

Available online on 17.05.2021 at <http://jddtonline.info>

# Journal of Drug Delivery and Therapeutics

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Research Paper

## Evaluation of Clinical Pharmacy Services Offered for Palliative Care Patients in Chennai

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### Article Info:



#### Article History:

Received 03 April 2021  
 Review Completed 05 May 2021  
 Accepted 14 May 2021  
 Available online 17 May 2021

#### Cite this article as:

Thirumal V, Evaluation of Clinical Pharmacy Services Offered for Palliative Care Patients in Chennai, Journal of Drug Delivery and Therapeutics. 2021; 11(2-s):109-112  
 DOI: <http://dx.doi.org/10.22270/jddt.v11i2-s.4803>

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### Abstract

Palliative care is an emerging concept in developing countries like India. North region is having more illiterate people comparing to southern part of India and shows poor palliative care services offered in those regions. Clinical pharmacy services are in developing stages in those regions. The objectives of this study were to create a baseline inventory of clinical pharmacy interventions in palliative care and to assess the perceived importance of interventions made. This was a prospective, single-center characterization study. Interventions were documented from a period of three months (September to November, 2020) and were characterized into predetermined categories and analyzed using descriptive statistics. Physician acceptance rate and intervention rate per patient was calculated. A total of 98 interventions were documented, giving 2 interventions per patient and an acceptance rate of 62%. Discontinuing therapy (35%), initiating therapy (22%), and provision of education/counseling (8%) were most common Interventions. Clinical pharmacy interventions are frequent, and those relating to alterations in drug therapy are most common. The major conclusions from this study are that clinical pharmacy services are being offered for palliative care patients in chennai, with an emphasis on initiating and discontinuing through clinical pharmacist is effective.

**Keywords:** *Clinical pharmacy; hospice; palliative care; pharmacy; pharmacy education*

## INTRODUCTION

Palliative care is defined as “an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems—physical, psychosocial, and spiritual.<sup>1</sup> Non-communicable diseases (NCD) including injuries account for 62% of disease burden, as on 2004, and contribute to half (50%) of all mortality in India. Long-term care for such patients is emerging as a major healthcare issue in India.<sup>2</sup> Most of the patients were unaware of their disease.<sup>3</sup> Patients diagnosed with chronic conditions such as cancer, cardiovascular disorders, cerebrovascular disorders, chronic respiratory disorders, end-stage renal disease, leprosy, and HIV not only require physical control with their diseases and symptoms but also need help in coming to terms with their diseases. Increase in the geriatric population will have dramatic implications for governments around the world, particularly as aging populations put increasing pressure on existing services. The 'Quality of Death' index measures the current end-of-life care environments across 40 countries. The index scores countries across four categories: Basic end-of-life healthcare environment; availability of end-of-life care; cost of end-of-life care; and quality of end-of-life care. The index ranks the

United Kingdom and Australia as providing the world's best 'Quality of Death', whereas countries such as Italy and South Korea are ranked much lower. The report identifies poor access to pain relief, a lack of palliative care at national policy level, and cultural taboos as the main barriers to countries providing a good 'Quality of Death' and thus good quality of life at the end of life. India ranks at the bottom of the Quality of Death index in overall score, and scores badly on many other indicators. Furthermore, India ranks poorly regarding the knowledge of existence of hospice care, reflecting a general lack of awareness.<sup>4</sup>

### Need for Palliative Care

According to Worldwide Palliative Care Alliance (WPCA), although more than 100 million people across the world would benefit from hospice and palliative care annually (including family and carers who need help and assistance in caring), less than 8% of those in need access it.<sup>4</sup> The exact need for palliative care is difficult to estimate because of flaws in disease registration, communication difficulties, and stigma attached to the diagnosis of cancer and AIDS.<sup>5</sup> It is estimated that in India around 1 million people are diagnosed with cancer every year. Around 80% of all cancers are diagnosed in the advanced stage when treatment is less effective and palliative care becomes absolutely essential.<sup>2</sup>

## Palliative care in India

Though palliative care services have been in existence in India for many years, there has been steady progress in the past few years. According to the report by WPCA, India has moved from Group 2 countries (making capacity-building activities) to Group 3B countries for having generalized palliative care provision.<sup>6</sup> Although India ranks at the bottom of the Quality of Death Index in overall score, Kerala, an Indian state, is cited as a 'beacon of hope' for providing palliative care services. Constituting only 3% of India's population, Kerala provides two-thirds of India's palliative care services. The state has a formal palliative care policy in place and its government provides funding for community-based care programs. It was also one of the first of India's states to relax narcotics regulations to permit use of morphine by palliative care providers.

National Rural Health Mission has also initiated the development and expansion of community-owned palliative care services in collaboration with the state government. The Aroky Kerala project for community-based care of the bedridden elderly is an example for integration of community-based palliative care.<sup>7</sup> In the state of Karnataka, Bangalore Hospice Trust, set up in 1994, is an independent, standalone institution that provides both homecare and institutional care.<sup>8</sup> The Government of Andhra Pradesh started a health insurance system for people below poverty line, wherein the insurance scheme also covers palliative care services.<sup>9</sup> It is estimated that in India the total number of people who need palliative care is likely to be 5.4 million people a year, stressing on the need to expand the coverage of palliative care services and integrate services at all levels of care. Across the levels of care, services can be provided through inpatient care, outpatient care, and home-based care. In low resource settings where the number of people requiring care is high and the number of doctors and nurses available to provide care is low, palliative care can be made effective by involving clinical pharmacist and community caregivers trained in palliative care.

Clinical pharmacists are essential in developing an individualized treatment regimen for each patient. The Knowledge regarding antibiotic use in community level is very low<sup>10</sup> and depression and anxiety due to certain diseases like PCOD is now emerging.<sup>11</sup> A treatment plan requires specific patient goals with pharmacologic and nonpharmacologic management to improve quality of life while reducing costs and unnecessary medications. Effective utilization of pharmaceutical options optimizes the care of active disease states, enhances individualized dosing regimens, and assists in reducing the adverse effects of medicines.<sup>12</sup> Excessive medication use can lead to polypharmacy and adverse events. The clinical pharmacist can play a major role in providing diabetes care and other life style diseases.<sup>13</sup>

In palliative care patients, adverse events can be avoided by discontinuing inappropriate medications. Examples of interventions clinical pharmacists can use to prevent and reduce polypharmacy include medication reconciliation, patient education, geriatrics consultation, and multidisciplinary team consults.<sup>14</sup> In addition, resources such as the Beers List Criteria<sup>15</sup> can be used as a guide for effective and appropriate medications.

## Non-traditional Administration Routes

Alternative administration routes for palliative care are vital to providing effective patient care. Many commonly prescribed drugs (eg, promethazine, morphine sulfate) may be used in non-traditional routes.<sup>16</sup> Topical gels containing

lorazepam, diphenhydramine, or metoclopramide can be effective for patients with refractory nausea and vomiting.<sup>17</sup> Various dosage forms, including transdermal patches of scopolamine and depot injections of octreotide, are used to treat specific needs of individual patients.<sup>18</sup> Many medications not manufactured in parenteral or suppository formulations can pose administration challenges in patients with an interruption in oral access. Commonly prescribed medications can have non-traditional uses and rectal bioavailability, such as carbamazepine tablets or suspension for convulsions; rectal use may allow rapid absorption and partially avoid first-pass metabolism.<sup>19</sup> If necessary, drugs can be compounded into parenteral, solutions, creams, ointments, and transdermal dosage formulations to improve patient adherence and ameliorate AEs, such as constipation, nausea, gastrointestinal issues, and sedation.<sup>20</sup>

Individualized care is required because palliative care regimens are highly individualized to meet each patient's needs, integrating a clinical pharmacist into the interdisciplinary team is vital to achieving a patient's care goals. Body kinetics and volume of distribution are altered in patients in end-of-life care. Clinical Pharmacists have a unique knowledge base for optimizing patient care while reducing AEs and toxicity.<sup>21</sup> Gastrointestinal issues may develop secondary to many chronic conditions (eg, advanced cancer, neurologic disorders).<sup>22</sup> Constipation is one of the most common problems patients experience at the end of life. The cause can be as simple as dietary alterations or the inability to ambulate or exercise. Severe discomfort and pain from constipation may cascade into an unrelenting decline in a patient's quality of life, requiring pharmacologic intervention.<sup>23</sup> Clinical pharmacists can play an important part in preventing and managing the symptoms of these type of conditions, such as bowel obstruction, dehydration, loss of appetite, mobility issues, and medication AEs.<sup>24</sup> Many nonpharmacologic approaches (eg, dietary changes, avoidance of negative environmental stimuli, behavioural measures such as relaxation) may assist patients without adding to the pharmacologic burden. In collaboration with the interdisciplinary team, the Clinical pharmacist must assess the needs of each patient, including family dynamics and spirituality, to select the best method of treatment. This team may include a spiritual counsellor, nurses, physicians, caregivers, and volunteers.

Appropriateness of therapy should be evaluated in regard to a patient's anticipated life expectancy. Research shows that discontinuing certain medications in elderly patients and those in palliative care does not worsen outcomes, but can actually reduce the risk of AEs and decrease patients' overall costs. Pharmacists can de-escalate medications by eliminating long-term medications that do not show immediate benefit to elderly patients and those in palliative care. As treatments centered on comfort and quality of life become a greater priority, many common long-term medication therapies may require re-evaluation for patients in palliative care. Counselling by clinical pharmacists can bridge the knowledge gap for patients and caregivers to prepare them for possible discontinuation of long-term medications. Pharmacists within the interdisciplinary team can help patients and their families understand the risks and potential dangers of these medications. Some drugs may not be beneficial for sustaining life or providing comfort at the end of life, but may increase AEs.

The primary objective of this study was to create a baseline inventory of clinical pharmacy interventions by clinical pharmacist in palliative care. Other objectives were to assess the perceived importance of these interventions.

## METHODS

Data's were collected throughout the study period of three months (September to November 2017). A data collection tool was developed, for which all the data's were recorded. The collected data included number of patients admitted to palliative care while clinical pharmacists were on service, and actual or potential drug therapy problem, clinical pharmacist intervention for resolution of identified drug therapy problem and acceptance by the prescriber, (if applicable). Similar methods were described previously.<sup>12</sup> Intervention forms were copied and distributed independently to two experienced clinical pharmacist investigators. Both investigators classified each recommendation according to an adaptation of a published classification method. Results were compared and any discrepancy was resolved through discussion and consensus. Classified recommendations were analysed using descriptive statistics. Average numbers of recommendations per patient and recommendation acceptance rates were calculated. Education-related recommendations/ interventions were not included in the acceptance rate, as the pharmacist does not need to seek permission to perform education-related activities. Pharmacists were asked to rank each recommendation type on a 10-point scale. The 10-point scale consisted of numbers from 1 to 10, with 10 representing the highest importance and 1 representing the lowest importance.

## RESULTS AND DISCUSSION

A total of 98 recommendations were documented throughout the study time period. The majority of palliative care patients spend most of their last year at home under the care of their General Practitioner and the primary care team. The pharmacist saw 42 patients during this time, and this resulted in an average intervention rate of 2.0 interventions per patient. After removing education-based interventions, the prescriber acceptance rate was 62%. The results of the intervention classification are given in Table 1. Interventions regarding the discontinuation of drug therapy were most common (35%), followed by interventions regarding initiation of drug therapy (22%). Referring to other health care professionals was the least common intervention (8%), which is not surprising due to the nature of the inpatient practice. The most common medications involved with pharmacist interventions included Antibiotics like cephalosporins, Acyclovir and other drugs like NSAIDS, Calcium Channel blockers. The median and range for each question is given in Table 2. The most highly rated interventions were those regarding initiation and discontinuation of therapy, which matched the most commonly classified interventions in the unit. Only when the pharmacist knew and had details of the patient's medical condition and prognosis were they able to suggest new therapies or to titrate existing ones. We chose an expert panel review of pharmacist's interventions in order to remove as much subjectivity and bias as possible from an emotive area. The panel broadly reflected the professions participating in the teams caring for the patients. It has been shown from assessment of interventions in other studies that pharmacist interventions are generally viewed positively by doctors. The areas where the panel failed to reach a consensus indicate that some progress still needs to be made so that each profession recognizes each other's role and the need for overlap of some roles to provide continuity of care for the patient.

**TABLE 1: Classification of Clinical Pharmacy Recommendations in Palliative Care Unit.**

Classified category of recommendations	Number (%)
Discontinuation of therapy	35 (36%)
Initiation of therapy	22 (22%)
Education or counselling	12 (12%)
Dosage Increase	8 (8%)
Change in route of administration or dosage Form	2 (2%)
Change in dose frequency or schedule	5 (5%)
Dosage decrease	4 (4%)
Laboratory monitoring	2 (2%)
Referral to other consult services	8 (8%)

**TABLE 2: Perceived Importance of Clinical Pharmacy Interventions in Palliative Care.**

S.No	Recommendation Category	Rank*
1.	Initiation of Drug Therapy	10
2.	Discontinuation of Drug Therapy	10
3.	Adjusting Doses	10
4.	Adjusting Routes	8.5
5.	Patient Education	10
6.	Diagnostic tests	9
7.	Non Pharmacological alternatives	9
8.	Adjusting Schedules	8
9.	Physician/Nurse Education	10
10.	Laboratory Monitoring	9
11.	Brand Switches	6

\*Rankers were asked to rate each category of recommendations on a scale of 1-10, with 1 being not at all important and 10 being highest importance

## CONCLUSION

This study described an evaluation of clinical pharmacy services in palliative care in Chennai, Tamilnadu. To our knowledge, this is the first study to report on clinical pharmacy services in palliative care in the Salem.

The major finding of this study is the establishment of a baseline inventory of clinical pharmacy services in palliative care in Chennai. This inventory can be used as a benchmark to monitor and compare future initiatives, including expansion of pharmacy service and scope of practice. This study does suggest that when trained community pharmacists are included as integral members of the palliative care team, they can intervene effectively to improve pharmaceutical care for palliative care patients in the community, providing additional support for them to remain at home. The study has shown that the personal palliative pharmaceutical care services are feasible in everyday practice when the pharmacist is included in the multidisciplinary palliative care team. Finally, as palliative care teams become more common throughout the South India and entire India, the results of this study can be used as rationale for inclusion of a clinical pharmacist as an

essential team member and can provide insight for the types of services they can offer. This is a significant finding, as practice should attempt to generally reflect which types of activities are deemed most useful. This is especially true for clinical pharmacy services, as pharmacists are largely able to tailor their practices according to which activities they prefer. For example, a pharmacist could focus solely on dosage and route of administration adjustments, instead of proactively suggesting changes in therapy.

## ACKNOWLEDGEMENT

Authors are grateful to the SRM Medical College and Hospital, Chennai for providing facility for this research.

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