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Understanding the Factors that Influence Physical Activity Promotion: A Systematic Literature Review

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Abstract

Background and Study Aim. Physical inactivity is one of the challenges that increases the chance of death from heart disease, stroke, cancer, diabetes, and chronic lung disease. Limited empirical research has been conducted on understanding the factors that can influence physical activity promotion. This paper aims to conduct a systematic literature review to identify and examine the factors that influence physical activity promotion in physical education. **Material and Methods.** A systematic literature review (SLR) was used to identify these factors. **Results.** Three databases were used in this SLR, i.e., ERIC, SCOPUS. Overall, 95 articles met the inclusion criteria, and factors' data was extracted from these articles. Initially, 182 factors were identified from 95 articles. After applying the thematic analysis method, a final list of 15 factor categories was identified. The top 6 factors which can influence physical activity promotion are (1) qualified and experienced teachers, (2) design of competitive physical activity tasks, (3) fun in physical activities, (4) good student-teacher relation, (5) innovative curriculum, and (6) teamwork. In this paper, a list of guidelines has been provided that can assist in the implementation of these factors.

Conclusions. Educational institutions must implement all top 6 factors in their curriculum for adequate physical activity promotion.

Keywords: Systematic Literature Review, Physical Activity, University Students, Physical Education, Health Education

Introduction

Physical inactivity is one of the four risks factors for mortality due to heart disease, stroke, cancer, diabetes, and chronic lung disease (WHO, 2020). According to a WHO report, globally, 28% of the adults are not active enough, including 23% men and 32% women (WHO, 2020). As global levels of physical inactivity rise, so does the prevalence of non-communicable diseases (Al-Hazzaa, 2018). In Malaysia, more than 60% of Malaysian adults were categorized as inactive (Cai Lian, Bonn, Si Han, Chin Choo, & Chee Piau, 2016). Other countries are facing similar challenges. In England, only 66% of men and 58% of women are physically active

(Scholes & Neave, 2017). In the United States of America, nearly 80% of the adult population is not meeting the physical activity requirements (Piercy et al., 2018). Saudi Arabia is also facing similar challenges. In Saudi Arabia's capital city Riyadh, 57% of children, 71% of youths, and 80.5% of adults were physically inactive (Al-Hazzaa, 2004). A study in Saudi Arabia showed a very low prevalence of physical activity, i.e., men, 6.1%; women, 1.9% (Mabry, Koohsari, Bull, & Owen, 2016). Similar results are shown in the national survey, i.e., Physical inactivity affects 60% of the Saudi Arabian population (MOH, 2013).

In order to maintain pupils' good health, regular physical activity is essential (Román-Mata et al., 2020). Pupils' physical inactivity can lead them to obesity-related health problems (Philippou et al., 2019). Research shows that increasing the number of hours in physical activities can positively impact pupils' health, leading to a healthy lifestyle (Román-Mata et al., 2020). The Chief Medical Officer's report in England has highlighted the need to engage young adults in various physical activities for more than 150 minutes of moderate-intensity or more than 75 minutes of vigorous-intensity activity every week (Chief-Medical-Officer, 2020).

One crucial point that needs consideration is that obesity relates to physical inactivity (Ma et al., 2021). Obesity is rising as thousands of people worldwide die from obesity or obesity-related illnesses (Agha & Agha, 2017; WHO, 2020). Many countries are facing obesity-related challenges. According to the Department of Health in England (2013), most individuals are overweight or obese, with 61.9 percent of adults and 28 percent of children aged 2 to 15 being overweight or obese. In the United States, obesity in adults was 39.8% in 2015-2016, i.e., 41.1% in women and 37.9% in men (Hales et al., 2017). A study conducted with 490 Malaysian adults found that 52.8% of the Malaysian were overweight and obese (Lee & Muda, 2019). Studies have indicated that weight gain begins after high school due to a decline in physical activity (Winpenny et al., 2020). Weight gain is specifically dominant in university-aged students because it is a transitional stage in life (i.e., new environment, busy schedule, responsibilities, social life, job, studies, etc.). The Chief Medical Officer's report in England has also mentioned rising obesity and overweight trends in adults aged 16 and over (over 60%) (Chief-Medical-Officer, 2020).

Countries are spending enormous amounts of money to fight against the decreasing physical activity levels in many young people (European-Union, 2016). Furthermore, health specialists in various countries advocate for physical education in colleges and high schools to provide students with the skills and information they need to stay physically active for the rest of their lives (Trigueros et al., 2019). The physical inactivity figures and its consequences described above show that limited efforts have been made to understand factors that can influence physical activity promotion in educational institutions. There is a need to conduct a systematic literature review to satisfy this need. The following are the contributions of this paper

- Different health-related challenges can be minimized if educational institutes can implement factors that influence physical activity promotion.
- This will lead students to adopt a healthy lifestyle. Research in this area is expected to improve students' active participation in physical activities.
- In addition, a thorough examination of the factors, will assist in promoting physical activities in universities and schools.

- Moreover, this study will contribute to the available knowledge taught in universities about which factors can influence physical activity promotion in universities and schools.

This SLR will answer the following research questions

- RQ1: What factors influence physical activity promotion in physical education?
- RQ2: How can one implement these factors?

These questions systematically gather and review the formal research studies published in peer-reviewed journals.

This paper is organized as follows. The research method is described in Section 2. The study's findings are presented in Section 3. The discussion is provided in Section 4. Section 5 provides the implications of the findings. Study limitations are discussed in Section 6. Section 7 concludes the paper by providing insights into future research.

Materials and Methods

In order to identify the factors that influence physical activity promotion in physical education (PE), a systematic literature review (SLR) (Petticrew & Roberts, 2008) was designed and conducted. "Systematic literature reviews are a method of making sense of large bodies of information, and a means of contributing to the answers to questions about what works and what does not – and many other types of the question too" (Petticrew & Roberts, 2008). SLR is different from ordinary reviews. It is based on a structured approach, which includes designing search string, inclusion and exclusion criteria, data extraction, and data synthesis. The outcome of the SLR will be a list of factors that influence physical activity promotion in PE.

Systematic reviews are scientific methods with the aim to limit systematic error or bias to answer a particular research question as they are used to summarize, appraise, and communicate the results and implications of studies. In order to conduct an SLR, a detailed protocol is needed that describes the process and methods which will be applied.

Search Strategy

The following research question was used to design a search strategy:

RQ: What factors influence physical activity promotion in PE?

The factor is a very broad term used in the field of PE. It is the context in which something is learned or understood or a context that can impact how something is learned or taught (Collier-Harris & Goldman, 2017). These factors can be related to the environment where instruction/teaching takes place, people engaged in the learning/teaching process, the setting (e.g., school, facilities, community, etc.), the object of study (namely, the unit/subject or curriculum), as well as more general factors influencing the physical activity promotion such as society, parents' body, etc (Oikonomou & Patsala, 2021).

The search strategy focused on factors (keywords: context, factors, facilities, environment) and physical education (keywords: education, educational, PE). The following search string has been designed:

(Context OR Factor OR Facilities) AND (PE OR "Physical education")

ERIC, Google scholar, and SCOPUS databases were used to identify the relevant papers. These databases contain articles related to physical education, and they are simple to use,

which allows users to search for a wide variety of materials such as articles, books, conference proceedings on a vast number of topics.

Inclusion/exclusion criteria

Articles were included in the review if they report on the factors that influence physical activity promotion targeting high schools and universities. The articles must be a journal, conferences, or technical reports. The complete version published was included in the case of duplicate publications. Articles were excluded if they were published in a language other than English or studies conducted outside a school or university setting. In addition, studies conducted in primary schools were excluded.

Study selection process

A two-step process was used to select the relevant articles: (1) Initially, the abstract of each retrieved article was read to decide if the article was relevant to our research question or not, (2) Reading the entire paper to decide the final selection of the articles.

Data extraction and synthesis

The factors that influence physical activity promotion were extracted from the selected primary studies. The following data was extracted from each selected primary study: Author's names, paper title, paper venue, list of factors.

Results

Classification of studies

Initially, 182 factors were identified from 95 articles. To synthesize data, the thematic analysis method (Terry et al., 2017) was used to review the primary studies and to identify, conceptualize and categorize the underpinning factors. The identified factors were labeled and related factors were grouped to generate categories and calculate their frequency. A final list of 15 factors categories was identified, as shown in Table 2.2.

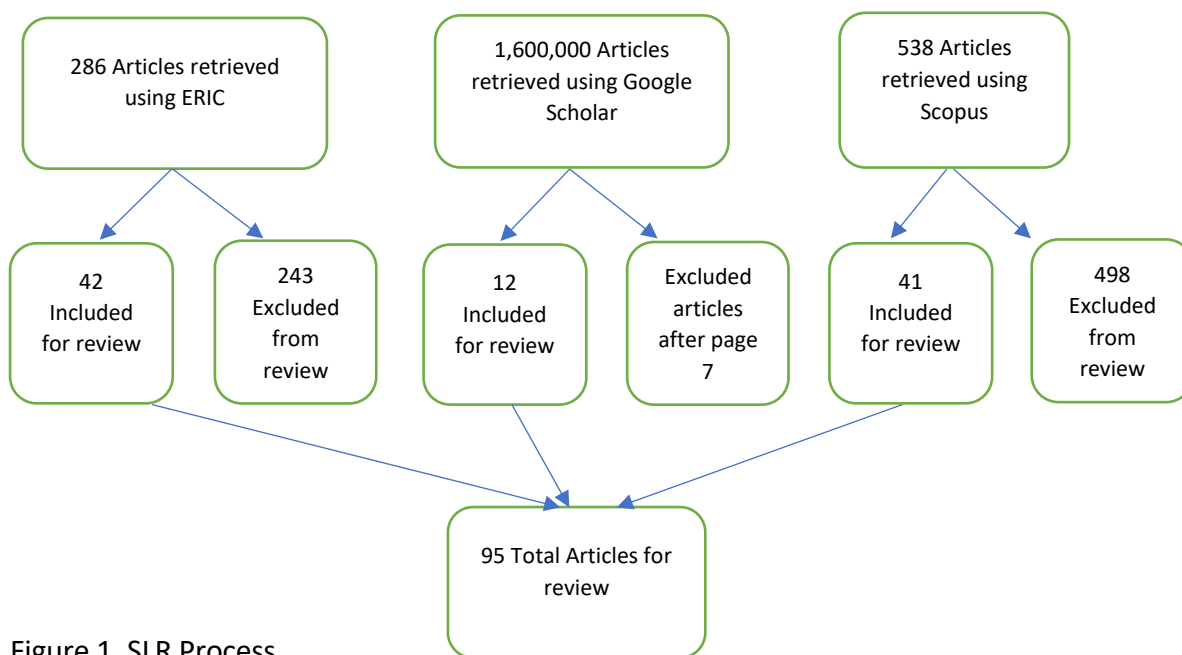


Figure 1. SLR Process

One researcher examined each article to determine its relevance with the research question and inclusion criteria. If an article was in this research domain, then it was classified as “included for review” otherwise “excluded from the review.” A second researcher was invited to randomly select 20% of the articles classified as “included for review” and “excluded from review” to validate the first researcher’s work. There were few study selection and data extraction differences between the two reviewers, which were resolved through discussion, and there was no need to invite a third reviewer.

Three databases were used in this SLR, as shown in Figure 1. The search string retrieved 286 articles using the ERIC database. After the titles and abstracts of publications were screened, 42 articles were classified as “included for review” for the ERIC database. Google scholar retrieved a large number of articles, i.e., 1,600,000 potentially relevant publications. However, after page 5, all irrelevant papers were coming. Hence, the researcher stopped searching after reading page 7 of google scholar. In total, 12 articles were included for review in google scholar. The total number of articles retrieved from Scopus was 538. After reading the abstract and title, 41 articles were classified as “included for review” for SCOPUS. Overall, 95 articles met the inclusion criteria, and factors data was extracted from these articles (as shown in Appendix A on the link):

<https://www.dropbox.com/s/2cam228267458fb/Appendix%20A%20for%20south%20african%20journal%20PE.docx?dl=0>.

Article analysis with respect to year of publications

To classify retrieved articles, the selected articles were classified according to the year of publications, as shown in Figure 2. The maximum retrieved studies belong to “before 2010” with a frequency of 23 out of 95. 16 out of 95 studies were published in 2020, while 11 out of 95 studies were retrieved in 2016.

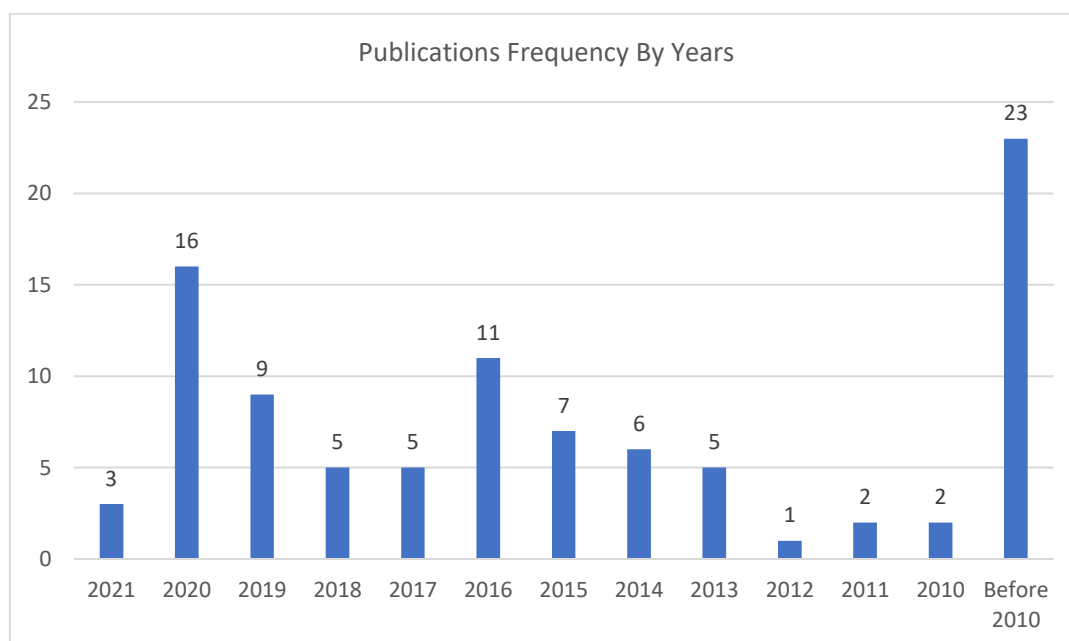


Figure 2. Publications frequency by years

Factors that influence physical activity promotion

The authors selected 95 articles after applying the inclusion and exclusion criteria. Factors that can influence physical activity promotion were identified after a detailed screening of these articles. Initially, 182 factors were identified from 95 articles. After using the thematic analysis method Terry et al (2017), a final list of 15 factor categories was identified, as shown in Table 1.

“Qualified and Experienced Teachers”, with a frequency of 20, is the key factor that positively influences physical activity promotion. Many studies have conclusively demonstrated that teacher quality is one of the elements influencing student accomplishment (Boonsem & Chaoensupmanee, 2020). Students who are taught by qualified teachers excel rapidly, whereas students who are allocated to less qualified teachers fall behind and frequently never catch up.

Table 1

A list of factors that influence physical activity promotion

Factors	Frequency	References
Qualified and experienced teachers	20	(1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16), (17), (18), (19), (20)
Design of competitive physical activity tasks	16	(21), (22), (23), (24), (25), (26), (27), (28), (29), (30), (31), (32), (33), (34), (35), (36)
Fun in Physical Activities	16	(37), (1), (38), (39), (40), (33), (27), (41), (6), (16), (42), (43), (44), (45), (46), (28)
Good Student-teacher relation	15	(17), (47), (48), (38), (7), (4), (49), (50), (39), (15), (51), (52), (46), (53), (54)
Innovative curriculum	14	(55), (6), (4), (56), (9), (57), (18), (58), (52), (59), (46), (60), (61), (62)
Teamwork	14	(2), (56), (63), (64), (21), (65), (66), (33), (51), (27), (52), (67), (50), (35)
Regular physical activities	11	(68), (69), (70), (21), (71), (2), (72), (16), (73), (24), (52)
Good facilities and equipment for physical activities	11	(74), (2), (75), (76), (77), (78), (28), (79), (80), (9), (50)
Autonomy of students in physical activities	10	(2), (81), (32), (82), (20), (27), (30), (83), (84), (25)
Teacher’s motivation for students’ engagement	10	(2), (64), (50), (19), (41), (36), (30), (56), (85), (51)
Good physical activities environment	9	(1), (75), (3), (84), (35), (86), (87), (32), (57)
Teaching strategies in physical activities sessions	6	(38), (88), (51), (57), (16), (19)
Fitness promotion activities in the university	5	(42), (87), (89), (16), (90)
Use of digital technologies in Physical Education	5	(91), (71), (88), (92), (93)
Small class size	4	(9), (94), (6), (95)

“Design of competitive physical activities” and “fun in Physical Activities” are the second most critical factors, with the frequency of 16 each. These two factors are related to students’ motivation for physical activities. Competition can improve the activity's level of performance. In addition, competition is helpful because it adds excitement to physical activity. However, such tasks should be designed carefully as they can be harmful because they can be stressful and take over the fun of the game. Fun in physical activities promotes students' participation. There are different ways to make physical activities fun, such as hiking, dance class, joining a team sport, bike riding, etc.

“Student-teacher relation” has been identified with a frequency of 15 in our SLR. Improving students' relationships with teachers has significant, positive, and long-term implications for students' academic and social growth. Positive student-teacher relationships increase engagement, motivation, and active participation in physical activities.

In our SLR, the factor “innovative curriculum” has been identified with a frequency of 14. Teachers and students are urged to investigate, learn about, and employ all of the resources accessible to them in order to benefit from educational innovation. It requires a fresh perspective on how to approach and resolve issues. An innovative curriculum improves learning by forcing students to tackle problems at a higher level of thinking (Liang & Liu, 2017).

Teamwork is another frequently cited factor in our SLR. In physical activities, teamwork teaches students how to work together toward a common objective while also encouraging healthy competition and sportsmanship. Fourteen studies have identified teamwork as a factor that influences physical activity promotion.

The remaining factors that play an essential role in positively influencing physical activity promotion, along with the frequency of occurrence and reference of articles, are mentioned in Table 1.

A Venue Type of Factors

A venue-wise analysis was done to determine the venue for each factor, as shown in Table 2 and Figure 3. Figure 3 shows that most of the retrieved studies that contain factors were published in the ERIC database, i.e., 44.2%.

Twelve factors out of 15 have been identified from all three databases, i.e., google scholar, ERIC, and Scopus. Three factors, i.e., “design of competitive physical activity tasks”, “teaching strategies in physical activities sessions”, and “use of digital technologies in Physical Education”, were not identified via google scholar. In addition, “teaching strategies in physical activities sessions” was only identified via ERIC database.

Table 2

A venue type of factor

Educational Context/ Factor	Venue type			
	Google Scholar	ERIC	SCOPUS	Total
Qualified and experienced teachers	6	12	2	20
Design of competitive physical activity tasks	0	4	12	16
Fun in Physical Activities	3	7	6	16
Good Student-teacher relation	3	8	4	15
Innovative curriculum	3	3	8	14
Team work	2	7	5	14
Regular physical activities	1	7	3	11
Good facilities and equipment for physical activities	1	6	4	11
Autonomy of students in physical activities	2	1	7	10
Teacher's motivation for students' engagement	2	5	3	10
Good physical activities environment	2	4	3	9
Teaching strategies in physical activities sessions	0	6	0	6
Fitness promotion activities in the university	1	1	3	5
Use of digital technologies in Physical Education	0	4	1	5
Small class size	2	1	1	4

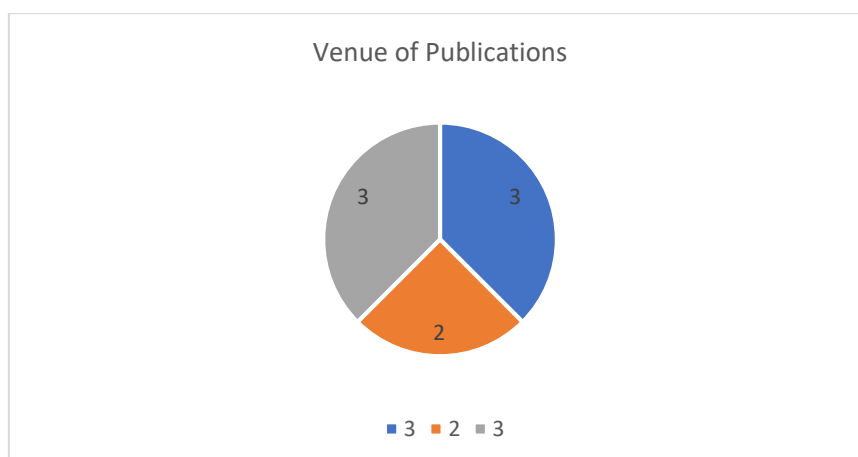


Figure 3. Articles with respect to the venue of publications

Discussion

This study aims to make essential contributions in both research and practice in the domain of physical education. Based on Ajzen's (1991) theory, it can be stated that if students have positive attitudes towards physical activities, then more likely they will participate in such activities, which will improve their health and reduce the risk of developing obesity-related problems. It is a well-established fact that PE has the potential to promote physical activity inside and outside university and school. However, logically, it will only be effective if factors that influence physical activity promotion are known. Different factors can play a positive or negative role in promoting physical activities in PE. Therefore, it is imperative to explore which factor can positively or negatively influence physical activity promotion in PE.

In this section, top 6 factors have been explained in more detail about why universities should implement these factors. In addition, a list of guidelines has been provided that can assist in implementing these factors. ChatGPT was used to identify initial set of guidelines for the implementation of the identified factors.

Qualified and Experienced Teachers

“Qualified and Experienced Teachers”, with a frequency of 20, is the important factor that positively influences physical activity promotion in PE. Qualified and experienced physical education teachers are professionals who have received the appropriate training and education to teach physical education to students. They possess the knowledge and skills needed to promote physical activity, health, and wellness among their students, as well as the ability to create a safe and supportive learning environment

In recent years teacher training went through significant changes; one of these changes is the introduction of professional standards in quality to teach (Call, 2018). This has changed the concept of “one size fits all” approach and introduced a number of training options for teachers. However, there are different views about what should be the focus of teacher training, i.e. developing knowledgeable teachers or developing the knowledge to teach (Capel, 2007).

Subject knowledge is essential and crucial in achieving promising results in any field. In subject knowledge, the physical education teachers often take a subject-centered approach based on different teaching models (Metzler, 2017). It is argued that in addition to physical education subject knowledge, it is also essential to have knowledgeable physical education teachers who can motivate and promote physical activities among students (Turner, 2013). The knowledgeable physical education teachers always teach based on the interests of pupils and place pupils’ learning at the core of their teaching (Capel, 2007; Turner, 2013).

The following are some specific guidelines that can be used in the implementation of qualified and experienced physical education teachers factor:

- Knowledge of physical activity and health: Experienced physical education teachers strongly understand physical activity's benefits and its role in promoting overall health and wellness.
- Instructional skills: Qualified physical education teachers can create engaging and effective lesson plans and differentiate instruction to meet the needs of a diverse group of students.
- Education and credentials: Qualified physical education teachers typically have a degree or certification in physical education or a related field and may have completed additional training in areas such as coaching or exercise science.
- Safety and supervision: Experienced physical education teachers know safety guidelines and can create a safe and supportive learning environment.
- Professionalism: Qualified physical education teachers exhibit high professionalism, including punctuality, good communication, and a positive attitude.

Qualified and experienced physical education teachers are critical in promoting physical activity and healthy lifestyles among students. They possess the knowledge, skills, and passion needed to help students develop the skills and habits they need to lead active and healthy lives.

Design of competitive physical activities

Design of competitive physical activities” is the second most important factor for the promotion of physical activities in PE with the frequency of 16. The design of competitive physical activity tasks involves creating activities that challenge individuals or teams to compete against each other while engaging in physical activities. Competitive physical activities have many benefits, such as respect for the rules in games, social skills, physical development, confidence, learning to lose, teamwork, etc. In addition, competitive physical activities help students learn what can go right and wrong and arm them with strategies that they can use to do better in the future.

The following are some guidelines to consider when designing competitive physical activity tasks

- Clear rules and guidelines: To ensure a fair competition, it's important to establish clear rules and guidelines that all participants understand and can follow.
- Appropriate challenge level: The activities should be challenging enough to motivate participants to compete, but not so difficult that they become frustrated or discouraged.
- Safe environment: Participants should be able to compete in a safe environment that is free from hazards and risks.
- Fair competition: The activities should be designed to ensure fair competition without giving one participant or team any advantage.
- Motivating rewards: To motivate participants to compete, rewards such as medals, trophies, or certificates can be offered to the winners.
- Variety of activities: To keep participants engaged, it's important to offer a variety of physical activities that cater to different interests and abilities.

Overall, competitive physical activity tasks can be a fun and engaging way to encourage individuals or teams to participate in physical activities. By designing challenging, safe, and fair activities, participants can be motivated to push themselves and strive for success while having fun and staying active.

Fun in Physical Activities

In order to maintain pupils' good health, regular physical activity is essential. If students have positive attitudes towards PE, then they will more likely participate in physical activities. One of the most critical factors in changing students' attitudes towards physical activities is the “fun in physical activities” sessions. Fun in physical activities refers to the enjoyment, pleasure, and satisfaction that individuals experience when engaging in physical activity. Fun can be a key motivator for physical activity, as individuals are more likely to engage in activities that they find enjoyable and engaging. There are several benefits of enjoying an activity. Physical activity releases a bunch of hormones known as endorphins. Endorphins are also called happy hormones designed to make the body feel relaxed, calm, and comfortable. On the other hand, engaging and enjoyable physical activities sessions boost confidence and improve pupils' social, mental, and cognitive abilities.

There are many ways to make PE lessons fun, such as using a variety of fitness activities, providing lots of specific positive feedback, progress from easy to difficult, allowing student

choice and use of music etc (Beighle, 2019). The following are some characteristics of fun in physical activities

- Positive emotions: Fun physical activities can elicit positive emotions, such as happiness, excitement, or satisfaction.
- Challenge: Fun physical activities often involve a level of challenge, whether trying to improve a skill or competing against others.
- Variety: Various physical activities can help keep things exciting and fun. This can include trying new activities or varying the intensity or duration of a particular activity.
- Social interaction: Fun physical activities often involve social interaction with others, whether it's playing team sports or joining a fitness class.
- Sense of accomplishment: Fun physical activities often provide a sense of accomplishment, such as achieving a personal best or completing a challenging workout.

Fun in physical activities is vital for promoting sustained engagement in physical activity and promoting positive health outcomes. By incorporating elements of challenge, variety, social interaction, positive emotions, and a sense of accomplishment, physical activity can become a more enjoyable and rewarding experience

Good Student-teacher relation

Good student-teacher relations are characterized by positive interactions between students and teachers, which can lead to a more supportive and engaging learning environment. Student-teacher relation" was identified with the frequency of 15. Different articles have mentioned that good student-teacher relations can positively influence students' attitudes towards physical activities (Arbabisarjou, Sourki, & Bonjar, 2016). Research shows a link between PE teachers' personality traits and students' beliefs, individual, and social behaviors (Arbabisarjou et al., 2016). The finding suggests that paying attention to physical education teachers' personalities can improve students' views and individual habits. Hence, this can lead to active participation in physical activities.

The following are some specific examples of good student-teacher relations

- Positive communication: Teachers who communicate with their students positively and respectfully can build trust and establish a sense of mutual respect.
- Active listening: Teachers who actively listen to their students can better understand their needs and concerns and offer appropriate support and guidance.
- Encouragement: Teachers who provide encouragement and positive feedback can boost students' confidence and motivation to participate in physical activities.
- Personalization: Teachers who get to know their students personally can tailor their instruction and support to individual needs and interests.
- Collaboration: Teachers who involve their students in the decision-making process can promote a sense of ownership and engagement in physical activities.

Good student-teacher relations involve building positive connections, fostering trust, and creating a supportive and engaging learning environment. When teachers prioritize these elements, students are more likely to feel motivated, engaged, and empowered to participate in physical activities and reach their full potential.

Innovative curriculum

An innovative physical education curriculum goes beyond traditional approaches to physical education and incorporates new and creative strategies for promoting physical activity and wellness. Meeting students at their level, providing help to improve abilities, and developing a lifelong love of exercise are all part of an innovative physical education curriculum. If instructors look to the future and incorporate cutting-edge teachings into their curriculum, it can assist in participating in physical activities (Nelson, 2020). Research shows that curriculum content is considered the most critical determinant for the students to actively participate in physical activities (Nelson, 2020). In designing an innovative PE curriculum, one should consider multiple purposes of PE, e.g., education, health, socialization, citizenship, fundamental skills, physical development, and sporting success (Dudley & Burden, 2020; Winpenny et al., 2020). PE curriculum that helps students develop confidence in their abilities and encourage participation could encourage a lifelong active lifestyle because of the enjoyment they derive from that participation (Mandolesi et al., 2018). The less effective lessons and too much teacher-talk can also be one of the reasons for student disengagement (Ofsted, 2013).

The following are some of the guidelines that may be used in the development of an innovative PE curriculum

- Offering non-traditional activities: Introducing students to activities such as dance, yoga, and martial arts can provide a fun and engaging way to promote physical activity.
- Focusing on teamwork and leadership: Encouraging students to work together and develop leadership skills through team sports and group activities can help build social and emotional skills and physical fitness.
- Providing opportunities for self-expression: Allowing students to choose activities or create their own routines can help them find activities they enjoy and feel confident in, leading to a more outstanding commitment to lifelong physical activity.
- Focusing on teamwork and leadership: Encouraging students to work together and develop leadership skills through team sports and group activities can help build social and emotional skills and physical fitness.
- Integrating technology: Using heart rate monitors, fitness trackers, and video analysis software can help students track their progress and learn about the science of physical activity.

An innovative physical education curriculum can help students develop a positive attitude towards physical activity and health, impacting their overall well-being.

Teamwork

Teamwork in physical education refers to the collaboration and cooperation among students to achieve a common goal or objective during physical activities. Teamwork is essential to physical education, as it promotes social and emotional skills and physical fitness. To turn the physical activities session into a meaningful experience, Beni et al (2017) identified five themes. The first and most important one is “social interaction”, which can only be achieved through playing team sports or teamwork. Teamwork can play an essential role in developing social skills and working as an active learning form. There are several benefits of teamwork in physical activities. It motivates unity, assists in positive feedback, improves efficiency and productivity, improves skills, motivates to perform better, healthy competition,

and strives to do better (Astin, 1985). Group work fosters students' critical thinking and conceptual understanding. The results show that replacing lectures with group work helped students engage in active learning and take their knowledge to an advanced level (Knight & Wood, 2005). Group work is also effective in personal development as it motivates the low achieving pupils to get fully involved and succeed (Gillies, 2016). However, group work can be challenging in physical education due to different factors such as coordination, teaching skills, assessment skills, personality clashes, etc.

Here are some specific guidelines which can be used in teamwork

- Peer coaching: Physical education teachers may encourage students to provide feedback and support to their peers, such as through peer coaching or providing constructive criticism.
- Leadership opportunities: Physical education teachers may provide students with opportunities to take on leadership roles within a team or group, such as team captain or coach, which can help develop leadership skills and foster a sense of responsibility.
- Group challenges: Physical education teachers may create group challenges, such as obstacle courses or fitness circuits, that require students to work together to complete the challenge.
- Partner activities: Partner activities, such as relay races or partner stretches, require students to communicate and collaborate with a partner to complete the activity.

Through teamwork in physical education, students can develop essential social and emotional skills, such as communication, collaboration, leadership, and problem-solving, while improving their physical fitness and health.

Implications of the findings

The findings of this SLR will have many implications from various perspectives. The outcome of this study will contribute to the available knowledge taught in universities about which factors can positively promote physical activities. This work will help universities develop PE curricula that engage students in physical activities while taking into account the identified factors. In addition, the findings of this study will also provide PE teachers with a new way of thinking and the students who want to participate in PE activities actively. Moreover, this work will also provide researchers in PE with appropriate knowledge to evaluate the existing PE programs. The findings will aid experts in deciding where to invest while developing tools and equipment for PE activities. To adequately implement the identified factors, universities need to arrange proper training programs for PE teachers.

Limitations with study

This research has a few limitations. It is possible that some important studies published in other digital libraries have been overlooked. The digital libraries chosen, on the other hand, cover the most relevant published literature on factors. Another potential issue is the absence of meaningful synonyms in the search strings, despite the fact that we carefully built our search strings following the SLR principles and properly analyzed the search strings.

Conclusions

This paper provides the details of an SLR conducted to better understand the factors that can promote physical activity promotion in physical education lessons. A total of 95 articles were extracted from three databases. The articles were retrieved using a search string, and the articles included in this SLR were extracted based on defined inclusion and exclusion criteria. First, we evaluated the articles and provided a demographic analysis to identify the venues for publications in this area and in which years more articles were published. A total of 15 factors were extracted from 95 articles.

In order to answer RQ, our findings show that “qualified and experienced teachers”, “design of competitive physical activity tasks”, “fun in physical activities”, “good student-teacher relation:”, “innovative curriculum”, and “teamwork” are the top 6 factors that can influence physical activity promotion in PE programs. If not addressed in time, the identified factors can cause students to disengage from physical activities. These factors need to be implemented to make students actively participate in physical activities.

In the future work, we plan to extend our research by proposing a standard solution in the form of best practices that can be used to successfully implement the identified factors in the PE programs of universities.

Conflict of Interest

There is no conflict of interest between authors.

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