Jurnal Ners Volume 9 Nomor 4 Tahun 2025 Halaman 6915 - 6931
JURNAL NERS
Research & Learning in Nursing Science
http://journal.universitaspahlawan.ac.id/index.php/ners

APPLYING SOCIAL COGNITIVE THEORY TO UNDERSTAND FACTORS INFLUENCING ADOLESCENT PHYSICAL ACTIVITY: A SYSTEMATIC REVIEW

Maria Jia Fernandez[1], Makhfudli[2], Rista Fauziningtyas[3]
[1,2,3]Faculty of Nursing, Airlangga University-Mulyorejo Surabaya, East Java, Indonesia
maria.jia.fernandez-2024@fkp.unair.ac.id, makhfudli@fkp.unair.ac.id, ristafauzinigtyas@fkp.unair.ac.id

Abstrak

Physical activity can improve the physical and mental health of adolescents so it is an important aspect for adolescents. However, data from around the world show that adolescents have consistently experienced a decline in physical activity. Less than 20% of adolescents meet WHO physical activity standards. Many studies have found factors that affect physical activity, but only a few studies have combined all of these factors into one complete theory. This systematic review aims to identify and synthesize the main factors that affect physical activity among adolescents according to social cognitive theory. This systematic review refers to the PRISMA 2020 guidelines, with inclusion criteria for healthy adolescents aged 10-24 years, articles included in English published in 2020-2025, were quantitative studies using cross-sectional study study research design and physical activity as independent variables using a theoretical social-cognitive approach. The quality of the study assessment by JBI critical assessment tool and used a narrative approach based on the theme of the social cognitive theory. Social cognitive theory is a solid basis for determining the complex components that influence adolescent physical activity. Interventions used to improve adolescent physical activity should prioritize self-efficacy social support an integrated and interacting family, school and community

Kata Kunci: *Physical activity, Social cognitive theory, Adolescents, cross-sectional study*

@Jurnal Ners Prodi Sarjana Keperawatan & Profesi Ners FIK UP 2025

* Corresponding author : Maria Jia Fernandez
Address : Kedung Tarukan baru IV.A No. 14, Kel. Mojo, Kec. Gubeng,Kota Surabaya, Jawa Timur
Email : maria.jia.fernandez-2024@fkp.unair.ac.id
Phone : 081237036834

INTRODUCTION

Physical activity plays an important role in maintaining the health, well-being, and development of adolescents(Manzano-Sánchez, 2023) develops along with age and emotional maturity. Adolescents are said to have reached the peak of adolescence and emotional maturity if at the end of their teenage years they are 19-21 years old (lateadolescence)(Zatihulwani et al., 2022). Physical activity also contributes greatly to maintaining heart and lung health functions, maintaining muscle and bone fitness, maintaining adolescent mental health (Guthold et al., 2020) as well as an indicator of heart health and body metabolism and maintaining body composition (Meng et al., 2022). Thus physical activity can reduce the prevalence of non-communicable diseases such as obesity, diabetes, and cardiovascular disease (Dilsad Ahmed et al., 2020) and improve mental health by reducing anxiety and depression (Ian Janssen, 2015). Through physical activity, young people can interact socially and foster a sense of mutual belonging (Eime et al., 2013).

Physical activity is a physical movement that involves muscle contraction that results in the production of more energy than basal metabolism (Jang & Park, 2024) (Sanz-Martín et al., 2024) (Toledo Caetano et al., 2024) (Amornsriwatanakul et al., 2023). Physical activity is part of a healthy lifestyle behavior pattern related to a healthy quality of life (Wu et al., 2024). The range of physical activity from low physical activity (LPA) and moderate to moderate physical activity (MVPA) (Chaput et al., 2020). Physical activity has a very important role in supporting adolescents' physical and mental health, but studies show that less than 20% of adolescents worldwide meet the physical activity standards recommended by the WHO. According to WHO (2020), challenges in the implementation of physical activity promotion among adolescents include: high levels of sedentary, lack of awareness and motivation, lack of environmental support (To et al., 2020) (Rhodes et al., 2020), lack of social support (Vazquez & Schuler, 2020)(Rhodes et al., 2020) Gender inequality (Guthold et al., 2020) (Dilsad Ahmed et al., 2020) and socioeconomic status and lack of integration across sectors (WHO, 2020)

Especially in high-income countries there is a significant increase in the prevalence of physical inactivity (Koski et al., 2022). The WHO and the 2018 United States guidelines recommend that adolescents engage in moderate to vigorous physical activity daily for 60 minutes or more for moderate to vigorous physical activity daily (Guthold et al., 2020). In general, physical activity decreases with age. This was seen in boys aged 11-12 years with a physical activity level of 28.2% down to 21.2% at the age of 16-17 years. Meanwhile, in girls, it decreased from 19.4% to 11.1% (Marques et al., 2020)

Some of the factors that affect adolescents' involvement in physical activities are social support factors such as family support (Sanz-Martín et al., 2022), body image and body composition, environmental factors (Karchynskaya et al., 2022) and gender (Biadgilign et al., 2022), psychological factors and motivations (Koski et al., 2022)(Kurnianto et al., 2022) as well as economic and social factors (Saraiva et al., 2023) Positive treatment and support from their peers(Fahlevi et al., 2020)

According to cognitive social theory, psychological, social, and cognitive factors interact with each other to influence physical activity in adolescents. This theory emphasizes more self-efficacy, expectation of results, and social support. Therefore, this theory is widely used in studies that involve adolescents to understand and predict their behavior in terms of physical activity.

The social cognitive theory (SCT) developed by Albert Bandura emphasizes that the formation of human behavior is influenced by the dynamic and reciprocal interaction of three main components, namely personal cognitive factors (individual thoughts and beliefs), individual behavioral factors (real actions), and social environment factors (social and physical environment around individuals) (Dubovi & Sheu, 2021) (Bandura, 2001). Perception of one's ability is the key to healthy behavior to engage in physical activity (Khatri & Sharma, 2024). A person who has high self-efficacy tends to have high goals so they always try harder and survive in facing obstacles. Self efficacy facilitates the relationship between social support and physical activity in adolescents (Lin et al., 2024). Cognitive factors are personal factors that are derived from mental processes such as perception, self-assessment, beliefs, and expectations. Self-efficacy introduced by Bandura is the main aspect that determines the ability of individuals to organize the actions necessary to achieve certain outcomes (Bandura. Albert, 1997). People with high self-efficacy are more likely to take the initiative in overcoming challenges and commit to their goals (Bandura, 2004). The existence of positive perceptions of self in exercise (such as pride and feeling better after physical exercise) is positively correlated with physical activity (Schmidt et al., 2025). Individual behavioral factors describe how a person acts and responds to certain situations. This factor is not only influenced by cognitive processes but as a source of learning that strengthens and changes individual beliefs and attitudes. This is known as enactive learning where learning is through the direct consequences of the individual's own actions (Bandura, 2012). Behavioral factors are influenced by appreciation/reinforcement and personal experiences that reinforce the behavior itself (Yuan et al., 2024a) (Khatri & Sharma, 2024). Environmental factors consist of the social environment and the physical environment that surround the individual such as social support, group norms, and opportunities to act, the time of implementation of activities, social support and availability of facilities as well as the location and time of implementation of activities (Zhou et al., 2025). According to the concept of reciprocal determining, the environment not only affects

individual behavior but on the contrary individual behavior also affects the environment (Bandura, 2012). With the existence of the social environment and the physical environment, environmental factors also complement the other two factors. Social factors such as family, peers, teachers can provide emotional support to be role models, as well as the availability of school facilities and policies also support the implementation of sports (Ahmadi et al., 2024) Also social capital factors such as social networking, participation and social cohesion (Gao et al., 2024)

Although many studies explore the individual factors influencing physical activity in adolescents, there is a lack of comprehensive studies that combine these factors using a single framework like social cognitive theory. Existing research does not fully examine how self-efficacy, social support, and environmental factors interact to influence adolescent physical activity across different cultural and regional contexts (Siagian et al., 2023). Additionally, while self-efficacy has been identified as a strong predictor of physical activity, its interaction with other SCT components, such as social support and motivation, remains insufficiently explored. Most studies focus on isolated variables without integrating them into a comprehensive model that could predict behavior in diverse settings .

This study addresses by integrating multiple factors influencing physical activity through the lens of social cognitive theory. It uniquely combines self-efficacy, social support, behavioral capability, self-regulation, and environmental factors into a unified framework, offering a more holistic approach to understanding adolescent physical activity. By focusing on the interaction between these components, this research will provide insights into how they collectively shape adolescent engagement in physical activity across varying cultural and regional contexts. Additionally, this study highlights the role of self-efficacy in facilitating physical activity through goal-setting and reinforces the need for interventions that consider the broader social and environmental influences on adolescents' activity levels, (Annesi, 2022; Ma et al., 2020).

The purpose of the systematic review is to to identify and synthesize findings from various cross-sectional studies to understand how factors within the Social Cognitive Theory (SCT) influence adolescent engagement in physical activity. This review specifically highlights the role of key components such as self-efficacy, social support, behavioral capability, self-regulation, observational learning, outcome expectations, and reinforcement.

METHOD

Design

This study is systematic review**.** Applying Social Cognitive Theory To Understand Factors Influencing Adolescent Physical Activity, to determine the role of SCT factors that have the most influence on adolescent physical activity. A structured literatur search was conducted through a critical assesmen of articles found, extratiting data, synthesizing and analysing (Brink, 2006). This review process is carried out following the guidelines Preferred reporting items for Systematic Review and Meta Analyyses (PRISMA) to endure transparency and metodologycal accuracy in each stage of research (Haddaway, N. R., Page, M. J., Pritchard, C. C., & McGuinness, 2022)

Search Strategy

The systematic review search was conducted on February 26-27, 2025. Search using 7 databases namely: Scopus, web of science, Proquest, Ebsco, phubmed, chocrane, sagepub . The database was searched from 2020 to 2025.The process of selecting and reporting the articles adhered to established guidelines, specifically utilizing the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist and flow diagram.

The literature search was planned for February 26-27, 2025, utilizing the PICOS framework as the search strategy. Keywords used were "("physical activity" OR "exercise" OR "fitness" OR "movement") AND ("adolescents" OR "teenagers" OR "youth" OR "young people") AND ("health" OR "well-being" OR "wellness" OR "fitness level") AND ("benefits" OR "effects" OR "outcomes" OR "impact") AND ("sedentary behavior" OR "lifestyle" OR "habits" OR "activity level") The search was limited to full-text articles published in English between 2020 and 2025 to ensure the inclusion of relevant literature and

Eligybility Criteria

A stucture approach was adoptes to established the inclusin criteria, guide by the pipulation (P): Adolescents aged 10- 19 years and in good health, Intervention (I): The study assesses factors that affect physical activity based on cognitive social theory, comparison (C): No comparator, Outcome(O): Adolescent involvement in physical activity, study design (S) : Quantitative Design and Cross-sectional studies, language : english. The use of open access articles in studies that apply the PICOS criteria reduces bias related to access limitations or costs that may prevent researchers from obtaining relevant information from a broader range ofpublication

Population methods, interventions/issues of interest, comparison, outcomes and study design (PICOS) were applied to identify eligible studies. Articles included in this study that meet the inclusion criteria: research conducted to look at the relationship or influence of various factors that affect physical activity in adolescents, is a quantitative study that uses a cross-sectional study design, adolescent age 10-24 years, articles published in 2020-2025, physical activity as a dependent variable, articles that evaluate the triggering factors of adolescents engaging in physical activity, articles that use English, and Open Access. Studies are excluded/ignored if the study is qualitative research, reviews, editorials or opinion articles, studies with incomplete texts, adolescent populations with certain diseases,

articles that do not use a crosssectional stud research design, articles that are not accessible. The

The initial screening process was carried out by reviewing abstracts to assess their relevance to the topic. Articles that met the inclusion criteria were then thoroughly examined to verify their relevance and validity before further analysis was conducted.

The search was conducted independently by the author on 7 databases. The author first conducted a screening by studying the abstract to select articles that were considered to be in accordance with the PICOS research objectives. Furthermore, the complete manuscript of the article that meets the criteria is evaluated for feasibility using inclusion and exclusion criteria. Articles that are open access are directly downloaded by the author and numbered on each file to prevent data loss and make it easier to check duplicates. After all articles were downloaded, the author checked for duplication using Mendeley. Every difference that appears in each article, the author conducts repeated screening and analysis independently. The author independently extracts data with standard guidelines manually including the title of the article, author's name, year of publication, location, type of research, purpose, research design, samples, variables, factors that affect physical activity and results.

Study selection

Result comprehensive search in seven database (&) academic database found 4032 articles with artivle details from Scopus (330 article), web of science 9150 article), Proquest (500 article), Ebsco (16 article), phubmed (335 article), chocrane (6 article), sagepub(2686 article). A total of were found. 3,337 duplicate articles using mendeley. 2851 removed because they where outside 2020-2025 time frame. And 486 articles were excluded for other reasons, leaving 800 articles. Open access: 255. Articles that meet PICOS criteria: 129, qualitative and other quantitative studies: 82 articles, physical activity as an independent variable: 30. And the remaining 17 articles that meet the inclusion criteria and PICOS criteria

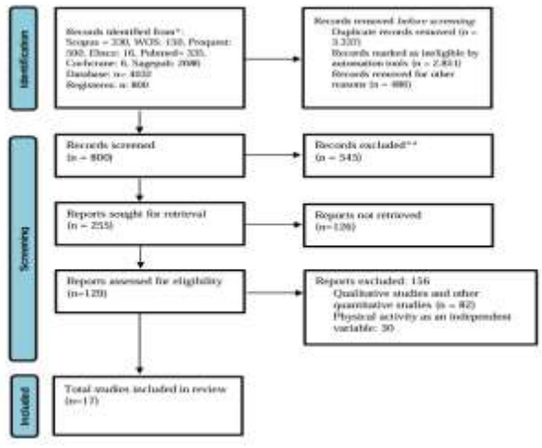

Figure 1. PRISMA Flow Diagram

Metodologycal quality of each study include in this review was assed using Critical Apprasial Checklist developed by Joana Briggs Institute (JBI) in cross sectional study. JBI methodology for Cross Sectional Study study design consisted of 8 question indicators for assessment that included critical aspects. Methodologycal score of all 95%.

The authors independently conducted a critical assessment of 17 selected articles. The Joana Brigs institute (JBI) is used as a critical research tool that is used according to the type of design in each asrticle. A critical assessment was conducted to examine the level of confidence and potential risk of bias from the studies included in this systematic review. The assessment instruments developed by the Joanna Brigs Institute (JBI) are widely recognized in the field of evidence synthesis for their comprehensive approach and evaluate the risk of bias based on the design, implementation and analysis of an epnetian. The JBI tool is designed for a variety of study designs including *cross-sectional studies* and is considered appropriate for systematically reviewing the factors that most affect physical activity in adolescents.

Table 2. The risk assessment of bias using JBI critical Appraisal checklist for cross-sectional study

Author, year	JBI score	Criteria met	Main dis-advantage	Result
(Jang & Park, 2024)	100 %	8/8	clear	Include
(Wu et al., 2024)	100 %	8/8	clear	Include
(Heredia et al., 2024)	100 %	8/8	clear	Include
(Sanz-Martín et al., 2024)	100 %	8/8	clear	Include
(Jáuregui-Ulloa et al., 2024)	100 %	8/8	clear	Include
(Toledo Caetano et al., 2024)	100 %	8/8	clear	Include
(Aznar et al., 2024)	100 %	8/8	clear	Include
(Chen et al., 2024)	100 %	8/8	clear	Include
(Amornsriwatanakul et al., 2023)	100 %	8/8	clear	Include
(Hnidková et al., 2024)	75%	6/8	Factor identified is not Aplicable, confounding factor unclear	Include
(Rajab et al., 2021)	100 %	8/8	clear	Include
(Brestovci et al., 2021)	100 %	8/8	clear	Include
(Vancampfort et al., 2021)	100 %	8/8	clear	Include
(In Tyng et al., 2020)	100 %	8/8	clear	Include
(Muñoz-Galiano et al., 2020)	87,5 %	7/8	confounding factor unclear	Include
(Sujarwati et al., 2023)	100 %	8/8	clear	Include
(MARSITO et al., 2024)	100 %	8/8	clear	Include

Frequently unmet criteria:

a. Factor identified is not Aplicable, and confounding factor unclear (Hnidková et al., 2024)
b. confounding factor unclear (Muñoz-Galiano et al., 2020)

RESULT AND DISCUSION

Result

Major finding According to social cognitive theory

1. Self Efficacy

Self-efficacy is the most influential factor on physical activity participation in adolescents (In Tyng et al., 2020) and both male and female students (Brestovci et al., 2021), accompanied by the perception of benefits, obstacles, and positive perceptions (Jang & Park, 2024) and interests (Amornsriwatanakul et al., 2023) to health, especially in women. Students who have higher levels of self-efficacy tend to be more physically active (Brestovci et al., 2021). Adolescents with high self-efficacy have almost 3 times greater chance of exercising(Amornsriwatanakul et al., 2023) Based on previous research from Bakker & Demerouti (2014

2. Behavioral Capability

Adolescent Health Literacy in lower grades (grades 5 and 6) had higher physical literacy scores compared to adolescents in higher grades (grades 7 through 9). Increased academic pressure and lack of time for physical activity may be the cause of the decline in physical literacy in schools, in addition to the gap between adolescents living in cities having higher physical literacy scores compared to those living in villages or small villages (Chen et al., 2024). There are significant differences in the dimensions of sports knowledge, emotions, and athletic abilities by gender. Men show higher scores than women in these three dimensions. This is likely due to social stereotypes that encourage men to be more active in physical activity than women(Chen et al., 2024).

Support from parents (Amornsriwatanakul et al., 2023) , teachers, and peers significantly affect all dimensions of physical literacy (attitude, sports knowledge, emotions, athletic ability, and physical fitness) (Chen et al., 2024), More educated parents tend to be able to better manage their children's time, creating a balance between physical activity
and sedentary time (Muñoz-Galiano et al., 2020). Physical literacy is also influenced by peer support that motivates adolescents to participate in physical activity.(Chen et al., 2024). Adolescents living in cities have higher physical literacy scores compared to those living in villages or small villages, this is likely due to differences in access to sports facilities and awareness of the importance of activities (Sanz-Martín et al., 2024)

Adolescent physical activity decreases significantly with age (Hnidková et al., 2024), with significant differences between males and females. Men have a higher level of physical activity than women (In Tyng et al., 2020) (Hnidková et al., 2024) Men tend to be more physically active than women (Jang & Park, 2024), especially at an older age. The critical period of decline in PA occurs at age 14 for females and 16 years for males. Age- and gender-based interventions are needed to prevent significant declines in physical activity in adolescents (Hnidková et al., 2024). Participation rates decreased in adolescents aged 16–17 compared to 14 years of age, Adolescents with obesity had a significantly lower chance of participation.(Amornsriwatanakul et al., 2023). Adolescent boys are more obedient than adolescent girls, especially in doing physical activity for 60 minutes (Jáuregui-Ulloa et al., 2024)(Chen et al., 2024) (Sujarwati et al., 2023). Low adherence in women indicates the presence of certain barriers such as perceptions of physical activity, lack of women-friendly facilities, or social norms (Jáuregui-Ulloa et al., 2024)(Sanz-Martín et al., 2024)

3. Self Control

There was a significant positive association between sedentary behavior for ≥3 hours per day and adequate moderate to high intensity physical activity (MVPA) levels in adolescents in low- and middle-income countries (LMICs). The general paradigm that sedentary behavior always reduces physical activity does not fully apply. Adolescents who have sedentary behaviors during leisure time may compensate with physical activity (Vancampfort et al., 2021). Sedentary behavior of more than 2 hours to study can reduce physical activity, depending on other factors (In Tyng et al., 2020). More educated parents tend to implement a better time structure for their children, as seen from the balanced time between physical activity, doing tasks, and using electronic media (Muñoz-Galiano et al., 2020).

Parents' perception of environmental safety also affects adolescents' physical activity (Sanz-Martín et al., 2024) (Chen et al., 2024). As the results of the research by Heredia et al (2024), adolescents who have parents with foreign-born or non-American-born status, have a lower likelihood of doing physical activity.

4. Observasional learning

Social isolation has a significant influence on physical activity levels. Socially isolated adolescents tend to have lower levels of physical activity than those who are not isolated (Jang & Park, 2024). Doing physical activity with friends is consistently the most powerful factor in predicting adolescents' adherence to physical activity recommendations. This shows the importance of the role of peer support in building healthy habits in adolescents (Sanz-Martín et al., 2024) Sedentary behavior ≥3 hours per day does not necessarily reduce physical activity (Vancampfort et al., 2021). Parental education levels have a significant influence on children's physical activity levels and sedentary behavior. Physical activity behavior in adolescents in Banjar City is only more influenced by the knowledge factor (Sujarwati et al., 2023). Children with middle- and high-educated parents tend to have higher total physical activity time than children with low-educated parents, especially at the preschool, elementary, and secondary school levels. Thus, parental education

has an important role in encouraging physical activity in children (Muñoz-Galiano et al., 2020)

5. Reinforcement

Family emotional and informational support is positively associated with adolescent physical activity (MARSITO et al., 2024). Strengthening religious values and improving the quality of the family atmosphere can be effective strategies in promoting health and preventing risky behaviors in adolescents (Saquib et al., 2024). Improved walkability (e.g., sidewalk improvements, access to parks, and public amenities) can be an effective strategy to increase walking activity in children and adolescents from a variety of socio-economic backgrounds (Aznar et al., 2024). Support from parents, teachers, and peers (Amornsriwatanakul et al., 2023) significantly affects all dimensions of physical literacy (attitude, sports knowledge, emotions, athletic ability, and physical fitness (Chen et al., 2024)

External and internal factors of social cognitive theory that influence adolescent physical activity acoding the article include: Motivation and awareness of health, Outcome expectation, Behaviour Capability, Parental support, Self efficacy, Factors of Habituation Using Technology, Mental and emotional health, Preference Factors, Urbanization and urban planning, Peer Influence, Availability of facilities and infrastructure, Economic Status, School support, Environmental safety, Influence of Teachers and Trainers and age.

Table 2. Result and Caracteristics

Heading	Social kognitif theory iclude in article	Data Source	Participants	type of physical activity (walking, running etc)	Time needed for physical activity	Instruments/measuring instruments to measure physical activity
The Association between Social Isolation and Physical Activity among Korean Adolescents, 2024, Sarang Jang, Na-Young Park, Korea Selatan (Jang & Park, 2024)	Self efficacy, behavioral cappablity, expectation, expectancies, self control,	Hasil survei 8th Korean Children and Youth Happiness Index	3,356 junior and senior high school students in South Korea	Sports, Exercise, Dance	60 minutes	Questionnaire Korean Children and Youth Happiness Index survey, Accelerometer, Self-report, Skala
Health-Related Quality of Life in Relation to Health Behaviour Patterns among Canadian Children, 2024, Xiuyun Wu, Arto Ohinmaa, Paul J. Veugelers, Katerina Maximova University of Alberta, Canada (Wu et al., 2024)	Self efficacy, behavioral capability, expectation, expectancies, self control, observasional learning, reinforcement	School-based survey using latent grade analysis (LCA)	2,866 fifth-graders in Alberta, Canada.	Walking, Exercise	Not mentioned	Questionnaire, Self-report, Skala, (Latent class analysis of 11 health behavior indicators; includes PA, sleep, diet, sedentary behavior)
Influence of Parental Nativity and Perceived Neighborhood Environment on Physical Activity and Screen Time of United States Youth, 2024, Natalia I. Heredia, Ethan T. Hunt, Kevin Lanza, University of Texas Health Science Center (UTHealth) Houston (Heredia et al., 2024)	Behavioral capability, expectations, expectancies, self control, observasional learning, reinforcements,	Data survei nasional (National Survey of Children's Health 2020-2021).	24,928 children and 30,951 adolescents in the U.S.	Exercise	60 minutes, 2 hours, 3 hours	Questionnaire, Likert, Skala Kuesioner berbasis survei. Parental reports on youth PA and screen time from National Survey of Children's Health
Physical Activity and Perceived Support among Adolescents According to Sex and Municipality, 2024, Daniel Sanz-Martín , Germán Ruiz-Tendero, José Manuel Alonso-Vargas and EduardoMelguizo-Ibáñez, Spain (Sanz-Martín et al., 2024)	Self efficacy, behavioral capability, expectations, expectancies, self control, observasional learning, reinforcements	The results of the study used questionnaires and social support scales.	694 adolescents from the interior of Spain (mean age 14.06 years ± 1.27)	Sports, Dance	25 minutes, 60 minutes	Physical activity questionnaires Parental and peer support scales (Parental Support Scale, Peer Support Scale, physical activity questionare Likert, Skala

Comparison of Physical Activity and Sedentary Behaviour Patterns by Sex, Geographical Location, and Time of the Week in Mexican Adolescents, 2024, Edtna Jáuregui-Ulloa, Julissa Ortiz-Brunel, Alejandro Gaytan-Gonzalez, Raúl Soria-Rodríguez, José Marcos Pérez-Maravilla, Martín Francisco González-Villalobos, Deborah Salvo, Darren E. R. Warburton, Juan Ricardo López-Taylor, Mexico (Jáuregui-Ulloa et al., 2024)	Self efficacy, behavioral cappability, expectations, expectancies, self control, obsevational learning, reinforccement	Data taken measurements using an accelerometer	106 youth (ages 15–18)	Aerobics, muscle strengthening, sports at school and outside of school	≥60 minutes per day (WHO recommendation)	Accelerometer (GT3X+s ActiGraph) Waist-worn accelerometers for one week (Waist-worn accelerometers (objective PA and SB measurement)
Individual, Family, School and Neighborhood Predictors Related to Different Levels of Physical Activity in Adolescents: A Cross-Sectional Study, 2024, Isabella Toledo Caetano, Fernanda Karina dos Santos, Alynne Christian Ribeiro Andaki, Thayse Natacha Q. F. Gomes, Paulo Roberto dos Santos Amorim, Brazil (Toledo Caetano et al., 2024)	Self efficacy, behavioral cappability, Expectations, Expectancies, self-control, Observtional learning, reinforcements	Data were taken using surveys and accelerometry.	309 adolescents (mean age 15.37 years ± 0.57).	Walking, exercise, daily activities	≥60 minutes per day for MVPA, more than 300 minutes per day for LPA.	Accelerometer (ActiGraph GT3X), kuesioner
Walkability and Socio-Economic Status in Relation to Walking, Playing, and Sports Practice in a Representative Spanish Sample of Youth: The PASOS Study, 2024, Susana Aznar Fabio Jimenez-Zazo Cristina Romero-Blanco Santiago F. GómezClara Homs, Julia Wärnberg, Maria Medrano, dkk. Spain (Aznar et al., 2024)	Self efficacy, Behavioral cappability, Expectations, Expectancies, self control, observasional learning, reinforcements ,	Population-based survey studies with a cross-sectional approach.	Adolescents from different regions of Spain who are members of the PASO study.	Walking, playing, team sports.	≥60 minutes per day for MVPA.	Accelerometer (ActiGraph wGT3X-BT) Accelerometers to measure physical activity and sleep time., questionnaires 7-item for individual, family, school, and neighborhood predictors)
Research on the relationship between physical literacy and demographic variables and interpersonal support for physical exercise among adolescents in China, 2024, Weisong Chen, Bowei Zhou, Xuan Wang, Lin Li, China (Chen et al., 2024)	self-efficacy,Behavioral capability, expectations, Expectancies, observasional learning, reinforcements	Cross-sectional study	Adolescent respondents from different levels of education and social backgrounds .	Sports, Exercise, Dance	Not mentioned	Likert scale, Self-report, (Questionnaire to measure interpersonal support and physical literacy. Comprehensive survey on physical literacy (five dimensions: attitude, knowledge, emotion, athletic ability, fitness))
Ecological correlates of sport and exercise participation among Thai adolescents: A hierarchical examination of a cross-sectional population survey, 2023, Areekul Amornsriwatanakul, Leanne Lester, Fiona C. Bull, Michael Rosenberg, Thailand (Amornsriwatanakul et al., 2023)	Self efficacy, behavioral cappability, expectations, expectancies, self control, observational learning, reinforcements .	Cross-sectional	4617 Thai teenagers aged 14-17 years	Structured exercise, daily activities.	3-4 days per week with a duration of ≥60 minutes	Thailand Physical Activity Children Survey (TPACS), Student Questionnaire; School Built Environment Audit
Age and Gender as Factors Affecting Adolescent's Physical Activity Regime, 2024,Lenka Hnidková, Beáta Ružbarská, Pavol Čech, Slovakia (Hnidková et al., 2024)	Self efficacy, behavioral cappability, expectations, expectancies,observational learning, reiforcements	Quantitative, cross-cutting studies	417 adolescents aged 11–18 years (245 females, 172 males).	Organized, daily, sedentary	Not mentioned	Physical Activity Questionnaire for Adolescents (PAQ-A)

The associations of religiosity and family atmosphere with lifestyle among Saudi adolescents, 2021, Tawfik Mamoun Rajab, Juliann Saquib, Ahmad Mamoun Rajab, Saed Enabi, Saleh Qusai, Saleh Ayash, Suhaib Abdelrahman, Abdulrahman Almazrou, Nazmus Saquib, Saudi Arabia (Rajab et al., 2021)	Doesnt focus on self efficacy, behavioral cappability, Expectation, Expectancies, self control, observasional learning, reinforcement	Cross-sectional	2067 students from 32 schools in Saudi Arabia	Sports, Exercise, Dance	149 minutes, 150 minutes	Questionnaire, Accelerometer, Self-report, Skala Validated scales for religiosity, family atmosphere, lifestyle behaviors
Gender Differences in Social Cognitive Factors and Physical Activity of Kosovo College Students, 2021, Shqipe Bajçinca Brestovci, Besnik Morina, Georgi Georgiev, Seryozha Gontarev, Kosovo, Macedonia (Brestovci et al., 2021)	self efficacy, Behavioral capability, expectation, expectancies, self control, observasional learning, reinforcement,	Survey-based quantitative research	973 students (459 males, 514 females)Randomly selected from several faculties at the State University of Kosovo	Sports, Exercise, Dance	Not mentioned	Exercise Benefits/Barriers Scale (EBBS) questionnaire for benefits and barriers; PA self-efficacy scale; Parental and peer social support scale Physical activity liking scale
Association between Physical Activity and Leisure-Time Sedentary Behavior among 140,808 Adolescents Aged 12 to 15 from 47 Low- and Middle-Income Countries, 2021, D. Vancampfort, J. Firth, L. Smith, B. Stubbs, S. Rosenbaum, M. Hallgren, T. Van Damme, A. Koyanagi, Multinationals (47 low- and middle-income countries) (Vancampfort et al., 2021)	Self efficacy, behavioral capability, expectation, expectancies, self control, observational learning, reinforcements	Global survey-based observational studies,	140,808 youth aged 12-15 from 47 countries	Walking, playing games, watching TV, talking to friends.	60 minutes per day for MVPA, ≥3 hours per day for sedentary. Measuring Tool: PACE+ Adolescent Physical Activity Measure.	PACE+ Adolescent Physical Activity Measure; Global School-Based Student Health Survey (Global School-based Student Health Survey (GSHS), PACE+ Adolescent Physical Activity Measure)
Do psychological factors and sedentary activities influence physical activity level? Findings from Malaysian adolescents, 2020, Leong In Tyng ,Nor Afiah Mohd Zulkefli and Salmiah Md Said, Malaysia (In Tyng et al., 2020)	self-efficacy, Behavioral capability, higher expectation, expectancies, reinforcements,	Clustered Random Sampling	1158 Malaysian teenagers, aged 16-17 years	Sports, Exercises	Duration: 60 minutes, 120 minutes, 300 minutes	Measurement Scale: Questionnaire, IPAQ, Scale International Physical Activity Questionnaire (IPAQ) 2005 - Rosenberg Self-Esteem Scale - Physical Activity Self-Efficacy (PASE) Scale, Self-administered questionnaire (includes physical activity self-efficacy, self-esteem)
Influence of the Parental Educational Level on Physical Activity in Schoolchildren, 2020, Inés M. Muñoz-Galiano, Jonathan D. Connor, Miguel A. Gómez-Ruano, Gema Torres-Luque, Spain (Muñoz-Galiano et al., 2020)	Behavioral capability, expectations, self control, observasional learning	Questionnaire-based surveys	727 elementary to high school students	Walking, Cycling, Sports, Exercise, Dancing	10 minutes, 15 minutes, 20 minutes, 30 minutes	Questionnaires, Surveys: Self-report questionnaires (Parent-completed questionnaires assessing education level and child's PA/sedentary behavior)

Factors Related to Physical Activity Behavior in Adolescents in Banjarbaru City in 2021, 2023, Annisa Sujarwati, Emelia Agustina, Muhammad Azmiyannoor, Dian Rosadi, Rudi Fakhriyadi, Noor Ahda Fadillah, Hadrianti H.D. Lasari, Mufatihatul Aziza Nisa, Banjarbaru City, South Kalimantan, Indonesia (Sujarwati et al., 2023)	Behavioral capability, expectations, self control, observasional learning	Quantitative	80 adolescents aged 10-24 years	Not explicitly mentioned.	Not explicitly mentioned.	(Questionnaire based on Lawrence Green's theory (validated)) The questionnaire that has been tested for validity and reliability.
Family Support in Promoting Active Lifestyles and Preventing Risky Behaviors among Adolescents, 2024, Marsito, Ernawati, Putra Agina Widyaswara Suwaryo, University of Muhammadiyah Gombong, Indonesia (MARSITO et al., 2024)	Self efficacy, behavioral cappablity, expectation, expectancies, self control	Survei cross-sectional	403 youth from different communities	Sports, constructive & non-constructive recreation, physical education	Not mentioned	The Family Support Scale (FSS), Physical Activity Questionnaire for Adolescents (PAQ-A), Risky Behavior Scale (RBS), Leisure Time Activity Scale (LTAS)

Discusion

This systematic review aims to identify and diagnose factors that affect physical activity using the perspective of the social theory of cognitive theory (SCT) established by Albert Bandura (1986) in studies conducted in various countries. Various findings in the selected article show that there are 7 factors in social cognitive theory that affect physical activity in the body, namely Self efficacy, Outcome expectation, Observational learning, Social support, Reciprocal determinant, Behavior capability, Reinforcement. The results of the article analysis can be seen in table 1 and the grouping of results by theme in table 2. Of the 7 key factors of social cognitive theory, only 5 factors are implied in various studies.

The data collection method in the study was carried out by the survey method. The survey method is considered effective for the rapid collection of relatively large data from a wide audience (Kholifah & Sofwan, 2024), allowing researchers to track changes over time or compare different population segments (Redding & Araújo, 2023). This improves the generalization of findings, which is critical to inform public health policies and interventions (Goodfellow, 2023).

This systematic review focuses on the analysis of the factors that influence physical activity from the perspective of constrtuct of social cognitive theory. The findings in the study show complex results that will affect the implementation of physical activity among adolescents.

Self-efficacy is the most influential factor in promoting physical activity among adolescents (In Tyng et al., 2020)(Brestovci et al., 2021)(Jang & Park, 2024)(Amornsriwatanakul et al., 2023). As a central mechanism of personal agency, self-efficacy influences various psychological processes such as cognitive, motivational, affective, and selection processes, which in turn shape how individuals approach goals and challenges (Wiley, 2023). Research by Shrestha et al., 2021) Further supports this, showing that higher self-efficacy enhances endurance and encourages consistent participation in physical activity. Adolescents with strong self-efficacy are better equipped to overcome obstacles, which directly impacts their physical activity levels (Wang et al., 2015). However, in low- and middle-income countries, other contextual factors also affect the success of mHealth interventions aimed at promoting physical activity. Brestovci et al., (2021) note that although mHealth can raise awareness and provide tools for monitoring activity, its effectiveness is often influenced by access to technology, infrastructure, and local culture. Therefore, designing mHealth interventions in developing countries requires consideration of how self-efficacy interacts with broader social and environmental factors, such as family support, government policies, and local social norms. Further research highlights the significant role of psychological factors like self-esteem and self-efficacy in physical activity levels (Wang et al., 2015). Craike et al. (2014) found that behavior regulation and self-competence perception strongly influence physical activity in adolescent girls, particularly in older adolescents. Additionally, high self-esteem is associated with increased physical activity and enjoyment of exercise (Adachi & Willoughby, 2014). These findings underscore the importance of self-efficacy in fostering long-term engagement in physical activity.

Individual, interpersonal, and environmental factors have a significant impact on sports participation. 2 The results of the study stated that individual factors contributed 64% to light physical

activity (LPA), and 59.4% to moderate-heavy physical activity (MVPA). The most significant decrease in physical activity occurred at age 14 for females and 16 years for males (Hnidková et al., 2024) This is in line with the results of previous research which stated that adherence to physical activity among adolescents tends to decline with age (Dumith et al., 2011) In addition, A longitudinal study focusing on a large group of children aged 6–15 years showed that objectively evaluated sitting time increased with age, while moderate to heavy physical activity volume and intensity (MVPA) decreased (Janssen et al., 2016).

Gender and knowledge have a significant effect on physical activity behavior. This is evidenced by the p value of Gender: P=0.001; PR=21.3 and Knowledge: P=0.001; PR=10.2 (Sujarwati et al., 2023). Male students have a higher level of physical activity than women. The factor that most affects physical activity in men is self-efficacy (Brestovci et al., 2021). Previous research states that men are more physically active than women. Men are more likely to engage in unstructured physical activity such as during school breaks and after school (Mota et al., 2005), (Micklesfield et al., 2014). In contrast, women are more involved in passive activities. Although men are more socially accepted as active and playful individuals than women, higher parental support encourages physical activity involvement in men but not in women. Women feel less confident to be physically active than men (Telford et al., 2016). These findings highlight the importance of designing gender-sensitive approaches for mHealth-based interventions because, given the differences in factors influencing physical activity participation between men and women, mHealth interventions aimed at enhancing self-efficacy and perceived benefits should be tailored according to gender. This research also provides valuable insights into the role of knowledge in motivating physical activity behaviors. Students with a greater understanding of the health benefits of physical activity tend to be more engaged in it. Therefore, mHealth intervention programs that aim to increase knowledge about the importance of physical activity could play a crucial role in enhancing student participation, particularly in low- and middle-income countries.

Parental and peer support is also a strong factor in increasing adolescent physical activity (Amornsriwatanakul et al., 2023). Children with foreign-born parents are less likely to meet physical activity guidelines than children with U.S.-born parents (Heredia et al., 2024). Most teens don't meet physical activity recommendations. Family and friend support factors affect adherence to physical activity (Sanz-Martín et al., 2024) this is inline with Social support impacts students psychologically and emotionally, which is very important to related with self-confidence and motivation (Alfia Nuriil Firdausi, Fauziningtyas & et all, 2023). These findings also highlight that psychological and emotional factors, influenced by social support, play a crucial role in shaping adolescents' physical activity habits. Family and peer support are not only external factors but also impact the intrinsic motivation of adolescents to engage in physical activities. Therefore, mHealth interventions aimed at increasing physical activity among adolescents should include strategies to enhance social support. For example, mHealth applications could be designed to involve family and peers in motivating and encouraging adolescents to participate in regular physical activity. Overall, social support from family and peers is essential in promoting physical activity among adolescents, especially in countries with diverse social and economic challenges. Thus, designing mHealth interventions that consider these social dimensions can significantly increase the likelihood of success in improving physical activity among students, particularly in low- and middle-income countries.

High religiosity and a good family atmosphere are associated with healthier living habits (Rajab et al., 2021). Children of parents with higher education are more physically active (Muñoz-Galiano et al., 2020). Family emotional and informational support is positively associated with adolescent physical activity (MARSITO et al., 2024). Family support has consistently been identified as a significant factor influencing adolescent physical activity. This includes tangible support such as transport and encouragement, which positively correlates with moderate to vigorous physical activity levels (MVPA) (Wenthe et al., 2009)(Doggui et al., 2021). Research conducted in Pakistan by Kiyani et al., (2021) stating that family support affects adolescents' perception of physical activity. Family involvement by providing encouragement, providing a supportive environment can be a motivation for adolescents to exercise regularly. Socially isolated teens tend to be less physically active than those who are not isolated. Teens with more active friends tend to be more physically active; Social isolation is negatively related to physical activity. (Jang & Park, 2024). In line with previous studies that stated that lack of peer support can hinder physical activity (Osgood et al., 2014)(Celentano, 2010). Furthermore, it was found that this type of social isolation had a different impact on physical activity. Adolescents with avoidance-type social isolation (not having and not being nominated as a friend) had the lowest levels of physical activity. Previous research on children in China showed that children with avoidance tendencies tended to prefer sedentary activities due to a lack of social motivation (Zhu et al., 2021)(Hoare et al., 2016). Peer support is the strongest predictor of physical literacy compared to parental and teacher support. Overall, these findings emphasize that both family and peer support play an inseparable role in enhancing adolescents' participation in physical activity. Effective mHealth-based interventions should include elements that strengthen both forms of support, while also paying special attention to the importance of reducing social isolation, in order to encourage adolescents to engage more actively in physical activities.

Physical literacy differs significantly based on gender and education level. The interaction between gender and class has an impact on the emotional dimensions and physical fitness. Social support is essential in improving adolescent physical literacy. (Chen et al., 2024). The results of previous

research stated that Schools play a crucial role in promoting physical activity, with policies and programs that encourage participation in sport and physical activity to be effective in increasing activity levels (Junjiang Sun, Haitao Li , Jun Li, 2023). These interventions focus on improving their attitudes, controlling their behavior, and subjective norms associated with physical activity (Jha et al., 2024)

Environmental walkability significantly increased walking and play activities, but lower socioeconomic status was associated with lower sports participation. Improved walkability (e.g., sidewalk improvements, access to parks, and public facilities) can be an effective strategy to improve walking activity in children and adolescents from various socio-economic backgrounds. Children from families with high SES (socio-economic status) were more involved in team sports and more physically active, suggesting that economic factors play a major role in access to sports facilities and physical activities. High walkability can reduce the negative impact of low SES (socio-economic status) on walking and playing activities. This means that improving walkability can be a solution to reduce social gaps in physical activity. Environmental walkability significantly increased walking and play activities, but lower socioeconomic status was associated with lower sports participation. (Aznar et al., 2024). This finding is in line with the results of Cereijoetal's research (Cereijo et al., 2019) which analyzes the relationship between the level of the SES (socio-economic status) area and the availability of sports facilities in Madrid, Spain. In this study, the overall number of facilities was lower in the lower SES area compared to the higher SES area. According to the literature, one of the most supported correlations for PA behavior, especially among the adult population, is walkability in the surrounding environment (Frank et al., 2010)(Hall & Ram, 2018). The relationship between walkability and PA is more consistent when studies are based on objective environmental evaluation methods, such as geographic information systems (GIS) or observation tools, compared to subjective methods (perception instruments) (D'Haese et al., 2014). These results are in line with Molina-Garcia's research (Molina-García et al., 2017) which states that the number of sports facilities and organized physical activities is usually lower in environments with low socio-economic status (SES). Environmental factors contributed 13.6% to LPA and 27.4% to MVPA. Active transportation to school significantly increases MVPA (Toledo Caetano et al., 2024). Therefore, to increase physical activity among children and adolescents, especially in low-SES communities, a more holistic approach that combines infrastructure improvements and broader access to physical facilities is essential. Enhancing walkability can be a crucial step in addressing inequalities in sports participation and promoting healthy living habits across all segments of society.

Sedentary time ≥3 hours per day was associated with an increased probability of moderate-heavy physical activity. The results of a study conducted on adolescents in low- and middle-income countries (LMICs) showed a significant positive correlation between sedentary behavior for more than 3 hours per day and moderate to high intensity physical activity (MVPA) levels . (Vancampfort et al., 2021). All screen-related behaviors (watching television, using social media, using electronic devices, and computers for non-learning) showed no significant association with physical activity levels. Similarly, learning-related sedentary activities (taking school lessons, private tutoring at home, and doing homework) were not significantly related, except for reading ($\chi^2 = 9.041$; $p = 0.011$) and repeating lessons ($\chi^2 = 11.058$; $p = 0.004$).(In Tyng et al., 2020). Physical activity is also positively related to productive sedentary activities such as reading or doing homework. Although students spend time studying, these activities do not necessarily reduce physical activity (Pearson et al., 2014). Students who can manage their time well tend to be able to balance learning and physical activity (Feldman et al., 2003).

The results of a study conducted on adolescents in low- and middle-income countries (LMICs) showed a significant positive correlation between sedentary behavior for more than 3 hours per day and moderate to high intensity physical activity (MVPA) levels (Vancampfort et al., 2021). This is in line with the findings of previous research that found that better self-control has been shown to correlate positively with the amount of physical activity performed by adolescents. Better self-control was also associated with the number of hours of physical activity performed each week and higher levels of self-efficacy, which in turn increased the likelihood of adolescents engaging in physical activity (Herzog-Krzywoszanska et al., 2023)(Boat et al., 2024). Self-control is very important in influencing the physical activity of students. Students can perform physical activity better using traditional self-monitoring methods such as journaling and with modern technology, such as fitness bracelets.) stated that self-efficacy and optimism are components of personal resources which are one of the predictors of work engagement (Dewanti & Prakosa, 2024).

This method not only increases adolescents' interest in sports, but also links daily hiking to increased adaptation to aerobic exercise, overall well-being, and motivation to participate in physical activity. This shows how important self-control is for teens (Шалавина et al., 2024). Self-control also affects patterns of exercise behavior habits, as well as stronger exercise habits regulating the relationship between self-control and physical activity. This shows how important it is to have strong exercise habits to maintain physical activity (Gillebaart & Adriaanse, 2017)

In addition to the type of activity, the duration of physical activity also affects the success of physical activity according to WHO standards. A total of 11 articles show the duration of physical activity is more than ≥ 60 minutes. Meanwhile, 6 articles do not explicitly mention the duration of the eacttu used. According to the World Health Organization (WHO), adolescents and young adults are advised to engage in moderate-to-vigorous physical activity for at least 60 minutes every day (Lin et al., 2024) in order to be able to significantly

contribute to the improvement of physical health and fitness. However, research conducted by Karchynskaya et al., (2024) It was found that the main obstacles for adolescents in achieving the ideal duration of physical activity are lack of free time and academic stress.

This systematic review has several limitations first involving survey-based studies, are mainly due to several factors (n=15) which limits the ability to draw causal conclusions or track changes over time. Second the survey designs with poorly worded questions or inadequate response options can introduce measurement errors, impacting the validity of the findings.

Third the majority of studies used a cross-sectional design (n=17), which only gives an overview at a time without revealing cause-and-effect relationships. Fourth there is a diversity in the use of methods to reduce physical activity such as questionnaires, accelerometers and self-reports that can affect the results of the research.

The social, economic and cultural factors that affect physical activity have not been thoroughly considered in each article. All studies are based on construc of Cognitive Social Theory to determine how effective methods are for improving adolescent physical activity. This makes the results of the study less generalizable. Articles used include English-language and open-access articles that may result in data loss and articles that have more significant results.

CONCLUTION

Overall, this systematic review emphasizes that social cognitive theory is a foundation that can be used to understand the factors that affect physical activity in adolescents, especially the self-efficacy factor which means that adolescents who have greater confidence in their abilities are more likely to be physically active. To encourage adolescents to engage in physical activity or exercise, social support, especially from friends and family, is essential. In addition, other variables that contribute to adolescents' involvement in physical activity include behavioral ability, the ability to control oneself, and knowledge gained from observation of the surrounding environment. Reinforcement, such as rewards or positive feedback from others, can help teens stay consistent in physical activity.

REFERENCES

Adachi, P. J. C., & Willoughby, T. (2014). It's Not How Much You Play, but How Much You Enjoy the Game: The Longitudinal Associations Between Adolescents' Self-Esteem and the Frequency Versus Enjoyment of Involvement in Sports. *Journal of Youth and Adolescence*, *43*(1), 137–145. https://doi.org/10.1007/s10964-013-9988-3

Ahmadi, S., Gilbert, J. A., Marcotte, M., de Fátima Guimarães, R., & Mathieu, M. E. (2024). Exercise-related self-perception, physical activity and intention to in-person and virtual activities among adolescent girls. *Sports Medicine and Health Science*, *7*(December 2023), 109–115. https://doi.org/10.1016/j.smhs.2024.03.007

Alfia Nuriil Firdausi, Fauziningtyas, R., & et all. (2023). Self-efficacy and social support have relationship with academic burnout in college nursing students. *Journal of the Pakistan Medical Association*, *73*(02), S63–S66. https://doi.org/10.47391/JPMA.Ind-S2-15

Amornsriwatanakul, A., Lester, L., Bull, F. C., & Rosenberg, M. (2023). Ecological correlates of sport and exercise participation among Thai adolescents: A hierarchical examination of a cross-sectional population survey. *Journal of Sport and Health Science*, *12*(5), 592–605. https://doi.org/10.1016/j.jshs.2020.04.012

Annesi, J. J. (2022). Cognitive Behavior–Based Programming to Increase Physical Activity and Control Overweight/Obesity in Youth: An 18-Year Research Program Informing Novel Curricula. *Permanente Journal*, *26*(3), 114–127. https://doi.org/10.7812/TPP/22.022

Aznar, S., Jimenez-Zazo, F., Romero-Blanco, C., Gómez, S. F., Homs, C., Wärnberg, J., Medrano, M., Gusi, N., Gonzalez-Gross, M., Marín-Cascales, E., González-Valeiro, M. Á., Serra-Majem, L., Terrados, N., Tur, J. A., Segu, M., Lassale, C., Colom-Fernández, A., Labayen, I., Sánchez-Gómez, J., … Molina-García, J. (2024). Walkability and socio-economic status in relation to walking, playing and sports practice in a representative Spanish sample of youth: The PASOS study. *PLoS ONE*, *19*(3 MARCH), 1–15. https://doi.org/10.1371/journal.pone.0296816

Bandura. Albert. (1997). *Self Efficacy The Exercise of Control*. Freeman a& Company. file:///C:/Users/ASUS/Downloads/Albert_Bandura_Self_Efficacy_The_Exercis.pdf

Bandura, A. (2001). Social Cognitive Theory: An Agentic Perspective. *Annual Review of Psychology*, *52*(1), 1–26. https://doi.org/10.1146/annurev.psych.52.1.1

Bandura, A. (2004). Health Promotion by Social Cognitive Means. *Health Education & Behavior*, *31*(2), 143–164. https://doi.org/10.1177/1090198104263660

Bandura, A. (2012). Social Foundations of Thought and Action. In *The Health Psychology Reader* (2nd ed., pp. 94–106). Englewood Cliffs. https://doi.org/10.4135/9781446221129.n6

Biadgilign, S., Gebremichael, B., Abera, A., & Moges, T. (2022). Gender Difference and Correlates of Physical Activity Among Urban Children and Adolescents in Ethiopia: A Cross-Sectional Study. *Frontiers in Public Health*, *10*(March), 1–9. https://doi.org/10.3389/fpubh.2022.731326

Boat, R., Williams, R. A., Dring, K. J., Morris, J. G., Sunderland, C., Nevill, M. E., & Cooper, S. B. (2024). Associations of Self-Control with Physical Activity, Physical Fitness, and Adiposity in Adolescents. *Behavioral Medicine*, *50*(1), 82–90. https://doi.org/10.1080/08964289.2022.2114416

Brestovci, S. B., Morina, B., Georgiev, G., & Gontarev, S. (2021). Gender differences in social cognitive factors and physical activity of

kosovo college students. *Journal of Physical Education and Sport*, *21*(3), 2165–2172. https://doi.org/10.7752/jpes.2021.s3276

Brink, H. and V. der W. (2006). *Fundamentals of Research Methodology for Health Care Professionals*. https://books.google.co.id/books?id=YZnPYoA4Jk0C&printsec=frontcover&hl=id&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

Celentano, D. (2010). Social Networks and Health: Models, Methods, and Applications: By Thomas W. Valente. *American Journal of Epidemiology - AMER J EPIDEMIOL*, *172*, 488. https://doi.org/10.1093/aje/kwq243

Cereijo, L., Gullón, P., Cebrecos, A., Bilal, U., Santacruz, J. A., Badland, H., & Franco, M. (2019). Access to and availability of exercise facilities in Madrid: an equity perspective. *International Journal of Health Geographics*, *18*(1), 15. https://doi.org/10.1186/s12942-019-0179-7

Chaput, J. P., Willumsen, J., Bull, F., Chou, R., Ekelund, U., Firth, J., Jago, R., Ortega, F. B., & Katzmarzyk, P. T. (2020). 2020 WHO guidelines on physical activity and sedentary behaviour for children and adolescents aged 5–17 years: summary of the evidence. *International Journal of Behavioral Nutrition and Physical Activity*, *17*(1), 1–9. https://doi.org/10.1186/s12966-020-01037-z

Chen, W., Zhou, B., Wang, X., & Li, L. (2024). Research on the relationship between physical literacy and demographic variables and interpersonal support for physical exercise among adolescents in China. *PLoS ONE*, *19*(10), 1–24. https://doi.org/10.1371/journal.pone.0311793

Craike, M. J., Polman, R., Eime, R., Symons, C., Harvey, J., & Payne, W. (2014). Associations Between Behavior Regulation, Competence, Physical Activity, and Health for Adolescent Females. *Journal of Physical Activity and Health*, *11*(2), 410–418. https://doi.org/10.1123/jpah.2012-0070

D'Haese, S., Van Dyck, D., De Bourdeaudhuij, I., Deforche, B., & Cardon, G. (2014). The association between objective walkability, neighborhood socio-economic status, and physical activity in Belgian children. *International Journal of Behavioral Nutrition and Physical Activity*, *11*(1), 104. https://doi.org/10.1186/s12966-014-0104-1

Dewanti, N., & Prakosa, M. M. (2024). Contribution of Self-efficacy and Optimism on Nurse Work Engagement. *Fundamental and Management Nursing Journal*, *7*(1 SE-Articles), 13–18. https://doi.org/10.20473/fmnj.v7i1.44159

Dilsad Ahmed, M., Ho, W. K. Y., van Niekerk, R. L., Sulz, L., & Begum, S. (2020). Social support and sports participation motivations of female adolescents in India - Study of age transition and achievement level. *Physical Culture and Sport, Studies and Research*, *88*(1), 49–67. https://doi.org/10.2478/pcssr-2020-0025

Doggui, R., Gallant, F., & Bélanger, M. (2021). Parental control and support for physical activity predict adolescents' moderate to vigorous physical activity over five years. *International Journal of Behavioral Nutrition and Physical Activity*, *18*(1), 43. https://doi.org/10.1186/s12966-021-01107-w

Dubovi, A. S., & Sheu, H.-B. (2021). Testing the effectiveness of an SCT-based training program in enhancing health self-efficacy and outcome expectations among college peer educators. In *Journal of counseling psychology*. https://doi.org/10.1037/cou0000592

Dumith, S. C., Gigante, D. P., Domingues, M. R., & Kohl, H. W. (2011). Physical activity change during adolescence: A systematic review and a pooled analysis. *International Journal of Epidemiology*, *40*(3), 685–698. https://doi.org/10.1093/ije/dyq272

Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for adults: informing development of a conceptual model of health through sport. *International Journal of Behavioral Nutrition and Physical Activity*, *10*(1), 135. https://doi.org/10.1186/1479-5868-10-135

Euler, R., Jimenez, E. Y., Sanders, S., Kuhlemeier, A., Van Horn, M. L., Cohen, D., Gonzales-Pacheco, D., & Kong, A. S. (2019). Rural–Urban Differences in Baseline Dietary Intake and Physical Activity Levels of Adolescents. *Preventing Chronic Disease*, *16*, 180200. https://doi.org/10.5888/pcd16.180200

Fahlevi, R. Y., Yusuf, A., & Krisnana, I. (2020). Cyberbullying Relationship with Social Anxiety and Social Withdrawal in Adolescents. *Fundamental and Management Nursing Journal*, *3*(2 SE-Articles), 38–45. https://doi.org/10.20473/fmnj.v3i2.21720

Frank, L. D., Sallis, J. F., Saelens, B. E., Leary, L., Cain, K., Conway, T. L., & Hess, P. M. (2010). The development of a walkability index: application to the Neighborhood Quality of Life Study. *British Journal of Sports Medicine*, *44*(13), 924–933. https://doi.org/10.1136/bjsm.2009.058701

Gao, Z., Chee, C. S., Dev, R. D. O., Li, F., Li, R., Gao, J., & Liu, Y. (2024). Exploring the role of social capital in enhancing physical activity among college and university students: A systematic review. *PLoS ONE*, *19*(11), 1–21. https://doi.org/10.1371/journal.pone.0314610

Gillebaart, M., & Adriaanse, M. A. (2017). Self-control Predicts Exercise Behavior by Force of Habit, a Conceptual Replication of Adriaanse et al. (2014). *Frontiers in Psychology*, *8*. https://doi.org/10.3389/fpsyg.2017.00190

Goodfellow, L. T. (2023). An Overview of Survey Research. *Respiratory Care*, *68*(9), 1309–1313. https://doi.org/10.4187/respcare.11041

Guthold, R., Stevens, G. A., Riley, L. M., & Bull, F. C. (2020). Global trends in insufficient physical activity among adolescents: a pooled analysis of 298 population-based surveys with 1·6 million participants. *The Lancet Child and*

Adolescent Health, *4*(1), 23–35. https://doi.org/10.1016/S2352-4642(19)30323-2

Haddaway, N. R., Page, M. J., Pritchard, C. C., & McGuinness, L. A. (2022). PROTOCOL: Interventions to Improve Labour Market Outcomes of Youth: A Systematic Review of Active Labour Market Programmes. *Campbell Systematic Reviews*, *10*(1), 1–109. https://doi.org/10.1002/CL2.123

Hall, C. M., & Ram, Y. (2018). Walk score® and its potential contribution to the study of active transport and walkability: A critical and systematic review. *Transportation Research Part D: Transport and Environment*, *61*, 310–324. https://doi.org/10.1016/j.trd.2017.12.018

Heredia, N. I., Hunt, E. T., & Lanza, K. (2024). Influence of parental nativity and perceived neighborhood environment on physical activity and screen time of United States youth. *Preventive Medicine*, *183*(April), 107973. https://doi.org/10.1016/j.ypmed.2024.107973

Herzog-Krzywoszanska, R., Potoczny, W., & Krzywoszanski, L. (2023). O.4.5-10 Self-control and self-efficacy positively influence physical activity levels. *European Journal of Public Health*, *33*(Supplement_1). https://doi.org/10.1093/eurpub/ckad133.218

Hnidková, L., Ružbarská, B., & Čech, P. (2024). Age and Gender As Factors Affecting Adolescent'S Physical Activity Regime. *Journal of Kinesiology and Exercise Sciences*, *34*(106), 1–7. https://doi.org/10.5604/01.3001.0054.2943

Hoare, E., Milton, K., Foster, C., & Allender, S. (2016). The associations between sedentary behaviour and mental health among adolescents: a systematic review. *The International Journal of Behavioral Nutrition and Physical Activity*, *13*(1), 108. https://doi.org/10.1186/s12966-016-0432-4

Ian Janssen, A. G. L. (2015). Moderating Infl uences of Baseline Activity Levels in School Physical Activity Programming for Children: The Ready for Recess Project. In *School Nutrition and Activity* (pp. 155–172). Apple Academic Press. https://doi.org/10.1201/b18227-14

In Tyng, L., Mohd Zulkefli, N. A., & Md Said, S. (2020). Do psychological factors and sedentary activities influence physical activity level? Findings from Malaysian adolescents. *International Journal of Adolescence and Youth*, *25*(1), 319–328. https://doi.org/10.1080/02673843.2019.1628079

Jang, S., & Park, N. Y. (2024). The Association between Social Isolation and Physical Activity among Korean Adolescents. *Children*, *11*(8), 1–14. https://doi.org/10.3390/children11081003

Janssen, X., Mann, K. D., Basterfield, L., Parkinson, K. N., Pearce, M. S., Reilly, J. K., Adamson, A. J., & Reilly, J. J. (2016). Development of sedentary behavior across childhood and adolescence: Longitudinal analysis of the Gateshead Millennium Study. *International Journal of Behavioral Nutrition and Physical Activity*, *13*(1), 1–10. https://doi.org/10.1186/s12966-016-0413-7

Jáuregui-Ulloa, E., Ortiz-Brunel, J., Gaytan-Gonzalez, A., Soria-Rodríguez, R., Pérez-Maravilla, J. M., González-Villalobos, M. F., Salvo, D., Warburton, D. E. R., & López-Taylor, J. R. (2024). Comparison of Physical Activity and Sedentary Behaviour Patterns by Sex, Geographical Location, and Time of the Week in Mexican Adolescents. *Journal of Functional Morphology and Kinesiology*, *9*(4), 1–15. https://doi.org/10.3390/jfmk9040212

Jha, S. S., Dobe, M., Taklikar, C., & Lahiri, A. (2024). Classroom intervention to improve behavioral intention toward regular physical activity among adolescents. *Frontiers in Public Health*, *12*. https://doi.org/10.3389/fpubh.2024.1260916

Junjiang Sun, Haitao Li , Jun Li, T. G. (2023). A Study on the Factors Influencing Physical Activity among Children and Adolescents under the 'Double Reduction' Policy—Based on A Socio-Ecological Model. *Social Medicine and Health Management*, *4*(3). https://doi.org/10.23977/socmhm.2023.040308

Karchynskaya, V., Kopcakova, J., Geckova, A. M., Katrusin, B., Reijneveld, S. A., & de Winter, A. F. (2024). Barriers and enablers for sufficient moderate-to-vigorous physical activity: The perspective of adolescents. *PLoS ONE*, *19*(2 February), 1–16. https://doi.org/10.1371/journal.pone.0296736

Karchynskaya, V., Kopcakova, J., Geckova, A. M., Klein, D., De Winter, A. F., & Reijneveld, S. A. (2022). Body image, body composition and environment: Do they affect adolescents' physical activity? *European Journal of Public Health*, *32*(3), 341–346. https://doi.org/10.1093/eurpub/ckac022

Kebede, M., Howard, A. G., Ren, Y., Anuskiewicz, B., Di, C., Troester, M. A., & Evenson, K. R. (2024). A systematic scoping review of latent class analysis applied to accelerometry-assessed physical activity and sedentary behavior. *PLoS ONE*, *19*(1 January), 1–13. https://doi.org/10.1371/journal.pone.0283884

Khatri, S., & Sharma, R. (2024). Effective management of sedentary behavior among Indian university students: An empirical exploration into health-related behavior. *Journal of Education and Health Promotion*, *13*(1). https://doi.org/10.4103/jehp.jehp_1489_23

Kholifah, E. R., & Sofwan, M. (2024). Comparison of Data Collection Methods: Advantages and Disadvantages. *Jurnal Kepemimpinan Dan Pengurusan Sekolah*, *9*(4), 519–525. https://doi.org/10.34125/jkps.v9i4.628

Kiyani, T., Kayani, S., Kayani, S., Batool, I., Qi, S., & Biasutti, M. (2021). Individual, Interpersonal, and Organizational Factors Affecting Physical Activity of School Adolescents in Pakistan. *International Journal of Environmental Research and Public Health*, *18*(13), 7011. https://doi.org/10.3390/ijerph18137011

Koski, P., Hirvensalo, M., Villberg, J., & Kokko, S.

(2022). Young People in the Social World of Physical Activities: Meanings and Barriers. *International Journal of Environmental Research and Public Health*, *19*(9). https://doi.org/10.3390/ijerph19095466

Kurnianto, S., Abidin, Z., & Puspitasari, H. D. (2022). Cognitive Behavior Therapy Effects in Patients with Insomnia: A Literature Review. *Fundamental and Management Nursing Journal*, *5*(1 SE-Articles), 37–44. https://doi.org/10.20473/fmnj.v5i1.38908

Lin, H., Chen, H., Liu, Q., Xu, J., & Li, S. (2024). A meta-analysis of the relationship between social support and physical activity in adolescents: the mediating role of self-efficacy. *Frontiers in Psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1305425

Ma, X. X., Liu, J., Shang, B., Yin, Y. Y., Yang, M., Zeng, M., Zhang, Y., Jianxiu Liu, Borui Shang, Yi Yin, et all, Ma, X. X., Liu, J., Shang, B., Yin, Y. Y., Yang, M., Zeng, M., & Zhang, Y. (2020). Analysis on Influencing Factors of Adolescents' Physical Activity From the Perspective of Social Cognitive Theory. *Environment and Social Psychology*, *5*(1). https://doi.org/10.18063/esp.v5.i1.1394

Manzano-Sánchez, D. (2023). Profile analysis through self-determination theory and intention to be physically active: differences according to gender and age. *Frontiers in Psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1277532

Marker, A. M., Steele, R. G., & Noser, A. E. (2018). Physical activity and health-related quality of life in children and adolescents: A systematic review and meta-analysis. *Health Psychology*, *37*(10), 893–903. https://doi.org/10.1037/hea0000653

Marques, A., Henriques-Neto, D., Peralta, M., Martins, J., Demetriou, Y., Schönbach, D. M. I., & Gaspar de Matos, M. (2020). Prevalence of Physical Activity among Adolescents from 105 Low, Middle, and High-Income Countries. *International Journal of Environmental Research and Public Health*, *17*(9), 3145. https://doi.org/10.3390/ijerph17093145

MARSITO, ERNAWATI, & SUWARYO, P. A. W. (2024). Family Support in Promoting Active Lifestyles and Preventing Risky Behaviors Among Adolescents. *Journal of Community Positive Practices*, *24*(3), 43–58. https://doi.org/10.35782/JCPP.2024.3.03

Meng, C., Yucheng, T., Shu, L., & Yu, Z. (2022). Effects of school-based high-intensity interval training on body composition, cardiorespiratory fitness and cardiometabolic markers in adolescent boys with obesity: a randomized controlled trial. *BMC Pediatrics*, *22*(1), 112. https://doi.org/10.1186/s12887-021-03079-z

Micklesfield, L. K., Pedro, T. M., Kahn, K., Kinsman, J., Pettifor, J. M., Tollman, S., & Norris, S. A. (2014). Physical activity and sedentary behavior among adolescents in rural South Africa: Levels, patterns and correlates. *BMC Public Health*, *14*(1), 1–10. https://doi.org/10.1186/1471-2458-14-40

Miyazaki, M., Uchiyama, M., Nakamura, Y., Matsuo, K., Ono, C., Goto, M., Unoki, A., Nakashima, A., & Imakyure, O. (2020). Association of Self-Reported Medication Adherence with Potentially Inappropriate Medications in Elderly Patients: A Cross-Sectional Pilot Study. *International Journal of Environmental Research and Public Health*, *17*(16), 5940. https://doi.org/10.3390/ijerph17165940

Molina-García, J., Queralt, A., Adams, M. A., Conway, T. L., & Sallis, J. F. (2017). Neighborhood built environment and socio-economic status in relation to multiple health outcomes in adolescents. *Preventive Medicine*, *105*, 88–94. https://doi.org/10.1016/j.ypmed.2017.08.026

Mota, J., Silva, P., Santos, M. P., Ribeiro, J. C., Oliveira, J., & Duarte, J. A. (2005). Physical activity and school recess time: differences between the sexes and the relationship between children's playground physical activity and habitual physical activity. *Journal of Sports Sciences*, *23*(3), 269–275. https://doi.org/10.1080/02640410410001730124

Muñoz-Galiano, I. M., Connor, J. D., Gómez-Ruano, M. A., & Torres-Luque, G. (2020). Influence of the parental educational level on physical activity in schoolchildren. *Sustainability (Switzerland)*, *12*(9), 1–11. https://doi.org/10.3390/su12093920

Nonguierma, E., Lesco, E., Olak, R., Welch, H., Alam, N. Z., Bonyadi, J., & Hopkins, L. (2022). Improving Obesogenic Dietary Behaviors among Adolescents: A Systematic Review of Randomized Controlled Trials. *Nutrients*, *14*(21), 4592. https://doi.org/https://doi.org/10.3390/nu14214592

Osgood, D. W., Feinberg, M. E., Wallace, L. N., & Moody, J. (2014). Friendship group position and substance use. *Addictive Behaviors*, *39*(5), 923–933. https://doi.org/10.1016/j.addbeh.2013.12.009

Pfledderer, C. D., Burns, R. D., Byun, W., Carson, R. L., Welk, G. J., & Brusseau, T. A. (2021). School-based physical activity interventions in rural and urban/suburban communities: A systematic review and meta-analysis. *Obesity Reviews*, *22*(9). https://doi.org/10.1111/obr.13265

Rajab, T. M., Saquib, J., Rajab, A. M., Enabi, S., Ayash, S. Q. S., Abdelrahman, S. A. A., Khojah, M. A. A., Almazrou, A., & Saquib, N. (2021). The associations of religiosity and family atmosphere with lifestyle among Saudi adolescents. *SSM - Population Health*, *14*, 100766. https://doi.org/10.1016/j.ssmph.2021.100766

Redding, E., & Araújo, L. S. (2023). Surveys, Questionnaires, and Interviews. In *Research Methods in the Dance Sciences* (pp. 166–179). University Press of Florida. https://doi.org/10.5744/florida/9780813069548.003.0012

Rhodes, R. E., Perdew, M., & Malli, S. (2020). Correlates of Parental Support of Child and

Youth Physical Activity: a Systematic Review. *International Journal of Behavioral Medicine*, *27*(6), 636–646. https://doi.org/10.1007/s12529-020-09909-1

Sanz-Martín, D., Melguizo-Ibáñez, E., Ruiz-Tendero, G., Zurita-Ortega, F., & Ubago-Jiménez, J. L. (2022). Physical Activity, Energy Expenditure, Screen Time and Social Support in Spanish Adolescents—Towards an Explanatory Model about Health Risk Factors. *International Journal of Environmental Research and Public Health*, *19*(16). https://doi.org/10.3390/ijerph191610222

Sanz-Martín, D., Ruiz-Tendero, G., Alonso-Vargas, J. M., & Melguizo-Ibáñez, E. (2024). Physical Activity and Perceived Support among Adolescents According to Sex and Municipality. *Healthcare (Switzerland)*, *12*(15), 1–10. https://doi.org/10.3390/healthcare12151512

Saquib, J., Saquib, N., Basha, A. C., Aljundi, S., Rajab, A. M., Rajab, T. M., & Almazrou, A. (2024). The associations of family atmosphere, religiosity and lifestyle with self-esteem and self-control among Saudi adolescents. In *International journal of psychology : Journal international de psychologie* (Vol. 59, Issue 6, pp. 1245–1253). https://doi.org/10.1002/ijop.13250

Saraiva, B. T. C., Ritti-Dias, R. M., Scarabottolo, C. C., da Silva, A. L. F., Tebar, W. R., & Christofaro, D. G. D. (2023). Effects of nine months practice of martial arts on aerobic fitness in children and adolescentes. *Science and Sports*, *38*(4), 394–400. https://doi.org/10.1016/j.scispo.2022.02.007

Schmidt, E. B., Elmose-Østerlund, K., & Ibsen, B. (2025). A survey study of physical activity participation in different organisational forms among groups of immigrants and descendants in Denmark. *BMC Public Health*, *25*(1), 345. https://doi.org/10.1186/s12889-025-21314-5

Shrestha, N., Pedisic, Z., Jurakic, D., Biddle, S. J. H., & Parker, A. (2021). Physical activity and sedentary behaviour counselling: Attitudes and practices of mental health professionals. *PLoS One*, *16*(7). https://doi.org/https://doi.org/10.1371/journal.pone.0254684

Siagian, L. A., Agustiningsih, D., & Supriyati, S. (2023). Analysis of Social Cognitive Theory in predicting Physical Activity Among Adolescents in Depok City, West Java Province, Indonesia: Structural Equation Modeling Approach. *Malaysian Journal of Medicine and Health Sciences*, *19*(5), 115–122. https://doi.org/10.47836/mjmhs.19.5.17

Sujarwati, A., Agustina, E., Azmiyannoor, M., Rosadi, D., Fakhriyadi, R., Fadillah, N. A., Lasari, H. H. D., & Nisa, M. A. (2023). Faktor-Faktor yang Berhubungan dengan Perilaku Aktivitas Fisik Pada Remaja di Kota Banjarbaru Tahun 2021. *Jurnal Biostatistik, Kependudukan, Dan Informatika Kesehatan*, *3*(3), 192. https://doi.org/10.51181/bikfokes.v3i3.7218

Telford, R. M., Telford, R. D., Olive, L. S., Cochrane, T., & Davey, R. (2016). Why are girls less physically active than boys? Findings from the LOOK longitudinal study. *PLoS ONE*, *11*(3), 1–11. https://doi.org/10.1371/journal.pone.0150041

To, Q. G., Gallegos, D., Do, D. V., Tran, H. T., To, K. G., Wharton, L., & Trost, S. G. (2020). Correlates of physical activity in fifth-grade students in Ho Chi Minh City, Vietnam. *Sports Medicine and Health Science*, *2*(1), 33–37. https://doi.org/10.1016/j.smhs.2020.02.002

Toledo Caetano, I., dos Santos, F. K., Christian Ribeiro Andaki, A., Gomes, T. N. Q. F., & dos Santos Amorim, P. R. (2024). Individual, family, school and neighborhood predictors related to different levels of physical activity in adolescents: A cross-sectional study. *PLoS ONE*, *19*(8), 1–18. https://doi.org/10.1371/journal.pone.0304737

Vancampfort, D., Firth, J., Smith, L., Stubbs, B., Rosenbaum, S., Hallgren, M., Van Damme, T., & Koyanagi, A. (2021). Association between physical activity and leisure-time sedentary behavior among 140,808 adaolescents aged 12 to 15 from 47 low- and middle-income countries. *Public Health*, *199*, 1–9. https://doi.org/10.1016/j.puhe.2021.08.001

Vazquez, C., & Schuler, B. (2020). Adolescent Physical Activity Disparities by Parent Nativity Status: the Role of Social Support, Family Structure, and Economic Hardship. *Journal of Racial and Ethnic Health Disparities*, *7*(6), 1079–1089. https://doi.org/10.1007/s40615-020-00731-9

Wang, X., Liu, Q. M., Ren, Y. J., Lv, J., & Li, L. M. (2015). Family influences on physical activity and sedentary behaviours in Chinese junior high school students: A cross-sectional study Health behavior, health promotion and society. *BMC Public Health*, *15*(1), 1–9. https://doi.org/10.1186/s12889-015-1593-9

Wenthe, P. J., Janz, K. F., & Levy, S. M. (2009). Gender Similarities and Differences in Factors Associated with Adolescent Moderate-Vigorous Physical Activity. *Pediatric Exercise Science*, *21*(3), 291–304. https://doi.org/10.1123/pes.21.3.291

WHO. (2020). WHO Guidelines on physical activity and sedentary behaviour. In *Routledge Handbook of Youth Sport*. https://www.who.int/publications/i/item/9789240015128

Wiley. (2023). Perceived Self-Efficacy as a Foundation of Agency. In *Social Cognitive Theory* (pp. 53–81). Wiley. https://doi.org/10.1002/9781394259069.ch3

Wu, X., Ohinmaa, A., Veugelers, P. J., & Maximova, K. (2024). Health-Related Quality of Life in Relation to Health Behaviour Patterns among Canadian Children. *Children*, *11*(3), 1–14. https://doi.org/10.3390/children11030346

Yuan, F., Peng, S., Khairani, A. Z., & Liang, J. (2024a). A Systematic Review and Meta-Analysis of the Efficacy of Physical Activity Interventions among University Students. *Sustainability*, *16*(4), 1369.

https://doi.org/10.3390/su16041369

Yuan, F., Peng, S., Khairani, A. Z., & Liang, J. (2024b). A Systematic Review and Meta-Analysis of the Efficacy of Physical Activity Interventions among University Students. *Sustainability*, *16*(4), 1369. https://doi.org/10.3390/su16041369

Zatihulwani, E. Z., Rustanti, E., Puspita, S., & Bella, S. (2022). Factors Associated with Perceived Behavioral Control and Adolescents Smoking Behavior in a Rural Area of Indonesia . *Fundamental and Management Nursing Journal*, *5*(1 SE-Articles), 23–28. https://doi.org/10.20473/fmnj.v5i1.39550

Zhou, Y., Wang, L., Chen, R., & Wang, B. (2025). Associations between class-level factors and student physical activity during physical education lessons in China. *International Journal of Behavioral Nutrition and Physical Activity* , *22*(1), 1–10. https://doi.org/10.1186/s12966-024-01703-6

Zhu, J., Xiao, B., Hipson, W., Yan, C., Coplan, R. J., & Li, Y. (2021). Social Avoidance and Social Adjustment: The Moderating Role of Emotion Regulation and Emotion Lability/Negativity Among Chinese Preschool Children. *Frontiers in Psychology*, *12*(March), 1–11. https://doi.org/10.3389/fpsyg.2021.618670

Шалавина, А. С., Шалавина, Ю. В., Мухаметзянова, Л. И., & Васенков, Н. В. (2024). Self-control as a mandatory element of individual physical activity. *Bulletin of Pedagogical Sciences*, *7*, 76–81. https://doi.org/10.62257/2687-1661-2024-7-76-81