

Coping Strategies for Stress Among Breast Cancer Patients Undergoing Excisional Surgery: A Field Study of a Sample of Breast Cancer Patients at Bachir Ben Nasser Hospital

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Abstract:

This study aimed to identify the main coping strategies used by breast cancer patients undergoing excisional surgery to adapt to their stress, as well as the level of stress they experienced. The descriptive method was used to study a sample of 120 patients, using a scale of coping strategies developed by the researcher and a scale of psychological stress developed by the researcher "Thabet". After analysing the information obtained from the application of both scales and using SPSS statistical methods to calculate the mean, median and scores, we concluded that:

- There is a high level of psychological distress among breast cancer patients undergoing lumpectomy.
- Coping strategies that focus on seeking support and help are most commonly used by them.

Keywords: psychological distress; coping strategies; breast cancer patients Excisional Surgery

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I- Introduction :

Breast cancer in women is considered to be one of the most common psychosomatic diseases in today's society due to several factors that contribute to its prevalence. These include psychological factors (such as stress and anxiety), physical hormonal factors, genetic predisposition, family and occupational factors, etc. While stress may not be a direct cause of breast cancer, it is certainly a trigger and aggravating factor for tumors and their spread. This can significantly affect the health of cancer patients and accelerate their mortality. Therefore, it is essential to find a means, method, mechanism or strategy to help patients cope and adapt to their stress, while ensuring that these strategies are effective and powerful. Therefore, our study aims to identify the most commonly used coping strategies among these cases and to assess their effectiveness.

1-1 Problem Statement:

Breast cancer is one of the most prevalent malignant diseases among women in Algeria, with the number of patients reaching 15,000 in 2021, as reported by the President of the Algerian Society of Oncology, Professor Kamel Bouzid. This situation can be attributed to several factors, including physical, hormonal, genetic, and psychological factors. While psychological factors may not be a direct cause of cancer in its various forms, they are certainly a triggering and exacerbating factor.

The head of the research team at Monash University in Australia, Erika Salon, confirmed in the British Daily Mirror the scientific fact that "stress and psychological pressure contribute to the spread of cancer cells in the patient's body, due to the hormone cortisol, which plays a significant and negative role in cell division and abnormal



growth. They found that there is leakage from blood vessels in the body, which enhances the movement of cancerous cells and increases their spread” (arabe journal ,2016)

This indicates the profound impact of psychological factors on women diagnosed with breast cancer, and this impact is intensified when the primary and most important solution is to undergo excisional surgery of a body part that represents aesthetic (physical harmony), maternal (breastfeeding and childbirth) and sexual relational (relationship with her husband) aspects - the breast. The loss or removal of the breast through excisional surgery can cause a breast cancer patient to lose the highest meanings of life (such as her sense of motherhood, the beauty of her physical harmony, her stable relationship with her husband, etc.).

This can lead to destructive negative feelings such as anxiety, sadness, depression and various fears (fear of the future, fear of death), which are compounded by social perceptions (pity, cruelty). As a result, she may find herself trapped in an endless cycle of psychological pressure, making it difficult to make a final and urgent decision about her surgery. She may hesitate or delay making quick decisions about surgical medical treatment, which could allow the cancerous tumor to grow and weaken her physical and psychological immunity over time, making it increasingly difficult for even the most skilled doctors to manage and control the disease.

This stage represents a significant psychological and physical challenge for the breast cancer patient to resist various pressures and accept her current situation. Therefore, it is essential to find an effective psychosocial coping strategy, adapted to the patient's personality, inclinations, interests and upbringing, in order to reduce her suffering and increase her ability to adapt to and relieve her pressures, as well as to accept the disease and excisional surgery as the first therapeutic step towards survival.



From here we can ask the following questions:

Study Questions:

- What is the level of psychological stress among breast cancer patients undergoing excisional surgery?
- What are the nature of the coping strategies most commonly used by breast cancer patients preparing for excisional surgery?

1-2 Study Hypotheses:

- There is a high level of psychological stress among breast cancer patients undergoing excisional surgery.
- Coping strategies that focus on seeking support and assistance are the most commonly used by breast cancer patients preparing for excisional surgery.

1-3 Objectives of the Study:

The study aims to achieve the following:

1. To determine the level of psychological stress among breast cancer patients undergoing excisional surgery.
2. To identify the coping strategies most commonly used by breast cancer patients preparing for excisional surgery.

1-4 Significance of the Study:

The significance of the study arises from the nature of its subject, as it investigates the strategies used by breast cancer patients undergoing excisional surgery to cope with and manage the psychological and

social pressures associated with surgical treatment.

1. Understanding coping strategies and their impact aids psychologists in designing therapeutic intervention sessions to enhance positive behaviors in patients, helping them achieve a state of self-stability and improve their future quality of life.
2. The study also aims to draw the attention of health ministry officials to the necessity of establishing more medical and therapeutic units to provide medical and psychological care for these cases, emphasizing the role of psychologists within these units.
3. It opens the door for further scientific studies and research that can benefit from our study, linking it to other variables (anxiety, fear, depression).
4. Finally, it enriches the academic literature with a study or research that can serve as a resource for all researchers pursuing further inquiry.

1-5 Methodology and Tools of the Study:

1-5-1 Methodology of the study:

The methodology used is the descriptive-analytical approach, which is defined as “one of the forms of systematic scientific analysis and interpretation to describe a specific phenomenon or problem and to capture it quantitatively by collecting standardised data and information about the phenomenon under study” (Malham, 2007-2008, p370)

This approach was chosen based on the nature of the study topic, which aims to accurately describe the study variables (both quantitatively and qualitatively), as well as the characteristics of the study population and the method of its selection.



1-5-2 Areas of Our Study:

- A. Temporal Area: Limited to the period from September 1, 2024, to December 1, 2024 (three months).
- B. Spatial Area: The location where the study was conducted, specifically Bashir Ben Nasser Hospital in Biskra, Department of Sinology and Breast Diseases.
- C. Human Area: The target group consists of women diagnosed with breast cancer who are preparing to undergo excisional surgery performed by a specialized surgeon.

1-5-3How the Study Sample Was Selected:

The study sample was selected intentionally by interviewing the patients due to our work in the department (as a psychological specialist) before they underwent excisional surgery and during their hospitalization within the previously specified time frame. The sample included 120 cases.

Table 01: Description of the Study Sample:

Variable	Number of individuals	Percentage %	Remarks
Age:			
- 20 to 39 years (Youth)	30	25,00	
- 40 to 60 years (Middle-aged)	47	39,16	
- 60 years and above (Elderly)	43	35,83	
Educational Level:			
- Intermediate			

- Secondary	35	29,16	
- University			
- Other Answers	40	33,33	
- Illiterate	15	12,50	
	30	25,00	
Place of Residence:			
- Inside the state of Biskra	77	64,16	
- Outside the state	43	35,83	
Stages of Illness:			
- First	100	83,33	
- Second	18	15	
- Third	02	1.66	
Economic Level:			
- Acceptable	35	29,16	
- Average	25	20,83	
- Low	60	50	
Marital Status:			
- Single	63	52,50	
- Married	52	43 ,33	
- Divorced	5	4,16	



1-5-4 Study Tools:

This refers to the set of procedures and tools used systematically to collect data and information to achieve the study's objectives (Angress, 2004, p. 184). We utilized the following:

1-5-4-1 Psychological Stress Scale:

Developed by "Ouham Naaman Thabet," used in her 2008 doctoral thesis entitled "Psychological Stress and Its Relationship to the Psychological Adjustment of Women with Early Breast Cancer in Jordan." This scale was relied upon in our study for the following reasons:

- It was applied to the same study sample we are examining (breast cancer patients).
- It accurately measures the level of stress in this group (breast cancer patients), which is one of our objectives.
- The scale is validated by experts with experience in this field. It includes 32 items distributed across 4 dimensions:
 - Psychological Dimension: Describes the psychological aspects experienced by breast cancer patients (anxiety, frustration, depression). It includes 17 items numbered (4, 6, 7, 8, 9, 10, 11, 13, 15, 17, 19, 21, 23, 27, 28, 31, 32).
 - Physical Dimension: Describes the physical aspects resulting from the disease, including 6 items numbered (1, 2, 3, 22, 25, 29).
 - Treatment-Related Dimension: Refers to the symptoms experienced by breast cancer patients during and after treatment (whether surgical, chemotherapy, or radiation), including 3 items numbered (14, 18, 24).

- Socioeconomic Dimension: Includes 6 items numbered (5, 12, 16, 20, 26, 30).
- Responses are provided according to the Likert scale (1 to 5). The scoring method for the scale is as follows:
 - Represents very high stress: Score (5)
 - Represents high stress: Score (4)
 - Represents moderate stress: Score (3)
 - Represents low stress: Score (2)
 - Represents no stress: Score (1)

The scale was applied after the researcher verified the availability of the psychometric properties of the developed scale (validity and reliability).- Validity of the Scale: Measured by presenting it to experts and calculating their agreement on its suitability for measuring what it was designed to assess.

- Self-Validity Measurement: Reliability coefficient $\sqrt{0.9}$ $0.94 = \Rightarrow$ indicating that the scale is valid and reliable.
- Reliability of the Scale: To calculate the reliability of this scale, the researcher applied it to a sample of 30 individuals. After scoring it, the reliability coefficient was calculated using the Gutmann equation.

Table 02: Shows the results of calculating the dimensions of the psychological stress scale by researcher Anam Thabet using the “Gutmann equation.”

Dimensions	Stability factors
Psychological dimension	<i>0.86</i>
Physical dimension	<i>0.66</i>
Therapeutic dimension	<i>0.50</i>
Economic and social dimension	<i>0.80</i>

Thus, the scale is reliable across the four dimensions (psychological, physical, treatment-related, and socioeconomic). The reliability coefficients range from 0.50% for the treatment-related dimension to 0.88% for the psychological dimension. Consequently, all dimensions showed high reliability for the psychological stress scale. The program was applied to calculate the following:

1-5-4-2 Coping Strategies Scale:

This scale was prepared by the researcher in coordination with the supervisor, aiming to identify the main methods and techniques used by breast cancer patients to cope with their psychological stress. This was based on literary, methodological, and scientific frameworks that we reviewed, This scale contains 40 items divided into five domains:

1. Problem-Focused Coping Strategies: This domain includes 8 items numbered as follows: (1, 6, 11, 16, 21, 26, 31, 36).
2. Emotion-Focused Coping Strategies: This domain includes 8 items

numbered as follows: (7, 2, 12, 17, 22, 27, 32, 37).

3. Avoidance and Escape Coping Strategies: This domain includes 8 items numbered as follows: (3, 8, 13, 18, 23, 38, 33).

4. Leisure Activity Coping Strategies: This domain includes 8 items numbered as follows: (4, 9, 14, 19, 24, 29, 34, 39).

5. Support-Seeking Coping Strategies: This domain includes 8 items numbered as follows: (5, 10, 15, 25, 30, 35, 40).

Responses are provided according to the Likert scale (1 to 5), scored as follows:

- I use it very much: Score (5)
- I use it a lot: Score (4)
- I use it sometimes: Score (3)
- I use it a little: Score (2)
- I do not use it: Score (1)

The scale was applied after verifying the psychometric properties, which include:

- Validity of the Scale: Measured by presenting it to experts and calculating their agreement on its appropriateness for measuring what it was designed to assess.
- Reliability of the Scale: Reliability was calculated using the split-half method, with 20 items containing odd numbers and 20 items containing even numbers, followed by applying Pearson's correlation coefficient.



$$\text{Reliability Coefficient}(r_{xx'}) = \frac{N \sum XY - \sum X \sum Y}{\sqrt{(N \sum X^2 - (\sum X)^2)(N \sum Y^2 - (\sum Y)^2)}}$$

The result was $\sqrt{(0.97)}$, indicating high reliability.

1-5-5 Statistical Methods Used in the Study:

In our study, we relied on several statistical tools to achieve our objectives and facilitate the collection, analysis, and tabulation of information and data. We utilized the Statistical Package for the Social Sciences (SPSS) to enter the data obtained in the study and apply the following calculations:

- Calculation of Measures of Central Tendency:
 - Median: To determine the median score that divides the scores obtained by the study sample when applying the psychological stress scale into two sections: the median score (112).
 - The first section represents high scores indicating a high level of stress (112 and above).
 - The second section represents low scores indicating a low level of stress (112 and below).
 - The number of individuals in the first section is 65, while 55 individuals belong to the second section.
 - Mean: To find the average scores obtained by the study sample when applying the scales with their dimensions.
 - Calculation of Percentages: For the sample individuals and the scores obtained from applying the scales and their average scores.
3. Review and Critique of Previous Studies:

2- Theoretical Framework and Definition of Study Terms:

2-1 the Previous Studies:

2-1-1 Study by Taylor et al. (1994) titled “Coping Strategies in Breast Cancer Patients. «The study aimed to understand the relationship between cancer and coping. A coping strategies scale was used with early-stage breast cancer patients, and the results indicated:

- The correlation of avoidance and escape coping with negative effects manifested in physical symptoms among patients.
- In contrast, coping through exclusion, positive appraisal, and self-control had a positive effect on patients.

(Marazqa, 2008-2009, pp. 16, 13)

2-1-2 Study by Louvier et al. (2007) titled “Coping Strategies for Patients with Breast Cancer.”The study aimed to identify the nature of stress and coping strategies used by breast cancer patients after completing chemotherapy and radiation treatment. The sample consisted of 51 women aged between 34 and 77 years. The results showed:

- Breast cancer patients experience psychological stress due to doubt, lack of trust, anxiety, difficulty concentrating, and fear of death. They used acceptance, religious coping, and distraction strategies to cope with their illness. (Mazlouf, 2013-2014, p. 29)

2-1-3 Study by Hanaa Ahmed Shuikh (2007):This study aimed to identify methods for alleviating psychological stress resulting from cancer in Egypt. A comparative descriptive method was used on a sample of 90 individuals. The results indicated:

- There were statistically significant differences in coping methods between patients and non-patients, with non-patients generally using

coping strategies more frequently. The most used strategies included planning, self-development, and positive thinking, while patients tended to use strategies focused on emotions and denial. (Shuikh, 2007)

2-1-4 Study by Susan Ghazal (2008) titled “Coping Strategies Among Cancer Patients During Chemotherapy.” This study aimed to explore the coping strategies used by cancer patients during chemotherapy and their relationship to various variables (age, gender). The sample consisted of 150 patients. The results indicated:- Cancer patients tended to use a variety of positive and negative coping strategies to face their problems.

- Young males leaned towards strategies that suppress competitive activities and self-denial, while females preferred emotion-focused strategies and seeking support. Older adults tended to use only support-seeking strategies. (Ghazal, 2008)

2-1-5 Study by Taylor (1992) titled “Coping Strategies for Problems and Stress Among Cancer Patients.” This study aimed to identify effective coping strategies for problems and stress related to cancer. The study was conducted on a sample of 603 cancer patients experiencing psychological stress, using a list of coping strategies to address their problems. The results showed:- The most significant psychological issues these patients faced included fear of the future (41%), psychological pain (29%), and the effects of the disease on their physical and behavioral states (12%). The main coping strategies identified were: 1) seeking social support, 2) cognitive avoidance and escape, 3) focusing on positive behavior, 4) self-exclusion, and 5) behavioral avoidance.

- Patients who employed coping strategies such as seeking support, positive focus, and self-exclusion experienced less emotional distress

and stress related to cancer, while the opposite was true for those using cognitive and behavioral escape strategies. (Marazqa, 2008, p. 13)

-Comments on Previous Studies:The previous studies provided a solid scientific foundation for building the knowledge framework for our study, as well as for developing the scale used by the researcher. They shared several important similarities with our study, including:

- The study sample (breast cancer patients) (Studies by Taylor and Louvier).
- The connection between this disease and the variable of psychological stress (Studies by Susan Ghazal and Hanaa Shuikh).
- One of our study's objectives focuses on the nature of the methods and approaches adopted by patients in dealing with their stress (Study by Louvier).
- The use of a descriptive analytical correlational method.

However, there are also differences between the previous studies and ours, which can be summarized as follows:

- Some studies considered breast cancer patients as part of the sample related to cancer (Studies by Hanaa Shuikh and Susan Ghazal).
- Previous studies used different scientific terms parallel to coping strategies, such as methods for alleviating stress (Study by Hanaa Shuikh) and coping strategies (Studies by Louvier and Taylor).
- Although some previous studies had similar objectives to ours, they were conducted at different times during chemotherapy and radiation treatment (Studies by Susan Ghazal and Louvier).- Additionally, there were differences in the scales used and the results obtained.



There are several terms and basic concepts that need to be defined and clarified in our study:

2-2 Definition of Study Terms:

2-2-1 Psychological Stress:

2-2-1-1 Definition:

- Terminologically: The scholar Folkman defines it as “the special relationship between the individual and their environment, which the individual perceives as demanding and exceeding their resources to cope with, thus posing a risk to their health.” (Abd El-Azim Hussein, 2006, p. 15).

- Operationally: It refers to the emotional state experienced by breast cancer patients since the discovery of their disease, necessitating a quick decision regarding acceptance of excisional surgery for the tumor in one or both breasts as an initial solution, influenced by various surrounding sources (familial, professional, social, psychological—such as fear of illness and death, depression—and economic sources, etc.) that exceed their coping abilities. This will be measured using the psychological stress scale developed by Ouham Thabet.

2-2-1-2 Components of Stress: The phenomenon of psychological stress consists of three essential elements:

- Stimulus: Referring to the internal and external sources causing stress, which we identify through the five senses.

- Individual: The extent of their appraisal, understanding, and analysis of the stressful situation based on their capabilities (physical, psychological).

- Response: The individual's reactions to the previously perceived stressful situation. (Baghija, 2005-2006, p. 40).

2-2-1-3 Sources of Stress: There are many sources causing psychological stress, which can be divided into:- External Environmental Sources: Such as family, school, work, financial status, system of governance, etc. (Jado, 2014-2015, p. 15).

- Internal Sources: Such as the individual's susceptibility and readiness to accept stress, their perception of the stressful situation, feelings of helplessness, frustration, constant anxiety, and personality type A. (Laghrir, 2009, p. 38).

2-2-2 Psychological Coping Strategies:1-2-2-1 Definition:

- Terminologically: Flokman (1984, p. 129) defines it as "the cognitive and behavioral efforts to confront, control, reduce, or accept internal and external demands that threaten or exceed an individual's resources.

- Operationally: These are the emotional, cognitive, behavioral, and social methods and strategies that breast cancer patients use to cope with various stresses, translated into indicators based on the items in the scale developed by the researcher, aimed at identifying the most commonly used coping strategies.

2-2-3 Breast Cancer Patients:

2-2-3-1 Who Are They? They are women diagnosed with breast cancer, regardless of their social status, age, educational background, or economic level, who have received a positive diagnosis of breast cancer and are preparing to undergo excisional surgery for the tumor. Operationally, they represent the study sample.

2-2-3-2 Stages of Acceptance of the Illness: Researchers have



attempted to categorize the stages breast cancer patients go through in accepting their illness:

- Stage of disbelief or denial of the illness.
- Stage of hysteria, crying, resentment, and anger.
- Stage of acceptance and non-acceptance of the illness (understanding the illness and being convinced of its existence while seeking solutions, or withdrawing and feeling depressed). (Schultz, 1998, p. 77)

2-2-4 Excisional Surgical Procedure: This is a procedure performed by a general surgeon at Bashir Ben Nasser Hospital, contracted in the department of senology and breast diseases, after a preliminary examination and diagnosis of the patient. The surgery is scheduled to take place in a sterile operating room with the assistance of a team of doctors, anesthetists, and qualified nurses, and involves the removal of the tumor located in one or both breasts. This procedure takes more than two hours.

3- Discussion of Study Results:

The first question was phrased as: “What is the level of psychological stress among breast cancer patients preparing for excisional surgery?” Based on the results indicated in the following table:

Table 3: the level of psychological stress among breast cancer patients preparing for excisional surgery

Level of stress	Number of individuals	% percentage	Scores	Mean average
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High	65	54 ,16 %	8898	80 ,10
Low	55	45,83 %	4650	2,803
Total	120	100%	13548	112,90
Sources of Psychological Stress		Scores	Mean average	Remarks
Psychological dimension		7846	65 ,38	
Physical dimension		2023	16,85	
Therapeutic dimension		987	08,22	
Economic and social dimension		2464	20,53	

Shows the levels and sources of psychological stress among the study sample based on the results of applying the psychological stress scale. It was found that most breast cancer patients preparing for excisional surgery have a high level of psychological stress, with 65 cases, representing 54.16%, and a mean score of 80.10. The remaining patients have a low level of psychological stress, totaling 55 cases, or 45.83%, with a mean score of 32.80.

This confirms the validity of the first hypothesis, which states that there is a high level of psychological stress among breast cancer patients preparing for excisional surgery. This hypothesis aligns closely with the results obtained by researcher Wafaa Mazlouf in her study conducted in 2013-2014, titled “Coping Strategies for Psychological Stress in Breast Cancer Patients,” which aimed to

assess the level of psychological stress among cancer patients and to examine similarities and differences in the use of coping strategies based on factors such as age and gender. The findings indicated that there is a high level of stress among cancer patients in all its forms.

The second research question was formulated as follows: What are the most commonly used coping strategies for psychological stress among breast cancer patients preparing for excisional surgery? The results are detailed in the following table:

Table 4: Shows the most commonly used coping strategies among breast cancer patients.

Coping Strategies for Stress	Individuals	%	Mean Average	Scores
Problem-focused strategies	<i>12</i>	<i>10</i>	<i>91,66</i>	<i>1100</i>
Emotion-focused strategies	<i>16</i>	<i>13,33</i>	<i>116,29</i>	<i>2120</i>
Avoidance and escape strategies	<i>15</i>	<i>12,50</i>	<i>106,18</i>	<i>2000</i>
Engaging in various activities	<i>27</i>	<i>22,50</i>	<i>132,50</i>	<i>3140</i>
Seeking support and help	<i>50</i>	<i>41,66</i>	<i>133,33</i>	<i>5309</i>
Total	<i>120</i>	<i>100</i>	<i>—</i>	<i>13669</i>

It was found that most of the study participants use coping strategies focused on seeking support and help, with 50 cases, representing 41.66%, and a mean score of 133.33. This is followed by the use of coping strategies centered on engaging in various activities, with 27 cases, or 22.50%, and a mean score of 132.50. Then come the emotion-focused coping strategies, with 16 cases, or 13.33%, and a mean score of 116.29. Next are the avoidance and escape strategies, with 15 cases, or 12.50%, and a mean score of 106.18. Finally, the problem-solving strategies were used by 12 cases, representing 1%, with a mean score of 91.66. This confirms the validity of the first hypothesis, which states that coping strategies focused on seeking support and help are the most commonly used by breast cancer patients preparing for excisional surgery. This hypothesis aligns with the findings of researcher Jihad Barahmi in her study titled “Psychological Pain and Stress in Cancer Patients” conducted in 2016. This study involved 230 patients and utilized the Depression, Anxiety, and Stress Scale (DASS21). The result indicated that the strategy of seeking social support and help is the most commonly used among these patients

General conclusion: From the results in Table 3, it is clear that most breast cancer patients preparing for excisional surgery have a high level of psychological stress, with 65 cases out of a total of 120, representing 54.16%, and a mean score of 80.10. This stress comes from several sources and dimensions, which are listed in order according to Table 3: 1. Psychological source: total score of 7846, average score of 65.38.

2. Physical source: Total score of 2023, mean score of 16.85.

3. Source related to fear of treatment: Total score of 987, mean score of 8.22.

4. Socioeconomic source: Total score of 2464, mean score of 20.53.



Despite the fact that most participants used coping strategies focused on seeking psychological and material support from others, with a rate of 41.66%, a mean score of 133.33, and 50 patients, this strategy, according to previous results, has not proven effective and has not achieved its goals in helping the study sample to cope with the stress resulting from their impending excisional surgery.

4. Conclusion: This study aimed to identify the most commonly used coping strategies among breast cancer patients preparing for surgery. It was found that coping strategies focused on seeking support and help from others, whether this support is material or moral (such as kind words, comforting them in their struggles, and providing initial solutions to their problems, etc.), as well as turning to God and entrusting their affairs to Him, overwhelmingly occupy the top position as an attempt to achieve some psychological balance. However, this strategy did not help them to achieve this balance and the results of the study showed that it was not effective.

This makes it necessary for them to look for another strategy that has a higher and more sustained level of effectiveness, especially as they are about to undergo chemotherapy and radiotherapy sessions, which require greater strength and patience to endure this type of treatment and its long-term side effects. This highlights the role of clinical psychological intervention to support them throughout their treatment journey, to help them accept their illness and to help those around them understand their struggles and how to deal with them. It is also crucial for health authorities to pay attention to this group by setting up comprehensive care units that include general practitioners, specialists, nurses, psychologists and social workers to provide various treatments.

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Appendices:

A: Information Form:

I. General Information:

1. Age: - From 20 to 39 years (youth) ☐ - From 40 to 59 years (middle age)

- 60 years and above (old age) ☐

2. Educational Level: - Primary ☐ - Intermediate ☐
- Secondary ☐ - University ☐ - Other responses ☐

3. Marital Status:

- Single ☐ - Married ☐ - Divorced ☐ - Widowed ☐

4. Place of Residence:

- Within Biskra Province ☐ - Outside Biskra Province ☐

II. Health Information:

- The disease was diagnosed as: Early
Not early

At what stage of development was the disease diagnosed?

- Stage One ☐ - Stage Two ☐ - Stage Three ☐

III. Family Financial Condition:

1. Are you employed (working woman)? Yes ☐ No ☐

2. Who covers your treatment expenses (medications, laboratory tests, imaging)? - You ☐ ☐ ☐
- Father ☐ - Husband ☐ - Mother ☐ - Other responses ☐

Your family's income level ranges:

- Less than 10,000 DZD ☐ - 70,000 DZD and above ☐ - 35,000 DZD to 50,000 DZD ☐
- 10,000 DZD to 20,000 DZD ☐ - 20,000 DZD to 35,000 DZD ☐ - 50,000 DZD to 70,000 DZD ☐

B: Psychological Stress Scale.

Statements	It causes very high stress	It causes stress	It causes moderate stress.	It causes a little stress	It does not cause stress



I complain of fatigue and low energy					
I suffer from insomnia and sleep disturbances.					
I feel that my memory has weakened since I got sick.					
I complain of anxiety and tension.					
- I feel lonely and isolated from others since I became ill.					
I have lost confidence in myself.					
I get upset easily over trivial matters.					
I feel sadness and depression.					
I feel that I am unable to do what I want.					
I fear the future more than the					

present.					
I feel a loss of security and psychological stability.					
I am bothered by my dependence on others.					
I have lost hope in staying alive.					
I fear the return of the illness.					
I feel guilty.					
I am afraid of losing my family's support.					
The idea of not having children bothers me.					
I am disturbed by the effect of treatment on my appearance.					
I find myself confused and don't know how to act in many situations.					



I suffer from financial difficulties due to treatment.					
I experience a loss of enjoyment in life.					
I have sexual problems.					
I feel that God is punishing me for my mistakes.					
Ongoing medical tests exhaust me.					
I suffer from physical pain.					
I see myself as less effective than others.					
- I have lost my appetite for food.					
I experience bouts of irritability and nervousness.					
I feel shortness of breath.					
I feel that people are					

watching me.					
I have strange fears for which I can't find a reason.					
I am not satisfied with myself.					

C: Stress Coping Strategies Scale

Statement	I use it very often.	I use it a lot.	I use it sometimes	I use it a little.	I do not use it
I have started to communicate with doctors to provide me with information about my health issue.					
- I have become afraid of the future.					
I sleep for long hours now.					
I have come to love exercising.					
I seek advice from close friends.					
I communicate with					



psychologists to help me.					
I have started to get angry over trivial matters.					
I prefer solitude.					
I enjoy relaxation exercises and yoga.					
I talk to everyone about my health issue to relieve my stress.					
I make sure to follow the advice of experienced people when faced with stressful situations.					
I cry a lot now.					
I take sleeping pills to help me sleep.					
I have favorite hobbies that I engage in to distract myself and reduce my stress.					
I attend all family gatherings and events.					
I keep up with all information that helps					

reduce my stress from various sources (TV, internet, books, etc.).					
I blame others for their lack of concern for me.					
I often wish for a miracle to happen.					
I attend scientific medical conferences that discuss my illness.					
I go out with my friends frequently to different places.					
I try to understand my health issue and analyze it in terms of (its sources, effects, solutions) to find a resolution.					
I blame myself a lot.					
My conversations with people have become limited.					
I frequently visit mosques to attend religious lessons.					
I increase my prayers					



and voluntary acts to draw closer to God, the Healer.					
I share my issue on social media (Facebook, Twitter, Instagram, etc.) to find solutions.					
I tend to eat irregular meals more often to relieve my stress.					
I no longer enjoy attending any family gatherings or events.					
I watch more entertaining TV programs to lift my spirits.					
I pray and plead with God, the Healer, more often.					
I try to organize my thoughts and arrange them to find a way to reduce my stress.					
I speak loudly and angrily with others.					

I can't believe that I am sick.					
I engage in various clubs and associations to escape from stress.					
I read verses from the Quran more often.					
I use previous successful methods similar to reduce my stress.					
My words have become hurtful to others.					
I have surrendered to my fate and found no solution.					
I listen to music and singing for entertainment.					
I undergo therapeutic psychological sessions.					

D: SPSS Statistical Processing System



Results of calculating central tendency measures (Mean, Median) for the college grades of the study sample after applying the psychological stress scale.

VAR00001

N	Valide	120
	Manquant	0
Moyenne		112,9000
Médiane		112,0000
Variance		232,494
Somme		13548,00

Results of calculating central tendency measures (Mean, Median) for the dimension scores of the psychological stress scale for the study sample.

		النفسي	الجسدي	العلاج	الاقتصادي
N	Valide	120	120	120	120
	Manquant	0	0	0	0
Moyenne		65,3833	16,8583	8,2250	20,5333
Médiane		68,0000	17,0000	8,0000	21,0000
Somme		7846,00	2023,00	987,00	2464,00

