DOI: 10.7860/JCDR/2024/68791.19350

Original Article

Public Health Section

Motivators and Barriers for Physical Activity among School-going Students in Chengalpattu District, Tamil Nadu, India: A Qualitative Study

SRINIVASARENGAN KAMALA SAMPATH[1], PADMASUNDARI SINGARAM[2], KALPANA KOSALRAM[3]

ABSTRACT

Introduction: Participating in physical activity is crucial for the holistic development and well-being of children and adolescents. Research has shown that physical activity enhances metabolic, musculoskeletal, cardiovascular, psychosocial, and cognitive health. Among children and adolescents, it also improves cardiorespiratory and muscular fitness, and consistent engagement leads to reduced adiposity in overweight individuals.

Aim: To explore the motivators and barriers to physical activity among adolescents.

Materials and Methods: The study employs a qualitative phenomenological approach, utilising the Colaizzi method for data analysis. A total of 15 participants were selected via purposive sampling, and in-depth interviews were conducted from March to July 2023 in the Chengalpattu district of Tamil Nadu, India. Ethical considerations were observed, with participants providing informed consent.

Results: The main themes were identified and categorised into motivators and barriers. Barriers include lack of time, access to fitness classes, interest or motivation, social support, psychological barriers and cost. Motivators encompass improved physical health, mental well-being, physical appearance, self-confidence, athletic and academic performance and a strong immune system.

Conclusion: The study identified financial concerns, limited access to fitness classes, lack of interest or motivation, and inadequate social support as major barriers to physical activity. Motivators include a healthy immune system, improved physical health, mental well-being, self-confidence, and enhanced academic and athletic performance. To increase adolescent physical activity, it is essential to address academic demands and incorporate physical activity courses into the curriculum. Parental involvement in education and the use of effective motivational strategies are crucial.

Keywords: Adolescents, Physical appearance, Psychological barriers

INTRODUCTION

According to the World Health Organisation (WHO), individuals between the ages of 5 and 17 are advised to engage in atleast 60 minutes of moderate to strenuous physical exercise each day. Physical activity exceeding 60 minutes per day is associated with additional health benefits [1]. The WHO has set a global goal to reduce physical inactivity rates by 10% by 2025 and 15% by 2030, given the high incidence of chronic diseases worldwide that can be attributed to insufficient physical activity [2].

Physical activity provides significant advantages for adolescents, including promoting healthy musculoskeletal tissues, cardiovascular systems, and body weight management. Engaging in physical activity has been shown to enhance individuals' mental well-being by alleviating symptoms associated with depression, anxiety, and stress [3]. The influence of this phenomenon on students' academic accomplishments and overall well-being is undeniably beneficial. Physical activity is crucial for fostering social development as it offers avenues for self-expression, enhances self-assurance, facilitates social interactions, and promotes integration [4].

Physical activity among adolescents is observed in a variety of settings and domains, including the family environment, communal spaces, transit modes, and educational institutions. Playtime and lunch breaks, participation in school sports, and involvement in physical education classes are all examples of opportunities for physical activity within the school setting [5]. The physical education curriculum provides the means and opportunities for students to meet their daily physical activity needs, thereby contributing to their daily energy expenditure [6].

Physical activity has positively affected both immediate and long-term physical and mental health. Furthermore, an increasing amount of evidence indicates a correlation between physical activity and academic performance as well as cognitive function [5]. Numerous studies have demonstrated that maintaining regular physical activity in children and adolescents yields positive effects on various aspects of their well-being, including body composition, cardiorespiratory and muscular fitness, bone health, and biomarkers associated with metabolic health [7,8].

Barriers to engaging in physical activity can be classified into three main categories: individual, behavioural, and environmental variables. These categories can be further subdivided into six dimensions. The variables that contribute to an individual's well-being can be categorised into six main domains: i) socio-economic and demographic factors; ii) psychological, emotional, and cognitive aspects; iii) socio-cultural factors; iv) environmental factors; v) physical activity attributes; and vi) behavioural qualities. Investigating various determinants plays a crucial role in understanding and analysing physical activity patterns, especially among individuals in the late adolescent and early adulthood stages [9,10].

Despite extensive efforts, urban adolescents attending school encounter numerous obstacles to engaging in physical activity. Inadequate physical activity is associated with a lack of playgrounds, sedentary behaviours at home and in schools, increased screentime, and digital addiction. Only a limited number of studies have been conducted on this topic, particularly in both urban and rural settings in India. Therefore, the present study aimed to understand the

barriers and motivators involved in physical activity among school-going children in Chengalpattu District.

MATERIALS AND METHODS

The data analysis in the present phenomenological study was conducted using the Colaizzi method [11]. The present qualitative investigation was carried out with the consent of students enrolled in both public and private schools in the Chengalpattu district in Tamil Nadu, India from March 2023 to July 2023. The researcher obtained ethical clearance from the Institutional Ethics Committee (AUS:67/2023) prior to commencing data collection. The participants received an introductory overview from the Principal Investigator (PI) and the project. Participants received detailed information regarding the study and were informed about the potential advantages and benefits associated with their participation. They were also provided with an explanation of informed consent and its specific components. Prior to conducting the interview, an informed consent form was obtained from each participant.

Sample size: The study employed the phenomenological method to investigate a research sample of 15 students attending government and private schools. The participants were selected using a purposive sampling technique. Data saturation was achieved once a total of nine participants were interviewed. To validate the attainment of data saturation, two supplementary interviews were undertaken.

Inclusion and Exclusion criteria: The study included participants who were adolescents between the ages of 13 and 17 years, encompassing both males and females. Subjects with physical disabilities affecting their hands or legs, as well as individuals with intellectual disabilities, were excluded from the study.

Study Procedure

The investigation was conducted intermittently from March 2023 to July 2023. The in-depth interviews were scheduled at a convenient time for the interviewee. In-depth interview guides were developed using existing literature [6,8]. The primary author was interviewed in a designated space within the school. The interviews ranged from 50 to 90 minutes, during which participants were questioned about their perceptions of physical activity, its impacts, and the obstacles they encountered in engaging in physical activity.

Interviews were fully recorded, and field notes were taken during the interview. The interview began with the question: What do you understand about physical activity? What do you understand about exercise? When do you start exercising routinely, and what is the main reason for doing so? How many times do you exercise a week?

Following that, questions were asked about experiences. In your opinion, what are the benefits of exercise for yourself? What needs to be done for you to start exercising? What can help you maintain carrying out exercise?

Following that, a succession of curious inquiries was presented concerning the provision of aid by members of one's social circle, such as family members, friends, and peers. Considering the potential influence of interview dynamics and participant expectations on data collection, conscious measures were taken to establish an empathetic rapport that created a relaxed setting for interviewees to recount their experiences candidly. The interviewer assured the participants of the confidentiality of their responses and underscored that the primary objective of the research was to understand their individual experiences, not to ascertain the accuracy of the responses. Nevertheless, the study was carried out, placing particular emphasis on the narratives supplied by the participants.

Data Analysis: During the interview, auditory recordings (with obtained consent) and verbatim notes were obtained. The primary author (SS) documented the interview in its entirety and took field notes. To ensure participant validation, the interview summary was read aloud to the participants following the interview. The entirety of the interviews was conducted by the primary author (SS). The recorded interviews were carefully reviewed and transcribed verbatim following each interview session. According to the transcript, each interview was meticulously reviewed by the secondary authors (PS, KK) who carefully examined each line. The interviews that were recorded were transcribed and subsequently coded. The themes were generated following the clustering of the codes into a code family. The themes were predetermined in accordance with the findings of the literature review. Nevertheless, a limited number of themes that emerged from the synthesis were retained. Data collection continued until the point at which the occurrence of repeated data became evident. Data saturation was achieved after conducting nine interviews. Thematic analysis was conducted utilising the trial version of Max QDA [12], and Descriptive analysis was done for the demographic variables.

The process of extracting, organising, and analysing the narrative dataset was facilitated by using the Colaizzi method. Colaizzi's phenomenological data analysis method exemplified an engaged approach in delineating the authentic lived experiences pertaining to barriers and motivators of physical activity. Subsequently, notable assertions were identified and refined into articulated interpretations. Themes were developed.

STATISTICAL ANALYSIS

Thematic analysis was conducted utilising the trial version of Max QDA, and descriptive analysis was performed for the demographic variables.

RESULTS

According to the study, approximately 7 (47%) of the participants fall within the age range of 13 to 14 years, while 8 (53%) belong to the 15 to 17 years age group. Additionally, 9 (60%) of the participants were males and 6 (40%) were females. Furthermore, 8 (53%) of the participants lived in rural areas. A total of 6 (40%) of the individuals belong to the Other Backward Classes (OBC) community, while 4 (27%) of the heads of households have attained either an intermediate or diploma qualification [Table/Fig-1].

Demographic variables	Categories	n (%)
Age (in years)	i) 13 to 14	7 (47)
	ii)15 to 17	8 (53)
Gender	i) Males	9 (60)
	ii) Females	6 (40)
Place of living	i) Urban	7 (47)
	ii) Rural	8 (53)
Community	i) Schedule Tribe (ST)	2 (13)
	ii) Schedule Caste (SC)	3 (20)
	iii) OBC	6 (40)
	iv) General	4 (27)
Education of the head of the family	i) Profession or honours	1 (7)
	ii) Graduate	2 (13)
	iii) Intermediate or Diploma	4 (27)
	iv) High school certificate	3 (20)
	v) Middle school certificate	3 (20)
	vi) Primary school certificate	2 (13)

[Table/Fig-1]: Social and demographic characteristics.

The themes [Table/Fig-2] have been categorised into motivators and barriers which were identified and explored. On barriers: i) Lack of time; ii) Lack of fitness classes; iii) Lack of interest or motivation; iv) Lack of social support; v) Psychological barriers (e.g., low self-confidence, body image concerns); vi) Cost. And motivators: i)

Motivators	Barriers
Improved physical health	Lack of time
Good immune system	Lack of interest or motivation
Improved self confidence	Psychological barriers
Improved athletic and academic performance	Cost
Improved mental health	Lack of social support
Physical appearance	Lack of fitness classes

[Table/Fig-2]: Categorisation of themes based on motivators and barriers.

Improved physical health; ii) Improved mental health; iii) Improved physical appearance; iv) Athletic performance and academic performance; v) Self-confidence; vi) Good immune system.

Barriers

Lack of time: The majority of the participants felt that the major barrier was the lack of time due to the school's distance of 60 kilometres, which resulted in them being unable to engage in appropriate physical activity after spending more than three hours travelling daily. Academic responsibilities at home and school left them feeling constrained, with parents restricting playtime unless academic performance was exceptional. School and homework commitments also left little time for recreational activities.

"My school is 60 km away. I travel more than three hours daily, and after travelling, I can't engage in proper physical activity," said a 16-year-old.

"I feel overwhelmed with schoolwork and studies at home. My parents only allow me to play if I achieve good grades. Between homework and school hours, I hardly have time to play," said a 14-year-old.

Lack of fitness classes: The absence of fitness courses in schools poses a significant barrier to promoting physical activity. Many schools prioritise academic education over physical education, without allocating dedicated staff for physical fitness classes.

"I am in 10th grade now. We don't have physical activity classes. In our school, academic education takes precedence over physical education. There is no one to train the students," said a 15-year-old.

"Our school never offers separate fitness classes apart from physical education classes once a week. After the tenth grade, teachers mainly use physical education classes to complete the syllabus," said a 17-year-old.

"Although the school organises tournaments and sends students to participate, I feel that the sports options are limited, and the sports equipment is often in poor condition," mentioned a 15-year-old.

Lack of interest or motivation: A common issue found in adolescents is the lack of interest or motivation in physical activity. This lack of enthusiasm can be attributed to a sedentary lifestyle influenced by modern conveniences, resulting in reduced interest in physical activities.

"I have no interest in doing physical activity because of the academic workload," said a 17-year-old.

"I will only go to the gym or karate class for a month," said a 15-year-old.

"I am more interested in playing video games on my parent's mobile than playing outside," said a 16-year-old.

Lack of social support: Social support is a crucial factor in initiating and maintaining a regular exercise routine, essential for promoting and sustaining physical activity. However, in the context of the research, social support was identified as a barrier. The absence of support from friends, family, or peers, as well as emotional barriers like low self-esteem or lack of confidence, played a significant role.

"Whenever I go to the gym, I never receive support from my parents or even my friends," said a 17-year-old.

"I used to play cricket in the street with my neighbour friends during my childhood, but now no one is coming to play," said a 17-year-old.

Psychological barriers: Psychological obstacles have a significant impact on an individual's motivation and ability to engage in physical activity. Students face various psychological challenges such as lack of confidence, fear of evaluation or humiliation, diminished belief in their abilities, and social anxiety.

"I weigh 77 kg. I want to reduce my weight, but I lack confidence in engaging in physical activity. I can't stick to my regular routine. I fear what people will think of me," said a 16-year-old.

Cost: The high cost associated with physical activity can be a significant barrier for many individuals. This barrier includes various expenses related to regular exercise, such as facility usage fees, league participation fees, equipment rental fees, and costs associated with specific sports or recreational activities. Additionally, proper athletic wear and gear, essential for safety and comfort, can be expensive. Speciality items like running shoes, swimsuits for swimming, or team sports uniforms further contribute to the overall cost.

"I come from a lower-middle-class family. I am an athlete, but I cannot afford dietary supplements," said the 16-year-old.

"Recently, there has been a lot of influence on social media about going to the gym, but I find it too expensive to afford," said a 17-year-old.

Motivators

Improved physical health: Engaging in regular physical activity offers a multitude of benefits for physical health, affecting various aspects of bodily function and well-being. Physical activity, especially when combined with a balanced diet, can help maintain a healthy weight by burning calories and regulating the body's metabolic rate. Strength training, in particular, builds muscle strength and endurance.

"When I work out or go for a run, I feel that my physical health is good," said a 15-year-old.

Improved mental health: Engaging in physical activity has numerous positive impacts on mental health, providing benefits as significant and multifaceted as those for physical health. Regular physical activity can help regulate sleep patterns, leading to deeper, more restorative sleep, and can reduce levels of the body's stress hormones.

"We are facing a financial crisis at home. So, I started working out, and I felt relieved as I was not thinking about anything. More physical activity improves my mental health," said a 16-year-old.

Improved Self-confidence: Active participation in regular physical exercise has the potential to improve an individual's self-esteem and confidence by influencing their perception of their physical appearance. Achieving fitness-related goals can also elicit a sense of accomplishment, regardless of the scale of the goals.

"I lost almost 5 kg after maintaining my regular workout routine. Daily walking and running have helped improve my physical appearance, boosting my self-confidence," said a 17-year-old.

Athletic performance: Physical activity plays a crucial role in enhancing athletic performance by building strength, endurance, flexibility, and speed necessary for sports. Regular physical activity conditions the body to handle the demands of specific sports and targeted training is essential for improvement.

"With a regular routine of physical activity, I performed well in my district kabaddi matches. Our team's regular workouts helped us play well," said a 16-year-old.

Academic performance: Physical activity has a positive impact on various aspects of academic performance and cognitive function among students.

"I used to score 50% on exams. Three months after joining a swimming class, I now score above 75%. Physical activity improves academic performance," said a 17-year-old.

Good immune system: Physical activity plays a vital role in maintaining and enhancing the immune system, providing health benefits that contribute to overall immune function. The immune system defends the body against infections and diseases, and regular physical activity can significantly support and improve its effectiveness.

"One of my elder brothers runs 2 km daily. He hasn't visited the hospital in over three years. Having a good immune system is crucial for a healthy body," said a 15-year-old.

DISCUSSION

The barriers to physical activity among schoolchildren are multifactorial, and the current qualitative study resonates with a study conducted in South Asia by Rajaraman D et al., and the motivators to overcome these are mostly within the school and socio-ecological setting, as observed by Satija A et al., [13,14].

The barriers to physical activity have been categorised under various themes by Abdelghaffar EA et al., such as physical activity awareness, time constraints, social support, and gender and cultural norms, which are similar to the current study [15]. In a systematic review by Martin J et al., the key barriers have been classified into individual, socio-cultural and environmental, nature of physical activity factors, and life factors, each of which comprises lack of motivation, body image, influence of peers, parents, and teachers, and environmental influences [16]. Similarly, the present study themes involve individual factors that are predominantly psychological, including low self-confidence and body image concerns. Poor interest or lack of motivation is interconnected with a lack of support from social and environmental barriers. Lack of time and lack of fitness classes are the other barriers that can be intersectoral with physical activity nature factors, majorly influenced by school/institution-based physical activity. While considering life factors, socio-economic constraints have also been observed in the present study results. Abdelghaffar EA et al., demonstrated these themes under the socio-ecological model as they are compartmentalised barriers and motivators that can have positive/negative interactions at different levels [15].

In the current study, a participant stated that body image stereotypes have been one of the limiting factors to physical activity; Rajaraman D et al., Allender S et al., Rees R et al., have observed that consciousness about body image and social exclusion had a negative perception towards physical activity [13,17,18]. Further, in the context of psychological barriers as observed in the current study, this further leads to low self-esteem, body image, low confidence, and poor performance at school.

According to Moore JB et al., and Hertzog D et al., physical activity has been highly valued by children, with playing and active engagement physically being most important [19,20]. However, the lack of interest recorded in the present study among adolescents has been associated with a lack of time due to academic overload and accessibility. Secondly, the lack of support imposes parental influences in the present study, although studies by Martínez-Andrés M et al., and Alvarez-Bueno C et al., have evidently confirmed the positive relationship between cognitive/academic performance and physical activity; parents do not perceive it in the same manner [21,22]. However, parents' concern for academics might influence this factor. Abdelghaffar EA et al., witnessed that active adolescents had continuous support and encouragement from the family, while lack of support has a negative influence on physical activity participation [15].

The lack of peer support recorded is the most remarkable barrier/motivator that makes children refrain from physical activity. In concordance with the current observation, Alcántara-Porcuna V et al., Larouche R et al., and Kirby J et al., also concluded that the influence of friends highly affects the proportion of physical activity [23-25].

The lack of fitness classes due to a lack of resources also showed poor physical activity in the current study, which aligns with Mitchell CA et al., Goh TL et al., and Michael RD et al., studies that encompass the lack of infrastructure facilities at school, parks, and sport spaces, and human resources [26-28]. Therefore, increasing accessibility can greatly facilitate academic and sport performance among young children. In addition to the lack of access, according to Kirby J et al., high cost also plays a significant role for children. The current study participants stated affordability and accessibility constraints to physical activity [25].

The facilitators identified in the present study include physical health and mental health associated with academic and athletic performance. In a qualitative study, Goh TL et al., have categorised training, experience, value for role modelling, and adaptability at all levels from teachers, students, and parents [27].

Limitation(s)

There are certain limitations concerning how some of the facilitators and barriers can be generalised further, which highlights the need for more theoretical clarification, research study designs, and maintaining a high standard of methodological quality. Nevertheless, it is critical to recognise the credibility of the data collected in the present analysis.

CONCLUSION(S)

Various barriers and motivators have been identified in the present study, including personal and interpersonal factors, i.e., individual, social, and environmental, all of which have been observed to establish increased involvement in physical activity. Lack of time and social support have been mentioned primarily. These results offer a distinctive perspective on how children utilise the environment for their physical activity. From the current study, it is also evident that broader dimensions of the social and physical environment either support or limit the behavioural choices made by individuals. Addressing challenges to balance academics and physical activity can help lessen these barriers. Community/school-based interventions for the promotion of physical activity based on diversity are required to impose an active lifestyle among younger children.

REFERENCES

[1] Bull FC, Al-Ansari SS, Biddle S, Borodulin K, Buman MP, Cardon G, et al. World Health Organization 2020 guidelines on physical activity and sedentary behaviour. Br J Sports Med [Internet]. 2020;54(24):1451-62. World Health Organization. Physical Activity Factsheet; 2018. Available from: https://www.who.int/news room/fact sheets/detail/physical activity.
[2] World Health Organization. Physical Activity Factsheet; 2018. Available from: https://www.who.int/news room/fact sheets/detail/physical activity.
[3] Malm C, Jakobsson J, Isaksson A. Physical activity and sports-real health benefits: A review with insight into the public health of Sweden. Sports (Basel). 2019;7(5):127. Doi: 10.3390/sports7050127. PMID: 31126126; PMCID: PMC6572041.
[4] Fernández-Bustos JG, Infantes-Paniagua Á, Cuevas R, Contreras OR. Effect of physical activity on self-concept: Theoretical model on the mediation of body image and physical self-concept in adolescents. Front psychol. 2019;10:1537.
[5] Pate RR, Davis MG, Robinson TN, Stone EJ, McKenzie TL, Young JC. Promoting physical activity in children and youth: A leadership role for schools: A scientific statement from the American Heart Association Council on Nutrition, Physical Activity, and Metabolism (Physical Activity Committee) in collaboration with the Councils on Cardiovascular Disease in the Young and Cardiovascular Nursing. Circulation. 2006;114(11):1214-24.
[6] Uddin R, Salmon J, Islam SMS, Khan A. Physical education class participation is associated with physical activity among adolescents in 65 countries. Sci Rep. 2020;10(1):22128. Doi: 10.1038/s41598-020-79100-9. PMID: 33335213; PMCID: PMC7746694.
[7] Mahindru A, Patil P, Agrawal V. Role of physical activity on mental health and well-being: A review. Cureus. 2023;15(1):e33475. Doi: 10.7759/cureus.33475. PMID: 36756008; PMCID: PMC9902068.
[8] Wang C. The role of physical activity promoting thinking skills and emotional behavior of preschool children. Psicol Reflex Crit. 2022;35(1):24. Doi: 10.1186/s41155-022-00223-1. PMID: 35913559; PMCID: PMC9343512.

[9] Mandolesi L, Polverino A, Montuori S, Foti F, Ferraioli G, Sorrentino P, et al. Effects of physical exercise on cognitive functioning and well-being: Biological and psychological benefits. Front Psychol. 2018; 9: 509.
[10] Ai X, Yang J, Lin Z, Wan X. Mental health and the role of physical activity during the COVID-19 pandemic. Front Psychol. 2021;12:759987.
[11] Colaizzi PF, Valle RS, King M. Existential phenomenological alternatives for psychology. Psychological research as the phenomenologist views it. 1978;48:71.
[12] VERBI Software. (2021). MAXQDA 2022 [computer software]. Berlin, Germany: VERBI Software. Available from: maxqda.com.
[13] Rajaraman D, Correa N, Punthakee Z, Lear SA, Jayachitra KG, Vaz M, et al. Perceived benefits, facilitators, disadvantages, and barriers for physical activity amongst South Asian adolescents in India and Canada. Journal of Physical Activity and Health. 2015;12(7):931-41.
[14] Satija A, Khandpur N, Satija S, Mathur Gaiha S, Prabhakaran D, Reddy KS, et al. Physical activity among adolescents in India: A qualitative study of barriers and enablers. Health Education & Behavior. 2018;45(6):926-34.
[15] Abdelghaffar EA, Hicham EK, Siham B, Samira EF, Youness EA. Perspectives of adolescents, parents, and teachers on barriers and facilitators of physical activity among school-age adolescents: A qualitative analysis. Environmental Health and Preventive Medicine. 2019;24(1):01-03.
[16] Martins J, Costa J, Sarmento H, Marques A, Farias C, Onofre M, et al. Adolescents' perspectives on the barriers and facilitators of physical activity: An updated systematic review of qualitative studies. International Int J Env Res Pub He. 2021;18(9):4954.
[17] Allender S, Cowburn G, Foster C. Understanding participation in sport and physical activity among children and adults: A review of qualitative studies. Health Educ. Res. 2006;21(6):826-35.
[18] Rees R, Kavanagh J, Harden A, Shepherd J, Brunton G, Oliver S, Oakley A. Young people and physical activity: A systematic review matching their views to effective interventions. Health Educ. Res. 2006; 21(6):806-25.
[19] Moore JB, Jilcott SB, Shores KA, Evenson KR, Brownson RC, Novick LF. A qualitative examination of perceived barriers and facilitators of physical activity for urban and rural youth. Health Educ. Res. 2010;25(2):355-67.
[20] Hertzog D, Cermak S, Bar-Shalita T. Sensory modulation, physical activity and participation in daily occupations in young children. Can J Occup. Ther. 2019;86(2):106-13.
[21] Martínez-Andrés M, Bartolomé-Gutiérrez R, Rodríguez-Martín B, Pardo-Guijarro MJ, Garrido-Miguel M, Martínez-Vizcaíno V. Barriers and facilitators to leisure physical activity in children: A qualitative approach using the socio-ecological model. International Int J Env Res Pub He. 2020;17(9):3033.
[22] Alvarez-Bueno C, Pesce C, Cavero-Redondo I, Sánchez-López M, Garrido-Miguel M, Martínez-Vizcaíno V. Academic achievement and physical activity: A meta-analysis. Pediatrics. 2017;140(6):e20171498.
[23] Alcántara-Porcuna V, Sánchez-López M, Martínez-Vizcaíno V, Martínez-Andrés M, Ruiz-Hermosa A, Rodríguez-Martín B. Parents' perceptions on barriers and facilitators of physical activity among schoolchildren: A qualitative study. Int J Env Res Pub He. 2021;18(6):3086.
[24] Larouche R, Mire EF, Belanger K, Barreira TV, Chaput JP, Fogelholm M, et al. Relationships between outdoor time, physical activity, sedentary time, and body mass index in children: A 12-country study. Pediatric Exercise Science. 2019;31(1):118-29.
[25] Kirby J, Levin KA, Inchley J. Parental and peer influences on physical activity among Scottish adolescents: A longitudinal study. Journal of Physical Activity and Health. 2011;8(6):785-93.
[26] Mitchell CA, Clark AF, Gilliland JA. Built environment influences of children's physical activity: Examining differences by neighbourhood size and sex. Int J Env Res Pub He. 2016;13(1):130.
[27] Goh TL, Hannon JC, Webster CA, Podlog L. Classroom teachers' experiences implementing a movement integration program: Barriers, facilitators, and continuance. J. Teach. Educ. 2017;66:88-95.
[28] Michael RD, Webster CA, Egan CA, Nilges L, Brian A, Johnson R, et al. Facilitators and barriers to movement integration in elementary classrooms: A systematic review. Research Quarterly for Exercise and Sport. 2019;90(2):151-62.

PARTICULARS OF CONTRIBUTORS:
1. Research Scholar, Department of Psychology, Annamalai University, Chidambaram, Tamil Nadu, India.
2. Assistant Professor, Department of Psychology, Government Arts College, Coimbatore, Tamil Nadu, India.
3. Professor, SRM School of Public Health, SRM Institute of Science and Technology, Chengalpattu, Tamil Nadu, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Srinivasarengan Kamala Sampath,
Research Scholar, Department of Psychology, Annamalai University,
Chidambaram -608002, Tamil Nadu, India.
E-mail: ksrengan@gmail.com

PLAGIARISM CHECKING METHODS: [Jain H et al.]
- Plagiarism X-checker: Nov 29, 2023
- Manual Googling: Dec 18, 2023
- iThenticate Software: Feb 17, 2024 (10%)

ETYMOLOGY: Author Origin

EMENDATIONS: 6

AUTHOR DECLARATION:
- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **Nov 25, 2023**
Date of Peer Review: **Dec 11, 2023**
Date of Acceptance: **Feb 20, 2024**
Date of Publishing: **May 01, 2024**