) proposed an eight-dimensional model of defence mechanisms that is more widely accepted in the literature. This model includes denial, repression, projection, displacement, regression, rationalization, and sublimation (Banat et al., 2021).

Denial is one of the most common defense mechanisms. It occurs when you refuse to accept reality or facts. You block external events or circumstances from your mind so that you do not have to deal with the emotional impact. In other words, you avoid the painful feelings or events (Perry & Bond, 2012; Banat et al., 2021).

Repression is unsavory thoughts, painful memories, or irrational beliefs that can upset you. Instead of facing them, you may unconsciously choose to hide them in hopes of forgetting about them entirely (Banat, 2019a; Banat et al., 2021).

Projection reflects the thoughts or feelings you have about another person that might make you uncomfortable. If you project these feelings, you are misattributing them to the other person (Carmer, 2006; Gori et al., 2020; Banat et al., 2021).

In displacement, your direct strong emotions and frustrations towards a person or object that does not feel threatening. This allows you to satisfy an impulse to react, but without risking significant consequences (Miller Smedema et al., 2010; Banat, 2019a; Banat et al., 2021).

In regression, some people who feel threatened or anxious may unconsciously "escape" to an earlier stage of development. This type of defense mechanism may be most obvious in young children. If they experience trauma or loss, they may suddenly act as if they are young again. They may even begin wetting the bed or sucking their thumb (Rice & Hoffman, 2014; Banat, 2019a; Banat et al., 2021).

In rationalization, some people may attempt to explain undesirable behaviors with their own set of "facts". This allows the person to feel comfortable with the choice he/she made, even if the person knows on another level that it is not right

(Maricutoiu & Crasovan, 2016; Gori et al., 2020; Banat et al., 2021).

Sublimation is considered a positive strategy. That is because people who rely on it choose to redirect strong emotions or feelings into an object or activity that is appropriate and safe (Perry & Bond, 2012; Banat, 2019a; Banat et al., 2021).

In the reaction formation, people who use this defense mechanism recognize how they feel, but they choose to behave in the opposite manner of their instincts (Maricutoiu & Crasovan, 2016; Banat, 2019a; Gori et al., 2020; Banat et al., 2021).

2. Defence Mechanisms and Cancer

Psychological adaptation to cancer is thought to reflect the joint influence of dispositional traits and defensive functioning on resilience and trauma-related symptoms (Romeo et al., 2025).

Cancer is a large group of diseases that can start in almost any organ or tissue of the body when abnormal cells grow uncontrollably, go beyond their usual boundaries to invade adjoining parts of the body and/or spread to other organs (American Cancer Society, 2023).

Cancer is a leading cause of death worldwide, accounting for nearly 10 million deaths in 2020, or nearly one in six deaths. The most common cancers are breast, lung, colon, and rectum and prostate cancers. Around one-third of deaths from cancer are due to tobacco use, high body mass index, alcohol consumption, low fruit and vegetable intake, and lack of physical activity. In addition, air pollution is an important risk factor for lung cancer (WHO, 2025).

While it is difficult to provide exact 2025 statistics for Palestine due to ongoing conflict and data limitations, reports indicate cancer is a growing concern, particularly in Gaza. In 2020, Globocan data showed that lung and breast cancers were among the leading causes of death in Gaza. The ongoing humanitarian crisis, including limited access to healthcare, is likely exacerbating the situation (Ministry of Health, 2025).

In Palestine, cancer is a significant cause of mortality, ranking as the second leading cause of death at 14%, after cardiovascular diseases at 30%. The cancer burden in Palestine is expected to increase, reaching levels that further challenge the financial and infrastructural resources of the current health-care system, of which financial and political uncertainty exacerbate the problem (Ministry of Health, 2025).

The cancer crude incidence rate doubled from 53.7 per 100,000 populations in 2010 to 119.2 per 100,000 populations in 2021. During the period 2017 to 2021, 15,822 new cancer cases were diagnosed in West Bank, of which 15,756 cases were invasive cases and 64 cases were non-invasive cases. The crude incidence rate CIR of invasive cases was 116.7 per 100,000 populations (Ministry of Health, 2025).

In the West Bank, there were more than 200 types of cancer, just these five types—breast, colorectal, lung, leukemia, and thyroid—together account for about half (47%) of all new cancer cases between 2017-2021. Breast cancer was the most common cancer, 15.9% of all cancer cases in 2019 (incidence rate was 18.5 per 100,000

population). This was followed by colorectal cancer with 1978 cases and CIR 14.7 cases per 100,000 populations. Lung cancer ranked 3rd, representing 7.7% of all registered cancer cases (Ministry of Health, 2025).

3. Empirical Related Studies

Defense mechanisms among cancer patients has been the focus of attention for some previous studies that were conducted globally, taken into consideration the effect of cancer on patients psychologically. In a recent study, Mariá Azambuja Santos et al. (2022) confirmed that a greater capacity for resilience correlates with the use of adaptive defense mechanisms and with lower levels of depressive symptoms and anxiety in patients while receiving outpatient chemotherapy.

In another study, Saab et al. (2021) concluded that, the severity of Breast Cancer, the age of carriers, and the social status may lead to higher use of defense mechanisms, at the level of the individual defense and the hierarchal or the tripartite levels.

The study of Weber et al. (2021) indicated that there was considerable variety in levels of defensive functioning as well as repressive coping in the sample, and no difference were found in overall levels of defensive functioning between men with vs. without repressive coping. However, patients with repressive coping demonstrated a decopupled association between fear of progression and defensive functioning as compared to patients without repressive coping. The study confirmed that, with further development focusing on the role of defense mechanisms in the regulation of internal conflicts, the concept shifted and evolved to incorporate the adaptation to external demands, including intrapsychic and interpersonal handling of burden of illness. In addition to defense mechanisms, coping provides another perspective on human adjustment to difficult life events.

In a qualitative and quantitative analysis study, Di Giuseppe et al. (2019) concluded that breast cancer patients use more reaction formation, omnipotence, and rationalization and less idealization of others' image and autistic fantasy, compared with other-site cancer patients. From the qualitative analysis of the defensive profile, displacement and repression appeared among the most representative defense mechanisms of breast cancer patients.

Following the hierarchical organization of defenses, the study of Di Giuseppe et al. (2018) concluded that higher physical and emotional functioning emerged as being associated with High-adaptive defenses, while Mental Inhibition defenses, in particular repression, promote psychosomatic symptoms, passive decisional preferences and worse physical and emotional health. Disavowal defenses foster lower anxiety and higher emotional functioning by denying anxiety about death. Image distortion defenses, including both Minor and Major image-distorting defenses, were more frequent in cancer patients than in control groups and finally, Action defenses predicted sleep disturbance and lower survival probability. The early detection of maladaptive defensive functioning may foster appropriate psychotherapeutic intervention and prevent worsening of the illness.

Talepasand & Mahfar (2018) concluded that paying attention to psychological factors and defense mechanisms that are used by cancer patients could help clinical therapists to make very effective mental health interventions.

Finally, Bredicean et al. (2016) indicated that, the group of subjects diagnosed with cancer demonstrated the presence of defence mechanisms of the following type: passive aggressiveness, projection and coping mechanisms that were characterised by an emphasis on social support. The control group had defence mechanisms of the following types: repression, denial and coping mechanisms that focused on emotions.

To sum up, cancer patients are more likely to experience unconscious defense mechanisms due to the challenges posed by this serious illness. This study seeks to assess the prevalence of defense mechanisms among Palestinian cancer patients, addressing the main defense mechanisms among them, and identify the demography breakdown over defense mechanisms prevalence among Palestinian cancer patients with the aim of identifying any statistically significant differences.

4. Statement of the Problem

Cancer patients frequently employ unconscious defense mechanisms to manage intense anxiety, fear, and emotional distress related to their diagnosis, treatment, and potential death (Freud, 1894; Mcleod, 2009; Weber et al., 2021). High-adaptive defenses (e.g., humor, suppression) are linked to better emotional functioning, while maladaptive mechanisms like denial, repression, and acting out can lead to poorer physical health outcomes and lower survival.

Previous studies had consistently highlighted the importance of psychological support in optimizing cancer treatment outcomes. A common understanding of the prevalence of defense mechanisms among cancer patients, timely identification and treatment by medical practitioners can improve the prognosis of cancer patients. By illuminating this issue, we can pave the way for targeted psychosocial support, empowering patients to articulate their emotions, fostering a therapeutic alliance with healthcare providers, and ultimately enhancing their quality of life during treatment through this complex journey.

5. Hypotheses

Taking into consideration, the set objectives, questions and variables of the study, the study addresses the main hypotheses:

1) There are no statistically significant differences at $\alpha \leq 0.05$ in prevalence of defence mechanisms among Palestinian Cancer Patients according to gender.

2) There are no statistically significant differences at $\alpha \leq 0.05$ in prevalence of defence mechanisms among Palestinian Cancer Patients according to type of family.

3) There are no statistically significant differences at $\alpha \leq 0.05$ in prevalence of defence mechanisms among Palestinian Cancer Patients according to marital status.

4) There are no statistically significant differences at $\alpha \leq 0.05$ in prevalence of

defence mechanisms among Palestinian Cancer Patients according to qualification.

5) There are no statistically significant correlations at $\alpha \leq 0.05$ between age and prevalence of defence mechanisms among Palestinian Cancer Patients.

6) There are no statistically significant differences at $\alpha \leq 0.05$ in prevalence of defence mechanisms among Palestinian Cancer Patients according to cancer stage.

6. Definition of Terms

6.1. Defence Mechanism

A defence mechanism is defined as mental operations, generally unconscious and automatic, which aim to reduce or eliminate anxiety arising from unacceptable or potentially conflicts or stressful situations (Carmer, 2006; Gori et al., 2020; Walker & McCabe, 2020).

6.2. Coping Strategies

Coping strategies are the basic categories used to classify how people react to or handle stress (Rabenu et al., 2017: p. 875; Gori et al., 2020).

6.3. Patient

A person who is the recipient of health care (WHO, 2011).

7. Limitations

The population of the current study was limited to Palestinian Cancer Patients, in the West Bank, Palestine during 2026, assuming that the selected sample represents its population.

8. Methodology and Design

8.1. Approach

The study uses a quantitative design, in a cross-sectional study, using a questionnaire, which is appropriate to the exploratory nature of the research, and will provide more meaningful in-depth data.

8.2. Population and Sampling

The target population consists of cancer patients at hospitals in the West Bank during 2026, which includes 15,756 cancer patients totally. The population is comprised of 7657 males and 8099 females (Ministry of Health, 2025; Banat et al., 2025).

Five hundred seventy-nine Palestinian cancer patients were stratifiedly calculated, based on governorate and gender, and were selected using the purposive sampling method. The sample population consists of cancer patients who are living within their families and hospitals at the time of the survey, as indicated in **Table 1**. The sample size was calculated using the sampling web. of http://www.surveysystem.com/sscalc.htm, with a margin error of 0.04.

Table 1. Distribution of cancer patients' population and sample in the west bank, Palestine 2026 by governorate and gender.

Governorate	Population		Total	Sample		Total
	Male	Female		Male	Female	
Hebron	1790	1909	3699	56	80	136
Nablus	1199	1372	2571	38	57	95
Ramallah & Al-Bireh	1167	1276	2443	37	53	90
Jenin	977	921	1898	31	38	69
Bethlehem	728	760	1488	23	32	55
Tulkarem	622	661	1283	19	28	47
Qalqiliya	344	330	674	11	14	25
Jerusalem	266	283	549	8	12	20
Salfit	223	245	468	7	10	17
Tubas	188	176	364	6	7	13
Jericho & Al-Aghwar	153	166	319	5	7	12
Total	**7657**	**8099**	**15,756**	**241**	**338**	**579**

8.3. Instrumentation

Defence mechanisms among Palestinian Cancer Patients was evaluated using an index of a 20-item scale, which was developed by the research team, based on The Defense Mechanisms Rating Scales-Self-Report-30 (DMRS-SR-30) introduced by the (American Psychiatric Association, 2000), taking into consideration the cultural appropriateness in the Palestinian society. A 5-point Likert scale (strongly agree to strongly disagree) was used to to assess the prevalence of the following defense mechanisms: denial (2 items), repression (3 items), projection (2 items), displacement (3 items), regression (2 items), rationalization (3 items), sublimation (2 items), and reaction formation (3 items). The highest score indicates a high prevalence of using the defense mechanisms. The survey was conducted through face-to-face interviews in the West Bank by trained researchers, in the period January 15, 2026 to April 25, 2026, as indicated in Table 1. The response rate reached 100% of the participants. The sampling survey instrument sought background information about participants', which included age, gender, type of family, marital status, qualification, and cancer stage.

8.3.1. Instrument Validity

Validation of the instrument proceeded in three distinct phases. The initial phase involved a group of referees and expert arbitrators, who provided some comments on the tool. The second phase involved a focus group session (N = 15); while the third phase involved the implementation of a pilot study (N = 30) to validate the survey using exploratory factor analysis. Factor loading for all items exceeded 0.70 (0.73 to 0.88), which means that those items are suitable in measuring every item

of defence mechanisms among cancer patients.

8.3.2. Instrument Reliability

The reliability was tested using Cronbach's Alpha and Guttman Split-Half coefficients to ascertain reliability and consistency of the survey. Cronbach's Alpha and Guttman split-half for the survey instrument was 0.91 and 0.87, respectively, indicating excellent reliability and consistency.

8.4. Sample Socio-Demographic Characteristics

The demographic breakdown of the participants was based on age, gender, type of family, marital status, qualification, and cancer stage. In total, five hundred seventy-nine cancer patients and a focus group were conducted. Respondents were between 18 and 75 years of age (M 50.73, SD 13.17). Females represented (58.4%) of the participants, while the remaining (41.6%) were males; and the vast majority (76.5%) were married. Half (48.9%) of the participants were well-educated (Diploma, and Bachelor or above), 32.5% had basic education, while the remaining (18.7%) had a secondary education. The vast majority (79.8%) were living in nuclear families, while the remaining (20.2%) were living in extended families, and nearly (32.5%) of the participants were in the second cancer stage, 28.3% in the third stage, (20.7%) in the first stage, while the remaining (18.5%) were in the fourth cancer stage.

8.5. Data Analysis

The questionnaire items were rated on a 1 - 5 Likert scale (1 = strongly disagree to 5 = strongly agree), the highest score indicates a high prevalence of using the defense mechanisms. Descriptive statistics gauged prevalence of using the defense mechanisms among the sampled population, using the following mean key (1 - 2.33 = Low, 2.34 - 3.67 = Moderate, 3.68 - 5 = High).

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS). The normality of the distribution of numerical data was evaluated using the Kolmogorov-Smirnov test. Additionally, the following statistical techniques were measured: Regression, t-test, One-way analysis of variance, Tukey test, Cronbach's Alpha, Guttman Split-Half Coefficient and Factor Analysis.

9. Findings

9.1. Prevalence of Defense Mechanisms among Cancer Patients

The mean score of prevalence of defense mechanisms among Palestinian cancer patients as reported by the sample of five hundred seventy-nine cancer patients was moderate (M 3.49, SD 0.50). (69.8%) of the patients had moderately employ unconscious defense mechanisms during their journey with cancer.

9.2. Types of Defense Mechanisms among Cancer Patients

Furthermore, findings identified the types of defense mechanisms as reported by

the cancer patients. They ranked in a descending order as follows, denial (M 3.72, SD 0.92); repression (M 3.68, SD 0.83); displacement (M 3.60, SD 0.76); rationalization (M 3.50, SD 0.82); sublimation (M 3.46, SD 0.78); displacement (M 3.41, SD 0.84); projection (M 3.37, SD 0.94), and reaction formation (M 3.24, SD 0.72).

9.3. Differences in Prevalence of Defense Mechanisms among Cancer Patients According to the Demographic Breakdown

Furthermore, the study explored the demographic breakdown over prevalence of defense mechanisms among cancer patients with the aim of identifying any differences. Findings showed that age, gender, and qualification do not show any significant differences. However, it was found that type of family, marital status, and cancer stage were significant variables.

In relation to the type of family, the differences favored the participants who are living within nuclear families (M 3.61, SD 0.51) compared to (M 3.48, SD 0.46) for participants who are living within extended families, Independent-Samples t-test value was (3.082, P = 0.002).

As for marital status, the differences were in favor of married cancer patients (M 3.69, SD 0.50), compared to (M 3.25, SD 0.47) for single participating patients, Independent-Samples t-test value was (10.573, P = 0.000).

Finally, findings indicated that there is statistically significant positive correlation between cancer stage, and prevalence of defense mechanisms among cancer patients, Standardized Beta Coefficients value was (0.356, P = 0.000).

10. Discussion, Conclusion and Recommendations

10.1. Discussion

The study confirmed the moderate prevalence of the defense mechanisms among cancer patients. The study findings supported theories about the correlation between cancer response style and the employment of unconscious defense mechanisms during their journey with cancer, which is essential for their emotional stability.

Cancer patients are more likely to experience unconscious defense mechanisms due to the challenges posed by this serious illness. In this context, Banat et al. (2025) concluded that alexithymia poses significant challenges for cancer patients and their limited ability to articulate their emotional experience, which leads and creates barriers to effective communication and explaining how they feel with their HealthCare Providers, which would increase their unconscious employ of defense mechanisms during their journey with cancer. In this context, Weber et al. (2021) concluded that the concept of defense mechanisms has undergone extensive revision and expansion since Freud (1894) first described these processes. Initially formulated as an unconscious repression of unpleasant memories, with further development focusing on the role of defense mechanisms in the regulation of internal conflicts, the concept shifted and evolved to incorporate the adaptation to external demands, including intrapsychic and interpersonal handling of burden

of illness. In addition to defense mechanisms, coping provides another perspective on human adjustment to difficult life events (Weber et al., 2021).

The findings revealed that the high prevalence of using the defense mechanisms was found among cancer patients who are living within nuclear families. Palestinians as an Arab society have traditions that might be different from Western societies. Palestinian communities are based on patrilineal kinship relations in an extended family and they care for each other in times of need (Banat, 2014; Banat et al., 2021).

Palestinians believe that they should support each other. They were able to build what is called collective consciousness in sociology. According to Durkheim (1893), collective consciousness is the set of shared beliefs, ideas and moral attitudes that operate as a unifying force within society; it is a social group's identity that is constructed with narratives and traditions that are created to give its members a sense of community (Banat et al., 2021).

Additionally, the Palestinian family in general and the extended families in particular, have played and still play a distinctive role in the preservation of the social, cultural, political and economic identity in the Palestinian society, especially if we look at the difficult conditions and the huge events that the Palestinian society has been exposed to since more than seventy-three years and even before that. The family's concentration on the land means that there are face to face social relationships among individuals; they focus on the father and kinship based on the blood bond. Family solidarity is often considered one of the main features of the Palestinian families where the child is raised on family solidarity at different levels including the responsibility to care for the children and guide them (Banat, 2010; Banat et al., 2021). The father, mother, brothers and sisters, some aunts, uncles, and cousins take part in this, which would decrease in a way or another the prevalence of using the defense mechanisms during their journey with cancer compared to patients who are living in nuclear families.

Findings revealed that married cancer patients were using the defense mechanisms more than single participants. Consequently, with increased number of children, couples have more family responsibilities and deal with different problems including economic issues under the difficult living conditions prevalent in the Palestinian occupied society and new challenges (Banat, 2019b). Thus, this would agitate the stability of the family and would increase their employ of unconscious defense mechanisms during their journey with cancer.

The study's results also revealed that age, gender, and qualification did not indicate any significant differences over the prevalence of defense mechanisms among cancer patients. This indicates that prevalence of the defense mechanisms among cancer patients is not very much influenced by these variables and is more likely to be affected by factors other than age, gender, and qualification.

Finally, a positive correlation was found between cancer stage, and prevalence of defense mechanisms among cancer patients. Patients who are in the advanced stages of cancer and closer to the reality of death might experience higher levels

of prevalence of defense mechanisms.

A cancer diagnosis is typically a stressful experience and can have negative physical, mental, and social effects. Reactions to this life event may include fear, sadness, anger, anxiety, and depression. The reactions of cancer patients can include elements seen in post-traumatic stress disorder (PTSD), including intrusive ideation, reactivity to reminders, and avoidance, which increase their employ of unconscious defense mechanisms during their journey with cancer. Cancer has been reported to be a traumatic stress factor in several studies (Mulligan et al., 2014; Andrykowski et al., 2015; Cordova et al., 2017; Eraslan et al., 2023; Cakmak et al., 2021; Banat et al., 2025).

10.2. Conclusion and Recommendations

Defense mechanisms are a prevalent phenomenon among cancer patients. The study's findings confirmed the value of employing unconscious defence mechanisms in decreasing the psychological distress among patients during their journey with cancer (Freud, 1894; Mcleod, 2009; Weber et al., 2021). Prevalence of the defense mechanisms was higher among married, nuclear families, and higher cancer stages. Understanding the use of unconscious defence mechanisms among cancer patients, by HealthCare Providers for their emotional stability can improve their prognosis. A cross-sectional study should be conducted for the post-traumatic stress disorder (PTSD) among cancer patients, and further research is essential in the area of using the unconscious defence mechanisms among cancer patients using the quantitative research design.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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