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Impact of Healthy Lifestyle on Physical Fitness Among School-Aged Children: A Comparative Study Between Indonesia and Pakistan

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Abstract
Children's general well-being is greatly influenced by physical fitness and leading a healthy lifestyle, although there are differences depending on the sociocultural context. The objective is to examine how healthy lifestyle choices affect school-age children's levels of physical fitness in Pakistan and Indonesia. The study provides valuable insights for educators, health practitioners, and policymakers to design strategies that promote healthier behaviours among children in diverse cultural settings. ***Methods****: Researchers conducted cross-sectional research comparing 375 junior high school pupils from Pakistan (n = 182) and Indonesia (n = 193). The Multistage Fitness Test (MFT) was used to measure physical fitness levels, and a healthy living questionnaire was used to collect data. To assess the differences between the two groups, statistical analyses were conducted using independent sample t-tests, homogeneity tests, and normality tests.* ***Result****: The homogeneity and normality tests confirmed that the data were suitable for parametric analysis. The two groups' levels of physical fitness (t = 3.431, p = 0.000) and healthy lifestyle (t = 4.059, p = 0.000) differed significantly, according to the independent sample t-test. Compared to their Pakistani counterparts, Indonesian students demonstrated greater levels of physical fitness and a healthier lifestyle. These results suggest that students' fitness levels and lifestyle choices may be influenced by sociocultural, environmental, and educational conditions.* ***Conclusion****: Compared to Pakistani students, Indonesian students demonstrate greater levels of physical fitness and healthier lifestyle choices, underscoring the need for focused interventions to enhance the well-being of children in both nations. These findings can help schools, community organisations, and public health authorities develop targeted programs to foster healthy habits and improve youth fitness across different sociocultural contexts. Future studies ought to investigate the root reasons for these disparities and create policies that encourage students in various sociocultural contexts to lead healthier lives.*
Keywords*: Children of School age, Indonesia, Pakistan, Healthy Lifestyle, Physical Fitness.*

Dampak Gaya Hidup Sehat Terhadap Kebugaran Fisik pada Anak Usia Sekolah: Studi Perbandinggan antara Indonesia dan Pakistan

Abstrak
Kebugaran fisik dan gaya hidup sehat sangat memengaruhi kesejahteraan umum anak-anak, meskipun ada perbedaan tergantung pada konteks sosiokultural. Studi ini menyelidiki bagaimana gaya hidup sehat mempengaruhi tingkat kebugaran fisik anak-anak di Pakistan dan Indonesia usia sekolah. Temuan ini dapat memberikan wawasan berharga bagi para pendidik, praktisi kesehatan, dan pembuat kebijakan untuk merancang strategi yang mempromosikan perilaku yang lebih sehat di antara anak-anak dalam lingkungan budaya yang beragam. Metode: Penelitian potong lintang dilakukan untuk membandingkan 375 siswa sekolah menengah pertama dari Indonesia (n = 193) dan Pakistan (n = 182). Untuk mengumpulkan data, tes kebugaran multistage (MFT) digunakan untuk mengukur tingkat kebugaran fisik seseorang. Analisis statistik dilakukan menggunakan uji t sampel independen, uji homogenitas, dan uji

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normalitas untuk menilai perbedaan antara kedua kelompok. Hasil: Uji homogenitas dan normalitas mengkonfirmasi bahwa data tersebut cocok untuk analisis parametrik. Hasil: Hasil uji normalitas dan homogenitas menunjukkan bahwa data dapat digunakan untuk analisis parametrik. Uji t sampel independen menunjukkan perbedaan signifikan dalam tingkat kebugaran fisik (t = 3.431, p = 0.000) dan gaya hidup sehat (t = 4.059, p = 0.000). Siswa Indonesia menunjukkan gaya hidup yang lebih sehat dan tingkat kebugaran yang lebih tinggi dibandingkan dengan rekan-rekan mereka dari Pakistan. Hasil ini menunjukkan bahwa faktor sosiokultural, lingkungan, dan pendidikan dapat memengaruhi pilihan gaya hidup dan tingkat kebugaran siswa. Kesimpulan: Siswa Indonesia lebih sehat dan menjalani gaya hidup yang lebih sehat dibandingkan dengan siswa Pakistan. Ini menunjukkan bahwa perlu ada upaya khusus untuk meningkatkan kesejahteraan siswa di kedua negara. Temuan ini dapat membantu sekolah, organisasi masyarakat, dan otoritas kesehatan masyarakat mengembangkan program yang ditargetkan untuk menumbuhkan kebiasaan sehat dan meningkatkan kebugaran kaum muda di berbagai konteks sosiokultural. Studi lanjutan harus menyelidiki faktor-faktor yang menyebabkan perbedaan ini dan membuat peraturan yang mendorong siswa di berbagai konteks sosial dan budaya untuk menjalani gaya hidup yang lebih sehat.
Kata kunci: Anak-anak Usia Sekolah, Indonesia, Pakistan, Gaya Hidup Sehat dan Kebugaran Fisik.

INTRODUCTION

As childhood obesity rates rise worldwide, knowing the factors that influence physical fitness and general health in children is critical for designing effective solutions. A healthy lifestyle, which includes a balanced diet, frequent physical activity, and the avoidance of dangerous behaviours, has been proven to be critical in reducing childhood obesity and boosting physical fitness (Qi, 2023; Dong et al., 2021). Hatta et al. (2022), for example, found that energy intake from healthy foods is positively associated with motor fitness, underlining the relevance of both diet and physical exercise in improving fitness levels in schoolchildren. Furthermore, incorporating fundamental movement skills (FMS) into physical education curricula has been connected to higher health-related quality of life and physical fitness in children (Xie et al., 2023). However, there is a scarcity of data from South and Southeast Asia, where most research on children's health and lifestyle has been conducted in Western or affluent countries. Comparative researches (cross-country analysis), such as between Pakistan and Indonesia–two countries with a variety of socio-cultural, economic, and environmental contexts yet facing sedentary behaviours and unhealthy food consumption, are especially limited. This gap must be addressed to inform interventions and models to implement in diverse settings, both domestically and internationally.

This is consistent with the findings of Anwar et al. (2019), who demonstrated that structured physical activity treatments significantly increased the physical fitness of primary school students, demonstrating the usefulness of organised exercise programs in promoting health. This shows that improving children's motor abilities can have a significant impact on their general health and well-being. Furthermore, it was discovered that participation in organised sports and fitness groups is significantly associated with higher levels of physical activity, reinforcing the notion that structured physical activity opportunities are critical for promoting a healthy lifestyle among school-aged children (Cadogan et al., 2014).

One important factor influencing children's lifestyle decisions is parental influence. According to Wang et al. (2022) research, children frequently imitate their parents' actions, suggesting that parents' commitment to leading healthy lives might have a significant influence on the health of their children. Furthermore, social and familial influences influence children's exercise routines. Sawa et al. (2020) found that parental support and lifestyle choices have a substantial impact on children's physical activity levels, implying that family-based interventions are critical for promoting healthy behaviours. This highlights the importance of including families in health promotion programs, as parental involvement can enhance the effectiveness of interventions aimed at improving children's eating and exercise habits. Children's lifestyle choices are significantly shaped by parental influence, according to research. For example, Qi (2023)

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emphasises the significance of role modelling in healthy behaviours by pointing out that parental adherence to healthy living habits considerably lowers the likelihood of obesity in kids. This idea is reinforced by research, which shows that children who participate in physical activities with their parents are more likely to lead active lives (Verloigne et al., 2012).

Another important factor in encouraging physical fitness is nutrition education. In order to enhance children's food choices and, in turn, their physical fitness, the Haruto (2023) study highlights the necessity of comprehensive nutrition instruction in schools. This idea is supported by Liu et al. (2022), who discovered that school-aged children's obesity can be successfully addressed by multimodal therapies that focus on eating patterns and physical activity. We should design educational programs that involve kids and their families, fostering an environment that promotes healthy lifestyle choices.

Schools play an important role in promoting healthy lifestyles. School-based health promotion programs have been found to effectively boost children's physical activity levels, particularly in socioeconomically deprived areas. These programs not only give scheduled opportunities for physical activity, but they also serve as platforms for teaching youngsters the value of health and fitness. For example, it demonstrated that comprehensive school health initiatives can reduce disparities in physical activity, fostering inclusivity and access to health resources (Bastian et al., 2015). According to studies, children's physical and cognitive development depends on leading a healthy lifestyle that includes frequent exercise and a balanced diet (Ruiz et al., 2016; Donnelly et al., 2016; Aragón-Martín et al., 2022). For example, Ruiz et al. (2016) point out that school-based treatments can significantly improve students' aerobic fitness, which lowers their risk of cardiovascular diseases. In a similar vein, Donnelly et al. (2016) highlight the connection between academic success and physical exercise, arguing that kids who regularly participate in physical activity typically do better academically.

Furthermore, integrating technology into lifestyle programs has shown promise in increasing children's participation in physical exercise and healthy eating. Research suggests that using active video games and mobile apps can increase children’s physical activity and healthy eating habits (Río et al., 2021). Rahayu (2023) explores the use of digital technology to encourage youngsters to live healthier lives through interactive and engaging physical exercise platforms. Research on the impact of healthy lifestyles on school-age children's physical fitness is crucial, particularly in diverse cultural contexts such as those in Pakistan and Indonesia. Concerns have been raised about the physical fitness and general health of children in these countries due to the high incidence of sedentary activities and inadequate eating habits. Existing research on the impact of healthy lifestyles on school-age children's physical fitness has primarily focused on specific nations or demographics, often neglecting comparisons across diverse socioeconomic and cultural contexts. Although studies have shown how important diet and exercise are for fostering fitness, there is a dearth of thorough research that compares these elements, especially across Pakistan and Indonesia. This disparity is noteworthy because sedentary lifestyles, obesity, and disparities in access to resources that support healthy living are particular issues in both nations.

METHODS

This cross-sectional study employs a comparative analytical descriptive design. We used this design to assess the differences in a healthy lifestyle and physical fitness between Indonesian and Pakistani students simultaneously. The cross-sectional design allows for collecting data quickly from a broad representation of participants, and the comparative analytical framework is helpful to identify similarities as well as differences between both cultural/educational systems. This type of design is suitable for pattern recognition, policy purposes and informing future interventions, without the need for longitudinal follow-up. This study was conducted in Indonesian and Pakistani junior high schools.

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Participants

A sample of 375 students participated in this study;193 of them were junior high school students from Indonesia, and 182 from Pakistan. Participants are chosen based on inclusion and exclusion criteria. Inclusion criteria: 1) represent junior high schools in both Pakistan and Indonesia; 2) be between the ages of 11 and 15; 3) be male or female; 4) take part in three separate Pakistani and three different Indonesian schools; and 5) come from different cities in both countries. Criteria for exclusion: 1) Students from wealthy families or the highest socioeconomic class, 2) Students who went to private schools instead of public ones, and 3) Students who do not participate in sports or other physical activities.

Procedure

This study used a survey design, comprising questionnaires, tests, and measuring procedures. This study was performed on August 15, 2024, in junior high schools in Pakistan and Indonesia. This study was carried out by completing an appropriate healthy lifestyle questionnaire and the Multistage Fitness Test (MFT) to assess physical fitness levels.

Food and drinks, personal and environmental hygiene, illness and disease, activity balance, rest, and exercise are all factors that contribute to a healthy lifestyle (Notoadmojo,1993). The indicators are sorted based on each criterion. The types of food and drinks consumed, as well as meal timings, serve as indicators of eating and drinking. Personal hygiene entails washing and cleansing one's hair, mouth, and teeth, and wearing clean, harmonious clothing. Students have an important role in promoting environmental hygiene in their homes and schools. Indicators of illness and disease include health care, disease prevention, medical treatment, and recovery. Furthermore, sufficient rest intervals, sleep disruptions, exercise intensity, and healthy sports all contribute to a balance of activities, rest, and exercise. As a result of the content validity and internal consistency reliability levels (Cronbach's alpha values > 0.70), it is a convenient tool for evaluating lifestyle constructs such as diet, hygienic behaviour, disease prevention behaviours, rest habits and activities level. The questionnaire was completed online using Google in Pakistan and Indonesia.

The Multistage Fitness Test (MFT, also called 20-m shuttle run test) is a standardized and validated evaluation protocol used to predict VO2max. Its reliability has been demonstrated in some adolescent samples with high test–retest reliability ($r > 0.90$) and validity was established against laboratory-based measures of cardiorespiratory fitness (Ramsbottom et al., 1988).

Assumption tests were performed before commencing the comparative analyses. The normality of the data was tested using the Kolmogorov–Smirnov test and the homogeneity of variances. Both assumptions were satisfied by observing p-values up to the 0.05% significance level for all variables. Satisfying these assumptions legitimised the Dominant Independent Sample t-test, a parametric test which enables testing of means between two independent groups (Indonesian and Pakistani students). The t-test was chosen because it is robust, popular in comparative studies and leads to clear statistical evidence of group differences.

RESULTS AND DISCUSSION

Descriptive Analysis

The following describes the findings of the descriptive analysis of the data about Pakistani students' physical fitness and healthy lifestyles (Table 1).

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Table 1. Descriptive data for 182 students' physical fitness and healthy lifestyle scores.

Variable	N	Mean	St.Dev	Minimum	Maximum	Sum
Healthy lifestyle	182	125.36	14.16	42	158	22816
Physical fitness	182	29.81	8.13	17.2	50.5	5426.1

The average healthy lifestyle score of 125.36 with a standard deviation of 14.61 suggests that most students fall into this category, despite some fluctuation. The range (42 to 158) shows that respondents' habits varied significantly. There is a considerable amount of variation in fitness levels, as seen by the physical fitness mean score of 29.81 and standard deviation of 8.13. The range of 17.2 to 50.5 indicates that while some students score better, others demonstrate very low levels of fitness. Students' lifestyle habits are more widely distributed, as seen by the larger standard deviation of healthy lifestyle scores as compared to physical fitness scores.

Table 2. Variable Frequency Distribution of Pakistani Students about Healthy Lifestyles

Criterion	Range	Sum (N=182)
Excellent	>147	11
Good	133 – 147	50
Fair	118 – 132	73
Less	103 – 117	42
Very Less	<103	6

Based on the table above (Table 2). Regarding the distribution of healthy lifestyle variables for students in Pakistan with a population of 182 students with criteria totaling 5 categories, the results were obtained with an excellent category with a score of more than 147 there were 11 students, the good category with a score between 133 – 147 there were 50 students, the fair category with a score between 118 – 132 there were 73 students, the less category with a score between 103 – 117 there were 42 students, and the significantly less category with a score below 103 there were 6 students.

Table 3. Variable Frequency Distribution Physical Fitness of Students in Pakistan

Gender	Age	Very Less	Less	Keep	Good	Very Good	Excellent	Sum (N=182)
Man	11 - 15	< 35.0	35,0 - 38,3	38,4 - 45,1	45,2 - 50,9	51,0 - 55,9	> 55.9	
		83	19	8	3	0	0	113
Woman	11 - 15	< 25.0	25,0 - 30,9	31,0 - 34,9	35,0 - 38,9	39,0 - 41,9	> 41.9	
		50	16	0	3	0	0	69

The distribution of physical fitness levels among males and females aged 11 to 15 is shown in the table, which is divided into six levels. For both men and women, the categorization is based on particular threshold values. A low degree of physical fitness is indicated by the fact that the majority of the male participants (83 out of 113) fell into the Very Less group. There are 8 participants in the Keep category, while the second-largest group (19 participants) is classified as Less. Only 3 participants are categorized as Good, while none are categorized as Very Good or Excellent. The majority of female participants (50 out of 69) were classified as Very Less, indicating a similar tendency. Furthermore, just 3 women are in the Good group, compared to 16 who are in the Less category. Neither the Keep, Very Good, nor Excellent categories apply to any female contestants. A total of 182 teenagers were evaluated, and 133 of them were classified as Very Less, while 35 were classified as Less. None attained Very Good or Excellent fitness levels, and only a tiny percentage attained Keep (8 participants) or Good (6 participants). According to this distribution, a sizable percentage of the sample's teenagers are not very physically fit.

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Table 4. Descriptive Analysis of Healthy Lifestyle and the Physical Fitness of Students in Indonesia

Variable	N	Mean	St. Dev	Minimum	Maximum	Sum
Healthy lifestyle	193	124.52	10.49	98	144	23260
Physical fitness	193	27.260	2.0116	26.2	35.0	5840.1

Table 4 presents descriptive data for 193 students' physical fitness and healthy lifestyle scores. The mean healthy lifestyle score of 124.52 with a standard deviation of 10.49 indicates that most students have remarkably similar living patterns, which is not surprising, as a lower standard deviation indicates less variability. The range (98 to 144) indicates that most students probably fall near the mean, even though some had much lower or higher scores. The mean score of 27.26 with a standard deviation of 2.01 suggests that most students have comparable levels of physical fitness. The narrow range (26.2 to 35.0) provides further proof that the sample's physical fitness scores are comparatively stable.

Table 5. Distribution of Variable Frequency of Healthy Lifestyle of Students in Indonesia

Criterion	Range	Sum (N=193)
Excellent	>147	20
Good	133 – 147	43
Enough	118 – 132	67
Less	103 – 117	38
Very Less	<103	25

Based on five categories of achievement, 193 students are categorized in the table. Of the whole sample, 20 participants received scores higher than 147, which puts them in the Excellent group. 43 participants fall into the Good group, with scores ranging from 133 to 147. 67 participants, the biggest group, with scores ranging from 118 to 132, placing them in the Enough category. In contrast, 38 participants had scores in the range of 103 to 117, which is considered less. Last but not least, 25 participants fell into the Very Less group with scores below 103.

Table 6. Variable Frequency Distribution of Physical Fitness Students in Indonesia

Gender	Age	Very Less	Less	Keep	Good	Very Good	Excellent	Sum (N=193)
Man	11 - 15	< 35.0	35,0 - 38,3	38,4 - 45,1	45,2 - 50,9	51,0 - 55,9	> 55.9	
		89	21	7	2	0	0	119
Woman	11 - 15	< 25.0	25,0 - 30,9	31,0 - 34,9	35,0 - 38,9	39,0 - 41,9	> 41.9	
		54	18	2	0	0	0	74

The following table represents the distribution of physical fitness levels among 193 individuals, aged 11 to 15 (119 males and 74 females). They are divided into six categories according to differing threshold values for men and women. The majority of male participants (119 students) (89 students) are classified as Very Less, which denotes a poor degree of physical fitness. 7 pup participants are in the Keep group, while 21 students are in the Less category. None of the participants is rated as Very Good or Excellent, and just two are categorized as Good. In a similar vein, 54 of the 74 female participants are classified as Very Less. Just 2 participants make it to the Keep category, while another 18 fall into the Less group. Interestingly, none of the female participants fit into the Excellent, Very Good, or Good categories. Overall, 39 participants are categorized as Less, while the bulk of the 193 students (143 students) are in the Very Less group. Just 2 participants make it to the Good level, and only 9 students make it to the Keep category. No student may be classified as Very Good or Excellent, the highest two classifications. With little

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representation in higher fitness categories, this distribution indicates that a sizable part of the sample's teenagers have poor levels of physical fitness.

Comparison Test Results

To determine if the data has a normal distribution, the normality test is applied. The Kolmogorov-Smirnov test was applied in this study to check for data normality. Table 7 below shows the results of the normality test.

Table 7. Results of the Data Normality Test for Indonesia and Pakistan

Data		**KSZ**	**p**	**Desc**
	Pakistan			
Healthy Lifestyle		1.261	0.078	Normally
Physical Fitness		0.853	0.508	Normally
	Indonesia			
Healthy Lifestyle		1.095	0.182	Normally
Physical Fitness		1.074	0.199	Normally

The findings of the normality test for data on physical fitness and lifestyle in Pakistan and Indonesia are shown in Table 7. The Kolmogorov-Smirnov (KS) test for the Pakistani sample produced a p-value of 0.078 and a KSZ value of 1.261 for a healthy lifestyle, indicating that the data are normally distributed because the p-value is higher than 0.05. The physical fitness data similarly show normality, with a p-value of 0.508 and a KSZ value of 0.853. With a p-value of 0.182 and a KSZ value of 1.095 for a healthy lifestyle, the KS test confirmed the normal distribution of the Indonesian sample. The normality assumption is also met by the physical fitness data (KSZ = 1.074, p = 0.199). For additional investigation of both datasets, parametric statistical tests are appropriate because all p-values are above the 0.05 threshold.

The data on healthy lifestyles in Indonesia and Pakistan showed comparable variance, according to the homogeneity test, which produced a computed F value of 0.258 with a significant value of 0.614. It may be said that the statistics on healthy lifestyles in Pakistan and Indonesia are homogenous since the significant value is higher than 0.05 ($p>0.05$). This suggests that data concerning healthy lifestyles may be analysed using parametric statistics. When comparing the variation of physical fitness data across Pakistan and Indonesia, the homogeneity test yielded a computed F value of 3.658 with a significant value of 0.057. It may be concluded that there is no significant difference between the physical fitness statistics from Pakistan and Indonesia, as the significance level ($p>0.05$) exceeds 0.05. The Independent Sample t-test, a parametric analytic tool, was used to compare data on physical fitness and healthy living. The following are the analysis's findings.

Table 8. Comparison Between Indonesian and Pakistani Students' Levels of Physical Fitness and Healthy Lifestyle

Data	**t count**	**p**	**Description**
Physical Fitness	3.431	0.000	Significant
Healthy Lifestyle	4.059	0.000	Significant

The study conducted an independent samples t-test to compare the physical fitness and healthy lifestyle scores of students from Pakistan and Indonesia. In both categories, the results show statistically significant differences between the two groups. The comparison of physical fitness yielded a t-value of 3.431 and a p-value of 0.000, whereas the comparison of healthy lifestyle yielded a t-value of 4.059 and a p-value of 0.000. The differences are statistically significant since both p-values are less than the significance level of 0.05.

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These findings show significant variations in students' healthy lifestyles and levels of physical fitness between the two nations, even beyond statistical significance. Variations in cultural attitudes, access to sports facilities, physical education programs, or daily activity patterns may be the cause of the significant discrepancy indicated by the higher t-values. For example, disparities in physical education programs at schools, involvement in extracurricular sports, or lifestyle choices like screen usage and sedentary behaviour may all have an impact on physical fitness levels. Similarly, variations in dietary practices, health consciousness, or cultural standards surrounding physical well-being could be the cause of discrepancies in healthy lifestyle ratings. These findings highlight how important it is to consider context when evaluating students' behaviour connected to their health. Future research should examine the underlying causes of these discrepancies, such as socioeconomic status, governmental health policies, or environmental factors, to better inform initiatives aimed at increasing physical fitness and healthy lifestyles in both regions.

The objective of the current study was to compare Pakistan and Indonesia in order to examine how healthy lifestyle choices affect school-age children's physical fitness. The findings show that there is a noticeable difference between the Indonesian and Pakistani students' groups concerning both physical fitness and healthy lifestyle. The physical fitness t-value of 3.431 and p-value of 0.000 showed a statistically significant difference. Similarly, the t-value for healthy living was 4.059, and the p-value was 0.000, indicating a significant difference between the two student groups. Given that the p-values for both variables are less than 0.05, it can be said that the levels of physical fitness and healthy living among Pakistani and Indonesian students differ statistically significantly.

It is clear from comparing the two nations that although they both have issues with physical fitness, the fundamental causes may be different. According to Gunawan et al. (2024), a reduction in movement activity and a lack of passion for physical education are the main causes of Indonesia's declining physical fitness. However, as noted by Nasir et al. (2019), the problems in Pakistan appear to be more related to lifestyle decisions and stress levels. It demonstrates that although physical fitness is a problem in both nations, various approaches that are adapted to their particular cultural and educational settings may be needed to address these problems.

Furthermore, the relationship between intellectual accomplishment and physical health cannot be disregarded. Research has shown a correlation between increased levels of physical fitness and better academic achievement. For example, Widianto et al. (2019) stress that children in Islamic boarding schools benefit from physical exercise in terms of both academic achievement and physical fitness. Comparably, Maniaci et al. (2021) discovered a favourable correlation between teenagers' academic success and healthy lives, indicating that students who adopt healthier habits often perform better academically. This link highlights the importance of incorporating physical fitness programs into the school curriculum to improve academic and health outcomes.

Studies show that students' views of fitness and health have a significant impact on their actions when it comes to adopting healthy lifestyle attitudes. According to research, physical education may significantly influence students' perceptions of healthy lifestyles (Auliya, 2023). The findings by Sofyan et al. (2021), which show that healthy living ideas are essential for encouraging physical activity among Indonesian college students, make this especially pertinent. Similar trends are seen in Pakistan, where Melnyk et al. (2016) posit that students' lifestyle choices can change when mental health conditions like depression and anxiety are addressed. This demonstrates how lifestyle decisions, physical fitness, and mental health are intertwined in both nations.

Furthermore, it is impossible to ignore the importance of environmental influences and social support. According to Sogari et al. (2018), social environments and parental influence are important factors in determining students' healthy diet and exercise habits. According to Anwar et

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al. (2019), traditional games and physical activities are being incorporated into educational settings in Indonesia to improve students' physical health. This strategy encourages community involvement and cultural identification in addition to physical activity. On the other hand, students in Pakistan tend to prioritise their academics above physical exercise due to the emphasis on academic expectations (Nasir et al., 2019). Because of this cultural diversity, programs designed to increase physical fitness should take into account the unique social norms and values of each nation. According to Sam et al. (2024), diverse cultural beliefs about physical activity and healthy habits influence how students from each country approach fitness, with factors such as gender roles, religious practices, and acculturation shaping participation rates in exercise and healthy living activities.

Another important factor that needs consideration is how diet affects physical fitness. According to research by Gultom et al. (2021), students' levels of physical fitness and nutritional status are strongly related, highlighting the need for a comprehensive strategy that incorporates both physical activity and food instruction. This is especially important in Pakistan and Indonesia, where eating choices have a significant influence on students' general fitness and health. A fundamental tactic for improving students' physical fitness in both nations is to address nutritional deficits and encourage wholesome eating practices. Furthermore, encouraging a culture of health among students requires that health education be incorporated into the curriculum. According to research, students who get thorough health education are more likely to adopt practices that promote their health (Melnyk et al., 2016). This is especially important given the noted disparities between Pakistani and Indonesian students, where there may be significant variations in the calibre and scope of health education. It could be feasible to bridge the disparity in lifestyle choices and physical fitness by strengthening health education programs in both nations.

The results advance knowledge of how physical education programs and educational policies might influence students' health-related behaviours. According to Khairuddin et al. (2023), physical education plays a crucial part in encouraging kids to engage in more physical exercise each day. This is consistent with the observed variations in physical fitness levels, indicating that better health outcomes may result from improving the calibre and execution of physical education programs. Education changes that emphasise physical exercise and health education are desperately needed in Indonesia, where physical fitness levels are noticeably low (Auliya, 2023). The results of the study also highlight how crucial environmental and community influences are in influencing students' health-related activities. Shoukat et al. (2021) Higher academic demands, family expectations, and limited social support—often reported by Indonesian students—are associated with less physical activity and poorer health habits, whereas Pakistani students may experience different stressors and social reinforcement structures, affecting their fitness and lifestyle. According to the Imtiaz et al. (2020) study, the low levels of physical activity among Pakistani teenagers may be caused by their preference for academic pursuits over physical fitness. This highlights the importance of neighbourhood-based programs that promote exercise and healthy living, particularly in environments with high academic pressure. Similar to this, community support and involvement can help Indonesia develop a culture that prioritises physical fitness and a good life (Gani et al., 2023).

The study has significant policy and practical implications. In Indonesia, enhancing the quality of physical education and community-based physical activities, including traditional games, and incorporating health and nutrition education into school curricula are important strategies to maintain and enhance students' fitness. Policy implications. If Pakistan is to move forward, academics need to be balanced with structured opportunities for physical activity; stress management and mental health promotion should be integrated into the school curriculum and

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promoting healthy lifestyles among students, families, and communities needs far greater attention. Moreover, on a larger scale, both countries should be investing in greater parental influence along with school-based health education programs and culturally tuned interventions targeting diet, physical activity and mental well-being. By converting these results into concrete principles, governments, educators, and families will be empowered to establish environments which are conducive to promoting greater health levels and physical fitness among school-aged children, with the result of positively affecting academic performance.

LIMITATION

Despite the valuable information this study provided, it should be highlighted that it has some limitations. First, because of the cross-sectional nature of the study, it is challenging to establish a clear correlation between physical fitness levels and healthy lifestyle choices. To learn more about the long-term impacts of lifestyle choices on school-aged children's physical fitness, longitudinal studies are advised. The second limitation is the possible impact of unmeasured factors that were not specifically controlled for in this study, such as parental influence, nutritional intake, socioeconomic position, and access to recreational facilities. Future studies should examine these other drivers in greater detail because cultural and environmental factors significantly influence people's behaviour regarding physical activity and health. Also, this study was limited to students from certain schools in Indonesia and Pakistan, which may affect the applicability. A more thorough grasp of the differences in lifestyle and fitness levels across various sociocultural contexts might be possible if the sample were expanded to include students from other geographic locations, such as rural and urban areas.

CONCLUSION

Indonesian students lead better lifestyles and demonstrate greater levels of physical fitness compared to their Pakistani counterparts. With a t-value of 4.059 ($p = 0.000$) for a healthy lifestyle and a t-value of 3.431 ($p = 0.000$) for physical fitness, the statistical analysis showed substantial differences between the two groups. These results suggest that sociocultural, environmental, and possibly educational variables may influence students' lifestyle choices and level of physical fitness. Practically speaking, the studies indicate that there could be benefits of “schools in both countries ensuring higher quality of physical education content, infrastructure and staffing; better integration of health and nutrition education into [the] curricula; and promoting after-school sports activities” to instil good habits early on. Parental engagement also plays a part, teaching families how to promote healthy habits at home and policymakers how best to design programs that are aligned with each nation’s cultural and structural barriers.

There were also a few limitations of this study, including a cross-sectional design (which impeded the causality interpretation) and its specific reference to selected schools from Indonesia and Pakistan might not be representative of the general population. Moreover, unmeasured confounders, including socioeconomic status, parental factors and recreational facilities, might influence these findings. While the above findings may be viewed as preliminary, they suggest important new directions for interventions to address disparities in physical fitness and healthful lifestyles among students across diverse cultural settings. The use of such evidence in school-based programs, family engagement approaches, and public health agendas can help provide a better future to new generations in both countries.

Future studies ought to investigate the fundamental causes of the observed variations in Pakistani and Indonesian students' levels of physical fitness and healthy living. Qualitative research may be used to better understand students' views, driving forces, and obstacles to leading active, healthy lives. Furthermore, to assess the efficacy of school-based health promotion initiatives tailored to the cultural and educational environment of each nation, intervention-based research must be conducted. The disparity in physical fitness levels across various student

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populations may be lessened by creating focused programs that include physical education, nutrition education, and parental involvement. Finally, incorporating tech-driven solutions, such as digital fitness applications, may offer creative ways to boost students' physical activity levels. Future research could evaluate how these interventions affect school-aged children's long-term health outcomes. Future studies can advance our understanding of how to encourage children in diverse cultural contexts to lead healthy lives and engage in physical activity by addressing these limitations and exploring new avenues of inquiry.

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