Targeted Multiple Physical therapy Interventions to Improve Functional Capacity for Elderly Residing at Old Age Home

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Abstract

Background: Population ageing remains a global phenomenon in this new millennium and is poised to become a major issue in developing countries. Malaysia, an upper middle income country, with a population of 28 million is no exception. Life expectancy among Malaysian has also risen to 71.7 years for men and 76.5 years for women in 2007. By the end of 2009 63.8% of the total population will be aged between 15 and 64, mean while those above 64 will increase to 4.7%. Increased longevity is not only a triumph for a society but a huge challenge for health systems. This study aims to determine the effectiveness of targeted multiple physical therapy interventions to enhance functional capacity of elderly people livelihood in residential care facilities. The total number of 21 elderly individuals ranged from 65 to 97 years (mean age 79 years, 12 men and 9 women) selected by purposive random sampling method at three old age homes in Malaysia. 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exercise program with specific goals positively affect certain aspects of the biology of ageing, mainly the musculoskeletal, cardiovascular and nervous systems [8]. This means multi oriented physical therapy interventions targeted to improve the better quality of life in the elderly people also many number of research supporting this study. Study which has been done mainly to find out the effectiveness of planned multiple physical therapy interventions to improve functional capacity in the elderly those who are being in the residential home care set ups.

Methodology

The total number of 21 elderly individuals ranged from 65 to 97 years are selected for this study to find out the effectiveness of targeted multiple physiotherapy interventions to improve better quality of life in elderly residing at old age homes in Malaysia. Group of elderly people has been selected by purposive random sampling method with due inclusion and exclusion criteria. Among 21 subjects, 12 are males and 9 are females. Those subjects were taken from different old age homes with management consent. In the initial period of study a total of 25 subjects were selected. During the application of physiotherapy interventions 4 subjects were died due to general complications includes respiratory failure and heart attacks and 3 of them were discharged from old age home by effective physiotherapy treatment which reports 70% of successful independent life. Mobility is not only transportation of the body from one place to other place its gives weight bearing, improves general body blood circulations. Like this general factors helpful to avoid various other complications induced by senility.

This study was mainly deals with how to make the patient mobility also to maintain the level mobility as much as possible with maximum tolerance level. In later stages of life, prevention can be very effective to improve functional capacity and to avoid further complications related with others diseases. The participants selected with impaired functional performance with various disabilities in orthopaedic, neurological, cardio respiratory and other conditions due to aging, advised to physiotherapy treatment. A selected subject has to be managed very carefully with follow up by regular medical follow up along with local medical officer working in old age homes. Physician checks the subjects two times a day with necessary medications vital signs are well managed and maintained.

The various individualised physiotherapy interventions like pain relief, specific muscle strengthening, aerobic exercise, pacing, stretching, group therapy, chest physiotherapy, gait training were applied every day which continues for 2 months. Physiotherapy treatment starts regularly in the early morning after subjects finish their tea break. Every session extends more than 45 minutes to 1hour. Treatments are given by physiotherapy students under supervision of qualified physiotherapist. During the treatment session patients feels too tired when physiotherapy interventions are stopped immediately. Physiotherapy treatment starts regularly in the early morning after subjects finish their tea break. The exercise session are carried out by group therapy such as aerobic exercise, general body muscle stretching, pacing and breathing exercise.

Group therapy session shows more positive results in the means of cooperation and improvement of general body fatigue. Usually gait training progressed before exercise session starts. Our physiotherapy team feels that subjects are not cooperative if exercise session starts first. Every day therapeutic session begins with gait training. Later, physiotherapy team continues the targeted multiple physiotherapy interventions.

Data Analysis and Interpretation

The outcomes were assessed by the use of Barthel Index (BI) and Modified Rivermed Mobility Index (RMI). The Study was done with purposeful random sampling method with sample taken from local old age home in Malaysia. Samples are selected with complete fulfillment of inclusion and exclusion criteria. The total number of 21 elderly women and men utilised in these study with informed consent. Some of them cooperated well during this targeted multiple physiotherapy tasks. Data were collected and analysed before and after physiotherapy interventions.

Discussion

Solange Czerniewicz et.al [7] emphasized role of the physiotherapist, biokineticist and exercise scientist with regard to health protection, health enhancement, functional assessment and promotion of an independent life. To illustrate these possibilities, the prevention and treatment of falls and the value of exercise therapy for mobility risk reduction are discussed. This approach improves functional status, delays the onset and manifestation of chronic diseases and specifically increases the exercise or physical activity dose for the elderly client [9]. Selected subject were treated with targeted multiple physiotherapy interventions such as pain relief, specific muscle strengthening, aerobic exercise, pacing, stretching, chest physiotherapy and gait training. These physiotherapy interventions are mainly focused to prevent the bedridden complications. Physical therapy that can prevent, delay, or reverse functional decline can serve to prolong the independence of older people [10].

Mulrow CD, Gerety MB et.al [9] Subjects randomized to the intervention group receive one-on-one physical therapy sessions three times weekly for 4 months, while control group subjects receive structured social visits three times weekly to control for potential Hawthorne effects. Physical therapy sessions generally last 30 minutes and consist of functional activity and general conditioning exercises; these exercises are individually tailored to the subject’s level of physical and functional disability [11]. Many number of elderly modality disturbed due to bedridden complication. 85 percentage causes death due to lack of mobility.

These results support the use of the MRMI, which is reliable, valid, simple, and quick; more importantly the MRMI targets items that are

![Figure 1: Pre and Post test comparison of Barthel Index.](image-url)
relevant to the aims of therapists working in stroke rehabilitation. All of these factors are critical in determining whether a scale will gain widespread clinical acceptance [12,13]. Prevention of falls is the important task for the physiotherapist those who practicing in the geriatrics physical therapy area [14,15].

Falls mainly caused by weakness/wasting in the muscles. General body muscles weakness or multiple muscle atrophy in the body causes poor balance and equilibrium. This physiological changes cause biomechanical modifications in the elderly. Once normal biomechanics has been disturbed makes those to frequent fall [16]. When they feel imbalance and failure in equilibrium general body mobility and debility will be affected very seriously. The aim of this study is to determine whether physiotherapy would enhance functional capacity and overall quality of life in elderly people those who are living in residential care facilities.

This result indicates that 2 months intensive physiotherapy program (2hr X 5 TIMES / WEEK) could have positive effects on quality of life and functional level in elderly. And also intensive physiotherapy training could improve the quality of life with functional components like Lying to sitting, standing from chair, turning in bed, getting in and out of bed, standing unsupported, walking inside with aid. Physical therapy could prevent delay or reverse functional decline can serve to prolong the independence of elder people. The results of this study justify testing the effectiveness of physical therapy for improving functional performance in elderly individuals. This mobility component helps to prevent them from many diseases like bedsores, chest infections and DVT. The effectiveness of this physical therapy for older people living in residential care facilities has important implications.

Further study is recommended to test the effectiveness of physical therapy for improving functional performance in elderly. The number of subjects included in this study is very minimal. To know accurate result of targeted multiple physical therapy interventions study to be continued with large sample size. A third limitation of study was the time lag between initial assessment and initiation of physical therapy. The parameters used here are not very strongly related to general body mobility of the elderly.

**Results**

Statistical analysis was done using non parametric Wilcoxon on Singed Rank test. Pre and post test measures of Barthel index and Modified Rivermead mobility index scales were measured for the target population. There was a significant (p<0.01) improvement in the functional capacity and overall quality of life in the participants. The effectiveness of this targeted multiple physical therapy interventions for older people living in residential care facilities has significant role. Independent living capabilities usually promotes a higher functional capacity and quality of life in elderly [17,18].

**Conclusion**

The hospital environment, a tertiary care setting has focused on medically managing illness states not improving elderly people functional activity. The results of this study show that intensive home based physiotherapy intervention is effective to improve functional capacity for elderly individuals residing at old age home. Further research is required to determine whether this approach can reduce the need for hospital admission.

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**References**


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