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EXERCISE WITH ELDERLY PEOPLE

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THESIS ABSTRACT

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The elderly people in society tend to be at risk of developing chronic conditions at their advanced age due to lack of exercise. This study aimed at establishing the effects of exercise among the elderly from peer-to-peer reviewed articles. It focuses on the elderly aged above 65 years old living in home care facilities. It also focuses on identifying the fundamental roles played by nurses in provision of care to the elderly in the community. The majority of the articles revealed that the number of falls decreased during and after the intervention. Additionally, exercise improved their self-confidence, motivation, self-efficacy and mood. It also reduced anxiety and cognitive functions. The data used for the literature review of this study was collected from article databases such as CINAHL, PubMed, JBL, SAGE, EBSCO host, Google scholar and other online manual searches. The manual online searches were done using different key words and phrases to unearth relevant articles which contained adequate data on the topic of research. All these literature reviews confirmed that exercise affects the elderly physically, socially, mentally and psychologically.

Keywords: exercise, elderly people, physical activity

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1 INTRODUCTION

Aging is an irreversible process determined by multiple factors, which results in the reduction of the neuromuscular functions and muscle mass (McGregor et al., 2014). According to the World Health Organization, the aging population is composed of those aged 60 years and above, and it is increasing drastically across the world, since most countries' population is shifting towards the elderly. The advancement in technology, education and healthcare has resulted in the growth of the elderly population**.** Finland is one of the European countries with the oldest population that is ageing rapidly, with the Finnish people living longer than 65 years.

This population is susceptible to preventable infections and illnesses that can be mitigated through exercise. Exercise is a poignant intervention that promotes quality of life and limits aging complications through promotion of elderly physical strength, mental performance and socialization (Perales et al., 2014). Elderly people are encouraged to enrol into home-care facilities and rehabilitation centres with established physical activity programs designed by professionals, where they are guided through workouts to improve their health (Livingston et al., 2017).

2 AGING

Lifestyle habits, such as eating habits and exercise, influence the aging process. When cells do not receive the required nutrients, their functionality, repair mechanisms and reproduction become damaged (Rosset, 2017). Each cell in the human tissue demands vitamins, oxygen, minerals, sugar and amino acids to effectively perform their functions. Therefore, food ought to undergo digestion, absorption in the blood stream and be routed to the individual cells (Rosset, 2017). When food is consumed haphazardly, irrespective of digestion modes, it is not properly absorbed into the blood stream affecting the functions of the cells and body tissues.

Lack of exercise influences the aging process through strengthening body muscles and enhancing brain performance. Proper stretching of muscles to their full range increases the level of activity and fitness of individuals as they age. Stretching is associated with various benefits for the aging population, such as strengthening of muscles, increase in blood cell count and strengthening of bones (Rosset, 2017). Meditative exercises enhance the brain activity and reduces depression and, therefore, promoting active aging. Furthermore, human activities such as swimming, running and bicycling enhance the functionality of the cardiovascular and respiratory system (Varsha & Shashikala, 2017).

Exposure to radiation has adverse influence on the aging process. Radiation damages the functioning of cells, inhibiting the cells' ability to regenerate, reproduce and heal in case of injury (Shang et al., 2019). Cell damage in turn affects the entire muscle, which later affects the functionality of the organ (Shang et al., 2019). Once someone is born, ageing cannot be avoided due to biological and physical changes that they undergo. When someone ages, the biological and physical changes might become a barrier to participation in physical activities. The barriers may be linked to clinical related issues, physical impairments and diseases related to the age of an individual. Through aging process, the cartilage of an individual loses water posing the individual to the risks of injury due to stiffness in movement. The elderly in Finland are likely to get arthritis infection, whose signs are stiffness, pain in joint movement and to some extent redness and swelling of the affected sites (Brymer, Clough, and Denovan 2017).

A study found out that physical frailty resulted in withdrawal from exercise activities among the elderly, according to the respondents of the research (Chen, 2010). In this study, the elderly aged above 65 years of age were used as the study subjects. This study found out that elderly

people's physical health problems that bar them from physical activities were majorly diseases that relate to their age. They include arthritis, hypertension, poor eyesight, physical disabilities among other health problems (Chen, 2010).

Elderly people were found not to be exercising as a result of their immobility. Some of the elderly use wheelchairs, as they cannot walk on their own because of their age, and this limits them from performing physical activities that are important not only to their physical health, but also to their mental health (Brymer, Clough, and Denovan, 2017). The majority of elderly people, when they want to move from one place to another, need mobility aids be able to move. This hinders their capability to engage in physical exercise that is important in their life as it could even lengthen their lifespan. These elderly people need designated physical activities, which are not always available for them. According to the population-based control study, there were two study subjects that were confined on the wheel chair and they asserted that the challenge they were facing was inability to participate in the physical activities for their wellbeing (Brymer, Clough, and Denovan, 2017).

According to the study, some of the respondents revealed that they were facing this challenge whenever they thought of engaging in such important activities (Brymer, Clough, and Denovan, 2017). One male participant aged 75 years revealed that during his youth, he used to practice Tai Chi every morning, but at his current age he could not practice it anymore, because his energy level was low, making him unable to practice it. Tai Chi being a game that needs energy implies that the elderly man could not practice it due to his low energy level (Brymer, Clough, and Denovan, 2017). On the one hand, a 74-year old male respondent said he could not engage in physical exercises due to symptoms that result from such activities. He revealed that he used to participate in calisthenics every morning and he could feel muscle-aches, which made him uncomfortable. The solution for such a negative impact for the 74-year-old man was to stop doing it at his age, which was the cause of the muscle-aches after the activity (Brymer, Clough, and Denovan, 2017). It was also revealed that the elderly were not participating in physical activities due to lack of energy and some were not comfortable with the symptoms that resulted from physical activity (Brymer, Clough, and Denovan, 2017).

3 THE IMPORTANCE OF EXERCISE TO ELDERLY HEALTH

3.1 Definition of exercise for elderly people

Exercise is an activity that is planned, structured and implemented systematically on a regular basis, with the aim of improving an individuals' health (Gibson, Wagner, & Heyward, 2018). Most of the elderly reside in homecare facilities since changes in their physical capabilities have rendered their bodies ineffective to perform routine activities. The older population is susceptible to multiple illnesses. Therefore, exercise is essential in keeping such ailments at bay. Most of them have severe disabilities and are in need of advanced care and harmonized program for exercises. Exercise is essential in ensuring the body's physical strength and functions are performed well by the different body organs. Observing a routine physical exercise results in the maintenance of good health across all ages and its significance among the elderly helps them prevent incidences of common ailments (Gibson, Wagner, & Heyward, 2018). Exercise enables one to control their health by preventing risk factors, which are associated with obesity. Participating in exercises aids in cutting down of calories, therefore aiding to keep fit. Additionally, exercise enables one to live longer, by reducing the risk factors of ailments, such as cancer and heart diseases (Gibson, Wagner, & Heyward, 2018).

3.2 Types of exercise

There are different forms of exercise which encompass aerobic, strength and flexibility that attributes to physical, social, psychological and cognitive changes (Levin et al., 2017). Aerobic exercise such as brisk walking, jogging, swimming, biking and dancing increase the rate of breathing and heart rate. Strength exercises are responsible for making the muscles stronger, balance exercises are significant in aiding to prevent falls and flexibility exercises stretch the muscle helping the body to stay fit.

As an example, Tai Chi is a Chinese traditional martial art that involves a circular, precise and slow movement carried out with the hips and knees held in flexion. The advantages of Tai Chi among the elderly includes the promotion of muscle strength, reduced risk of fall and muscle flexibility (Zheng et al., 2018).

3.3 Changes brought by exercises

According to a systematic review that evaluated effects of physical activity, it was confirmed that there is a correlation between physical activity and physical wellbeing of the body that improves activities such as walking (Brymer, Clough, and Denovan, 2017). It was noted that there was an improvement in strength, aerobic capacity, standing and walking after subjecting the elderly on a physical exercise training. Besides, it was reported that reduction in physical disability was due to engagement in physical activities. Physical activities are essential in ensuring that flexibility of the body is maintained even at the old age (Kehler, Theou, and Rockwood, 2019). It was revealed that elderly people who participated in Tai Chi showed greater improvement in both self-efficacy and physical wellbeing at the end of the intervention. A majority of the beneficiaries of Tai Chi were those with low levels of physical functions, compared to those with higher physical functions (Cartee et al., 2016).

According to a study carried out by the University of Florida (2014), 1,635 participants aged between 70 and 89 participated in the study and were followed for three years participating in balance training, stretching exercise, strength and flexibility exercise during the period. The participants reported improvement in their mobility after the intervention. Physical activity such as aerobic and muscle strengthening enhanced ability of adults to walk at the rate of 18% higher compared to their counter parts who do not engage in physical exercise. Physical activities have improved the independence of older people in the community through strengthening of their mobility. Physical activity operates as a significant intervention which aids in the recovery and prevention of older people who are fragile from physical disability through strengthening of their muscles. Adults in home-care facilities undergo prescribed physical activities as characterized in their training manuals.

4 RESEARCH METHODOLOGY

4.1 Purpose

The elderly form a big proportion of the population and they have been growing in number due to various factors. Most elderly are vulnerable to infections, which are manageable if they adopt healthy living behaviors such as exercise and proper dieting. Adults at home can seek help from health professional who can enroll them into a physical exercise intervention to realize various benefits of exercise. The purpose of the study is to examine various literature on exercise and document some of the benefits of exercise among the elderly to challenge the elderly to continuously participate in physical exercise.

The study adopted the following research questions;

1. What are the physical effects of exercise among the elderly?
2. What are the psychological effects of exercise among the elderly?
3. What are the social effects of exercise among the elderly?
4. What are cognitive effects of exercise among the elderly?

4.2 Research method

The study adopted a literature review to examine all relevant case studies which examined exercise among the elderly population and its effects. The use of systematic review tends to identify, appraise and assess already published scientific articles in an efficient manner. Systematic literature relies on scientific facts that are relevant to research plans and objective which aims at minimizing the bias and other limitations that are likely to get encountered during the research process. Therefore, the literature review needs planning through the use of different phases to ensure that the researcher gets the relevant existing work done by early authors in same research topic (Beel et al., 2016).

4.3 Literature search

The research utilized articles from databases such as CINAHL, PubMed, Joanna Briggs Institute, EBSCO host, SAGE, and Google Scholar and other online searches for literature review. When using manual online searches, there was use of key words and phrases to filter out irrelevant articles and remain with the relevant articles that comprised of enough data on the topic of research. On the other hand, online search was done through combination of the relevant terms and phrases such as elderly, aging and importance of exercise to the elderly. The search was broad and the researcher had to narrow it down to the relevant articles that were to be used for the research process. For the use of relevant articles; the researcher was able to go through abstracts and given conclusions of such articles to find out whether they were reliable or not for the research topic. Upon reading the articles, there was selection of the final documents to be used which depended on the selection criteria as outlined in the early stages.

The articles to use in the literature review needed to meet the following criteria before being used in the research:

- Written in English language
- Be peer-reviewed research
- Articles published between 2015-2020
- Articles that could be accesses easily by the researcher
- Scientific publications and journals and master's thesis were also included
- Articles that discussed relationship between exercise and health of the elderly were included in the research study

Articles that did not meet the above outlined criteria were left out as they were irrelevant to the research topic. The articles used in the study were outlined in the table below.

Table 1.0 Data search

Database	Key terms	Results	Chosen on basis of title	Relevant studies
CINAHL	Physical exercise among elderly and its benefits	21	6	4
PubMed	Physical exercise among elderly and its benefits	50	45	13
JBL	Benefits of exercise among elderly	42	18	10
Google scholar	Impacts of Exercise	130	10	8
EBSCO host	Role of nurses in elderly health promotion	115	20	7
Google scholar	Cognitive effects of physical exercise among elderly	35	7	2
SAGE	Psychological effects of physical exercise among the elderly	45	5	2

5 RESULTS

5.1 Physical exercise and physical effects

The elderly population is focused on extending their lives by ensuring functional independence through management of their health. Those individuals who participate in exercises gain higher functional levels of health, reduce the risk of fall and have a greater cognitive function reducing risk of severe functional limitations. According to the World Health Organization Report, physical exercises are significant among the elderly as they help in the prevention of functional capacity decline among them. Physical exercises are responsible for the prevention of chronic conditions and diseases (Sun et al., 2019). For instance, flexibility, balance and strength exercises are reliable strategies in the prevention of fall among the elderly. Physical exercises are positively related to the development of higher self-esteem, independence in self-care activities, decreased mortality rates and higher life expectancy (Cvecka et al., 2015). Physical exercises lead to break down of oil and excess fat thereby, leading to reduced mortality rates (Cvecka et al., 2015).

Regular physical activities are integral intervention in the reduction of fall and its related injuries. Physical exercises reduce the incidence of fall among the elderly population at the facilities and home since training the elderly people strengthens their muscles limiting the risks of falling (De Labra et al., 2015). Physical activities play both the primary and secondary roles in the prevention of the falls among the elderly. For instance, a primary role of the physical activity, is that any participation in the physical activity reduces pathological and physiological impairments that attribute to the likelihood of fall. The secondary of role of physical exercise ion the reduction of fall is anchored on the ability to reduce the progression of infections and the performance of physical activities restores the normal functions of the body (De Labra et al., 2015).

Adults are involved in the group-based exercises which contains activities that are designed with the aim of reducing the risk of fall. The activities of the group-based exercise include muscle weakness, balance impairment and movement speed exercises programs which have significantly shown that they can reduce the risks of fall. These programs are delivered by trained professionals who have immense experience in the provision of the physical exercise instructions (Levin et al., 2017).

The findings from earlier researches have shown that engaging in physical exercise prevent illness. Research shows that exercise effectively treats some chronic ailment. Exercise helps people having high blood pressure or hypertensive or diabetic patients in overcoming the challenges of the diseases (Brymer, Clough, and Denovan, 2017). Physical activities are beneficial to the elderly as they help protect them against risks associated with injuries with possibilities of fractures of the bones, with physical exercise, the bones can rebuild and get back to normal position for the benefit of the victim.

Population-based study revealed the significance of the physical activity in prevention of progressive functional deprivation (Leyland, 2019). Aerobic activities were recognized among the elderly as one of the activities that helped the victims improve and promote their health whereas strengthening muscle activities were important in promoting physical independence where elderly could move on their own without mobility aids. Age related changes can be reversed through increasing physical activities of an individual that is achieved by physical exercise (Cartee et al., 2016).

People tend to lose muscle strength between the age of 65-89 years of age, the muscle power declines at a rate of 3.5% while the muscle strength declines by 1-2 % yearly (Kehler, Theou, and Rockwood, 2019). There is a positive correlation between muscle injury prevention and activities such warming up, stretching and balance training among other physical activities (Yamashita et al., 2017).

5.2 Physical exercise and psychological effects

Engaging in physical exercise on regular basis is essential for mental health. There is a correlation between physical activity and psychological wellbeing among the mentally challenged cases. Physical activity helps people having such mental disorders to reduce the severity of the situation and avoid the duration they might spend in health facilities seeking for rehabilitation services (Leyland, 2019). Physical activities have helped in promoting psychological wellbeing of individuals in several ways; it might act as therapy for treatment for mental illness and disorders, it can help cope up with the mental status of an individual, improves quality of life for the mental cases individuals and for those elderly in our society can prevent onset of mental illness if they participate in physical exercises.

It is not a must that when people are aging, they must undergo depression (Lindqvist, Simon, and Wolkowitz, 2019). There is an increase in mental illness in the public general which presents itself with mild depression symptoms accompanied by anxiety. Mental fitness of the study participants was directly related to the physical exercises that they engage in, the study noted that with five minutes of aerobic exercise that is vital for the elderly (Lindqvist, Simon, and Wolfowitz, 2019).

Exercises improves psychological health of the elderly for instance, Tai chi promotes increased alertness and attentiveness among the elderly people as the exercise requires stillness to understand one body movement its own space. Additionally, Tai chi reduces anxiety and stress. (Zheng et al., 2018). Individual's mood and wellbeing are likely to improve after participating in a work out since there is an association between improve mood and physical exercise. A study on the college swimmers observed that they improved their mood after swimming compared to the control group which did not participate in swimming (Varsha & Shashikala, 2017). A work out is essential in improving an individual mood and attitude towards performing their routine activities as short time exercises for instance for five minutes enhances the mood of the person.

There is a positive correlation between exercise and reduction of the individual stress thus, participation in exercise is likely to reduce anxiety, stress and depression. Alleviating depression is one the long-term effects of exercises and the population-based correlation studies have established that active individual individuals are less depressed compared to the inactive people (Smits, 2011). Individual s who are enrolled in a physical exercise program and quit are more depressed than people maintaining and observing the program for a long-term basis. Physical exercises are essential in the treatment of depression and prevention of relapses. A study observed patients with depression disorders and after a follow up for one year established that those patients who actively enrolled into exercise-based programs lees scores of depressions in comparison to their counter parts who were very inactive (Smits, 2011). Exercise can play a significant role in the sub setting patients with depression and diabetes. Exercise is essential in improving the two conditions since active participation in the exercises suppress the level of depression (Smits, 2011).

Active participation in the regular workouts aids those individuals who are prone to anxiety to stop panicking in case they find themselves in difficult situation because during exercise, the body relaxes similar physical reactions which include higher heart rates and increased perspiration in response to exercise (Levin et al., 2017). A study on active exercises confirmed this

theory be subjecting 60 volunteers who had higher sensitivity to anxiety to these exercises. These participants who involved in active two weeks' exercise program (Levin et al., 2017). The participants in the programs show-cased an improvement in their anxiety sensitivity in comparison to the control group that did not participate in the exercise. Active participation in the exercise is a good exposure to the treatment of one's ailments.

Participation in exercise has far reaching effects on the individual's brain since it has the ability to suppress and aviating chronic depression through the increase d production of serotonin which is the neurotransmitter that is targeted by the antidepressants. Additionally, exercises improve an individual's mood of the depressed person by enabling them participate in those activities which are meaningful and which enables them realizes and feel a sense of accomplishment. Some of the aerobic exercises such as swimming, jogging walking, cycling, dancing and gardening reduce depression and anxiety (Toots et al., 2017). Exercises improve the mood through increasing the flow of blood to the brain activating the hypothalamic pituitary adrenal enhancing physiologic reactivity to depression and stress (Smits, 2011). The physiologic influence is mediated by intensive communication between the HPA axis and regions around the brain, limbic system which is responsible for controlling mood and motivation, the amygdala which is responsible for generation of fear in response to stress and the hippocampus which is also responsible for the memory, motivation and mood formation (Smits, 2011).

5.3 Physical exercise and sociological effects

Exercise has the power to combat loneliness cycle in the individual life as exercise in the home care facility with team member's makes one feel like they are not alone in this world. Joining the exercise clubs provides an opportunity to meet new individuals whom you share similar interests and workouts in the same teams provides an opportunity where individuals experience similar exhaustion, burn and endorphin therefore, developing robust relationships (Miller et al., 2019). Developing new friends is important to those elderly people who have a smaller circle of friends since their friends have shrunk over the years. Most of the people who loss friends develop a loneliness condition characterized by the symptoms such as increased depression, stress and Alzheimer's disease. The cure for these symptoms is for an individual to finds physical activity where you can brain storm and share issues with other people who might be experiencing the same issues (Miller et al., 2019).

Exercise promotes discipline and accountability since the physical instructor at the facility gives instructions to the elder people enrolled in the program, and following such instructions is essential to realizing the objectives and the goals of the program. In most cases, elderly people find it difficult to stick to the instructions of the program since their bodies will not stretch to a particular level. A survey carried in the United States of America established that 80% of those enrolled at the gym in January often quit on the second week of February after signing up for the program (Andrews, 2004). Exercises with a friend or arranging to exercise with close people at the gym aids in the keeping each other on check, with the main social obligation being leaving the house and attending all the exercise programs. Most physical activity facilities have designed activities such as yoga and aerobic exercise to be performed in a group. Even if an individual is meeting strangers at the exercising facility, there is always mentality from the members that one ought to attend all the sessions, therefore pushing an individual to attend all the required sessions, even if your body feels or says otherwise (Andrews, 2004). Sticking to the program's instructions and the team member's objectives for the exercises creates accountability, even if one feels weak.

The benefit of exercising with others is the push for an individual to be able to do their best. In most of the sessions, some exercise lonely at home, therefore being victims of giving up and leaving the program, while those enrolled in group teams for exercise get encouragement from friends who push them to keep going (Fritz, 2016). Motivation from other members is a benefit to those who might meet challenges and struggle during exercise despite their physical conditions or they are never comfortable at the sports center or the training facilities. Older adults are often the victims of individuals struggling with exercise at gyms or training centres. Additionally, studies have established that exercising in groups promotes self-efficacy and the older people are always encouraged to add social elements in their exercise programs (Fritz, 2016).

Team building at the exercise center builds robust friendships and new skills, which might be funny, and we did not know about them. In most of the teams, there is always a primary principle of unity of purpose, shared vision and collaborative teamwork, and therefore building a cohesive working group atmosphere. The essence of wanting to be stronger and reaching new limits during exercise equips one with skills and before an individual realizes, it is often that the team has pushed them to achieve their expectations. Indulging others into our daily exercise routines pushes us to perform better (Fritz, 2016).

Working out enables an individual to deal with the negative emotions surrounding him or her. Exercises sessions provides an opportunity where an individual can be able to take out their frustrations. There are always some range of negativity during exercising which arise when an individual is pushing himself or herself to go beyond their limit (Huang et al., 2007). Exercises provide an opportunity for a healthy space to experience, anger, and frustration, stress where an individual body will learn to respond to them and also learn how to deal with such feelings outside the training centres (Fritz, 2016). They learn how to deal with these feeling through exercising them out of their system which in turns creates a big influence on ones socializing skills. Additionally, exercise sessions provide an opportunity for self-reflection where one learns what makes them tick and they can also carry such knowledge in their daily routine of life (Fritz, 2016).

Exercises boosts an individual self-confidence and esteem through improvement of emotional health such as meeting and sharing challenges with the team members boosting social interaction. Exercise provides an opportunity to establishing new friendship with others and helps an individual to understand how to handle themselves in the social environments (Huang et al., 2007). According to the Centre of disease control, Lack of adequate sleep affects socialization skills. The center for disease control attributes that finding good sleeps, helps one become active and perform responsibilities effectively. Exercise is one of the avenues which provides us with an opportunity to experience good sleep (Huang et al., 2007). During workouts the muscles and body tissues become worn out therefore, prompting an individual for relaxation and calmness. Moderate exercises make it easy for an individual to fall a sleep at night and also increases their time they spend sleeping. Sleep is an essential component for social health.

The earlier researchers have found thorough engagement in aerobic exercise has evidently shown a decline in levels of the tension while improving mood, sleep, and the level of participant's self-esteem gets better. When group of activities are organized and the participants are elderly, there is a positive feedback at the end of the physical activity. Organized physical activities improve the interaction among the participants as they will have time to share their ideas while interacting and at the same time break monotony through creation of friendship with other elderly as shown in the diagram picture below.

Source: mumybear.com

It was confirmed there was development of relations within the groups that were exercising which lead to their life satisfaction and omitted issues of loneliness in their life (Yamashita et al., 2017). On the other hand, it was noted that physical activities among the elderly led to small but noteworthy improvement in the emotional status of the participants which was found to be healthy in their life at such old age. The elderly gets sleeping difficulties which is and independent risk factor especially among those elderly that stays within the institution. Increased intensity progressive resistance training program led to an improvement in the way the elderly could sleep even if they were depressed with their own things (Lindqvist, Simon, and Wolkowitz, 2019).

5.4 5.4 Physical exercise and cognitive effects

Previous researchers have revealed that when elderly people exercise, their mental state is boosted. They have shown that individuals improve their cognitive abilities and memory, but those who did not exercise showed worse cognitive abilities. Some individuals who participated in physical activities indicated that there is a connection between medial temporal and cognition regions and memory (Leyland, 2019). There is improvement in cognitive level of participants who engaged in regular exercise, pedaling on a stationary bike for 50 minutes three times a week for three months (Leyland, 2019). While the other group of participants, that had moderate pedaling, had small improvement in cognitive abilities than those engaged in such exercise for long time. The last group participated in light workout, which resulted in lesser cognition. Additionally, most individuals in the moderate and lighter-intensity groups showed mental benefits, judging by the brain scans and working memory tests given at the beginning and at the

end of the three-month exercise period. The brain gains were no greater than the improvements from when they had exercised a single time, which shows that it was important for the elderly to exercise so that they improve their mental health and memory at the same time.

A study on the effects of exercise on the cognitive function of the older people living with dementia revealed that Dementia results to dependence and disability among the older people. Features of dementia include deficit in memory, loss of occupational function and cognitive function (Toots et al., 2017). One hundred and eighty-six participants were selected to participate in the study. Exercise was the main intervention administered to the participants in the study. The exercise program was based on the high intensity functional exercise (HIFE) program. The result of the intervention showed improvement in the cardiorespiratory fitness of the participants (Toots et al., 2017).

Cognitive decline and impairment are age related and commonly affects the older people within the community. Exercise is one the preventive strategies that can aid in the decline of dementia. Physical exercises or activity has the ability to improve the cognitive function of the older people through the neuroplasticity. Cognitive gains are induced among the older age taking part in physical exercises when these physical exercise interventions are performed together with a cognitive activity. Currently, the aging population is facing pressure to adopt the prevention strategies which can be essential in the reduction of the risks associated with cognitive decline. Some of the physical activity which remarkable in the prevention of cognitive decline include strength exercise and aerobic exercises. These physical activities have adverse effects on the structure, function and connectivity of the brain (Gheysen et al., 2018). Physical exercises are essential in alleviating negative effects of aging on their cognitive functions (functionality). Physical exercise enhances the cognition performance of the older people who have cognitive impairment (Jia et al., 2019).

Cognitive health is having the ability to learn, remember and think clearly which a critical component of the brain is. Other significant components for the cognitive include motor functions which involves the control movements and how well we are able to make such movements (Aldaba, 2018). Another significant function is the emotional function which highlights how well we are able to interpret different emotions and respond to them appropriately. The last component of the cognitive is the sensory function which deals how well we are able to feel sensations of temperature, touch, pain and pressure and how effectively we are able to respond to these

sensations. Some aerobic exercises which are significant to the cognitive health include brisk walking and they are important than toning exercise (Aldaba, 2018).

Morning workout improves cognitive functions such as decision-making, compared to having prolonged sitting without being involved in any exercise. Some of the morning exercises involves early joking and walking, which disrupts an individual sitting frequently and improves one's short-term memory in comparison to being in uninterrupted sitting for a long period. Brain derived neurotropic growth is a protein that plays a significant role in the growth and survival of the neurons which transmits information. Often, this protein is alleviated during exercises compared to uninterrupted sitting (Jia et al., 2019). Therefore, the uninterrupted sitting needs to stop for us to achieve an optimal cognitive ability across the day and a modest intensity exercise is essential for the maintenance of a healthy brain.

6 CONCLUSION

In conclusion, positive exercise affects the elderly wellbeing by influencing their physical, psychological, social, and cognitive state. Adults participating in physical exercise gain flexibility, balance and strength, which prevent the number of falls and related injuries, reduce the risk of cardiovascular infections and chronic illness as a result of excess fat (Cvecka et al., 2015). Regular exercises among the elderly reduce the incidences of depression, stress, and alleviates anxiety. Physical exercise, such as Tai Chi, promotes alertness, improved mood, and relaxes the mind (Toots et al., 2017). Physical exercise encourages socialization and the development of a robust relationship. Exercise in a team promotes shared goals, challenges, and expectations. Jogging exercises can be practiced in groups providing an opportunity for new friendships. Active participation in physical exercise improves memory functionality among the elderly suffering from dementia. Home and healthcare professionals should help adults to exercise since they understand their needs, know about physiology, and are registered by professional bodies to provide such care. I developed the exercise model attached in the appendix that could be adapted to aid the elderly with physical exercise programs.

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APPENDICES

APPENDIX 1: Proposed exercise schedule

	EXERCISE	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Lower Limb	**Back leg raise**	X	X	X	X	X	X	X
	Holding on a chair for balance, breath in as lower your leg slowly.	X	X	X	X	X	X	X
	Repeat 10-15times for each leg.	X	X	X	X	X	X	X
	Side leg raise	X	X	X	X	X	X	X
	Holding on a chair for balance, breath in as lower your leg slowly.	X	X	X	X	X	X	X
	Repeat 10-15times for each leg.	X	X	X	X	X	X	X
	Knee curl	X	X	X	X	X	X	X
	Holding on a firm chair, Lift one leg backward without bending the knees	X	X	X	X	X	X	X
	Kips hip still as you bend from your knees.	X	X	X	X	X	X	X
	Breath in as lower your leg slowly.	X	X	X	X	X	X	X
	Repeat 10-15times for each leg.	X	X	X	X	X	X	X
	Toe stand	X	X	X	X	X	X	X
	Holding on a firm chair, stand on your tiptoes. breath in as you lower heels slowly.	X	X	X	X	X	X	X
	Repeat 10-15times for each leg	X	X	X	X	X	X	X
	Buddy stretch	X	X	X	X	X	X	X
	Sitting on the floor facing your buddy, let each one grabs the end of a towel, pull the towel slowly bending your buddy forward while you lean forward	X	X	X	X	X	X	X
	Repeat this 3-5 times while exchanging pulling roles	X	X	X	X	X	X	X
	Calf	X	X	X	X	X	X	X
	Stand facing the wall at a distance of your arm's length from the wall. Ensure your feet is wide a part.	X	X	X	X	X	X	X
	Putting your arms against the wall, step your right leg forward then bend the right knee. Bend the left knee slowly to feel stretch in your left calf muscle.	X	X	X	X	X	X	X
	Repeat this for 3-5 times for each leg.	X	X	X	X	X	X	X
Upper Limb	**Neck**	X	X	X	X	X	X	X
	Sit on a steady chair and ensure your shoulder are width part	X	X	X	X	X	X	X
	Turn your head slowly to the left, hold on position for 10 seconds then turn your head to left	X	X	X	X	X	X	X
	Repeat 3-5 times.	X	X	X	X	X	X	X
	Back	X	X	X	X	X	X	X
	Sit on armless chair, keeping your back and neck bend slowly forward from your hips.	X	X	X	X	X	X	X
	Hold for 10 seconds and straighten back to starting position	X	X	X	X	X	X	X
	Repeat 3-5 times.	X	X	X	X	X	X	X
	Shoulders and Upper Back	X	X	X	X	X	X	X
	Sit on armless chair, with your palm facing outside, stretch arms at shoulders height. Keeping the upper body still, reach forward with the hands. Stop in case of discomfort or pain. Repeat 3-5 times.	X	X	X	X	X	X	X