Review Article

Psychology as Support for Medicine on Lung Cancer: A Literature Review

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Abstract

This study addresses the intersection between lung cancer and psychology, highlighting the importance of emotional stability in coping with the disease. We address the psychological implications at individual and family levels by considering the affected age group, predominantly between 50 and 75. Psychology emerges as a fundamental tool aiming to promote quality of life and mental well-being in the context of lung cancer diagnosis and treatment.

Additionally, we address the stigmas associated with the diagnosis, exploring how a lack of information contributes to misperceptions. The importance of family support is highlighted, highlighting the crucial role of the family in promoting the patient's mental health.

Keywords: lung cancer; psychology; support and emotional support; family, generation x

Introduction

Psychology is currently in a growth phase, although it has yet to fully achieve recognition comparable to other sciences, such as medicine. However, it plays a significant role in the human experience. Scientific advances in this area have revoked Cartesian dualism, demonstrating that the mind and body act interconnectedly, exerting direct and indirect influence on each other (Levy, L 2010).

Diagnoses previously addressed exclusively from a medical point of view began to be considered by psychology, not through drug interventions, but by offering emotional support to face the condition (Deitas & Pollo, 2022). This approach is particularly relevant when chronic diseases require continuous adaptation throughout life. It is especially evident in more severe cases, such as lung cancer, which not only raises uncertainty about the future, but also poses significant challenges to existence itself, both for the affected individual and those around them (Sofia & Grilo, 2023).

Currently, through the media and other sources, it is possible to access statistical data on cancer, observing its rapid evolution until the often fatal outcome. However, we recognize that medicine does not act in isolation in this scenario. Hospitals and health centers increasingly rely on multidisciplinary teams, integrating doctors, nurses, healthcare professionals, and mental health specialists, such as psychologists and psychiatrists, who adopt a biopsychosocial approach (Deitas & Pollo, 2022). This perspective recognizes that all problems have biological, psychological and social foundations.

Lung cancer emerges as one of the leading causes of death globally (Global Cancer Observatory, 2020; Dumitrascu et al., 2023), requiring an in-depth

understanding of its evolution and associated triggering factors. In addition to analyzing demographic data to understand its impact, it is crucial to explore the psychological and emotional side that the diagnosis can have on the life of the affected individual, as well as on family dynamics and the system as a whole (Grilo, 2012; Deitas & Pollo, 2022; Dumitrascu et al., 2023).

Method:

The methodology adopted for this study began with an extensive literature review conducted through online searches on PubMed, Google Scholar, and B-On platforms, covering 22 articles. The inclusion criteria were based on the presence of the intended topic in the title or keywords, followed by an analysis of the abstract to assess its relevance for the development of the work. The selection prioritized articles from the last 20 years (2003-2023), conducting research in both English and Portuguese.

Statistical data from reliable sources were incorporated, including the World Health Organization (WHO), the Institute for Health Metrics and Evaluation, the Global Cancer Observatory, and the Portuguese League Against Cancer.

The exclusion criteria were strict, eliminating articles outside the established period, those lacking relevant information about the intersection between lung cancer and psychology, and those that did not make the full text available.

The literature search was conducted using keywords in English, such as "psychological impact of lung cancer," "emotions and feelings arising from a lung cancer diagnosis," "quality of life in cancer patients," "psychological changes in lung cancer," and "family and social support in coping with lung cancer," with a parallel approach in Portuguese. This meticulous process ensured a robust and comprehensive basis for analyzing and discussing the proposed topic.

Lung cancer:

According to the Portuguese League Against Cancer, lung cancer is among the most prevalent neoplasms, being categorized into two distinct groups: non-small cell lung cancer (NSCLC) and small cell lung cancer (SCLC). The prevalence of SCLC is observed in approximately 20% of lung cancer cases. At the same time, the more common NSCLC is characterized by slower growth and dissemination, showing less aggressiveness in approximately 70-80% of cases (European Lung Foundation | ELF | Homepage, n.d.). This categorization encompasses three distinct subtypes: squamous cell carcinoma, adenocarcinoma and large cell lung cancer. In contrast, small-cell lung cancer, which is less common, exhibits rapid growth and a greater propensity to metastasize to other organs (Liga et al. o Cancro).

The leading causes of this type of cancer are associated with tobacco consumption, accounting for more than 80% of cases (European Lung Foundation | ELF | Homepage, n.d.). However, the probability of developing a tumor is influenced by the age at which smoking began, the duration of the habit, the daily number of cigarettes, and the depth of inhalation (Liga et al. o Cancro).

Furthermore, cases of passive smokers, that is, individuals constantly exposed to tobacco smoke, can also develop lung cancer. Environmental pollution is another relevant factor, triggering the diagnosis, primarily through inhalation of combustion fumes, exposure to radon, asbestos, arsenic and industrial metals such as chromium (Liga et al. o Cancro; (European Lung Foundation | ELF | Homepage, n.d.).

Early identification plays a crucial role, requiring careful observation of clinical signs, such as persistent cough, chest pain, hemoptysis, dyspnea, asthmatic conditions, hoarseness, pneumonic manifestations, bronchitis, facial and neck edema, weight loss, and asthenia (Portuguese League Against Cancer). Diagnosis usually requires the intervention of procedures such as chest radiography (or X-ray) or sputum cytology, with biopsy playing a crucial role in analyzing lung tissue and confirming the presence of cancer (Liga et al.). On the other hand, the prognosis is generally not optimistic, given the tendency for late diagnoses, resulting in a reduced probability of cure. The standard survival rate is five years, although it is essential to consider the individual variability of each case, as some patients may have a more limited survival time (European Lung Foundation | ELF | Homepage, n.d.).

In the early stages of the disease, the primary treatment involves removal through surgery; however, when this is not possible, treatment is usually done through chemotherapy and radiotherapy. Chemotherapy aims to cure cancer through drug interventions, while radiotherapy uses high-energy X-rays to eliminate cancer cells. Although they are different approaches, both have common side effects, such as nausea, vomiting, fatigue and hair loss (Cancro, n.d.; European et al. | ELF | Homepage, n.d.). On the other hand, when the disease is already at a very advanced stage, and cancer has already metastasized, the "objective is to prolong survival, alleviate symptoms and improve quality of life through the use of chemotherapy and immunotherapy" (World Health Organization, 2023).

Epidemiology of Lung Cancer in the World and Portugal:

As indicated by the World Health Organization (WHO), lung cancer represents the leading cause of mortality on a global scale (Dumitrascu et al., 2023), leading to high death rates in both men and women (World Health Organization, 2023). According to data from GLOBOCAN 2020, this type of cancer occupies the highest prevalence among men, with an incidence of 31.5% and a mortality rate of 25.9% per 100,000 inhabitants. In the female population, it ranks third in the table as the most prevalent cancer, only surpassed by breast and colorectal cancer, with an incidence rate of 14.6% and a mortality rate of 11.2% per 100,000. Inhabitants (Global Cancer Observatory, 2020).

It is essential to highlight that there is a predominant incidence of lung cancer cases north of the equator, with notable emphasis on the United States of America (USA), Europe and the Asian continent, although some regions to the south also have a considerable incidence among inhabitants (Global Cancer Observatory, 2020). In this context, the mortality rate follows incidence patterns, highlighting regions such as Russia, Oceania and the whole of Europe, which did not show such a high incidence

of cases (Global Cancer Observatory, 2020).

Considering these data, the literature has shown a higher prevalence of cases in highly industrialized countries, which justifies the incidence in the abovementioned nations. Furthermore, it is highlighted that, increasingly, due to these countries being more developed, there is greater availability of socioeconomic resources and easier exposure and access to risk factors, such as tobacco (European Lung Foundation | ELF | Homepage, n.d.). Smoking, being the main predisposing factor to lung cancer, has been increasingly consumed by females, resulting in an increase in cases among women compared to previous years, in which men were the primary tobacco consumers (FGM 2000, 198. Lung Neoplasia).

In Portugal, based on the most recent data from 2020, it is observed that lung cancer occupies the third position in prevalence among men, recording an incidence of 35.4% and a mortality rate of 31.4% for every 100,000 inhabitants. This classification places lung cancer in a lower position only than prostate and colorectal cancer. Regarding females, this type of cancer ranks fourth in prevalence, with an incidence of 10.8% and a mortality rate of 8% per 100,000 inhabitants. In this context, lung cancer is surpassed in prevalence by breast, colorectal and thyroid cancers. (Global Cancer Observatory, 2020). It is essential to highlight that, compared to other European countries, Portugal has the lowest incidence of lung cancer cases, occupying the thirty-fifth position (35th) in a group of 40 countries (Global Cancer Observatory, 2020).

It is important to note that Portugal - compared to other countries highlighted by the Cancer Observatory, with high lung cancer incidence rates - has a numerically smaller population. It is worrying to note that, instead of decreasing, the current trend is for an increase in the daily number of cases, even in the face of significant technological advances in medical and scientific areas. It is expected that, with the progress of these sciences, there will be a reduction in cases, as recommended by the objectives of the National Health Plan until 2030, which aim to improve the population's quality of life and reduce the daily and annual incidence of cancer deaths in general (National Health Plan).

Due to the recognition of the significant global repercussions - and considering the data above - the World Health Organization (WHO) also adopted multiple initiatives to deal with this disease. The central purpose is to expand smoking control, promote cancer prevention and early detection, and improve access to high-quality treatments and care (World Health Organization, 2023).

Psychology as support for medicine and the patient:

In addition to the conventional medical approach, it is currently recognized that psychological support plays an essential role in various multidisciplinary teams present in hospital environments and health centers (Deitas & Pollo, 2022). Historically dominated by medical and nursing professionals, these teams have evolved to include psychological professionals. In response to this change, the World Health Organization (WHO) adopted the concept of health, starting to consider health problems from a biopsychosocial perspective. In this approach, health is defined as a "state of complete physical, mental and social well-being and not merely the absence of disease" (World Health Organization, 2023; Deitas & Pollo, 2022). After this recognition of psychology as a science capable of contributing to improving the quality of life of patients diagnosed with lung cancer, we now understand that the impact of this diagnosis, given the magnitude of the disease, is extraordinarily challenging, both for the patient and for the family. Even if the family is not directly affected by the disease, it is impacted by the need to adapt to the situation and the uncertainty associated with the diagnosis ((Murillo, 2006; Deitas & Pollo, 2022). In this context, the family plays a crucial and of significant importance in the life of the patient diagnosed with lung cancer (Deitas & Pollo, 2022; Silva & Rolim, 2021). Emotional support from friends, colleagues and individuals considered as part of the family, even if there are no blood ties, reveals that It is incredibly vital for the patient to realize that they are not facing this new stage alone and that they will always have someone to lean on (Dumitrascu et al., 2023; Grilo, 2012).

Furthermore, we understand that the diagnosis of a disease, such as cancer, regardless of the type, causes deep sorrow and guilt in the patient, in addition to feelings of uncertainty about the future and cure, about death and survival, leading to feeling different from others. Questions often arise, such as "Why me?", "what did I do to deserve this?" and "Will I be condemned to death?" (Grilo, 2012; Silva & Rolim, 2021). The literature points out that support from peers and family has a very positive impact, not directly on healing, as this does not depend on desire or support, but on an emotional level, consequently enabling greater adherence to treatments and a greater sense of hope that the disease will be overcome (Querido, 2012).

Psycho-oncology is an "interdisciplinary science that crosses the areas of psychology, medicine, psychiatry and sociology" (Ordem et al.), aiming to provide psychological support to individuals faced with a cancer diagnosis, to restructure them emotionally and reintegrate them into society (Silva & Rolim, 2021; Zhang et al., 2023). Given the alarming statistics of annual diagnoses of lung cancer and the shocking number of deaths associated with this disease on a global scale (Global Cancer Observatory, 2020), psychology must make decisive progress in this field in order to serve a significant contingent of people who need psychological support to preserve their mental health and quality of life in the face of the overwhelming impact of a diagnosis of this nature (Murillo, 2006). Such a diagnosis raises uncertainty about the individual's survival and profoundly challenges their meaning in life (Silva & Rolim, 2021; Deitas & Pollo, 2022).

Lung carcinoma generates diagnoses of anxiety and, sometimes, depressive states (Silva & Rolim, 2021) due to the direct impact it has on the individual's body, resulting in damage that, consequently, leads to the loss of essential functions for activities. A characteristic intrinsically associated with lung cancer, a vital organ of the respiratory system, is the manifestation of shortness of breath or decreased respiratory capacity (Liga et al. o Cancro). Although this ramification may not become immediately evident, it is imperative to highlight that, according to Psychology, any reduction or loss of respiratory capacity, regardless of its magnitude, requires adaptation. Additionally, the diagnosis

requires readjustment and adaptation to the new situation and the presence of something new (Basso & Wainer, 2011; Zhang et al., 2023).

Generation X and the impact of their ideals on tackling lung cancer:

According to the 2019 National Oncological Registry (RON-2019), the age group most commonly affected by the diagnosis of lung cancer in Portugal is between 50 and 75 years old, with the majority of cases occurring between 50 and 66 years old, characterizing this population as part of generation X (Veloso et al., 2016).

Various sources state that generations are influenced by historical events that shape their values and worldviews. In the context of Generation X, two particular characteristics that significantly impact several domains stand out. First, many members of this generation were raised by parents with extensive professional commitments, resulting in a family dynamic in which older siblings assumed caregiving roles from a young age (Veloso et al., 2016). Secondly, in the professional sphere, generation ensures job retention (Veloso et al., 2016).

The influence of these characteristics becomes evident when we consider the diagnosis of lung cancer in this specific age group. The literature suggests that generation, the family is impacted by intense feelings of sadness ((Murillo, 2006; Deitas & Pollo, 2022; Silva & Rolim, 2021), especially for the patient who sees his family life as an achievement and who now faces the possibility of destruction by a potentially fatal disease.

This psychological impact can trigger feelings of anguish, depression and anxiety, as well as internal and external conflicts (Murillo, 2006; Silva & Rolim, 2021); (Wang et al., 2023). The change of roles, from caregiver to dependent on children, can generate feelings of weakness and shame as the patient perceives a change in the family dynamics they were building. This scenario can result in emotional and mental conflicts, increasing the challenge faced by these patients during treatment and living with the disease (Grilo, 2012).

It implies considering the dynamics between parents and children and recognizing the existence of several family subsystems, each with specific roles and dynamics. In the marital context, the relationship between husband and wife is distinguished by different interactions, being particularly susceptible to both physical and psychological repercussions caused by the disease (Silva & Rolim, 2021). Therefore, it is crucial to consider the preservation of physical health and mental health, recognizing that both aspects play a significant role in the effective functioning of the family and marital relationship (Grilo, 2012). Maintaining emotional stability helps the patient to cope with the disease without being overwhelmed by anxiety and other feelings arising from uncertainty about the future, allowing them to live with the best quality possible given the circumstances (Grilo, 2012).

In the professional sphere, the need for a feeling of usefulness in the work environment is characteristic of the generation, resulting in competition to stand out from others, aiming to ensure the maintenance of their positions and longevity in employment (Veloso et al., 2016). Considering the age group in which lung cancer predominates, it is possible to infer that a large part of this population is active and employed, often with financially and emotionally dependent children. Not only is the diagnosis of lung cancer impactful in itself but the difficulties and consequences associated with it also have a strong influence.

A striking characteristic of lung cancer is the loss of respiratory functions, combined with the side effects of treatments, which include symptoms such as fatigue, malaise and nausea (European Lung Foundation | ELF | Homepage, n.d.). These factors, almost inevitably, compromise the patient's ability to maintain their work activities, leading to a temporary interruption or cessation of their functions. In a generation that profoundly values work and a sense of usefulness, this loss of capabilities affects the professional sphere and the family's role (Grilo, 2012).

The change in routine and perceived contribution to the work community results in feelings of uselessness, exacerbated by the possibility of financial difficulties faced by the family due to the loss of income resulting from the disease (Grilo, 2012). Changing roles and breaking expectations generate not only physical pain but also more intense psychological pain. In this context, the role of psychology and Psycho-oncology is crucial to help the patient adapt, encourage resilience and overcome these feelings, promoting the understanding that the diagnosis is not a punishment, could not be predicted and that the patient cannot feel guilty about something that is beyond control (Silva & Rolim, 2021)

The psychological and emotional impact of Lung Cancer on the patient and family and family support as a guarantee of emotional stability. Psychology is vital in shedding light on aspects often less highlighted by medicine. One of these critical aspects is the emphasis on maintaining a positive perspective, demonstrating to the patient that emotional stability contributes significantly to a better quality of life (Silva & Rolim, 2021). This approach not only improves living with the disease but also comprehensively impacts various aspects of the individual's life, influencing their self-perception and social interactions. Thus, it is clear that mental health promotion is intrinsically linked to physical well-being, following the premise that a healthy mind contributes to a healthy body (Deitas & Pollo, 2022; Silva & Rolim, 2021). In this context, it is essential to direct attention to the family sphere since the patient is significantly affected by the presence of the disease, although not physically, but psychologically (Deitas & Pollo, 2022; Silva & Rolim, 2021). It is essential to highlight that, when referring to "family," we are not restricting ourselves just to the nuclear family, although this is undeniably the most impacted. We encompass all contemporary concepts of family, extending to the extended family and friends considered as family members.

Studies have shown that the family plays a facilitating role throughout the process, from diagnosis to treatments, as well as in the final phase of the disease, whether death or cure (Deitas & Pollo, 2022). It is undeniable that support, an essential element to feel safe, is crucial in this scenario. When receiving a diagnosis of lung cancer, the patient needs support from family, together with a

support network that includes close friends or colleagues. The straightforward certainty of having someone to count on when they feel sad and helpless becomes extremely important for the patient.

Quality of life and stigma:

When an individual is diagnosed with lung cancer, they are often subject to stigma (Sanguedo, 2019), both from themselves and their surroundings. The stigma associated with this condition is often influenced by the widespread belief that lung cancer is directly linked to bad habits, mainly tobacco consumption, even though this is just one of the risk factors, not excluding other possible causes. This misconception, often perpetuated by a lack of information, creates a harmful stigma for the patient and society. The automatic association between lung cancer and smoking leads to an immediate perceived death sentence, contributing to the stigmatization of the patient from the moment of diagnosis (Sanguedo, 2019). The stigma associated with lung cancer, primarily when related to smoking, often results in feelings of guilt on the part of the patient, especially if they are or have been a smoker. The search for quality of life is a universal aspiration; however, human nature often focuses on dissatisfactions to the detriment of achievements already made (Sanguedo, 2019).

In contexts such as lung cancer, characterized by high mortality rates and low probabilities of cure, the objective of psychological intervention is to promote the patient's mental well-being throughout the entire process, regardless of the outcome (Psicologia Ciência E Profissão, n.d.) The literature highlights the overwhelming emotional burden of the diagnosis and the fear of the outcome for patients (Deitas & Pollo, 2022). While medicine plays its role in the fight against illness, the patient's mental health dimension often lacks adequate support.

In this sense, psychology emerges as a fundamental tool to ensure the patient's emotional stability, providing them with an optimized quality of life (Basso & Wainer, 2011; Junqueira & Kovács, 2008) within limits imposed by the condition and encouraging the understanding of that part of the coping process is also under the patient's control (Deitas & Pollo, 2022; Silva & Rolim, 2021; Sanguedo, 2019). Furthermore, the objective, taking into account the feelings of guilt that arise, is to try to provide the patient with the vision that he is not to blame for what is happening to him and that he is much more than that illness (Basso & Wainer, 2011).

Final reflection:

An in-depth study of lung cancer and the application of positive psychology prove crucial to understanding the emotional complexity surrounding this condition. Throughout this analysis, we highlight the importance of family support as a fundamental element in coping with a lung cancer diagnosis.

The presence and support of the family emerge as an essential pillar for the patient, not only in the physical sphere but, above all, in the psychological one. The positive influence of the family support network is reflected in the patient's ability to deal with the emotional challenges inherent to the diagnosis, providing crucial support for effectively coping with the disease.

The psychological impact of a lung cancer diagnosis is vast and profound, affecting the patient and their families. Psychology highlights the need to cultivate an optimistic outlook even amid adversity. It does not imply ignoring difficulties, but instead recognizing the resilience, strength and possibilities for personal growth that can emerge from the coping process. Integration of psychology in lung cancer treatment plays a crucial role in promoting emotional well-being. Family support, as a central element, offers emotional comfort and contributes to building a more positive approach to a challenging diagnosis. This work reinforces the continuous need to integrate the principles of psychology in the clinical monitoring of these patients, aiming not only at physical survival but also at quality of life and psychological flourishing in the face of adversity.

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