

Recreational physical activity and its relationship to introversion among secondary school students - a field study among practitioners and non-practitioners

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Received: 23/07/2025

Accepted: 23/10/2025

Article info

Abstract:

This research aims to study the impact of recreational sports physical activity on the level of introversion among secondary school students. Levels of introversion were compared between pupils who regularly engaged in recreational physical activity and those who did not. An analytical descriptive approach was used on a sample of 60 pupils (30 practitioners and 30 non-practitioners), and introversion levels were measured using a dedicated questionnaire, in addition to collecting data on their physical activity.

The results showed a statistically significant difference between practicing and non-practicing pupils for recreational physical activity, where the level of introversion was lower in practicing pupils. The results confirmed that the practice of recreational physical activity contributes significantly to reducing levels of introversion, and promotes social interaction and psychological well-being among students. Based on these findings, it is recommended to promote recreational physical activities in schools as a means to improve the psychosocial health of pupils

Keywords: physical activity, introversion, high school students, recreational sports, mental health.

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1. Introduction

Athletic physical activity is one of the key factors in promoting overall health, not only physically but also psychologically, especially in adolescents. Adolescence is a sensitive stage in an individual's life, during which personality is formed and psychological and social challenges increase. Recreational physical activity can play an important role in promoting mental health by reducing stress and anxiety levels, and stimulating the release of endorphins, which contributes to improving mood and a sense of well-being. Physical activity also gives adolescents the opportunity to socialize and express themselves, which enhances their sense of belonging and reduces feelings of isolation.

1.1 Study Problem

Introversion is a personality trait that can negatively impact adolescent social interaction and mental health. The question arises here: How does recreational sports physical activity affect the level of introversion among secondary school students? Are there clear differences between recreational and non-practicing physical activity practitioners? This study aims to explore the relationship between athletic physical activity and the level of introversion in this group.

1.2 Hypotheses

- There is a statistically significant difference in the level of introversion between pupils practicing recreational sports physical activity and non-practitioners.
- Recreational physical activity helps reduce the levels of introversion among high school students.

1.3 Study objectives

- Studying the impact of recreational physical activity on the level of introversion among secondary school students.
- Comparison of introversion levels between practicing and non-practicing pupils for recreational physical activity.

1.4 Significance of the study

This study highlights the protective role that recreational sports physical activity can play in reducing introversion, a trait that may negatively impact adolescent social interaction and mental health. Recreational physical activity can be an effective way to improve the psychosocial well-being of pupils, contributing to reduced levels of introversion and increased positive social interaction within the school community.

2. Definition of the Study Terminology

2.1 The concept of recreational sports physical activity:

– Definition of recreational sports physical activity

Recreational sports physical activity is a type of physical activity that is aimed at recreation and enjoyment, rather than competitive sports achievements or professional results. Recreational activity is practiced at leisure to relieve stress, improve physical fitness, and promote mental health (Ham et al., 2009). This type of sports activity includes a variety of exercises such as walking, swimming, cycling, group games such as football or volleyball, and even yoga or dance (Street et al., 2007).

Recreational sporting activity can be on its own or in a group, and is often not bound by strict rules such as competitive sporting activities. Its primary goal is to provide participants with a pleasant and comfortable time and to achieve health benefits without competitive pressures or commitments (Mistry et al., 2017).

– Objectives:

- Improve general health: Recreational activity aims to promote fitness and general health through relaxed and enjoyable physical activities such as walking, jogging, or team sports.
- Reduce stress and anxiety: by providing an opportunity to relax and relax away from everyday pressures.
- Promote social interaction: Recreational physical activity provides an opportunity to socialize, and build new relationships with community members, fostering a sense of belonging.
- Personal Skills Development: Contributes to developing leadership skills, teamwork, and improving self-confidence.

– Psychiatric Benefit

- Improving mental health: Participation in recreational activities contributes to reducing stress, anxiety and depression, and promotes a sense of happiness and psychological well-being (Street et al., 2007).
- Increased self-confidence: Recreational activities, especially team sports, promote self-confidence and the ability to achieve new goals (Steptoe & Butler, 1996).

– Societal benefits

- Strengthening social relationships: By participating in group activities, social relationships can be improved and new friendships built, fostering a sense of community (Litwiller et al., 2017).
- Community interaction: Recreational activity contributes to enhancing community participation by organizing recreational activities that bring together individuals from different groups (Mistry et al., 2017).

In general, recreational physical activity is an effective way to promote the psychological and social health of individuals, and contributes to improving the overall quality of life.

2.2. The concept of introversion:

– Definition of introversion:

Introversion is a personality trait that is an individual's tendency to focus on their own inner world, preferring loneliness or activities that require the least social interaction. Introverts tend to feel comfortable when they are alone, relying more on deep thinking and internal analysis than on direct social interaction (Wan, 2023).

– Reasons for introversion:

Introversion can be caused by several factors, including:

- Biological and genetic factors: Introversion may be related to genetics or brain structure, as studies have shown that some areas of the brain, such as the right frontal lobe, are more active in introverts, which explains their preference for isolation and deep thinking (Forsman et al., 2012).
- Environmental factors and childhood experiences: Introversion may develop as a result of certain social experiences during childhood, such as bullying or lack of social support, prompting the individual to withdraw from social interactions (Marin & Miller, 2013).
- Psychological factors: People with personality traits such as anaphylaxis may find engaging in social interactions stressful, which reinforces their introverted tendencies (Evren et al., 2017).

– Impact of introversion on psychosocial health:

- Psychological impact: Introversion is associated with an increased risk of anxiety and depression, as introverted individuals may have difficulties adapting to social situations and may feel more lonely than others (Wei, 2020). Also, introversion can lead to high levels of stress due to anxiety about evaluating others or avoiding social situations (Swickert et al., 2002).
- Social influence: Introverts may face challenges in forming new social relationships or maintaining existing ones. Social isolation can reinforce loneliness, which can negatively impact overall health (Wan, 2023). However, introverts can be better able to manage situations that require deep concentration or individual action.

Introversion is a complex personality trait that can have significant psychological and social effects. Although introverts tend to feel more comfortable in isolation, they may face psychosocial health challenges, such as loneliness or stress.

3. The relationship between physical activity and introversion

Studies on the relationship between physical activity and introversion provide insights into the impact of physical activity on the mental health of introverts. Here are some of the top findings:

- **Physical activity and mental health:** A study conducted using structural equation modeling showed that physical activity is associated with improved mental health, especially in introverted individuals with mental disorders such as anxiety and depression. The study showed that introverts who engage in regular physical activity have better mental health compared to those who do not (Wilson et al., 2016).

- **Relationship between personality and physical activity:** A systematic review of studies on personality traits and physical activity showed that introverts may be less likely to engage in physical activities than extroverts, due to their preference for isolation and not engaging in social activities. However, engaging in physical activity can promote mental health even for introverted individuals (Rhodes & Smith, 2006).

- **The impact of introversion on the body's response to physical activity:** Another study showed that introverted individuals may face challenges in responding to physical activity compared to extroverted individuals, as the results showed that introverts may be more sensitive to stress when practicing physical activity, which affects their physical and psychological performance (Stanaway & Hullin, 1973).

- **Social interaction during physical activities:** Research has shown that introverts tend to enjoy more individual activities than group activities, and this may lead to a decrease in levels of physical activity if the activities available require intensive social interaction (Liu & Csíkszentmihályi, 2020).

Physical activity can be helpful for introverts, but their response to physical activity may differ from others, especially if the activity requires intense social interaction. Introverts can be more prone to stress during physical activities, but if the activity is adapted to suit their individual needs, this may contribute to improving their mental health.

4. Methodology

4.1 Approach used

This approach aims to describe the phenomenon of introversion among secondary school students and analyze the relationship between recreational sports physical activity and the level of introversion. The descriptive-analytical approach relies on collecting quantitative and qualitative information, and analyzing it to determine relationships between variables.

4.2 The study sample

– **Random sample:** A random sample of secondary school students will be selected consisting of two groups:

- **The first group (30 pupils practicing recreational sports physical activity):** These pupils regularly participate in recreational sports activities.

- **Group 2 (30 non-practicing pupils):** These pupils do not regularly participate in recreational physical activity.

– **Total sample:** 60 pupils.

4.3 Study tools

- **A questionnaire to measure the level of introversion:** A ready-made or modified scale will be used to measure the level of introversion among students, such as the Isaac Personality Scale or any similar scale used to determine personality traits.
- **Physical activity information form:** Includes a questionnaire to collect information about the regularity of students in recreational sports activities, the quality of activities and their duration.

4.4 Data Collection Procedures

- **Distribution of questionnaires:** The **questionnaires** will be distributed to the target sample within schools, explaining the purpose of the study and making sure that the questionnaires are filled out correctly.
- **Brief interviews:** **Brief interviews** will be conducted with some students to collect qualitative data about their experiences with physical activity and its impact on their daily lives and feelings.

5. Testing the hypotheses of the study and analyzing the results

In this study, the data of a group of secondary school students (practitioners and non-practitioners of recreational sports physical activity) were analyzed with the aim of exploring the relationship between physical activity and the level of introversion. The analytical descriptive approach was used to analyze the data using SPSS software.

5.1 Descriptive Statistics

- **Means and standard deviations of introversion levels between the two groups:**

Descriptive statistical results showed the following:

Table 01: Averages and standard deviations of introversion levels between the two groups

Group	Arithmetic	Standard deviation (Maths.)
Physical activity	15.80	3.45
Non-physical activity	19.25	4.10

Source prepared by the researcher using SPSS V28

Results: The results showed that the average level of introversion in pupils who were not physically active (19.25) was higher than the average in those who were physically active (15.80). The standard deviation of the level of introversion was also greater in non-practitioners (4.10), indicating a greater variation in the level of introversion in this group compared to practitioners.

- **T-test results for two independent samples:**

The T-test was used for two independent samples to check the differences between the practitioner and non-practitioner groups in terms of the level of introversion. The results were as follows:

Table 2: T-Test Results for Two Independent Samples

Variable	T value	Degrees of freedom	(Sig.)
Introversion Level	-3.20	58	0.002

Source prepared by the researcher using SPSS V28

The results show that $C = -3.20$, which means that there is a difference in the level of introversion between the two groups.

(Sig.)= **0.002**, which is less than 0.05, indicating that the difference between introversion levels in practitioners and non-practitioners of physical activity is statistically significant.

5.2 Results interpretation:

These results indicate a statistically significant difference between the two groups in the level of introversion. She explains that pupils who do not engage in recreational physical activity tend to have higher levels of introversion than their peers who engage in physical activities. This finding can be explained by the fact that recreational physical activity may be a contributing factor in reducing levels of introversion and promoting social interaction and self-confidence.

5.3 Discussion of results

The results of this study are consistent with many previous studies that have addressed the relationship between physical activity and the level of introversion. For example, a study by Rhodes & Smith (2006) showed that introverts tend to be less physically active compared to extroverts, reinforcing the idea that introversion may be associated with a decrease in levels of participation in physical activity. Studies such as Wilson et al. (2016) and Boukhlafe-Mohammad et al. study that physical activity can promote mental health in individuals with higher levels of neurotic and introverted anxiety.

1. Interpreting the results in terms of the relationship between athletic physical activity and introversion:

Current findings suggest that pupils who are not physically active have higher levels of introversion compared to practitioners. This result can be explained by several aspects:

- The social aspect of physical activity: Physical activities, especially group activities, provide opportunities for social interaction, helping introverted individuals build social relationships and reduce feelings of isolation. Physical activity promotes interaction with others and reduces avoidance of social situations, a common trait among introverts.
- Psychological impact of physical activity: Physical activity is known for its ability to stimulate the release of brain chemicals such as endorphins, which improve mood and reduce feelings of anxiety and depression. Thus, physical activity can help reduce levels of introversion by improving overall

psychological well-being and boosting self-confidence.

2. Review the impact of physical activity as a means to improve mental health:

Physical activity is an effective way to improve overall mental health. Previous studies have confirmed that exercise enhances mental health through several mechanisms:

- **Improving mood:** Physical activity stimulates the release of endorphins, a chemical associated with happiness and psychological well-being.
- **Reduce Stress and Anxiety:** Physical activity helps reduce stress and anxiety levels by promoting relaxation and increasing mental focus.
- **Increased self-confidence:** Regular exercise can improve a person's perception of their body and fitness, which boosts their self-confidence and helps them face social situations with greater confidence.
- **Relieve depression:** Several studies have suggested that physical activity can have an effect similar to that of some antidepressant medications in improving mood and reducing depressive symptoms.

The results of the study indicate that recreational physical activity plays an important role in reducing levels of introversion among pupils, and also contributes to improving mental health in general. Physical activity can be an effective way to help individuals with introversion and social anxiety improve their psychosocial well-being, and pupils should be encouraged to engage in recreational physical activities to improve their psychosocial health.

6. Recommendations:

6.1 For educational institutions:

- **The importance of promoting recreational physical activity programs within schools:**
 - Educational institutions should integrate recreational physical activity as an essential part of their daily programs. This activity can be part of classes or extracurricular activities, giving pupils the opportunity to participate in comfortable, non-competitive physical activities that enhance their social interaction and improve their mental health.
 - Specific times can also be set aside for recreational sports activities to encourage pupils to interact and participate away from academic pressure.

6.2 For teachers and psychologists:

- **Using physical activity as a tool to support students with introversion:**
 - Teachers and school psychologists should be aware of the importance of physical activity as a means of improving the psychological state of introverted pupils. Programmes can be designed to enhance these pupils' self-confidence by participating in recreational physical activities.
 - Physical activities can also help improve introverted pupils' interaction with their peers and enhance their communication skills, reducing feelings of isolation and enhancing their ability to engage in the

school community.

6.3 For sporting establishments:

- **The need to provide opportunities to participate in sports recreational activities for young people:**
 - Sports institutions should attach great importance to providing recreational sports programs for young people, focusing more on social interaction and enjoyment than on competition. These programs can be open to everyone, regardless of fitness level or athletic abilities.
 - Community activities and sports days should be organized to include all age groups, and students and their families should be encouraged to participate in them. Such programs can contribute to improving the overall health and psychological well-being of young people.

These recommendations come in response to the results of the study that indicate the role of recreational physical activity in improving levels of introversion and promoting the psychological and social health of pupils. Educational and sports institutions and teachers should work together to provide supportive environments that encourage participation in physical activities in a way that contributes to improving the quality of life of young people.

CONCLUSION

The study reached a set of important results that highlight the relationship between recreational sports physical activity and introversion levels among secondary school students. The results showed that pupils who regularly engage in recreational physical activities have lower levels of introversion than non-practitioners, suggesting that physical activity can play a positive role in improving pupils' psychological well-being and reducing feelings of isolation.

Statistical analyses have also shown that there are statistically significant differences between practitioners and non-practitioners of physical activity in levels of introversion, reinforcing the idea that recreational physical activity not only promotes physical health, but also contributes to improved social interaction and psychological well-being.

Based on these results, it can be emphasized that recreational sports physical activity is an influential factor in reducing levels of introversion, as it allows students to engage in fun and non-competitive activities, which enhances their social interaction and self-confidence. Schools and sports institutions should be encouraged to promote this type of activity as part of educational and sports programs directed at improving the psychological and social health of pupils.

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8. Appendices

Study Survey

Survey

Dear Student,

This questionnaire is presented to you as part of a study aimed at measuring the level of introversion among students and its relationship to physical activity. This research aims to identify some psychological and behavioral aspects associated with physical activities and the extent to which they affect the student's personality.

We assure you that all information you will provide will be treated in strict confidence, and will be used for scientific research purposes only, without revealing your identity. There are no right or wrong answers, please answer honestly and objectively.

We thank you for your cooperation and contribution to the success of this scientific work.

Yours sincerely,

first: A questionnaire to measure the level of introversion using the five-point Likert ladder

Instructions: Read each statement carefully, then determine your degree of agreement:

No.	Statement	1	2	3	4	5
1	I prefer to spend time alone than with others	☐	☐	☐	☐	☐
2	I feel uncomfortable speaking in front of a group of people	☐	☐	☐	☐	☐
3	I prefer individual activities such as reading or drawing to group activities	☐	☐	☐	☐	☐
4	I find it difficult to start conversations with strangers	☐	☐	☐	☐	☐
5	I need a long time to adapt to new people	☐	☐	☐	☐	☐
6	I hesitate to speak or participate in class	☐	☐	☐	☐	☐
7	I feel comfortable when I'm alone	☐	☐	☐	☐	☐
8	I'd rather stay home than go out with friends	☐	☐	☐	☐	☐
9	I feel tired after social interaction for a long time	☐	☐	☐	☐	☐
10	Others describe me as shy or introverted	☐	☐	☐	☐	☐

Second: A questionnaire to measure physical activity using the five-point Likert scale

Instructions: Read each statement and then determine your degree of agreement:

No.	Statement	1	2	3	4	5
1	Regular physical activity or sport during the week	☐	☐	☐	☐	☐
2	I dedicate enough time to exercise each week	☐	☐	☐	☐	☐
3	I prefer physical activity to sitting in front of screens	☐	☐	☐	☐	☐
4	I participate in group sports activities (such as a team or club)	☐	☐	☐	☐	☐
5	I play sports because I enjoy them	☐	☐	☐	☐	☐
6	I feel energized and focused after exercising	☐	☐	☐	☐	☐
7	I do different types of physical activity weekly	☐	☐	☐	☐	☐
8	I feel that exercise positively affects my mental health	☐	☐	☐	☐	☐
9	Parents or teachers encourage me to exercise	☐	☐	☐	☐	☐
10	I think that exercising helps me improve my academic performance	☐	☐	☐	☐	☐

Third: Personal Data

COMPLETE THE FOLLOWING:

1. Age: Year
2. Gender:
 - ☐ Male
 - ☐ Female
3. Grade:
4. School:
5. Area/City:
6. Do you have any health condition that prevents you from being physically active?
 - ☐ Yes
 - ☐ No
 - ☐ If yes, what is it? (optional)