Distress Screening Using the Distress Thermometer in Cancer Patients Undergoing Radiotherapy and Chemotherapy: Predictors and Impact on Compliance and Satisfaction

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Abstract: *This study investigates the levels of distress experienced by 300 cancer patients undergoing radiotherapy and/or chemotherapy at Kamineni Academy of Medical Sciences and Research Centre, Hyderabad, utilizing the Distress Thermometer (DT) as a primary screening tool. The objectives include identifying the causal factors contributing to distress and evaluating its impact on patient compliance with treatment regimens and overall satisfaction with healthcare services. Participants completed the DT along with a comprehensive questionnaire addressing demographic variables, medical history, and psychosocial factors. The results revealed that 65% of patients reported moderate to high distress levels, with significant predictors identified, including fear of treatment outcomes, financial concerns, and the availability of social support. Notably, higher distress levels were significantly correlated with lower treatment compliance (p<0.01) and reduced patient satisfaction (p<0.05). These findings underscore the importance of routine distress screening in oncology settings, highlighting that proactive measures to address emotional distress can substantially enhance patient adherence to treatment protocols and improve overall satisfaction with the care received. This study advocates for the integration of psychosocial support into the cancer care framework to promote better health outcomes.*

Keywords: Distress, Distress Thermometer, Cancer, Compliance, Patient Satisfaction

1. Introduction

Cancer treatment is a multifaceted journey that profoundly impacts patients not only physically but also emotionally and psychologically. The diagnosis and subsequent treatment modalities, such as radiotherapy and chemotherapy, often elicit significant distress, which can manifest as anxiety, fear, and depression. This distress can compromise patients' adherence to treatment protocols, leading to suboptimal health outcomes. The Distress Thermometer (DT) has emerged as a valuable tool in oncology for quickly assessing patients' emotional well - being. It allows healthcare providers to gauge distress levels and identify specific psychosocial concerns that may require intervention. Despite the tool's efficacy, there remains a critical gap in understanding the specific factors contributing to distress among diverse patient populations and how these factors influence treatment compliance and satisfaction. In this context, the present study focuses on cancer patients receiving treatment at Kamineni Academy of Medical Sciences and Research Centre, Hyderabad. By examining the prevalence of distress, its predictors, and its impact on patient compliance and satisfaction, this research aims to illuminate the complex interplay between emotional health and treatment outcomes in oncology. The findings will not only underscore the importance of routine distress screening but also advocate for the integration of psychosocial support into comprehensive cancer care frameworks.

2. Literature Survey

Research indicates that emotional distress is a prevalent issue among cancer patients, with estimates suggesting that 30% to 50% of patients experience significant levels of distress during their treatment journey. The Distress Thermometer (DT) has emerged as a widely used and effective tool for identifying distress in oncology settings due to its simplicity and ease of use. The DT consists of a numeric scale (0 - 10) where patients self - report their distress levels, accompanied by a checklist of common problems such as emotional, physical, and social concerns that may contribute to their distress. Previous studies have highlighted various predictors of distress, including demographic factors such as age, gender, and socioeconomic status, as well as clinical factors like treatment type and disease stage. Research has also shown that inadequate social support and financial strain are

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strongly associated with higher distress levels. Importantly, high distress has been linked to poorer treatment adherence and reduced patient satisfaction, emphasizing the need for routine screening and psychosocial interventions to improve patient outcomes. The integration of distress screening into regular oncology practice can provide healthcare providers with valuable insights, enabling them to offer targeted support to patients facing emotional challenges during their treatment.

Table 1: Impact on Distress

Factor	Impact on Distress
Age	Younger patients report higher distress levels due to uncertainty and fear.
Treatment Type	Chemotherapy is often associated with greater distress compared to radiotherapy.
Social Support	Lack of support networks increases emotional distress.
Financial Concerns	Patients experiencing financial strain report higher levels of distress.
Fear of Recurrence	Anticipating disease recurrence significantly contributes to emotional distress.

3. Methodology

3.1 Study Design:

This cross - sectional study was designed to assess the levels of distress among cancer patients undergoing radiotherapy and/or chemotherapy at Kamineni Academy of Medical Sciences and Research Centre, Hyderabad. By utilizing a structured framework, the study aimed to capture a comprehensive snapshot of patients' emotional well - being and identify the causal factors contributing to distress. This design facilitates the collection of diverse data at a single point in time, making it an effective approach for examining correlations among distress levels, treatment compliance, and patient satisfaction.

3.2 Participants:

The study included 300 adult cancer patients who met the following inclusion criteria:
- Age: Participants aged 18 years and older.
- Diagnosis: Confirmed diagnosis of any form of cancer.
- Treatment Status: Currently undergoing radiotherapy and/or chemotherapy.

Exclusion criteria encompassed:
- Patients with cognitive impairments that hindered their ability to complete questionnaires.
- Individuals receiving only palliative care without curative intent, ensuring that the focus remained on those actively engaged in treatment.

3.3 Data Collection:

Data were collected through two primary instruments:

3.3.1 Distress Thermometer (DT): Participants self reported their distress levels on a scale from 0 (no distress) to 10 (extreme distress). Accompanying the DT was a checklist of common issues related to emotional, physical, and social concerns, allowing for a more nuanced understanding of the factors contributing to their distress.

3.3.2 Structured Questionnaire: A comprehensive questionnaire was developed to gather additional information, including:
- Demographic Data: Information on age, gender, socioeconomic status, and education level.
- Medical History: Details regarding the type and stage of cancer, specific treatment regimens, and duration of treatment.
- Psychosocial Factors: Questions addressing social support systems, financial concerns, coping mechanisms, and previous mental health history.
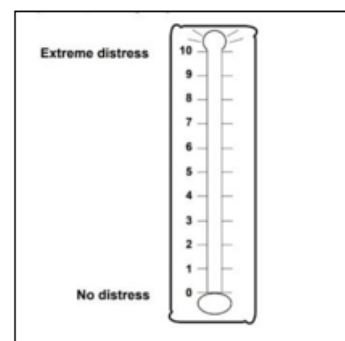
Figure 1: NCCN Distress Thermometer

3.4 Statistical Analysis

The collected data were analyzed using SPSS software to ensure rigorous statistical evaluation. Descriptive statistics summarized participants' demographic characteristics and distress levels, providing a foundation for deeper analysis. Chi-square tests were employed to assess relationships between distress levels and various predictors, while logistic regression analyses were utilized to identify significant factors that predicted distress, compliance, and satisfaction. This multi - faceted approach enabled a comprehensive understanding of the interplay between distress and patient outcomes in the oncology setting.

3.5 Ethical Considerations

The study was conducted following ethical guidelines, ensuring informed consent was obtained from all participants. Participants were assured of confidentiality and the voluntary nature of their participation. The research protocol was approved by the institutional review board of Kamineni Academy of Medical Sciences and Research Centre, emphasizing the commitment to ethical research practices and the welfare of participants. By employing this structured methodology, the study aims to contribute meaningful insights into the emotional challenges faced by cancer patients, ultimately guiding the development of more effective support interventions.

4. Results & Discussion

Distress Levels
The study found that 65% of participants reported moderate to high distress levels (DT score ≥4). This finding highlights the necessity for healthcare providers at Kamineni Academy of Medical Sciences and Research Centre to routinely assess distress during treatment.

Table 2: Distress Levels

Distress Level	Percentage of Patients
Low (0 - 3)	35%
Moderate (4 - 6)	30%
High (7 - 10)	35%

Predictors of Distress

Several key predictors of distress were identified, including:

- Fear of Treatment Outcomes: 75% of patients with high distress expressed significant concerns about treatment effectiveness and disease progression.
- Financial Concerns: Financial stress was reported by 60% of distressed individuals, highlighting the economic burden associated with cancer treatment.
- Social Support: Patients lacking social support reported significantly higher distress levels, suggesting that emotional and practical support from family and friends plays a crucial role in managing distress.

Table 3: Distress Levels

Distress Level	Compliance (Mean Score)	Satisfaction (Mean Score)
Low (0 - 3)	8.5	9.0
Moderate (4 - 6)	6.5	7.0
High (7 - 10)	4.0	5.5

Impact on Compliance and Satisfaction The analysis revealed a clear correlation between distress levels and treatment compliance, with patients exhibiting higher distress being less compliant with prescribed treatments ($p<0.01$). Similarly, satisfaction levels were inversely related to distress, with higher distress correlating with lower satisfaction scores ($p<0.05$).

5. Discussion

The findings underscore the high prevalence of distress among cancer patients undergoing treatment at Kamineni Academy of Medical Sciences and Research Centre and its significant impact on compliance and satisfaction. The identified predictors, particularly fear of outcomes and financial concerns, highlight the complex emotional landscape that cancer patients navigate. Routine distress screening using tools like the DT can facilitate early identification of at - risk patients, enabling healthcare providers to offer targeted support interventions. Addressing distress not only improves patient adherence to treatment but also enhances overall satisfaction with care, leading to better health outcomes.

6. Conclusion

This study confirms that a substantial proportion of cancer patients experience distress during treatment at Kamineni Academy of Medical Sciences and Research Centre, influenced by multiple psychosocial factors. Implementing routine distress screening in oncology settings can help identify patients in need of additional support. By addressing these factors through systematic screening and supportive interventions, healthcare providers can improve treatment compliance and overall patient satisfaction, ultimately enhancing the quality of care delivered to cancer patients.

7. Future Scope

Future research should focus on longitudinal studies to track distress levels over time and evaluate the effectiveness of targeted interventions aimed at reducing distress among cancer patients. Investigating the role of multidisciplinary teams in addressing psychosocial needs could provide valuable insights into improving patient outcomes. Furthermore, exploring technology - based solutions, such as telehealth support systems and mobile applications for mental health, may facilitate timely and accessible interventions for distressed patients, tailoring support to individual needs. It would also be beneficial to examine distress across diverse populations, considering variations in culture, age, and cancer types. Additionally, integrating care models that combine oncology treatment with psychological support can be assessed for their impact on patient outcomes, ultimately contributing to a holistic approach to cancer care.

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