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Chemotherapy-Induced Hair Loss and Its Psychological Impacts: A Study Among Cancer Survivors in a Tertiary Care Centre, Chennai

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Abstract

Introduction: Chemotherapy-induced hair loss (CIA) is a distressing side effect for cancer patients, caused by chemotherapy targeting rapidly dividing cells, including healthy hair follicles. This sudden hair loss significantly impacts self-esteem, body image, and quality of life, often leading to anxiety and depression, particularly among women and younger patients.

Objective: To analyse the extent of chemotherapy-induced hair loss and its psychological impacts among cancer survivors.

Materials and Methods: A descriptive study was conducted among 100 cancer survivors using a non-probability consecutive sampling technique. The tools included Socio-Demographic and Clinical Data, Chemotherapy-Induced Hair Loss (Cohen Hair Loss Classification), and the Alopecia Areata Symptom Impact Scale.

Results: The study found 60% of participants experienced moderate hair loss, while 40% faced severe hair loss. Psychological impacts were moderate in 70% and severe in 30%. A strong positive correlation was observed between hair loss severity and psychological distress. Education and employment status significantly influenced hair loss scores, while cancer type, chemotherapy regimen, and psychological counselling were significant variables. Women and younger patients reported greater psychological impacts, confirmed by chi-square analysis.

Conclusion: Chemotherapy-induced hair loss profoundly affects cancer survivors, causing significant emotional distress, particularly in women and younger individuals. Addressing these psychological impacts through mental health support and counselling is essential to enhance the quality of life for cancer survivors.

Keywords: Chemotherapy-induced hair loss, psychological impacts, Cancer survivors.

Introduction

Chemotherapy-induced hair loss (CIA) is a distressing side effect of cancer treatment, caused by chemotherapy targeting rapidly dividing cells, including healthy hair follicles. This often leads to partial or complete hair loss, significantly altering appearance and impacting self-esteem, confidence, and quality of life. For many patients, hair loss is deeply tied to identity, and its visible effects can lead to social withdrawal, isolation, and compounded emotional distress. The psychological impact of CIA varies based on age, gender, and cultural beliefs, with women and younger patients experiencing greater distress due to societal and personal expectations. For some, the emotional toll persists even after treatment, especially if hair regrowth differs in texture or color, highlighting the need for ongoing psychological support. Medical advancements, such as scalp cooling, have shown promise in reducing hair loss, though access remains limited. Psychological interventions, including counselling, support groups, and cognitive behavioural therapy (CBT), are crucial in helping patients manage their emotional burden. Healthcare providers must address hair loss empathetically during treatment, offering resources and support to ease its psychological effects. Ultimately, understanding and addressing the impact of CIA is vital for improving the overall well-being of cancer survivors and ensuring more holistic cancer care.

Background of the Study

Chemotherapy-induced hair loss (CIA) is a common and distressing side effect of cancer treatment, significantly impacting patients' self-esteem, body image, and mental health. Globally, 65% of cancer patients undergoing chemotherapy experience significant hair loss, according to the WHO (2020), while the American Cancer Society (2021) reported that over 75% of female patients noted a negative effect on their quality of life. The European Society for Medical Oncology (2022) found that up to 60% of patients developed anxiety or depression due to CIA. Nationally, a 2021 Tata Memorial Centre study revealed that 60-70% of Indian cancer patients experience hair loss, with over 80% of women reporting anxiety and depression. In Tamil Nadu, a 2020 Adyar Cancer Institute study found that 70% of patients undergoing chemotherapy faced hair loss, with 75% of women experiencing psychological distress. These findings highlight the urgent need for psychological support in cancer care to improve patient well-being.

Need for the study

The psychological impact of chemotherapy-induced hair loss (CIA) on cancer survivors highlights the need for this study. While essential for treating cancer, chemotherapy often causes significant hair loss, deeply affecting patients' self-image, identity, and mental health. This distressing side effect can lead to anxiety, depression, social withdrawal, and diminished quality of life. By addressing the emotional burden of CIA, the study aims to emphasize the importance of integrating mental health support into cancer care. Exploring these challenges provides valuable insights into the lived experiences of survivors, fostering the development of targeted interventions like counseling, support groups, and coping strategies. Tailored psychological care can help patients navigate their distress and build resilience, enhancing overall well-being. This research advocates for holistic oncology care, combining physical treatment with emotional support. It calls for routine mental health screenings and collaborative care plans involving oncology and mental health professionals. Ultimately, the study contributes to advancing psycho-oncology, promoting a patient-centred approach that acknowledges and addresses the

psychological ramifications of cancer treatment, improving survivors' quality of life.

Statement of the Problem

"A descriptive study to Analyse Chemotherapy-induced hair loss and its psychological impacts among Cancer survivors in a Tertiary Care Centre, Chennai"

Objectives

Primary

Assess the level of Chemotherapy-induced hair loss and its psychological impact Score among Cancer survivors

Secondary

- Correlate the level of Chemotherapy-induced hair loss and its psychological impacts Score among Cancer survivors
- Find out the association between the level of Chemotherapy-induced hair loss and its psychological impacts Score of Cancer survivors with their selected demographic and clinical variables

Hypothesis

H1: A significant relationship exists between chemotherapy-induced hair loss and its psychological impact among cancer survivors.

H2: A significant association exists between chemotherapy-induced hair loss, its psychological impact, and selected demographic variables among cancer survivors.

Delimitations

The study focused solely on cancer survivors, conducted over four weeks, and was limited to the Oncology department at RGGGH, Chennai.

Methods & Materials

This study utilized a quantitative, non-experimental descriptive research design to analyse chemotherapy-induced hair loss (CIA) and its psychological impacts among cancer survivors in the Oncology department at RGGGH, Chennai. The study was conducted over four weeks, with a sample size of 100 cancer survivors who met the inclusion criteria, including both male and female patients undergoing chemotherapy and radiation. Data was collected using a structured questionnaire, which included socio-demographic and clinical variables, a Cohen Hair Loss Classification to assess the level of hair loss, and the Alopecia Areata Symptom Impact Scale (AASIS) to evaluate the psychological impacts of hair loss. Content validity was ensured by experts in nursing and oncology, and the reliability of the tool was confirmed with a high Cronbach's alpha of 0.86.

Ethical Considerations

Ethical clearance was obtained from the Ethical Committee, HOD, and Department of Oncology, RGGGH, Chennai, ensuring adherence to ethical principles such as beneficence, respect for dignity, confidentiality, and informed consent.

Results

The study revealed among cancer survivors, 60% experienced moderate chemotherapy-induced hair loss, while 40% faced severe hair loss. None had mild or no hair loss. Psychological impacts were moderate in 70% and severe in 30%, with no minimal impacts. There is a strong positive correlation

between hair loss severity and psychological distress. Education and employment status influenced hair loss scores, with statistical significance confirmed via chi-square tests. Cancer type, psychological counselling, and chemotherapy regimen were significant variables. Gender and education status had higher psychological impacts, verified by chi-square analysis.

FIGURE 1. SCHEMATIC PRESENTATION

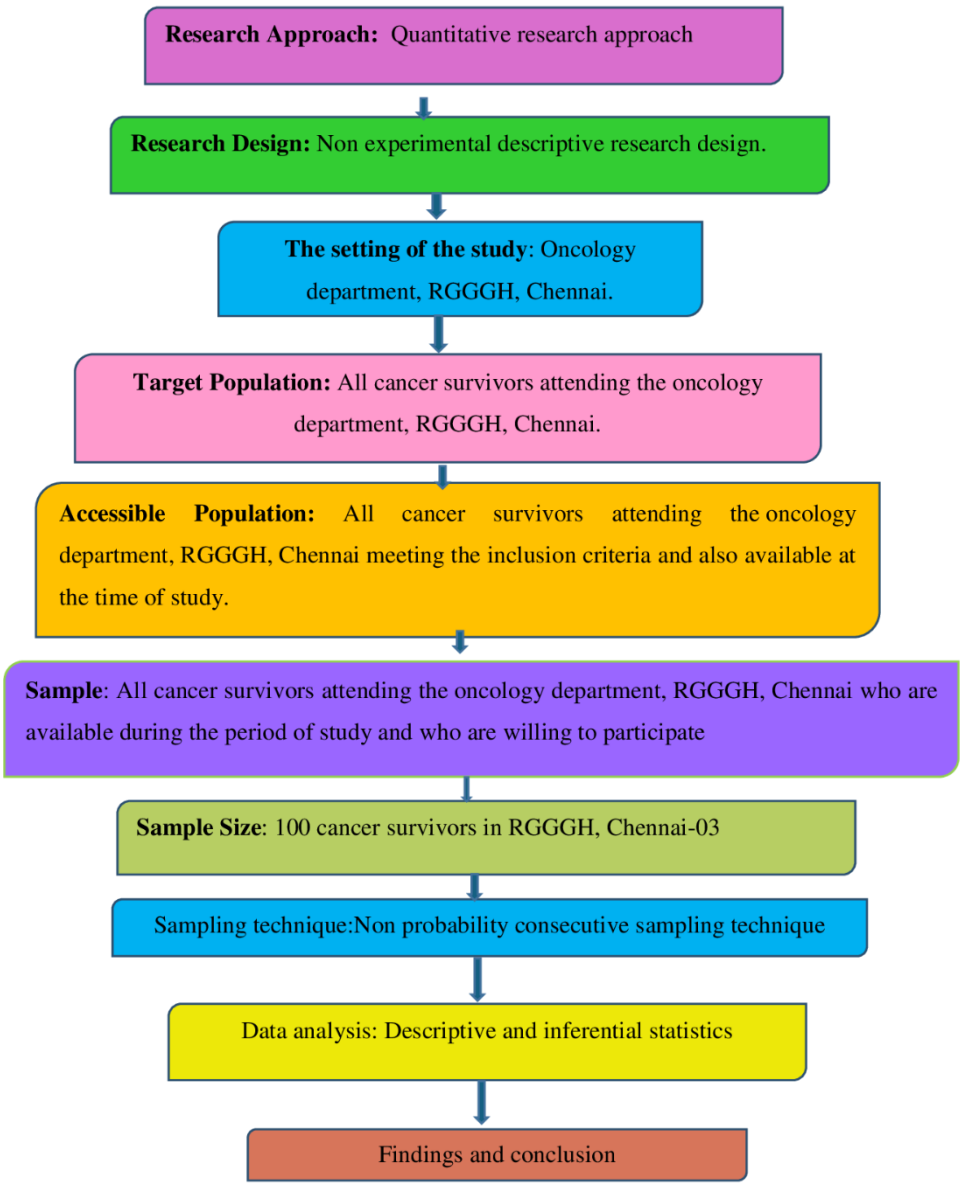


TABLE 1. DEMOGRAPHIC VARIABLES OF THE CANCER SURVIVORS

DEMOGRAPHIC VARIABLES		FREQUENCY (N)	PERCENTAGE (%)
Age Group	18-30 years	25	25%
	31-45 years	30	30%
	46-60 years	35	35%
	Above 60 years	10	10%
Gender	Male	40	40%
	Female	60	60%
Marital Status	Single	15	15%
	Married	70	70%
	Divorced	5	5%
	Widowed	10	10%
Educational Level	No formal education	20	20%
	Primary education	25	25%
	Secondary education	30	30%
	Graduate	15	15%
	Postgraduate & above	10	10%
Employment Status	Govt employment	10	10%
	Private employment	30	30%
	Unemployed	20	20%
	Retired	10	10%
	Homemaker	30	30%
Type of Residence	Urban	40	40%
	Semi-urban	35	35%
	Rural	25	25%
Religion	Hinduism	70	70%
	Islam	20	20%
	Christianity	10	10%
Dietary Habits	Vegetarian	35	35%
	Non-vegetarian	65	65%
Physical Activity Level	Sedentary	50	50%
	Moderately active	30	30%
	Highly active	20	20%
Habits	Alcohol	15	15%
	Smoking	10	10%
	Both	5	5%
	None	70	70%

TABLE 2. CLINICAL VARIABLES OF THE CANCER SURVIVORS

Clinical Variables		Frequency (n)	Percentage (%)
Cancer Type	Breast cancer	40	40%
	Lung cancer	25	25%
	Colorectal cancer	20	20%
	Other	15	15%
Duration Since Diagnosis	Less than 1 year	30	30%
	1-3 years	45	45%
	Over 3 years	25	25%
Type of Chemotherapy	Alkylating agents	30	30%
	Antimetabolites	25	25%
	Natural products	20	20%
	Hormonal agents	15	15%
	Other	10	10%
Frequency of Chemotherapy	Weekly	40	40%
	Bi-weekly	30	30%
	Monthly	20	20%
	Other	10	10%
Psychological Counselling	Yes	35	35%
	No	65	65%
Family History of Cancer	Yes	45	45%
	No	55	55%
Chemotherapy Regimen	Standard regimen	50	50%
	High-dose regimen	20	20%
	Targeted therapy	15	15%
	Combination therapy	15	15%
Presence of Metastasis	Yes	30	30%
	No	70	70%
Side Effects (Other than Hair Loss)	Nausea/Vomiting	40	40%
	Fatigue	30	30%
	Neuropathy	20	20%
	Others (specify)	10	10%
Use of Hair Loss Prevention	Yes	20	20%
	No	80	80%

TABLE 3. LEVEL OF CHEMOTHERAPY-INDUCED HAIR LOSS SCORE

Hair Loss Score	Description	Frequency (n)	Percentage (%)
0	No hair loss	0	0%
1	Mild hair loss	0	0%
2	Moderate hair loss	60	60%
3	Severe hair loss	40	40%

TABLE 4. LEVEL OF PSYCHOLOGICAL IMPACTS SCORE

Psychological Impact Score	Description	Frequency (n)	Percentage (%)
0-2	Minimal impact	0	0%
03-05	Mild impact	0	0%
06-08	Moderate impact	70	70%
09-10	Severe impact	30	30%

FIGURE 2. LEVEL OF CHEMOTHERAPY-INDUCED HAIR LOSS SCORE

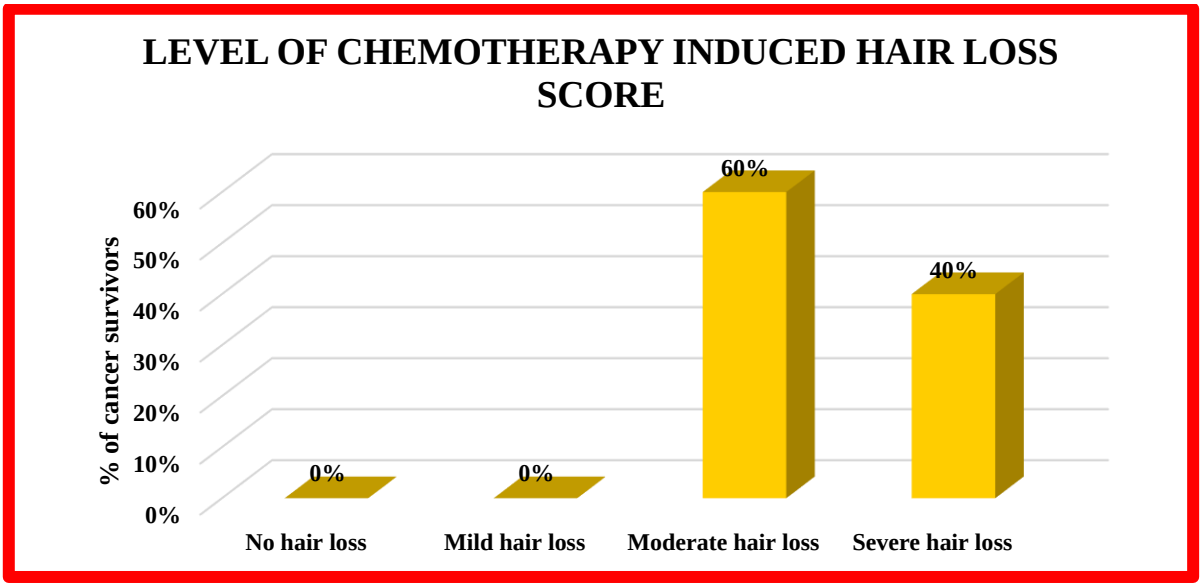
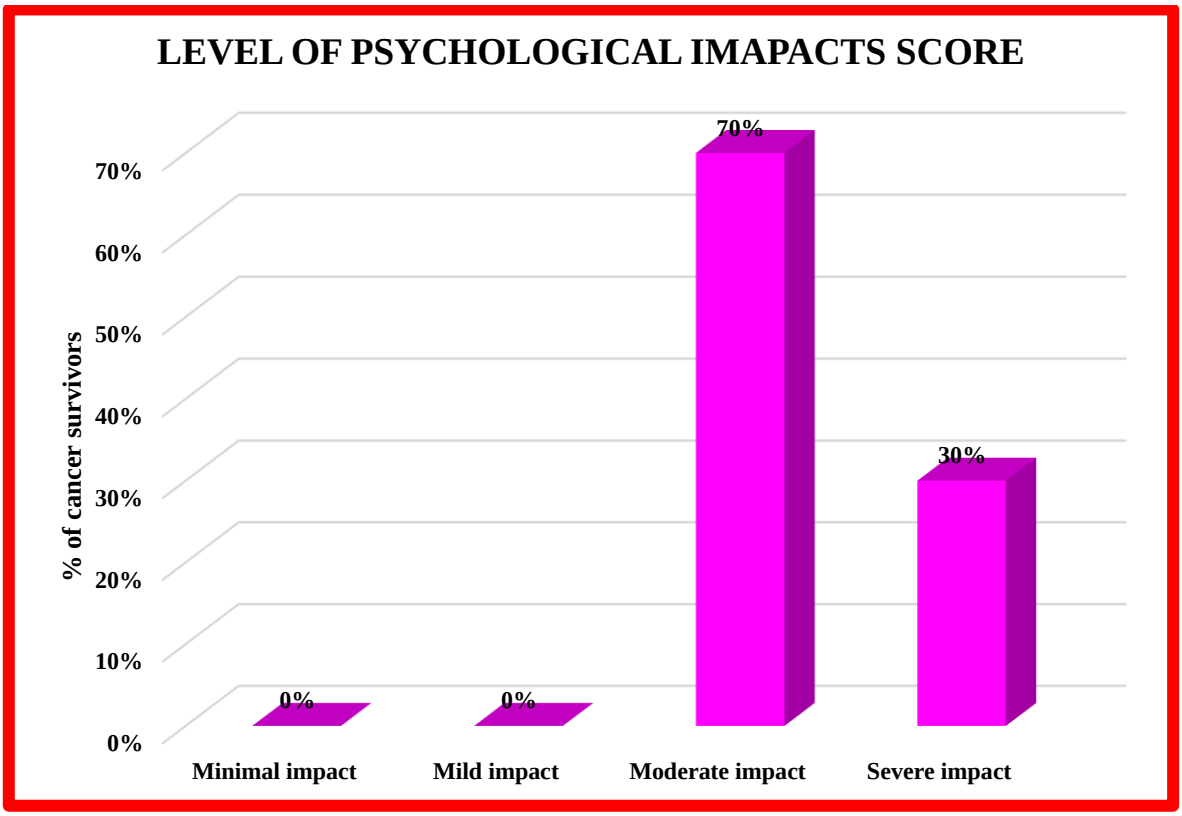


FIGURE 3. LEVEL OF PSYCHOLOGICAL IMPACT SCORE



Discussion

The study revealed that 60% of cancer survivors experienced moderate chemotherapy-induced hair loss (CIA), while 40% faced severe hair loss, with no participants reporting mild or no hair loss. In terms of psychological impact, 70% reported moderate distress, and 30% experienced severe distress, with none reporting minimal or mild psychological impacts. These findings align with Kridis et al. (2024), whose study on breast cancer patients showed a significant negative effect of CIA on quality of life, with 97.2% of participants reporting distress. Haque et al. (2020) also highlighted the significant emotional toll of CIA, emphasizing the lack of effective preventive treatments. A strong positive correlation between hair loss severity and psychological distress was found, confirming that increased hair loss leads to greater psychological impact. This finding supports Boland, Brady, and Drury (2020), who identified CIA as a major disruptor of identity and psychological well-being in women. Additionally, significant associations were found between CIA severity and factors like education, employment status, and cancer type, aligning with Özüsağlam and Can (2021) and Paterson et al. (2021). These studies underline the need for tailored interventions to address the psychosocial effects of CIA, affirming the importance of psychological support for cancer survivors.

Nursing implications

Nursing Education

Nurses should be educated on the psychological impacts of chemotherapy and hair loss. Training in mental health screening and patient-centred care is essential. Developing communication skills and promoting stress management techniques will enhance support for cancer patients.

Nursing Administration

Administrators must implement policies to ensure safe chemotherapy practices and psychosocial support for cancer patients. Resource allocation for oncology training and patient care must be prioritized. Interdisciplinary collaboration should be encouraged to enhance care delivery and outcomes.

Nursing Practice

Nurses should perform mental health assessments and educate patients about chemotherapy side effects, including hair loss. Emotional support and coordination with oncologists are essential for comprehensive patient care. Continuous education and the promotion of self-care are key to effective nursing practice.

Nursing Research

Research should focus on the psychological effects of chemotherapy-induced hair loss and the efficacy of interventions. Studying

the impact of sociodemographic factors on hair loss can provide insights for better care. Investigating the long-term psychological effects of cancer treatment will inform future nursing practices.

Recommendations

Future studies should focus on longitudinal designs to track patient outcomes over time. Randomized controlled trials and mixed-methods approaches would enhance understanding of chemotherapy's impact. Research should also focus on diverse patient populations to ensure generalizable findings.

Limitations

The study's small sample size and short duration limit generalizability and long-term trend analysis.

Conclusion

This study highlights a significant correlation between chemotherapy-induced hair loss and psychological distress among cancer survivors, with 60% experiencing moderate and 40% severe hair loss, and 70% reporting moderate and 30% severe psychological impacts. These findings underscore the emotional toll of physical changes and emphasize the need for integrated psychological support in oncology care. Sociodemographic and clinical variables, including education, employment, cancer type, and chemotherapy regimen, significantly influence hair loss and psychological outcomes. Nurses should prioritize mental health assessments, psychosocial support, and tailored interventions, ensuring a holistic, patient-centred approach to enhance the well-being and quality of life for cancer survivors.

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