

# A Study of Physiotherapy Migration Practice Pattern in Cancer Therapy

Yamini Sharma\*

Assistant Professor, Department of Physiotherapy, Galgotias University, Greater Noida, Uttar Pradesh, India

**Abstract –** *Physiotherapists contribute significantly to the maintenance of functional independence and quality of life among cancer patients through early intervention and community follow up. There is very little documentation of the extent to which physical therapists are involved in treating and managing persons with cancer-related functional deficits in India, though physiotherapists are compulsory to promote and maintain physical function. The study was designed to examine and describe existing physiotherapist practice patterns in cancer rehabilitation in South India. A descriptive study of 1120 randomly selected physiotherapists licensed and practicing in South India was conducted using the data gathering survey method. Upon approval of the institutional review board, e-mail surveys were forwarded to subjects with consent format and e-mail submissions were received. The returned usable surveys were 188 (18.13 percent ). 62.8% of the therapists reported treatment of people with a cancer history, and only 17.8% reported regular treatment of cancer patients. The most common patients had breast (75%) cancer; common treatments were home exercise and exercise (both 77.1%), movement exercise range (68.6%), chest clearance (64.6%), enhancement and education (both 60.4%), and stretching (56.3 percent ), Oversight methods consisted of: cardiac velocity (58.3%), blood pressure (54.2%), pain scale, O2 (47.9%) and perceived exercise rates (37.5%), functional outcome measures include: 6 minute walk test (41.7%), quality of life (20.8%), SF-36 (19.8%), Functional Independence measurement (14.6 percent ). We found that very few physiotherapists practice only in South India in cancer care. Types of intervention were satisfactory during inconsistent monitoring and action on functional outcomes. In addition, a growing demand for physiotherapy in cancer care has not been met by many physical therapists working in cancer centers.*

**Key Words –** *Physiotherapy, Rehabilitation, Cancer Treatment, Survey, Practice Patterns.*

## INTRODUCTION

Cancer has become a common disease and a major disability source. There are an increasing number of people living in cancer and anti-cancer treatments with long-term and short-term side-effects who require supporting care. Individuals receiving or surviving cancer often develop a functional deficiency from pain, movement limitations, fatigue, lymphedema, skin, and tissue disintegration, as well as respiration difficulty [1 to 4]. Cancer can therefore lead to multiple disabilities and impairments that reduce daily physical and activities. [5] This functional losing can be devastating for the patients and can lead to considerable social and economic burdens on the families and the society of cancer patients and survivors who are increasingly disabled. [6,7] The current prospects for cancer rehabilitation see it as a field which helps every patient with physical, psychologic, social and vocational activities in many wide areas of the human function. Rehabilitation of cancer occurs in different stages and forms such as preventive, restaurative, supportive and palliative treatment. [8] Perhaps the most important therapeutic approach to physical disabilities rehabilitation is

physical exercise. [9] As complementary therapy in cancer patients during and after treatment exercises could play a potential role. [10] Supervised exercise programs show positive strength, cancer, physical functioning and quality of life gains during and after treatment. [11–14] Even in some of the developed countries, there are no formal cancer rehabilitation programmes, and cancer rehabilitation programs worldwide are lacking. Rehabilitation for cancer patients worldwide, however, is underutilized. Rehabilitation services are also limited in some countries for cancer patients. The reasons for this fact include: failure of the functional impairments identified by the acute care personnel, lack of adequate referrals, the lack of awareness about refurbishment services, and the lack of knowledge among the family members about such services.

Physiotherapy helps survivors of cancer increase their physical abilities, mobilize or use assistance in a different manner. In cancer, formalized involvement in physiotherapy dates from the 1960s, before the beginning of modern movement in hospices. Today, physiotherapists participate in the field of oncology and have different roles that are evidence-based and

common to use. In order to improve the circulation, reduce swelling, and keep muscles healthy, physiotherapists will also guide patients in their safe work to avoid deformities or health complications. The prevention and management of various system complications are part of postoperative physiotherapy. Specific exercise therapies like resistive and aerobic supervising are prescribed to enhance strength, tolerance and fatigue after surgery / radiation treatment. The fact that patients receive physiotherapy immediately after operation has demonstrated the potential to prevent or reduce lymphedema. In addition, physiotherapeutic involvement includes the use of simple measures and palliative care to enhance the quality of life and make an impact on relieving caregivers' burden by taking all of the above-mentioned applications. Physiotherapy treatments also support and maintain function in hospice and palliative care settings. Physiotherapy can in this respect significantly contribute to the maintenance of functional autonomy and quality of life among palliative care patients.

There has been, however, very little documentation on the degree to which physiotherapists participate in the treatment and management of people with functional cancer deficits. In India, the situation is even worse because the physiotherapy facility itself does not have several regional cancer centers. Kathie, et al (2004) found that in Washington only 46.8% of physiotherapists treated people diagnosed with cancer. Of these, 40% did not measure functional outcomes and 10% did not monitor these individuals during treatment. Furthermore, physiotherapists mainly used strengthening, range of movement and home training programs while evaluating functional outcomes, and indicating the progress and value of the interventions. Further, although many people have suffered from cancer, very few of them have been treated by physiotherapists. However, cancer survivors are not well integrated into the workforce due to lack of knowledge about return-to-work practice for health care providers and employers. While studies describe the level of contribution of cancer and treatment, the number and type of cancer survivors who would benefit from the interventions of physiotherapy are at this time uncertain. There are no studies in this regard in India. The aim of this study was to examine and describe current practice patterns of physiotherapist in cancer rehabilitation in India since expanded information about physiotherapists' patterns of Indian oncology practice would benefit for advancing research initiatives, developing educational guidelines and promoting guidelines for professional practice in oncological physiotherapy practice.

## METHODOLOGY

Given the variety of trends and practices in Indian physiotherapy rehabilitation, these exploratory studies were necessary to gain an insight into the current pattern of physiotherapy. So, we chose to use a valid,

personalized questionnaire for a survey. In this study, it was necessary to detect a minimum number of 355 responses with an alpha value of 0.05. We can determine the required sample size for the minimum number of surveys completed using a response rate of 31,7 percent (as in the previous study) and allowing for lost or unlivried surveys. There have been 1120 physiotherapists, who are currently qualified and practical in southern India, the states of Tamil Nadu, Karnataka and Kerala. Themes have been randomly selected from an eligible pool of 5403 people registered with Indian Physiotherapist Association via the computer randomization. Unless they were currently in practice, retired, or practicing in other states and other countries, physiotherapists were not eligible to participate in this study. The English version of an assessment in the Physiotherapy Practice Pattern in Cancer Rehabilitation, which was originally self-administered and validated, had questions about the professional qualification, the experience, the establishment, the oncological case load, the procedures for patients with cancer, the diagnostic procedures and the physical and functional results measures used behind.

## PROCEDURE

After the approval of the Institute Review Board, surveys were transmitted to sample subjects in the three countries by electronic mail. In the Indian Association of Physiotherapists, the contact email addresses have been identified. The e-mail contained a cover letter indicating the purpose of the survey, an informed consent form, and information on how and how to finish the survey. The names of the respondents did not appear on the questionnaire reply form in order to assure confidentiality; however, the respondents had to sign an attached informed consent form. The email was sent via a separate mail-id created to do so. An electronic survey with "Survey Monkey" online contract monitoring system was produced to increase the rate of response and the URL was sent to participants. This made it very easy and convenient to respond. The participants had to click this URL to bring them to the survey page and then click on the answers to each question in accordance with the guidelines. In addition to the increase of the response rate after exactly every week, each participant received a further reminder mail for three weeks in a row. As a final recall, the third recall was mentioned. Between March and June 2012, the survey was carried out. Their names were not mentioned in the text in the results section to protect the anonymity of the participants. The name was replaced by a number for each respondent. One survey participant was assigned each number. Data obtained from the surveys were entered into and analyzed with SPSS (version 20.0, IBM Corporation, 2011). Descriptive statistics were used to assess responses on the survey.

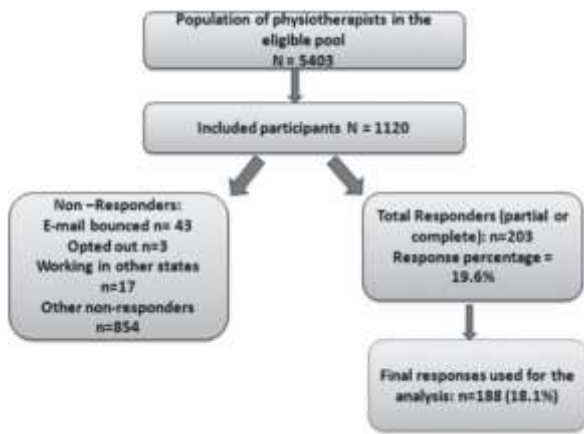


Figure 1: Population, Non-responder and Responder Numbers, and Response Percentage

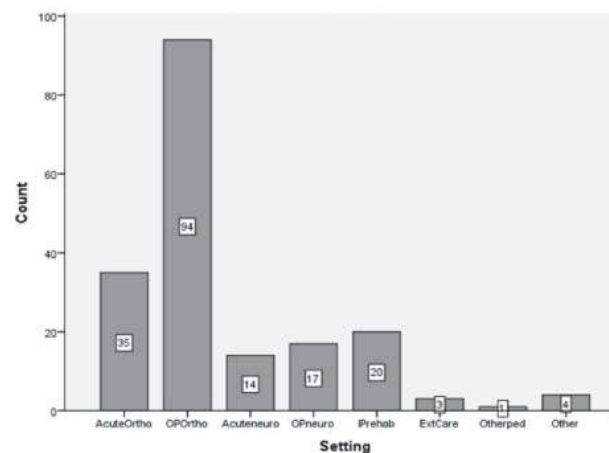
## RESULT

The response rate to the mailing was 203 (19.6%) completed surveys. After the requested period of time, notifications to non-respondents have been sent to improve the response rate. The final answer rate (Figure 1) was 188 (18.13 percent), with just 188 surveys completed in part or in full and used in the study. In the study, 15 surveys returned but not used included incomplete surveys. In addition, there were 43 surveys of the entire send due to incorrect e-mail addresses that could not be delivered, three therapists chose not to take part in the survey and 17 respondents surveys belonged to physiotherapists currently operating in another country although essentially in any of those three countries. Those 17 surveys were not therefore included in the data evaluation, nor were they taken as a response.

The population characteristics of the respondents are illustrated in Table 1. There were 130 male and 58 female respondents. At present, all respondents are at work. Of a total of 188 participants, 77 (41%) were Physiotherapists from Tamil Nadu, 67 (35%) were Physiotherapists of Karnataka and 23.4% were from Kerala, respectively. The average age was  $30.51 \pm 4.3$  years for respondents. Of these, 63.8% worked as a Physiotherapist while the other 36.2% worked as academics in schools. Physiotherapy graders at the entry level were 27.7% physiotherapy graduates; 69.1% physiotherapy masters; and 3.2% were physiotherapist graduates. The respondent's specializations were the most frequent (44.7%) Musculoskeletal, followed by Neurological (17.6%), Cardio-respiratory (13.8%), Pediatric (8.5%), CBR (3.2%) and others (4.3%) incl. OBG. In the category 'musculoskeletal' specialization was given in hand rehabilitation, manual treatment and physiotherapy for sports.

Table 1: Demographic Characteristics of the Respondents

Characteristics		N	%
Gender	Male	130	69.1
	Female	58	30.9
Designation	Therapist	120	63.8
	Academician	68	36.2
Current area of practice	Acute Ortho	35	18.6
	Out-patient Ortho	94	50.0
	Acute Neuro	1	0.5
	Out-patient Neuro	17	9.0
	IP rehabilitation center	20	10.6
	Extended care Facility	3	1.6
	Academic institution	17	9.0
	Other	4	2.1
	Highest entry-level degree	BPT	52
MPT		130	69.1
PhD		6	3.2
Speciality	Cardio-Respiratory	26	13.8
	Musculoskeletal	84	44.7
	Neurology	33	17.6
	Paediatrics	16	8.5
	CBR	6	3.2
	Others	8	4.3
Experience	Less than 2 years	37	19.7
	2-5 years	46	24.5
	More than 5 years	105	55.9
Attended Oncology related workshops/ continuing education		49	26.1

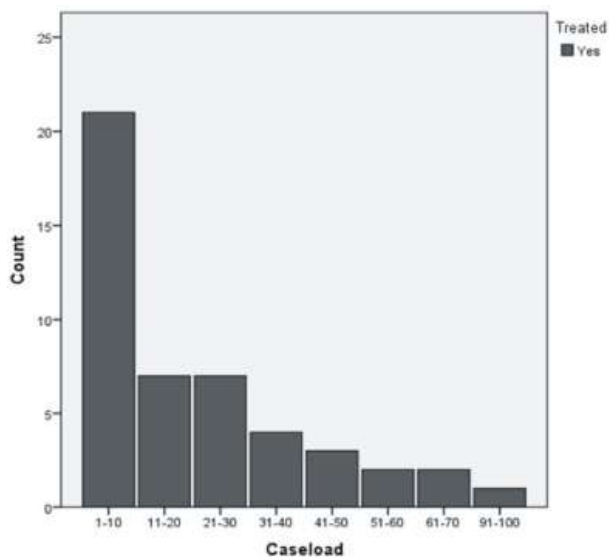


Graph 1: Practice Settings Reported by Number for All Respondents

The working experience of the respondents after their graduation was; 19.7% with less than 2 years and 24.5% with 2-5 years while 55.9% were with more than 5 years of experience. The current practice settings (Graph 1) of respondents were; out-patient orthopaedics was the most common (50.0%), followed by Acute Orthopaedics (18.6%), In-patient rehabilitation centre (10.6%), Out-patient neurology (9.0%), Academic Institute (9.0%), other (2.1%), extended care facility (1.6%), and the acute neuro care (0.5%). The 'other' category represented write-in responses that were primarily home care, but also included fitness centre, and cancer centre.

**Table 2: Cancer Patient Load for the Respondents**

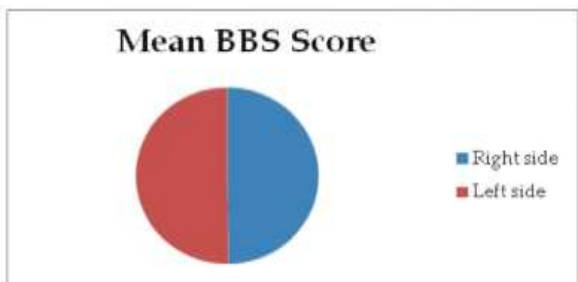
Characteristics		N	%
Treated cancer patients		118	62.8
Cancer Practice Routine	Regularly	21	17.8
	Occasionally	57	48.3
	Rarely	40	33.9
No. of cancer patients treated till now	Less than 2	10	8.6
	2-5	34	29.3
	6-10	26	22.0
	More than 10	48	40.7
Mode of approaching the cancer patients	In-patient	13	27.1
	Out-patient	11	22.9
	Both	24	50.0
Mode of cancer patients referred for physiotherapy	Direct	8	16.7
	Physician/surgeon	40	83.3



**Graph 2: Reported Oncology Patient Caseload Percentage**

**Table 3: Descriptive Statistics for the Frequency and Type of Cancer Patients had been Treated by the Respondents**

Sl. No	Type of cancer	Treated	Frequency	
			Less	More
1	Breast	36 (75)	20(55.6)	16(44.4)
2	Skeletal	29(60.4)	18(62.1)	11(37.9)
3	HNC	30(62.5)	18(60.0)	12(40.0)
4	Nervous System	28(58.3)	19(67.9)	9(32.1)
5	Lung	30(62.5)	23(76.7)	7(23.3)
6	GIT	24(50.0)	19(79.2)	5(20.8)
7	Lymphoma	18(37.5)	13(72.2)	5(27.8)



**Graph 3: Most Commonly Reported Interventions**

A total of 118 physiotherapists (62.8%) reported treating individuals with an oncology history. (Table 2) Among them, 48.7% of the respondents in the out-patient orthopedics, 20% in Acute Orthopedics, 11.3% in In-patient rehabilitation centre, 7.8% in Out-patient neurology, 7% in acute neurology, 2.6% in extended care facility and 1.6% in other categories reported working with individuals with an oncology diagnosis or history. Furthermore, only 17.8% of those having the cancer patient case load were treating the cancer patients regularly while 48.3% were dealing occasionally and about 33.9% were dealing with cancer patients rarely. In addition, only 40.7% of them answered that they had treated more than 10 patients till now while the remaining physiotherapists had treated less than 10 cancer patients. The most common response for caseload percents (Table 2) was that respondents did not treat individuals with oncology conditions (37.2%). Among the respondents treated cancer patients, the common case load (Graph-2) in a typical week was “1-10 %” (44.7%) of the caseload category followed by “11-20” and “21-30 %” (14.9%). This indicates that 58.5% of respondents never or rarely manage individuals with oncology diagnoses or histories. Among the respondents who had dealt with cancer patients (48), most number of therapists had treated the patients with breast cancer (75%) followed by HNC & Lung (62.5%), Skeletal (60.4%), Nervous system (58.3%), GIT (50.0%) and the least amount (37.5%) of Lymphoma patients. The frequency of cancer patients the therapists encountered for each type is provided in Table 3. It shows that most of the respondents (more than 55.5%) had treated various types of cancer patients less frequently. For a surprise only 4 out of the total 188 respondents were working in the oncology rehabilitation centres.

**DISCUSSION**

Cancer rehabilitation in India has received relatively little research and educational efforts as compared to other areas of practice. While not every survivor of cancer will need rehabilitation, the long-term health consequences of cancer have a significant impact on the rehabilitation of cancer through a large survey of cancer Survivors from developed nations. In palliative oncology the physiotherapist has a vast part to play, beginning early with rehabilitation and continuing with hospice care as a team member. Given the increasing interest among cancer survivors in recovery of physics, health maintenance and health care, it was imperative for physiotherapists to examine current practice patterns in cancer care. In order to integrate a better care plan into the multidisciplinary care of cancer survivors. In this study, the rate of response (18.1%) is almost the same as in the previous study, where they only reported 23.5%. The report is in English. There was no clear reason for the poor reaction rate. We used the electronic sources and used postal mail with reply envelope in the preceding study. Since all therapists

either don't have the time or some can hesitate to take part in both studies, they practice.

In this study, 58.5% of respondents in South India never or rarely handle oncological diagnoses or histories, while 77% in the Michigan State, although it was a developed country. Also, the most frequent response in these countries (44.7 percent) to caseload of 1-10 percent shows that physiotherapists have been treated by only a few cancer patients. Similarly in previous studies, the proportion of cases in Michigan was from 1–10 percent and in Washington State, from 0–25 percent. Thus, physiotherapists who have previously treated at least over 10 cancer patients have only been permitted to answer questions regarding treatment for the sequent cancer in order to prevent the answer based on knowledge, instead of on the experience with cancer patients. As a result, 50 percent of the respondents worked in out-patient orthotics with the mean age  $30.5 \pm 4.30$  and mostly (55.9 percent), more than five years of experience after graduation, and surprise, only three therapists worked in an exclusive cancer facility. That was why the therapists reacted less frequently than the cancer patients treated. This is the case in South India in which many of the leading cancer centres, without physiotherapy, have less chance of being served in cancer rehabilitation by the more kindergarten physiotherapists. It is not clear why the physiotherapist doesn't have the huge burden of cancer patients at these cancer centres. The common symptoms for which cancer patients were either approached or referred to were pain, general weakness, joint stiffness and difficulty breathing. In South Indian countries, a large number of physiotherapists have mainly used HEPs, respiratory exercises, ROMs, chest clearance technique and patient training. Concurrently, the ECT system has less common use for the compression bandaging, compression clothing and compression pumps.

## CONCLUSION

It has been concluded that while people who seem to benefit from physiotherapy procedures with functional deficiencies related to oncology, only very few physiotherapists practice exclusively in cancer care, especially in extendable care or hospice settings. The usual methods of treatment used by physiotherapists in southern India were satisfactory in their approach to cancer rehabilitation. However, during the treatment and measurement of functional results, the physical and physiological parameters of cancer patients are monitored inconsistently. In addition, it is shown that many kindergarten therapists who work in cancer centers fail to satisfy the demand for physiotherapy for them is increasing. A further study should be conducted in order to identify the number and treatment of cancer patients and survivors who are functionally deficient due to cancer, to evaluate patterns of reference of oncologic interventions for

physiotherapy and to examine the proportion of cancer patients receiving physiotherapy treatment as part of cancer rehabilitation.

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### Corresponding Author

**Yamini Sharma\***

Assistant Professor, Department of Physiotherapy, Galgotias University, Greater Noida, Uttar Pradesh, India