The effect of comprehensive school physical activity program (CSPAP) on students' physical literacy

El efecto del programa integral de actividad física escolar (CSPAP) en la alfabetización física de los alumnos

Authors

Diky Hadyansah[1]
Dimyati[2]
Hedi Ardiyanto Hermawan[3]

[1] Universitas Negeri Yogyakarta (Indonesia)
[2] Universitas Negeri Yogyakarta (Indonesia)
[3] Universitas Negeri Yogyakarta (Indonesia)

Corresponding author:
Diky Hadyansah
dikyhadyansah.2022@student.uny.ac.id

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Abstract

Introduction: Physical activity of students in Indonesia has not met the standards set by WHO. This is a result of the low level of physical literacy possessed by students. Utilization of time at school by providing physical activity is important because students spend more time at school than at home

Objective: This study aims to improve physical literacy through the Comprehensive school physical activity program (CSPAP).

Methodology: The method used in this research is Quasi Experiment with multiple treatment and control design with pretest-posttest. The population in this study were junior high school students in grade VIII at SMP Kartika XIX-1 Bandung City as many as 90 people. The sampling technique used was cluster random sampling. Data analysis techniques using one-way anova test with three groups.

Results: The results showed that there was a difference in the effect between the standard curriculum CSPAP program group, fitness integrated CSPAP program and conventional on students' physical literacy because the significance value showed 0.015 <0.05.

Conclusions: This study shows that the provision of the CSPAP program is able to increase the gain score of students' physical literacy level from before being given the CSPAP program. The CSPAP program, with the various physical activities offered and the support system in its implementation, will increase students' physical literacy and stimulate students to be active in practicing physical activities both at school and outside of school.

Keywords

Comprehensive school physical activity program (CSPAP); Physical Literacy; Physical Activity; sedentary lifestyle.

Resumen

Introducción: La actividad física de los estudiantes en Indonesia no ha alcanzado los niveles establecidos por la OMS. Esto se debe al bajo nivel de alfabetización física que poseen los estudiantes. La utilización del tiempo en la escuela proporcionando actividad física es importante porque los estudiantes pasan más tiempo en la escuela que en casa.

Objetivo: Este estudio pretende mejorar la alfabetización física a través del Programa Integral de Actividad Física Escolar (CSPAP).

Metodología: El método utilizado en esta investigación es Cuasi Experimento con diseño de tratamiento múltiple y control con pretest-postest. La población de este estudio fueron estudiantes de secundaria de grado VIII en SMP Kartika XIX-1 de la ciudad de Bandung, 90 personas. La técnica de muestreo utilizada fue el muestreo aleatorio por conglomerados. Las técnicas de análisis de datos fueron la prueba de anova unidireccional con tres grupos.

Resultados: Los resultados mostraron que había una diferencia en el efecto entre el grupo del programa CSPAP del plan de estudios estándar, el programa CSPAP integrado de fitness y el convencional en la alfabetización física de los estudiantes porque el valor de significación mostró 0,015 <0,05.

Conclusiones: Este estudio muestra que la provisión del programa CSPAP es capaz de aumentar la puntuación de ganancia del nivel de alfabetización física de los estudiantes desde antes de recibir el programa CSPAP. El programa CSPAP, con las diversas actividades físicas ofrecidas y el sistema de apoyo en su implementación, aumentará la alfabetización física de los estudiantes y estimulará a los estudiantes a ser activos en la práctica de actividades físicas tanto en la escuela como fuera de ella.

Palabras clave

Programa integral de actividad física escolar (CSPAP); alfabetización física; actividad física; sedentarismo.

Introduction

Sedentary lifestly behavior is a problem experienced by Indonesian society today, especially among teenagers of the millennial generation (Fuadah et al., 2021). Sedentary lifestly behavior is a group of behaviors that require little energy expenditure such as watching television, playing video games, computers, sitting in class or on transportation (Yusfita, 2018;Park et al., 2020). The rapid development of technology has limited the activities that children can do, which does not contribute enough and meaningful benefits to their health (Cavill, 2001). Technological advances and changes in lifestyle and occupation that demand lower levels of physical activity (Katzmarzyk & Mason, 2009). This decline in physical activity impacts physical fitness and is predicted to lead to serious public health problems (Chang et al., 2019) and Other Diseases like Depression, Cognitive function (Park et al., 2020); (Fuadah et al., 2021).

This decrease in physical activity is a result of the low level of physical literacy possessed by children (Palma, B, Claros, 2024). Literasi physical activity is a concept of healthy lifestyle habits. The results of research on physical activity among adolescents conducted by Supriadi et al. (2021) recommended the need to increase physical literacy as an effort to increase physical activity. Physical literacy according to The International Physical Literacy Association (IPLA) Physical literacy is the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in lifelong physical activity (IPLA, 2014). Low physical literacy indicates low levels of motivation, confidence, physical competence, knowledge and understanding of the importance of physical activity. Therefore, studies on efforts to improve physical literacy among adolescents are important to be carried out by various parties.

Increasing physical literacy can be done by optimizing with education or through physical activity. Various efforts to increase physical activity are carried out by related institutions, including by the Ministry of Youth and Sports Deputy 3 for Sports Culture directing the 2020-2024 Strategic Plan, the Ministry of Health through the Healthy Living Community Movement, and the Ministry of Health through the Healthy Living Community Movement (GERMAS) (Kementrian Kesehatan, 2017), dan Ministry of Education through physical education programs in schools (Akinci & Kirazci, 2022). However, the implementation of all these programs is carried out separately and is not a comprehensive physical activity program intended to be carried out by a person in an environment so that the achievements of each program are not optimal. Meanwhile, to understand physical activity behavior according to Department of Health and Human Services' National Institutes of Health (NIH) must understand the ecological model framework that divides five levels as a framework for understanding a person's behavior, namely: personal, interpersonal, organizational, community, and policy (National Institutes of Health, 2017). This means that increasing physical activity will be successful if there is a reciprocal relationship between these five factors.

The CSPAP program is a physical activity program designed through an ecological approach. The CSPAP program is conceptualized as an approach to achieve educational outcomes (i.e., outcomes that match academic standards) that are supported for physical education and to provide school-aged children with the opportunity to meet the WHO-recommended 60 minutes of daily physical activity. Specifically, the outputs of CSPAP are threefold: comprehensive student development that includes physical, social-emotional and academic learning, daily physical activity of at least 60 minutes daily and lifelong physical activity (Webster et al., 2020). The program synergizes all components: physical education as the foundation, physical activity before and after school, physical activity during school, staff involvement, and family and community (National Center for Chronic Disease Prevention and Health Promotion, 2013).

Research Lee et al., (2019) related to school teachers' perspectives on CSPAP and physical literacy showed that the CSPAP Program and physical literacy domains on psychomotor were able to improve physical fitness and motor skills, increase physical activity time; on the cognitive domain increased knowledge about the benefits of physical activity, academic performance and taught the importance and fitness; and on the affective domain included: increasing enjoyment in physical activity, building social skills, improving social, self-esteem and promoting support and values. Suggestions for future research include comparing the impact on pre-service elementary classroom teachers' perspectives of different CSPAP instructional approaches. In this study, physical literacy is an elaboration of the above CSPAP program outputs.

There were no studies that used all the CSPAP components identified in the literature review search. Research Eather et al., (2013) with the 4 Fun Program conducted in Australia on activity programs through PE learning, family involvement and the school environment (Eather et al., 2013a;Eather et al., 2013b) also have not fully implemented all components of the CSPAP program. Other researchers explain that interventions that use more CSPAP components are more effective than interventions that use fewer CSPAP components (Webster, 2022). Therefore, this study used the five-component approach of CSPAP. This study aimed to improve the physical literacy level of Kartika XIX 1 Bandung junior high school students.

Method

This design was chosen because it increases the validity of experimental research, especially internal validity. With the control group, researchers can compare the results of treatment (treatment) with normal conditions or without treatment, so that it can be ascertained that the changes that occur in the experimental group are indeed caused by the treatment, not other factors The following is a figure 1. of the design used :

Figure. 1 Research Design

R_1	O_1	X_1	O_2
R_2	O_1	X_2	O_2
R_3	O_1	C	O_2

Ket.
R1 = Experimental group 1
R2 = Experimental group 2
R3 = Control group
X1 = Fitness integrated CSPAP program intervention
X2 = Standard curriculum CSPAP program intervention
C = Conventional program
O1 = Pretest
O2 = Posttest

Participants

The researcher took the population of junior high school students of Kartika XIX-1 Bandung City. The students involved totaled 90 students (38 boys and 52 girls) who were divided into three groups and had an age of 12-14 years and had no history of special diseases. The sampling technique was carried out by cluster random, where the selection was carried out randomly from three classes at the VIII grade level so that it would be divided into three groups, namely two experimental groups and one control group. The method used in this research is Quasi experiment with multiple treatment and control design with pretest-posttest.

Procedure

The CSPAP program given to the experimental group was divided into two groups, namely the group that received physical education materials with the standard school curriculum and the group that received fitness-specific physical education materials. The control group only received the natural activities implemented by the school with the standard curriculum physical education materials.

Before being given the CSPAP program intervention, all samples, both experimental and control groups, measured the level of physical literacy with a student physical literacy questionnaire. After taking the initial data, the sample was given an intervention program in the form of CSPAP program. The implementation of the CSPAP intervention program was carried out every school day for two months. This is based on previous research on the application of the CSPAP program for 12 weeks can increase physical activity and physical fitness. (Brusseau et al., 2016).

The CSPAP program consists of five activity components including: a) physical education, b) before and after school, c) during school, d) staff involvement and e) family and community involvement. The sub-components of the CSPAP program in table 1:

Table 1. Components of CSPAP

Components of CSPAP	Sub-Component
Physical Education	Standard kurikulum Motor Skill Development Physical Fitness
Before and After School	Walking Program/Biking to and from school Intramural activities
During School	Classroom physical activity breaks Daily recess
Through Staff Involvement	Role models for wellness Classroom participation
Family and Community Engagement	Shared use of recreational facilities Opportunities for physical activity when school is out of session Environments for safe travel to and from school

The first component is the PE program material. In this study, PE materials were divided into two, namely standard curriculum PE and fitness-integrated PE in Table 2. The second component, physical activity before and after school in this study can be classified into two categories, namely: cycling or walking to school (active transportation), and intramural activities (sports participation outside of school). Cycling and walking can achieve 28 minutes of MVPA per day. In the implementation of active transportation, students are encouraged to walk or bike to and from school. If it is not possible, walking and cycling activities are replaced by walking around the school field before entering class for 3-5 rounds in table 3. While intramural activities include extracurricular sports, traditional sports (boy bo-yan, jump rope), and clubs - Fitness activities, gymnastics, dancing, and running. The third component is physical activity while at school. This consists of classroom activities (lesson changes) and break times in Table 4. Physical activities while at school are offered to students to minimize sedentary activities and get used to being active while at school in the form of fitness activities such as: sit ups, push ups, back ups, skiping, high knee, jumoing jack, plank or other free sports activities in table 5. The fourth component is staff involvement, where some school staff such as teachers, and employees are involved in physical activities such as health promotion, encouraging students in the implementation of the CSPA program and actively involved in one of the physical activities such as gymnastics together in table 6. The fifth component is Family and community involvement in physical activity means parents, school staff and community members work together to increase physical activity opportunities before, during and after the school day to improve children and young people's learning, development and health. The activities offered include weekend sports either individually or together as shown in Table 7.

Table 2. Physical Education Program

Week	CSPAP Fitness Material	CSPAP Materials Standard & Conventional Curriculum
1	HRF, SRF & Cardioresp ratory fitness	Floor Gymnastics Activities
2	Flexibility & Muscular Strenght	Fitness Activities
3	Speed & Agility	Fitness Activities
4	BMI, Balance & Coordination	Basketball Games
5	Circuit Training	Soccer Games
6	Invasion Games	Baseball Games
7	Invasion Games	Traditional Games
8	Traditional Games	Traditional Games

Table 3. Activities Before and After School

Activities	Type	Shape
Before	Walking Program/ Biking to and from school	Cycling or Walking
After School	Intramural activities	Boy-boyan Ekstrakurikuler Toxic Balls Skiping

Table 4. Activities during class breaks

Week	Break Times 1	Break Times 2
1	4 Office Posture Exercises	Ice Breaking 1 + 1
2	Road Around the Classroom	Ram Sam Sam Gymnastics
3	Office Stretching	Brain Gymnastics
4	Road Around the Classroom	Piquin Gymnastics
5	Seated Strech	Ice Breaking 1 + 1
6	Road Around the Classroom	Tabata 1
7	Office Stretching	Brain Gymnastics
8	Road Around the Classroom	Ram Sam Sam Gymnastics

Table 5. Activities During School

Activities 1	Activities 2
Skiping	Pull up & Back up
Sit up & Push up	Skiping
Ladder Jump	Futsal/Basket
Jumping jack & Squat Thrust	eye coordination
Sprint & Zigzag	TABATA

Table 6. Staff Involvement in CSPAP Program

No	Activities
1	Promotion of physical activity for obesity
2	Encourage the implementation of the CSPAP program
3	Actively engage in morning exercises

Table 7. Parent involvement in CSPAP program

No	Activities
1	Promotion of physical activity at home
2	Encourage the implementation of the CSPAP program
3	Actively engage in weekend sports

The continuity of activities from the five components was directly supervised by the research team, especially in the PE component, physical activity before and after school, and while at school (activities in the classroom and rest time). In addition, supervision was also carried out by the head of each group by filling out a log book and making a video report in the whatapp group provided by the researcher. As for the involvement of staff, teachers and parents, it is supervised by filling in the log book provided by the researcher. As for the control group intervention was only in the form of a school program in general using only physical education components. While physical activity during, before and after school is not made into a program that must be done. The main physical activity was carried out only in physical education and morning exercise once a week.

Data Collection / Statistical Analysis

Data collection was carried out twice, namely pretest and post test through filling out a physical literacy scale questionnaire. The data analysis technique used in this research is inferential statistics. Hypothesis testing conducted in this study used a one-way ANOVA test. The prerequisite that must be done before the one-way anova test is that the research data must be normally distributed and homogeneous or the significance value must be> 0.05. If these conditions are met, the one-way anova statistical test can be continued with posthoc which aims to identify significant differences between the group means.

Instrument

The instrument used refers to the instrument developed by Dong (2021) Perceptions of Physical Literacy for Middle-School Students (PPLMS) for junior high school students from China which divides the dimensions of OT into four namely: Physical activity affectivity, perceived physical competence, knowledge and understanding of physical activity, and engagement in physical activity. The affective domain, consisting of intrinsic motivation and self-confidence, was used to examine middle school students' attitudes towards physical activity. Knowledge and understanding presented in the cognitive domain focused on investigating secondary school students' understanding of the value of physical activity to a healthy lifestyle. Perceived physical competence represented the physical domain to evaluate secondary school students' basic motor skills and physical abilities, while engagement in physical activity represented the behavioral domain used to assess secondary school students' physical behavior habits.

This instrument has been validated by researchers using the factor validity test by correlating the factor score (the sum of the items in one factor) with the total factor score (the total of all factors). Determining whether or not an item is suitable for use, usually a correlation coefficient significance test is carried out at the 0.05 significance level. If r count ≥ r table (2-sided test with sig. 0.05) then the instrument or question items are significantly correlated to the total score declared valid. The instrument reliability test uses the Cronbach Alpha formula with the provision that if the alpha value> 0.7, the reliability is sufficient. In this physical literacy instrument, the average value of Cronbach Alfpha is 0.6 declared valid items (table 8) and has a reliability of 0.95 or reliable and can be used as in table 9.

Table 8. Pearson Correlation Physical Literacy

	R Hitung	R Tabel	Keterangan
X1	.699**	0.235	Valid
X2	.505**	0.235	Valid
X3	.769**	0.235	Valid
X4	.713**	0.235	Valid
X5	.705**	0.235	Valid
X6	.749**	0.235	Valid
X7	.733**	0.235	Valid
X8	.828**	0.235	Valid
X9	.755**	0.235	Valid
X10	.683**	0.235	Valid
X11	.778**	0.235	Valid
X12	.619**	0.235	Valid
X13	.639**	0.235	Valid
X14	.601**	0.235	Valid
X15	.717**	0.235	Valid
X16	.758**	0.235	Valid
X17	.772**	0.235	Valid
X18	.661**	0.235	Valid
X19	.559**	0.235	Valid
X20	.710**	0.235	Valid
X21	.795**	0.235	Valid
X22	.746**	0.235	Valid

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Table 9. Reliability Statistics

Cronbach's Alpha	N of Items
.950	22

Data analysis

Data collection was carried out twice, namely pretest and post test through filling out a physical literacy scale questionnaire. The data analysis technique used in this research is inferential statistics. Hypothesis testing conducted in this study used a one-way ANOVA test. The prerequisite that must be done before the one-way anova test is that the research data must be normally distributed and homogeneous or the significance value must be> 0.05. If these conditions are met, the one-way anova statistical test can be continued with posthoc which aims to identify significant differences between the group means.

Results

The research results of the physical literacy level of class VIII students of SMP Kartika XIX-1 Bandung totaling 90 students (38 boys and 52 girls) in this study will be presented below:

Table 10. Descriptives Statistics

Group	Gender	N	Sum	Mean	Std. Deviation	Variance	Min	Max
CSPAP Standard Curriculum	Boy	13	202	15.54	18.7	349.76	-8	43
	Girl	17	241	14.18	15.72	247.27	-11	59
	Total	30	443	14.77	16.78	281.63	-11	59
CSPAP Integrated Fitness	Boy	12	84	7	13.5	182.36	-14	30

	Girl	18	157	8.72	13.6	185.03	-8	35
	Total	30	241	8.03	13.35	178.37	-14	35
Conventional	Boy	13	-16	-1.23	16.38	268.52	-22	38
	Girl	17	109	6.41	14.02	196.63	-18	46
	Total	30	93	3.1	15.31	234.43	-22	46

Based on table 10, the average value of the CSPAP Standard Curriculum program group is 14.77, the CSPAP Integrated Fitness program group is 8.30, and the conventional program is 3.10. To test the hypothesis using the one-way anova technique, a prerequisite test must be carried out, namely the normality test and the homogeneity test. The normality test results show that the significance value of all groups is greater than 0.05> which means that this data is normally distributed as in table 11. Likewise, the homogeneity test value shows a significance value of 0.624> 0.05 which means that the variance of the three groups is homogeneous.

Table 11. Tests of Normality

	Group	Kolmogorov-Smirnov[a]		
		Statistic	df	Sig.
Group	CSPAP Standard Curriculum	.085	30	.200*
	CSPAP Integrated Fitness	.141	30	.129
	Conventional	.105	30	.200*

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Table 12. Anova

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2057.867	2	1028.933	4.445	.015
Within Groups	20139.033	87	231.483		
Total	22196.900	89			

Based on table 12 of the one-way ANOVA test, the data shows a significance value of 0.015 < 0.05. This data shows that the average of the three groups is different. This means that there is a difference in the effect between the standard curriculum CSPAP program group, fitness integrated CSPAP program and conventional on students' physical literacy. To see the difference between the groups, the following table 5 post hoc test will be presented.

Table 13. Multiple Comparisons

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.
Group 1	Group 2	6.733	3.928	.206
	Group 3	11.667*	3.928	.011
Group 2	Group 1	-6.733	3.928	.206
	Group 3	4.933	3.928	.424
Group 3	Group 1	-11.667*	3.928	.011
	Group 2	-4.933	3.928	.424

*. The mean difference is significant at the 0.05 level.
*. Group 1 = CSPAP Standard Curriculum
*. Group 2 = CSPAP Integrated Fitness
*. Group 3 = Conventional

Based on the results of the post hoc test in table 13, it shows that there is a difference in influence between the CSPAP Standard Curriculum Group and the Conventional Group with a significance value of 0.011 <0.05. while between the CSPAP Integrated Fitness group and the conventional group and the CSPAP Standard Curriculum group with the CSPAP Integrated Fitness group there is no difference because the significance value is greater than 0.05.

Discussion

Based on the results of the ANOVA test above, it shows that there is a difference in influence between the standard curriculum CSPAP program group, fitness-integrated CSPAP program and conventional on students' physical literacy. This result is supported by research Lee et al., (2019) related to school teachers' perspectives on CSPAP and physical literacy show that the CSPAP Program has the potential to improve physical literacy in both psychomotor, cognitive, and affective aspects. This occurs due to differences in the physical environment, social environment, and policies designed and provided to students. Researchers developed the CSPAP program based on the ecological model of physical activity that provides space for students to receive education through and or through physical activity optimally so that students' physical literacy develops.

Department of Health and Human Services' National Institutes of Health (NIH) divides the ecological model into five levels as a framework for understanding the interactive effects of factors that determine a person's behavior namely: personal, interpersonal, organizational, community, and policy (National Institutes of Health, 2017). The ecological model applied to the CSPAP program is carried out in a specific physical environment. The specific meaning here is that the relationship between personal and environmental factors with physical activity in the ecological model focuses more on the socio-cultural environment and the physical environment that supports the improvement of physical literacy.

The intervention mechanism of the CSPAP program on the four domains of physical literacy in the domain of motivation and beliefs in the form of giving autonomy authority in choosing physical activities, and determining physical activities that are arranged according to ability, fostering feelings of competence students feel competent in the activities they do by arranging physical activities tailored to their abilities; and feelings of connection with others by forming groups in the implementation and monitoring of physical activities. These three interventions are based on the self-determination theory of Edward Deci and Ryan Richard that students' motivation will arise when their three basic psychological needs are met such as autonomy, competence, and relatedness (Ryan & Deci, 2000). A person who is motivated to participate in physical activity will feel pleasure and positive experiences will feel confident to continue participating in physical activity (Whitehead, 2010). The resulting self-confidence gained through participation will encourage individuals to maintain or gain motivation to have a physically active lifestyle. Therefore, the CSPAP intervention program is provided in the form of fun and varied physical activities so that students have the motivation to be active.

CSPAP program interventions in the second domain of physicality refer to an individual's ability to develop skills, movement patterns, and the capacity to experience various intensities and durations of movement. Physical competence is improved through movement education in physical activities during, before and after school. Improved physical competence enables an individual to participate in a variety of physical activities and settings. Edwards et al. (2017) indicates that the five core categories of the physical domain are: "movement capacities, motor skill competence, physical competence, fundamental movement skills (FMA) and purposeful physical pursuits".

CSPAP program interventions in the third domain of knowledge and understanding include the ability to identify and express important qualities that influence movement, understand the health benefits of an active lifestyle, and understand various aspects of safety associated with physical activity in various circumstances and physical environments. Increasing knowledge and understanding is done through education about movement in physical education lessons, providing books on forms of physical activity at home, guidance from social environments such as teachers, staff, and parents, which are the fourth and fifth components of CSPAP.

CSPAP program interventions in the fourth domain of physical literacy, namely behavioral factors, by developing an ecological model of physical activity, where sustainable engagement in physical activity is supported by the interactive effects of factors that determine a person's behavior, namely: personal, interpersonal, organizational, community, and policy (National Institutes of Health, 2017). This is important because promoting active participation leads to a healthy and active life. This means that individuals will prioritize and maintain engagement in a range of activities as an integral part of lifestyle, not only relating to 'being physically active, but also encompassing an understanding of how to be physically active by interacting with varied and challenging environments.

The process of implementing the CSPAP program as an ecological model of physical activity, each student is taught behavior as a physically literate individual by teachers, staff, students, and parents

themselves. The implementation of this process is based on social learning theory which states that a person can learn certain behaviors through modeling mechanisms from the surrounding social environment. This social learning process is called Bandura's social cognition theory where a behavior arises as a result of a triangular reciprocity relationship between personal factors - the individual with a set of learned experiences, the environment - or external social context and behavior - responses to stimuli to achieve goals that interact with each other (Albert Bandura, 1989a;Nickerson, 2023).

The CSPAP program with all its components synergizes to improve students' physical literacy. The first component, physical education, is unique in that it is systemically part of the formal school infrastructure and has learning standards that focus on providing school students instruction that includes the knowledge, skills, and confidence to be physically active for the rest of their lives. (Rink et al., 2010). The components of physical activity during, before, and after school have the potential to support physical education or improve students' physical, social-emotional, academic learning and increase the total amount of students' daily physical activity so that students' physical literacy increases. The second component, physical activity during school such as physical activity in class, recess. Previous research has shown that PA in the classroom can contribute to physical and cognitive health outcomes of school-aged children (Donnelly & Lambourne, 2011). The third component, before and after school physical activity includes before and after school activities, clubs, and intramural activities, which provide multiple opportunities for students to engage in physical activity (Erwin et al., 2013). Engagement in physical activity strengthens all domains of physical literacy. The other two components of the CSPAP model - staff engagement and family and community engagement provide the support system for implementing CSPAP, especially in terms of providing physical activity opportunities during, before and after school. The fourth component, staff engagement provides opportunities for social agents in schools (i.e. teachers, administrators, school counselors, school staff) to be positive role models who can motivate students to be physically active and healthy (Erwin et al., 2013). The fifth component of family and community engagement plays an important role in providing physical activity opportunities to children. Families (e.g., parents, siblings, relatives) can have a positive impact by shaping children's physical activity habits and interests, and community partners to offer resources that are essential for physical activity promotion (Castelli et al., 2014).

The first finding indicated that the delivery of materials using standard curriculum materials was better than fitness-integrated materials. This is possible because the standard curriculum materials have a variety of sports activities so that the physical competencies present in the physical literacy assessment are developed rather than in the fitness-integrated CSPAP program materials. The second finding showed that the CSPAP program group, both standard and fitness-integrated curricula, had greater mean scores than the conventional group. The control group intervention was only in the form of a school program in general using only physical education components. While physical activity during, before and after school is not made into a program that must be done. The main physical activity was carried out only in physical education and morning exercise once a week. Strengthening knowledge and understanding of physical activity is only in physical education learning. This resulted in less than optimal education about and through movement. The results also found that interventions that targeted more CSPAP components were more effective than interventions that targeted fewer components. (Kuhn et al., 2015).

A further consequence of the findings in this conclusion is that first, in general, subjective respondents realize the importance of physical activity for physical and mental health. In addition, students, teachers, staff and parents collaborate together in the success of the CSPAP program. Second, there needs to be a follow-up to this research in the form of an evaluation of implementation by the school to become the school's flagship program. Third, there is a need for supporting infrastructure and health seminars for all human resources involved in the implementation of the CSPAP program.

Conclusions

The conclusion of this study shows that there is a difference in the effect between the standard curriculum CSPAP Program, fitness integrated CSPAP program and Conventional program on physical literacy. The standard curriculum CSPAP program had the largest mean score than the other groups. The first limitation of this study was the number of schools that implemented the CSPAP program (only one

school). This is due to the complexity of implementing the CSPAP program which involves students, teachers, staff and parents. In addition, the implementation process is carried out every day while students are at school. It requires an active role from the school principal in making a special policy to conduct this program. The second limitation is the supervision of students in the implementation of the program, especially in physical activity at home in the implementation of the fitness program and active transportation after school.

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References

Akinci, Y., & Kirazci, S. (2022). Health Related Fitness Physical Education Intervention : Self-Determination Perspective. Journal of Pharmaceutical Negative Results, 13(3), 1926–1935. https://doi.org/10.47750/pnr.2022.13.S03.288

Bandura, A. (1989). Social cognitive theory. 6, 1–60.

Brusseau, T. A., Hannon, J., & Burns, R. (2016). Effect of a Comprehensive School Physical Activity Program on Physical Activity The Effect of a Comprehensive School Physical Activity Program on Physical Activity and Health-Related Fitness in Children From Low-Income Families. Human Kinetics, 13. https://doi.org/10.1123/jpah.2016-0028

Castelli, D. M., Centeio, E. E., Beighle, A. E., Carson, R. L., & Nicksic, H. M. (2014). Physical literacy and Comprehensive School Physical Activity Programs. Preventive Medicine, 66, 95–100. https://doi.org/10.1016/j.ypmed.2014.06.007

Cavill, N. A. (2001). Health Enhancing Physical Activity for Young People : Statement of the United Kingdom Expert Consensus Conference. Pediatric Exercise Science, 13. https://doi.org/10.1123/pes.13.1.12

Chang, Y. K., Pontifex, M. B., & Walk, A. M. (2019). A systematic review of physical activity and cardiorespiratory fitness on P3b. Society for Psychophysiological Research, May. https://doi.org/10.1111/psyp.13425

Dong, X. (2021). Measuring Middle-School Student Physical Literacy: Instrument Development. Barry University.

Donnelly, J. E., & Lambourne, K. (2011). Classroom-based physical activity , cognition , and academic achievement. Preventive Medicine, 52, S36–S42. https://doi.org/10.1016/j.ypmed.2011.01.021

Eather, N., Morgan, P. J., & Lubans, D. R. (2013a). Physical Education and Sport Pedagogy Feasibility and preliminary efficacy of the Fit4Fun intervention for improving physical fitness in a sample of primary school children : a pilot study. Physical Education and Sport Pedagogy, 18(4), 37–41. https://doi.org/10.1080/17408989.2012.690375

Eather, N., Morgan, P. J., & Lubans, D. R. (2013b). Social support from teachers mediates physical activity behavior change in children participating in the Fit-4-Fun intervention. International Journal of Behavioral Nutrition and Physical Activity, 1–15.

Edwards, L. C., Bryant, A. S., Keegan, R. J., Morgan, K., & Jones, A. M. (2017). Definitions , Foundations and Associations of Physical Literacy : A Systematic Review. Sports Medicine, 47(1), 113–126. https://doi.org/10.1007/s40279-016-0560-7

Erwin, H., Beighle, A., Carson, R. L., Darla, M., Erwin, H., & Beighle, A. (2013). Comprehensive School-Based Physical Activity Promotion : A Review Comprehensive School-Based Physical Activity Promotion : A Review. September, 37–41. https://doi.org/10.1080/00336297.2013.791872

Fuadah, D. Z., Siswoaribowo, A., & Daniaty, E. (2021). Sedentary Lifestyle with Social Interaction in Adolescent. Journal of Applied Nursing and Health, 3(2), 77–83.

IPLA, T. I. P. L. A. (2014). What Is Physical Literacy. https://physicalliteracy.ca/physical-literacy/

Katzmarzyk, P. T., & Mason, C. (2009). The Physical Activity Transition. Journal of Physical Activity and Health, 6(February 2020). https://doi.org/10.1123/jpah.6.3.269

Kementrina Kesehatan. (2017). GERMAS - Gerakan Masyarakat Hidup Sehat. https://promkes.kemkes.go.id/germas

Kuhn, A. P., Stoepker, P., Carson, R. L., & Dauenhauer, B. (2015). A Systematic Review of Multi-Component Comprehensive School Physical Activity Program (CSPAP) Interventions. J Phys Activ Health, 12(10), 1436–1446. https://doi.org/10.1123/jpah.2014-0244.

Lee, J., Zhang, T., Lun, T., Chu, A., Zhang, X., Weiller-abels, K. H., & Keller, J. (2019). Comprehensive School Physical Activity Program and Physical Literacy : Exploring Preservice Elementary Classroom Teachers ' Perspectives. Advances in Physical Education, 9, 314–330. https://doi.org/10.4236/ape.2019.94022

National Center for Chronic Disease Prevention and Health Promotion. (2013). Comprehensive School Physical Activity Programs: A Guide For Schools A Guide for Schools. Atlanta. https://www.cdc.gov/healthyschools/professional_development/e-learning/CSPAP/_ass%0Aets/FullCourseContent-CSPAP.pdf

National Institutes of Health. (2017). Developing Interventions for Health-Enhancing Physical Activity. PAR-18-307 Research Project Grant. http://grants.nih.gov/grants/guide/pa-files/PAR-18-307.html

Nickerson, C. (2023). Albert Bandura's Social Cognitive Theory: Definition & Examples. February 13. https://www.simplypsychology.org/social-cognitive-theory.html

Patiño Palma, BE, y Vidarte Claros, A. (2024). Evaluación Canadiense de Alfabetización Física-2 (CAPL-2) como herramienta objetiva para evaluar la alfabetización física en niños de 8 a 12 años: Una revisión exploratoria. *Retos, 60*, 918–925. https://doi.org/10.47197/retos.v60.106813

Park, J. H., Moon, J. H., Kim, H. J., Kong, M. H., & Oh, Y. H. (2020). Sedentary Lifestyle : Overview of Updated Evidence of Potential Health Risks. Korean Journal of Family Medicine, 41, 365–373.

Rink, J., Hall, T., & Williams, L. (2010). Schoolwide Physical Activity: A Comprehensive Guide to Designing and Conducting Programs. Champaign, IL: Human Kinetics.

Ryan, R. M., & Deci, E. L. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. The American Psychological Association, 55(1), 68–78.

Supriadi, D., Hadyansah, D., & Budiman, A. (2021). Physical Activity in Adolescents during Covid-19 Pandemic Based on Gender. Malaysian Journal of Medicine and Health Sciences, 17(7), 100–104.

Webster, C. A. (2022). The Comprehensive School Physical Activity Program: An Invited Review. American Journal of Lifestyle Medicine, 17(6), 7622–7774. https://doi.org/10.1177/15598276221093543

Webster, C. A., Rink, J. E., Carson, R. L., Moon, J., & Gaudreault, K. L. (2020). The Comprehensive School Physical Activity Program Model : A Proposed The Comprehensive School Physical Activity Program Model : A Proposed Illustrative Supplement to Help Move the Needle on Youth Physical Activity. Human Kinetics, May. https://doi.org/10.1123/kr.2019-0048

Whitehead, M. (2010). Physical Literacy: Throughout the Lifecourse. Routledge, New York, NY.

Yusfita, L. Y. (2018). Hubungan Perilaku Sedentari Dengan Sindrom Metabolik Pada Pekerja. The Indonesian Journal of Public Health, January, 143–155. https://doi.org/10.20473/ijph.vl13il.2018.143-155

Authors' and translators' details:

Diky Hadyansah	dikyhadyansah.2022@student.uny.ac.id.com	Author/ Translator
Dimyati	dimyati@uny.ac.id	Author
Hedi Ardiyanto Hermawan	hedi_ardiyanto@uny.ac.id	Author