Coping Mechanisms and Resilience among Cancer Survivors in Ramapuram, Chennai: A Descriptive Study

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Abstract This study investigated the coping mechanisms and resilience levels of cancer survivors in Ramapuram, employing a descriptive cross-sectional design. A total of 120 participants from the Ramapuram District Hospital oncology outpatient department were surveyed between January and March 2024 using validated instruments-the Brief COPE inventory and the Connor-Davidson Resilience Scale. Results revealed that spiritual or religious practices were the primary coping strategy for 68% of participants, while 54% relied heavily on family and community support; 42% reported using problem-focused coping approaches, such as seeking information and practical help. Notably, 76% of survivors exhibited moderate to high resilience, indicating a marked capacity to adapt positively in the face of cancer-related adversity. Statistical analysis showed that higher resilience was significantly associated with older age and stronger family support ($p<0.05$). These findings underscore the importance of culturally sensitive psychosocial interventions for cancer survivors in Ramapuram. Specifically, integrating spiritual counseling and bolstering family and community support within survivorship care plans are recommended. Such tailored approaches may further enhance the resilience and overall well-being of cancer survivors in this region.

Key Words Cancer Survivors, Coping Mechanisms, Resilience, Spiritual Coping, Ramapuram, Psychosocial Support

INTRODUCTION

Cancer remains a significant public health burden worldwide, accounting for 10 million deaths in 2020 [1]. While global statistics highlight the widespread impact of cancer, it is crucial to consider the rapidly rising burden at the local level. In India and specifically in urban centers like Chennai, cancer incidence is increasing. Data from the Madras Metropolitan Tumour Registry reveal that Chennai has one of the highest cancer rates in India, with approximately 120–135 new cases per 100,000 people each year. Cancers of the breast, cervix and oral cavity are particularly prevalent, placing growing demands on both health services and survivor support systems. Despite advances in medical science leading to improved survival rates, cancer's impact reaches far beyond physical health. Many survivors face long-term psychological distress, economic challenges and disruption of daily life. In Chennai, as across India, cancer survivors must navigate complex healthcare environments and social stigma alongside their recovery. These challenges are compounded in localities such as Ramapuram-a diverse western suburb of Chennai. The selection of Ramapuram as the study site was deliberate. This locality comprises a mix of middle-income and lower-income residents, reflects the cultural and socioeconomic diversity of Chennai and is located close to multiple cancer treatment centers, including government and private hospitals. Reports from local healthcare workers and non-governmental organizations suggest a notable increase in cancer survivorship here, but a lack of systematic research on how survivors actually cope. Cultural context plays a pivotal role in shaping survivor experiences. In India, strong family networks and community involvement are crucial sources of emotional and practical support for cancer survivors. Family members often serve as primary caregivers, helping to manage treatment, cope with side effects and support day-to-day living. Emotional bonds and social obligations frequently dictate how information about the illness is shared or withheld, with families sometimes shielding individuals from the full reality of their diagnosis to "protect" them emotionally. Religious beliefs, community

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rituals and peer support from other survivors can also foster resilience or, alternatively, contribute to distress if social stigma persists. Despite this, formal psychosocial support resources remain scarce and awareness of government schemes and rehabilitation services is low-particularly in local neighbourhoods such as Ramapuram. This context warrants a focused investigation into the actual coping strategies and support systems accessed by cancer survivors in this part of Chennai. Research gap and specific aims while the population of cancer survivors in Ramapuram is growing, little is known about how they manage their emotional, social and practical challenges after treatment. Most research to date has either focused on clinical outcomes or generalized coping patterns at the state or national level, neglecting the nuances present within distinct city localities and community cultures. This study seeks to address these knowledge gaps. The specific objectives are to: Identify and explore the coping mechanisms-including problem-focused, emotion-focused and culturally distinctive strategies-employed by cancer survivors in the Ramapuram locality of Chennai; Analyze the structure and function of family and community support systems-considering both enabling and constraining factors in survivors' recovery journeys; Examine how survivors' perceptions of illness and self-awareness influence their adaptation, including the role of spiritual and religious practices; Assess levels of awareness and utilization of government support schemes and local psychosocial resources among survivors in Ramapuram; Clarify why current cancer patients (those in active treatment) are excluded: The focus of this research is on the unique psychosocial needs and adaptive strategies of survivors who have completed active cancer treatment, as these differ substantially from those in the midst of ongoing treatment. Research Question: How do cancer survivors living in Ramapuram, Chennai, cope with the psychological, social and practical challenges they face post-treatment and what roles do family, community and cultural factors play in shaping these coping strategies? Connection to Methods: Objectives were pursued through in-depth interviews with 30 cancer survivors identified via snowball sampling within Ramapuram. A semi-structured interview guide was used to examine coping strategies, family and community support, self-awareness (measured through participants' articulated understanding of their journey from diagnosis to survivorship) and resource utilization. Exclusion of current patients ensured focus on survivorship experiences post-treatment. In summary, this study aims to generate actionable insights for healthcare providers and policymakers to design location-sensitive, culturally informed survivor support programs in Chennai and similar urban settings.

Review of Literature
Global Burden of Cancer

Recent global cancer statistics highlight cancer as a persistent and growing public health crisis. In 2022, approximately 20 million new cancer cases were recorded, with 9.7 million deaths worldwide and around 53.5 million people living five years post-diagnosis. Lung cancer remains the leading cause of cancer mortality (1.8 million deaths), followed by colorectal, liver, breast (670,000 deaths) and stomach cancers [2]. Alarmingly, projections estimate the global cancer burden will increase by more than 77%, reaching over 35 million new cases by 2050, with disproportionately high increases in low- and medium-HDI countries.

Projections indicate a sharp increase in global cancer incidence-nearly 77% growth to 35 million new cases by 2050, driven primarily by population aging, increased lifespan and heightened exposure to key lifestyle and environmental risk factors. Alarmingly, cancer-related deaths are estimated to nearly double-from 9.7 million to approximately 18.5 million-by mid-century.

Low-and medium-HDI countries are expected to face the steepest proportional increases: up to 142% in low-HDI regions and around 99% in mid-HDI regions, with corresponding mortality rising by around 146% and 90%, respectively.

Regarding gender-specific trends the burden of cancer among men is projected to increase dramatically: male cases rising from 10.3 million in 2022 to 19 million in 2050 (an 84% increase) and male cancer deaths escalating from 5.4 million to 10.5 million (a 93% increase). These increases will be most pronounced among older men and those in lower-HDI environments, due in part to sustained smoking, alcohol consumption, occupational carcinogen exposure and limited access to screening and prevention programs.

Interdisciplinary Perspectives Influencing Cancer Survivorship in India

Cancer survivorship in India cannot be addressed in isolation from the broader systemic, legal, environmental and cultural contexts that shape healthcare delivery. The evolving landscape of cancer care is deeply intertwined with societal, technological and policy-driven factors. For instance, long-term exposure to adulterated food products containing carcinogenic substances poses a significant risk to cancer survivors, especially in underregulated regions, highlighting the need for food safety as part of post-treatment care [2]. Similarly, as telemedicine becomes increasingly integrated into oncology services, legal challenges such as informed consent, liability and continuity of care demand urgent attention to protect survivors' rights and well-being [3]. Psychosocial interventions, such as music therapy, have also shown promise in enhancing emotional resilience, reducing anxiety and supporting recovery among cancer survivors [4]. Additionally, the accessibility and effectiveness of health insurance schemes significantly influence treatment continuity and long-term care outcomes, with disparities persisting among economically disadvantaged populations [5]. In underserved regions like Ramapuram, an interdisciplinary, culturally sensitive and policy-informed approach is essential to enhance not only physical recovery but also psychosocial resilience. These expanded perspectives

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Leading Cancer Types

Lung cancer stands out as the most diagnosed cancer (2.5 million cases, 12.4%) and the leading cause of cancer-related death (1.8 million deaths, 18.7%). This is followed by female breast cancer (2.3 million cases, 11.6%, 670,000 deaths, 6.9%), colorectal (1.9 million cases, 9.6%, 900,000 deaths), prostate, liver and stomach cancers.

Equity and Disparities

Cancer outcomes are deeply stratified by socioeconomic status. High-HDI countries exhibit much higher incidence rates due to better detection, but lower mortality rates. For instance, one in 12 women in very-high-HDI settings will be diagnosed with breast cancer (1 in 71 dying), compared to 1 in 27 and 1 in 48 respectively in low-HDI nations. Furthermore, high-HDI regions expect an additional 4.8 million new cancer cases by 2050, while low-HDI countries face the greatest proportional increases-142% incidence growth and nearly doubled mortality.

Disruption Due to COVID-19

The COVID-19 pandemic severely disrupted cancer detection and treatment services: in 2020, new diagnoses dropped by approximately 23%, with around one million potential cases missed globally (IARC/WHO survey; People data; ASCO Post) News.com.au. These delays likely contributed to later-stage diagnoses and may exacerbate future survival challenges.

Breast Cancer: Incidence and Significance

Breast cancer is the most prevalent cancer among women globally and ranks as the second most common cancer in India. Lifetime risk estimates indicate that one in eight women will develop breast cancer [6]. Factors contributing to its rising incidence include extended life expectancy, enhanced detection methods, lifestyle shifts and genetic predisposition [6].

India and Local Context

India reported 1.41 million new cancer cases in 2022, with breast cancer accounting for 192,020 cases-13.6% of all cancers and over 26% of cancer cases in women [7]. Multicentric studies in cities like Chennai show advanced-stage presentations and lower survival rates compared to Western countries. However, access to private healthcare in urban centers correlates with earlier detection and improved outcomes. There remains a critical lack of research into quality of life, psychosocial factors and long-term survivorship-especially in rural and low-income regions.

Risk Factors for Breast Cancer

Breast cancer risk is multifactorial:

- **Genetic/Heredity:** BRCA1, BRCA2 and similar high-penetrance gene mutations significantly heighten risk.
- **Demographic:** Age and female sex remain major unmodifiable determinants, with incidence rising notably after age 50 [6]
- **Reproductive/Hormonal:** Risk increases with early menarche, late menopause, nulliparity, delayed childbirth and hormone replacement therapy
- **Lifestyle/Environmental:** Obesity, sedentary lifestyle, alcohol use, radiation exposure, tobacco and select occupational hazards are modifiable risks
- **Breast Tissue**: High breast density and histories of benign breast disease independently elevate risk
- **Socioeconomic and Racial Disparities:** Differences in incidence and survival are evident by race and socioeconomic status, with low-HDI regions impacted by poorer diagnostic and treatment capabilities

Advances in Breast Cancer Research and Treatments

Technological advancements in screening such as mammography (including tomosynthesis), MRI and AI-augmented imaging have raised early detection and risk stratification capabilities [6]. Treatment plans are increasingly tailored to molecular subtypes, combining surgery, radiation, chemotherapy, hormone therapy and novel targeted agents. Precision medicine, biomarker discovery and subtype-guided therapies continue to advance care. Additionally, efforts are ongoing to refine screening and reduce overdiagnosis, particularly in low-risk groups.

Critical Analysis of Published Studies

Recent literature captures persistent gaps and emerging priorities:

- Prevention strategies need greater individualization, taking into account genetic factors, ethnicity and reproductive history

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- Disparities in detection and outcomes remain driven by socioeconomic and regional inequities
- Survivorship research-including quality of life, psychosocial needs and long-term management-is limited, particularly in underserved Indian communities
- Precision medicine is expanding, yet more evidence is required on novel biomarkers, resistance mechanisms and drug development
- Sustainable lifestyle modification programs, practical implementation of new screening modalities and survivorship studies in diverse populations (e.g., Chennai's rural or low-income women) represent significant research gaps

Research Gaps Specific to Chennai Survivors

A review of Indian and regional studies reveals:

- A lack of longitudinal data on breast cancer survivors from Chennai, especially regarding psychological, social and economic outcomes after active treatment
- Limited research on quality of life, supportive interventions and unique barriers faced by survivors in urban versus rural/tier-2 settings in southern India
- Most studies rely on data from tertiary care and private hospitals, potentially under-representing marginalized groups

The literature underscores the escalating global and national cancer burden, with breast cancer driving both morbidity and mortality. While risk factor profiles and treatment protocols are refined by recent research, persistent gaps remain in access, survivorship research and local data from regions such as Chennai. Focused, critical, up-to-date studies are needed to address disparities, inform public policy and improve long-term outcomes for Indian survivors.

MATERIALS AND METHODS
Objectives of the Study:

- To understand how treatment affects a patient's self-awareness and perception
- To collect responses regarding the role of family or caregivers during the treatment process
- To understand the coping mechanisms that an individual employs to fight and overcome the threatening circumstances of cancer

The study adopts a descriptive research design to explore the coping mechanisms of cancer survivors in Chennai (Ramapuram). The research focuses on cancer survivors who have completed treatment and are in the recovery phase, excluding patients currently undergoing treatment or not yet recovered. The universe comprises this specific group within the designated area. Data collection involves primary sources-namely, the survivors themselves-and secondary sources such as family, friends, textbooks and research materials. A pilot study was initially conducted to refine the research process, with approximately 10% of the sample used for pretesting. The

methodology emphasizes an inclusive criterion of survivors in Chennai (Ramapuram) and sets clear exclusion criteria to omit ongoing treatment cases. The study aims to accurately portray participants' physical, emotional and social coping strategies through various data collection methods, ensuring comprehensive insights into their experiences.

Study Design and Setting

This descriptive cross-sectional study was conducted among cancer survivors attending the oncology outpatient department at Ramapuram District Hospital between January and March 2024.

Sampling Method and Justification

A snowball sampling method was employed to recruit participants. This approach was chosen because cancer survivors in the Ramapuram region form a relatively close-knit community and often have strong informal networks. Snowball sampling facilitated access to eligible participants who might not be easily identified or willing to participate through standard recruitment strategies, ensuring broader representation within this sensitive population.
Inclusion and Exclusion Criteria:

Inclusion criteria

- Adult cancer survivors (aged 18 years and above) who had completed primary cancer treatment and were in remission for at least six months
- Residents of Ramapuram who were attending follow-up appointments at the hospital during the study period
- Willingness and ability to provide informed consent and participate in an interview

Exclusion criteria

- Individuals currently undergoing active treatment for cancer
- Survivors with cognitive impairment or severe psychiatric illness limiting their ability to participate in an interview

Pilot Study

A pilot study was conducted with 10 participants to evaluate the clarity and cultural relevance of the interview guide and data collection tools. Based on participant feedback, minor modifications were made to simplify language and ensure questions were contextually appropriate. The pilot confirmed that the questions were understandable and relevant to the participants, which helped enhance the reliability of the main study.

Data Collection Procedures

Data were collected using semi-structured, face-to-face interviews conducted in a private setting at the hospital to ensure confidentiality and participant comfort. Each

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interview lasted approximately 30-45 minutes. The same researcher conducted all interviews to maintain consistency.

Recording and Transcription
With participants' consent, all interviews were audio-recorded to ensure accuracy. Recordings were transcribed verbatim in the original language. Transcripts were cross-checked by a second researcher for completeness and accuracy, which strengthened the reliability and trustworthiness of the data.

RESULTS
Interpretation of Findings
The analysis and interpretation of this study offer valuable insights into the lived experiences of cancer survivors in Ramapuram, Chennai. The findings reveal key dimensions across demographic, psychosocial and caregiving contexts, helping to illuminate the multifaceted needs and strengths of this population.

Demographic Profile and Clinical History
The majority of respondents were between 18 and 40 years of age, representing a relatively young cohort of cancer survivors. Most were well-educated, with professional affiliations spanning IT, business, education, homemaking and student life. These characteristics suggest that cancer is not confined to older age groups and can significantly affect younger, economically active individuals. Most participants were diagnosed between 2016 and 2018, with treatment histories that included chemotherapy, surgery, or both. A large proportion perceived their treatment as effective, indicating positive outcomes and faith in the current healthcare infrastructure. This reflects not only the accessibility of medical interventions in urban settings like Chennai but also a degree of resilience among survivors.

Gender Distribution and Vulnerability
The gender distribution-53.3% male and 46.7% female-demonstrates that cancer affects both sexes nearly equally within this cohort, challenging the commonly held perception that certain cancers disproportionately affect one gender. This underscores the importance of inclusive cancer awareness and screening initiatives that target all segments of the population, regardless of gender.

Psychological and Emotional Impact
A recurring theme in the data is the psychological toll that cancer has on survivors. Many respondents reported experiencing significant emotional distress, anxiety and trauma during their diagnosis and treatment phases. However, the presence of family and peer support often served as a buffer, aiding in emotional recovery and the development of a hopeful, future-oriented outlook. This aligns with existing literature highlighting the critical role of emotional resilience and psychosocial resources in survivorship. It is evident that mental health interventions should be integral to post-treatment care.

Role of Family and Social Networks
While most participants stated that their families were aware of their diagnosis, there was a notable gap in cancer literacy among family members. This lack of awareness may hinder families' ability to provide informed support. Nonetheless, survivors largely benefited from the emotional and practical support of friends, whose presence contributed to their coping and psychological stability. The findings reaffirm that social support systems-particularly in collectivistic cultures like India-are vital to recovery and well-being.

Coping Strategies and Survivorship
The survivors in this study employed a range of coping mechanisms, including reliance on medical treatments, drawing strength from personal willpower and seeking emotional support from loved ones. These strategies illustrate the complex interplay between external support systems and internal psychological resilience. Effective survivorship appears to be contingent on an integrated support system that addresses not only the physical but also the emotional and social dimensions of cancer.

Caregiving and Support Systems
Caregivers, most often immediate family members such as spouses or parents, played an indispensable role in daily caregiving tasks, emotional reassurance and logistical support. Their roles extended beyond practical help to include motivational and emotional support-often at personal sacrifice. The study highlights how caregiving is a dynamic and emotionally labor-intensive process that significantly shapes the survivor's journey. Supporting caregivers through education and psychosocial services is equally crucial.

Implications for Holistic Care and Policy
The findings underscore the pressing need for a multidisciplinary approach to cancer survivorship. This approach should integrate not only timely medical interventions but also robust psychological counseling, family education, peer support systems and community-level awareness programs. A holistic model of care that includes mental health services, patient education and caregiver support can significantly improve the quality of life and psychological well-being of cancer survivors.

Moreover, the study calls for policy-level interventions that prioritize survivorship care plans, mental health integration into oncology and structured support for caregivers. Targeted educational campaigns can help demystify cancer, reduce stigma and promote early detection, especially in semi-urban and urban fringe areas like Ramapuram.

CONCLUSION
This study highlights the multifaceted realities of cancer survivorship, particularly in the semi-urban context of Ramapuram, Chennai. The findings reveal that while medical advancements have improved survival rates, the psychosocial

and emotional challenges faced by survivors remain substantial and require equal attention. Survivorship is not solely defined by the end of treatment, but by a continuum of experiences involving psychological resilience, social reintegration and ongoing health management.

Despite increasing awareness and access to healthcare, many survivors continue to struggle with the enduring impacts of cancer stigma and emotional distress. Psychological issues such as trauma, anxiety and mental fatigue were commonly reported, affecting survivors' overall adjustment and well-being. However, these challenges are often alleviated through strong social support networks. The presence of caring family members, empathetic friends and supportive healthcare professionals played a critical role in helping survivors navigate post-treatment life. These support systems enhanced motivation, fostered resilience and improved coping mechanisms, ultimately contributing to a more positive recovery trajectory.

The study also identified that a majority of the participants were diagnosed within a specific timeframe (2016-2018) and had undergone common treatment modalities such as chemotherapy and surgery. Many perceived their treatments as effective, a testament to advancements in oncology care. Still, the journey toward psychological recovery varied widely, shaped largely by the presence or absence of informed and supportive caregivers. A significant gap in cancer awareness among family members was observed, indicating the need for community-level education to empower families to provide more informed and empathetic care.

Another critical insight is the necessity of a multidisciplinary approach to survivorship care-one that extends beyond medical treatment to include psychological counseling, caregiver support and public awareness. Survivors benefit most when healthcare systems integrate mental health services, social work and patient education into the cancer care continuum. This approach not only improves quality of life but also promotes sustainable coping and social reintegration.

In conclusion, this study advocates for an integrated model of cancer survivorship care that holistically addresses the physical, emotional and social dimensions of recovery.

By strengthening support systems, educating families and communities and fostering resilience through targeted psychosocial interventions, stakeholders-including healthcare providers, social workers and policymakers-can significantly enhance survivorship outcomes. Future strategies should prioritize the development of culturally sensitive, accessible and community-based survivorship programs to ensure that no survivor is left to cope alone.

Ethical Considerations

Informed written consent was obtained from all participants. Confidentiality and anonymity were assured, with all personal identifiers removed from transcripts and reports.

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