

THE IMPACT OF PHYSICAL ACTIVITY ON MENTAL HEALTH

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ABSTRACT

Throughout this article, we will investigate the complex connection that exists between physical exercise and mental health. In recent years, there has been a considerable increase in the amount of attention paid to the intersection of physical fitness and psychological well-being. This is due to the fact that research has constantly shown the good impact that exercise has on mental health. In this study, we examine the vast amount of research that has been published on this subject, focusing on the most important discoveries and trends. Numerous studies have shown that engaging in physical exercise has a direct influence on the control of mood, the reduction of stress, and the treatment of disorders such as anxiety and depression. These results have ramifications for a wide range of age groups and demographics, including adolescents, adults, and the elderly, among others. In addition, this study investigates the psychological and physiological elements that operate as mediators in the connection between physical activity and mental health..

When it comes to promoting holistic well-being and shaping public health policy, having a solid understanding of the influence that physical exercise has on mental health is very necessary. The purpose of this abstract is to provide a look into the expanding body of research that highlights the crucial relationship between physical exercise and mental well-being. It also encourages further inquiry and the creation of evidence-based techniques to harness these advantages.

Key Words: *Physical Exercise, Mental Health, Cardiometabolic Disease Prevention, Technology-based, Physical Activity, School Physical Education, Mental Health.*

INTRODUCTION

Physical activity not only has a substantial influence on our physical well-being, but it also contributes to the formation of our mental health. The connection between mental health and physical exercise is an area that is attracting increasing attention and investigation. Research has shown that consistent physical activity has a substantial impact on several facets of mental well-being, including stress alleviation, mood enhancement, and cognitive performance improvement. We will examine the numerous ways in which physical exercise might influence mental health throughout this discourse. Our attention will be directed towards the physiological and psychological factors involved, in addition to exploring the potential benefits of integrating exercise into our daily routines for a holistic enhancement of our state of being.

For thousands of years, people have been engaging in various forms of physical exercise. In the early Bronze Age, about 3000 B.C., it is thought that the civilization of the Indus Valley provided the groundwork for what would later become known as contemporary yoga. There is a lot of evidence available in the literature about the benefits of physical exercise for maintaining a healthy lifestyle, particularly with regard to the management and prevention of health problems. There are a multitude of significant health benefits that may be gained by engaging in physical exercise. Regular physical activity results in the production of mechanical stress and the repeated exposure to gravitational forces, both of which contribute to

the enhancement of a variety of qualities. These qualities include bone mineral density, neuromusculoskeletal fitness, physical strength, and endurance, all of which are essential for living a life that is independent and functional.

REVIEW OF LITERATURE

A study conducted by Joseph A. Giandonato, Victor M. Tringali, and Ryan C. Thoms (2021) examined the relationship between regular physical activity and the prevention of cardiometabolic disease. The research also explored the ways in which physical activity improves a variety of attributes, including muscular strength and endurance. Depressive symptoms were more prevalent among 165 individuals with mild to moderate symptoms of anxiety disorder and/or depression who did not meet the prescribed physical activity requirements, according to a cross-sectional examination of their physical activity patterns. Compared to those who engaged in physical exercise on a less frequent basis, those who participated regularly had a reduced likelihood of getting depression. Physical exercise was discovered to have a preventative impact against the development of depression in young individuals. The study observed that physical exercise provided protection against depression in individuals of various age groups in Asia, Europe, North America, and Oceania.

Anne Turner [2023] The primary objective of the present thesis is to examine the hypothesis that there exists a positive correlation between physical activity and happiness among employed persons aged 21 to 65. Moreover, the research aims to ascertain whether there is a significant correlation between the differentiation of activities based on their origins (e.g., occupational and non-occupational work-related activities) and assessments of happiness. Lastly, it seeks to determine whether age and gender significantly influence individuals' perceptions of happiness.

This research by Tamadher Abdul aziz Muhsen and Muroj Abdulaziz Muhsen (2020) states, In recent years, there has been a notable rise in the prevalence of mental health issues, including but not limited to anxiety, depression, stress, and suicide ideation, despite the implementation of conventional treatment approaches. Since a consequence, physical exercise programmes have been mandated for adoption, as they provide a safer and more effective remedy. Although conventional therapeutic approaches are effective in the treatment of mental diseases, not all patients achieve the desired level of total recovery. Physical activity has been shown to substantially alleviate the symptoms of stress, anxiety, depression, ADHD, and other psychological disorders, according to research. Engaging in physical activity yields improvements in mood, memory, sleep quality, and general psychological wellness for the individual. Sporting activities promote interpersonal interaction, therefore assisting individuals in diverting their attention from concerns.

Ruilin Xu, Yangyang Liu, and Hongxue Zhang (2023) A technology-based physical activity intervention enhanced the levels of physical activity and mental health outcomes of both sexes, according to the findings of the present research. Male and female participants in the intervention group exhibited a statistically significant rise in their levels of physical activity between the pre-intervention and post-intervention periods, in comparison to the control group. Furthermore, when comparing the mental health outcomes of female participants in the intervention group to those in the control group, a significant improvement was seen. Consistent with prior research on the efficacy of technology-driven therapy to enhance mental health and encourage physical activity, the results of this study support these conclusions. Additionally, the research identified potential gender disparities in the impact of the intervention on mental health outcomes, underscoring the need for further investigation into the underlying mechanism.

Luis Garcia Gonzalez, Ciaran MacDonncha, Padraic Rockiffe, Manolis Adamakis, Brendan T.O. Keeffe, Liam Walsh, Aine Bannon, Fiona Chambers, Michalis Stylianou, Ian Sherwin, and Patricia Mannix-McNamara. [July 2023] The impacts of regular school physical education, sports, and physical activity programmes are among the most important aspects of public health in order to improve the mental health and well-being of adolescents and reduce global health expenditures. Nevertheless, the existing body of research mostly examined physical education programmes, neglecting to provide a significant amount of data about the synergistic impacts of sports and physical education inside educational institutions. A number of exemplary cases of optimal practises within the regular school physical education curriculum were illuminated by the present research, including minor modifications to the standard programme that positively impact the mental health and well-being of teenagers. periodic periods of rigorous internal training, and the integration of physical education teacher seminars into the curriculum in order to ensure that instructors are updated on pedagogical and health matters.

Adilson Marques, Andre O. Werneck, Priscila Marconcin, Miguel Peralta, Andreas Ihle, and Elvio R. Gouveia; Hugo Sarmento; Gerson Ferrari; (2022) The review included a total of thirty-one papers. In general, the findings of the study suggest that greater physical activity is associated with enhanced well-being, an elevated quality of life, and reduced

levels of depressive symptoms, anxiety, and stress, irrespective of age. An optimal level of physical exercise to alleviate depressed symptoms in the mind has yet to be determined, with no consensus about the frequency or nature of such activity. While women were more responsive to changes in mental health, males were more susceptible to changes in physical exercise. In the first year of the COVID-19 pandemic, participation in physical exercise has shown itself to be a prudent and pragmatic choice in mitigating the adverse effects of the virus on psychological well-being. There are several nations throughout the globe that have issued stay-at-home orders; thus, public health initiatives should be cognizant of any possible avenues to promote physical exercise.

Jochen Deenik, Michel Sabe, Chaomei Chen, Othman Sentissi, Davy, Joseph, Lee Smith, Brendon, Simon, Felipe Barreto, and Marco Solmi are in attendance (2022) In brief, the effects of physical exercise on illnesses like eating disorders, dementia, mental disorders, cardiovascular disease, and other somatic ailments have been the subject of ongoing scientific investigation. In recent times, the COVID-19 epidemic has brought attention to the therapeutic potential of physical exercise in treating a wide range of mental and physical ailments. The recent emergence of the literature about behaviour modification, urban planning, and green space has expanded the transdisciplinary uses of physical exercise. The synergy of our results reinforces and magnifies the distinct and vital significance of physical activity in the realm of public health. This supports the notion that physical activity specialists should be consistently engaged as stakeholders in the deliberations about public health.

Yongxin Li, Tengyun Ding, Kai Wu, and Tengyun Wang (2023) This study has a number of theoretical implications. They explored the mechanisms behind the correlation between exercise and the mental health of technology and scientific personnel. Limited study has been dedicated to examining the correlation between exercise and mental health among scientists and IT professionals, with the bulk of studies focusing on this population having been undertaken on students. Additionally, applications exist for this research. The results underscore the importance of physical exercise, indicating that it is critical to provide adequate care for workers in the fields of science and technology. As the primary agents of advancement in research and technology, the mental well-being of personnel in these domains is an extremely significant matter. By fostering a happy work environment and aiding managers in the development of equitable and effective management methods, the results of this study have the potential to improve the mental health of scientists and technologists.

DATA COLLECTION METHODS

Primary Data Gathering

An investigation was carried out on those who engage in physical activity. A sample of thirty students participated in a standardised questionnaire that gathered data from firsthand experiences. The data obtained from a representative sample is presented in an impartial format. The acquired data is very precise and is used only for research purposes.

Acquisition of Secondary Data

In order to get secondary evidence about the influence of physical exercise on mental health, one should consult respected websites, academic journals, and government health agencies for research, analyses, and statistics. Consider techniques, conclusions, and significant discoveries to substantiate research..

OBJECTIVES

1. To investigate the possible advantages of physical exercise in fostering mental well-being and avoiding mental health problems across various age cohorts.
2. By investigating the correlation between consistent engagement in physical exercise and the amelioration of symptoms linked to mental health conditions, including but not limited to anxiety and depression.
3. To examine the physiological processes by which physical exercise affects the brain and its potential contribution to the control of mood.
4. To examine the impact of physical exercise on the management and treatment of distinct mental health disorders, including but not limited to post-traumatic stress disorder and bipolar disorder.
5. Determining possible obstacles to the integration of physical exercise into an individual's daily routine and suggesting approaches to surmount them.

HYPOTHESIS

1. Age does not influence the consensus about the influence of physical activity on mental health.
2. Gender does not influence the perception of the effects of physical activities on mental health in any way.
3. There is no discernible variation in perspectives about the effects of physical activities on mental health based on one's degree of education (Under graduate or Post Graduate).
4. With regard to the influence of physical activities on mental health, there is no variation in viewpoint contingent upon one's employment status.
5. Regarding the effects of physical activities on mental health, there are no discernible differences in viewpoints based on marital status.

DATA ANALYSIS AND INTERPRETATION

Demographic data of the respondents

FREQUENCY TABLE

		Frequency	Percent
Age	18-30	19	63.3
	30-50	11	36.7
	Total	30	100.0
Gender	Female	16	53.3
	Male	14	46.7
	Total	30	100.0
Educational Level	Under Graduate	14	46.7
	Post Graduate	16	53.3
	Total	30	100.0
Occupation	Working	14	46.7
	Non-Working	16	53.3
	Total	30	100.0
Marital status	Bachelor	16	53.3
	Married	14	46.7
	Total	30	100.0

The frequency table presented illustrates data pertaining to various demographic characteristics (age, gender, educational level, occupation, and marital status), with counts and percentages within each category. The respondents of this study were individuals who regularly engage in physical activities and their perceptions were compared prior to and following their participation.

The following describes the age distribution of the respondents: A total of 63.3 percent of the respondents are between the ages of 18 and 30, while 36.7 percent are between the ages of 30 and 50. Based on the available data, it seems that the study sample mostly comprises individuals in their youth.

In relation to gender, the sample is almost balanced, with 46.7 percent of respondents identifying as male and 53.3 percent as female. The study exhibits a little majority of female participants.

With regard to academic credentials, 46.7 percent of the respondents possess either a graduate certificate or degree, whilst 53.3 percent have a postgraduate degree. A substantial majority of the population have a postgraduate degree.

With regard to occupation, the respondents are spread equitably, with 46.7 percent classified as working and 53.3 percent as non-working. A preponderance of non-working categories is seen.

With regard to the marital status of the respondents, 53.3% are unmarried and 46.7% are married.

HYPOTHESIS 1

Age does not influence the consensus about the influence of physical activity on mental health.

Age	N	Mean	Std. Deviation	t-test	Sig.
18-30	19	41.0	3.8	1.798	0.083
30-50	11	37.7	6.1		

The following statistical measures of significance are included in the table for two age-categorized groups: the mean, the standard deviation, and the t-test (18-30). An analysis of the data will be performed as follows:

The average score for individuals between the ages of 18 and 30 is 41.0, while the standard deviation for this age group is 3.8. This discovery indicates that the average score of the individuals who were a member of this age group was 41.0, displaying a degree of dispersion that was considered to be rather limited (as indicated by the standard deviation of 3.8).

The value of the t-test is 1.798, as predicted. To evaluate whether or not there is a statistically significant difference between the means of two groups, the t-test is a statistical measure that is administered. The result of the t-test that was obtained, which was 1.798, suggests that the difference between the means of the two groups is an amount that is not very significant.

The p-value (0.083) is significant when it is greater than 0.05. When it comes to this particular scenario, the null hypothesis (H₀) often suggests that the means of the variable that is being evaluated do not differ substantially across the two age groups (18-30).

HYPOTHESIS 2

Gender does not influence the perception of the effects of physical activities on mental health in any way.

Gender	N	Mean	Std. Deviation	t-test	Sig.
Female	16	38.56	3.20	-1.483	0.14
Male	14	41.21	6.29		

The following table presents data on the mean, standard deviation, t-test, and significance for two groups that are classified according to gender-specific categories: (Female and Male).

When it comes to the female population, the average is 38.56 years, and the standard deviation is 3.20.

The average of the male population is 41.21, while the standard deviation is 6.29, which is much greater.

A t-test result of -1.483 was obtained. A negative sign implies that, on average, the female group tends to be younger than the male group. This is represented by the positive sign. 0.14 is the number determined to be significant (Sig.). In order to evaluate whether or not this p-value is statistically significant, it is compared to a significance threshold, which is often set at 0.05. The p-value of 0.14 is higher than the threshold of 0.05. In most cases, the null hypothesis (H₀) asserts that there is no statistically significant difference in the average age of the male and female groups.

HYPOTHESIS 3

There is no discernible variation in perspectives about the effects of physical activities on mental health based on one's degree of education (Under graduate or Post Graduate).

Education Level	N	Mean	Std. Deviation	t-test	Sig.
Under graduate	14	39.92	4.28	0.130	0.898
Post graduate	16	39.68	5.66		

The data that has been given offers a comparison between the two degrees of education, namely undergraduate and postgraduate, with respect to a specific variable. When compared to the mean, the standard deviation for undergraduate participants is 4.28, while the mean score for these people is 39.92.

With a mean score of 39.68 and a standard deviation that is much higher at 5.66, participants in postgraduate studies reported significant differences in their scores. 0.130 was the result that was obtained from the t-test. The value of 0.898 for the p-value is much greater than the value of 0.05. The t-test and the p-value both suggest that there is no statistically significant difference in the variable between the persons who are undergraduates and those who are postgraduates. This is the conclusion that can be drawn from the findings of the data.

HYPOTHESIS 4

With regard to the influence of physical activities on mental health, there is no variation in viewpoint contingent upon one's employment status.

Occupation	N	Mean	Std. Deviation	t-test	Sig.
Working	14	38.21	5.54	-1.680	0.104
Non-working	16	41.18	4.11		

The information that has been supplied makes a comparison of the variable across people who have diverse vocations (Working and Non-working). The mean for those who are employed is 38.21, while the standard deviation for this group is 5.54. The average number of people who are not employed is 41.18, and the standard deviation is 4.11, which is lower than the average. A t-test result of -1.680 was obtained. The difference between the means is represented by this number, and the presence of a negative sign implies that the mean for the Working group is lower than the mean for the other groups. There is no statistically significant difference between the Working group and the Non-working group, as shown by the significance value (Sig.) of 0.104 found in the data.

HYPOTHESIS 5

Regarding the effects of physical activities on mental health, there are no discernible differences in viewpoints based on marital status.

Marital status	N	Mean	Std. Deviation	t-test	Sig.
Bachelor	16	41.25	4.57	1.597	0.12
Married	14	38.28	5.16		

Comparisons of the variable are made between people who have a variety of characteristics using the data that is supplied (Bachelor and Married). On average, those who have earned a Bachelor's degree have a score of 41.25.

The average number of married people is 38.28, according to the data. 1.597% is the value of the t-test. The difference between the means is represented by this figure, and the fact that it has a positive sign implies that the mean for those who have a Bachelor's degree is greater than the mean for other people. 0.12 is the value considered to be significant (Sig.). The p-value of 0.12 is higher than the threshold of 0.05. As a result, there is no statistically significant difference between persons who have a Bachelor's degree and those who are married, according to the significance threshold of 0.05.

FINDINGS:

The investigation of the perspectives of respondents about the influence of physical activities on mental health showed fascinating findings across a variety of demographic characteristics. The mean score for individuals between the ages of 18 and 30 was 41.0, while the standard deviation was calculated to be 3.8. The result of the t-test was 1.798, which indicates that there is a difference in means; nevertheless, the p-value was 0.083, which did not meet the level of significance. The age difference between men and females was not statistically significant ($p = 0.14$), with the mean age of males being 41.21, and the mean age of females being 38.56. It was also shown that there were no significant variations in the influence that education level, job status, and marital status had on mental health.

SUGGESTIONS:

However, despite the fact that the data suggest that there are no significant differences between the demographic categories, it is recommended to investigate other aspects or to carry out a more extensive research. For the purpose of gaining a more detailed understanding, future study may investigate lifestyle behaviours, the amount of time spent engaging in physical exercise, or certain mental health criteria.

CONCLUSION:

The findings of the research, in conclusion, provide significant insights into the perceived influence that physical activities have on mental health across a variety of groups. The fact that the differences were not statistically significant suggests that the connection may be influenced by variables that were not taken into consideration in this investigation. In order to unearth the complex relationships that exist between physical exercise and mental well-being, researchers had to take into consideration adopting a more all-encompassing methodology.

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