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Author Name(s): Varhatun Fauziah, Nuridin Widya Pranoto, Tjung Hauw Sin, Ahmad Chaeroni

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# Positive youth development-based physical activity to enhance social awareness in middle school students

**Varhatun Fauziah, Nuridin Widya Pranoto<sup>\*)</sup>, Tjung Hauw Sin, Ahmad Chaeroni**

Universitas Negeri Padang, Padang, Indonesia

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## ABSTRACT

Physical education has the potential to support not only students' physical development but also their social and emotional growth. However, physical activity in many physical education classes is still implemented without a clear pedagogical design aimed at developing students' social awareness. This study examined the effect of Positive Youth Development (PYD)-based physical activity on strengthening social awareness among middle school students. A quasi-experimental pretest–posttest control group design was used involving 60 students (aged 13–15 years) who were divided into an experimental group ( $n = 30$ ) and a control group ( $n = 30$ ). The experimental group participated in physical education activities designed using PYD principles such as cooperation, empathy, responsibility, and positive social interaction, while the control group followed conventional physical education learning. Social awareness (caring) was measured using adapted items from the Chinese Positive Youth Development Scale covering empathy, prosocial behavior, social relations, and emotional regulation. The results showed a significant increase in social awareness in the experimental group compared with the control group ( $p < 0.05$ ), indicating that PYD-based physical activity can support the development of students' social competence in physical education learning.



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## Corresponding Author:

Nuridin Widya Pranoto,  
Universitas Negeri Padang  
Email: [nuridin@fik.unp.ac.id](mailto:nuridin@fik.unp.ac.id)

## Introduction

Adolescent development is not only reflected in academic achievement but also in the ability to develop social and emotional maturity that supports healthy interactions with others (Matei & Dumitrescu, 2012; Calaresi et al., 2025; Ren et al., 2025). One important aspect of this development is social awareness, which refers to the capacity of adolescents to understand the feelings of others, show empathy, and behave in ways that support positive social relationships (T. Chen et al., 2024; Ricon, 2025). In educational contexts, social awareness is often reflected in caring attitudes, such as helping peers, showing concern for others, and maintaining respectful interactions in social environments.

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Developing this ability is essential because it contributes to the formation of students who are not only academically capable but also socially responsible members of society.

Social awareness is closely related to several important psychosocial components, including empathy, prosocial behavior, the quality of social relationships, and the ability to regulate emotions in social situations (Calmeiro et al., 2021; Li et al., 2022; Wan et al., 2021a). These competencies enable adolescents to understand social cues, manage interpersonal conflicts, and respond constructively to the needs of others. When these abilities are well developed, students tend to build healthier peer relationships and demonstrate stronger engagement in cooperative activities. For this reason, many scholars argue that the development of social awareness should become an important goal within the broader framework of character education in schools.

In the educational environment, strengthening students' social awareness is increasingly viewed as a crucial component of holistic learning. Schools are expected not only to facilitate cognitive development but also to create learning experiences that support students' social and emotional growth (Baharuddin et al., 2025; Lousen et al., 2025). Through structured educational activities, students can learn how to interact constructively with others, develop empathy, and build supportive social relationships. Therefore, integrating social and emotional learning within the school curriculum has become an important strategy to prepare students for the complex social challenges they face during adolescence.

Despite this expectation, empirical studies indicate that adolescents' social awareness has not yet developed optimally in many educational contexts (Wan et al., 2021b). Problems such as low empathy, limited social engagement, and difficulties in managing emotions during social interactions are still frequently observed among students (Y. Chen et al., 2024; Moreno-Rosa et al., 2024). These conditions suggest that conventional learning approaches may not provide sufficient opportunities for students to develop social competencies through meaningful experiences. As a result, there is a growing need for educational strategies that allow students to actively practice social values within authentic learning situations.

Physical education learning (PJOK) offers a unique and potentially effective context for supporting the development of students' social awareness. Physical activity naturally involves interaction among students, including cooperation, communication, and emotional regulation during both competitive and collaborative situations (Tang et al., 2025). Through team activities and shared challenges, students are required to work together, respect rules, and respond to the behavior of their peers. These learning experiences create opportunities for students to develop important social and emotional competencies within a dynamic and engaging learning environment (De-Jongh González et al., 2025).

However, in many schools, physical education learning still tends to focus primarily on physical performance and the implementation of motor activities. As a result, the pedagogical potential of physical education as a medium for social and character development is often not fully utilized (Maloney et al., 2024). When physical activity is conducted mainly as free play or routine exercise, the opportunity to intentionally develop students' social awareness through structured learning experiences becomes limited. This condition highlights the importance of designing physical education activities that are pedagogically oriented toward the development of social and emotional competencies.

One approach that has gained increasing attention in youth development research is Positive Youth Development (PYD). The PYD framework emphasizes the importance of providing supportive environments and meaningful experiences that allow adolescents to develop their strengths and positive personal qualities (Gabour et al., 2024; Yang et al., 2024). Within this perspective, caring is considered an important developmental outcome that emerges through the cultivation of empathy, positive social relationships, and constructive emotional regulation. In other words, PYD focuses not only on preventing negative behaviors but also on fostering positive developmental capacities in adolescents.

Several studies have shown that physical activity can contribute to adolescents' social and emotional development, including improvements in empathy, prosocial behavior, and peer relationships (Wan et al., 2021b; Zeng et al., 2025). Participation in structured physical activities has

also been associated with improved interpersonal relationships and reduced social problems among adolescents (Wu et al., 2025). However, much of the existing research still examines physical activity in a general sense and does not specifically explore how physical activities designed using the principles of Positive Youth Development can strengthen students' social awareness in the context of school-based physical education learning (Larouche et al., 2025; Stavinski et al., 2025).

Based on this gap, the present study positions PYD-based physical activity as a pedagogical strategy integrated within physical education learning. The study focuses specifically on the caring dimension of social awareness, which includes empathy, prosocial behavior, social relationships, and emotional regulation in social interactions (Chasciar, 2024; Dorris et al., 2022). By examining these dimensions, the study aims to provide a clearer understanding of how structured physical activities can support students' social character development through direct social interaction and experiential learning processes in school settings.

Therefore, this study aims to analyze the effect of Positive Youth Development-based physical activity on strengthening the social awareness of adolescent students within physical education learning. Through this approach, the research seeks to contribute to the development of pedagogical strategies that integrate physical activity with character education, particularly in promoting students' social and emotional competencies in school environments.

## Method

This study employed a quantitative approach using a quasi-experimental pretest–posttest control group design to examine the effect of Positive Youth Development (PYD)-based physical activity on students' social awareness in physical education learning. The study was conducted in a middle school setting involving adolescent students aged 13–15 years. A total of 60 students participated in the study and were divided into two groups: an experimental group ( $n = 30$ ) and a control group ( $n = 30$ ). The grouping of participants was based on existing class groups to maintain the natural classroom setting, which is a common procedure in quasi-experimental research.

The experimental group participated in physical education learning designed using the principles of Positive Youth Development. The activities were integrated into regular Physical Education (PJOK) learning materials and emphasized several PYD components, including cooperation, empathy, shared responsibility, positive peer interaction, and emotional regulation during group activities. Learning activities included collaborative games, team-based problem-solving tasks, and structured reflection sessions aimed at encouraging students to interact positively and demonstrate caring behaviors toward peers.

The intervention was implemented during regular PJOK lessons over several instructional sessions. Each session involved structured physical activities designed to promote cooperation and interaction among students rather than focusing solely on physical performance. Meanwhile, the control group participated in conventional PJOK learning that primarily focused on the implementation of physical activities and motor skill practice without explicit emphasis on strengthening social awareness or PYD principles.

Students' social awareness (caring) was measured using selected items adapted from the Chinese Positive Youth Development Scale (CPYDS). The instrument was used to assess several sub-dimensions of caring, including empathy and concern for others, prosocial behavior and social engagement, social relationships and peer support, and emotional regulation in social interactions (Zein et al., 2022; Liu & Fu, 2024). The instrument consisted of Likert-scale items that allowed students to report their perceptions of their social behavior and interactions with peers.

Prior to data collection, the instrument was reviewed to ensure clarity and suitability for the participants' context. Data were collected through two stages of measurement, namely pretest and posttest. The pretest was administered before the implementation of the learning intervention to measure the initial level of students' social awareness. After the intervention period was completed, the posttest was administered to both groups using the same instrument to examine changes in students' social awareness.

Data analysis was conducted using descriptive and inferential statistical techniques. Descriptive statistics were used to summarize the mean and standard deviation of students' social awareness scores. Before conducting hypothesis testing, prerequisite tests including normality and homogeneity tests were performed to ensure that the data met the assumptions required for parametric analysis. A paired sample t-test was used to examine changes in social awareness scores within each group between the pretest and posttest, while an independent sample t-test was used to compare posttest scores between the experimental and control groups. In addition, analysis was conducted on each sub-dimension of social awareness to provide a more detailed understanding of how the PYD-based physical activity influenced different aspects of students' caring behavior.

## Results and Discussions

The study examined the effect of Positive Youth Development (PYD)-based physical activity on the social awareness (caring) of adolescent students in physical education learning. Prerequisite tests for normality and homogeneity indicated that the data met parametric assumptions ( $p > 0.05$ ), allowing the use of paired and independent sample t-tests.

Descriptive analysis showed that the experimental group's mean social awareness score increased substantially after the intervention, while the control group showed minimal change. The paired sample t-test confirmed a significant increase in the experimental group ( $t = 12.47, p < 0.001$ ), whereas no significant change was observed in the control group ( $t = 1.02, p > 0.05$ ). The independent sample t-test on posttest scores indicated that the experimental group performed significantly better than the control group ( $t = 8.36, p < 0.001$ ).

**Table 1.** Pretest and Posttest Social Awareness Scores

Group	N	Pretest Mean (SD)	Posttest Mean (SD)	Gain	Paired t-test	Sig. (p)
Experimental	30	42.51 (3.12)	51.93 (2.15)	9.42	12.47	<0.001
Control	30	32.14 (2.87)	32.62 (2.11)	0.48	1.02	0.315

Analysis of sub-dimensions of caring showed the largest gains in social relations (gain = 0.3), followed by empathy (gain = 0.1), prosocial behavior (gain = 0.1), and emotional regulation (gain = 0.05). This suggests that PYD-based activities primarily enhance peer interaction and collaborative skills, while empathy and prosocial behavior may require longer or more targeted interventions.

**Table 2.** Pretest and Posttest Scores by Sub-Dimension

Sub-Dimension	Pretest Mean	Posttest Mean	Gain
Empathy	2.8	2.9	0.1
Prosocial Behavior	2.9	3.0	0.1
Social Relations	2.9	3.2	0.3
Emotional Regulation	2.8	2.85	0.05

These findings indicate that conventional PJOK learning, which emphasizes physical activity without social-emotional objectives, is insufficient for developing students' social awareness. In contrast, PYD-based activities create structured and supportive environments where students can practice cooperation, empathy, and positive peer interactions, consistent with experiential learning principles of PYD (Wan et al., 2021b; Zeng et al., 2025; Wu et al., 2025).

Focusing on sub-dimensions reveals that improvements in social relations may mediate other aspects of social awareness, highlighting the importance of group-based interaction as a driver of caring behaviors. Smaller gains in empathy and prosocial behavior suggest that these skills develop more gradually and may require sustained or more intensive interventions.

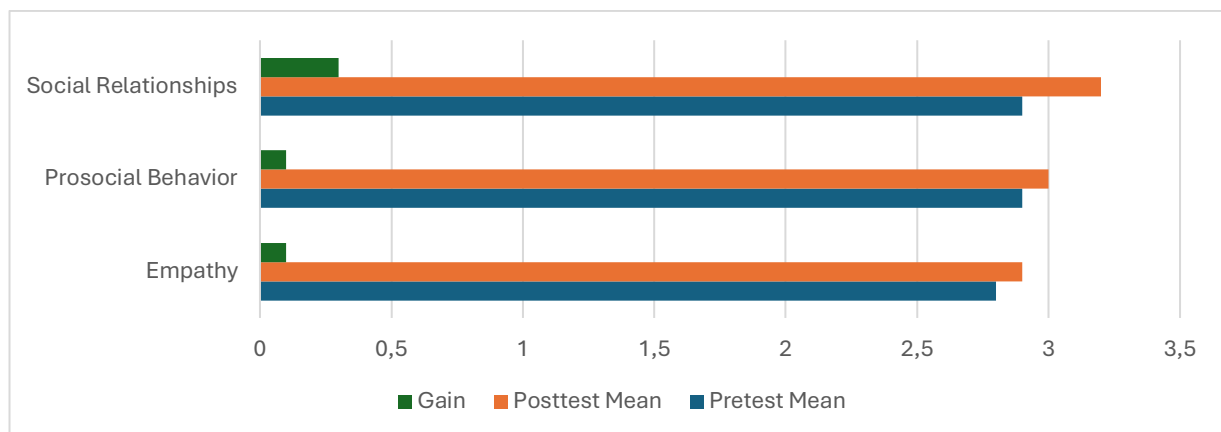
From a practical perspective, these results imply that physical education teachers can intentionally design activities that incorporate PYD principles, such as structured cooperation, shared responsibilities, and guided reflection, transforming physical education into a tool for holistic character development.

In conclusion, PYD-based physical activity effectively strengthens students' social awareness, particularly in collaborative and relational aspects, while conventional physical education provides limited pedagogical stimuli for these outcomes. Future research could explore longer interventions, additional PYD dimensions, and diverse school contexts to maximize the potential of physical activity in social-emotional development.

**Table 3.** Comparison of scores on the sub-dimension of social concern (caring)

Sub-Dimensions of Caring	Pretest Mean	Posttest Mean	Gain
Empathy	2.8	2.9	0.1
Prosocial Behavior	2.9	3	0.1
Social Relations	2.9	3.2	0.3

Table 2 shows that all sub-dimensions of social awareness increased after students participated in Positive Youth Development-based physical activities. The largest increase was seen in the social relations sub-dimension (gain = 0.3), followed by empathy and prosocial behavior (each gain = 0.1). This finding indicates that the intervention had a stronger impact on aspects of social interaction and relationships between students, which are key characteristics of group activity-based physical education learning. The highest increase in the social relations sub-dimension indicates that PYD-based physical activities work primarily through intensive social interaction mechanisms. Collaboratively designed physical activities enable students to build trust, support each other, and communicate effectively during learning (Wu et al., 2025). Meanwhile, increases in empathy and prosocial behavior indicate that these social experiences also contribute to students' ability to understand others' feelings and display contextually helpful behavior (Whooten et al., 2025). This finding is in line with the view that physical education is an ideal context for the development of adolescents' social-emotional competencies through experiential learning (Feng et al., 2026; Greenberg, 2025).



**Figure 1.** Improvement in Empathy, Prosocial Behavior, and Social Relationships

The absence of a significant increase in social awareness in the control group indicates that conventional PJOK learning which does not explicitly integrate the principle of strengthening social values tends to provide less than adequate pedagogical stimulus for the development of students' social awareness aspects (Qian et al., 2025; Zhang et al., 2024). This indicates that strengthening social character does not occur automatically through physical activity, but requires a targeted learning design based on a specific pedagogical approach. The findings of this study reinforce the view that PYD-based physical activity can function as an experiential learning vehicle, where students learn the value of social awareness through direct experience in situations that require empathy, cooperation, and positive interactions. Through active involvement in collaboratively designed physical activities, students not only understand the concept of social awareness cognitively, but also internalize it through real-life practice in learning.

The research's focus on the caring dimension is intended to provide a more in-depth understanding of the role of PYD-based physical activity in strengthening the social character of adolescent students. Although Positive Youth Development encompasses various developmental dimensions, the emphasis

on caring is considered relevant to the goals of character education in schools and the needs of students' social-emotional development. These findings open up opportunities for further research to examine the role of PYD-based physical activity in relation to other PYD dimensions in educational contexts.

## Conclusions

This study concludes that Positive Youth Development-based physical activity is an effective pedagogical tool for strengthening social awareness (caring) in adolescent students within the context of physical education learning at school. Physical activities designed in alignment with physical education learning materials and PYD principles can create meaningful social learning experiences, thereby supporting the development of empathy, positive interactions, and social awareness in students. The findings of this study confirm that strengthening social awareness does not occur automatically through physical activity, but rather requires structured learning design oriented towards character education goals. Therefore, PYD-based physical activity can be positioned as a strategic approach in physical education learning to support the holistic development of character and social competence in adolescent students.

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