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EVALUATING IMPEDIMENTS LEADING TO NON-ADHERENCE OF PHYSICAL THERAPY TREATMENT AMONGST INHABITANTS OF ROHTAK DISTRICT

Physiotherapy

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ABSTRACT

Background: The rate of success of a physiotherapy treatment programme is strongly influenced by the adherence of the patient with prescribed treatment programme. Non-adherence with the therapy given to the patient is often overlooked and is one of the reasons for failure to achieve desired results aimed for a given disease/condition.

Methods: A total of 40 geriatric subjects (20 urban and 20 rural) were surveyed for information using self-questionnaire from Rohtak district.

Results: Out of 40 subjects (10 urban males and 10 urban females and 10 rural males and 10 rural females) 70% of urban (30% females and 40% males) and 30% of rural (10% females and 20% males) population was found to be adherent to physical therapy treatment. Impediments identified in the current study that were statistically significantly associated with non-adherence to physical therapy treatment among the geriatric population included residential locality (p=0.02), accessibility to physiotherapy clinics (p=0.001), paying capacity (p=0.003), compliance to unsupervised home based exercise treatment (p=0.01) and cooperation by family members (p= 0.01). A non-significant relationship was found with ability of doing ADLs (p=0.06).

Conclusion: The study shows that geriatric population of Rohtak district residing in urban areas are more adherent to physical therapy treatment programme as compared to those residing in rural areas.

KEYWORDS

Impediments, adherence, geriatric, physical therapy treatment

INTRODUCTION

Aging or getting old is a fundamental interaction that upsets the entirety of our body frameworks and tissues. Right around one-half (47%) of the older population is experiencing any one ongoing chronic diseases or ailment like asthma, diabetes mellitus, angina, joint pain, or depression (Chatterji S et al., 2008). Exercise and physical work or activities plays a critical job with regards to the restoration of the old and have proven that exercises can significantly improve together ease of doing the function or task, Quality of life (QoL) and balance in elderly. The part of geriatric physical therapy is critically taking care of all the things together in consideration. Physiotherapists are giving phenomenal consideration to patients in various settings that incorporate intense consideration clinical skills, like in out-patient departments, home-care services, restoration focuses on the numerous conditions of the older person (Forkan R et al., 2006).

Adherence has been characterized as "the degree to which an individual's conduct relates with concurred suggestions from a medical care provider" (Burkhart and Sabaté, 2003). The term adherence liked over compliance as it relates to intentional exertions of the patient in setting up and to executing the treatment and compliance is characterized as withstanding respectfully by the specialist's advice (Bassett S and Phty D, 2003). Patient dutifulness has fundamental significance regarding exercise based treatment just as its results (Sluijs EM, Kok GJ and Van der Zee J, 1993).

Jack K, McLean SM, Moffett JK, & Gardiner E (2010) reported that though, inside the physiotherapy, it is yet not comprehended, which factor go about as obstructions to adherence, but the inability to do exercise routinely and regularly is archived as the essential factor for non-adherence among patients with chronic conditions (Buddhadev DNP, 2012).

It has been recognized that irregularity in receiving physiotherapy treatment is the most well-known issue across some medical services disciplines including physiotherapy (Marwaha K, Horobin H and McLean S, 2010).

Thus, with this point of view the present study was carried out to find the various issues of adherence and impediment related to adherence for physiotherapy treatments among urban and rural geriatric population. The present study aims to investigate the barriers to access physiotherapy treatment among the rural and urban geriatric population and to analyze their association with adherence of the patient to physiotherapy treatments.

METHODOLOGY

This is a cross sectional survey. Elderly populaces from different areas were contacted to discover that they knew about physiotherapy and who were undergoing physiotherapy treatment for any clinical condition. After assessing them (who were >65 years old and those who took physiotherapy sessions for their illness), an aggregate of 50 old subjects was screened using a convenient random sampling procedure. Out of 50 subjects, 40 participants gave their consent of participation, (urban - 10 females and 10 males, rural - 10 females and 10 males). To identify the adherence and impediment to physiotherapy treatment a questionnaire was developed using PUBMED and Google scholar searches. The inventory questionnaire was formulated in accordance with the guidelines laid down by previous studies (Buddha DNP, 2012; Marwaha et al., 2010; Sluijs EM et al., 1993). There were three sections in the inventory questionnaire. The initial segment comprised of the data with respect to the variables (like age, sex, and area of home, marital status) and socio-economic variables like the family arrangement, reliance, educational status, capabilities and occupation of the participants. The subsequent part comprised of six inquiries to discover the adherence or non-adherence among older population. Section three also included six items to look out for the impediments that lead to non-adherence among old patients who were going to take physiotherapy treatment. The survey questionnaire was created on those elements that were universally applicable for the geriatric population, particularly in the Indian setting. The survey questionnaire was anonymous, and subjects were instructed about the secrecy and confidentiality of the study project. A pilot study was carried out on 10 elderly patients to look out for any limitations in the planned questionnaire survey. Challenges experienced while gathering data like the clearness of questions, time to finish the survey were calculated, and a few amendments were finished. Modification of the survey included explanation of the questions and sequencing of inventory questionnaire. The finalized survey questionnaire was utilized to gather the information for the investigation. An elderly population aged 65 years or above was evaluated for eligibility criteria for participation in the study from urban and rural areas of district Rohtak. A sum of 40 members met the inclusion criteria and was willing to take part in the study. Subsequent to getting veritable interest from the members, consent was taken from the subjects and an elaborative interaction was carried out to separate the data with respect to adherence and obstructions and impediment identified with non-adherence. The information with respect to the socioeconomics and financial status was recorded as part I of inventory survey. In part II, sum of six inventories were posed to decide adherence of the older population to physical therapy treatment. Subjects who were non-adherent were taken to part III of the interview that comprised of various factors that could lead to non-adherence. Out of these seven inventories, six were close ended kind of questions, to give uniform answers and to work on coding for information analysis. The whole survey was clarified in the regional language, of the subjects and reaction was recorded. Non-responses were coded as not applicable. An interview meeting went on for approximately 20 minutes.

STATISTICAL METHODS

The data was coded and entered into Microsoft Excel spreadsheet.

Analysis was done using SPSS version 20 (IBM SPSS Statistics Inc., Chicago, Illinois, USA) Windows software program. Descriptive statistics included computation of percentages, means and standard deviations. Chi-square test was used for qualitative data analysis, whenever two or more than two groups were used to compare. Level of significance was set at $P \leq 0.05$.

RESULTS

The sample population comprised of 40 older people (≥65 years) in which 20 (50%) were from metropolitan, and 20 (50%) were from rural zones. Among the urban patients, the prevalence of adherence was discovered to be 70%. Among the rural patients, the adhesion was discovered to be 30%.

Table 1. Demographic data of patients enrolled in the study.

	Males (n=20)	Females (n=20)
Age (Mean± S.D)	72.92 ± 6.12	72.85 ± 5.73
Locality Frequency (%)	10 (urban) (50%) 10 (rural) (50%)	10 (urban) (50%) 10 (rural) (50%)

Table 1 shows the demographic information of the patients who participated in the study with mean age of males and females 72.92 and 72.85 years respectively.

Table 2. Adherence to Physiotherapy treatment among the elderly population (urban& rural)

	Urban (N=20)	Rural (N=20)
Females	**Frequency (%) n=10**	**Frequency (%) n=10**
Non-adherent	7 (70%)	9 (90%)
Adherent	3 (30%)	1 (10%)
Males	**Frequency (%) n=10**	**Frequency (%) n=10**
Non-adherent	6 (60%)	8 (80%)
Adherent	4 (40%)	2 (20%)

Table 2 shows the data about the adherence to physical therapy treatment, in which 70% urban and 90% rural females were non-adherent and amongst the male individuals 60% urban and 80% rural males were non-adherent. The adherence to physical therapy treatment was observed in 30% urban and 10% rural females and in the male population, 40% urban and 20% rural males were found to be adherent.

Table 3. Association between impediments and non-adherence/ adherence to physical therapy treatment among the elderly population:

Impediment(s)		Adherence status; Number, N (%)		Chi square, p value	Significance
		Non-adherent	Adherent		
Residential Locality (Rural/Urban)	Rural	18 (60%)	2 (20%)	χ^2=4.8, p value =0.02	Significant
	Urban	12 (40%)	8 (80%)		
Ability to perform ADL/IADL	Not capable	16 (53.3%)	2 (20.0%)	χ^2= 3.36, p value = 0.06	Non-significant
	Capable	14 (46.7%)	8 (80.0%)		
Accessibility to physiotherapy centre	Not accessible	25 (83.3%)	3 (30%)	χ^2=10.15, p value =0.001	Significant
	Accessible	5 (16.7%)	7 (70%)		
Paying capacity	Not able to afford expenses	24 (80%)	3(30%)	χ^2 =8.54, p value= 0.003	Significant
	Able to afford expenses	6 (20%)	7 (70%)		
Difficulty in performing unsupervised home based exercise programme without therapist aid	Yes	26 (86.66%)	2 (20%)	χ^2 = 15.87, p value =0.01	Significant
	No	4 (13.33%)	8 (80%)		
Cooperation by family members	No	25 (83.33%)	2 (20%)	χ^2 = 13.71, p value =0.01	Significant
	Yes	5 (16.67%)	8 (80%)		

Table 3 shows the relationships of impediments with adherence to physical therapy treatment. Observations suggested a statistically significant relationship of following impediments with adherence to physical therapy treatment including residential locality (p =0.02), approachability to physiotherapy clinic (p =0.001), paying capacity (p =0.003), compliance to unsupervised home exercise training (p =0.01) and cooperation by family members (p= 0.01).

DISCUSSION

This study was an endeavor attempt to discover the impediment and their relationship with adherence to physiotherapy treatment among rural and metropolitan geriatric population.

The study population comprised of 40 older people (≥65 years) in which 20 (50%) were from urban, and 20 (50%) were from rural areas. Amongst the urban older population, the prevalence of adherence was discovered to be 30% and 40% in the females and males respectively. In the rural population, the adherence was discovered to be 10% and 20% in the females and males groups. The results indicate that an enormous number of members from both urban (70% female; 60% males) and rural (90% females; 80% males) areas were non-follower to the physiotherapy treatment. As opposed to our examination, a higher pace of adherence as 39% has been accounted for by Chand D and Can F (2010) and also a rate of 28.2% by Forkan R et al., (2006). Lower rate of adherence seen in the current study in contrast to previous studies , could be on the grounds that in the current study the adherence rate was determined for the physiotherapy treatment being given to the geriatric population and that too at the physiotherapy centers. However, adherence rate revealed by Chand D and Can F (2010) and by Forkan R et al., (2006) was for home exercise based program and that also being delivered to young population.

The findings of present study revealed statistically significant association ($\chi 2$ = 4.8, p=0.02) between the residential location of patients and their adherence to physiotherapy treatment , as patients residing in urban areas were more adherent in comparison to those living in rural areas. The significant association observed be¬tween the residential location and adherence to physiotherapy treatment in the current study could be attributed to approachability to the physiotherapy center to the people residing in urban areas. Also, a significant association was observed between the approachability to the physiotherapy center and adherence rates ($\chi 2$= 10.15, p=0.0001) in the current study. Accessibility to physical therapy treatment was discovered to be one of the critical components related with non-adherence. In the current study, 83.3% population was accounted for trouble in simple approachability to physiotherapy centers. The people residing in urban areas had ease to access physiother¬apy centers as there are more number of physiotherapy centers in urban areas as well as there are less transportation problems. The findings of the present study in terms of association between the residential location i.e. urban or rural areas and adherence to physiotherapy treatment are in accordance with the results quoted by Sluijs EM et al. (1993) and by Alexandre NM, Nordin M, Hiebert R, and Campello M (2002), who also reported transportation as one of the barriers that lead to non-adherence among the elderly population.

Another factor that was seen as an impediment to the adherence of the treatment was the monetary limitations and paying capacity. Paying for physiotherapy services was observed to be significantly connected with the adherence of the old to physiotherapy treatment ($\chi 2$= 8.54, p=0.003). In this study, 80% population disclosed that they experienced issues paying the costs of physical therapy treatment. These findings are in accordance with the findings quoted by previous studies by Buddhadev DNP (2012) and Marwaha et al (2010), who in their study on the Indian population recommended that in a country like India, monetary elements are an impediment to physiotherapy services. Paying costs turns out to be significantly more troublesome with regards to the old population. It has been seen that the financial factor of the old is of most extreme significance, as neediness and dependence increased with age. The reasons might be, medical problems, cost of medications, individual assistance increased with age, while the source of income diminishes.

Another parameter evaluated was to compare whether home-based exercise program could help the patient over clinic based treatment in terms of adherence. 13.33% of members reported that home-based exercise program is more helpful than going to physiotherapy centre and 86.67% ($\chi 2$= 15.87, p=0.01) concluded that the home-based

exercises are difficult, as they can't do it properly and require proper guidance during the treatment. Troubles and challenges in recollecting exercises and absence of trust in getting back to practice once halted are the other two components identified as an impediment for adherence to home based physiotherapy, in the examined population. These finding propose that almost 65% of the population can't adhere to the protocols when they are offered home-based exercise program. This finding is in accordance with the study done by Forkanet et al (2006), who announced non-adherence as a common phenomenon in a prescribed home-based exercise program. The absence of certainty, self-viability, and self-inspiration, confines patients to proceed or restart an activity program at their own. Like the current investigation, Jack et al (2010), also proposed that a low level of self-viability is an obstruction to treatment adherence.

Encouragement from family members was also found to be significantly associated with the adherence rate of the patients to physiotherapy treatment ($\chi 2 = 13.71$, $p=0.01$). In the present study, more than 50% of the patient population reported that lack of cooperation from family members was a contributing factor for non adherence to the physical therapy treatment programme. This finding is supported by the results of Funch DP and Gale EN (1986) who also suggested that in subjects with chronic TMJ pain, completion of a behavioral therapy program was predicted by social factors. A non-significant relationship was found with the ability of doing ADLs ($p=0.06$). The data relies on the reliability and quality of the subjects. The current study didn't research the adherence issue with a particular disease or condition. The study didn't inspect the perspective of physiotherapists concerns regarding adherence.

CONCLUSION

The present study recommends that the physiotherapists ought to be concerned about mentalities, attitude, convictions and impediment that a patient faces and should act cooperatively with the patients to design more reasonable treatment designs which should be changed by patient's comfort. Steps could be taken to define such treatment techniques like locally situated projects, mobile vans, group therapy treatments, free camps, etc. to adapt up to non-adherence of the patients. In addition, the arrangement of physiotherapy services could be anticipated for rural and sub-urban regions. Patient should be made mindful of the public authority plans for managing the monetary issues. Home based treatment with time to time checking should be anticipated for patients who can't bear the cost of visiting physical therapy center or treatment.

Questionnaire
Part 1
PERSONAL INFORMATION
Age -
Gender:
Location: Rural / Urban
Marital status: Married, Unmarried, Widowed, Divorced
Dependency: Family/ Caretaker/ Relatives/ Neighbor /Independent

Family set up: With Spouse /Family /Children /Grand Children/ Alone/ Relatives

Education level
- Profession
- Graduate
- Intermediate
- High school
- Middle school
- Primary school
- Illiterate

Occupation level
- Profession
- Semi Profession
- Clerical
- Skilled worker
- Semi-skilled worker
- Unskilled worker
- Unemployed

Part-2
Recognizing the elderly for adherence/non-adherence to physical therapy treatment

1. Do you understand what physiotherapy is?
   Yes No
2. Do you have any musculoskeletal/orthopedic issue?
   Yes No
3. What treatment you are taking for your concern?
   - Medications
   - Physiotherapy
   - Both
   - Any other treatment like ayurvedic/ homeopathy etc.
4. Has your primary care physician at any point suggested you physiotherapy?
   Yes No
5. Have you at any point undergone active physical therapy treatment and were you benefitted by it?
   Yes No
6. Have you finished your course of your physical therapy treatment?
   Yes No

Part 3-Distinguishing the obstructions for non-adherence
1. Is it accurate to say that you are ready to do the activities of everyday living just as instrumental exercises of day by day living?
   Yes No
2. Is the area of physical therapy effectively accessible to you?
   Yes No
3. Do you have any difficulty in approaching/ travelling to the physical therapy centre?
   Yes No
4. Do you think paying the costs of physical therapy is hard for you?
   Yes No
5. Do you discover difficulty in performing unsupervised home based exercise programme without the aid of therapist?
   Yes No
6. Does your family/mate assist/ support you for exercises?
   Yes No

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