

Analysing The Stress Level Management for Cancer Patients in India

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KEYWORDS ABSTRACT

Management, Health
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In human life, stress is frequently associated with strain, concern, anxiety, and pressure. Stress can have positive or negative impacts and is a necessary part of life, as is well acknowledged. Physical, emotional, mental, spiritual, or social impacts are all possible. A person experiencing illness experiences additional stress, so it is occasionally necessary to find a speedy solution to such a stressful scenario in order to determine whether an increasing level of stress could eventually overwhelm the person experiencing it. Comprehending the notion of stress is crucial, as it offers a means of perceiving an individual as a cohesive entity that reacts comprehensively to diverse forms of disorder seen in everyday existence. Patients with cancer and tuberculosis experienced anxiety as a result of their unlucky diagnosis, societal unrest, financial difficulties, and familial issues. Compared to others, they experience higher levels of stress, tension, annoyance, and anxiety as a result. For the patient, the only options are costly surgery or chemotherapy. This takes a lot of time and requires the patient's family to be very involved, both physically and emotionally. As a result, the cancer patient faces stress during the whole therapeutic process. Thus, the purpose of this study is to look into how cancer patients control their stress levels.

1. Introduction

The unsuitable physical and psychological surroundings are making living increasingly difficult for humans. People perceive their surroundings as being highly competitive, unstable, corrupt, restless, polluting, and disease-producing. We saw that many people were exhibiting higher levels of stress, tension, anger, annoyance, and anxiety. People who are unlucky enough to contract cancer or tuberculosis experience higher levels of stress and anxiety than average since their family lives are disrupted by their impending mortality. Anxiety and stress are inevitable in our lives [1]. Taking care of these individuals who are nearing the end of their lives is the primary interest. Even they have trouble getting into public spaces, colleges, schools, and the public transport system. People's perceptions of and attitudes towards patients with cancer and tuberculosis are substantially different from those of patients with other illnesses as phileria, malaria, etc. [2]. A state of bodily and mental tension is called stress. While some regard it as a common occurrence, others take it very seriously. Positive stress provides one with more energy to work, which leads to higher productivity. Negative stress might also result in more challenging and serious circumstances. Thus, one of the key factors contributing to the rise in disease is stress. In the modern, anxious world of information technology, it is difficult for people with cancer and tuberculosis to have stress- and anxiety-free lives without taking extra steps to maintain bodily and emotional stability. Therefore, as the patients are nearing the end of their life and are coping with major challenges, it is my first obligation to evaluate their levels of stress and anxiety [4][11].

2. Literature Review

Research has shown that stress affects immunological, hormonal, and neurochemical functioning. These changes are controlled by many of the same factors that have an impact on the carcinogenic process, indicating a potential link between these three systems and the changes in tumour growth brought on by stress. It has been demonstrated that stress promotes tumour growth. Studies conducted in both the lab and in the clinic [5] have demonstrated a link between chronic stress and tumour growth in a number of cancer types. Research has revealed that stress may have an impact on the development and metastasis of tumours; however, the specific biological processes responsible for these effects remain unclear. Researchers have hypothesised that some tumour growth may be influenced by the immune system's reaction to stress. On the other hand, recent research using animal models indicates that stress hormones produced by the body might directly affect how cancer cells behave [9]. A review [12] of studies that evaluated psychological factors and outcomes in cancer patients indicates a

correlation between some psychological factors, like feeling helpless or suppressing negative emotions, and the onset or spread of cancer, even though this relationship was not consistently observed in all the studies. Research has often shown a stronger correlation between psychological variables and the growth and spread of cancer than between psychological factors and the initial development of the disease. [7] looked at the connection between chronic stress and the growth of tumours in different kinds of cancer. High baseline stress levels were found to be associated with a decreased chance of developing breast cancer [8]. Research done over the past 30 years looking at the relationship between psychological factors, like stress, and cancer risk has produced contradictory results [3]. Despite various research findings suggesting a connection, no clear cause-and-effect relationship has been established between any psychological feature and an increased chance of developing cancer. specific forms of tumours connected to vims have been found to have an indirect correlation with stress, according to specific research. Research on both humans and animals indicates that long-term stress impairs immunological function, which may influence the occurrence of cancers linked to viruses, like some types of lymphomas and Kaposi sarcoma. Since a study [13] shown that known stress pathway inhibitors may be able to limit the effects of stress mediators on lung cancer progression, there is increased motivation to investigate stress-based cancer prevention strategies [6]. More recent research employing animal models suggests that the neuroendocrine response of the body can directly impact vital cell activities such as deoxyribonucleic acid repair and cell growth regulation, which help to prevent the development of cancer.

3. Methodology

Data were gathered for the current inquiry in order to examine the hypothesis. The state of Maharashtra's Vidharaba division provided the data. Hospital lists were gathered, and locations were visited in accordance to gather data. The state of Maharashtra's Vidharaba division is home to eight cancer and eleven TB hospitals. With prior authorisation from the institution's head, lists of individuals were obtained from the authorised institutions. Personal data sheets from patients with cancer and tuberculosis were utilised to choose the sample. Just 480 SS were selected for the study based on both sexes out of the 550 patients with lung, liver, and mouth cancer. Comparably, out of 570 TB patients with pulmonary, extrapulmonary, and active disease, only 480 TB patients were included as SS for the study. Using a selective sampling technique, the sample was obtained. For the current study, 960 SS were chosen, of whom 480 were TB patients and 480 were cancer patients.

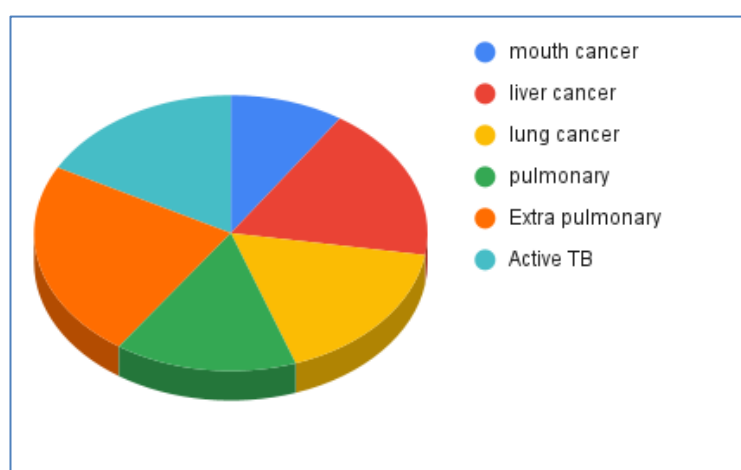


Figure: 1- Chart depicting percentage of Patienta

The hospital where SS were chosen provided an adequate representation of the cancer and tuberculosis populations. Prior to the administration of the examinations, their voluntary participation was verified. Regarding the procedure of filling out the questionnaire and providing personal information, clear instructions were provided. Every patient with oral, liver, lung cancer, pulmonary, extrapulmonary, and active tuberculosis received a unique stress scale as well as hospital anxiety and depression scales.

Sufficient time was allotted for each individual's response to be completed. Prior to the stress and anxiety scale being collected, it was made sure that every question was addressed. Every SS was given a 15-meter break in between two tests [10].

Statistical Analysis

After gathering data, ratings from the hospital anxiety and depression scale and the standardised test stress were statistically analysed. One-way and two-way ANOVA, the independent t-test, the mean, and the standard deviation were employed to test different hypotheses. The numerical results were obtained and analysed in a manner that made sense. Every assumption was checked before parametric testing was used. Version 20 of SPSS was used to analyse all of the data.

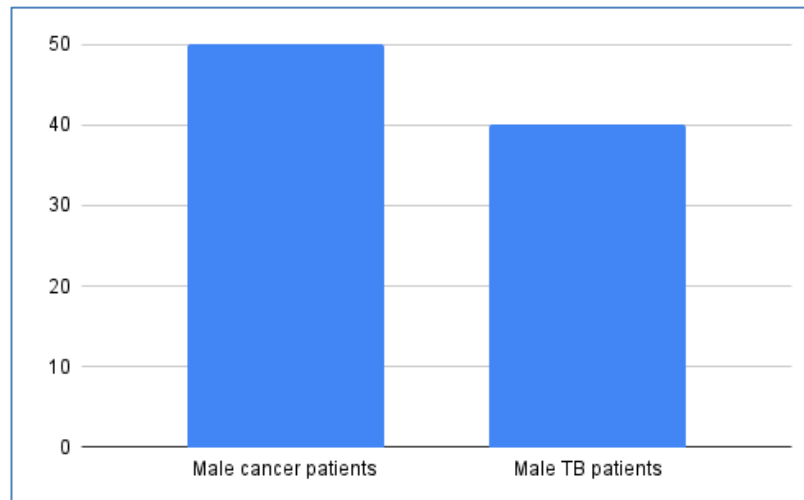


Figure 2: mean stress levels of male patients with cancer and tuberculosis.

There may not have been a significant group difference because the intercept point was centred at the post-test level ($z=.719$, $p=.472$; Cohen's $d=.13$). The condition had no discernible impact on the intercept. A analogous examination of the difference at Time 3 revealed a non-trivial difference at the follow-up test level ($z=3.928$, p).

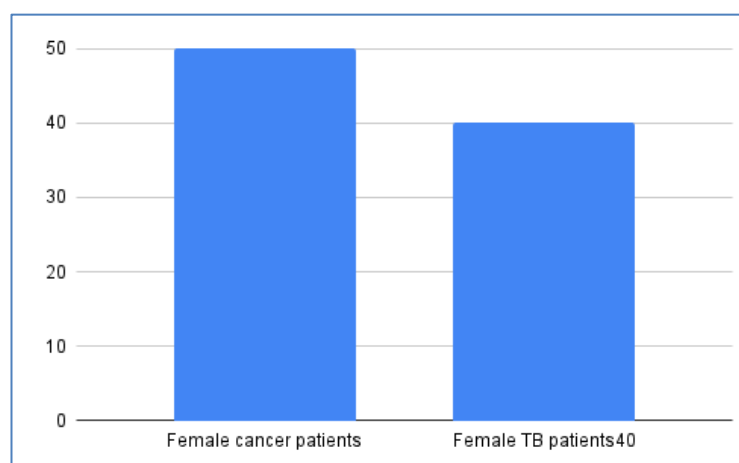


Figure 3: male and female cancer patients' stress mean, SD, and t ratio

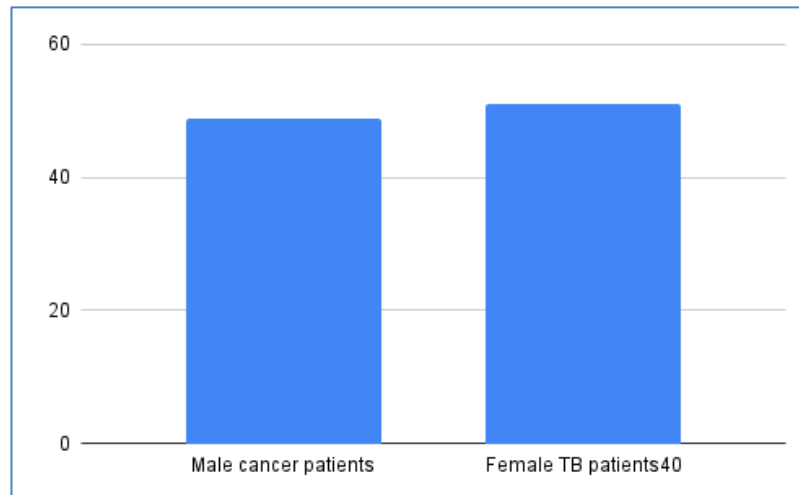


Figure 4: stress mean, SD, and t ratio for cancer patients, both male and female

Table 1 shows that a two-way ANOVA indicated significant differences in stress levels between patients with cancer and tuberculosis in the first, second, third, and fourth phases. Nonetheless, there was no appreciable variation in the stress levels of male and female patients with tuberculosis and cancer.

Table 1: combined two-way ANOVA of patients with tuberculosis and cancer

Variable	Stress				Anxiety			
characteristics	Sum of squares	df	Mean square	F	Sum of squares	df	Mean square	F
Types	1144	3	371	11.92	194.4	3	371	2.92
Gender	25.66	1	24	1.05	1525.66	1	24	7205
Stages Gender	43.36	3	13	0.53	.36	3	13	0.53
Error	2753.75	952	25		21753.75	952	25	
Total	1978556	960			177885.56	960		

Similar to this, a two-way ANOVA showed that male and female patients with cancer and tuberculosis in the first, second, third, and fourth stages had significantly different anxiety levels. There was no significant difference in the stress and anxiety scores of patients with tuberculosis and cancer based on their stages or gender interaction.

4. Conclusion and future scope

Today's health care services have evolved into the health care sector, raising consumer awareness of the need to choose high-quality services. One could conclude that women diagnosed with breast cancer do, in fact, need psychosocial support, and that group psychosocial interventions, in particular, can greatly improve their quality of life and coping strategies. To improve the health of women with non-metastatic cancer, health care practitioners are required to acknowledge and address the importance of quality of life in addition to therapy. Additionally, it can be used as a support system to enhance their emotional, psychological, and social wellbeing.

Reference

- [1] Ajmera, Puneeta, and Vineet Jain. "Modeling the factors affecting the quality of life in diabetic patients in India using total interpretive structural modeling." *Benchmarking: An International Journal* 26, no. 3 (2019): 951-970.
- [2] Kaur, Sumanpreet, and Soumitra Ghosh. "A pilot study to assess stress and coping among primary caregivers of patients with leukemia." *International Journal of Indian Psychology* 9, no. 1 (2021).
- [3] Alamer, L., Alqahtani, I. M., & Shadadi, E. (2023). Intelligent Health Risk and Disease Prediction Using Optimized Naive Bayes Classifier. *Journal of Internet Services and Information Security*, 13(1), 01-10.

- [4] Kaur, Ramandeep, Bibi Bordoloi, and Jumi Sarmah Baruah. "Effect of pranayama on reducing the level of fatigue during external radiation therapy among the patients in a cancer hospital of Guwahati, Assam India." *National Journal of Community Medicine* 14, no. 03 (2023): 147-154.
- [5] Kaur, Sumanpreet, and Soumitra Ghosh. "A pilot study to assess stress and coping among primary caregivers of patients with leukemia." *International Journal of Indian Psychology* 9, no. 1 (2021).
- [6] Ramana, R.H.V., & Ravisankar, V. (2024). Precision in Prostate Cancer Diagnosis: A Comprehensive Study on Neural Networks. *Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications (JoWUA)*, 15(2), 109-122. <https://doi.org/10.58346/JOWUA.2024.I2.008>
- [7] Astély, David, et al. "LTE: the evolution of mobile broadband." *IEEE Communications magazine* 47.4 (2009): 44-51.
- [8] Kaur, Ramandeep, Bibi Bordoloi, and Jumi Sarmah Baruah. "Effect of pranayama on reducing the level of fatigue during external radiation therapy among the patients in a cancer hospital of Guwahati, Assam India." *National Journal of Community Medicine* 14, no. 03 (2023): 147-154.
- [9] Sundaran, Amrutha. "HINDRANCE STRESSORS AND COPING STRATEGIES OF ONCOLOGY SOCIAL WORK PRACTITIONERS." (2023).
- [10] Chatterjee, P., Siddiqui, S., Granata, G., Dey, P., & Abdul Kareem, R. S. (2024). Performance Analysis of Five U-Nets on Cervical Cancer Datasets. *Indian Journal of Information Sources and Services*, 14(1), 17–28.
- [11] Srivastava, Alpna, Sandeep Tiwari, and Gyan Chandra. "A vital analysis of factors affecting QoL of cancer patients in Uttar Pradesh through structural equation modelling approach." *International Journal of Behavioural and Healthcare Research* 7, no. 4 (2021): 318-330.
- [12] Chillakunnel Hussain Rawther, Shejila, Mamatha Shivananda Pai, Donald J. Fernandes, Stanley Mathew, V. S. Binu, Jyothi Chakrabarty, Elsa Sanatombi Devi, Anice George, and Baby S. Nayak. "A randomized controlled trial to evaluate the impact of a nurse navigator programme on outcomes of people with breast cancer: study protocol." *Journal of Advanced Nursing* 73, no. 4 (2017): 977-988.
- [13] Chillakunnel Hussain Rawther, Shejila, Mamatha Shivananda Pai, Donald J. Fernandes, Stanley Mathew, V. S. Binu, Jyothi Chakrabarty, Elsa Sanatombi Devi, Anice George, and Baby S. Nayak. "A randomized controlled trial to evaluate the impact of a nurse navigator programme on outcomes of people with breast cancer: study protocol." *Journal of Advanced Nursing* 73, no. 4 (2017): 977-988.
- [14] Kondeti, Ajay Kumar, Ambedkar Yadala, N. Rajya Lakshmi, C. S. K. Prakash, Gayatri Palat, and Shoban Babu Varthya. "Assessment of caregiving burden of family caregivers of advanced cancer patients and their satisfaction with the dedicated inpatient palliative care provided to their patients: A cross-sectional study from a tertiary care centre in south Asia." *Asian Pacific Journal of Cancer Prevention: APJCP* 22, no. 7 (2021): 2109.