

Exercise Adherence Following Physiotherapy Interventions in Older Adults 60 Yrs and Above - A Descriptive Study

Y. Pallavi¹, Pranjali Dwivedi², Sharon L Anthony³

¹Professor, V. S. P. M's College of Physiotherapy, Dighod Hills, Hingna, Nagpur, Maharashtra, India
Email ID- [yellarthip\[at\]gmail.com](mailto:yellarthip[at]gmail.com)

²B. P. Th
Corresponding author Email ID- [pranjaldwi29\[at\]gmail.com](mailto:pranjaldwi29[at]gmail.com)

³B. P. Th
Email ID- [sharonanthony1998\[at\]gmail.com](mailto:sharonanthony1998[at]gmail.com)

Abstract: Background: In India, like many other countries worldwide, the elderly population is expanding. Poor adherence to physiotherapy treatment can have negative effects on health outcomes and healthcare cost. This study aims to determine geriatric patients at risk of non-adherence and suggest methods to reduce impact of those barriers thereby maximizing their level of adherence. Aim: To find out the factors to exercise adherence following physiotherapy interventions in older adults 60years and above. Objectives: To identify the factors for adherence to physiotherapy treatment among elderly and find out the reasons for non-adherence by questionnaire method. Materials and method: The study was descriptive, conducted in 2020 - 2021. A total of 100 subjects (61males, 39females) were surveyed using a questionnaire. [1]for information. The adherence to physiotherapy treatment among them was found out. Results: 72% of the sample population was adhering to physiotherapy treatment. Of the total 100, females were 39 and their percentage of adherence was 66.66% while males were 61 and their adherence was 75.40%. Conclusion: It can be concluded that 72% geriatric population was adherent to physiotherapy treatment. It was based on behavioural point and not the outcome measures of the treatment.

Keywords: exercise adherence, barriers, elderly, physiotherapy treatment, geriatrics

1. Introduction

Geriatric health care delivery is a major public health issue. Geriatrics refers to diagnosing and treating older adults with complex medical conditions and social problems. [1] WHO stated older adults are generally defined according to a range of characteristics including chronological age, changes in social role and changes in functional capabilities. In high resourced countries older age is generally defined in relation to retirement from paid employment and receipt of pension, at 60 or 65years and above. With increasing longevity some countries define a separate group of oldest people, those over 85 years. In low resourced countries with shorter life spans, older people may be defined as those over 50 years. [2]

Ageing is an essential process that distresses all systems and tissues. [1] The chronological criteria that is presently used for categorizing the older adults in India has been set at age 60 years and above [2]. Almost one half of the elderly population is suffering from at least one chronic disease such as asthma, arthritis, diabetes, angina. [2], [3] Physical activity and exercise play important role when it comes to management of chronic conditions in geriatric rehabilitation. It is proven that exercises can significantly improve functional independence, quality of life and balance of age issues. Multani et al, had drawn the inference of role of geriatric physiotherapy in context to patient care that includes acute care hospitals, outpatient departments, home health care rehabilitation centers depending upon the multiple comorbid conditions of elderly individual. [4], [5]

Poor adherence to treatment is the most common problem across some health care disciplines including physiotherapy. [6] Adherence with treatment is an important factor which can influence the outcome of treatment explained by Hayden et. al. in 2005. [7] Adherent patients have better treatment outcomes than non-adherent patients concluded by WHO in 2003. [8]

The extent of non-adherence with patient treatment is not clear. Vasey found that 14% of physiotherapy patients did not return for follow up. Slujis suggested that non-adherence to the treatment and exercise program depends on patients interests and symptomatic relief. Obedience of patient has vital role to prove effectiveness of treatment. The poor adherence is quite common due to treatment cost and sometimes effectiveness of the treatment. [9], [11]

WHO defined adherence as, The extent to which a person's behavior corresponds with agreed recommendations from a health care provider. There are many reasons which can contribute for patient's nonadherence which includes low physical activity, anxiety, poor socioeconomic support, increasing pain during exercises. [12]

Many factors related to the patient, the health care provider and health care organizations are thought to influence patient adherence with treatment. Identification of barriers may help physiotherapist identify patient at risk of non-adherence and suggest strategies to reduce the impact of those barriers., thereby, maximizing adherence. [13]

Volume 10 Issue 9, September 2021

www.ijsr.net

Licensed Under Creative Commons Attribution CC BY

2. Literature Survey

PUBMED, PEDRO and various physiotherapy and geriatric sites.

The keywords like adherence, non - adherence, compliance, physical therapy, aged population The database for the current study was made from Medline, outpatients, barriers to physiotherapy treatment, factors influencing physiotherapy treatment.

The reference of primary studies were identified and further relevant citations were screened. Internet searches of Google scholar and Google were conducted.

The primary citation of current study was taken from Forkan R Rumpfen B titled, 'Exercise adherence following physiotherapy intervention in old patients with impaired balance.' He drew the conclusion that a higher rate of adherence lowers the impairment and improves balance. [10] The previous research investigated the factors that affect the adherence in older adults to physiotherapy treatment was based on present questionnaire which consisted of three parts in the development of questionnaire.

The construction of questionnaire is based on the studies by Buddhadev and Slujis E M. Multani and Verma in 2007 reported that 40% of elderly Indian population is living below poverty line whereas 87% are dependent upon family and care takers. These two factors strong contributors of physiotherapy treatment. [5], [9], [11]

Indian physiotherapists perception of factors that influence the adherence of Indian patient to physiotherapy treatment recommendations done by Marwaha in 2010, drew the result in favour of non - adherence by identifying the factors like poor infrastructure, economic factors and poor communication. Further he suggested to design strong strategy and policies for physiotherapy treatment. [6]

Burnett Aloni revealed that Asian women are less likely to take regular exercises than American women. Consequently, Asians may be less likely to adhere with treatment recommendations and believe in their own beliefs.

Research has consistently shown that up to half of all patients do not follow recommended treatment regime whether it is drug regime or physiotherapy treatment. This conclusion is drawn from the study by Donovan with the title, 'Patient non - compliance, deviance or reasoned decision making in the year 1992. [12]

The noncompliance has been associated with substantial cost increase, hospital stay, repeated hospital admissions. Even noncompliance can lead to incorrect conclusions about therapeutic efficacy suggested by Feinstein AR, 'Compliance bias and the interpretation of therapeutic intervention in 1976.' which shows no change in the trend of patient's behavior towards non - compliance. [13]

Quilty B Tucker M conducted a randomized clinical trial for patellofemoral joint disability, quadriceps dysfunction and response to physiotherapy treatment in 1989 revealed that

five months regular treatment showed significant improvement in strength of quadriceps and increase in range of motion index knee joint with minimum pain reduction. The trial was tuned for one year but most of the patients discontinued their treatment in between, then they were requested to report for follow up by surgeon. The readings drastically dropped down. He suggested outcome measures were returned to pre - treatment level. He advocated strict adherence to improve the condition. [14]

A systemic review was planned by Kirsten Jack, Sionnadh Mairi and Jennifer on barriers to treatment adherence to patient physiotherapy OPD – A systemic review suggested poor adherence to treatment can have negative effects on outcomes and health care cause. They tried to identify barriers to treatment adherence in patients typically managed by musculoskeletal physiotherapy. Much of the available research has focused on patient factors and additional research is requested to investigate the barriers introduced by health professionals on health organizations because these factors are also likely to influence patient adherence with treatment. [15]

Miller in 1997 investigated potential barriers such as socioeconomic strata, health professional factors and health organization factors emerged as predictors of non - adherence. [16]

Kolt et. al. found most used measures of adherence where attendance at appointments, adherence with home programs and in clinic adherence. While attendance at appointments is standardized, it provides no information about patients' attitude and behavior towards rehabilitation. [17]

Patients' self - reports using paper diaries where the most common measure of adherence with home program however poor real time compliance with diary completion and recall accuracy may lead to data of questionable validity was the important finding of Stone et. al. in 2003. [18]

Minor and Brown study indicated that worsening pain during exercise was the barrier to adherence with exercise and suggested strategies to minimize initial pain are important. [19]

McLean did a systemic review to investigate the strategies for enhancing the adherence with musculoskeletal treatment showed that there was moderate evidence to improve attendance at motivational community based clinical sessions. [20]

Dmitry Chan Filizcan did a study to evaluate patients' adherence to home exercise program in physiotherapy practice among Turkey population aged between 16 - 75 year old and found poor performance by most of the subjects. Everyone expressed difficulty to understand exercises and affirmation of exercises. He suggested physiotherapy should rethink and reevaluate the time spend on explaining and rehearsing the exercise sessions. [21]

Nancy Mahmoud El - sakhy found the barriers of adherence to physiotherapy treatment among geriatric patients in Matrouh, Egypt. The study was carried out at the out -

patient clinics of physiotherapy center of Matrouth general hospital and found that more than two thirds of the studied geriatric population did not adhere to physiotherapy treatment.



Patient filling the questionnaire

3. Material and Methods

The study was descriptive in nature. The permission to conduct the questionnaire - based survey was obtained by head of institution and institutional ethics committee.

Elderly population aged 60 and above from geriatric physiotherapy OPD and medicine OPD was contacted to find out if they know about physiotherapy and have undergone physiotherapy for any medical or physical conditions. Old registered candidates and patients were contacted for the same to collect data. 150 elderly subjects were screened with the convenient random sampling for participation in studies out of which 100 elderly were recruited for study. The subjects were explained about the questionnaire and purpose of the study. Those willing to participate were asked to give a written consent. They were assured of data encryption. The questionnaire was given to them after personal interview by knowing the comfortable language.

The first part consists of demographic variables like age, gender, marital status, economic status, qualification, their

previous occupation and dependency. The second part consists of 5 questions to find the adherence and non - adherence among elderly. The third part includes 12 questions identifying the barriers that lead to non - adherence among elderly for assessing physiotherapy treatment. Maximum questions are close ended. Participants were made sure about anonymity of the study.

Elderly population was screened as per eligibility criteria. One question was given an opportunity to describe other problems those were not included in close ended questions. The response and answer to the question along with personal interview took 20 - 30 minutes duration to complete the procedure to find out the physiotherapy treatment adherence.

Study setting: geriatric OPD (physiotherapy and medicine department of tertiary care institute)

Target study design: descriptive study.

Population: older adults aged 60 and above.

Sample size: 100

Type of sampling: convenience sampling

Inclusion criteria -

- Willing to participate.
- Can read the questionnaire.

Exclusion criteria-

- Unable to read the questionnaire. (illiterate, visually impaired)
- Cannot remember previous treatment.

4. Results

In the study, a total of 100 elderly were assessed. It was found that the total adherence among them was 72% and the percentage of non - adherence was 28%.

Therefore, they were receiving physiotherapy treatment which was effective.

Questions	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Do you know what physiotherapy is?	100	100%	0	0%
Do you have any musculoskeletal problem (low back pain, knee pain or others?)	93	93%	7	7%
What treatment you are taking for your problem?	Both		Medicine	
	70	70%	10	10%
Have your doctor ever recommended physiotherapy?	91	91%	9	9%
Have you ever had physical therapy treatment?	85	85%	15	15%
If yes to the above question, did you receive benefits from the service?	96	96%	4	4%
Have you completed your course of physical therapy treatment?	67	67%	33	33%
Are you able to perform the activities of daily living as well as instrumental activities of daily living?	67	67%	33	33%
Is the location of Physical Therapy center easily accessible to you?	82	82%	18	18%
Do you find it difficult to travel to a physical therapy center?	41	41%	59	59%
Do you think paying the expenses of physical therapy treatment is difficult for you?	10	10%	90	90%
Do you think exercises make you anxious and stressful?	15	15%	85	85%
Do you feel a longer treatment duration makes it difficult to get physical therapy services?	52	52%	48	48%

Do you think home - based exercise program is easy than visiting physical therapy centers?	73	73%	27	27%
Are you not able to benefit from physical therapy services because of any other medical condition (such as urinary incontinence, greater OA, communicable disease) ?	30	30%	70	70%
How confident are you that you can overcome obstacles to exercise or return to exercise, despite having replaced for several weeks?	86	86%	14	14%
Do you find difficulty in remembering exercises?	52	52%	48	48%
Does your family/spouse encourage you for exercise?	95	95%	5	5%
What problems you experience other than these?	Frequency	Percentage		
<i>Exercises do not fit in a daily routine</i>	10	10%		
<i>I can do little myself</i>	17	17%		
<i>I get tired from exercising</i>	22	22%		
<i>I often forget to exercise</i>	18	18%		
<i>My therapist is more important</i>	20	20%		
<i>Recovery depends on the therapist</i>	3	3%		
<i>The exercises are painful</i>	10	10%		

Variables	Total = 100
Females	39
Non – adherent	33.33%
Adherent	66.66%
Males	61
Non – adherent	24.59%
Adherent	75.40%
Total Adherence – 72%	

5. Discussion

This descriptive study was an attempt to identify the factors for adherence to physiotherapy treatment among geriatric population by questionnaire. WHO stated that, measurement of adherence provides useful information that outcome - monitor alone cannot provide, but it remains only an estimate of patient’s actual behavior. The study consisted of 100 elderly individuals (60 years and above) of which 93 (93%) individuals of the population had musculoskeletal problems and 70 (70%) of them took both physiotherapy and medicine treatment while 10 (10%) took only medicines and (20%) only physiotherapy treatment. The reason could be 76 resided in urban areas and 24 in rural areas and those from the urban areas had better accessibility to facility and resources that promote a multimethod approach regarding the treatment of a condition and thus an increased opportunity to exercise.

91% were recommended physiotherapy by their clinicians but 85% had undergone physiotherapy treatment. (Acc to Q.4 pt. II in Questionnaire)

96% received benefits from the treatment but only 67% could complete the course of physiotherapy. Majority of the population being residing in the urban areas, the location of the center was easily accessible to 82% of the population. Still 41% complained of difficulty in traveling to physiotherapy center. Out of which some responses were - difficulty in using public transport and unavailability of the attendants to take them to the center. This is the limitation of the research that physiotherapy centers and their distance from the location of the clients and other difficulties faced were not included in the study.

90% of the population was able to pay for the physiotherapy treatment while 10% of the population had financial constraints to attend physiotherapy services. It has been seen

that the socio - economic factor of the elderly is of utmost importance as dependency increases with age and paying expenses becomes more difficult^[1]

Among the studied population 67% were able to perform the activities of daily living as well as instrumental activities of daily living. (Acc to Q.1 pt. III in Questionnaire)

15% were made anxious and stressful by performing the exercises. Stress has a bidirectional relationship with physical activity, in which greater stress is associated with less physical activity, and less physical activity is associated with greater stress^{[16], [22]}

While 52% believed that a treatment of extended duration as a limitation for their compliance to physiotherapy treatment. Some of them complained it as time consuming, disliked change in daily routine, take out time from social responsibilities, work, and family to undertake physiotherapy treatment

As much as 73% people decided that home - based exercise program is way easier than visiting physiotherapy centers. Home exercise programs aid patients to assume responsibility for managing their conditions as this ensures the maintenance of functional gains and continual progress.^[21]

30% were not able to benefit from physical therapy services because of any other medical condition such as urinary incontinence, greater OA, communicable diseases.86% were confident that they can overcome obstacles to exercise or return to exercise despite having replaced for several weeks.52% had difficulty in remembering exercises.95% were encouraged by their family or spouse to exercise.

The study also attempted to explore the attitude of the participants towards exercise. Therefore, an open - ended question was asked to the participants related to their reason for nonadherence to exercise. Varied responses among which “I get tired from exercising” (22% of the population), “my therapist is more important” (20%), “I often forget to exercise” (18%), “I can do little myself” (17%), “exercises do not fit in a daily routine” (10%), “the exercises are painful” (10%), “recovery depends on the therapist” (3%) were recorded.

Few prominent barriers like the duration of the physiotherapy treatment, transportation of the elderly, commuting independently, dependency on care takers were explored from the study. The present study did not investigate adherence issues related to various diseases and conditions. At the same time physiotherapist's viewpoint was not considered regarding adherence

6. Conclusion

It can be concluded that 72% geriatric population was taking regular physiotherapy treatment. The adherence rate was good. It was based on behavioural point and not the outcome measures of the treatment.

7. Future Scope

The study recommends more steps could be taken to formulate the study on the basis of the outcome measures and specific treatment strategies like home - based exercise programs, mobile van, group therapies, video consultations to cope up with non - adherence of the patient.

Time to time monitoring, regular follow ups, cost effective physiotherapy treatment will help elderly to have good quality of life.

References

- [1] Sheikh. A. F., &Singh, S. Identify barriers and their association with adherence to physiotherapy treatment among rural and urban geriatric population in Patiala district. *International Journal of Physiotherapy*.2019; 6 (1): 01 - 08.
- [2] WHO Asian classification of ageing. World Health organization; 2020
- [3] Guccione A, Wong R and Avers D. Geriatric physical therapy.2012.3rd ed.
- [4] SomnathChatterji. The Health of Aging Populations in China and India. *Health Affairs*.2008; 27 (4): 1052 - 63
- [5] Multani N. K and Verma S. Principles of Geriatric Physiotherapy.2007.1st ed.
- [6] Marwaha K, Horobin H, and Mclean S. M, October. Indian physiotherapist's perception of factors that influence the adherence of Indian patients to physiotherapy treatment recommendations. *International journal of physiotherapy and rehabilitation*.2010; 1 (1): 09 - 18.
- [7] HaydenJA, vanTulderMV, Tomlinson G., systematic review: strategies for using exercise therapy to improve outcomes in chronic low back pain. *Ann Intern Med*.2005 May 3; 142 (9): 776 - 85. doi: 10.7326/0003 - 4819 - 142 - 9 - 200505030 - 00014. PMID: 15867410.
- [8] WHO. Adherence to long term therapies - evidence for action. World Health organization; Geneva, 2003.
- [9] Slujis E. M. Correlates of exercise compliance in physical therapy. *Physical therapy*, 1993; 73 (11): 771 - 782.
- [10] Forkan R, Pumper B, Smyth N, Wirkala H, Ciol MA, Shumway cook A. Exercise adherence following physical therapy intervention in older adults with impaired balance. *PhysTher*.2006; 86 (3): 401 - 410
- [11] Buddhadev N. Physiotherapist's perception of patient's compliance to home exercises in chronic musculoskeletal Physiotherapy. *National Journal of integrated research in medicine*.2012; 3 (2): 162 - 165.
- [12] Donovan JL, Blake DR. Patient non - compliance: deviance or reasoned decision - making? *Soc Sci Med* 1992; 34: 507 - 13
- [13] Feinstein AR. "Compliance bias" and the interpretation of therapeutic trials. In: Sackett DL, Haynes RB, ed. *Compliance with therapeutic regimens*. Baltimore: Johns Hopkins University Press, 1976: 152 - 66.
- [14] Quilty B, Tucker M, Campbell R, Dieppe P: Physiotherapy, including quadriceps exercises and patellar taping, for knee oateoarthritis with predominant patellofemoral involvement: randomized controlled trial. *Journal of Rheumatology*.2003, 30: 1311 - 7
- [15] Kirsten Jack, Sionnadh Mairi Mclean, Jennifer Klaber Moffett, Eric Gardiner. Barriers to treatment adherence inphysiotherapy outpatient clinics: A systemic review. *Manual therapy*15 (2010) 220 - 228
- [16] Stone AA, Shiffman S. Schwartz, Broderick JE, Hufford MR. Patient compliance with paper and electronic diaries. *Controlled Clinical Trials* 2003; 24 (2): 182 - 99.
- [17] KoltG. S., McEvoy J. F. Adherence to rehabilitation in patients with low back pain. *Manual Therapy*.2003; 8 (2): 110 - 116
- [18] Stone AA, Shiffman S. Schwartz, Broderick JE, Hufford MR. Patient compliance with paper and electronic diaries. *Controlled clinic trials* 2003; 24 (2): 182 - 99
- [19] Minor MA, Brown JD. Exercise maintenance of persons with arthritis after participation in a class experience. *Health education quarterly* 1993; 20 (1): 83 - 95
- [20] Jack. K, Mclean. S, Monfett. J and Gardiner. E. Barriers to treatment adherence in physiotherapy outpatient clinics: A systemic review. *Manual therapy*.2010; 15 (3 - 2): 220 - 228
- [21] Dmitry CHAN, Filiz CAN. Patient's adherence/compliance to physical therapy home exercises.2010; 21 (3): 132 - 139
- [22] PalazzoC, KlingerE, Dorner V. et al. barriers to home based exercise program adherence with chronic low back pain. Patient expectations regarding new technologies. *Ann physRehabil Med*.2016.01.009. Epub 2016 Apr 1. PMID: 27050664