



Pain Among Cancer Patients with Chronic Pain- A Cross Sectional Study in a Tertiary Care Hospital Setting in Belagavi

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KEYWORDS

pain severity, chronic pain, cancer patients, pain assessment, IPD/OPD, CT/RT.

ABSTRACT:

Introduction:

Background:

Pain remains one of the most common and distressing symptoms experienced by individual with cancer often resulting from the disease or its treatments. Chronic pain related to cancer can significantly affect physical functioning, emotional well-being and overall quality of life. Pain severity often varies depending on tumor progression, treatment modalities and individual physiological responses, making the effective pain management a critical component of cancer. Hence, addressing these issues is essential in improving pain assessment, guiding treatment decisions and ensuring comprehensive supportive care.

Objectives:

- 1) To determine the level of pain among cancer patients with chronic pain.
- 2) To examine the association of demographic factors with pain.

Materials and Methods: A cross sectional study design was used with a convenience sampling technique to select 107 reported cancer patients diagnosed with chronic pain from tertiary hospital in Belagavi city and Pain Questionnaire was used to assess the level of pain.

Statistical Analysis: Chi Square and percentage method were applied.

Results: Majority of patients (52.34%) showed Moderate level of pain, IPD/OPD and CT/RT demographic factors had significant association with pain ($p=0.0001$).

Conclusion: The level of pain is moderate among cancer patients and there exists significant association between the treatment setting and treatment modalities.

1. Introduction

Health is the most precious asset. Good health and wellbeing enable us to live happy, fulfilling lives and helps us to achieve our potential, supporting positive social and economic outcomes for individuals and society. "Health is a state of complete physical, mental

and social well being and not merely the absence of disease or infirmity." **World Health Organizational (1946).**¹

Health is a resource for everyday life, not just the objective of living. The shift from this state of health to one of illness occurs when the protective balance



provided by positive determinants of health like good nutrition and strong social support which otherwise overwhelmed by risk factors. These factors cover variety of areas, including biological factors like genetic predispositions and lifestyle choices, which collectively influence the entire state of health affecting the physical, emotional and psychological well-being of an individual.²

When illness occurs especially a severe chronic condition, it not only challenges the body's physical system but also disrupts emotional and psychological balance. Over time, this disruption can give rise to pain in multiple dimensions.³The mechanisms behind this are described by the Biopsychosocial model of pain, which recognizes that pain is not just a response to tissue damage but emerges from interplay of biological, psychological and social factors, and Cancer is one among such illness.⁴

Cancer Related Chronic Pain:

Cancer is a disease in which some of the body's cells grow uncontrollably and spread to other parts of the body. It is a genetic disease that is caused by changes to genes that control the way cells function, especially how they grow and divide.⁵

One of the defining feature of cancer is the rapid creation of abnormal cells that grow beyond their usual boundaries, which can then invade adjoining parts of the body and spread to other organs.⁶Cancer patients and survivors face a range of medical and psychological problems such as psychological distress, emotional pain ,subjective sufferings, fear of cancer recurrence, social isolation, sexual dysfunction, infertility, impaired organ function, cosmetic changes, limitations in mobility, communication and cognition.⁷

Pain is one of the most frequent and feared symptoms in people with cancer. Evidence shows that 30% to 50% of cancer patients experience moderate to severe pain. It

may occur at all stages of the disease, although it may increase in intensity and frequency if cancer progresses.⁸

According to the *International Association for the Study of Pain*, chronic pain is “persistent or recurrent pain lasting longer than 3 months and associated with significant emotional distress or significant disability that interferes with daily activities of individuals”.⁹

There are different kinds of chronic pain.

1) Chronic benign pain typically persists for 6 months or longer and is unresponsive to treatment.

2) Chronic progressive pain persists longer than 6 months and increases in severity over time.¹⁰

A study published in the Journal of Pain and Symptom Management revealed that cancer patients experiencing chronic pain reported significantly lower levels of emotional functioning and quality of life compared to those without pain. **Kroenke et al. (2010)**¹¹

Qualitative research highlighted that those patients with advanced cancer often engage in repressive avoidance behaviors and suffering alone. This makes pain worsen, which can lead to the feelings of emotional distress and individual's ability to cope with pain becomes weak.¹² Thus, there is a need to understand the psychological factors, which could improve pain and over well-being of these patients.

Feeling believed, being truly listened to and validation of one's experience are central to fostering trust, building a therapeutic relationship and strengthening a person's own sense of worth and identity. This is highlighted by the National Institute for Health and Care Excellence (NICE) in guidelines on chronic pain, which recommend fostering a collaborative and supportive relationship among the individuals with chronic pain.¹³

Beyond conventional strategies like analgesic medication, palliative care, and surgical interventions, emotional support plays a vital role in alleviating cancer-related pain. Maintaining strong connections and



practicing relaxation techniques like meditations and yoga can improve not only the physical pain but strengthen patient's ability to cope with emotional challenges of cancer by studying the importance of both physical and psychological aspects of pain.¹⁴

If the severity, frequency and impact of chronic pain in cancer survivors are not addressed, it can lead to serious consequences such as the persistent pain undermines daily functioning, diminishes quality of life and fuels emotional distress including depression and anxiety (Goncalves et al. 2020)¹⁵

Moreover, untreated pain disrupts sleep, limits physical mobility and strains social and interpersonal relationships that can lead to isolation and decrease individual's interest in daily activities.¹⁶

Including pain management in cancer care can lead to better physical functioning, improved quality of life and reduced emotional distress, strengthening patients' ability to live with great resilience, and also by examining the severity of chronic pain, healthcare providers can identify effective strategies to manage pain and improve overall well-being in cancer patients by aiming to understand their intensity, frequency and impact of pain on daily functioning and associated demographic characteristics.¹⁷ In this regard the current study was conducted.

2. Objectives

1. To determine the level of pain among cancer patients with chronic pain.
2. To examine the association of demographic factors with pain.

4. Results:

In this regard this study was carried out on the population of cancer patients.

Table no 1: Showing the distribution of Demographic characteristics of cancer patients

3. Methods

Research design: A Cross Sectional Study

Sampling technique: Convenience sampling

Sample size: A sample of 107 clinically diagnosed patients of Cancer with chronic pain, selected from Oncology Out patients Department (OPD) and In Patient Ward (IPD) from Belagavi city by using Sample size formula.

Measure used: Pain Questionnaire by Uday K. Sinha

Procedure: After seeking approval and ethical clearance from J. N. Medical College Institutional Ethics Committee for Human Subjects' Research and permission from the authorities of the concerned hospital, cancer patients of stage III and IV with chronic pain attending Oncology Out Patient Department and In Patient Ward in tertiary care hospital, Belagavi were selected for the study. Participants were informed about the study beforehand and confidentiality was ensured before obtaining Informed Consent, then researcher started data collection. The questionnaire was administered with clear instructions in English and vernacular language (as per the requirement). Researcher facilitated the process by reading each item a loud and recording their responses for the participants unable to read. All completed questionnaires were subsequently collected then produced for scoring, coding and entering into excel (2007) followed by statistical analysis using SPSS software version 22.0.

Analysis of Results: Percentage and Chi Square methods were utilized.



Characteristics	Number	Percentage
Age group		
<=30yrs	8	7.48
31-40yrs	5	4.67
41-50yrs	39	36.45
51-60	55	51.40
Gender		
Male	41	38.32
Female	66	61.68
Occupations		
Employed	19	17.76
Business	14	13.08
Housewife	37	34.58
Self employed	20	18.69
Agriculture	17	15.89
Education		
Illiterates	30	28.04
Primary	20	18.69
Secondary	23	21.50
PUC	13	12.15
Graduate	21	19.63
Marital status		
Married	104	97.20
Unmarried	3	2.80
Area of residence		
Urban	77	71.96



Rural	30	28.04
IPD/OPD		
IPD	50	46.73
OPD	57	53.27
CT/RT		
CT	79	73.83
RT	6	5.61
CT/RT	22	20.56
Total	107	100.00

Results of the first objective are presented in the following table and discussed as below:

Table no 2: Showing the levels of pain among cancer patients

Levels of pain	Number	Percentage
Moderate	56	52.34
Severe	47	43.93
More severe	4	3.74
Total	107	100.00

Graph 1: Showing the levels of pain in cancer patients

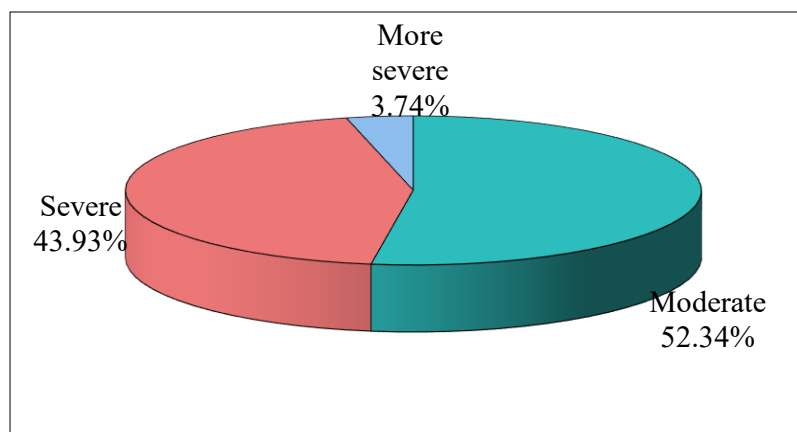




Table no 3: Showing the association between levels of pain with demographic characteristics.

Characteristics	Moderate	%	Severe	%	More severe	%	Total	%	χ^2	p-value
Age group										
<=30yrs	5	62.50	3	37.50	0	0.00	8	7.48	2.7390	0.8410
31-40yrs	2	40.00	3	60.00	0	0.00	5	4.67		
41-50yrs	23	58.97	15	38.46	1	2.56	39	36.45		
51-60	26	47.27	26	47.27	3	5.45	55	51.40		
Gender										
Male	17	41.46	22	53.66	2	4.88	41	38.32	3.1660	0.2050
Female	39	59.09	25	37.88	2	3.03	66	61.68		
Area of residence										
Urban	40	51.95	34	44.16	3	3.90	77	71.96	0.0300	0.9850
Rural	16	53.33	13	43.33	1	3.33	30	28.04		
Total	56	52.34	47	43.93	4	3.74	107	100.00		
Treatment setting										
IPD	9	18.00	37	74.00	4	8.00	50	46.73	45.0310	0.0001*
OPD	47	82.46	10	17.54	0	0.00	57	53.27		
Treatment modality										
Chemotherapy(CT)	44	55.70	33	41.77	2	2.53	79	73.83	10.7350	0.0300*
Radiation therapy (RT)	5	83.33	0	0.00	1	16.67	6	5.61		
CT/RT	7	31.82	14	63.64	1	4.55	22	20.56		
Total	56	52.34	47	43.93	4	3.74	107	100.		



5. Discussion:

Chronic pain in cancer patients refers to a long-lasting and persistent experience of discomfort that continues for months or years, often extending beyond the normal healing period. It plays an important role in overall health as it affects daily functioning, emotional stability, sleep, appetite etc. Pain severity and pain frequency are key dimensions of this condition. Many

patients experience repeated episodes of pain each day with levels ranging from moderate to severe, a few even reported more severe and intense pain.

Chronic pain can disrupt physical, psychological and social well-being, making it difficult for patients to cope with their illness. Emotional factors such as anxiety, fear and sadness may further intensify pain perception, and reduce the individual's ability to manage symptoms effectively. Positive coping abilities, supportive relationships, resilience, hope and strong social support can improve pain tolerance, enhance recovery and promote better quality of life. This highlights the importance of integrating both physical and psychological care into the management of chronic pain among cancer patients.¹⁸

The highlights of the results found by Shrestha et al. (2024) demonstrated that moderate pain was commonly experienced among cancer patients.¹⁹

Among the total participants of the study, majority of patients (51.40 %) belonged to 51–60 age group followed by 36.45% those aged between 41–50 years, remaining participants belonged to age group of ≤30 years (7.48%) and 31–40 years (4.67%). With respect to gender, majority (61.68%) of the participants were Females. Occupation wise, the highest proportion of participants were housewives (34.58 %) and 18.69% were self-employed followed by 17.76% being employed

and remaining 15.89% were from agriculture and 13.08% from business.

In context of education, majority of the participants were illiterate (28.04%). Subsequently, 21.50% were with background of secondary school education and 19.63% were graduates. Regarding marital status and residence, 97.20% participants were married and majority of the study participants (71.96%) resided in urban areas. Highest percentage (53.27%) of the participants were from OPD whereas 73.83% were from treatment settings undergoing chemotherapy.

As per the given table, among the total respondents, 52.34% reported experiencing a moderate pain, followed by 43.93% with severe pain; only a small percentage of 3.74% of participants reported a more severe pain. These findings indicate that majority of these patients experienced moderate to severe pain and very few reported extremely high pain (3.74%).

These findings support the results of previous research that emphasized moderate pain was most frequently reported followed by severe pain, indicating a substantial and persistent burden of chronic pain among cancer patients. It was further highlighted the need for effective pain management strategies to improve the overall quality of life for patients undergoing cancer care.²⁰

Evaluation of these results demonstrate that moderate to severe pain was noted in most of the study participants. This indicates that many cancer patients living with chronic pain may continue to experience significant and distressing pain symptoms. This further emphasizes the importance of conducting pain assessments, ensuring continuous monitoring and implementing effective pain management strategies to reduce pain intensity and improve the overall quality of life for cancer patients.



In the chronic illnesses like cancer, various demographic factors like age, gender, cultural factors, residence and duration of disease are associated with pain and play an important role.^{21,22} Objective two of the study was formulated to examine this and the concerned results are presented in the following table.

It is observed in the conclusion of the previous investigation that culture has a strong influence on how chronic malignant pain was experienced, expressed and coped with. Thus, it was suggested for planning care that includes social, psychological and other domain. **Mary Kodiath et al. (1995)**

Table no 3: Among all the age groups, moderate pain was observed in 62.50% participants belonging to ≤ 30 years followed by 58.97% aged between 41-50 and 47.27% from 51-60 years and 40% from 31-40 years age group. Among participants aged 31-40 years, 60% reported severe pain, subsequently 38.46% from 41-50 years, while 5.45% from 51-60 years group reported more severe pain. Calculated chi square and p value ($\chi^2=2.7390$, $p=0.8410$) indicated no significant association of age with pain.

In respect to gender, females showed a higher proportion of moderate pain (59.09%) compared to males (41.46%). In contrast, majority of males experienced severe pain (53.66%) than females. Furthermore, in the category of more severe pain, males showed the higher proportion (4.88%). Computed chi square and p value ($\chi^2=3.1660$, $p=0.2050$) determined that gender was not significantly associated with pain.

In context of area of residence, moderate to severe pain was observed in both the areas, but moderate pain was observed more in rural participants (53.33%) compared to urban participants (51.95%). Conversely, severe pain was more prevalent among urban participants-

44.16% followed by rural participants- 43.33%. Additionally, more severe pain was reported by 3.90% patients from urban than those residing in rural areas (3.33%). Calculated chi square ($\chi^2=0.0300$) and p value ($p=0.9850$) indicated no significant association between area of residence and pain.

Referring to treatment setting, moderate pain was much higher among OPD participants (82.46%) compared to the IPD participants (18.00%). Severe pain was predominantly seen among 74.00% IPD participants while a much lower proportion was observed in OPD attendees (17.54%). More severe pain was observed only among IPD participants with a proportion of 8.00% as per the chi square ($\chi^2=45.0310$) and p value, treatment setting (IPD/OPD) was highly significantly associated with pain at the level of 0.0001.

In terms of treatment modality, the largest percentage (83.33%) of moderate pain was noticed in participants receiving radiation therapy followed by 55.76% undergoing chemotherapy and 31.82% receiving combined CT and RT. Conversely, severe pain was most common among participants receiving combined CT and RT (63.64 %) with a low percentage among CT participants (41.77 %). Additionally, more severe pain was reported in 16.67 % taking RT followed by the combined CT and RT group at 4.55 % and in 2.53% patients receiving CT. Calculated chi square and p value ($\chi^2=10.7350$, $p=0.0300^*$) indicated a significant association of treatment setting and treatment modality with pain.

These differences were statistically significant ($p<0.05$), suggesting that pain severity varies notably depending on both the treatment settings and treatment type.

The observed results of care setting (IPD/OPD) are supported by a tertiary-care hospital-based study in



India, where hospitalized cancer patients reported a high prevalence of moderate-to-severe pain. **Arora et al. (2019)**²³

Overall findings of the present study demonstrated that pain was significantly associated with clinical variables IPD/ OPD and CT/RT, and not with the other remaining demographic factors.

I. CONCLUSION

- 1) Moderate level of pain is experienced by cancer patients with chronic pain.
- 2) Treatment setting and treatment modalities have significant association with pain.

II. LIMITATIONS OF THE STUDY

- 1) The study was restricted to Belagavi city with a small sample size.
- 2) Study included only male and female participants and excluded transgender.

SUGGESTIONS

- 1) Further studies involving cancer patients across various cancer types, stages and treatment can be conducted with large sample size and broader geographical areas.
- 2) Holistic approach must be promoted using the services of multidisciplinary professionals for the management of pain.
- 3) Regular pain assessment, orientation and awareness programs on life style modification, self management, enhancing health behaviors have to be organized in health care settings.

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