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RESEARCH ARTICLE

Barriers to physical therapy practice in cancer patients: Cross-sectional study

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ABSTRACT

Background: High cancer prevalence has been reported in Pakistan while concerning the multidisciplinary management approach the substantial percentage of population needs physical rehabilitation facility. On individual basis physical therapists have reported certain hurdles and barriers in rehabilitating the cancer patients, however, there is no published evidence that highlights such barriers. Therefore, it is essential to recognize those barriers so that these could be managed and addressed effectively for future.

Objectives: The study aimed to determine the barriers to physical therapy practice among cancer.

Methods: The was a cross sectional survey and the total number of participants included in the study were 403. The sampling method used was non-probability convenience sampling technique. The duration of the study was 6 months. Study was conducted in these hospitals; CMH, NORI Cancer Hospital, Fauji Foundation, PIMS, Shifa International Hospital and Holy Family Hospital. Data was collected through semi structured questionnaire, Godin leisure-time exercise and ONS Fatigue Scale. The study included patients with all types of cancers, at any stage of cancer, with the age bracket 20-70 years.

Results: Most of the barriers to physical activity reported by patients were; weakness (87%), poor endurance (54%), financial issues (46%), numbness in hand and feet (45%), joint stiffness (36%), procrastination (7%), a lack of knowledge (6%), lack of motivation (6%), lack of priority (4%), lack of confidence (3%), safety issues (3%), time constraints (3%), and lack of support (2%).

Conclusion: The study concluded that the main barriers to physical therapy exercise treatment included physical symptoms and surplus attentiveness regarding exercise programs, financial constraints, and lack of knowledge, priority, motivation, confidence, support and safety issues.

Keywords: Barriers, Cancer, Physical Therapy, Physical Rehabilitation, Physiotherapy.

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Introduction

Cancer poses foremost cause of deaths globally. In addition, more than 70 % of the deaths from cancer are in developing and underdeveloped countries among which the most common cancers causing death include lung cancer which causes 1.69 million deaths each year, liver cancer causes 78,000 deaths, colorectal cancer causes 774,000 deaths, stomach cancer causes 754,000 deaths, whereas, breast cancer causes 571,000 death each year (1). In addition to this, by 2030, the amount of new cases of cancer is predicted to escalate to 23.6 million (2). In the last 25 years, a significant increase has been seen in the cases of different kinds of cancer. The most common cancer in females in Pakistan is breast cancer and lung cancer in the male population. According to multiple studies, 300,000 new cases of cancer have been reported throughout Pakistan till 2016. (3, 4)

Overall related to general physical therapy practice, physical rehabilitation in polio, and general MSK disorders physical therapy literature identified various valid barriers and these studies guides further research to overcome these barriers (5, 6). As known, physical therapy plays an important role in decreasing the rate of cancer mortality and disability. The purpose of physical therapy is to provide treatment, rehabilitation, prevent risks and maximize the potential of movement of a person. It limits disability, tries to make the patient independent and improves quality of life. In most parts of the country, physical therapy is not a common practice and cancer is mostly treated by oncologists and radiologists.

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Cancer leaves a person fatigued and exhausted. Patients have difficulty in managing their daily activities, physical work and inability to carry out exercises which leads to several problems, such as, contractures and stiffness in joints, bed sores, muscular atrophy because of staying in bed all the time and simple tasks like getting out of bed becomes difficult. Even though, cancer treatment has advanced significantly, for example, surgeries, hormone therapy or immune therapy, chemotherapy and radiotherapy; it leaves the patient debilitates and weary with limitation in physical activity during and after the treatment. The limitations include deconditioning, incontinence, lymphedema, nerve damage, pain and cancer-related fatigue. These problems can be managed conservatively with physical therapy. Even though, there are several advantages of physical therapy treatment, it is not a common practice in Pakistan. Previously in various patient populations the barriers into physical therapy practice have been recognized, while related to cancer population there have been no publicized evidence. While literature encourages identification of barriers to improve the quality care. Therefore the study will bridge this gap through recognizing and identifying the barriers of physical therapy practice in cancer physical rehabilitation. So, this study aimed to determine the barriers to physical therapy practice among cancer patients and to determine the relationship between fatigue and exercise tolerance among them.

Methods:

The study conducted was a cross sectional survey and the total number of participants included in the study were 403. Sample was calculated through Rao software sample size calculator in which margin of error was 5% with confidence interval 95% (estimated population 20,000) (7). The sampling method used was non-probability convenience sampling technique.

The targeted hospitals were NORI cancer Hospital, Fauji Foundation, PIMS, and Holy Family Hospital. Before conducting the research, consent was taken from the respondents. Ethical approval was obtained (Riphah/RCRS/REC/Letter00450). The study included patients with all types of cancers, at any stage of cancer with the age bracket from 20 to 70 years. Patients with additional comorbidities not due to cancer were excluded from the study (e.g. COPD, Renal failure, and ischemic heart disease). The duration of the study was 6 months (2018-2019).

For this study the questionnaire with consent form was given to the patients and study purpose was explained to the patients verbally and in written form. They were told that all the data collected from them will be encoded and used only for research purpose and they had right to withdraw anytime. Data was collected through semi structured questionnaire, ONS (oncology nursing society) fatigue scale which was used to find frequency of fatigue and Godin Leisure-Time Exercise questionnaire, which is a valid self-report measure of physical activity.

Data was analyzed using SPSS 21. Frequency and percentages of different variables were calculated. Bivariate analyses were conducted using the Spearman's correlation (due to non-normal data) with p value <0.05 significant.

Results :

Total 403 individuals with a current or past diagnosis of cancer completed the survey. The mean age of participants was 43.21±0.41 years. Details of participant demographics can be found in Table 1. 248 participants were females and 155 were male patients.

The most common diagnosis was breast cancer (20%). Of the sample, a diagnosis of Stage I (9%) and Stage III (77%) cancer was most commonly identified. Almost the entire sample indicated that some type of treatment received and among them chemotherapy was (54.8%) highly reported.

Participants were asked about barriers to exercise during cancer treatment and the top was lack of energy (87%). Other barriers included were physical challenges, belief that it would make them feel worse, pain, numbness, and a lack of knowledge and awareness that they should be exercising. (Table 2.) Other side effects included were nausea (41.5%), depression (48.3%), anxiety (41.4%), limited joint movement (27.6%), The majority of participants (76.7%) indicated that these physical symptoms influenced their ability or desire to exercise. The global score of the Godin leisure-time exercise showed that 298(74%) cancer patients were insufficient active/sedentary, 103(26%) were moderately active and only 2 were active (0.5%). further results showed that people doing strenuous exercise on the daily basis were only 2(0.5%), those doing mild exercise were 44 (10.9%) and the remaining 357(88.5%) patients were not doing any exercise. Fatigue was seen in majority of the patients on ONS fatigue scale (table 3) There was a strong positive correlation ($r=0.81$, $p<0.05$) of fatigue with physical activity.

Table 1: Descriptive data details of study sample

Variables	n	%
Gender		
Male	155	38
Female	248	61
Total	403	100
Site of Cancer		
Breast CA	80	20
Blood CA	55	14
Bone CA	30	7
Brain CA	12	3
Abdominal	64	16
Viscera CA	31	8
Respiratory CA	30	7
Lymphoma CA	58	14
Reproductive CA		
Stage of Cancer		
1	35	9
2	20	5
3	311	77
4	27	7
5	10	3
Treatment received	221	54.8
Chemotherapy	156	38.7
Radiations	26	6.5
Surgery		

Table 2: Frequency (Percentage) of barriers

Variables	n(%) yes	n(%) No
Lack of knowledge	377(93)	26(6)
Lack of priority	388(96	15(3.7)
Lack of motivation	377(93)	26(6)
Lack of confidence	391(97)	12(2.9)
Lack of support	397(98)	6(2)
Safety issues	390(96.8)	13(3.2)
Procrastination	331(82.3)	72(17.7)
Financial issues	219(54.3)	184(45.6)
Time constraints	391(97)	12(2.9)
lack of energy/ weakness	355(88)	48(11.9)
Poor endurance	333(82.6)	70(17.3)
Joint stiffness	279(69.2)	124(30.7)
Numbness in hand/feet	294(72.9)	109(27)

Table : Frequency distribution of ONS Fatigue Scale

Variables	Frequency (n)				
	Not at all	A little bit	Somewhat	Quite a bit	Very much
I feel fatigued	52	13	23	22	293
I have trouble starting things because I am tired	112	37	23	32	199
How run -down did you feel on average?	100	47	28	115	103
How fatigued were you on average?	67	24	34	25	253
How much were you bothered by your fatigue on average?	62	21	36	28	256
To what degree did your fatigue interfere with your physical functioning?	65	19	32	30	257

Discussion:

To our knowledge this was the first study that has focused the physical therapy practice barriers among cancer patients. The current study findings revealed that majority of the sample consisted of females cancer patients. While the breast cancer was the most reported type of the cancer overall followed by blood, bone, and brain cancer etc. Cancer of abdominal organs was reported least. Moreover, the most reported stage of cancer reported was stage-III and least stage reported was stage-v, most common treatment identified was chemotherapy and least followed treatment was surgery. Considering the barriers in physical therapy practice the most common barrier reported was weakness followed by poor endurance, financial issues, numbness in hand and feet, joint stiffness, procrastination, a lack of knowledge, lack of motivation, lack of priority, lack of confidence, safety issues, time constraints, and lack of support. Furthermore, in the study fatigue found significantly positively correlated with physical activity in cancer patients.

The findings of the current study are comparable to existing literature such as previously high prevalence of breast cancer as found in our study has been reported by Akhtar Bibi et al (2020); despite the rising awareness of breast cancer in Pakistan (8). In our study most of the cases were of stage III because of significant improvement in patient outcomes in early stage as similarly reported by Saeed S. et al (2021); while least prevalent was stage 5 because of high mortality rate globally in later severe stages reported in a study conducted by Negotia S et al (2018) (9). In our study majority of the patient were on chemotherapy because previously reported that since the technological advancement in the chemotherapy and improved outcomes, the chemotherapy is being recommended as very initial line of treatment worldwide (10).

Considering the primary objective of the study related to the barriers in physical therapy practice weakness and poor endurance were found most common barriers. Similar findings were reported by Louise Brennan et al (2022) where generalized body weakness in response to disease and treatment and decreased aerobic capacity were found significant barriers in physical rehabilitation (11). However, some other results of current study are different form the study by Louise Brennan et al (2022) such as next most common barrier in the current study was financial issues but in the other study was more related to lack of awareness. This difference is explainable because of economical differences of the both study populations that in Pakistan very less percentage of people could enjoy free medical services for the health care (12).

In current study other common barriers identified were joint stiffness and numbness in hands and feet. Similar findings were declared by another study conducted by De Light KM et al (2019) where neuromuscular health issues found strongly associated barriers in overall management of cancer (13). However these findings might differ little as the study by De Light KM et al only consisted of breast cancer patients.

In current study fatigue faced by the cancer patients was found associated with physical activity which is integral part of physical rehabilitation. This findings further explains the findings of current study where weakness decreased endurance were found most common barriers. Moreover, matching findings have been discussed in various researches related to fatigue and physical activity in cancer patients such as study by J. Frikle et al (2020) where fatigue was found having negative effect on physical activity level in cancer patients.

The study provides basis to further explore the risks and barriers in specified cancer population and also guide further research to overcome these barriers in physical therapy. The study limits the risk factor analysis, and more strong statistical analysis to determine how much a certain barrier could affect the physical therapy and physical rehabilitation.

Conclusion:

The study concluded that the main barriers to physical exercise in patients undergoing cancer treatment were mainly health related issues, such as, weakness, poor endurance, fatigue, joint stiffness and numbness in hands and feet. Other barriers included financial constraints, lack of knowledge, priority, motivation, confidence, support and safety issues.

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