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 21elderly 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. The participants selected with impaired functional performance were given a continuous home based physiotherapy intervention was effective to improve functional capacity of the elder people living in residential care facilities.

Keywords: Chest physical therapy
Abbreviations: Modified Rivermead Mobility Index (MRMI); Barthel Index (BI)

Introduction

In comparison to Australia, a developed country with 22 million populations, 13.3% of its populace is aged 65 years and over [1]. The modern advancement in health care system protects the human from numerous diseases. The chronological age of 60 years and above seems young in the developed world, but for a developing country such as Malaysia where gains in life expectancy have not yet matched the developed world [2]. Geriatrics is a branch medicine deals with health and care of elder. Its ageing population of 60 years and above is rising steadily from 5.7% in 1990 to 6.3% in 2000 and is expected to be 9.8% in 2020 [3]. The main aim is to promote health by preventing, treating the diseases and disabilities for the elderly. Life expectancy among Malaysians has also risen to 71.7 years for men and 76.5 years for women in 2007 [4,5]. This technical advance in the field of modern medicine adds life to the human. Our aim is not only adding the days also to improve the quality elderly life. Geriatrics physical therapy occupies important role even though numerous subspecialties available in the field of geriatrics medicine.

The term geriatrics was proposed in 1909 by Dr. Ignatz Leo Nascher [6], former chief of clinic in the Mount Sinai Hospital outpatient department in the New York City. He is the one called as “Father” of geriatrics [6]. Day by day increasing geriatrics population is the biggest task for the physiotherapist to provide disease free life. It is a challenging thing to give hospitalisation and management to all those falls in senility diseases. Physiotherapy techniques can be a good support and brings pain free life for them. Pain free environment is the peaceful life for them in later stages, because this painful environment mostly brings up other serious complications and also psychological issues in these stages. Wear and tear is the unavoidable process, anti-aging medications and food now a day’s available to eliminate the aging process, but how much it will be successful in future is a big question mark. Long life is a sign of good health.

The ageing of the world’s population in developing and developed countries is an indicator of improving global health. By 2050, the “greying” population is forecast to reach 2 billion reported by WHO [1,7]. Physiotherapist we should know our significant role in the geriatric rehabilitation. This study deals with improving functional capacity of elderly people residing in old age homes with serious geriatric illness.

Purpose of this Study

Therapies designed to augment the quality of life of the elderly are a collective effort. Geriatricians, physiotherapists, occupational therapists, nutritionists, psychologists, podiatrists, sociologists, biokineticists and exercise scientists all have an important role to play. The role of each person within the multidisciplinary care team for the older adult is full of opportunity [8]. This study is to find out the efficacy of multiple physical therapy interventions to improve functional capacity in the elderly who are residing in the old age home, the multiple physical therapy tasks is to mainly concentrate to improve the bed mobility and general debility. The benefits of a planned process are credited.

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interventions.

The physiotherapy team continues the targeted multiple physiotherapy 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 1 hour. 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 Dnalysis and Interpretation

The outcomes were assessed by the use of Barthel Index (BI) and Modified Rivermead Mobility Index (RMI). The Study was done with purposive random sampling method with sample taken from local old age home in Malaysia. Samples are selected with complete fulfilment 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].

Muldrow 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)
Modified Rivermead mobility index scales were measured for the Singed Rank test. Pre and post test measures of Barthel index and mobility of the elderly.

The parameters used here are not very strongly related to general body time lag between initial assessment and initiation of physical therapy. Further study is recommended to test the effectiveness of physical therapy for improving functional performance in 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


18. World Health Organisation - Western Pacific Region: Malaysia - country context.