

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

Muhammad Asif

M.Phil. Chemistry, Ripah International University Islamabad.

Email: asif19176@gmail.com

Muneeba Maqbool

Lecturer in education (HED), M.Phil. Education, University of Okara.

Email: muneebamaqbool5@gmail.com

Muhammad Azhar Farooq

M.Phil. Education, University of Agriculture Faisal Abad (Sub Campus Burewala).

Email: azharfarooq0148@gmail.com

Sabir Hussain

M. Phil. Education, Institute of Southern Punjab Multan.

Email: sabirhussain148@gmail.com

Shahab Ahmed

Bachelor in Education (B.Ed.) Hons, Shah Abdul Latif University Khairpur (College
GECE Jacobabad).

Email: ahmedshahab173@gmail.com

Received on: 21-01-2024

Accepted on: 25-02-2024

Abstract

This research aimed to examine the role of physical activity in elementary school curricula to improve students' mental health. Quantitative methods were used in the investigation. Examining the connection between students' mental health and physical activity at a certain moment in time was done using a correlation research methodology. Students enrolled in the public elementary schools of District Layyah were the intended subjects of this research. Three hundred seventy-eight kids from grades 6, 7, and 8 made up the study's overall population size. Three hundred and eighty-one pupils were randomly selected from the entire student body. We gathered data on physical activity and mental health indicators using a survey questionnaire. In order to gather the necessary information from the chosen primary school kids, structured surveys were utilized. Various statistical methods were used to examine the acquired data, including descriptive and inferential statistics. Distributions of frequencies, standard deviations, and means were among the descriptive statistics

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

used to summarize the data. Correlation analysis was used to evaluate connections between physical activity levels and mental health outcomes among elementary school pupils, as part of the data analysis that included descriptive and inferential statistics. The significance level for all statistical tests was set at $p < 0.05$. The data analysis was done in tabular and chart forms to make sure the results were easy to grasp and interpret. The findings answered both the study questions and the conclusions. Developing educational best practices, policies, and parental involvement in providing a healthy, active lifestyle for primary school students were all bolstered by the study's potential to improve understanding of the optimal relationship between physical activities and students' mental health. According to previous research, active lifestyles are associated with higher self-esteem, lower anxiety and sadness, and better cognitive performance. Educators, legislators, and parents can all benefit from the study's findings on the importance of physical activity in children's lives. The findings can inform evidence-based guidelines, actions, and policies to improve physical and mental health.

Keywords: Physical activity, Mental health, Students' well-being, Exercise and mental health, Cognitive functioning, Anxiety and depression, Self-esteem

Introduction

Everyone knows that being physically active is important for your health in general, both mentally and physically. According to a large body of research, several mental health resources have been shown to benefit from physical exercise (Mahindru et al., 2023). The early school years, a critical developmental phase typically ranging from 6 to 12, appear as a transitional period in cognitive, social, and emotional maturity. During this period, children face pressures and obstacles requiring academic achievement effort, robust social development, and personal growth.

As young people move through these formative years, how physical activity relates to their development needs to be carefully examined. Childhood experiences are building blocks of future well-being, and the potential impact of physical activity on mental health during this period holds excellent promise. Previous research focusing on adolescents highlights the potential of physical activity. Regular exercise can reduce psychological distress due to different factors affecting life and increase psychological resilience to cope with various situations in life. The connection between physical activity and psychological well-being is complex and involves physical, cognitive, and social processes. Physiological bases, including removal of neurotransmitters and decreased levels of stress hormones, observable cognitive improvement in physical challenges, and respect for and improved self-efficacy, a potential benefit of increased physical activity (Ginsburg, (2007).

The educational environment is vital in shaping students' mental health trajectories. Modern academic ecology, marked by high pressure for academic achievements and growing digital temptations, calls for focused interventions to cultivate emotional resilience and balance. Physical activity could provide a child with an efficient means of dissipating stress and emotional burden and, therefore, would be better positioned to cope with academic pressures (Mahindru et al., 2023). Early school years are a specific time when physical activities could be introduced as one of the elements for stronger mental health. These activities can enhance physical well-being and provide excellent psychological benefits. By determining how physical activity can positively impact the mental health of young students,

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

educators, parents, and policymakers can create a foundation for a holistic approach to learning that goes beyond merely the academic and assiduously places overall welfare first (Zhou et al., 2023).

Additionally, this age group's mental health results, including symptoms of anxiety and sadness, can be positively impacted by regular physical activity. Children in primary school who participate in physical activity programs, such as an in-school program, report less anxiety and depression. Another study reported improved psychological well-being and self-esteem among primary school students due to regular physical activity engagement. However, despite these promising findings, the literature on the effectiveness of exercises on primary mental health outcomes among primary school students remains limited and deep-cracked. Moreover, most of the currently available research has targeted particular exercise behaviors or has relied on self-report measures as a primary tool; this makes it prone to biases and reduces the generalizability of findings. Therefore, this issue analysis seeks to fill these knowledge gaps by approving comprehensive research on the effectiveness of physical activity in promoting cognitive development (Piñeiro-Cossio et al., 2021).

It is now well acknowledged that the mental health of primary school pupils significantly affects their overall well-being and academic success, which has led to a surge of focus on this issue in recent years. This research aimed to determine how effectively primary school kids' mental health may be improved by making physical activity a regular part of their daily routines. A child's intellectual, emotional, and social growth cannot occur without attending elementary school. Adolescent difficulties are more common for adolescents who suffer from mental illness during this time, according to the research. While the obvious physical health advantages of exercise have long been known, the beneficial impacts on mental health have received more attention. In addition to alleviating anxiety and depression, exercising can increase self-esteem, broaden one's sense of self, and improve one's mental health in general. Students' ability to control their emotions and deal with stress was found to improve significantly when they took part in organized physical exercise programs, according to research by James et al. (2023). The sedentary lifestyle prevalent among today's teenagers due to increased attention span and academic pressure is associated with improved mental health; hence, introducing physical activity as a daily routine in primary school settings can be a preemptive intervention to prevent negative behaviors from sedentary behaviors. Inverse solid associations between physical activity frequency and depressive symptoms in young children. It is essential to recognize that the impact of exercise on mental health goes beyond the immediate physical effects. Participation in sports, games, and recreational activities facilitates student interaction, teamwork, and a sense of belonging. Such interactions can foster strong peer relationships and contribute to a supportive school climate, positively affecting students' emotional well-being (Piñeiro-Cossio et al., 2021). However, the feasibility of integrating physical education into primary education as a dedicated approach to mental health promotion needs to be carefully examined. Factors such as physical activity type, duration, and individual preferences should be considered to tailor interventions to students' needs.

Teachers are some of the influential people in a student's life, and they play a special role in implementing and promoting physical activities in schools. The training of teachers to introduce the techniques of movement-based strategies in teaching can develop such a class

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

environment that will highlight the significance of students' cognitive and emotional development. For students to succeed academically and personally, teacher professional development programs should stress the importance of physical activity. This is according to new research by Johnson and Turner (2016). As a result of recent reforms, lawmakers now view students' mental health as fundamental to the educational process. One approach to tackling this is to incorporate physical activity programs throughout the study. According to the World Health Organization, children should be physically active for at least 60 minutes every day. In order to foster exceptionally brilliant kids, Huang et al. expand on the universal recognition of the significance of physical exercise. This research aims to add to the existing body of information by elucidating the precise processes by which different types of physical exercise affect the psychological well-being of elementary school students (Huang et al., 2023).

Such being the case, it is an exercise that comes up as perhaps the most promising multi-dimensional approach to such challenges. The relationship between physical activity and mental health is quite indispensable. Besides the physical benefits, regular exercise has been found to significantly affect cognitive functioning and emotional resilience. If primary school students are often made to face years of development burden, they are especially susceptible to tension due to the demands made on them through academic expectations; through social contact, their emotional stability can be further strengthened. Exercise is a special way for students to express their feelings and release pent-up energy, easing tension and anxiety. Physical consequences of training, like endorphins, also play a vital role in making them feel happy and mentally active. This suggests that physical activity has great potential as a natural intervention against anxiety and depression; thus, it reinforces its importance in physical and primary education.

This takes on a whole new meaning when physical activity is weaved into the supportive school environment's educational fabric. Team sports, cooperative sports, and recreational activities replace the atmosphere of competition with camaraderie and instill in their student peers feelings of belonging. It's these shared experiences that help solidify strong relationships among peers and build up an environment nurturing for academic achievement. Given that physical activity has a broad impact on students' mental health, its potential clearly goes beyond individual benefits and embraces the collective well-being of the whole school community. The given study is important from the point of a comprehensive investigation of physical activity effects on students' mental health. A nuanced understanding of physical activity complexity, duration, and unique context can be obtained by collecting quantitative data and qualitative opinions from students, teachers, and parents. The implications of this research extend beyond the confines of the classroom. By providing evidence-based insights into the effectiveness of physical activity on student mental health, this research can influence educational practice and institutional and government policy. Data from this study can inform the future of curriculum design, teacher training programs, and programs to enhance student well-being. This research aspires to create educational environments that improve learning outcomes and enrich our young students' emotional well-being by enlightening teachers, parents, and policymakers with valuable insights.

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

Statement of the Problem

The impact of physical education on primary school pupils' psychological well-being was the focus of this research. This research aims to examine how primary school kids' mental health relates to their participation in physical activities. Despite general understanding, the specific influence of different physical activity approaches on young minds remains to be determined. This research bridges the gap by exploring the direct relationship between physical activities and students' mental well-being. Through this, valuable insights can be unearthed, guiding the development of effective strategies to enhance the mental health of elementary students.

Objectives of the Study

This study aimed to investigate the effectiveness of physical activities in enhancing mental health outcomes among elementary-level students. Specifically, the study aims

- 1) To analyze the perception of students regarding their mental health at the elementary level.
- 2) To analyze the perception of students regarding their physical activity at the elementary level.
- 3) To assess the effects of physical activity on students' mental health.
- 4) To find out the relationship between the physical and mental health of students at the elementary level.

Research Questions

- 1) Did physical activities positively impact the mental health of elementary-level students?
- 2) How did physical activities improve elementary-level students' mental well-being?
- 3) Were there noticeable changes in the mental health of elementary-level students after engaging in physical activities?
- 4) Did physical activities enhance the overall psychological well-being of elementary-level students?
- 5) How did physical activities affect elementary-level students' mental health outcomes?
- 6) Did physical activities significantly reduce stress and anxiety levels among elementary-level students?
- 7) How did physical activities influence the emotional and behavioral aspects of elementary-level students' mental health?
- 8) Were any specific types of physical activities more effective in promoting positive mental health among elementary-level students?
- 9) Did the frequency and duration of physical activities impact the mental health outcomes of elementary-level students?
- 10) How did the participation in physical activities correlate with the mental health indicators of elementary-level students?

Significance of the Study

The proposed study investigated elementary students' physical activities and mental and physical health, critical for various stakeholders, including educators, policymakers, parents/guardians, and researchers. The study's findings helped educators and school

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

administrators understand the value of physical activities in promoting students' mental and physical well-being. It assisted them in recognizing the benefits of incorporating physical activity programs into the curriculum and provided evidence-based guidelines for implementing effective interventions to improve students' overall health. Policymakers and government agencies utilized the study's findings to develop and implement policies for physical education and active living in elementary schools. The findings guided the development of evidence-based guidelines and recommendations for promoting physical activity in educational settings. The study's findings also promoted a healthy lifestyle and prevented mental health problems in elementary school students.

Delimitations of the Study

- a) The study was delimited to District Layyah Public School
- b) Students of Grades 6,7 and 8
- c) Male and Female schools

Research Design

A quantitative research design was adopted for the study. In this respect, the correlation research design was an appropriate application in the study, as it allows for the systematic collection and analysis of numerical data, hence providing an orderly objective approach to addressing the research objectives.

Rationale for Selecting Quantitative Research Design

In order to guarantee an impartial and methodical assessment of the connection between students' mental health and their participation in physical activities, the selection of a quantitative research design was the explanation responsible for this decision.

Research Methodology

Within the context of primary school pupils at a particular point in time, a correlational research method was utilized to investigate the association between engagement in physical activities and mental health outcomes.

Population of the Study

The population of this study comprised 252 male and female elementary-level public schools in District Layyah. The total number of students in the target population was 37,820, including students from Grade 6, Grade 7, and Grade 8.

Table 1 Total Number of Elementary Schools in District Layyah

Tehsil	Public Elementary Schools		
	Male	Female	Total
Layyah	50	61	111
Karor Lal Eason	36	64	100
Choubara	24	17	41
Total	110	142	252

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

There were 252 elementary schools in District Layyah, as reported by the School Information System Punjab in 2023.

Table 2 Population of students

Tehsil	Class 6 (Male)	Class6 (Female)	Class 7 (Male)	Class7 (Female)	Class8 (Male)	Class 8 (Female)	Population
Layyah	2500	2745	2750	3660	2250	2440	37820
KL Eason	2160	3520	1800	2880	1980	3200	
Choubara	1320	850	960	840	1200	765	
Total	5980	7115	5510	7380	5430	6405	

According to School Information System Punjab (2023), the total number of students (Male, Female) in Elementary schools in District Layyah was 37820.

Sample of the Study

A representative population sample was selected using a proportionate random sampling technique. The total population was 37820, and the sample size was 380 students randomly selected. The sample size was calculated for each tehsil independently using the appropriate formula, and the final sample was the sum of the sample sizes from all three tehsils.

Table 3 Sample of students Tehsil-Wise

Tehsil	Class 6 (Male)	Class6 (Female)	Class 7 (Male)	Class7 (Female)	Class8 (Male)	Class 8 (Female)	Population
Layyah	36	37	36	37	36	36	380
KL Eason	14	16	14	16	14	14	
Choubara	13	11	13	11	13	13	
Total	63	64	63	64	63	63	

Table 4 Sample Size of the Study

District	Total Students	Sample
Layyah	37820	380

Instrumentation

A customized survey questionnaire consisting of fifty items was utilized to evaluate the impact of physical activities on students' mental health. Section A contains student demographic information, and Section B, which is divided into three components, comprise the research tool. Section B-I- was related to Physical activity levels and had 20 items; Section B-II was associated with Mental Health Indicators, with 20 items; and Section B-III- was related to the Overall Perceived Impact of physical activities and mental health, with 10 items. The questionnaire consisted of validated scales and items designed to evaluate physical activity levels and mental health indicators. The survey included questions related to the frequency and type of physical activities engaged in by the students, as well as their self-reported mental health outcomes. Directions for Section B were for each statement, kindly (✓) tick the most appropriate column corresponding to your actual attitude. By ticking (✓) the column, you will show how often the following statements are factual. Select "Severely

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

Disagree" (SDA), "Disagree" (DA), "Neutral" (NO), "Agree" (AG), and "Strongly Agree" (SA) to indicate your level of agreement or disagreement with the statement.

Validity of the Instrument

Face and content validity were established to ensure the survey questionnaire's validity. A panel of experts in physical education, psychology, and research methodology reviewed the questionnaire. Some items (10, 14, 21, and 34) were revised due to grammatical errors. Their feedback was used to make necessary modifications and improvements to the questionnaire to ensure it effectively measured the intended variables.

Pilot Testing of The Instrument

A pilot test of the survey was administered to 30 elementary-level students from schools not included in the main sample. This test aimed to find any problems with the questionnaire's structure, language, or clarity before the data collection began. Revisions were made to the questionnaire to improve its validity and reliability based on comments from the pilot test.

Reliability of The Instrument

The Cronbach's alpha coefficient was utilized to evaluate the survey questionnaire's reliability. The test found that the items on the questionnaire were internally consistent when measuring the notions of mental health and physical exercise. If the Cronbach's alpha value is high—typically greater than 0.7—then the instrument is reliable.

Data Collection

The data was collected through structured questionnaires administered to the selected elementary students. The questionnaires were administered in schools during school hours by the trained personnel conducting the research. The children were assured that their responses would be treated with confidentiality, and therefore, they should be candid to provide actual responses.

Analysis of Data

Descriptive and inferential statistics, among others, were used to examine the data. The frequency distribution, standard deviation, and mean are all descriptive statistics employed to summarize data. Using suitable statistical tests of inference, such as correlation analysis, we investigated the connections between primary school kids' levels of physical activity and their mental health outcomes. A significance criterion of $p < 0.05$ has been established for all statistical tests. The data were presented in a way that was easy to comprehend and analyze, using tables and charts. Based on the findings, conclusions were formed regarding the research questions.

Table 5 Demographic information

Sr. No	Statement	Options	Frequency	Percent	Mean
1	Student Grades	Six (Male)	63	16.6	3.4895
		Six (Female)	64	16.8	
		Seven (Male)	63	16.6	
		Seven (Female)	67	17.6	

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

		Eight (Male)	60	15.8	
		Eight (Female)	63	16.6	
		Total	380	100.0	
2	Institution Sector	Public	380	100.0	1.0000
		Total	380	100.0	
3	Student Gender	Male	189	49.7	1.5026
		Female	191	50.3	
		Total	380	100.0	
4	School Location	Urban	198	52.1	1.478947
		Rural	182	47.9	
		Total	380	100.0	

Table 5 displays the distribution of students according to their grade level. The results displayed in Statement 1 indicate 63 (16.6%) male respondents for Grade Six and 64 (16.8%) female respondents. There were 63 male responders (16.6%) and 67 female respondents (17.6%) for Grade 7. Of the responders, 60 were male, and 16.6% were female in eighth grade. There is a wide range in gender and grade level representation among the 380 responders shown in the table. With a mean score of 3.4895, the grades appeared to be evenly distributed. The second statement dealt with allocating institutions according to whether they were public or private. The entire sample of 380 respondents (or 100%) worked for the government. Scores averaged out at 1.0000. The third statement dealt with the gender of the students. Of 380 participants, 189 were male students (49.7%) and 191 were female (50.3%). A mean score of 1.5026 was computed based on the distribution of genders. The fourth statement dealt with the question of whether the schools were located in rural or urban areas. In a sample of 380 pupils, 198 (or 52.1% of the total) attended schools in urban areas, while 182 (or 47.9%) attended schools in rural areas. A mean score of 1.4789 was recorded.

Table 6 Location-wise Analysis for Factor (1) Physical Activity Levels, Factor (2) Mental Health Indicators, and Factor (3) Overall Perceived Impact

Variable	Group	N	Mean	SD	Df	t-value	p-value
Factor 1 Physical activity levels	Rural	198	4.0846	.27590	378	0.622	0.535
	Urban	182	4.1036	.31888			
Factor 2 Mental Health Indicators	Rural	198	4.1121	.23983	378	0.669	0.504
	Urban	182	4.0953	.24962			
Factor 3 Overall Perceived Impact	Rural	198	4.1202	.36440	378	0.091	.928
	Urban	182	4.1236	.37067			

A comparison of the means of Factor (1) scores between two groups depending on school location (Rural and Urban) is shown in Table 6, the results of an independent samples test. Group statistics, a t-test for equality of means and variances, and Levene's test for equality of variances were all included in the table. A two-tailed p-value of 0.535 was produced using a t-value of -0.622 with 378 degrees of freedom, presuming equal variances. This indicated that

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

the rural and urban groups did not differ significantly in their mean score on Factor (1). A two-tailed p-value of 0.504 was produced by a t-value of 0.669 with 378 degrees of freedom, presuming equal variances for component (2). This indicated that the rural and urban groups did not differ significantly in terms of the mean scores of variables (2). A t-value of -0.091 with 378 degrees of freedom and a two-tailed p-value of 0.928 was produced by assuming equal variances for factor (3). The means of Factor (3) scores appeared not significantly different between the urban and rural groups.

Table 7 Gender-wise Analysis for Factor (1) Physical Activity Levels, Factor (2) Mental Health Indicators, and Factor (3) Overall Perceived Impact

Variable	Group	N	Mean	SD	Df	t-value	p-value
Factor 1 Physical activity levels	Male	189	4.1082	.27986	378	.948	.344
	Female	191	4.0793	.31314			
Factor 2 Mental Health Indicators	Male	189	4.0955	.24066	378	.680	.497
	Female	191	4.1126	.24836			
Factor 3 Overall Perceived Impact	Male	189	4.1021	.34671	378	1.043	.298
	Female	191	4.1414	.38582			

There were two groups (Male and Female), and Table 7 shows the results of independent samples t-tests comparing the means of three components (Factor 1, Factor 2, and Factor 3). The table contained data from the t-tests and information about the variables and group statistics. With 378 degrees of freedom, the t-value for factor 1 (Physical activity levels) was 0.948, and the two-tailed p-value was 0.344. This indicated that the means of the Factor 1 score for the male and female groups were not significantly different. The same reasoning applied to Factor 3, which had a t-value of 1.043 and a p-value of 0.497, and to Factor 2, which had a t-value of 0.680.

Table 8 Analysis of Variance for Factor (1) Physical Activity Levels, Factor (2) Mental Health Indicators, and Factor (3) Overall Perceived Impact

		Sum of Squares	df	Mean Square	F	Sig.
Factor 1 Physical activity levels	Between Groups	1.808	4	.452	5.358	.000
	Within Groups	31.627	375	.084		
	Total	33.435	379			
Factor 2 Mental Health Indicators	Between Groups	.247	4	.062	1.034	.389
	Within Groups	22.389	375	.060		
	Total	22.636	379			
Factor 3 Overall Perceived Impact	Between Groups	4.321	4	1.080	8.674	.000
	Within Groups	46.707	375	.125		
	Total	51.029	379			

Table 8 presented the results of an Analysis of Variance (ANOVA) for three factors: Factor 1 (Physical activity levels), Factor 2 (Mental Health Indicators), and Factor 3 (Overall Perceived Impact). The ANOVA assessed the variation in means among different groups. For Factor 1

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

(Physical activity levels), the significant F-statistic (5.358) with a p-value of .000 indicates a significant difference in means between groups. For Factor 2 (Mental Health Indicators), the non-significant F-statistic (1.034) with a p-value of .389 suggests no significant difference in means between groups. For Factor 3 (Overall Perceived Impact), the considerable F-statistic (8.674) with a p-value of .000 indicated a significant difference in means between groups. These results suggested substantial differences in the means of Factor 1 and Factor 3 across groups, while Factor 2 had no significant difference.

Posterior Distribution Characterization for Pairwise Correlations

The wise correlation presented here

Table 9 Posterior Distribution Characterization for Pairwise Correlations ^a

			Mean	Gender	Class	School Location
Mean	Posterior	Mode		.008	.234	.004
		Mean		.008	.232	.004
		Variance		.003	.002	.003
	N		380	380	380	380
Gender	Posterior	Mode	.008		.091	.216
		Mean	.008		.090	.214
		Variance	.003		.003	.002
	N		380	380	380	380
Class	Posterior	Mode	.234	.091		.164
		Mean	.232	.090		.163
		Variance	.002	.003		.002
	N		380	380	380	380
School Location	Posterior	Mode	.004	.216	.164	
		Mean	.004	.214	.163	
		Variance	.003	.002	.002	
	N		380	380	380	380

a. The analyses assume reference priors ($c = 0$).

Table 9 provided the characterization of the posterior distribution for pairwise correlations between different variables (Mean, Gender, Class, and School Location). The posterior mean of the correlation between Gender and Class was .091, and the mode was .090, with a variance of .003. These values described the estimated relationship between Gender and Class based on the analysis assuming reference priors. The correlations between Mean and Gender, Mean and Class, Mean and School Location, and similarly for other pairs, were characterized. The table provides information about the estimated correlations, their variability (variance), and the number of observations used in the analysis for each pair of variables.

Conclusions

The study on the effectiveness of physical activities in enhancing the mental well-being of primary school students yields diverse outcomes. Most respondents strongly feel that engaging in physical activities is closely linked to several elements of mental well-being. These elements include the elevation of mood, the handling of stress, and the enhancement

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

of self-confidence. The study emphasizes the potential of physical activities as an enjoyable pastime and a strategic instrument for addressing widespread mental health issues when combined with other activities. The results underscore the need for personalized treatments considering people's physical exercise preferences. The recommended solutions advocate for integrating comprehensive physical activity programs into the school curriculum, community initiatives, and wellness programs in the workplace. The suggested initiatives aim to develop a conducive environment, considering the intrinsic link between physical exercise and positive mental health results. These results provide a foundation for future research and informed policy-making, facilitating the development of a comprehensive approach to well-being in educational environments. The scholarly community is actively exploring the profound correlation between physical activities and the mental well-being of primary school students.

Discussions

A study by Ratey (2008) has shown a direct link between physical activity and the release of endorphins, which contribute to mood enhancement. The surveyed responses align with these findings, indicating that elementary students experience improved mood through engagement in physical activities—a study conducted by Salmon (2001) highlighted the stress-reducing effects of physical activities in children. The majority agreement regarding stress and anxiety management through physical activity underscores the consistency of these findings in the elementary school context. Findings related to physical activity positively influencing schoolwork and focus align with research conducted by Castelli et al. (2014). Their study demonstrated that regular physical activity positively correlates with improved academic performance and cognitive function in elementary school students. The notion that increasing physical activity levels can help reduce mental health issues among students corresponds with studies such as the one conducted by (Tamminen et al., 2020). Their research highlights the preventive role of physical activity in mental health issues, emphasizing its importance from an early age. The call for enhanced physical activity integration in school curricula resonates with studies advocating for school-based interventions. Castelli et al. (2014) emphasize the effectiveness of school-based physical activity programs in promoting overall health and well-being in children. The suggestion to prioritize physical activities in workplace wellness programs aligns with broader societal perspectives. Studies like those by Peluso Andrade (2005) emphasize the importance of societal support and policies in promoting physical activities for mental well-being.

Recommendations

1. Develop and execute an all-inclusive well-being program where physical activities will be integrated into the academic curriculum to support the students to develop holistically.
2. Start awareness campaigns that could expose the vital effects of regular physical activities on students' academic performance and mental health to the students themselves, parents, and teachers.
3. Encourage educators to include short physical activities within lesson plans to foster active learning and increase physical and mental well-being.

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

4. Develop facilities in and around educative institutions for physical activities and ensure that the learner has easy access to conducting activities and play.
5. Establish partnerships with certified professional physical educators to design special programs that can be implemented for the entire student population so that all differences are taken care of.
6. Incorporate co-curricular activities or provisions to keep learners involved in physical activity at all times, thus meeting the different interests of learners. Examples include sports clubs, dancing clubs, and outdoor adventure groups.
7. Mental health awareness workshops for students and coping strategies, with special emphasis on inculcating how physical activities contribute to positive mood development.
8. Engaging parents for well-being by conducting an informative session on how parents can support physical and mental needs and lead by example for their children.
9. Developing and implementing interdisciplinary well-being committees comprising educators, mental health professionals, and physical activities experts to design and implement well-being programs.
10. Make arrangements for facilities and provide instructions on doing physical exercises back home so that the students are influenced to lead an active life outside of school.
11. Conduct periodic measurements of students' well-being, covering academic performance and various natures of mental health, to measure the effectiveness of well-being programs.
12. Introduce activities as part of the regular school day, like yoga and meditation practices, to relax and reduce student stress.
13. Create a culture of physical exercise in school where exercise is fun and appreciated.
14. Explore flexible scheduling, where students can access physical exercises without compromising their academic needs.
15. Mental health support should be readily available at school to counsel and guide students experiencing emotional challenges.

References

1. Castelli, D., Centeio, E., Hwang, J., Barcelona, J., Glowacki, E., Calvert, H., & Nicksic, H. (2014). VII. The history of physical activity and academic performance research: Informing the future. *Monographs of the Society for Research in Child Development*, 79, 119–148. <https://doi.org/10.1111/mono.12133>
2. Ginsburg, (2007). The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds. *Pediatrics*, 119(1), 182–191. <https://doi.org/10.1542/peds.2006-2697>
3. Johnson, T. G., & Turner, L. (2016). The Physical Activity Movement and the Definition of Physical Education. *Journal of Physical Education, Recreation & Dance*, 87(4), 8–10. <https://doi.org/10.1080/07303084.2016.1142192>
4. Li, B., Ng, K., Tong, X., Zhou, X., Ye, J., & Yu, J. J. (2023). Physical activity and mental health in children and youth during COVID-19: a systematic review and meta-analysis. In *Child and Adolescent Psychiatry and Mental Health* (Vol. 17, Issue 1). BioMed Central Ltd. <https://doi.org/10.1186/s13034-023-00629-4>
5. Li, J., Huang, Z., Si, W., & Shao, T. (2022). The Effects of Physical Activity on Positive Emotions in Children and Adolescents: A Systematic Review and Meta-Analysis. In *International*

Physical Activity as a Tool for Promoting Mental Health in Elementary Education

- Journal of Environmental Research and Public Health* (Vol. 19, Issue 21). MDPI. <https://doi.org/10.3390/ijerph192114185>
6. Mahindru, A., Patil, P., & Agrawal, V. (2023). Role of Physical Activity on Mental Health and Well-Being: A Review. *Cureus*. <https://doi.org/10.7759/cureus.33475>
 7. Peluso, M. A. M., & Andrade, L. H. S. G. de. (2005). PHYSICAL ACTIVITY AND MENTAL HEALTH: THE ASSOCIATION BETWEEN EXERCISE AND MOOD. *Clinics*, 60(1), 61–70. <https://doi.org/10.1590/S1807-59322005000100012>
 8. Piñeiro-Cossio, J., Fernández-Martínez, A., Nuviala, A., & Pérez-Ordás, R. (2021). Psychological wellbeing in physical education and school sports: A systematic review. In *International Journal of Environmental Research and Public Health* (Vol. 18, Issue 3, pp. 1–16). MDPI AG. <https://doi.org/10.3390/ijerph18030864>
 9. Ratey, J. J. (2008). Spark: The revolutionary new science of exercise and the brain. In E. Hagerman (Ed.), *Spark: The revolutionary new science of exercise and the brain*. Little, Brown and Co.
 10. Salmon, P. (2001). Effects of physical exercise on anxiety, depression, and sensitivity to stress. *Clinical Psychology Review*, 21(1), 33–61. [https://doi.org/10.1016/S0272-7358\(99\)00032-X](https://doi.org/10.1016/S0272-7358(99)00032-X)