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ORIGINAL

THE ROLE OF PHYSICAL ACTIVITY IN MANAGING DEPRESSION IN ELDERLY POPULATIONS

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ABSTRACT

The purpose of research is to ascertain the function of physical exercise in senior populations. Physical exercise has a significant role in the management of depression among the senior population. It is well-known that humans acquire two forms of memory: short-term memory and long-term memory. Accurate neuronal function is necessary for the establishment and maintenance of different memory kinds. The development of memory in the aged population is improved with appropriate physical activity when there is an improvement in the quantity and quality of neurons. These individuals are less likely to experience mental health problems like dementia. We are persuaded that physical exercise provides several advantages for the aged population by all of these implications of physical activity in controlling depression in the senior population. Depressive symptoms and disorders are widespread and burdensome in older adults, and they are important risk factors for severe chronic diseases, such as cardiovascular disease, chronic pain, cognitive and functional decline, and an increased risk of suicide and all-cause death. Over 5% to 10% of all infections in Europe are related to depression in terms of disability-adjusted life years. Depression is thought to have cost the US economy alone more than \$210.5 billion. It remains a primary goal to identify possibly accessible and cheap lifestyle and health behaviours that may mitigate the risk factors for depressive disorders and symptoms, particularly in those with chronic diseases. Regular physical activity can prevent depression, as evidenced by recent meta-analytic research and earlier prospective cohort findings. In 111 prospective cohort studies involving over 3 million adults, physical activity exposure was associated with a 21% reduction in the odds of incident cases of depression or an increase in subclinical depressive symptoms in fully adjusted models.

KEYWORDS: Physical Activity (PA), managing Depression (MD), Elderly Population (EP)

1. INTRODUCTION

The aging process is inevitable by all means and ways, using all important scientific techniques. So, some important aspects are related to ageing, such as hair discolouration, wrinkles on the body, less energy production, poor health, and mental health issues such as dementia, Alzheimer's disease, stress, anxiety, and many others. So, there is a need for some suitable ways to combat these effects of aging. Recent surveys have convinced us that the level of depression has been increasing tremendously these days, not only in the young population but also in the elderly population(Figueira et al., 2023). This fact is terrifying because the increased level of Depression is responsible for declined output from human beings in different organizations. The medical studies have given Madera such tremendous success that they helped us in providing different ways to mitigate depression in the elderly population. The aspect of physical activity is one of these suitable means to reduce depression levels across the whole world. Recent studies have proved that physical activity has many benefits for the physical and mental health of human beings(Moya et al., 2021). If we talk about the effects of physical activity on physical health, we may conclude that it has many important benefits. The first important benefit is that Physical Activity helps to improve the process of digestion in the body, which will improve the physical health of the other important benefit is that proper physical Activity will prevent many diseases related to the heart, liver, kidney, lungs, and other body organs. But here, we will enumerate the impact of physical activity on mental health in the elderly population(Hu et al., 2019).

Suppose we explain the impact of physical activity on mental health. In that case, we can conclude that physical activity helps in the improvement of mood, enhancement of cognitive functions, increased self-esteem, better quality of sleep, reduced level of anxiety, And better social interactions with fellow human beings. There's a connection between mood and depression in the human body. When there is an aspect of depression in the human body, it releases hormones that will cause mood swings in the human body(Hu et al., 2019). As we have observed, mood swings are very common in the elderly population in the whole world, but we ignore the fact that a person who is showing mood swings may have depression. In other words, we can say that mood swings are also a symptom of depression in the human body. There is a great impact of depression on the cognitive functions of the human body. When a person experiences depression for a long time, his critical thinking skills will start fading, and he will lose cognitive functions. However, studies have observed that physical activity will help reduce depression by improving the

cognitive functions of the human body(Benedetti et al., 2008). Recent studies have revealed the release of endorphins in the body is a result of physical activity in the elderly population. There are a variety of functions of endorphins that are related to mitigating depression levels in the elderly population. The first important function of endorphins is that they are naturally painkillers in the body. As we know, there are various reasons for body pain in the elderly(Benedetti et al., 2008). So, when they do physical activity, they will experience mitigation of pain in the body, which will also help reduce depression in the elderly population. The other function of endorphins is that they help regulate mood in the elderly population. In other words, it is a happy hormone because it induces the feeling of happiness in the body. When there are feelings of happiness in the body, there will be reduced symptoms of depression. Emotional responses in the body are also regulated by endorphins in the body. Recent medical studies have shown that endorphin helps relax and calm(Strawbridge et al., 2002). So, by proper physical Activity, there are better emotional responses, which will help in dealing with depression in the elderly population. Endorphins also have a great impact on the cardiovascular system. A better amount of endorphin will also prevent any cardiac disorder. This factor will also reduce depression in the elderly population. The other important aspect of the impact of physical activity is that it helps ease neurotrophic factor expression. Neurotrophic factors are special types of proteins in the body that help in grief, survival, and normal body functioning.

Along with impacting normal growth and body function, it also has a major impact on neuroplasticity and neurotransmitter regulation (Vance et al., 2016). Some studies have proved that there is a factor of depression in the human body because of the degeneration of neurons in old age. When there is the release of neurotrophic factor expression in the the body, there will be less degeneration of neurons in the body, which will help deal with depression in the elderly population(Taylor et al., 2004). Physical Activity can also help reduce inflammation body and proper neurotransmitter regulation in the body. In this aspect, we can say that all of these factors are responsible for dealing with depression in the elderly population. There are a variety of physical exercises that are suggested for the elderly population for dealing with depression(Strawbridge et al., 2002). One of these exercises is aerobic exercises, which increase the Oxygen level in the body. When there is better oxygenation of brain cells, depression in the elderly population will also be reduced. There is also the recommendation for resistance training, such as physical activity, in the elderly population because it will improve the body's immune system against many diseases(Mura & Carta, 2013). Mostly, there are some social exercises suggested for reducing depression levels in the elderly population. It is because when there is less alone factor in the elderly population and more human interaction, it will keep them alive spiritually, thus helping in combating symptoms of depression(Cairney et al., 2005). As we know, humans

are social animals, so they need society and social interaction for physical and mental health. So, it is preferred when the elderly population is engaged in social activities to reduce their increasing level of depression (Zanetidou et al., 2017).

1.1 Research Objective

After an overview of these studies related to the Role of Physical Activity in managing depression in the elderly population, we may conclude that physical activity has many more benefits for the elderly, so there is a need to provide spots where social and physical activities can be promoted.

2. Literature Review

Scholars pursued to contrast the viability of actual activity & the therapy along energizer sedates regularly utilized in medical exercise, as far as diminishing burdensome manifestations in sufferers matured sixty-five Years, which provide detached standards of a burdensome event. In spite of the fact that development was at first comparable in the two therapy gatherings, antidepressant therapy was unrivalled in the mid-term, regardless of leading to more noteworthy certain unfriendly impacts(Hidalgo & Sotos, 2021). Researchers reveal that actual dormancy is especially normal in discouraged populaces & might address a voluntary restorative objective to tackle untimely fatality. Workout-founded mediations, as a matter of actuality, have demonstrated successfully diminishing cardio danger & fatality over various systems, despite the fact that proof actually should be imitated in discouraged populaces. General well-being might be the paragon context to create & disperse drives that advance the remedy & conveyance of activity-founded intercessions along with a specific spotlight on their expense viability(Belvederi Murri et al., 2020). Studies determined that PA is viewed as a certain principal systemcheck slightness associated with actual impedance in the old. Workout decreases Age-associated aerobic harm & persistent irritation, increments necroptosis, & enhances mitochondria-targeted capability, adiponectin-same development element flagging path, & adiponectin awareness. Consequently, workout mediation projects ought to be recommended in view of a person's actual work & adjusted toward the following reaction(Angulo et al., 2020).

This efficient survey & postmodern investigation of affiliations between PA & despondency proposes critical emotional well-being supports as to be dynamic, same in the classes underneath the general well-being proposals. Wellbeing experts ought to, along these lines, energize any expansion in PA to work on psychological well-being(Pearce et al., 2022). Scholars affirmed that PA is advantageous for psychological well-being. However, the proof was, for the most part, founded on identity-detailed actual work & psychological wellness estimates. Just a single report equated youthful & senior populaces,

determining that rising the degree of PA worked on psychological wellness for moderately elderly & senior ladies (no affiliation was noticed for more youthful ladies) (Maynou et al., 2021). The basic aim of this study is to orchestrate the proof of the impacts of actual work on side effects of despondency, tension & mental trouble in grown-up populaces. The results of this study indicate that PA is profoundly gainful for further developing side effects of despondency, nervousness & trouble beyond a large number of grown-up populaces, involving everybody, individuals with analyzed psychological wellness problems & individuals with constant infection. PA should be a pillar procedure in administering despondency, tension & mental trouble (Singh et al., 2023). This survey of audits gives a thorough & methodical outline of epidemiologic proof from recently directed exploration to evaluate the relationship of PA along corporeal & psychological wellness results in more seasoned grown-ups. Commonly, actual work degrees decrease & well-being deteriorates as we get older ; in any case, appraisals of the effect of actual idleness on populace well-being frequently neglect to emphasize more seasoned grown-ups explicitly (Cunningham et al., 2020). This research aims to decide the connection between the quantity & vehemence of PA executed by more established grown-ups in Northern US & their despondency & tension side effects whilst presently over-friendly separating rules toward the Coronavirus epidemic.

The outcomes of this study propose that executing the same little PA under the Coronavirus epidemic might assist with easing a portion of the adverse emotional well-being influences that more established grown-ups might be encountering whilst separated & sticking to societal distancing instructions under the Coronavirus epidemic (Callow et al., 2020). Studies suggest that despondency is a significant supporter of the worldwide weight of sickness, along elevated predominance & backslide pace. A few elements came to be viewed as a way to diminish the despondency trouble. The consequences of the study demonstrated a likely defensive impact of physical activity on the predominant & occurrence of despondency (Gianfredi et al., 2020). Researchers planned to distinguish whether depression & actual work were related to greater regrettable psychological well-being over a time of required societal separation in the United Kingdom. After representing the Initially-Coronavirus patterns, scholars demonstrate that encountering dejection & diminished PA are dangerous elements for demolishing emotional wellness over the epidemic. Studies discoveries require investigating approaches that focus on such possibly adaptable danger elements (Creese et al., 2021). Studies explain that compassionate interrelation among powerful neurophysiological & conduct components might assist with illuminating customized emotional well-being medicines & explain wherefore, & for who practice further develops emotional well-being results. The survey finishes with suggestions for prospective examinations utilizing person contrasts to enhance therapy ways to deal with improved emotional well-being perks (Arbonés et al.,

2023; Smith & Merwin, 2021). Scholars suggest that PA directed the roundabout impact of psychological wellness on the relationships between rest peculiarity & personal satisfaction. Empowering the rustic older to increment active work fittingly could work on personal satisfaction toward the old along with unfortunate rest peculiarity & emotional wellness issues (Yuan et al., 2020). Scholars expected to research the relationship between PA & mental working after dominating for prospective bewilders between more seasoned grown-ups in Hindustan. The outcomes show the conceivable useful impacts of continuous actual work on mental working among more established grown-ups. Accordingly, customary PA may be considered a viable way of life element to advance solid mental maturing (Kumar et al., 2022). Studies elaborate that PA has support for corporeal & mental wellbeing. Epoch quadrate was a critical indicator of a definite arch among epoch & vitality fulfilment & joy. PA was essentially connected with vitality, fulfilment & joy in youthful, moderately elderly, & more seasoned grown-ups. Also, vitality fulfilment & bliss expanded with expanding epoch. The outcomes sustain the advancement of active work (An et al., 2020). Studies claim that mental & societal prosperity are arising as significant factors in protecting wellbeing in advanced epochs.

Elevated degrees of mental & societal prosperity might dial back the epoch-associated decrease in actual capability, which affirms the intricacy of more seasoned grown-ups' well-being yet additionally focuses on the on the latest precaution techniques (Saadeh et al., 2020). Scholars explain that the ideal power of PA for reducing despondency in moderately elderly & more established grown-ups stays muddled. The results of this study indicate that there was no tremendous distinction between a temperate walking workout bunch & robust walking workout bunch. The two temperate walking workout bunch & robust walking workout bunch mediations also alleviated uneasiness seriousness and worked on personal satisfaction & cardio wellness. The base size of strolling workout at one or the other diminishes or enthusiastic power was discovered to reduce despondency in moderately elderly & more seasoned grown-ups (Yu et al., 2023). Studies show active work is a familiar methodology for overseeing uneasiness side effects in more seasoned grown-ups. Subset examination uncovered tremendous impacts for whole physical activity forms, meeting moments, recurrence, & mediation intervals contrasted & restrain gatherings, but with various extents of impact. Ultimately, albeit a few components of physical activity add to its viability for nervousness, physical activity power & manner expected to expand physical activity impacts stay indistinct (Ofosu et al., 2023). The study uncovered the effect of different sorts of active work influencing more established grown-ups' actual well-being, for example, utilitarian wellness, corpse structure, plunge hazard & equilibrium, & emotional well-being problems, like misery, nervousness, mental capability & personal satisfaction. Finally, this perusing audit caught the normal impacts

among PA & by and large, prosperity, involving corporeal, psychological, & mental well-being(Wong et al., 2023; Yin, 2023). Scholar studies reveal that maintaining practical wellbeing & personal satisfaction in advanced epoch is a significant objective & worldwide test in general wellbeing. Gathered proof infers that being genuinely dynamic & practicing is infinitely better to diverse ideal maturing catalysts.

However, this field of exploration confronts various limitations & snags(Brach et al., 2023). Studies indicate that aerophilic & obstruction practices were successful in working on worldwide mental capability, though multimodule & motorial activities weren't. Aerophilic activity was the best at working on mental capability. Along these lines, practice treatment is successful in lessening gloom in more seasoned grown-ups along mild mental function. The average impact of worldwide mental capability expanded with greater activity recurrence(Ahn & Kim, 2023). The goal of this examination was to analyze the connections among actual work & sadness, saw wellbeing, actual capability, & personal satisfaction amid more established ladies along Gentle Mental Weakness. The outcomes recommended that techniques to further develop wellbeing focused physical activity station in the old with gentle mental weakness are vital. In such manner, its particularly suggested that medical caretakers scheme sporting corporeal & athletics exercises toward the older in gatherings or exclusively so they may partake in the advantages of physical activity(Hashemi Motlagh et al., 2024). Scholars reveal that actual work, of any force & week after week recurrence, was areas of strength for an element opposed despondency, free of corporeal & psychological working. Wellbeing arrangements might animate the consolidation of diminish active work force to safeguard opposed discouragement, that maybe further achievable toward the populace degree(Lima et al., 2024). Studies means to decide the connection among the degree of actual wellness & the degree of despondency in the older as per sexuality & married standing.

The outcomes demonstrate that there's a critical connection among the degree of corporeal suitability & the degree of gloom(Sutapa et al., 2024). Researchers explain that workout is a successful therapy for despondency, with strolling or running, yogism, & force preparing greater powerful than different activities, especially when serious. Yogism & force preparing was all around endured contrasted & different medicines. Practice showed up similarly viable for individuals along & unless associated disorders & along various standard degrees of misery(Noetel et al., 2024). Studies planned to deliberately assess & measure the general viability of brain corporeal practices on rest aggravation & despondency in more seasoned grown-ups. The aggregate proof reasons that more established grown-ups who took part as a primary concern corporeal practice schemes displayed possible upgrades in rest aggravation & sorrow(Bu, 2023; Makhfudli et al., 2024) (Figure 1).

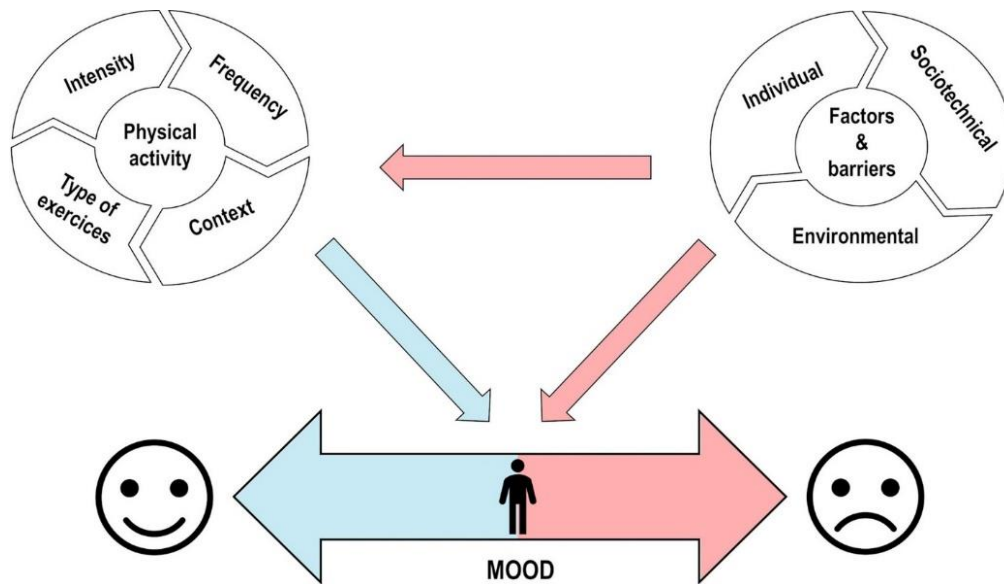


Figure 1: Physical Activities

Ageing in the older population causes them to confront several serious issues. Ageing may be attributed to detrimental physiological changes in the body that lead to a decrease in precise and distinct bodily functions. Elderly people have a variety of physical health concerns, but they also experience mental health difficulties like anxiety, depression, and other conditions. In addition to being prevalent among the elderly, mental health issues are also on the rise among the younger population. Therefore, there is an urgent need for appropriate strategies to support the management of mental health conditions like depression in the senior population. Physical activity has been shown in recent research to be helpful in the treatment of depression in older adults. This aspect has the following main implications:

2.1 Improved Mood, Enhanced Cognitive Functions, Reduced Symptoms of Depression, Better Memory

One of the most important implications of the role of physical activity in managing depression in the elderly population is that it can improve the mood of the Elderly Population. It has been seen that the elderly population suffers from mood swings more commonly as compared to the young population. It is because of various factors Such as less social interaction, loneliness, poor physical health, etc. However, through consistent physical activity, it has been noted that there is betterment in the mood of the Elderly Population. It is a common observation in scientific studies that physical activity helps release endorphins in the body, and this hormone acts as a happy hormone, which is helpful for a better mood in human beings. It is the most important benefit of Physical Activity in the elderly population is that it is not only beneficial for managing depression but also useful for better chemical and nervous coordination in the body. The other important implication of the role of physical activity in managing depression in the elderly population is the aspect of better

cognitive functions. It is evident from scientific studies that there is a reduction in cognitive functions of the elderly population because of various Mental Health issues such as dementia, Alzheimer's disease, and others. These mental health disorders aren't responsible for reducing the cognitive functions of the elderly population. In this way, these people may lose their critical thinking and analysis capability. But with the help of proper physical Activity, as there is improvement in Mental Health, there is an enhancement in cognitive functions. We also know that cognitive functions may decrease because of the death of neurons. But by proper physical exercises, neurons die less prematurely, which is also responsible for improved cognitive functions in the elderly. The other important implication of the role of physical activity in the elderly population is the reduced symptoms of depression. Those old age people who keep themselves engaged in physical activity are less prone to depression as compared to those old age people who have a relaxed lifestyle.

2.2 Exercise Programs, Physical Therapy, Recreational Activities, and Better Sleep Quality

As we have discussed earlier, physical activity helps manage depression in the elderly population, so there is a need for such exercise programs that are related to managing depression. There are various physical exercises, and each has a different impact on the body and brain. When we have come to know that physical Activity reduces depression in the elderly population, we can use this aspect for arranging exercise programs for the elderly population. Along with these exercise programs, various parks and other exercise spots may develop that will help promote physical activity in older people. These spots will serve as sites for physical exercise and will also help increase social interaction of elderly population. This increased social interaction can also be useful for managing depression in the elderly population. The other important implication of Physical Activity in managing depression in the elderly population is the aspect of the idea of Physical Therapy in the elderly population. If we have such an aged population that is not able to perform physical activity to manage depression, we can use an alternative way, which is physical Therapy. When we know that physical activity is useful, we can perform various physical therapies on the aged population to enhance the function and flexibility of neurons. The other important implication of Physical Activity in managing depression in the elderly population is the aspect of the arrangement of recreational activities. As we know, a human being is a social animal, so he cannot live alone without social interaction. When there is more social interaction, there is better growth and development of human beings concerning the physical and mental health of human beings. To increase such opportunities for social interaction, we can arrange recreational activities for older people. These recreational activities will keep them busy, alive, energetic, and social. These activities will also help induce happiness in the elderly population to reduce the risk of depression. The other important implication of

Physical Activity in managing depression in the elderly population is sleep quality. We can never deny the importance of sleep quality for better mental and physical health. Not only sleep quantity but sleep quality is also important. It has been seen that with the help of physical activity, the sleep-wake cycle improves in the elderly population, and this improved sleep-wake cycle will be useful for reducing the symptoms of depression in the elderly population as well. Various exercises are suggested for managing depression, such as aerobic exercises, including walking, swimming, resistance training such as weightlifting, flexibility exercises such as yoga, and many others.

Table 1: Result of Paired Samples Statistics

PAIRED SAMPLES STATISTICS					
		MEAN	N	STD. DEVIATION	STD. ERROR MEAN
PAIR 1	Physical Activity 1	1.6471	51	.68771	.09630
	Depression	1.4510	51	.57667	.08075
PAIR 2	Physical Activity 2	1.3725	51	.56430	.07902
	Depression	1.4510	51	.57667	.08075
PAIR 3	Physical Activity 3	1.4902	51	.57871	.08104
	Depression	1.4510	51	.57667	.08075

The previously mentioned outcome shown in table 1 demonstrates how the standard deviation rate, mean values, and standard error of the mean values associated to each pair are described by the paired samples statistical analysis result. Physical activity 1 and sadness make up the first pair. It demonstrates that the standard deviation rate is 57% and 68% divergence from the mean, with the mean value being 1.6471 and 1.4510. The standard error of the mean value is 0.09630 data reveals that 9% inaccuracy of the anticipated values between physical activity 1 and depression. Depression and physical exercise are the second couple. It demonstrates that while the standard error value is 7% and 8%, the standard deviation value is 56% and 57%. Similar results are seen for the pair 3 (physical activity 3) and depression, where the mean values are 1.4902 and 1.4510, respectively, and the standard deviation rate is 57%.

Table 2: Result of Paired Samples Correlations

PAIRED SAMPLES CORRELATIONS				
		N	CORRELATION	SIG.
PAIR 1	Physical Activity 1 & Depression	51	-.095	.508
PAIR 2	Physical Activity 2 & Depression	51	-.096	.501
PAIR 3	Physical Activity 3 & Depression	51	-.196	.168

The above result shown in table 2 indicate that paired sample correlation analysis result reveals that first pair is physical activity and depression its

correlation value is -0.095 the significant rate is 0.508 its shows negative but its 50% significant value.

The second pair is physical activity 2 and depression result indicates that significant value is 50% and its correlation value is -0.096 correspondingly. Physical activity 3 and depression are the third pair, and the correlation value between them is -0.196. the significant incidence is 16% between the physical activity and depression.

Table 3: Result of Paired Samples Test

PAIRED SAMPLES TEST		PAIRED DIFFERENCES							
		MEAN	STD. DEVIATION	STD. ERROR MEAN	95% CONFIDENCE INTERVAL OF THE DIFFERENCE		T	DF	SIG. (2-TAILED)
					LOWER	UPPER			
PAIR 1	Physical Activity 1 - Depression	.19608	.93850	.13142	-.06788	.46004	1.492	50	.142
PAIR 2	Physical Activity 2 - Depression	-.07843	.84482	.11830	-.31604	.15918	-.663	50	.510
PAIR 3	Physical Activity 3 - Depression	.03922	.89355	.12512	-.21210	.29053	.313	50	.755

The above findings shown in table 3 how the paired sample test analysis results explain the t statistic and significant values of each pair that includes the dependent and independent. They also describe mean values, standard deviation rates, standard error values, and the 95% confidence interval at lower and upper values.

The first pair's mean value for depression and physical activity is 1.9608, according to the results. There is a 93% standard deviation rate. the t statistic value is 1.492 likewise that its significant value is 14% accordingly. Comparably, the second and third pairs report that the significant rate is 51% and the t statistic value is -0.663, respectively. The positive t statistic value for depression and physical activity is 75%, respectively, as is the significant rate.

Table 4: Result of Coefficients

COEFFICIENTS						
MODEL		UNSTANDARDIZED COEFFICIENTS		STANDARDIZED COEFFICIENTS	T	SIG.
		B	STD. ERROR	BETA		
1	(Constant)	2.073	.382		5.425	.000
	Physical Activity 1	-.129	.123	-.154	-1.052	.298
	Physical Activity 2	-.072	.153	-.071	-.473	.639
	Physical Activity 3	-.208	.149	-.208	-1.395	.169

a. Dependent Variable: Depression

The results above shown in table 4 show how unstandardized coefficient values, such as beta and standard error, are described by linear regression analysis results. Additionally, the results show the beta rate and t statistic in relation to the standardized coefficient, which help to explain the significant values of each independent variable. The primary independent variable is physical activity 1, with a t statistic value of -1.052 and a significant rate of 0.298, indicating a negative relationship but 29% significance between them. the second element is physical activity 2 demonstrates that 63% meaningful levels between them. Comparably, physical activity 3 has a substantial rate of 16% and a value of -1.395.

3. Conclusion

We may draw the conclusion that physical activity can benefit older persons in a variety of ways for improving their physical and mental health after reviewing these elements of its implications for controlling depression in older adults. Critical information gaps were brought to light by this research, including the absence of evidence on the lowest level of physical activity that successfully treatments depression and the quantity of physical activity that over time decreases the chance of depression the greatest. This is further supported by reviews carried out by the World Health Organization (WHO) Guideline Development Group, which note that little is known about the relationship between physical activity and mental health from studies with sufficient power conducted on individuals with chronic disease, especially with regard to the optimal dose. Randomized clinical trials have shown that following exercise training, depressive symptoms were significantly reduced in individuals with chronic diseases who were meeting recommended physical activity levels. To the best of our knowledge, there isn't consensus on the overall quantity of physical activity that protects against depression or if this differs for persons with and without chronic conditions. Therefore, we set out to quantify the lowest dose of moderate to vigorous physical activity (MVPA) associated with reduced

odds of depressive symptoms and major depression status among older adults with and without chronic disease over a 10-year period using data from waves 1 through 5 of The Irish Longitudinal Study on Ageing (TILDA). A secondary objective was to assess the importance of meeting and exceeding the minimum dosage needed in accordance with current physical activity guidelines to avoid depression using the traditional WHO dose categories of three and the recently proposed five dose categories.

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