Original Article

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Physiotherapy Section

A Knowledge, Attitude, and Practice Survey on Oncology Healthcare Professionals' Awareness of Cancer Cachexia Diagnosis and its Management: A Cross-sectional Study

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ABSTRACT

Introduction: As per the new classification of Cancer Cachexia (CC), the clear distinct precachexia stage can be identified, enabling early interventional strategies to retard the progression of CC. Given its recent classification and potential to prevent the onset of CC, it is imperative to study its awareness among Oncology Health Care Providers in India.

Aim: To assess the Knowledge, Attitude, and Practices (KAP) of diagnosing and managing CC in a group of oncologists and Onco-physiotherapists in India.

Materials and Methods: This was a survey-based cross-sectional study. The surveys were disseminated through various Indian Oncology professional organisation bodies in the country via emails from May 2020 to April 2021. Two survey questionnaires were formulated and validated based on a literature review and input from experts in the field. A total of 64 oncologists with an average of 11.96±8.49 years of experience and 53 physiotherapists with an average of 3.86±4.89 years of experience participated in the survey. Data was analysed using descriptive statistics.

Results: In the knowledge domain, oncologists considered muscle wasting (37, 58%), weight loss (36, 57%), and loss of appetite (18, 14%) as the most accurate determinants of CC, and Onco-physiotherapists considered weight loss (18, 34%), muscle wasting (16, 30%), and loss of appetite (11, 21%) as the most accurate determinants. In the attitude domain of both surveys, nutritional therapy was considered an extremely important treatment. In the practice domain, the results showed that the majority of Oncologists (25, 39%) would initiate treatment at a weight loss of >5% when the stage of cachexia or refractory cachexia may have set in, while Onco-physiotherapists (23, 43%) would do so at 5%.

Conclusion: These surveys suggest a knowledge-to-action gap and highlight the need for increased awareness about CC among cancer healthcare providers for optimal patient care.

Keywords: Healthcare providers, Oncologists, Onco-physiotherapist

INTRODUCTION

According to an international consensus 2011, CC is defined as "a multifactorial syndrome characterised by an ongoing loss of skeletal muscle mass (with or without loss of fat mass) that cannot be fully reversed by conventional nutritional support and leads to progressive functional impairment" [1]. This same consensus defined the continuum of cachexia into precachexia, cachexia, and refractory cachexia. CC has been shown to decrease Quality of Life (QoL) and tolerance of anticancer treatment, and to be the cause of death in up to 20% of patients with cancer [2]. Patients with precachexia may have early clinical features such as poor appetite and impaired glucose tolerance that precede substantial weight loss, while patients with refractory cachexia are characterised by poor performance status, less than three months expected survival, and resistance to antitumour therapy. The goal is to identify and treat patients at the earliest stages of cachexia, preferably in the precachexia stage, or atleast the cachexia stage, since treatments may be more limited in the refractory stage [3-5].

Unfortunately, there is often a lack of awareness of CC among healthcare professionals [4-6]. There has been significant research on CC and its impact on the patients. Recently, there has been a focus on healthcare professionals' knowledge and practice gaps in the management of CC. Identifying and managing CC presents a challenge to healthcare professionals and may be complicated by the lack of globally accepted criteria for CC, limited availability of effective treatments, and lack of knowledge among clinicians [7]. Research carried out in the UK, Australia, as well as a multinational survey, revealed that cachexia is a complex and challenging syndrome that needs to be addressed in time and therefore underlines the importance of conducting international research to identify not only the differences in how cachexia is understood and managed but also to identify best practices [8]. A recent multinational survey demonstrated that the recognition and treatment of CC is lacking among oncology healthcare providers and underscores the need for increased awareness of CC and its management [9]. The classification being recent and given its potential to prevent the onset of CC, it becomes imperative to study its awareness among Oncology Health Care Providers in India. A KAP survey is often used to identify the baseline knowledge, myths, misconceptions, attitudes, beliefs, and behaviours in relation to a specific health-related topic, thereby identifying knowledge and practice gaps [10]. As medical management and exercise are the commonly used treatment approaches for CC, the aim of the present study was to gain insights into the current levels of awareness, attitudes, and treatment practices about CC among the oncologists as well as onco-physiotherapists.

MATERIALS AND METHODS

This was a descriptive, cross-sectional study conducted to assess the KAP of oncologists and onco-physiotherapists working in cancer care set-ups across India from May 2020 to April 2021. This study was approved by the Institutional Ethics Committee for Biomedical and Health Research (Approval number: DYP/IECBH/2020/41).

Inclusion criteria: A purposive sampling method was used with the inclusion criteria for Survey-1 being oncologists with more than three years of clinical experience currently working in an oncology setting with an average caseload of 30 patients each month. For Survey-2, onco-physiotherapists with atleast one year of experience working

in an oncology setting and a workload of 20 patients per month were included in the study.

Exclusion criteria: Inexperience in dealing with cachexia patients and unwillingness to participate were excluded from the study.

Sample size: The sample size was estimated using Stata Version 15.1 (©Stata Corp, College Station, Texas, USA) with the formula for the sample size for a single proportion,

$n=\{DEFF*Np(1-p)\}/\{(d^2/Z^2_{1-\alpha/2}*(N-1)+p*(1-p)\}$.

A previous study by Del Fabbro E et al., found that 67% of interviewed oncologists used weight loss as the most important criterion for cachexia [5]. Based on this estimate, with an alpha of 0.05 and power of 80%, the sample size was estimated using the formula for 'Sample Size for Single Proportion'. Based on the above parameters, the estimated sample size was 88 for Survey-1. For Survey-2, pilot data from 15 physiotherapists was evaluated. About 60% of physiotherapists responded that weight loss was the most important criterion for cachexia. With an alpha of 0.05, delta at 0.15, and power of 80%, the estimated sample size for Survey-2 was 84. To account for attrition, the size was inflated by 10%, resulting in final sample sizes of 97 for Survey-1 and 92 for Survey-2, respectively.

Data collection tool and procedure: The authors developed two questionnaires for the surveys, and the included items were based on a review of the literature. The face validity of the initial draft of the questionnaire was confirmed by experts in the area (2 oncologists and 2 onco-physiotherapists) and experts in research methods (2 biostatisticians) to identify common errors in items, including appropriateness, leading, confusing, and repeated questions. As there are definitive guidelines for the diagnosis of CC [1], it was decided to keep the domain of knowledge similar in both surveys. The attitude and practice domain of both the sample population varied considerably, so it was decided to formulate different questionnaires. Various oncology, palliative care, physiotherapy, and onco-physiotherapist organisations (n=6) were approached with a request to circulate the e-Google forms to their member oncologists and onco-physiotherapists. Informed consent was obtained from all individual participants included in the study.

Questionnaire

Knowledge: The knowledge domain of both surveys had four questions, which were multiple choice or in the form of yes and no.

Attitude: Both surveys had different questions in the attitude domain. There were four questions in Survey-1 and six questions in Survey-2. The questions were a mix of rating/Likert type questions and single yes/no response questions.

Practice: Different questions were framed in the practice domain for both surveys and were multiple choice and single yes/no response questions. There were four questions in Survey-1 and four questions in Survey-2.

Demographic information: The parameters of demographic data of the participants included years of experience, specialty, and number of patients seen per month.

STATISTICAL ANALYSIS

The collected data were checked for completeness and consistency and entered into the Excel datasheets. The frequency distribution was calculated using descriptive analysis and reported in the form of mean±standard deviation, as well as median with range.

RESULTS

Responses obtained were 64 and 53 for Survey-1 and Survey-2, respectively. Survey-1 consisted of 18 questions (12 related to KAP and 6 demographic questions) for oncologists, while Survey-2 had 22 questions (14 related to KAP and 8 demographic questions) for onco-physiotherapists.

Baseline demographic parameters: The years of experience and number of patients load in a month for Oncologist and Onco-Physiotherapists are shown in [Table/Fig-1]. Oncologist and Onco-physiotherapists with different specialities are shown in [Table/Fig-2].

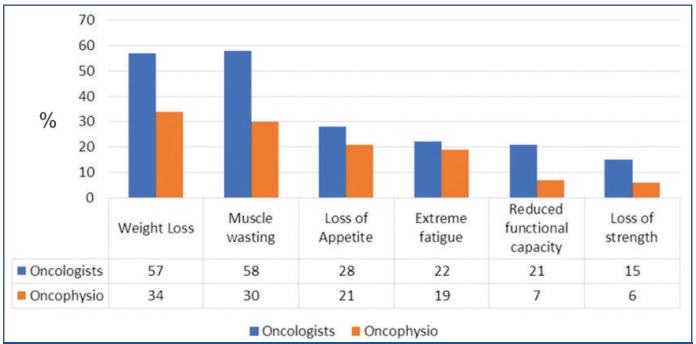
Characteristics	Oncologists (N=64) Mean±SD	Onco-physiotherapists (N=53) Mean±SD
Years of experience	11.96±8.49	3.86±4.89
No. of patients seen in a month	40.95±16.30	25.26±17.44

[Table/Fig-1]: Participants baseline information.

Speciality (Survey-1)	n (%)
Surgical Oncologist	32 (50)
Medical Oncologist	16 (25)
Radiation Oncologist	14 (22)
Haematological Oncologist	2 (3)
Speciality (Survey-2)	**n (%)**
PhD	3 (6)
MPT	33 (62)
BPT	17 (32)

[Table/Fig-2]: Oncologists' and Onco-Physiotherapists' speciality.

Knowledge: When asked about the symptoms considered to be the most accurate determinants of CC, the oncologists responded with muscle wasting 37 (58%), weight loss 36 (57%), loss of appetite 18 (28%), extreme fatigue 14 (22%), reduced functional capacity 13 (21%), and loss of muscle strength 9 (15%). Onco-physiotherapists considered weight loss 18 (34%), muscle wasting 16 (30%), loss of appetite 11 (21%), extreme fatigue 10 (19%), reduced functional capacity 4 (7%), and loss of muscle strength 3 (6%) as the most accurate determinants [Table/Fig-3]. Maximum participants said they were aware of cachexia classification [Table/Fig-4], but very few could accurately report the stages of cachexia as per the recent classification. Only 11 (17%) of the participants in Survey-1 chose 5% weight loss as indicative of CC, while 28 (53%) participants in Survey-2 chose 5% weight loss as indicative of CC [Table/Fig-5].



[Table/Fig-3]: Oncologists and Onco-physiotherapists three accurate determinants of CC.

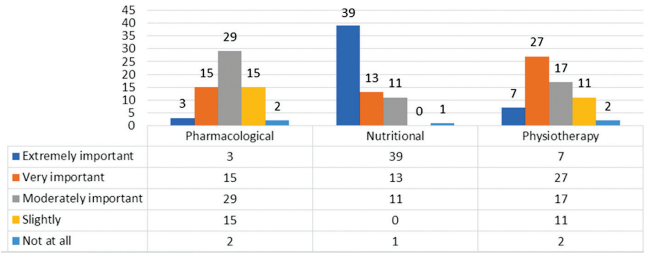
Are you aware if cachexia can be classified?	Oncologists (N=64), n (%)	Onco-physiotherapists (N=53), n (%)
Yes	46 (72)	32 (60)
No	18 (18)	17 (32)
Not sure	0	4 (8)
Can you list the stages of cachexia as per the recent classification?	**Oncologists who were aware of cachexia classification N=46**	**Onco-physiotherapists who were aware of cachexia classification N=32**
Correct awareness	7 (15)	16 (50)
Inaccurate awareness	39 (85)	16 (50)

[Table/Fig-4]: Knowledge domain question.

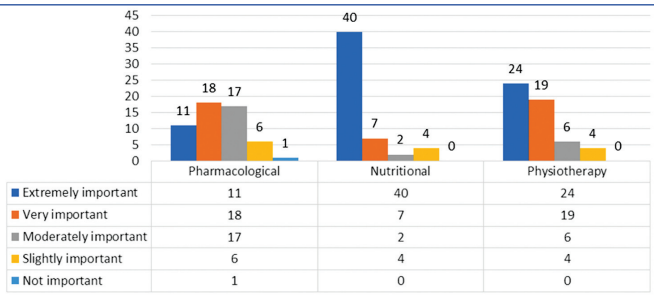
What percentage of weight loss from baseline do you consider to be indicative of CC and prompts you to initiate management?	Oncologists (N=64), n (%)	Onco-Physiotherapist (N=53), n (%)
5%	11 (17)	28 (53)
10%	41 (64)	15 (28)
20%	8 (13)	6 (11)
>20%	4 (6)	4 (8)

[Table/Fig-5]: Knowledge domain question of weight loss from baseline to be indicative of cachexia.

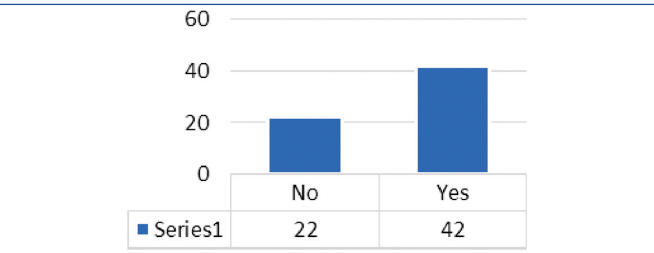
Attitude result: The participants of both surveys were asked to rate the importance of the three commonly used interventions for the management of CC [Table/Fig-6,7]. In Survey-1, 42 (66%) of the participants agreed that there is a lack of early detection of CC among healthcare staff [Table/Fig-8]. When asked if they believed that physiotherapy should be involved in the care of CC, 59 (92%) of the participants said that they did [Table/Fig-9].



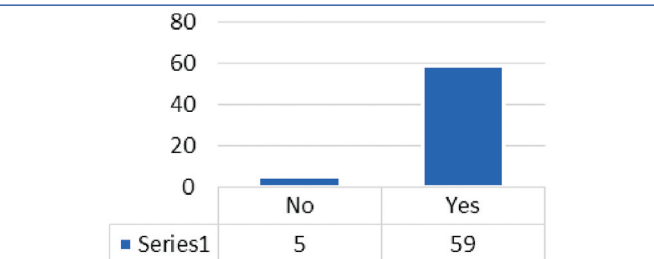
[Table/Fig-6]: Attitude oncologists: Perceived importance of treatment approaches by oncologists.



[Table/Fig-7]: Attitude onco-physiotherapist: Perceived importance of treatment approaches by onco-physiotherapist.

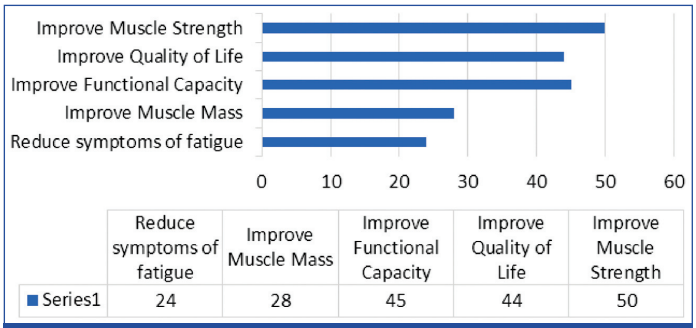


[Table/Fig-8]: Oncologists attitude domain: Lack of early detection of CC.

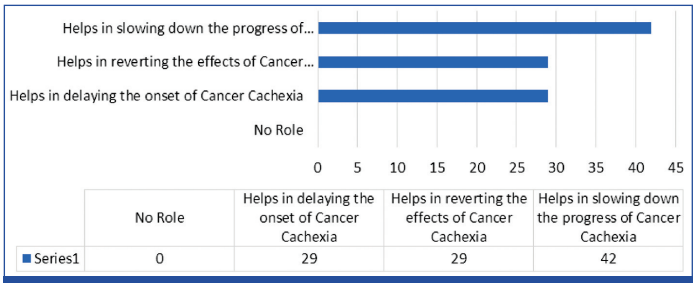


[Table/Fig-9]: Oncologists attitude domain: Do you think physiotherapy plays a role in Cancer Cachexia (CC) management.

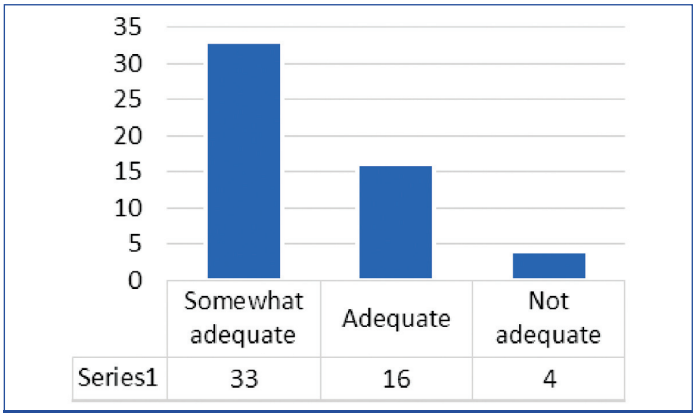
The three main functions of physiotherapy in CC, according to the oncologists, were to increase muscle strength 50 (78%), increase functional ability 45 (70%), and improve QoL 44 (68%) [Table/Fig-10]. In Survey-2, the participants were asked about the role of physiotherapy in the management of CC; 42 (79%) believe that it helps in slowing down the progress of CC [Table/Fig-11]. When asked to rate the adequacy of their training in dealing with CC patients, 33 (62%) onco-physiotherapists responded with somewhat adequate [Table/Fig-12]. When asked if they were confident in treating a patient suffering from CC, 30 (57%) reported to be confident, while 22 (41%) reported to be slightly confident [Table/Fig-13]. The participants were asked to rate the importance on a Likert scale for the routinely followed physical therapy assessment methods for CC [Table/Fig-14]. They were asked to rate on a Likert scale the importance of the physical therapy treatment goals for the planning of an intervention for CC patients [Table/Fig-15].



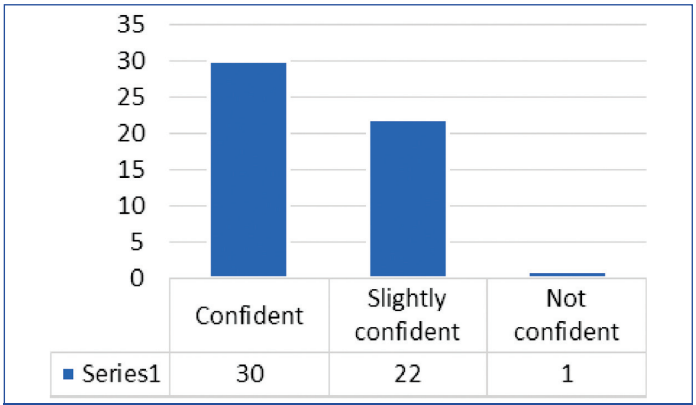
[Table/Fig-10]: Attitude oncologists: Perceived functions of physiotherapy in CC according to the oncologists.



[Table/Fig-11]: Onco-physiotherapist attitude about role of physiotherapy in CC management.



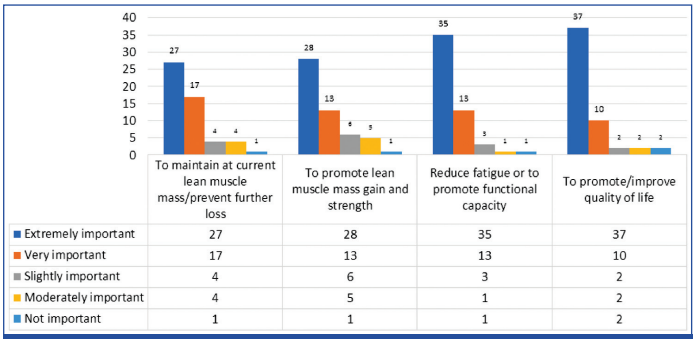
[Table/Fig-12]: Onco-physiotherapist attitude domain of adequacy in training in dealing with CC patients.



[Table/Fig-13]: Onco-physiotherapist attitude domain of confidence in dealing with CC patients.

Rate the importance of the routinely followed physical therapy assessment methods for CC	QoL	Functional capacity	Muscle strength	Body composition	Weight	BMI
Extremely important	34	32	31	26	30	28
Very important	16	17	14	19	11	15
Moderately important	1	2	6	5	8	4
Slightly	1	1	1	2	3	4
Not at all	1	1	1	1	1	2

[Table/Fig-14]: Attitude domain- Onco-physiotherapists.



[Table/Fig-15]: Importance of the routinely followed physical therapy treatment goals for CC by onco-physiotherapist.

Practice domain: The participants of both the surveys were asked if they are aware of any formal guidelines for the management of cachexia [Table/Fig-16]. Next, they were asked at what percentage of weight loss do you initiate the management of cachexia [Table/Fig-17]. The participants of Survey-1 were asked if they routinely refer patients for physiotherapy; 48 (75%) participants said yes, while 16 (25%) responded no [Table/Fig-18]. The participants were also asked about their routine goals in the treatment of cachexia; 46 (71%) said to promote or improve QoL, followed by 39 (61%) to maintain or prevent further weight loss and 30 (47%) to promote lean muscle mass gain [Table/Fig-19]. Additionally, participants of Survey-2 were asked about the assessment components in CC that they "routinely follow" in clinical practice, with the maximum response for muscle strength 49 (92.45%), followed by QoL 44 (83%) and Body Mass Index (BMI) 43 (81.6%) [Table/Fig-20]. In Survey-2, when asked about their preferred treatment approach for a patient suffering from CC, the maximum participants responded to counseling to maintain regular physical activity 42 (79.2%), aerobic exercise 40 (75.47%), and general mobility 37 (69.8%) [Table/Fig-21].

Are you aware of any formal guidelines for the management of CC	Oncologist (N=64), n (%)	Onco-physiotherapist (N=53), n (%)
Yes	27 (42)	11 (21)
No	37 (58)	21 (39)
Not sure	0	21 (40)

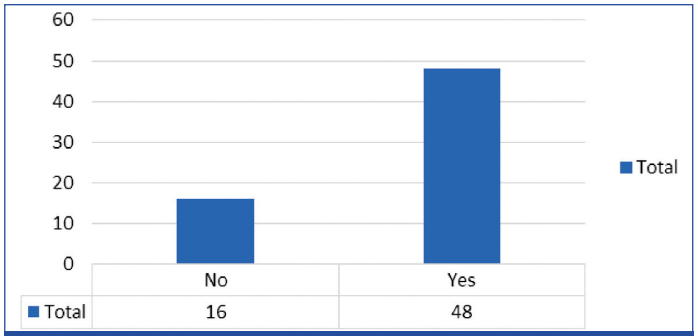
[Table/Fig-16]: Practice oncologists and Onco-physiotherapist.

At what percentage of weight loss do you initiate management of cachexia?	Oncologists (N=64), n (%)	Onco-physiotherapist (N=53) , n (%)
<5%	3 (5)	5 (10)
5%	11 (17)	23 (43)
>5%	25 (39)	7 (13)
>10%	15 (23)	8 (15)
>20%	10 (16)	10 (19)

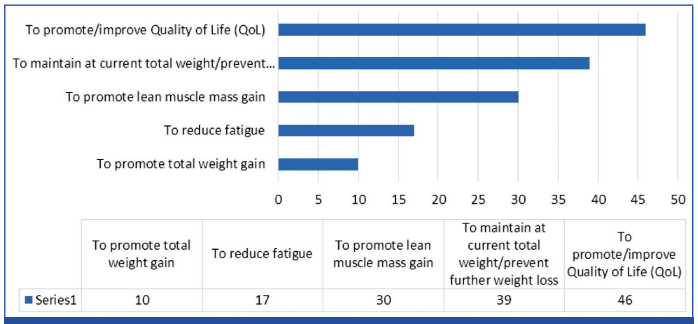
[Table/Fig-17]: Practice question of weight loss do you initiate management of cachexia.

DISCUSSION

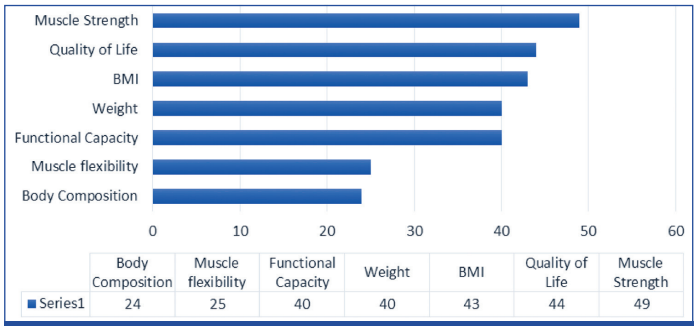
This is the first survey about CC in a specific group of Indian cancer HCPs. The recent classification of cachexia by Fearon K et al., outlines features like weight loss, loss of appetite, and muscle



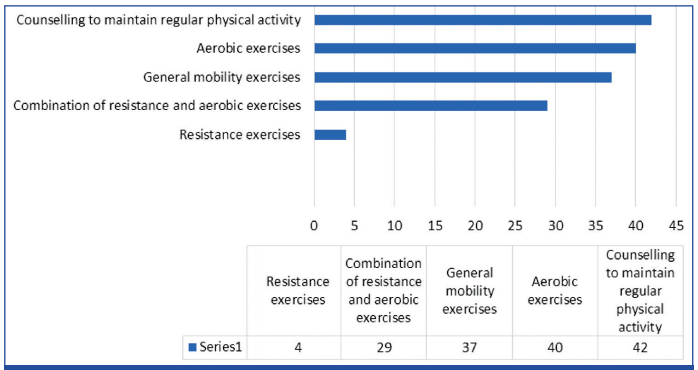
[Table/Fig-18]: Oncologists practice domain: Routinely refer patients for physiotherapy.



[Table/Fig-19]: Oncologists practice domain on preferred treatment goals for CC.



[Table/Fig-20]: Onco-physiotherapist practice domain on preferred assessments for CC.



[Table/Fig-21]: Onco-physiotherapist practice domain on preferred treatment approach for CC.

wasting as the key determinants of early identification of CC [1]. The maximum participants of both surveys have identified the three key determinants. Findings from another study showed that the symptoms most considered to be part of the CC criteria spectrum were weight loss (97%), loss of appetite (93%), failure to thrive (92%), and muscle wasting (91%) by the respondents [9]. In the current study, it was noted that while weight loss was the most frequent determinant of CC selected by the participants in both the surveys, maximum oncologists would initiate treatment at weight loss greater than 10% and 20%. Maximum Onco-physiotherapists seemed aware and would initiate treatment at weight loss <5%. Similar results were found in the multinational survey where almost half of the healthcare providers (46%) indicated that a weight loss of 10% was an indicator of cachexia, while 35% of participants responded that they would wait until weight loss reached 15-20%. Additionally,

over 10% of participants would wait until weight loss exceeded 25% [9]. Results of a similar survey showed that 83% incorrectly reported that weight loss of ≥10% corresponded to CC (n=174) [11]. Patients remain undiagnosed until late in the course of their disease, at which point the impact of CC on both QoL and treatment outcomes may have already been substantial [9]. Findings from another study revealed that 26.9% of participants regarded 10% weight loss as CC [12]. Results of another survey suggest that the identification and treatment of cachexia anorexia syndrome may occur late in the disease trajectory, potentially resulting in patients entering the late, refractory stage of cachexia and missing their anabolic opportunity to reverse muscle wasting and weight loss [5,13]. This type of delay clearly identifies the gap between knowledge and practice.

Oncologists and onco-physiotherapists unanimously choose nutritional therapy extremely important and physiotherapy very important as modes of treatment for CC. Pharmacological management was given moderate importance. As per the American Society of Clinical Oncology (ASCO) guideline, both nutritional and pharmacological interventions are given a moderate recommendation, while no recommendation can be made for exercises [14]. Inputs from a study on clinical practice guidelines on the management of CC reflected that a total of 138 (58%) respondents knew the international consensus, 111 (47%) were familiar with the European Society for Clinical Nutrition and Metabolism (ESPEN) guidelines, 31 (13%) with the ASCO guidelines, and 19 (8%) with the European Society for Medical Oncology (ESMO) guidelines [15]. Reports from a study that scrutinised over 140,000 web pages of various international oncology societies for guidelines on CC reported that global CC awareness was extremely low, with only a few (10/275) of the identified oncology societies providing guidelines. Of these, only six were for physicians, including the European Palliative Care Research Collaborative [9,16]. The low priority given to this condition also contrasts with many important advances in the field. Moreover, 62% of onco-physiotherapists reported a somewhat adequate level of training, while 41% reported lacking confidence in handling CC patients. Similar findings were reported in a study on healthcare providers where none of the occupations considered themselves to have received adequate training, and they did not have confidence in CC management [5,7,12]. This highlights the need for the formulation and effective dissemination of the recent international clinical practice guidelines.

The majority of oncologists reported their treatment goals as improving QoL followed by maintaining or preventing further weight loss, and promoting lean muscle mass gain. Another study on oncologists suggested that key intervention goals for cachexia anorexia syndrome included weight stabilisation or gain to improve tolerance for chemotherapy [5]. QoL as a goal was confined to symptom management [8]. The goals of cachexia anorexia syndrome treatment for Onco-physiotherapists were to promote QoL and reduce fatigue as 'extremely important', while promoting lean muscle mass gain and strength was considered 'very important'. In present study, the goals of both healthcare providers seemed aligned and can help in a multidisciplinary approach to treating cachexia anorexia syndrome (CC).

The treatment options administered by Onco-physiotherapists were to maintain regular physical activity, aerobic exercise, and general mobility. The preferred assessment methods were muscle strength assessment, QoL, and BMI. Although the main treatment approach selected was physical activity prescription, physical activity was neither a goal nor part of the assessment strategies. A recent study highlighted that despite the reported benefits of physical activity in alleviating the impact of cancer and its treatments, oncology care providers are not routinely discussing exercise with their patients, suggesting a knowledge-to-action gap [17].

Limitation(s)

The response rate of the survey was low, as oncologists and onco-physiotherapists comprise a specialised population. The actual responses considered in the study did not meet the minimum sample size requirement as per the calculation. A low response rate may also result from several factors, including a lack of enthusiasm for online surveys, current workload, and a general lack of interest in the topic. Another limitation was the absence of a scoring system for KAP. It could not be formulated, as there are no guidelines for treatment in CC and definite answers could not be expected. The study did not include a nutrition therapist among the healthcare providers. Since nutrition is considered an extremely important aspect of treatment, the perspectives of nutrition therapists and their knowledge have long been studied and explored.

CONCLUSION(S)

The participants seemed to be aware of the determinants of cachexia but missed out on the accurate criteria for diagnosis. The findings of this study demonstrate that there is a considerable gap in knowledge and practice. This underscores the need for increased awareness about the latest research developments in the early diagnosis and management of CC among oncologists and onco-physiotherapists for effective evidence-based practice. Efforts should be made to develop educational programs on CC. The oncologists perceived physiotherapists to have a role in the management of CC. Efforts could be made to develop Cachexia clinics in India with a focus on a multimodal treatment approach. Future studies can focus on identifying barriers and facilitators for the early identification of CC.

Acknowledgement

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