



## Knowledge and perceptions in palliative care among undergraduate medical students in Puducherry, South India

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### ABSTRACT

**Background:** In the NPCDCS program of Government of India, capacity building of health professionals on palliative care is a key component in rehabilitation of cancer and other NCDs. However as palliative care teaching is still not mandatory in undergraduate medical curriculum, a medical graduate lacks knowledge and confidence in providing palliative care. Understanding the existing level of knowledge and perceptions of students towards palliative care can facilitate planning a need-based curriculum.

**Aim:** To assess the knowledge and perceptions in palliative care among undergraduate medical students in Puducherry, South India.

**Methods:** After ethical clearance, a semi structured questionnaire comprising 15 knowledge questions and seven perception statements on palliative care was administered to 265 pre-final and final year medical students. The data were analyzed using SPSS-23.

**Results:** Cancer (88.6%), AIDS (28.6%), Spinal trauma (11.6%), XDR TB (5.6%) and Coma (4.5%) were mentioned as diseases that need palliative care. Improving quality of life (46.4%) and relief of pain (30.5%) were mentioned as the purposes of palliative care. Only 15.8% said palliative care starts from the time of diagnosis. About 54.7% students were unaware of main drugs in Step I & II in WHO Pain Ladder. Majority (90.2%) felt oral morphine relieves cancer pain and 47.5% felt it causes addiction. Nearly half of students (48.6%) felt that patients can be reassured during communication. Majority (83.4%) favored inclusion of palliative care teaching in undergraduate curriculum.

**Conclusion:** The findings indicate the need for filling the knowledge gap by focussed training of undergraduate students in palliative care.

### 1. Introduction

Palliative care is defined as “an approach that improves the quality of life of patients and their families through early identification, accurate assessment and appropriate treatment of pain and other physical, psychological, social and mental problems associated with life-threatening diseases”.<sup>1</sup> The global need for palliative care is increasing as a result of rising burden of non-communicable diseases (NCDs), a few chronic communicable diseases and ageing of populations.<sup>1,2</sup> However, currently, out of the estimated 40 million needy patients, only 14% receive palliative care.<sup>1</sup> By the year 2060, the need is expected to double, making the requirement for palliative care professionals and

services a global public health concern.<sup>3</sup>

In India, the need for palliative care is immense. About one million new cases of cancer occur each year and more than 80% present in advanced stages. At any point in time, about 2.5 million cancer patients and another 2.5 million patients with chronic debilitating illness are in need of palliative care services.<sup>4</sup> However only about one percent of all these patients receive palliative care.<sup>4,5</sup> A major reason for this situation is attributed to availability of limited number of trained palliative care physicians. Currently short courses on palliative care are being conducted for doctors by a few associations across India.<sup>6</sup> Further, Master's Degree in Palliative Medicine is being provided by a few institutions.<sup>7</sup> Nevertheless, the available number of qualified physicians is no-where

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matching the number of patients needing palliative care. To meet this shortage vs huge demand, more medical professionals, especially at undergraduate level have to be trained in basic skills of palliative care.<sup>8,9</sup>

Knowledge of palliative and end of life care is increasingly recognized as an important and an integral component of medical education worldwide.<sup>9</sup> The World Health Organization has proposed palliative care to be integrated in basic medical professionals courses.<sup>3,10</sup> Similar encouraging developments are being witnessed in India. In fact, this is one of the key objectives laid down by the National Policy for Palliative Care, NPPC 2012. It is envisaged that education and capacity building activities would be initiated through National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke (NPCDCS).<sup>11,12</sup> The National Medical Commission (NMC) has proposed relative modifications in the contemporary undergraduate curriculum for inclusion of palliative care education.<sup>13</sup> Despite these initiatives, palliative care teaching for undergraduate students is incomplete in many aspects. It is right time to integrate basic principles of palliative care teaching in management of cancer and other chronic debilitating diseases.<sup>14</sup>

Palliative care in Puducherry, South India is in infancy stage. As per a community based study in urban Puducherry, 6/1000 people need palliative care at any point in time.<sup>15</sup> This accounts to approximately 4000 patients (Census 2011, urban Puducherry population, 69.17% of 0.95 million). However, apart from a Central Government Medical Institution which has its own palliative care set up, only three out of the seven private medical colleges had recently established palliative care units. Hospital based care is being provided by a few trained doctors and nurses in these units. Compared to the estimated figure of needy patients<sup>15</sup>, the availability of palliative care professionals was very meagre, similar to the national scenario.

In line with the global trend, as the burden of palliative care patient load is expected to increase further in the future in India, a feasible solution to handle the manpower shortage problem could be training of undergraduate medical students. Currently, there are no specific modules on palliative care to be taught at undergraduate level. Understanding the current level of knowledge and perceptions of medical students about palliative care could facilitate focussed training and planning a need based curriculum. In this context, this study was carried out among undergraduate students in a private medical college in Puducherry.

## 2. Methodology

A cross sectional study was conducted in 2019 among all pre-final year and final year MBBS students. Clearance was obtained for the study from the Institutional Ethics Committee. The data collection tool included a semi-structured questionnaire with demographic variables, 15 knowledge questions and seven perception statements. The content included purpose, place, time of palliative care, pain management using WHO Ladder, principles of communication, end of life care issues, opinion on inclusion of palliative care training in undergraduate course etc. A 3-Point Likert scale was used to assess the perceptions. The tool was developed from Indian Association of Palliative Care (IAPC) course materials.<sup>16</sup> As there was no standard questionnaire available, the content validity of the tool was obtained from two experts. The tool was then pilot tested for length and comprehension on 10 current residents. Minor textual changes were made based on their responses and the final tool was designed. Written consent was obtained from the participants before administration of the questionnaire. Anonymity of identification by name was followed to ensure quality and unbiased responses. Participation was purely voluntary and no incentives were offered. The data was analyzed using SPSS 23. Appropriate descriptive statistics were applied.

## 3. Results

Out of the total 274 students, 265 (96.7%) participated in the study. The mean age was  $21.10 \pm 0.94$  years and 55.8% were females. Majority (97.3%) had heard about palliative care. Regarding diseases requiring palliative care, while most of the students mentioned cancer (88.6%), very few mentioned other diseases like AIDS (28.6%), spinal cord trauma (11.6%), XDR TB (5.6%), bedridden patients (4.9%), coma (4.5%), renal failure (2.3%) and dementia (1.8%). Less than 1% students mentioned heart failure and liver failure. None were confident in handling end of life care issues.

One hundred and twenty three students (46.4%) mentioned "improving quality of life" as the purpose of palliative care. Sixteen students (6.1%) felt, 'it hastens death', 48 students (18.1%) said it is provided 'to prolong life' and 81 students (30.5%) mentioned, 'to relieve pain'. About 45% students mentioned that palliative care could be provided either at health facility, home or at hospice. Majority (84.2%) were not aware that palliative care can be provided from the time of diagnosis of a life threatening illness. Fifty-seven percent students felt all cancer patients will experience pain. Other non-pain presenting symptoms of patients as listed by students were nausea/vomiting (69.4%), loss of appetite (78.1%), breathlessness (63.7%) and constipation (55.1%). Paracetamol and Tramadol as Step I and Step II drugs were correctly mentioned by 30.9% and 14.4% students respectively in WHO Pain management ladder. Majority (90.2%) were aware that morphine relieves cancer pain. Addiction (47.5%) was mentioned as the most common adverse effect of morphine and only 15.1% students mentioned constipation. (Table 1).

One-third students (32.8%) mentioned 'active listening' as a key component of communication. Almost half (49%) of them mentioned 'reassurance' as an important strategy in communication. Many students (78.1%) were unaware of collusion in communication. One third (33.6%) students said that palliative care is continued after death of patient as bereavement care. Two thirds (66.4%) were able to relate spiritual pain. Majority (96.9%) were not aware of NPPC. (Table 2). About 62.3% students perceived that palliative care cannot be provided along with conventional treatment. About three-fourth students felt that patient has the right to know about the disease (77.4%) and palliative care modifies hopes of a patient (76.2%) respectively. Majority (87.5%) agreed for involvement of family members in patient care. While 69.4% students were not in favor of euthanasia for seriously ill patients, 25.7% were uncertain on it. About three fourth (74.7%) students preferred hospital care for end of life care. Majority of students (83.4%) agreed for including palliative care in the undergraduate curriculum. (Table 3).

## 4. Discussion

### 4.1. Awareness on palliative care

In the present study, majority of students had heard about palliative care. This could be due to students noticing display of advertisements of the recent inauguration of Pain and Palliative care clinic in the hospital. Other sources could be through lectures or textbooks. Patel et al.<sup>14</sup> had reported in their study among 186 participants (undergraduate, post-graduate, senior residents & faculty) in Delhi, the most common sources of information as college lectures (66.5%) and internet (48.6%). Other sources quoted in their study were existing palliative care program in their institution and known person receiving palliative care. In a study among 500 medical students in Lahore, the sources of information were known acquaintance on palliative care (76%), internet (35%) and discussion among friends (25%).<sup>17</sup> Nnadi et al. had reported in their study from Nigeria that while the main sources of information were through lectures and health personnel, a few students had mentioned textbooks.<sup>18</sup>

In our study, awareness on diseases requiring palliative care was less. Except cancer, many other diseases requiring palliative care were

**Table 1**

Knowledge on purpose, place, pain management, non-pain symptoms in palliative care (N = 265).

S.No	Knowledge	No.	%
1 <sup>a</sup>	Palliative care is provided	123	46.4
	•To improve quality of life	81	30.5
	•To treat pain	48	18.1
	•To prolong life	16	6.1
	•To hasten death	7	2.6
	•Don't know		
2	Palliative care is to be provided at	112	42.2
	•Hospital	12	4.5
	•Home	11	4.2
	•Hospice	119	44.9
	•All the above places	11	4.2
	•Don't know		
3	When to start Palliative care?	94	35.4
	•After all Treatments failed to cure	128	48.3
	•Terminal stage	42	15.8
	•From the time of diagnosis	7	2.6
	•Don't know		
4	All cancer patients experience pain	151	56.9
	•Yes	96	36.3
	•No	18	6.8
	•Don't know		
5	In WHO Ladder, Paracetamol is the main drug in	82	30.9
	•Step I	34	12.8
	•Step II	9	3.5
	•Step III	140	52.8
	•Don't know		
6	In WHO Ladder, the main Step II drug is	38	14.4
	•Tramadol	26	9.8
	•Brufen	34	12.8
	•Paracetamol	30	11.3
	•Ketorolac	137	51.7
	•Don't know		
7	Morphine is given to relieve		
	•Cancer pain	239	90.2
	•Breathlessness	5	1.9
	•Pain in non-cancer diseases	71	26.7
	•Don't know	13	4.9
8	What is the main adverse effect of oral morphine	40	15.1
	•Constipation	79	29.8
	•Vomiting	47	17.8
	•Drowsiness	126	47.5
	•Addiction	99	37.3
	•Don't know		
	Symptoms other than pain in Palliative care patients	184	69.4
	Nausea/Vomiting	207	78.1
	Loss of Appetite	169	63.7
	Breathlessness	146	55.1
	Constipation	53	20.0
	Bleeding	18	6.7
	Others	9	3.4
Don't know			

<sup>a</sup> Multiple responses.

unknown to the most of the students. Varying reports were noted in other studies. In the study by Sakshi et al. among 260 medical students in Manipal, apart from metastatic cancer with pain (76.7%), about 56.4% students had mentioned heart failure.<sup>19</sup> In Patel et al. study, participants had reported metastatic cancer (89.8%), HIV (61.8%) and end stage heart failure (77.4%). Other diseases mentioned in their study included chronic kidney diseases, MDR-TB, neurological diseases and mental illness.<sup>14</sup>

#### 4.2. Purpose of palliative care

We noted more than 50% participants were not aware that palliative care is aimed at improving quality of life. Around a quarter had misconceptions that palliative care hastens death or prolongs life of a patient. Differing responses were noted in other studies. In a study by Sujatha et al. at Coimbatore in South India, 68% of 50 medical students

**Table 2**

Knowledge on Communication, Spirituality, Bereavement care and NPPC (N = 265).

S.No	Knowledge	No.	%
1*	During Communication, most important approach is	87	32.8
	•Listen actively	129	48.6
	•Reassure	40	15.1
	•Normalize	17	6.4
	•Don't know		
2	Collusion facilitates Communication	40	15.1
	•Yes	18	6.8
	•No	207	78.1
3	'Why this has happened to me?' is:	176	66.4
	•Spiritual pain	45	17.0
	•Psychological pain	44	16.6
	•Don't Know		
4	Palliative care continues even after death of the patient	125	47.2
	•No	89	33.6
	•Yes	51	19.2
	•Don't Know		
5	Knowledge about National Policy on Palliative Care?	8	3.1
	•Yes	257	96.9
	•No		

**Table 3**

Perceptions of the Students on Palliative care (N = 265).

Perceptions	Agree		Uncertain		Disagree	
	No.	%	No.	%	No.	%
Palliative care cannot be practiced con-injunction with conventional therapy	165	62.3	47	17.7	53	20.0
Patient has the right to know about his disease	205	77.4	42	15.8	18	6.8
Palliative care aims to modify hopes of the patient	202	76.2	40	15.1	23	8.7
Family members are involved in patient care	232	87.5	9	3.4	24	9.1
Euthanasia can be considered for seriously ill patient	13	4.9	68	25.7	184	69.4
Palliative care can be included in the undergraduate curriculum	221	83.4	28	10.6	16	6.0
End of life patients need hospital care	198	74.7	44	16.6	23	8.7

assumed that palliative care was to treat only pain, 8% felt it hastens death and 42% felt it prolongs life of a patient.<sup>20</sup> In Patel et al. study, 91.4% participants felt palliative care improves quality of life and 15.6% felt it prolongs life.<sup>14</sup> In the Manipal study, 62.7% students perceived it improves quality of life, 52.7% felt it prolongs life and one fourth students (25.4%) perceived that palliative care hastens death.<sup>19</sup> The incongruent findings between the studies could be due to different study settings or knowledge imparted to students through different models of palliative care teaching in those institutions.

#### 4.3. When & Place of care

Current concept in palliative care is that it has to be provided from the time of diagnosis of a life-threatening/limiting illness. This approach helps a palliative care team to adapt to the increasing needs of a patient as the disease progresses into terminal phase. We noticed in our study, majority were not aware that it can be provided from the time of diagnosis. Also many students perceived that palliative care cannot be provided along with conventional therapy. Similar findings were observed in other studies where most of the responses were that it is provided at the late stage of disease.<sup>20,21</sup>

In our study, around 50% and 87% of students mentioned that palliative care can be provided at home and hospital respectively. Very few mentioned about hospice care. In Manuja et al. study among 81 interns in Punjab, 83.9% had reported that palliative care can be

provided at hospital only.<sup>21</sup> In a study by Bhadra et al. among doctors in Kolkata, 53% felt that home is the ideal place to provide care.<sup>22</sup> In India, where there is always constraint of hospital beds and other resources, home based palliative care is an ideal model in relieving hospital and caregiver burden.<sup>14,21</sup>

#### 4.4. Pain management

In our study, majority (90.2%) were aware that morphine relieves cancer pain. At the same time, many were not aware of role of paracetamol and tramadol in pain management. In the study in Manipal, 76.4% students had mentioned morphine as the drug of choice for cancer pain.<sup>19</sup> Similar findings were reported in other studies. In a study among 178 postgraduate students from various disciplines in Maharashtra, only 54.5% were able to correctly mention the WHO analgesic ladder medicines.<sup>23</sup> In Nnadi et al. study, more than 50% of interns could not state the WHO analgesic ladder correctly.<sup>18</sup>

#### 4.5. Morphine in non-cancer conditions

Nearly 3/4th students in our study were not aware of pain relief with morphine for non-cancer diseases. Also awareness on role of morphine in control of breathlessness was found to be very less (98.1%). In the Manipal study, around 70% students were not aware about effect of morphine in relieving breathlessness.<sup>19</sup>

#### 4.6. Adverse effects of morphine

Morphine is most effective in treatment for cancer pain, but its use is limited by fears among health professions of addiction and dependence.<sup>4</sup> Addiction was the most common side effect reported in our study. Very few students mentioned constipation and vomiting. In the Manuja et al. study, 66.6% interns had felt that morphine produces addiction and tolerance.<sup>21</sup> Sujatha et al. study reported drowsiness (66%), nausea/vomiting (62%), constipation (54%) and addiction (46%).<sup>20</sup> In Sakshi et al. study, common side effects reported were addiction (89%), constipation (81%), drowsiness (77%) and nausea/vomiting (42%).<sup>19</sup>

#### 4.7. Non-pain symptoms

We observed that students were not having adequate knowledge on other symptoms of palliative care patients. Around 50%–70% students mentioned nausea/vomiting, breathlessness and constipation as the non-pain symptoms experienced by patients. Similar findings were observed in other studies where nausea/vomiting (56%–74%), breathlessness (42%–64%) and constipation (24%–68%) were reported.<sup>19,20</sup>

#### 4.8. Autonomy and Communication

Many respondents in our study felt that patient has the right to know about the disease and treatment. Many students agreed that palliative care aims to modify hopes of the patient and family members have to be involved in patient care. Sujatha et al. had reported that three fourth respondents felt prognosis has to be disclosed always and patient's wishes and choices were to be clearly communicated to family members.<sup>20</sup>

Good communication skills are essential for establishing rapport and trust with patients. In our study, two-third respondents were not aware of principles of communication and effect of collusion. Reassuring strategy was most commonly reported than active listening. In Sakshi et al. study, 84% students felt poor communication leads to lack of trust.<sup>19</sup>

#### 4.9. Spirituality, bereavement care, end of life care

Spirituality is a sense of coping mechanism. In our study, two third

respondents were able to describe spiritual pain. In the Patel et al. study, 78% felt spirituality as a coping strategy.<sup>14</sup> Knowledge about bereavement care was less among our study participants as only one-third mentioned about it. There is a distinct dearth of education at the undergraduate level on grief and bereavement care. Students require grief education so that, upon graduation, they are able to meet the needs of caregivers living with loss and grief.

We observed three-fourth participants had perceived that end of life patients need hospital care and family members need to be involved in decision making. Similar findings were noted in the study by Sakshi et al.,<sup>19</sup> where around 60% students felt hospital care and discussion with family members are needed in end of life situations.

Regarding euthanasia of seriously ill patients, while many students were not in favor, one fourth were uncertain about it. Bogam et al. in their study among 109 students in Karad, Maharashtra had reported that majority agreed that euthanasia is a crime as per medical code of ethics.<sup>24</sup> However Patel et al. reported 53% of their participants were of the opinion that euthanasia is better than palliative care towards end of life.<sup>14</sup> Perception on euthanasia seems to be varying among students of different institutions.

#### 4.10. Palliative care in undergraduate curriculum – India and abroad

Precise knowledge is needed for health care professionals at all levels to apply best the principles of palliative care. The current health care educational system in India focuses mainly on cure thereby compromising on “care” of advanced illness patients as well as patients with life limiting illness. The medical graduates are not sensitized adequately to handle pain relief and palliative care.<sup>10</sup> Almost all students in our study mentioned lack of confidence to provide palliative care. Similar observation is reported in other studies from India and abroad.<sup>10,25,26</sup> In a study among 101 medical students in Germany, only 10% were comfortable dealing palliative care issues.<sup>25</sup> Among 210 medical students in Turkey, more than half (55%) did not prefer to work in end of life patient care due to lack of confidence.<sup>26</sup>

We noted that more than 2/3rd students felt the need for palliative care training. Similar findings were observed in earlier studies in India.<sup>14,20</sup> Inclusion of palliative care in undergraduate curriculum has been acknowledged in western countries.<sup>18,25,26</sup> Similar school of thought is emerging in India. The Joint position statement by IAPC and Academy of Family Physicians of India, 2018 had recommended inclusion of palliative care as a mandatory component in the MBBS and postgraduate curriculum of family physicians.<sup>27</sup> Under the Competency based Undergraduate curriculum Vol III, NMC has provided guidelines in Anesthesia AS8.1–8.5 section about Pain Management. Also in the Electives Module, under Block 2, NMC has included Rehabilitation and Palliative Care teaching.<sup>28,29</sup>

Inclusion of palliative care in the undergraduate medical curriculum is feasible. However medical colleges still lack a dedicated curriculum and trained faculty in palliative care.<sup>13</sup> Hence, thought needs to be given to the curriculum content, methods of teaching and evaluation processes. Also, the challenges of incorporating palliative care in undergraduate curriculum needs to be explored.<sup>30</sup>

Limitation of the study is that the study was restricted to one medical college and sample size is less for generalizability of the findings. Determinants influencing the knowledge of students were not analytically assessed. However, barring a few qualitative studies,<sup>13</sup> this is the first quantitative study among undergraduate medical students in Puducherry. During the post study period, knowledge gaps identified were addressed through sensitization programs for all the pre-final and final year students. Further, the Department of Community Medicine started training of interns in home based palliative care services in its rural and urban health centres.

## 5. Conclusion

The present study has identified misperceptions, lack of confidence and inadequate knowledge on principles of palliative care among the students. A focused training in palliative care is essential to improve the knowledge and skills of undergraduate students.

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## Declaration of competing interest

None.

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