

Development of mental education through sports to enhance adolescent personal resilience

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ABSTRACT

Objective: Based on the problem at hand, the aim of this study was to investigate how adolescents' personal resilience is understood in the context of developing mental education through sports activities. **Research Methods:** This study used a quantitative research method with an experimental approach. This study used a sample of high school students (SMA) class XI which was taken by randomized sampling. The total sample of this study amounted to 50 students. Students who became the research sample were assumed to have the ability (in class XI) and the same age (average 16 years). **Research results:** The results show that there is an average difference between the Pre-test and Post-test physical education learning outcomes, which means that there is an average difference in students' personal resilience scores between the pre-test and post-test. These results indicate the influence of the results of mental education intervention through physical education in increasing students' personal resilience. In the implementation of the post-test, the average value is 100.3 while the average value of the post-test is 49.5, or if you look at the difference (gain) between the post-test and the pre-test of 50.4 which shows a significant result of increasing student resilience from the results of mental education interventions in sports education learning at school. **Conclusion:** Mental education development programs in adolescents should be tailored to the health interests of the adolescent generation. Sports clubs have the potential to be an arena for health improvement.

Keywords: Mental health, Personal resilience, Mental education, Sports, Youth.

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INTRODUCTION

Resilience is the capacity to face and overcome adversity, through personal transformation and growth (Tempiski et al., 2015). Resilience can also be interpreted as self-readiness in dealing with stress and protecting oneself from the negative effects of stress, so that it can become a foundation in life to be able to produce greater life satisfaction (Robbins et al., 2018). In a Student Resilience Survey (SRS) conducted on 7663 adolescents aged 11-15 years stated that, external support and internal characteristics are potentially viewed as protective factors and important in exploring adolescent resilience mechanisms such as family relationships, school relationships, community relationships, participation in home and school life, participation in community life, peer support, self-esteem, empathy, problem solving, and goals and aspirations (Lereya et al., 2016). In school life, it is important for educators to be able to recognize students' daily interactions in an effort to build student resilience at school, this will be a possibility or opportunity to protect or reduce the risk of mental disorders in school adolescents (Morrison & Allen, 2007).

Adolescence is a transition period between childhood and adolescence to adulthood, consisting of evolutionary phases with their own characteristics and problems. Adolescence is known as a time of emotional instability, with physical and psychosocial changes, which can be exacerbated by changes in global values, as it is a phase that is sensitive to factors that affect its transformation into adulthood (Rodrigues et al., 2018). Overall, adolescents' experiences in junior high school and their relationships with others may be influenced by unstable moods (mental health) that impact learning outcomes at school (Bond et al., 2007). Teenagers are often associated with the mass of self-discovery, not infrequently adolescents often experience psychological problems, especially those related to personal life (romance) and relationships between family members (Parent et al., 2021). The development of mental education through sports is considered as one of the best alternatives in improving the mental well-being of adolescents. This is because sport is an important part of the process of forming and developing a person's character and mentality.

Many students with emotional and behavioural disorders in educational settings lack personal resilience and are prone to failure in school (Zolkoski et al., 2016). Students who have weak personal resilience can disrupt their academic mission and hinder their emotional and personal development at school. (Gray, 2015). The idea of resilience building becomes a project between teachers and students in understanding the value of change in terms of perspective as well as a companion in improving students' mental well-being (Farquhar et al., 2018). This is because mental health is a major concern among adolescents. Most mental illnesses emerge during adolescence, and while about 14% of all adolescents aged 12 to 17 experience mental illness within a 12-month period, only 65% of these adolescents access health services to address their mental health problems (Liddle et al., 2017). Mental disorders, leading to substance use, are an impactful public health problem and are particularly common among adolescents from low-income neighbourhoods (Donohue et al., 2020). Engagement with sporting activities is an important part of life and has health benefits as well as enhancing mental well-being in an era of urbanization, the challenges of modern life, and environmental degradation leading to reduced quantity and quality of adolescent psychology (Shanahan et al., 2019).

In a study examining the effects of a training program for physical education teachers, it was found that engaging students in sport activities improved students' psychological well-being such as motivation and self-esteem (Tessier et al., 2010). Sports becomes a driving tool or instrument in which it has the power to change mindsets and mindsets in order to lead to noble human beings (Endrianto, 2019). The positive impact of sport and physical activity can be considered an important factor in improving the quality of life of adolescents (Ilham et al., 2013). Physical activity in adolescence can contribute to the development of a healthy lifestyle,

thereby helping to reduce the occurrence of chronic diseases (Hallal et al., 2006). Adolescent participation in sports activities is related to the psychological, social and motor fields towards a more positive direction (Moesch et al., 2018). As for if it is related to adolescents who join professional sports, it will have a positive impact on the ability to analyse, the ability to work in multi-disciplinary teams and experience in improving the welfare of life in the future (Wylleman, 2019).

A study shows that sports activities can indirectly improve mental toughness as a part of adolescent psychology (Mahoney et al., 2014). The importance of supporting wellbeing and improving adolescents' mental health in an effort to reduce functional impairment and equip adolescents how to cope with stress, which also enables adolescents to better manage the transition to the future (Schinke et al., 2016). However, while sport participation provides many benefits to an individual's health and well-being, adolescent athletes involved in professional sports also have additional risk factors that can affect their mental health, thus according to counselling experts it is important for adolescent athletes to adjust to risk factors for mental health disorders and monitor the adolescent athlete's environment that can trigger or exacerbate psychological problems (Chang et al., 2020).

Mental health literacy has included concepts related to knowledge of effective self-management strategies, challenging the stigma of mental illness, self-awareness and the use of mental health first aid to help others (Gorczyński et al., 2021). Thus adolescents who have good mental health will also contribute positively to people who are likely to have mental health problems. Sports activity interventions are an appropriate approach to developing mental health education in adolescents (Richards & Foster, 2013). The results show that patterns of involvement in extracurricular activities, especially sports, are an important aspect of personal resilience among vulnerable youth (Peck et al., 2008). Other findings also show that adolescent boys perceive exercise as an attractive means to support mental health (Swann et al., 2018).

Coaches have the potential to support athletes' mental health, yet many are unsure of what to do and are concerned they may inadvertently engage in behaviours that negatively impact their athletes. Education has the potential to help coaches engage in primary, secondary and tertiary preventive behaviours related to athlete mental health; however, there is no empirical basis or consensus to determine the target behaviours that should be included in such education (Bissett et al., 2020). Motivating boys to be active in sports is important from an early age. Research has shown that boys who are habitually involved in sports activities are more likely to face challenges positively and avoid negative peer influences (Ramirez-Granizo et al., 2020). Sport is not only a physical activity but sport is also able to strengthen the personality of adolescents not to engage in all forms of negative behaviour. Sports can be one way to prevent a negative mindset that can disrupt the personal resilience of adolescents (Thompson et al., 2015). The results of a study show that personality development is an internal factor of adolescents that is influenced by positive activities, such as sports (Stepanchenko & Briskin, 2018).

Adolescent personality is one of the important factors that influence adolescents' mental health. Mental health is characterized by a state of psychological, emotional, and social well-being in which individuals are able to feel, think, and act in ways that allow them to enjoy life, realize their potential, cope with normal life stresses, work productively, and contribute to the community and club (Slingerland et al., 2019). Based on an analysis of mental health research and practice, the International Society of Sport Psychology states that adolescent mental health is heavily influenced by environmental factors. (Schinke et al., 2018). So it is not uncommon for adolescents to experience many mental health problems whose source of influence comes from the surrounding environment, both family, school and social environments. The study results state that young

people describe how environmental factors can trigger serious mental health problems that will have an impact on adolescents' lives in the future (Chapman et al., 2022).

Mental health is an important bridge in building adolescents' personal resilience. Resilience is strongly linked to mental health, especially in children and adolescents (Mesman et al., 2021). In performance sports, psychological resilience is important because athletes must constantly withstand various pressures to achieve and maintain high performance (Sarkar & Fletcher, 2013). Adolescents who have good psychological resilience will be able to bounce back after facing difficulties, and continue to function well despite continuing to face risks (Gilligan, 2000). The experiences experienced by adolescents and the way adolescents process their experiences are related to how the level of adolescent mental health, which can then be an important factor in adolescent personal resilience, especially in facing problems or challenges. The results of a study conducted on female students showed that there was a positive correlation between mental health and psychological resilience and forgiveness (Toktas, 2019). This is in line with a study which states that good mental health will lead to high adolescent resilience, enabling adolescents to control negative mindsets, reduce symptoms of depression and increase life satisfaction over time (Gerber et al., 2013).

Adolescent participation in sports activities is heavily influenced by social media, which then becomes a time trend based on existing socio-cultural determinants (Scheerder et al., 2007). Social media is the best alternative in promoting the benefits of sports that will be useful as "*self-development*" for teenagers. The development of mental education through sports is one of the best ways to improve the personal resilience of adolescents because, sports become an attractive means that is naturally able to provide positive emotions to adolescents (Yook et al., 2017). In this study, researchers tried to conduct mental education interventions through sports in order to increase adolescents' personal resilience. This effort is done as a way to improve the personal quality of adolescents by engaging in sports activities that can later be useful in the future. The involvement of adolescents through sports can be a means of channelling negative emotions that can later affect adolescents' personal resilience. The development of mental education programs through sports can also be a foundation in increasing productivity among adolescents.

Research hypothesis

H₀: There is no difference in the average value of students' personal resilience between the pre-test and post-test. Which means there is no effect of the results of mental education intervention through physical education in increasing students' personal resilience.

H_a: There is a difference in the average value of students' personal resilience between the pre-test and post-test. Which means there is an effect of the results of mental education intervention through physical education in increasing students' personal resilience.

MATERIAL AND METHODS

Design

The type of research is quantitative research with an experimental approach. Experimental research aims to reveal the cause-and-effect relationship between variables by manipulating the independent variables (Mustafa, 2022). Experimentation is a research design that provides the most rigorous and careful hypothesis testing. This study used a sample of high school students (SMA) class XI which was taken by randomized sampling. The total sample of this study amounted to 50 students. Students who became the research sample were assumed to have the ability (in class XI) and the same age (average 16 years).

Program

Researchers deliberately include mental education in the implementation of physical education that has been designed and adapted to the characteristics of students. The design and interventions used in this study are as follows:

Table 1. Mental education intervention program in sport.

Features	Description	To be avoided
Physical and Psychological Safety	The availability of facilities that support safety and health, and practices that increase safety in interactions with the group and reduce unsafe or confrontational interactions with the group.	Physical and health harm; creating fear; feelings of insecurity both sexual and physical abuse; and verbal abuse.
Appropriate Structure	Limit setting; clear and consistent rules and expectations; sufficiently strong controls; continuity and predictability; clear limits; and age-appropriate monitoring.	Chaotic; disorganized; neglectful; rigid; overly controlled; and autocratic.
Supportive Relationships	Warmth; closeness; connectedness; good communication; caring; support; guidance; safe affection; and responsiveness.	Cold; distant; over-controlling; ambiguous support; untrustworthy; focused on winning; lacking attention; unresponsive; and rejecting.
Opportunities to Belong	Opportunities for meaningful inclusion, regardless of gender, ethnicity, sexual orientation, or disability; social inclusion, social engagement, and integration; opportunities for socio-cultural identity formation; and support for cultural and bicultural competence.	Exclusion; marginalization; and intergroup conflict.
Positive Social Norms	There are rules of conduct; expectations; commands; ways of doing things; values and morals; and obligations to serve.	absence of norms; anomy; neglectful practices; antisocial and immoral norms; norms that encourage violence; reckless behaviour; consumerism; poor health practices; and conformity.
Support for Efficacy and Mattering	Youth-based; empowerment practices that support autonomy; make a real difference in one's community; and are taken seriously. Practices that include enabling, responsibility-giving, and meaningful challenge. Practices that focus on improvement rather than on current relative performance levels.	Unchallenging; over-controlling; disempowering and disabling. Practices that undermine motivation and the desire to learn, such as excessive focus on current relative performance levels instead of improvement.
Opportunities for Skill Building	Opportunities to learn physical, intellectual, psychological, emotional, and social skills; exposure to intentional learning experiences; opportunities to learn cultural literacy, media literacy, communication skills, and good habits of mind; preparation for adult employment; and opportunities to develop social and cultural capital.	Practices that promote bad physical habits and habits of mind; and practices that damage schools and learning activities.
Integration of Family, School, and Community Efforts	Concordance; coordination; and synergy between family, school, and community.	Divisions; lack of communication; and conflict.

Research instruments

The instrument in this study used the Connor-Davidson Resilience Scale (CD-RISC) (Connor & Davidson, 2003), to then adjust the sample directed to school students then the researcher uses the instrument that has been made with students as a sample (Singh & Yu, 2010) with the level of reliability coefficient in the context of CD-RISC is 0.89, the internal consistency alpha value of the 4 factors is: $\alpha = .80$ for factor 1, $\alpha = .75$ for factor 2, $\alpha = .74$ for factor 3 and $\alpha = .69$ for factor 4. The Table 2 questions are as follows.

Table 2. Item Connor-Davidson Resilience Scale (CD-RISC) (Connor & Davidson, 2003; Singh & Yu, 2010).

Item no.	Abbreviated item
1	Able to adapt to change
2	Close and secure relationships
3	Sometimes fate and God can help
4	Can deal with whatever comes
5	Past success gives confidence for new challenge
6	See the humorous side of things
7	Coping with stress make stronger
8	Tend to bounce back after illness, injury or hardship
9	Things happen for a reason
10	Best effort no matter what
11	One can achieve one's goals
12	When things look hopeless, I don't give up
13	Know where to get help
14	Under pressure, focus and think clearly
15	Prefer to take the lead in problem solving
16	Not easily discouraged by failure
17	Think of self as strong person
18	Make unpopular or difficult decisions
19	Can handle unpleasant feelings
20	Have to act on a hunch, without knowing why
21	Strong sense of purpose in life
22	In control of my life
23	I like challenge
24	One works to attain one's goals
25	Pride in my achievements

Analysis

Paired sample t-test is a test of the difference between two paired samples. Paired samples are the same subjects but experience different treatments. This different test model is used to analyse the research model before and after. Paired sample t-test is a testing method used to assess the effectiveness of treatment, characterized by differences in the average before and the average after treatment is given. The basic assumption for using this test is that the observation or research for each pair must be under the same conditions. The mean difference must be normally distributed. The variance of each variable can be the same or not. To carry out this test, data on an interval or ratio scale is needed. What is meant by paired samples is that we use the same sample, but the test is carried out on the sample twice at different times or at certain time intervals. Testing was carried out using a significant .01 ($\alpha = 1\%$) between the independent variable and the dependent variable.

RESULTS

Before carrying out analysis at a further stage, the data results that have been obtained are then tested for normality as the main requirement. The results of the normality test can be seen in Table 3 below.

Table 3. Normality test (Shapiro-Wilk).

		W	p
Post-test	Pre-test	0.957	.064

Note. A low p-value suggests a violation of the assumption of normality.

Based on the normality calculations in Table 3 that have been carried out, a p -value of $.064 > .05$ is obtained, which states that the data obtained through data collection is normally distributed. Next, the results were analysed using the Paired Samples t-test which can be seen in Table 4 below.

Table 4. Paired samples T-Test.

			Statistic	df	p	Mean difference	SE difference
Post-test	Pre-test	Student's t	70.9	49.0	< .001	50.4	0.711

Note. $H_a \mu \text{ Measure 1} - \text{Measure 2} \neq 0$

Based on Table 4, guidelines for decision making in the Paired sample t-test. Based on the "Paired Samples Test" output table above, the Sig value is known. $p < .01$, then H_0 is rejected and H_a is accepted. So, it can be concluded that there is an average difference between the pre-test and post-test learning outcomes, which means that there is an average difference in students' personal resilience scores between the pre-test and the post-test. This means that there is an influence on the results of mental education intervention through physical education in increasing students' personal resilience. Apart from looking at the results of the paired tests above, more detailed data can also be seen in Table 5, the following statistical description.

Table 5. Descriptives statistic.

	N	Mean	Median	SD	SE
Post-test	50	100.3	100.0	3.92	0.554
Pre-test	50	49.9	49.5	3.55	0.502
Gain		50.4			

Based on Table 5 above, it is true that in terms of average value there has indeed been an increase in results. In carrying out the post-test, an average score of 100.3 was obtained, while the average post-test score was 49.5, or if you look at the difference (gain) between the post-test and pre-test, it was 50.4, which shows a fairly significant result. increasing student resilience from the results of mental education interventions in sports education learning at school.

DISCUSSION

Resilience is an area of increasing interest in educational literature, this is because resilience is linked to students' health, well-being and employability (workplace readiness) (Brewer et al., 2019). Personal resilience is an important protection in improving the quality of life related to health and mood disorders in individuals who experience injuries or mental health problems (Rao et al., 2015). The findings show that many sports organizations recognize the importance of the mental component in sport as an effort to improve youth's personal achievements and well-being (Liddle et al., 2017). Mental education program intervention

through sports is an alternative in improving the physical and psychological aspects of teenagers who are under academic pressure.

Based on the paired sample t-test, the Sig value is known. $p < .01$, then H_0 is rejected and H_a is accepted. So it can be seen that there is an average difference between physical education learning outcomes. Pre-test and post-test, which means there is a difference in the average score of students' personal resilience between the pre-test and post-test, which means there is an influence on the results of mental education intervention through physical education in increasing students' personal resilience. In implementing the post-test, an average score of 100.3 was obtained, while the average post-test score was 49.5, or if you look at the difference (gain) between the post-test and pre-test, it was 50.4, which shows a sufficient result. significant results of increasing student resilience from the results of mental education interventions in sports education learning at school.

Sports-based program interventions to improve mental health and help overcome mental health disorders as well as provide psychological resilience among adolescent sports participants (Vella et al., 2021). Sports activity interventions designed for teenagers in America reflect two different views, the first is that activities should improve physical fitness and the second that activities should improve social, emotional and intellectual development. The research results show that sport promotes the emergence of mental function in adolescents, especially executive function, optimizes physical fitness, encourages health-related behaviour to compensate for obesity, and facilitates mental development (Tomprowski et al., 2011). The results of other research also show that teenagers who are actively involved in sports are able to increase their knowledge as well as mental health literacy in increasing self-confidence for teenagers who have mental health problems (Sebbens et al., 2016).

Sport is known as a driving tool or instrument which has the power to change the mindset and mindset of teenagers in order to become people with noble character (Rusdin et al., 2022). Mental training program emphasizing that the foundation of mental skills, personal development abilities, and team skills, as well as performance skills, is an integral part in the development of the well-being of adolescents in the future (Vealey, 2012). Mental health is associated with a variety of positive behaviours (Lin et al., 2017). Physical activity has the potential to have beneficial effects in reducing depression. Interventions in one study stated that physical activity has been shown to have beneficial effects in reducing anxiety, increasing self-esteem, and improving cognitive function (Biddle & Asare, 2011).

The use of exercise programs in children and adolescents can provide the physical activity experiences necessary to form healthy habits and develop executive functions, especially those related to cognitive flexibility (Contreras-Osorio et al., 2021). Sports activities in adolescents are considered the best way to develop mental health, especially those related to self-efficacy, where a study states that there is a significant correlation between commitment to exercise and self-efficacy (Tan & Shao, 2021). A study on a group of teenagers proved that fitness and mental health simultaneously improved, as a result of engaging in competitive sports (Richards J et al., 2014). In addition, the participation of children and adolescents in physical education and sports curricular activities has the potential to contribute to social inclusion and the development of social skills (Bailey, 2005).

Longitudinal and cross-sectional studies show significant associations between physical activity and lower levels of psychological illness (i.e. depression, stress, negative affect, and total psychological distress) and greater psychological well-being (i.e. self-image, satisfaction with life and happiness, and psychological well-being) (Rodriguez-Ayllon et al., 2019). Sport is the best means of mental development for teenagers who

have the opportunity to be exposed to difficulties and life experiences so that they have the personal resilience to rise even better (Hu et al., 2015). The development of mental education is not necessarily carried out in schools, but family involvement in supporting mental health is considered the best therapy in reducing mental health problems and delinquency in adolescents (Corcoran, 2016). Research findings state that adolescent mental health is related to parental parenting patterns at home (Sağkal & Özdemir, 2019). A study states that the younger generation's sports participation reflects the effects of prolonged socialization as a habit given to them by their parents (Strandbu et al., 2020). This shows that parents are the main role models in promoting the benefits of sport to their children.

Teenagers' involvement in sports clubs should be accompanied by feelings of joy, a learning process, having fun friends and feeling healthy. Teenagers will stop if sports become too serious, inflexible, time consuming and too competitive. So mental education development programs for teenagers should be tailored to the health interests of the teenage generation. Sports clubs have the potential to become an arena for improving health, but the focus must be on changing the sports club environment, not focusing on changing the younger generation (Jakobsson & Lundvall, 2021). This means that the sports environment should adapt to the capacities and needs of young people, without losing the essence of the sport. The development of mental education through sports clubs has an important function in the lives of the younger generation by enabling them to have a sports lifestyle and a sense of coherence in sports activities (Jakobsson, 2014). Creating a superior, physically and mentally healthy generation requires coaching and developing sports as a place for self-appreciation and potential development (Rahadian & Ma'mun, 2018). The development of mental education is carried out as an effort to continuously maintain and increase the personal resilience of teenagers, one of which is through sports activities (Haris et al., 2021).

CONCLUSION

The results of the intervention show the influence of mental education through physical education in increasing students' personal resilience. The results of the post-test and pre-test show quite significant results in increasing student resilience from the results of mental education interventions in sports education learning at school. There is significant potential to improve youth mental health through sport-based interventions. Mental education development programs for adolescents should be tailored to the health interests of the adolescent generation. The sports environment should adapt to the capacities and needs of young people, without losing the essence of the sport. Sports clubs have the potential to become an arena for improving health.

AUTHOR CONTRIBUTIONS

Conceptualization – E. P., and E. M.; Methodology – E. M., B. H., and R. B.; Formal analysis – A. O., and I. O.; Data curation – E. P., N. J., and B. H.; Writing – original draft preparation – F. I. C., and R. B.; Writing – review and editing – N. J., F. I. C., and I. O.

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DISCLOSURE STATEMENT

No potential conflict of interest were reported by the author.

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