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Socio-Demographic Characteristics of Musculoskeletal Pain and Patients' Perceptions of Physical Therapy

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Abstract

Introduction: *Musculoskeletal pain is a major cause of disability, affecting joints, bones, muscles, and soft tissues, with prevalence increasing with age. Socio-demographic factors such as age, gender, occupation, and income influence patients' experiences and satisfaction with physical therapy. Understanding these perceptions is essential for improving treatment outcomes and patient satisfaction. Physical therapy, which includes modalities like thermotherapy and electrotherapy, aims to alleviate pain and enhance recovery.* ***Objective:*** *To find out the patients' perception on physical therapy treatment of musculoskeletal conditions.* **Material and Methods:** *This cross-sectional study was conducted over a one-year period from February 1, 2018, to January 31, 2019, to assess patients' perceptions of physical therapy treatment for musculoskeletal conditions at the Department of PM&R, BSMMU, Dhaka. The study focused on patients with musculoskeletal pain who sought physical therapy, adhering to specific inclusion and exclusion criteria.* ***Results:*** *The study included 150 patients with a mean age of 40±14.02 years, most of whom were aged 41-50 years. Of the patients, 68% were male and 32% female. The majority lived in Dhaka (42.7%), with 30.7% from semi-urban areas and 26.7% from nearby villages. Marital status showed 80% married and 17.3% unmarried. Most patients received thermotherapy, with 71.3% completing therapies within 10 minutes. Satisfaction levels were generally positive, with 65.3% satisfied with exercise instructions and 66.0% with facilities.* ***Conclusion:*** *This study reveals that most participants were middle-aged males, primarily from the middle-class, with a notable number being housewives. While overall satisfaction with physical therapy services, facilities, and equipment was high, complete satisfaction was less common, particularly with exercise instructions and equipment. Although a few patients deemed the treatment cost unreasonable, the majority were pleased with the environment and privacy measures. Notably, nearly all patients expressed a willingness to continue therapy at the center, reflecting a general satisfaction with the services offered, despite some opportunities for enhancement.*

Key word: *Patients perception, physical therapy, musculoskeletal pain, tertiary.*

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Introduction:

UMusculoskeletal conditions encompass disorders that impact the joints, bones, muscles, and soft tissues. According to the World Health Organization (WHO), there are over 200 identified musculoskeletal diseases or conditions[1]. While these disorders can affect individuals of any age, their prevalence tends to increase with advancing age. Common musculoskeletal conditions include back pain and other regional pain syndromes, chronic widespread pain, osteoarthritis, osteoporosis, rheumatoid arthritis, juvenile idiopathic arthritis, ankylosing spondylitis, psoriatic arthritis, and gout[2]. Among these, osteoarthritis is the most prevalent, especially in aging populations, and is commonly linked to joint wear and tear. Fibromyalgia syndrome (FMS) affects approximately 2% of adults, with a higher prevalence in women (3.4%) compared to men (0.5%). Low back pain (LBP) stands out as the most widespread musculoskeletal pain condition[1,2]. Musculoskeletal conditions are a leading cause of disability, particularly among women and the elderly. The pain and physical limitations associated with these conditions also negatively impact social interactions and mental well-being, further reducing the overall quality of life for affected individuals[3]. Therapeutic or physical modalities are tools used to produce a healing effect on tissues and are an essential component of treatment plans for musculoskeletal (MSK) disorders[4]. Key types of modalities in rehabilitation medicine include thermotherapy, hydrotherapy, electrotherapy, and light therapy. To alleviate pain, various physical therapy techniques are employed, such as cold therapy, hydrotherapy, infrared radiation, paraffin wax baths, shortwave diathermy, microwave diathermy, ultrasonic therapy, transcutaneous electrical nerve stimulation (TENS), interferential therapy, and cervical traction. Cervical traction is particularly effective for managing radicular pain[5,6,7]. Superficial heating modalities, such as hot packs, heating pads, paraffin baths, fluidotherapy, whirlpool baths, and radiant heat, primarily raise the temperature of the skin and subcutaneous fat to a depth of 1 to 2 cm. These are typically used to manage pain, muscle spasms, and joint stiffness in subacute and chronic injuries. Deep heating modalities, including ultrasound, shortwave, and microwave diathermy, penetrate deeper, reaching 3 to 5 cm, which can enhance the flexibility of structures like joint capsules and ligaments. Heat transfer mechanisms involved in these therapies include conduction, convection, radiation, evaporation, and conversion[8]. Therapeutic exercise is often regarded as the key element of the rehabilitation program since it requires active participation by the patient along with performance of a home exercise program (HEP) to further rehabilitation and prevent recurrent musculoskeletal injuries[9].

Patient education is the link between good intentions and actual success. Patient education ensures the proper use of home modalities, the safe performance of home exercises, and the prevention of re-injury. Patient education often needs to be addressed at each visit through verbal, visual, and written instruction to ensure safety and compliance. When utilized properly, patient education can improve the duration of benefit and even reduce health care costs[10]. Even patient's intentions about treatment and the opinion of them about service provider is important to improve the treatment benefit and effectiveness of the therapy. Patients' satisfaction about musculoskeletal physical therapy treatment has been investigated in many countries, as synthesized in a recent systematic review. However, Patients' perception about physical therapy treatment has not been closely monitored and a very few studies exist in Bangladesh. The measurement of such satisfaction is essential for improving services and would add to the scarce worldwide literature on this subject. Furthermore, these kinds of studies could serve as a learning tool as it may highlight staff's training/development needs. This study was conducted to evaluate the socio-demographic characteristics of musculoskeletal pain and patients' perceptions of physical therapy.

Materials and Methods:

This cross-sectional study was carried from 1st February 2018 to 31st January 2019 for one year duration to find out the patients' perception on physical therapy treatment in musculoskeletal conditions attending in the department of PM&R, BSMMU, Dhaka. Patients with musculoskeletal pain attended for physical therapy treatment to the Department of PM&R, BSMMU according to the inclusion and exclusion criteria was the population of this study. Whatever drug treatment regime was received by the participants (Non-steroidal anti-inflammatory drugs, analgesics or steroid) for their musculoskeletal pain, those who attended for physical therapy and had fulfilled the inclusion criteria was selected for this study. On fulfillment on inclusion and exclusion criteria and after taking informed written consent, all information was recorded in the data collection sheet. Interviewer-administered structured questionnaire was used in this study. With closed ended questions, participants were answered according to focused and pertinent to the objectives. Structured questionnaire was developed to know the perceptions. It was an interpretive approach that enables gain an understanding of individual patient's opinions, feelings, attitudes, beliefs and behavior of musculoskeletal pain patients about physical therapy treatment. The data was collected by using a closed ended questionnaire form and different codes was applied; finally, the coded data were checked, verified for consistency and edited followed by analyzed and was presented as qualitative analysis. Coded data was directly be entered to the computer by using SPSS (Statistical Package for the Social Sciences) software (SPSS Inc., Chicago, IL, USA) version 25. Descriptive statistics was analyzed to calculate the frequency, percentage, mean and standard deviation of observed data.

Results:

The mean age of the patients in study was 40¬+14.02 years. Out of 150 patients in the study, most of the patients were at the age group of 41-50 years. (Fig. 1). 102 (68%) subjects were male and rest 48 (32%) were female in a ratio of 2.12:1. Regarding occupation of the patients, most of the patients were housewives (HW, 28 %), then the second highest were the service holder (22%) and then Businessman (13.3%). Maximum patients of the study subjects were in the

middle-class group (50 %); their monthly income was in between 10000 to 20000 takas. Some patients were poor (38.7 %), their monthly income was less than 10,000 taka and a very few patients were rich (11.3 %), their monthly income was more than 20,000 taka found in our study. Most of our study subjects lived in Dhaka metropolitan city 64(42.7%), 46(30.7%) were from semi urban and only 40(26.7%) came from the villages nearby the Dhaka district. Most of the patients were educated. Off them 30% had passed primary level and 34.7% of them were completed secondary education. 31.4% persons are found who had completed either graduate level or higher studies. Some were illiterate and some had post graduate degree. Regarding marital status, maximum participants 120 (80%) were married and 17.30 % were unmarried (Table I). Almost all the patients were treated with thermotherapy off them 72(48%) received SWD, 35 (23.3%) treated with UST and 18 (12%) were treated with MWD. Most of the patients, 107 (71.3%) preferred or used to complete the therapies within 10 minutes as prescribed by the physician and 14% received the therapies for a duration of 20 minutes (Table II). Majority of patients were generally satisfied with the instructions and demonstrations of exercises provided by the physiotherapist (65.3%), as well as the facilities and equipment used during treatment (66.0%). However, fewer patients reported being fully satisfied with both the exercise instructions (8.0%) and the facilities (8.7%), indicating a notable gap in achieving complete satisfaction. A smaller proportion (26.7% for exercises and 24.7% for facilities) were only partially satisfied, while just 0.7% of patients expressed dissatisfaction with the facilities and equipment (Table III). Most of the patients were with chronic illness as 100 patients (66.7%) had symptoms with a duration of more than 3 months and rest of them had 1-3 months (32%) and (07%) for less than one month. Most of the patients who received physical therapies were suffering from low back pathology 48.7% followed by neck pathology which was 15.3% and shoulder pathology 8.7%. Others had Knee (6%), Thigh (4.7%), Wrist and hand (3.3%), and Upper back and Arm pathology were 2.7% each (Fig. 1). Among the patients, 149 (99.3%) patients were happy with the existing environment and only 07% were unhappy with this issue. Maximum (99.3%) of the patients were happy with the measures of maintaining privacy. Comparing the available centers, 100(66.3%) patients agreed that the cost of the physical therapy treatment was reasonable but other 50(33.3%) thought this cost was not reasonable. Despite of all issues, 148 (98.3 %) of the patients were eager to continue therapies from this center except 2 (1.3%) (Fig 2). Maximum patients were positive 144 (96%), only 2 (2.7%) respondents strongly agreed with overall complete satisfaction (Fig .3).

Table I: Demographic characteristics of the study subject (n=150)

Characteristics	Frequency	Percentage (%)
Age in years		
<20	10	6.7
21-30	35	23.3
31-40	36	24.0
41-50	38	25.3
51-60	21	14.0
>60	10	6.7
Sex		
Male	102	68
Female	48	32
Occupation		
House wife	42	28
Service	33	22
Farmer	6	4.0
Businessman	20	13.3
Laborer	5	3.3
Student	15	10.0
Unemployed	17	11.3
Others	12	8.0
Socio-economic status		
Poor class (less than 10,000 Tk)	75	50.0
Middle class (10000 to 20000 Tk)	58	38.7
Rich (more than 20,000 Tk.)	17	11.3
Resident		
Urban	64	42.7
Semi-urban	46	30.7
Rural	40	26.7
Education		
Illiterate	21	14.0
Primary	30	20.0
Secondary	52	34.7
Higher secondary	24	16.0
Graduate	19	12.7
Postgraduate	4	2.7
Marital status		
Married	120	80.0
Unmarried	26	17.3
Divorced	3	2.0
Widow	1	0.7

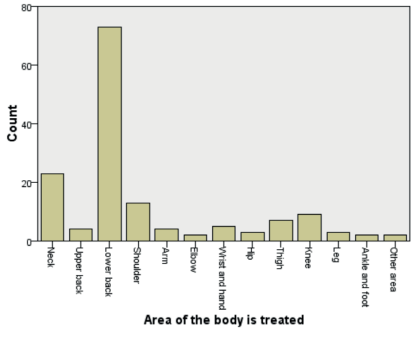

Fig. 1: Distribution of the area of body treated by physiotherapy (n=150).

Table II: Distribution of physical modality used by the subjects (n=150).

Physical modality used	Frequency	Percentage (%)
Treated with thermotherapy		
SWD	72	48.0
MWD	35	23.3
UST	18	12.0
Therapeutic exercise	10	6.7
IRR	11	7.3
Phonophoresis	1	0.7
Paraffin-wax bath	1	0.7
IFT	2	1.3
Duration of therapy received		
10 minute	107	71.1
20 minute	24	16.0
30 minute	19	12.7

Table III: Perception about instructions and demonstration of exercises, facilities and the equipment used in therapies

Perception about instructions	Frequency	Percentage (%)
Exercises given by the physiotherapist		
Satisfied	98	65.3
Partially satisfied	40	26.7
Fully satisfied	12	8.0
Facilities and the instrument used during treatment		
Satisfied	99	66.0
Partially satisfied	37	24.7
Fully satisfied	13	8.7
Unsatisfied	1	0.7

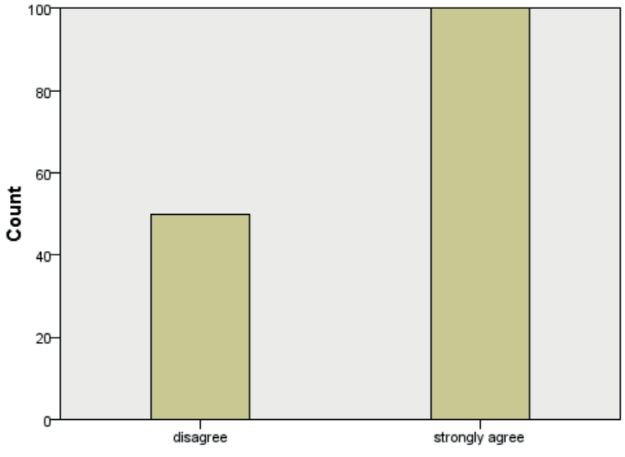

Fig. 2: Distribution of satisfaction over the therapy costs (n=150).

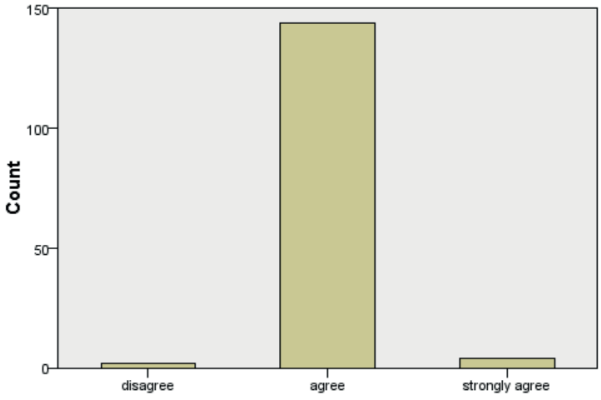

Fig. 3: Satisfaction level after the treatment (n=150).

Discussion:

This study included a total of 150 patients with various musculoskeletal conditions. Among them, 102 (68%) were male and 48 (32%) were female, resulting in a male-to-female ratio of 2.12:1. A similar study on osteoarthritis of the knee in Chittagong, Bangladesh, found that 61% of the patients were male and 39% were female[11]. The higher proportion of males in this study could be attributed to greater male attendance at the hospital, as female patients often hesitate to participate and share their opinions. In our study, mean age of the patients in study were 40±14.02 years. Out of 150 patients in the study, most of the patients were at the age group of 41 to 50 years. Thirty-eight (25.3%) patients were in this group. And then 24 % patients were at the age group of 31-40 years. In a study, it was found that maximum patients were in the age group of 30-39 years[12]. This is to some extent same as the result found in the present series. Most of the patients were house wives (HW, 28%) found in our study and then the second highest were the service holder (22 %) and then Businessman (13.3%). There were some patients of different occupation in our findings; they were Student (10%), Farmer (4%), Laborer (3.3%) and also Unemployed (11.3%), In a study at Barisal, it was found that most of the patients of LBP were students (23.97%), then HW (16.96%), labors (10.82%), businessman (9.95%) and some other occupations were also found in some cases[12]. This is to much extent same in some occupations but they found student in the highest position because they included all patients of different ages and we included patients of age ≥ 30 years and below ≤70 years. So, in our study HW was found more in respect to occupation. In the present study, Maximum patients of the study subjects were in the middle class group (50% %); their monthly income was in between 10,000 to 20,000 taka. Some patients were poor their monthly income was less than 10,000. In some studies, it was found that middle class people were attended more in their study. This is as same as found in the present study. This may be due to the poverty situation of the country. Some rich people usually take treatment from the private clinic and private doctors. So,

they are less in the study. On the other hand, poor people are illiterate and have no enough money to expense to reach the tertiary level hospital like BSMMU Hospital. So, they are also less in number. Most of the patients were educated. Of them 30% had passed primary level and 34.7% of them were completed secondary education. 31.4% persons are found who had completed either graduate level or higher studies. Most of the patients were married 120 (80%). Among the rest, 17.3% were unmarried and 2% were widowed. Study supported the hypothesis that physicians' perceptions of patients were influenced by patients' socio-demographic characteristics[13]. Using meta-analysis on a database of 221 studies, Hall and Dornan found greater satisfaction associated with being older, having less education, having higher social status, and being married. The authors could not account for the opposite trends for education and social status because these usually are positively related variables[14]. Perception about instructions and demonstration of exercises, facilities and the equipment used in therapies. The instructions and demonstration of exercises given by the physiotherapist made 65.3% satisfied but 26.7% were partially satisfied. There were no unsatisfied individuals. Regarding the facilities and the equipment used during treatment, 99(66%) were satisfied but 37(24.7%) were partially satisfied. Only 1 person was found unsatisfied. Low levels of adherence have also been linked to negative beliefs about the value of the exercises. Adherence to physiotherapy exercise programmes was found to be significantly greater when physiotherapists gave patients positive feedback, asked them for feedback about their progress and treatment, regularly monitored their exercise performance and frequently motivated them to do their home exercises.

Perception about the effects of the provided treatment. Among the patients, 99 (66%) had experienced good improvement since started the physiotherapy program, 43 (28.7%) felt better but 7(4.7%) though that still there was no visible improvement from the treatments. Level of improvement was more in Females patients (6.3%) than the male (3.9%) which is similar to all level of education group. Among them, 131(87.3%) of the patients thought the treatment is beneficial for them while 14 (9.3%) though that treatment was make any significant changes in sufferings. Female patients (14.6%) predominantly recommended the treatments were useful than the male groups (6.9%).148 (98.7%) patients wished to continue exercises as advised and 1.3% felt to discontinue the exercise therapy. Self-motivation has been consistently positively associated with adherence to sport injury rehabilitation programmes, of which physiotherapy is integral[15]. Among the patients, 149 (99.3%) were satisfied with the current environment, while only 0.7% expressed dissatisfaction. Nearly all patients (99.3%) were pleased with the privacy measures, with 100% of female patients satisfied, though one male patient raised a concern. The clinic's service environment has been recognized as important, with patients showing better adherence when they perceive the atmosphere as comfortable[13,16]. When comparing different centers, 100 patients found the cost of physical therapy reasonable, while 50 (33.3%) felt it was not. A higher percentage of female patients (41.7%) considered the treatment costs to be unfavorable compared to male patients (29.4%), likely because many female patients are housewives, depending on their male partners for financial support. In terms of overall satisfaction with the physical therapy services received from the Department of Physical Medicine and Rehabilitation at Bangabandhu Sheikh Mujib Medical University, the majority of patients (96%) responded positively. Male patients reported a higher level of satisfaction (100%) compared to female patients (95.8%). Patient and family satisfaction play a crucial role in the success of rehabilitation, as active patient involvement is vital for physical progress and acquiring new skills. Proper education on managing chronic conditions after discharge requires the full engagement of both the patient and their family. Since treatment duration is often lengthy, sustained cooperation is essential.

Conclusions:

In conclusion, the study highlights the majority of the participants were middle-aged males, predominantly from the middle-class income group, with a significant portion being housewives. While most patients expressed satisfaction with the physical therapy services, including the facilities and equipment, full satisfaction levels were low, especially regarding exercise instructions and equipment. Although a small percentage of patients found the cost of treatment unreasonable, a vast majority were content with the overall environment and privacy measures. Importantly, nearly all patients were willing to continue therapy at the center, demonstrating general satisfaction with the services provided, despite some areas for improvement.

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