

# **PHYSICAL ACTIVITIES IN ELDERLY: BENEFITS and BARRIERS.**

-Literature Review

Bachelor of Social Services and Health Care

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<p>Abstract:</p> <p><b>Aim:</b> To research and create awareness on how physical activities have promoted health in the life of the elderly.</p> <p><b>Research Questions:</b> 1. What are the benefits of physical Activity for Elderly? 2. What obstacles inhibit elderly from physical activities?</p> <p><b>Method:</b> The study was a Literature review with deductive content analysis method used for analyzing articles. The search engines used was EBSCO, SAGE and Google Scholar. The results are grouped in categories and sub categories and the main themes were: ``Benefits of Physical activities and Barriers to engage in physical activities. `The theoretical framework used was Health Locus of Control and refers to a perceived control over one`s health (Internal); and sense of how much control one person has in relation to their external environment (external).</p> <p><b>Results:</b> Physical frailty has been as a result of physical inactivity in many elderly. It was noted that individuals with an internal Locus of Control were significantly more active than those with an external Locus of Control. All individuals, regardless of age can benefit from regular physical activity, vigorous or moderate. Mobility and functioning in older adults, including the frail, can be improved through physical activity and regular physical activity reduces morbidity and mortality from chronic diseases.</p> <p><b>Conclusion:</b> Level of fitness of older adults need to be evaluate before determining their level of effort for physical activity. Education and awareness of the benefits of physical activities should be provided to both elderly and carers. An activity plan that indicates implementation and maintenance of individual and structured activities should be prepared.</p>	
Keywords:	Physical Activity, Elderly, Institution, Active Aging, Benefits of Physical Activity, Barriers to physical activity.
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# 1 INTRODUCTION

The elderly population is outsized in general and growing due to advancement of health care education and technology. This group is faced with numerous physical, psychological and social role changes that greatly challenge their sense of belonging and capacity to live a better life.

Physical dysfunction has greatly affected the seniors in our society today and the need for dependency has gradually increased. But with the introduction to Gerontechnology in the 21<sup>st</sup> century, technology has positively improved and prolonged the self-independency of the elderly. People are living longer today and this trend may increase in recent years. The current population of the elderly people in the world is 650 million and may increase up to 1300 million in 2025 (WHO 2011).

The United Nation Report indicates that trends and patterns in population aging have been determined by the following:

Increased longevity; People are living significantly longer in most parts of the world today compared to previous decades. Globally, life expectancy increased in two decades since 1950 (from 48 years 1950-55 to 68 years in 2005-2010). During the current half century, the UN Population Division projects global life expectancy to rise further to 76 years. (UN Population Division 2006).

Fertility and mortality decline; The start of baby booms following the Second World War marked the end of an earlier period of low fertility, especially in economically depressed Europe. Fertility rates in the 1950s and early 1960s were much higher, but by the mid-1960s fertility rates had begun to drop again. By the 1970s, they had declined to low levels. The fertility rate has fallen from 5 children per woman in 1950s to 2 children per woman today. (UN Population Division 2006). The aging of large cohorts of children born after World War 2 are leading to high shares of elderly group.

Compression of morbidity; this refers to reducing the Age Related suffering. According to Tonel et al. (2003), life expectancy has increased due to development in the medical field, research and technology which has resulted to the use of anti-aging technologies, memory enhancing drugs and high-tech joint replacement not forgetting healthier lifestyle like physical activities!

According to the Annual Review (2006) released by the Finnish Debt Management, it shows that Finnish ageing population is increasing rapidly compared to other European Countries. The most outstanding change in the age structure in Finland will occur within the next ten years when the baby-boom generation (those who were born during the second half of the 1940s) will retire (Statistics of Finland 2007).

Nearly 32,000 of persons born when Finland was under the Russian rule are still surviving. This is according to statistics of Finland (2007). In 1934, the 1<sup>st</sup> population projection in Finland showed that Finland would never exceed 4 million. However, in 1950 the 4 million mark was passed. Table 1 illustrates how the population growth has drastically decreased over the years.

*Table1. Illustrates the changes in Finnish population from 1912-2006. (Adapted from Population development in independent Finland 2007, statistics Finland)*

<b>Year</b>	<b>Population</b>	<b>Population growth (%)</b>
1912	3,015,500	1.2
1917	3,134,300	0.6
1950	4,029,803	1.0
1991	5,029,002	0.6
2006	5,276,955	0.4

## **Motivation for choice of Research**

During the period of learning and practical trainings done in different institutions, the author observed that functional dysfunction and non-communicable diseases have been on high prevalence to institutionalized elderly as well as those living at home. Most of these can be avoided through physical activities. Many professional care givers lack the knowledge on how physical activities can be enhanced and how it's linked to health promotion and quality of life.

The bed-ridden residents and those confined to geriatric chairs are the most affected group. It is very important for the care givers to be creative because there are simple activities that can be used to help this segregated group. Elderly who can walk independently have also been neglected! A course in Activities with elderly and Pro-act program also motivated the author. During the visits to the client the author was assigned to, the author noted that the small activities she provided to the client were very helpful. Examples were nature walks, stretching of arms and legs as well as singing.

The author had participated in an intensive program sponsored by the European Union. During this program together with five other participants (from Poland, Slovakia, Belgium and Finland), the author and colleagues had to come up with different activities. This task was assigned to help the residents at Kuustankartano elderly center with memory disorders to remain active. The group made simple instruments accompanied by an audio cd that could be used in physical activities.

Time passed on very quickly and the participants had to travel back to their home countries. Being the only resident from Finland, the author was privileged to demonstrate how the instruments and the cd function to the residents and the carers. The author noted that the small activity had a very great impact to the residents as well as the carers. From that case scenario, the author was so much motivated to the research and the link between the benefits of physical activities health promotion and quality of life.



The course on gerontechnology had a great impact to this research too. The author had to create an assistive device for the elderly clients at Kotikallio service home and the author made the same instruments as in Pro-acte program. It was observed that the other instruments created by fellow classmates were of great value in engineering the physical activities. The clients were very happy to touch, feel and exercise with those simple instruments.

## **2 AIMS OF THE STUDY AND THE RESEARCH QUESTIONS**

The aim of this literature review study is to research and create awareness on how physical activities have promoted health in the life of the elderly. The author will use 2 main research questions.

1. What are the benefits of physical activity for elderly?
2. What obstacles inhibit elderly from physical activities?

The above questions are considered throughout the paper and they will act as a pillar to guide the author. The research and written information revolve around the questions.

### **Relevance of the Study**

In relevance to working life, the study will be of huge benefit to the commissioning partner. The paper will provide examples of good physical activities and highlight the positive impact in the wellbeing of our elderly society. The paper will also describe some evidence based research that have been used before and that are applicable in the working life. This will have a positive impact within the life of elderly when the caregivers will put into practice the interventions provided in this paper.

**Description of concepts:**

*Physical activity* is defined as any bodily activity movement produced by skeletal muscles that require the use of energy. It is performed for many purpose including strengthening muscles and cardiovascular system. According to a report by World Health Organization, Physical inactivity has been identified as the fourth leading risk factor for global mortality causing an estimated 3.2 million deaths globally. (WHO 2013).

*Mobility* is the ability to physically move from one place to another. It can be facilitated by the use of assistive products such as walking canes, wheel chairs, walkers and rollators, electric scooters, arm crutches among other; it refers to movement in all of its forms, including basic ambulation, transferring from a bed to a chair, walking for leisure and the completion of daily tasks, engaging in activities associated with work and play, exercising, driving a car, and using various forms of public transport. (Satariano et al 2012).

*Ageing Concept:* Hagberg (2002) defines aging as a process of periodic change in human life where human and the conditions he is subjected to are constantly changing as time passes. Age determinants include: Chronological- this defines how many years one has lived; Functional-It defines person`s functional capability and Subjective or experiential which defines how one`s feel about his or her age.

### **3 BACKGROUND**

The background of this work consists of a brief examination of previous researches relating to this topic. Physical activity in older people is critically important in the prevention of disease, maintenance of independence and improvement of quality of life. There are many studies that have been conducted to create awareness and provide guidelines for physical activities in older adults. Some of these researches are described below.

#### **3.1 Previous Research**

Sun et al (2013), stated that regular physical activity can bring substantial health benefits to people of all ages. The need for physical activity does not end in later life and evidence increasingly indicate that physical activity can extend years of active independent living, reduce disability and improve the quality of life for older people. There is strong scientific evidence that elderly people who are active have a lower risk of heart disease, stroke, type 2 diabetes, some cancers, depression and dementia. The decline in muscle strength and mass during aging has been linked to physical frailty, falls, functional decline and impaired mobility in very elderly people. (Fiatarone et al 1994).

There are numerous aspects that may contribute to muscle weakness and loss of skeletal muscle mass in elderly. These consist of; chronic illness, sedentary life style, nutritional deficiency and normal aging. Among the above factors, skeletal muscle neglect and under nutrition are preventable and in some circumstance reversible with use of interventions. In a randomized controlled trial conducted by Fiatarone et al (1994), it was concluded that high-intensity resistance exercise training is possible and effective means of counteracting muscle weakness and physical activity in elderly of advanced age.

In a study to explore the association between physical activity and the risk of cognitive impairment and dementia by Laurin et al (2001), it was concluded that regular physical activity could represent an important and effective protective factor for cognitive decline and dementia in elderly persons. In this study, a community sample of 9008 randomly selected elderly 65+ were evaluated between 1991-1992 by the Canadian study of health and aging. 4615 participants completed a 5-year follow-up of clinical and screening. In 1996-1997, 3894 were without cognitive impairment while 436 were diagnosed with cognitive impairment and 285 as having dementia.

The results were encouraging since they found that physical activity was associated with lower risks of cognitive impairment and Alzheimer disease of any type. According to Stuart et al (2008), physical activity is positively associated with self-efficacy and attitudes to exercise and negatively associated with perceived barriers. Internal locus of Control is the belief that individual's capabilities will successfully assist in carrying out a course of action and is associated with confidence. A study conducted by Tang et al (2004) to examine the associations among self-efficacy, health locus of control, and psychological distress in 159 elderly Chinese women who had chronic physical illnesses illustrated that psychological distress was best predicted by a low level of general self-efficacy as well as a high level of external health locus of control. Internal health control beliefs did not contribute to the prediction of distress. Another study by Gregg et al (1996), to show the relationship of Locus of Control to physical activity among people with and without diabetes was alarming. The results revealed that among both men and women without diabetes, individuals with an internal Locus of Control were significantly more active than those with an external Locus of Control.

In general, strong evidence demonstrated from previous study show that elderly who are physically active have lower rates of all-cause mortality, coronary heart disease, high blood, pressure, stroke, and type 2 diabetes. Furthermore they also have a higher level of cardio-respiratory and muscular fitness, healthier body mass and composition compared to their counterparts. In addition, they exhibit higher levels of functional health, a lower risk of falling and better cognitive function. Studies show that people over the age

of 65, more than any other age group, require adequate fitness levels to help them maintain independence, recover from illness and reduce high risks of disease. (Gregg et al 1996). Table 2 highlights the difference between the truth and myth in relation to exercise and elderly group. The human body responds positively to exercise, no matter what its age.

*Table 2 below shows the difference between the truth and myth about exercise and elderly. (Revised from Gregg et al 1996)*

<b>Myth</b>	<b>Truth</b>
Older people are frail and physically weak	A lack of physical activity increases fragility and physical strength
The human body doesn't need as much physical activity as it age	People over the age of 65, more than any other age group, require adequate fitness levels to help them maintain independence, recover from illness and reduce their high risk of disease.
Exercising is hazardous for older people because they may injure themselves.	Exercising is safe for older persons if properly done
Only vigorous and sustained exercise is safe	Proper and safe forms of physical activity are not only beneficial, but necessary

## **3.2 Correlates of Physical Activity**

The four determinants of physical activities according to Trost et al (2002); Mutrie et al (2002); King (2001) and Stuart et al (2008) are discussed below.

### **Personal/demographic correlates**

Trost et al. (2002) has indicated that there are stable positive tendencies for leisure time physical activity in adults associated with male gender and higher levels of education and socio-economic status, but negatively associated with some ethnicity and age, with similar trends. Mutrie et al. (2000) further states that promoting physical activity in older women is a challenge because of cultural factors.

### **Psychological correlates**

Depression and anxiety are some of the psychological factors that are barriers to participate in physical activity. Moreover, health psychology values and cognitive behavioral therapies have been ignored by the overall population and medical professions. King (2001) has pointed out that the emotional and physical condition will continue to devastate the mind and body until the health psychology ideologies are accepted by the medicals and elderly begin to follow these principles. Private discussion between an elderly and the care giver and use of psychotherapy and service of psychologist could lower the psychological factors preventing the elderly to participate in physical activity (King (2001).

## **Social Correlates**

According to Trost et al (2002), social support from friends and family was vital as well as influence from a family Doctor in encouraging an individual to engage in physical activities. Individuals with higher educational levels, married or has a partner, in excellent or good health and those who have great internal locus of control are likely to participate in exercises compared to their counterparts. Another influence is seeing people engage in physical activity in the neighbourhood. (Trost et al 2002).

## **Environmental correlates**

According to the previous research and studies conducted, walking was linked with artistic attributes, convenience of facilities such as trails, accessibility of destinations, such as shops and perceptions of traffic and busy roads. Other factors include previous experiences of physical activity and current level of fitness. (Stuart et al 2008). Geographical location is another aspect but there is little society can do to change for instance climatic condition which may lead to inaccessibility.

## **3.3 THEORETICAL FRAMEWORKS**

A theoretical foundation is a set of statements composed of concepts related in one way or another to form an overall phenomenon. The theoretical framework provides support for the proposed study by presenting known relationships among variable and setting limits or boundaries for the proposed study. (Nutbeam et al. 2004). In scientific writing, a theory is not a guess or a belief, it is based on empirical evidence found through scientific research that has been thoroughly controlled to avoid bias; it describes specific behaviors and must make predictions about future behaviors.

The author has developed the framework by examining and exploring the relevant literature and narrowed down theories that are relevant to address different perspectives.

Health locus of control has been used as the main theory originally coined by Rotter (1954). Activity and continuity theories have been used as supporting theories in the research work.

According to Schultz & Schultz (2008), Health locus of control consists of the values that influence health actions an individual can choose to practice. Internal health locus of control is the individual's perception that actions are determined by one's behavior and one's state of health is a result of individual's control. External health locus of control is situation where an individual believe that owns' actions do not influence their future health and one's health is under control of other people like health care givers. (Schultz & Schultz 2008)

When discussing physical activity and elderly, the three social theories of aging go hand in hand; Theory of Health locus of control, Activity Theory and Continuity Theory. Theory of Health locus of control explains how a person understands the causes of events in life; it explains the importance of choice and personal responsibility in everyday life. The link among the three theories is very vital; when the causes of events of life (aging process) are understood, individual therefore make crucial choice and take responsibility of own body and health.

Activity Theory was discovered by Havighurst (1953) it argues that staying mentally and physically active will increase happiness. Havighurst (1953) developed this theory to challenge the theory of disengagement which states that it is natural for the elderly to disengage from society. It further states that aging is an inevitable, mutual withdrawal or disengagement, resulting in declined interaction between the aging person and others in the social system he belongs to. Activity theory implies that the more active elderly people are, the more they are likely to be satisfied in life. This theory proposes that an older person should continue a middle-aged lifestyle, rejecting the limitations of old age as long as possible. Likewise, the public should shun the prejudice of ageism by applying the same norms to old age as it does to middle age. (Havighurst 1953).



In his publication, Havighurst (1954) further states that activities engages the elderly and help them to socialize with others. This in return increases the sense of belonging, feelings of self-worth and pleasure which are important for happiness and longevity.

The continuity theory was invented by Atchely (1971) and states that Continuity is an outstanding adaptive strategy that is promoted by both individual preference and social approval. The continuity theory indicates that individuals prefer to use past experience and social world to accomplish their goals! In this context, the seniors hold on to their past practices, experiences, beliefs and relationships in their continuity to age. This theory applies positively to the elderly who have had a past active life and thus professionals should encourage them to hold onto it. Finchum et al (2000) defines continuity as the ability of older persons to maintain a strong sense of purpose and self in the face of the changes associated with aging as well as personal goal that most people use to guide their development as individuals. In simple terms the later part of life is simply a continuation of the earlier part of life. For instance, difficulties can arise if the person wants to go out and is not allowed to do so. Therefore it is crucial that staff understand this importance of continuity, and not do even the contrary, prevent the person to go out. Different cultures might promote and value different ways of activities for elderly, it is very important to be an active listener and give person-centered care as a staff. What does the person want? Is there a conflict? What is then the choice?

The theory of locus of control was first discovered by Rotter in 1954 and has since become a crucial aspect of personality studies. It has been developed by many authors and researchers. It takes two models; internal and external. Locus of control has a significant effect on our daily lives and wellbeing. Rotter states that an individual has an internal locus of control if one perceives that the event is contingent upon one's behavior, whereas external locus of control is characterized by the belief that reinforcement is perceived as not being contingent upon action but upon luck or fate (Rotter 1954).

### ***Health locus of Control and Physical Activity***

In recent research, locus of control theory has been applied in the area of health psychology. The multidimensional Health Locus of Control Scale is based on the idea that health may be attributed to two sources: internal factors (such as self-determination of a healthy lifestyle), External or powerful factors (such as one's doctor) or luck. Health locus of control is how people measure and understand on how to relate their health into their behavior, health status and how long it may take to recover from a disease. It is linked with increased exercise. (Schultz & Schultz 2008).

As Schultz & Schultz (2008) points out, Locus of control can influence how people think and react towards their health and health decisions. Seniors experience progressive decline in their health and this affect their locus of control. It is the duty and responsibility of the caregivers and helpers to encourage them to have internal locus of control so as to live a healthy lifestyle especially in the act of physical activities. In a study conducted by Menec & Clipperfield (1997), the results indicated that an internal locus of control was positively related to exercising and participation in leisure activities. Exercising and leisure activity participation were in turn predictive of better perceived health and greater satisfaction.

## 4 RESEARCH METHODOLOGIES

The techniques and practice employed to collect, process and interpret information used in the study are explained in this chapter. This topic is entirely based on qualitative study and literature review and its content analysis. A literature review is an account of what has been published on a specific topic by accredited scholars and researchers. Qualitative content analysis of which deductive content analysis falls can be defined as *“a research method for the subjective interpretation of content of a text data through the systematic classification process of coding and identifying themes or patterns”* (Hsieh & Shannon 2005).

According to Kumar (2011), literature review provides a theoretical background for the study and it helps establish the links between what the researcher is examining and what has already been studied. The researcher is able to show how the findings of the study have contributed to the existing knowledge in the field of study.

It is an analytical process that allows theoretical analysis to be used to improve the understanding of data by ways of inductive or deductive procedure. The analytical reasoning are based on these three themes; existing theories, previous studies, and the experience or expected knowledge on the subject that need to be researched, (Elo & Kyngäs 2008).

The literature review was also chosen because it gives the author an opportunity to reference previous research publications, provide strengths and weaknesses of the research and provide a base of knowledge from which the area of interest was built upon. (Leedy&Omrod, 2001). The author used literature review by identifying the topic of the study, research questions, contextualizing the study within the literature found, structuring an understanding of the theoretical concepts and terminology, facilitating the list of sources used, suggesting research method that was helpful, analyzing and interpreting the results found and suggesting topics for further reading.

## 4.1 Data Collection

The author started by studying the broad issues that are related to physical activity and elderly. Theoretical framework (Health locus of control) was considered. The second phase was to identify the studies that overlapped with the study and in the final stage, the author concentrated on the researches that were directly related to the topic and the research questions. A literature search was conducted by the use of the following data bases: EBSCO host, SAGE, and Google Scholar. Other literatures are cited from books and various professional journals. A literature review is used to draw and evaluate a range of professional journals, articles, books and web-based resources and it is also a summary of a subject field that supports the identification of specific research questions. (Rowley & Slack 2004).

A variety of keywords were used; Physical activities and elderly, Healthy aging, mobility in the elderly, motivating the elderly to participate and maintain physical exercise, correlates of physical activities, physical activities and health promotion, physical activity and mental health ,exercise programs for the elderly among other search terms. In the process of searching, the author decided to adjoin words for instance: Physical activities and elderly, Benefits of physical activity and elderly. The age group targeted was +65 and living in institution and or living at home. Table 3 demonstrates the search process. Articles retrieved ranged between years 2000-2012 .The author later applied the inclusion and exclusion criteria to limit the search and for refined results.

*Table 3: Data base search process and number of articles*

<b>Data base</b>	<b>Search terms</b>	<b>Total Number of hits</b>	<b>Articles re-trieved</b>	<b>Articles used</b>
EBSCO host	Physical activity and health in elderly	130	15	2
EBSCO host	benefits of Physical activity and elderly	15,621	20	2
Google scholar	Physical Activity, health promotion and elderly	610,000	10	1
Google scholar	Limitations to participate in physical activity for elderly	60,000	9	2
SAGE	Physical activities, capabilities and elderly	18,000	7	1
EBSCO host	barriers of physical activities and elderly	6,541	10	2

## 4.2 Inclusion and exclusion criteria.

When choosing the articles, the inclusion and exclusion criterion was applied. Inclusion is a very crucial criterion since the method helps to state out clearly the information and researches that corresponds directly to the subject area; it is more specific and brief. Table 4 shows the criteria used in inclusion and exclusion. The author also noticed that, results from topics searched are in very large quantity so it was appropriate to apply exclusion criteria to retrieve topics and articles related and relevant to the topic.

Table 4: Inclusion and exclusion criteria

Included articles and journals	Excluded articles and journals
<ul style="list-style-type: none"><li>• Scientifically written</li><li>• Written in English</li><li>• In full PDF format</li><li>• Free access</li><li>• With an abstract and result</li><li>• Relevant to the topic</li><li>• Published between 2002-2013</li><li>• Peer reviewed</li></ul>	<ul style="list-style-type: none"><li>• Not in full text</li><li>• With subscription</li><li>• Without concrete results and needed continuation research</li></ul>

## Description of Articles selected

Table 5 represents the list of 11 selected articles. The entire respondent in the studies were elderly 65+. The articles selected were from: UK, USA, Sweden, China, Australia and Iran.

*Table 5.A summary of the selected articles for the analysis*

<b>Author/year</b>	<b>Title</b>	<b>Aim</b>	<b>Results</b>
Chen Yuh-Min.  <b>Article 1</b>  2010	Perceived barriers to physical activity among older adults residing in long-term care institutions	Explored barriers that older residents of long-term care institutions experience in regular physical activity participation.	Barriers to physical activity can be personal or environmental, including physical health problems and physical frailty.
English; Manns,P; Tucak,C;& Bernhardt, J  <b>Article 2</b>  2012	Physical Activity and Sedentary Behaviors in People With Stroke Living in the Community	To update current knowledge of physical activity and sedentary behaviors among elderly with stroke living in the community.	Little is known about the time people with stroke spend being sedentary each day.
Fuller,B.G; Byles, J. E; Williams, J .S  <b>Article 3</b>  2010	Active living-the perception of older people with chronic conditions.	To describe and recognize factors which enhance and hinder participation in physical activity for older adults with and without chronic illness.	Health benefits of physical activity, social support and conducive environments contributed to the promotion of physical activity.

<b>Author / year</b>	<b>Title</b>	<b>Aim</b>	<b>Results</b>
Lee,P; Lan,W; & Lee, C  <b>Article 4</b>  2012	Physical Activity Related to Depression and Predicted Mortality Risk.	To examine associations between physical activity and depression, and relationship in physical activity and later life.	Study concluded that elders with less Physical Activity had a higher chance of getting depression.
McAuley, E; Szabo, A; Gothe, N & Olson, A.  <b>Article 5</b>  2011	Self-Efficacy: Implications for Physical Activity, Function, and Functional Limitations in Elderly.	To document the effects of physical activity on functional performance and limitations in older adults.	Self-efficacy plays a key role in the protective effects conferred by physical limitations.
Meng-Yueh Chien; H.k.; Ying-Tai.  <b>Article 6</b>  2010	Sarcopenia, Cardiopulmonary Fitness, and Physical Disability in Community dwelling Elderly People.	To compare physical activity, muscle strength for elderly with sarcopenia	The association between sarcopenia and physical disability was facilitated to a large extent by decreased cardiopulmonary fitness.



<b>Author / year</b>	<b>Title</b>	<b>Aim</b>	<b>Results</b>
Mortazavi, S; Ardebili,H; Eshaghi,S; Beni,R; Shahsiah, M; & Botlani, S  <b>Article 7</b>  February 2012	The Effectiveness of Regular Physical Activity on Mental Health in Elderly.	To explore physical activity as one of the possible health promotion strategies with positive effects on mental health in later life.	Physical activity IS an effective intervention which significantly improved mental health in older adults, and performing physical activity in a group of individuals with the same age would have more benefits.
Nelson, M; Rejeski, W; Blair, S; Duncan, P; Judge, J; Abby K; Macera, C; & Castaneda-Sceppa, C.  <b>Article 8</b>  2007	Physical Activity and Public Health in Older Adults	To issue a recommendation on the types and amounts of physical activity needed to improve and maintain health in older adults	Older adults should have an activity plan for achieving recommended physical activity that integrates preventive and therapeutic recommendations.
Paluska, Scott; & Schwenk, Thomas  <b>Article 9</b>  2000	Physical Activity and Mental Health	To study the effect of physical activity on mental health disorders.	Anxiety symptoms and panic disorder also improve with regular exercise. In general, acute anxiety responds better to exercise than chronic anxiety

<b>Author / year</b>	<b>Title</b>	<b>Aim</b>	<b>Results</b>
Seefeldt et al  <b>Article 10</b>  2002	Factors affecting levels of physical Activities in older Adults	To identify barriers to physical activities and design interventions that might effectively promote regular physical activity	Promotion of activity requires understanding of its determinants from the perspectives of the individual, family, peers and the community, and in the context of the life cycle.
Taylor et al  <b>Article 11</b>  2004	Physical activity and older adults: a review of health benefits and the effectiveness of interventions	To critically review evidence from descriptive, efficacy and effectiveness studies concerned with physical activity and older people.	Exercise improves Emotional, cognitive, social and perceived physical function of older adults.

### **4.3 Content Analysis**

The author found out that content analysis was suitable for the study as it is described as a method that may be used either quantitatively or qualitatively as an inductive or deductive way of study and research. A deductive content analysis was used. According to Elo & Kyngäs (2008), “*a deductive content analysis is used when the structure of analysis is operational on the basis of previous knowledge*”. It is based on earlier theories, models and literature reviews. (Hsieh & Shannon 2005). The author chose deductive content analysis because it is straight to the point and thus time saving. Another reason is that it is an efficient way to do qualitative research since it provides evidence based for practice. (Hsieh & Shannon 2005). In deductive content analysis, there is a possibility of using different theoretical templates and thus the author used Health Locus of Control as the main theoretical framework and Continuity and Active theories as supporting theories.

The chosen articles were read repetitively and numbered. The author used two different markers for each article in regard to the research questions. A green color marker was used for research question 1 and an orange marker was used for question 2. Short summaries were also written and this made it easier for the author to analyze the results.

#### **4.3.1 Validity and Reliability**

According to Elo & Kyngäs (2008), authentic citation can be used to increase the validity of a research and also help readers to identify what kind of original data categories formulated and this was also applied in the study. In Patton writings (2001), Validity and reliability are two elements which any qualitative researcher should be concerned about while designing a study, analyzing results and judging the quality of the study.

*“Validity is defined as the degree to which the researcher has measured what he has set out to measure”* (Kumar 2011). Kumar reiterates the importance of applying the concept of validity in the research process given that inaccuracies can be introduced at or into any stage of the study. According to Elo & Kyngäs (2008), reliability is the extent to which results are consistent over time. The reliability of this research is evaluated by how the link between the results and the data was demonstrated.

#### **4.3.2 Ethical Considerations**

The Arcada Thesis Guide, Herten et al (2009) was read before and during the process of conducting the study with the aim of avoiding rewriting, plagiarism and with the intention of doing a well academically written thesis. The Helsinki Declaration World Medical Association (2004) regarding ethics in research was thoroughly studied.

All reference materials such as books, journals and articles are quoted and properly cited and their authors were acknowledged through detailed and appropriate citation cum referencing.

## **5 RESULTS**

The aim of this study is to research and raise awareness on the link between Health promotion and physical activities by discussing the benefits of physical activities, and the obstacles which inhibit the elderly from participating in physical activities. Interventions to promote an increase in participation of physical activity have also been discussed. The results of the study are presented in two categories resulting from the first and second research question: What are the benefits of Physical Activities (Question 1) and what obstacles inhibit elderly from physical activities (Question 2). To answer question 1, the author will describe the benefits of physical activities for elderly. Question 2 will be discussed by describing the barriers to affect participation in physical activities. Table 6 demonstrates the results of benefits of physical activities on health promotion by describing the benefits of physical activity. (Question 1). Interventions drawn from the barriers will also be discussed.

*Table 6: Representing results of first question in reference to the benefits of physical activities in promotion of health.*

<b>Main category</b>	<b>Generic category</b>	<b>Sub-category</b>
Benefits of physical Activities for elderly	Disease prevention, Mobility and Functionality	<ul style="list-style-type: none"> <li>✓ prevent/delay diseases</li> <li>✓ Reduce risk of fall and hip fracture</li> <li>✓ balance maintenance (Physical health)</li> <li>✓ Lower risk of cardio-vascular diseases, coronary heart diseases and stroke.</li> <li>✓ Enhance skeletal muscle mass and</li> <li>✓ strength</li> </ul>
	Social well-being	<ul style="list-style-type: none"> <li>✓ Social interaction</li> <li>✓ Active participation</li> <li>✓ Independent living</li> </ul>
	Psychological well-being	<ul style="list-style-type: none"> <li>✓ Prevents mental disorders (distress, anxiety and cognitive decline)</li> <li>✓ Rehabilitation=prevents/reduce long-term hospitalization</li> <li>✓ Improves sleep</li> <li>✓ Elevate and stabilize mood.</li> </ul>

## **5.1 Benefits of Physical Activities in Prevention of Diseases, Mobility and Functionality**

Researchers have found that staying physically active and exercising regularly can help prevent or delay many diseases and disabilities. In some cases, exercise is an effective treatment for many chronic conditions. For example, studies show that people with arthritis, heart disease, or diabetes benefit from regular exercise. Exercise also helps people with high blood pressure, balance problems, or difficulty walking. (Taylor et al 2004). Physical activities protect against the risk of hip fracture as well as help the elderly who have had hip fractures to rebuild and maintain their balance consciousness. Staying physically active and exercising regularly can produce long-term health benefits and even improve health for some older people who already have diseases and disabilities. That's why health experts say that older adults should aim to be as active as possible. (Nelson et al 2007).

A systematic review that evaluated results of benefits of physical activity by McAuley et al (2010) confirmed that being physically active is associated with improved physical functioning activities like walking. It was reported that improvements in strength, aerobic capacity flexibility, standing and walking was observed after exercise training in older adults. Moreover, it was reported that reduced physical disability was as result of physical activity. In the American review study conducted by Nelson et al (2007), balance exercise helps to reduce the risk of injury and falls and that physical activity helps in maintaining flexibility. Tai chi Participants experienced substantial improvements in both self-efficacy and physical function over the course of the intervention. Those with lower levels of physical function at starting point benefited more from the Tai Chi training program than those with higher physical function scores. (Taylor et al 2004)

A population based study by Chen (2010) confirmed the importance of physical activity in prevention of progressive functional decline. Aerobic activities were also recognized in promotion and maintenance of health in older adults while muscle-strengthening activities were needed in promoting physical independence. Previous published data from various articles evaluated by Taylor et al (2004) confirm that age-related changes can be reversed by increasing levels of physical activity considering that functional capacity of central circulation can be induced by exercise.

Sarcopenia is a loss of muscle strength and power, between the age of 65-89 years, the rate of fall of muscle power is 3.5% while fall of muscle strength is 1-2% per year.(Meng 2010). In a systematic review presented by Taylor et al (2004), it was reported that improvements of muscle strength in old age have been observed in response to physical activities. Moreover, musculoskeletal injury can be prevented by various mechanisms such as warming-up, stretching, strength and balance training.

### **5.1.1 Benefits of Physical Activities and Social Well-being**

Researchers have established that consistent participation in aerobic exercise has been shown to decrease overall levels of tension, elevate and stabilize mood, improve sleep, and improve self-esteem. Organized group activities can have a positive impact in the life of the elderly. It improves the social-interaction skills of the participants and this will break the boredom. During these activities, the elderly can also create friendship among themselves. (Taylor et al 2004). In the same study review, it was reported that social relations developed within exercise group increased life satisfaction and reduced loneliness. However, physical activity in the frail elderly produced a minor but noteworthy improvement in the emotional health.

Sleep difficulties have been recognized as an independent risk factor for falls among elderly living in the institution. In five studies reviewed by Taylor et al (2004), it was confirmed that high-intensity progressive resistance training program improved sleep quality in depressed

elderly.

### 5.1.2 Benefits of Physical Activities and Psychological Well-being

Regular physical activity and exercise are important to the physical and mental health of older adults. There have been positive effects of physical activity on the psychological well-being of schizophrenic patients. The activities are not expected to change the diagnostic status of persons with severe chronic mental disorders but may be a component of rehabilitation to prevent or reduce long-term hospitalization. (Nelson et al 2007)

The role of physical activity in the promotion of psychological well-being has been used as;

- a therapy for the treatment of mental illness and disorders
- a means of coping and managing mental health condition
- a means of improving quality of life for the mentally ill
- a means of preventing the onset of mental health problems.

In countries like Belgium, the evidence for physical activity and mental health has been accepted and formalized into delivery systems and the use of psycho motor therapy to treat depression and anxiety has been on the rise. Exercise and other physical activity produce endorphins; these are chemicals in the brain that act as natural painkillers and also improve the ability to sleep, which in turn reduces stress. (Fuller et al 2010)

Depression is not a normal process of aging (Taylor et al 2004), though people occasionally feel sad when they experience losses. There is a growing recognition of a widespread mental malaise in the general public that is expressed as mild depression, low self-esteem, anxiety and poor coping. Stress and anxiety are inevitable part of life which cannot be eliminated but we can learn how to manage and cope with. Exercise is considered vital in maintaining mental fitness thus health care professional and physicians encourage people to stay active, five minutes of aerobic exercise can stimulate anti-anxiety effects. (Taylor et al 2004).



## 5.2 What are the obstacles which inhibit elderly from physical Activities?

Related, personal and situational factors influence people`s decision to become physically active. Biological, psychological and social factors` including individuals` perceptions of social support influences their will to start regular physical activity. The barriers that affect the elderly from participating in physical activities are described in table 7. There is a division of the main category, generic category and sub-category.

*Table 7: A summary of the result category two: Barriers to participate in Physical Activities.*

Main category	Generic Category	Sub-category
Barriers to engage in Physical Activities	Personal and psychological Factors (Internal factors)	<ul style="list-style-type: none"> <li>✓ lack of motivation</li> <li>✓ low self-efficacy</li> <li>✓ fear of fall and injury</li> <li>✓ not fun and enjoyable</li> <li>✓ insufficient knowledge (training)</li> <li>✓ loneliness and depression</li> <li>✓ past sedentary lifestyle</li> </ul>
	Environmental and Socio-economic Factors (External Factors)	<ul style="list-style-type: none"> <li>✓ Unsafe neighborhoods</li> <li>✓ non-conducive weather</li> <li>✓ inaccessible environments</li> <li>✓ improvement of technology</li> <li>✓ lack of encouragement, support cultural beliefs and carer`s irresponsibility</li> </ul>

	Aging Process	✓ Clinical issues like polypharmacy, Physical impairment, Physical frailty/Immobility, illness
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### 5.2.1 Personal and Psychological Factors

#### ***Risk of fall and injury***

Fear of fall and injury may become a deterrent to future activity, it is emotionally costly and a burden on the healthcare system. A questionnaire for a study done by Chen (2010) clearly demonstrated how fear of fall affects the need to participate in physical activity. One participant aged 74 responded that; *“My eyesight is very poor I can’t see clearly. It is too dangerous to move around. I might fall.”*

Elderly who has ever fallen and had hip fracture or even a slight injury maybe reluctant to participate in any sorts of exercise because of fear of fall and uncertainty followed with anxiety. In Chen`s (2010) study results, one participant responded that she had seen a resident fall and broke her hip and has never been able to walk again. She confirmed that she feared she might face the same fate. In addition, another correspondent stated that he ended into a long-term care after falling at home and breaking the leg. He further insisted that he feared performing physical activity just in case he falls again and make his current problems worse.

### **Low Self-Efficacy, Motivation, knowledge and confidence**

Older and overweight adults may find physical activities demanding and embarrassing this is accompanied by lack of confidence and low self-efficacy; belief in our ability to succeed in specific situations. This was demonstrated in a study by Chen (2010) where a participant aged 81 years responded that; *“when you grow older, your health also becomes worse. It is a natural Process and nothing can change it. I am quite old and I don’t think physical activity is worthwhile.”* This is associated with External Locus of Control.

Lack of awareness and knowledge about documented risk factors may have influence on individual risk perception and thus creates a barrier to physical activity. In a study conducted by Fuller et al (2010), the results indicated that participants lacked general knowledge regarding the intensity and duration of physical activity required. Another study conducted by Chen (2010) showed that many participants lacked knowledge of benefits associated with physical activity. One participant responded by saying that she has many health problems and thus needed more rest.

Motivation is another aspect that was reported in various articles. In a study conducted by Fuller et al (2010), a number of participants expressed frustration and dissatisfactions from General practitioners and only 3 out of 198 participants who acknowledged that their carers talk to them about the benefits of physical activities. Most participants stated that they at times receive information about physical activities from rehabilitation providers and physiotherapists. Similarly, Chen (2010) study showed that many elderly give up very easily when not motivated. In one incident, a participant stated that physical activities are designed for other residents but not him. He further stated that he earlier engaged in rehabilitation activities three times a week with no improvement and thus does not see the helpfulness of participation.

Fuller et al (2010) conducted a study where the results were alarming. Most participants expressed their frustration with their deteriorating health and indicated a general loss of confidence in their abilities to self-manage their illness process. Self-presentation was also posed a barrier.

Older adults are sensitive to age and health-related physical changes that may make them look dependent and clumsy. (Seefeldt et al 2002). In addition, some elderly people have no confidence of participating in group activities; they find it an embarrassment. (Chen 2010).

Past sedentary lifestyle, loneliness and depression are also apparent barriers. Early physical activity and adult lifestyle are inter-related and the health-related benefits of consistent physical activity are established at early ages. The results from a study conducted by Chen (2010) clearly showed that participants who had an inactive lifestyle in early life performed less or no physical activities in old age. One stated never had he been active nor has he ever made an effort to be active. Similarly, a literature reviewed by Seefeldt (2002) from previous studies showed that most people who were physically active in their youth maintained the status in old age.

## **5.2.2 Environmental and Socio-economic Factors**

### ***Environment, Equipment and Space***

Built environments have an impact in participation of physical activities. Older adults prefer to walk in pedestrian-friendly neighborhoods. Attractive neighborhoods design is also important. In a study by Fuller et al (2010), the “walk-ability” of neighborhoods was a perceived barrier. Many participants identified issues like condition of footpaths, lighting and cost of transportation as barriers to participation. In some cases the participants reported that services available are not well advertised. Moreover, lack of equipment’s and space in the institution hinders the ability to perform physical activities. A study directed by Chen (2010) demonstrated this hindrance; one participant indicated that there were barely any activity-related equipment’s in the institution and confirmed that apart from eating and sleeping, he spent most of the time sitting in the living room

gazing vacantly. Another raised concern of the limited space and no free place to implement physical activity.

### ***Socio-Economic Factors***

A study conducted by Nelson et al (2007) found that elderly who had a lower income and less schooling did not agree to participate in physical activities. A similar research by Seefeldt et al (2002) revealed that elderly in low socio-economic groups and those of lower educational level are unlikely to engage in physical activities because they tend to have limited capacity to self-management, financial limitations and attach little priority to health behavior. Women also suffer excessively more physical disability than men and report less physical exercise self-efficacy. Additionally, women seem to experience higher barriers to activity. According to Seefeldt et al (2002), certain ethnic minorities especially women face serious cultural barriers to an active lifestyle; they are expected to perform “female” activities like swimming, walking and dancing.

Loss of spouse, friends, or family members who has been a physical activity partner may act as a barrier. The loss has direct psychological impact on person and also affects one’s social support structure. It is important for the clinician and health care providers to offer psychological support to the sufferers. In Fuller et al (2010), most participants claimed that influence of families, partners and carers have an impact in the involvement of physical activity.

Carers` irresponsibility and or lack of knowledge was also reported in Chen`s (2010) study. One participant reported that there were few activities arranged by staffs while another confirmed that there was only one activity arranged of which it was a fifteen-minute calisthenics, further stating it was a boring activity. In addition the participants claimed that they were not sure if they can decide or choose the activities to perform and how to perform them like in groups or individual.

### 5.2.3 Aging Process

Some biological and physical aspects of ageing are inevitable and may act as a barrier to participate in physical activities. These may include clinical issues like; physical frailty, physical impairment, illness and polypharmacy. Aging causes cartilage to lose water, making it more vulnerable to injury from repetitive motion and stress. Arthritis is characterized by pain and stiffness in the joints, and in some forms, swelling, redness, and heat. (Meng-Yueh et al 2010). In a study conducted by Chen (2010), many respondents confirmed that physical frailty resulted to withdraw of participation. The participants' age ranged between 65-90 years. In this study, the physical health problems reported to inhibit physical activity practice included arthritis, gout, heart disease, stroke, Parkinson disease, poor eyesight, dizziness and physical disabilities. In the study a female aged 71 years stated that; *“My health is very poor. I have heart disease and arthritis. I spend a lot of time on bed. How can I perform physical activity? It is just a dream”*. In this situation, a person-centered approach, active listening and creative thinking is needed by staff.

Immobility was also reported as a barrier by many elderly. It may be hard for an elderly confined in a wheel chair to perform physical activities. Many elderly use mobility aids to facilitate movement. It may be hard for them to engage in physical activities if there are no or inadequate designed activities for them. In a population-based case control study by Chen (2010), two participants confined in a wheel chair confirmed that it was impossible, inconvenient and uncomfortable to participate in physical activities

Lack of energy and uncomfortable symptoms resulting from physical activity inhibit elderly from participation. The study by Chen (2010) has reported that some of the respondents faced these challenges. One male participant aged 75 years stated; *“I used to practice tai chi every morning. However, my present energy level is not high enough for me to do it anymore. I get tired easily. I have no energy to practice Tai chi; it would make me too tired”*.

Another male participant aged 74 years responded that; *“I used to perform calisthenics every morning, but it resulted in muscle ache. It made me so uncomfortable. So, I stopped doing it. Maybe I am too old to be active. It seems that nothing is suitable for my growing old body”*.

## **6 CRITICAL REVIEWS**

The aim of the study was to research and create awareness on how physical activities have promoted health in the life of elderly. The two research questions were: what are the benefits of physical activities for elderly and what obstacles inhibit the elderly from participating in physical activities?

However, couple of challenges was encountered. To start with, there were many articles, publications and books written about Physical Activities among elderly but most of them did not point out the methodological framework. It was also challenging to extract specific articles bearing in mind that this is a widely discussed topic. In addition, most literature reviewed have elaborated the benefits and barriers to physical activity in depth but the interventions to encourage the elderly in participation was not discussed at length and in some articles not highlighted at all. Language barrier was another challenge, some articles had important information but only the abstract was in English while the content was in other language. Accessibility was also a setback; some articles were not in full text and required subscriptions. Some articles were very interesting but could not be used in the study since they were not scientifically written.

The author faced some limitation in using the deductive content analysis. To start with, some information was excluded due to lack of meta-language and in some circumstances; there was excessive interpretation of data. In addition, there was author`s limitation to creativity since the study is based on earlier researches and it was also hard to come up with new finding in the conclusion.

## 7 DISCUSSIONS OF THE RESULTS

Physical activity is highly beneficial in the life of an elderly although an under-used tool in health promotion. Regular participation of physical activity can enhance independent living and prevention of progressive functional decline. The outcomes showed that physical activity lower the risks of cognitive impairment and Alzheimer diseases. Staying physically active will increase happiness and exercise is vital in the mental health of older adults. This is because exercise can stimulate anti-anxiety effects and also improves sleep.

Balance exercise helps to reduce the risks of injury and falls and this prevents hip fractures. In addition improvement of muscle strength is as a result of physical activity and musculoskeletal injury can be prevented through strength and balance and training. The psychological wellbeing of elderly can be improved by physical activity. This is because physical activity can be used to prevent the onset of mental health problems and as a therapy for treatment of mental illness and disorders. Physical activity has also been used as a tool to improve social interaction skills especially in the organized group exercise.

Many elderly are faced by multiple barriers that inhibit them from engaging in physical activity and physical frailty has been as a result of physical inactivity in many elderly. Low self-efficacy and lack of confidence were noted as the barriers to participation especially overweight elderly. Risk of fall and fear of injury are also prominent barriers to participate in physical activities and lack of awareness and knowledge about documented risk factors may also influence individual's perception.



Motivation to participation is also a barrier and this reflects mainly to elderly who don't get any rehabilitative and health improvements prior to engagement in physical activity. Later life is continuation of earlier life thus past inactive lifestyle was also an apparent barrier to participation. In addition, some biological and physical aspects of aging are inevitable and were seen to act as barriers. These include: physical frailty, immobility and impairment, illness and lack of energy.

## **8 CONCLUSIONS AND FURTHER RESEARCH**

This study examined benefits of physical activity and barriers to physical activities. It is important for the health practitioners to be aware that an increase in health standard for elderly cannot be achieved exclusively by individual action and promotion of activity requires understanding the determinants from the perspective of the individual, family, community and in the context of the life cycle. Measures that will adhere to participation of physical activities and aim at reducing the barriers should be implemented. A good example is by provision of interventions.

An individual plan is vital in promotion of activities. This help to plan activities that fit the elderly condition and provide advice on the possible benefits of increased physical activity as a routine part of caring. Implementation and maintenance of individual and structured activities should be prepared. It should identify the recommended levels of physical activity for a specific person and describes the process in which the person plans to reach their goal. This ensures that the plan takes into account therapeutic and risk management issues related to their condition. Examples of issues to consider are; risk for falls, individual abilities, fitness and limitations, strategies for increasing activity and individual preferences.

Education on the benefits of physical activity is also important. An elderly who is well informed will eventually take course on his wellbeing. This will in return promote a positive health locus of control. Health providers should initiate discussion of the bene-

fits of regular physical activity educate the elderly about the appropriate levels of physical activity in relation to their ages and conditions. Education for both elderly and carers should emphasize on the importance of physical activity.

Elders require accessible physical activity environments. Factors such as transportation, parking, location, ventilation, lighting, refreshments, toilet facilities, and floor surfaces are all elements of an ideal setting for physical activity. Equipment needed to facilitate physical activities and provision of accessible environments. In addition it may be crucial for the carers` to collect data that can be used to inform policy makers on the areas that need improvement.

Further research should be done on how technology can influence physical activity for example interactive video games. Secondly, types of physical activities for elderly with mobility challenge should also be explored. Moreover, advertisement of the available programs and services should be publicized properly.

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