

Psychological Profile of Workers Living with Cancer in Desert-Based Oil Companies: An Exploratory Analysis and Proposed Conceptual Model

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Abstract

Workers living with cancer in desert-based oil companies face a distinctive combination of health, psychological, occupational, and environmental challenges. This study develops an integrated conceptual model for understanding their psychological profile by examining six interrelated dimensions: psychological empowerment, psychological distress, coping strategies, quality of work life, health-related commitment, and treatment adherence. A descriptive-analytical approach is employed within an exploratory framework to move beyond fragmented interpretations of the cancer experience and provide a more comprehensive account of how affected workers respond to illness within their personal and occupational contexts. The proposed model explains the dynamic relationships among these psychological dimensions and identifies psychological empowerment as a central resource that may enable workers to manage the pressures arising from cancer, demanding working conditions, geographical isolation, and the constraints of the desert environment. Coping strategies are conceptualized as mediating mechanisms through which workers seek to restore psychological equilibrium, maintain occupational functioning, and adapt to the simultaneous demands of employment and medical treatment. The model further proposes that effective coping and greater psychological empowerment may improve quality of work life, reinforce health-related commitment, and promote treatment adherence. By integrating individual, occupational, and environmental factors, the study offers a theoretically grounded framework for future empirical research and for the development of context-sensitive occupational health

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interventions. The proposed model may assist oil companies, healthcare professionals, occupational psychologists, and policymakers in designing coordinated support systems that protect the psychological well-being, health engagement, and sustainable work participation of employees living with cancer in geographically isolated and operationally demanding environments.

Keywords: cancer-affected workers; coping strategies; desert work environment; occupational health psychology; psychological empowerment; quality of work life

Introduction

Cancer is a psychologically significant life event because of its profound effects on both the psychological and physical aspects of the individual. These effects do not stop there; rather, they extend to encompass various social and occupational dimensions. This impact becomes more complex when it concerns a worker affected by cancer in oil companies operating in a desert environment, where the individual faces a difficult equation involving the demands of treatment and occupational pressures. This situation may expose the worker to high levels of stress and emotional disturbances.

From the perspective of health psychology, which is defined as “the study of the relationship between psychological factors and behaviors and health, illness, and healthcare; in other words, researchers in this field study the psychological factors that contribute to illness or to the treatment of diseases” (Ali & Toudret, 2019–2020, p. 01), adaptation to chronic illness can be understood as a dynamic process influenced by a range of psychological factors. These factors shape a psychological profile among workers affected by cancer that is based on five fundamental dimensions: psychological empowerment, psychological distress, quality of work life, coping strategies, and treatment adherence.

Previous studies, to the best of the researcher’s knowledge, have addressed each dimension of this profile separately. For instance, the study by Aissat Meriem, Ait Medjebar, and Ouakli Badia (2020) examined coping strategies for psychological stress and their relationship with psychological hardness among civil protection officers. Similarly, the study by Souad Saadaoui and Ahlam Zeribi (2024) investigated the quality of working life among employees of the cement company (SCIBS). In addition, the study by Mechi Kharbouch and Djabair Bahri (2021) explored the activation of psychological empowerment as a strategy for promoting behavior. These studies provided an opportunity for further research aimed at addressing this knowledge gap. Accordingly, our study seeks to fill this research gap by proposing an integrative theoretical model encompassing these five dimensions of the psychological profile and providing a framework for understanding the unique profile of workers with cancer in light of the interaction among a set of psychological variables.

Accordingly, the research problem can be formulated through the following main question:

“How does psychological stress resulting from illness, work, and the desert environment affect treatment adherence among workers with cancer in oil companies? What role do psychological empowerment, quality of working life, and coping strategies play in moderating or mediating this relationship?”

First: Previous Studies

Previous studies constitute an important resource that assists researchers in making an appropriate choice of research topic. They help identify the various dimensions of the subject under investigation and contribute to developing an understanding of the research difficulties and problems that may be encountered, as well as ways of overcoming them. They also provide researchers with numerous sources and relevant information concerning the research topic that might otherwise remain unknown to them. Furthermore, one of the principal purposes of reviewing previous studies is to identify research gaps that may provide opportunities for further

investigation and to keep abreast of recent scientific developments and advances. Among the most important studies reviewed in the present research are the following:

1. Arab Studies

1.1. The First Study:

Study Title:	Authors	Study Sample	Research Methodology	Place and Time of the Study:	Instruments Used in the Study:	Study Results:
Health Compliance and Quality of Life among a Sample of Patients with Thyroid Diseases	Abdelsamad Houria – Dahman Lobna	The study included a sample of 126 patients.	The researchers employed the descriptive-correlational method and the causal-comparative method.	The study was conducted in Batna Province during the period extending from 2019 to 2020.	Health Compliance Questionnaire (developed by the researcher). World Health Organization Quality of Life – Brief Version (WHOQOL-BREF).	The study yielded the following results: A low level of health compliance was found. There was a statistically significant correlation between health compliance and quality of life. There was a statistically significant correlation in health compliance among the participants according to age and duration of illness. There were statistically significant differences in the participants' quality of life according to gender and type of disease.

						There were no statistically significant differences in the participants' quality of life according to age and duration of illness
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2.1. Second Study:

Study Title	Author(s)	Place and Time of the Study	Study Sample	Method Used in the Study	Research Instruments	Study Results
Quality of Work Life among Workers of the SCIBS Cement Company	Souad Saadaoui and Ahlem Zeribi	Ain Temouchent, Algeria; the study was conducted during the period from February 2, 2024, to June 16, 2024	The study sample consisted of 30 workers	The study adopted the descriptive-analytical method	The study relied on a questionnaire on Quality of Work Life, developed by the two researchers	The study found a high level of Quality of Work Life, with no statistically significant differences in Quality of Work Life attributable to gender.

3.1. Third Study:

Study Title	Author(s)	Place the Study	Time of the Study	Study Method	Research Instruments	Study Results
Activating the Psychological Empowerment Approach as a Strategy for Promoting Positive Behavior in the Organization	Mechi Kherbouche and Djabair Bahri	University of Setif 2, Algeria;	Volume 15, Issue 02, 2021	Analytical approach	No research instruments were used because the study was a theoretical and analytical study	The study highlighted the importance of psychological empowerment

						ment and its organizational effectiveness.
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4.1. Fourth Study:

Study Title	Study Author(s)	Place and Time of the Study	Study Sample	Method Used in the Study	Study Results
Psychological Stress-Coping Strategies and Their Relationship with Hardiness among a Sample of Civil Protection Officers	Maryam Aïssat – Badia Aït Majber Wakli	The study was conducted in the Province of Bouira during the period from 2019 to 2020.	The study sample consisted of 102 Civil Protection officers.	The descriptive correlational method was adopted.	- There is a correlational relationship between stress-coping strategies and psychological hardiness among the sample members. - There is a positive correlation between problem-focused coping strategies and social support, on the one hand, and the dimensions of psychological hardiness, on the other. - There is an inverse correlation between emotion-focused coping strategies and the

					dimensions of psychological hardiness. - The most frequently used strategies by the sample members are problem-focused coping and social support. Study Instruments (for the Fourth Study): The study relied on two scales: Stress Coping Strategies Scale by Mazloun Wafaa (2014). Psychological Hardiness Scale by Mokhaimer (2002).
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2. Foreign Studies:

1.2. The First Study:

Study Title	Study Author	Place of the Study	Time of the Study	Objective of the Study	Study Sample	Study Methodology	Study Instruments	Study Results
Lin-Ling Pan et al.	Latent Profile Analysis of Psychol	China (Wenzhou Medical	2024	To identify psychological profiles among university	University students	The study adopted a descriptive correlatio	The study used the Eysenck Personality Questionn	The study identified several distinct psychologi

	ogical Functio ning	Unive rsity + Wenz hou Hospi tal)		students using Latent Profile Analysis (LPA).		nal approach using Latent Profile Analysis (LPA).	aire and psychologi cal scales. The findings revealed the existence of several distinct psychologi cal profiles, with each profile being associated with different levels of anxiety and psychologi cal adjustment .	cal profiles, each associated with different levels of anxiety and psychologi cal adjustment . Study Instrumen ts The study employed the Eysenck Personality Questionn aire along with a number of psychologi cal scales. Study Methodolo gy The study adopted a descriptive correlation al methodolo gy, employing Latent Profile Analysis (LPA). Study Sample The sample consisted of university students.
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								Objective of the Study The study aimed to identify psychological profiles among university students using Latent Profile Analysis (LPA). Place and Time of the Study The study was conducted in 2024 in China, at Wenzhou Medical University and Wenzhou Hospital.
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2.2. The Second Study:

Study Title	Study Authors	Study Location	Study Date	Study Objective	Study Sample	Study Methodology	Study Instruments	Study Results
Using Temperament and Character Dimensions (TCI) to Analyze Personality Profiles in	Anna Vespa et al.	Italy (National Institute for Research and Care of Aging – INRCA).	2024 .	To identify psychological profiles among cancer patients using temperament and character dimensions .	The study sample consisted of 638 cancer patients (breast, colon, and lung cancer).	The study adopted a descriptive approach, using cluster analysis to identify persona	The study used the following instrument: TCI (Temperament and Character Inventory).	The study concluded that there were different psychological profiles among patients. Some

Cancer Patients						lity profiles		profiles were associated with poorer psychological adjustment to illness, while personality played an important role in adaptation to the disease.
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3. Review of Foreign Studies

3.1. Arab Studies

Topic	Methodology	Sample	Objective	Study Instruments	Study Findings
The four Arab studies addressed each dimension separately or combined two dimensions, such as organizational commitment, psychological hardiness, quality of life, quality of work life, psychological empowerment, and coping strategies, which differed from one another as well as from	These studies predominantly adopted the descriptive method, with only one study differing by employing an analytical approach.	The studies differed in sample size, with each study involving a specific number of participants.	The studies also differed in their objectives, with each study pursuing a specific aim: 1) measuring the level of quality of work life and identifying gender differences; 2) examining coping strategies and their relationship with psychological hardiness; and 3) determining	The studies differed in the instruments used. Some relied on standardized scales, such as the Coping Strategies Scale and the Psychological Hardiness Scale, while others used the Illness Commitment Questionnaire, the Quality of Life Scale, and the Quality of Work Life Questionnaire.	The studies also differed in their findings depending on the instruments, samples, and methodologies employed. They reported a low level of illness commitment and a statistically significant correlational relationship between quality of life and illness commitment. They also revealed a

the current study.			the level of illness commitment among patients with endocrine disorders.		high level of quality of work life. Some studies highlighted the importance of psychological empowerment and its organizational effectiveness. Furthermore, they found a correlational relationship between stress-coping strategies and psychological hardness. The studies also differed in their findings according to the instruments used, the characteristics and size of the samples, and the methodologies adopted. The findings indicated a low level of illness commitment and a statistically significant correlation between quality of life and illness commitment. They also revealed a high level of quality of work life,
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					while some studies demonstrated the importance of psychological empowerment and its organizational effectiveness. In addition, a significant relationship was found between coping strategies and psychological hardiness. With regard to the research instruments, the studies varied considerably. Some relied on psychological scales, including the Coping Strategies Scale and the Psychological Hardiness Scale, whereas others employed questionnaires, such as the Illness Commitment Questionnaire and the Quality of Work Life Questionnaire, in addition to the Quality of Life Scale. The studies also differed
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					in terms of their objectives. Each study focused on a specific objective, including: Measuring the level of quality of work life and examining differences according to gender. Investigating coping strategies and their relationship with psychological hardness. Determining the level of illness commitment among patients with endocrine disorders. The studies also differed in terms of sample size, as each study involved a different number of participants. Regarding methodology, these studies were characterized predominantly by the use of the descriptive approach, with only one study
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					adopting an analytical approach. Overall, the four Arab studies addressed the dimensions either separately or in combination, including illness commitment, psychological hardiness, quality of life, quality of work life, psychological empowerment , and coping strategies. These dimensions and their combinations differed from one study to another and also differed from those examined in the current study. Psychological profiles among cancer patients and psychological profiles among university students. The studies differed in
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					terms of the samples selected. The first study relied on a sample of cancer patients, whereas the second involved university students. The studies agreed in adopting a descriptive methodology, but differed in its application. The first study employed a descriptive analytical cluster methodology, whereas the second adopted a descriptive correlational methodology. The foreign studies addressed latent profiles of psychological functioning; however, they differed in their analyses, as each study examined a particular aspect, such as: Analyzing the latent functions of psychological profiles and
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The results varied according to the type of study. Both studies concluded that cancer patients exhibited different psychological profiles, some of which were associated with poor adjustment to the disease. Several psychological profiles were identified, with each profile being associated with a different level of anxiety and adjustment.	The studies agreed in terms of using psychological assessment scales, but differed in the type of scale employed. The first study used the Temperament and Character Inventory (TCI), whereas the second used the Eysenck Personality	The studies agreed in identifying the objective, namely, analyzing psychological profiles, but differed in their interpretation of these profiles.	The studies agreed in identifying the objective, namely, analyzing psychological profiles, but differed in their interpretation of these profiles.	Psychological profiles among cancer patients and psychological profiles among university students.	employing personality dimensions in the analysis of lexical expressions among cancer patients.
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The studies agreed that personality plays an important role in psychological adjustment.	Questionnaire (EPQ).				
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4. Position of the Present Study within Previous Research

The present study is consistent with previous literature in its focus on the psychological profile. However, previous studies differed in that they examined each dimension separately. The present study is distinguished by examining the psychological profile as a whole and by relying on its five dimensions to develop an integrated developmental model based on health psychology models, within the framework of an exploratory analytical study.

Second: Theoretical Background of the Developmental Model of the Psychological Profile

This model is based on a set of theories and models from health psychology that explain the relationship between psychological, behavioral, and health-related factors among workers with cancer in the distinctive and specific context of the desert environment.

1. Composite Variables (SCIBS)

• Psychological Stress:

The theoretical models underlying this dimension are Selye's model and Lazarus's transactional model. Hans Selye argues that stress occurs in three stages: alarm, resistance, and exhaustion. This model explains the deterioration of health status through the physiological persistence of stress across these stages, ultimately leading to immune suppression, disease progression, and potentially death.

In contrast, Lazarus and Folkman argue that the cognitive appraisal of the stressful event and the individual's perception of their ability to cope are two fundamental factors in the case of a worker with cancer.

Illness + desert working conditions = compounded stressors; consequently, cognitive appraisal determines the intensity of the psychological impact.

- Coping Strategies (Folkman, 2004) :

The theoretical model underlying this dimension is the Lazarus and Folkman model of coping. Within this model, coping represents a mediating variable between stressors and outcomes (health and occupational outcomes). Avoidant coping strategies contribute to the deterioration of both physical health and psychological well-being (Carver, 2011).

- Quality of Working Life:

This dimension is explained by both the Quality of Working Life model and the Work–Career Balance model. Similar to the psychological profile, this dimension focuses on job satisfaction, working conditions and the nature of work, as well as the compatibility between health status and job demands, particularly in the desert environment.

This is because isolation, climatic conditions, work-related stress, and chronic illness (cancer) can affect the quality of working life (Sirgy, 2017)

- Psychological Empowerment

The theoretical model explaining this dimension is Spreitzer's Psychological Empowerment Theory. Psychological empowerment enhances an individual's sense of control over life despite illness and reduces psychological helplessness. It also improves adaptation to work and the natural conditions of the workplace. Furthermore, it functions as a protective factor within the proposed developmental model (Seibert, 2011)

- Medical Adherence

This dimension is explained according to the Health Belief Model (HBM) and the concept of medical adherence. It is based on the individual's perceived severity of the illness, perceived benefits of treatment, perceived difficulties and barriers, and self-efficacy. A health-adherent individual follows the prescribed treatment, maintains a healthy lifestyle, and monitors their health status by attending medical appointments and taking medications on time (WHO, 2020).

The developmental model is based on the Transactional Theory of Stress and Coping (Lazarus & Folkman, 1984), which emphasizes the role of cognitive appraisal in determining responses to stressors. It also draws upon Selye's Theory of Stress to explain the physiological effects of stress. In addition, it incorporates Rosenstock's Health Belief Model (1966) to explain medical adherence, Spreitzer's Theory of Psychological Empowerment (1995), and Walton's Model of Quality of Working Life (1973). All these theoretical perspectives are integrated within the broader framework of Engel's Biopsychosocial Model (1977).

2. Quality of Working Life (Recent International Reports, 2025–2026)

Cancer patients are less likely to report good health compared with individuals without cancer.

A significant reduction in employment opportunities has been observed.

Quality of life is influenced by psychological and social factors.

3. The Impact of Illness on Occupational Performance and Quality of Life

Illness directly affects occupational performance and quality of life.

Furthermore, the biopsychosocial model explains the psychological profile of workers with cancer in oil companies operating in desert environments within a holistic framework. This perspective emphasizes that health status is not determined solely by biological factors, but rather results from a complex interaction among three major dimensions:

Biological dimension: illness, symptoms, and treatment.

Psychological dimension: anxiety, adaptation, cognitive appraisal, and psychological empowerment.

- Social Dimension (Social Support, Work Environment, and Social Relationships)

This model posits that the experience of illness, particularly chronic diseases such as cancer, is influenced by how individuals perceive their illness and the coping strategies they adopt, in addition to the social and occupational context in which they are situated, especially when the work environment has distinctive characteristics, such as the desert environment. Accordingly, the psychological profile, within this model, cannot be analyzed independently of these interrelated factors; rather, it should be understood from a comprehensive and integrative perspective (Engel, G. L., 1977, pp. 129–131).

Third: Presentation of the Proposed Developmental Model of the Psychological Profile of Cancer-Affected Workers in Oil Companies Operating in Desert Environments

In an attempt to understand the psychological profile of workers with cancer in oil companies operating in desert environments, the present study proposes an integrative conceptual model based on a dynamic perspective. This perspective assumes that the psychological experience of such workers cannot be reduced to a single dimension; rather, it results from a complex interaction among a set of psychological, occupational, and health-related dimensions. The proposed model is presented as follows:

1. Stress Variables (Psychological Stress)

Within this context, psychological stress is considered one of the most significant influencing variables and constitutes the primary input of the model. Workers with cancer face dual challenges arising from the demands of the illness on the one hand and occupational pressures on the other: Health-related stressors: treatment, pain, fear of disease prognosis, and fear of losing or being forced to leave their jobs.

Occupational stressors: the oil-industry work environment, physical exertion, and occupational hazards, all of which may affect psychological balance and emotional stability.

2. Coping Strategies (Mediating Variables)

The effect of psychological stress is not always direct; rather, it is largely determined by the coping strategies adopted by the individual, which play a mediating role in the relationship between psychological stress and the other dimensions:

Problem-focused coping.

Emotion-focused coping.

- Support-oriented coping.

The more effective the coping strategies are, the lower the impact of stress.

3. Psychological Empowerment (Internal Reinforcement Variables)

Psychological empowerment contributes to strengthening the individual's internal resources by providing them with a sense of competence, control, and meaning at work:

- Sense of competence.
- Sense of control.
- Sense of meaning at work.

These variables enhance the worker's ability to adapt to the work environment despite their health condition (illness).

4. Quality of Working Life (Environmental Variables)

Quality of working life plays a pivotal role as a supportive environmental factor when the organization provides appropriate and supportive working conditions that take into account the worker's health condition. This, in turn, has a positive impact on their psychological well-being and ability to adapt.

- Administrative support.
- Favorable working conditions.
- Work–life balance.

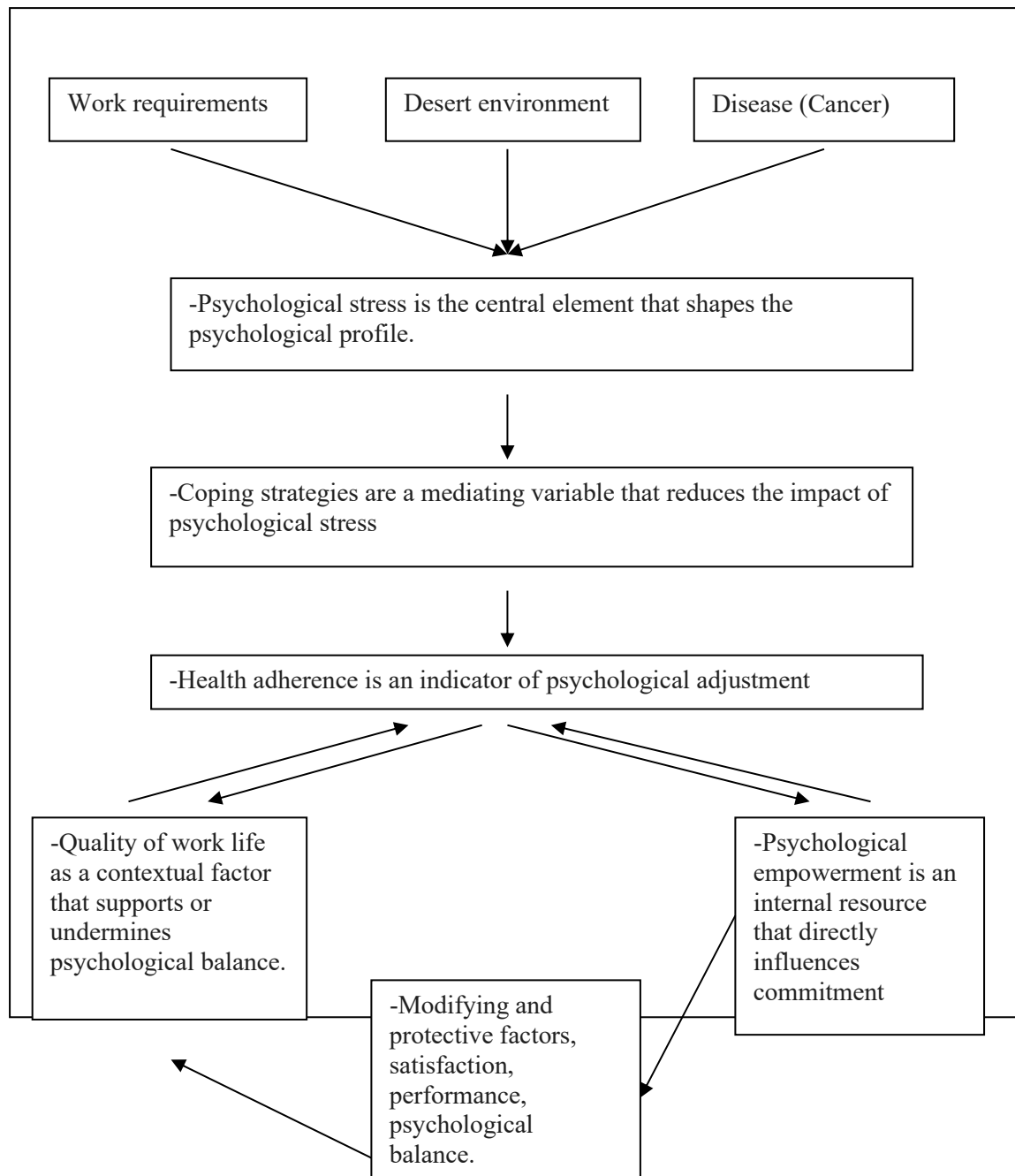
This means that a supportive work environment reduces psychological stress and enhances psychological empowerment among workers diagnosed with cancer.

5. Health Commitment (Behavioral Outcomes)

In light of the interaction among the aforementioned dimensions, health commitment emerges as the ultimate outcome of this psychological framework. The final outcomes of the proposed model are represented as follows:

- Adherence to treatment.
- Acceptance of the illness.
- Adoption of a healthy lifestyle.
- Continuing to work.

6. Diagram of the Proposed Theoretical Model:



7. Importance of the Model in the Desert Environment

This model contributes to addressing a knowledge gap in the scientific literature by focusing on a professional group living under particular conditions that have not received sufficient attention in health psychology research, particularly within Arab and Algerian contexts. It also provides a framework that can be relied upon in designing targeted psychological and health intervention programs aimed at improving quality of life and enhancing treatment adherence among workers living with chronic diseases.

Accordingly, the significance of this model is not limited to the theoretical dimension; rather, it extends to the practical dimension, as it may contribute to guiding health and occupational policies toward adopting comprehensive approaches that take into account the interaction between psychological and environmental factors, thereby ensuring the improvement of workers' psychological and physical health in desert environments.

Fourth: Conclusion

In light of the foregoing, it becomes evident that the psychological profile of a worker with cancer employed in oil companies operating in a desert environment cannot be understood independently of the integrative nature governing the interaction among its various dimensions. This study has demonstrated that psychological empowerment, psychological stress, coping strategies, quality of working life, and treatment adherence constitute an interconnected system that dynamically influences the worker's experience of illness and work simultaneously.

From this perspective, the proposed conceptual model was developed to frame this interaction within a holistic perspective that goes beyond a fragmented approach. It highlights how occupational and health-related stressors interact with psychological resources, ultimately affecting the level of adaptation and health-related adherence. The model also opens the way for a deeper understanding of the specific characteristics of work in desert environments and the additional psychological and occupational challenges associated with them. Accordingly, the significance of this approach is not confined to the theoretical dimension; it also provides a foundation upon which targeted psychological and occupational interventions can be developed, taking into consideration the characteristics of this population and the specificities of its context. Furthermore, this model constitutes an initial framework for future studies that may seek to empirically test and further develop it in accordance with real-world conditions.

Ultimately, the integrative approach adopted in this study represents a step toward developing a deeper and more humane understanding of the psychological profile of workers with cancer, thereby enhancing opportunities to provide them with psychological and occupational support in confronting this complex challenge.

Declarations

Ethics Approval: Not applicable, as this is a theoretical and exploratory study involving no human participants.

Informed Consent: Not applicable.

Conflict of Interest: The authors declare no conflicts of interest.

Funding: This research received no external funding.

Author Contributions: Both authors contributed to the conceptualization, analysis, drafting, and revision of the manuscript.

Data Availability: No datasets were generated or analyzed in this study.

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