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## Exploring the Role of Physical Activity Influencing Emotional Regulation and Mental Health in Adolescents

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### Abstract

This research paper explores the intricate relationship between physical activity, emotional regulation, and mental health in adolescents through an in-depth content analysis grounded in catharsis theory and the transactional theory of stress and coping. It underscores physical activity as the best practice for adolescents to manage emotions and mental health, identifying key themes that highlight its role in enhancing emotional regulation skills and reducing anger, anxiety, and depression. The catharsis theory suggests physical activity releases negative emotions, while the transactional theory explores how adolescents perceive and respond to stressors. Emphasizing the positive impact of physical activity on emotional regulation and mental well-being, the study advocates for integrating such programs in educational settings to provide essential coping skills. Although further research is needed, the paper concludes by synthesizing prior studies and highlighting the potential for physical activity to empower adolescents in managing stress, reducing anxiety and depression, and establishing positive coping strategies for a healthier lifestyle into adulthood.

### Keywords

emotional regulation; physical activity; mental health; catharsis theory, transactional theory; resiliency.

# **Exploring the Role of Physical Activity Influencing Emotional Regulation and Mental Health in Adolescents**

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### Abstract

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**Key Words:** emotional regulation; physical activity; mental health; catharsis theory, transactional theory; resiliency.

## **Introduction**

This research project aims to investigate the profound impact of physical activity on adolescents' regulating their emotions and explores the correlation between them. In addition, it also presents physical activity as the best practice for adolescents to enhance emotional regulation and their mental well-being. Furthermore, this paper forms a comprehensive literature review, offering insights into how physical activity plays a pivotal role in guiding adolescents toward improved emotional regulation and better management of their mental health symptoms. Moreover, this study focused on a theoretical framework that includes two theories relevant to emotional regulation and physical activity: the catharsis theory and the transactional theory of stress and coping. This study employs these theories as analytical lenses to shed light on the mental health challenges faced by adolescents in this context, such as anger, anxiety, and depression.

Moreover, adolescents encounter many stressors that lead to mental health issues and emotional dysregulation, such as academic pressures, peer pressures, bullying, family issues, changing perspectives, and bodily transformations. This study hypothesizes that engaging in 45-60 minutes of physical activity can empower adolescents to develop emotional resilience, effectively manage their emotions, and alleviate symptoms of mental health issues compared to adolescents who do not participate in physical activity. Therefore, it is crucial for adolescents to participate in physical activity because it provides them with effective strategies to express their emotions and acquire coping mechanisms.

## **Design and Data Collection**

This study collected 18 articles, using qualitative methods for data analysis. This approach enabled the researcher to extract conclusions from the gathered journal data. This data collection focused on exploring existing theories regarding adolescents' emotional regulation and underscore the importance of incorporating physical activity in this context. The research question was formulated following the PICOT method, addressing adolescents aged 12-17 who struggle with emotional regulation. It examined how consistent physical activity compared to a lack of physical activity affects their mental health during the academic school year. The research articles were sourced from CINAHL, PubMed, and Google Scholar databases. Boolean algebra was used to build research strings, first combining "Physical activity or fitness" with emotional regulation in adolescent students.

The research strings were expanded to incorporate additional keywords such as "exercise," "aerobic exercise," "mental health," "catharsis theory," and "transactional theory of stress and coping" in alignment with the theoretical framework. The inclusion criteria considered articles published after 2013 and within the specified age range, ensuring that the information was recent and relevant. Exclusion criteria were applied to articles published before 2013 and those involving age groups outside the 12-17 age range.

Of the 18 journal articles collected, 13 were selected as relevant to the study. Content analysis was employed to identify themes, patterns, and relationships within the data. The collected data was categorized by age, words, and concepts, and this categorization facilitated the interpretation and understanding of the content. Upon completion of the categorization process, the data was examined to identify patterns and derive conclusions in response to the research question.

The results indicated that words and concepts related to the influence of physical activity on emotional regulation in adolescents were more prevalent in the selected journal articles compared to the others. This suggests that physical activity plays a significant role in influencing emotional regulation in adolescents, like its impact on adults. This observation has implications for how readers perceive the role of physical activity in shaping emotions and mental health among adolescents.

## **Review of the Current Literature**

### ***Physical Activity***

Physical activity involves "all types of movement caused by muscle activity, resulting in increased energy expenditure" [16]. Several terms fall under physical activity, such as sports, exercise, fitness, walking, running or cardio, yoga, and weightlifting. Research has found that physical activity has benefits that help adolescents improve their mental and overall well-being [22]. On the other hand, no physical activity or sedentary is defined as "activity that involves little or no movement or physical activity"[16]. It is described as "sitting, watching television, playing video games, and using a computer" [16]. Therefore, when compared to each other, it is evident that physical activity offers more benefits than no physical activity.

### ***Emotional Regulation***

Emotional regulation is "the capacity to manage one's own emotional responses" [26]. These authors discussed that gaining the knowledge to maintain emotions is a "key socio-emotional skill," which provides resiliency in circumstances that provoke emotions. In maintaining emotions, physical activity has a significant impact on "improving emotional regulation and reducing behavioral functioning in children" [20]. These authors also discussed that consistent exercise boosts "self-efficacy" and influences "emotional wellness." Research has

shown that exercising can have favorable effects on "psychological well-being, improving self-esteem, and mood" [25]. Physical activity is one intervention that can help regulate mood, emotions, and lower stress levels [6]. Therefore, physical activity positively impacts adolescents to help them control their emotions and manage their mental health symptoms. Thus, these reasons point out that physical activity has significant benefits.

### *Anger*

One study found that physical activity helps reduce anger symptoms in adolescents [27]. They also discussed that physical activity requires utilizing energy, which is associated with many interactions within the body. These interactions include "increased body temperature, higher norepinephrine and endorphin releases, elevated blood and oxygen flow to the brain, heightened nerve cell growth and brain plasticity, and decreased blood pressure and resting heart rate." In addition, they found that these "physiological effects" are associated with lowering "stress and anxiety," which is connected to reducing anger symptoms [27]. That said, research shows that physical activity can help adolescents manage their anger symptoms by discharging energy resulting in calmness and relaxation.

### *Anxiety*

A study found that exercising can decrease and keep anxiety symptoms from happening [3]. They also include that physical activity has a broad spectrum of advantages and it is recommended as a "non-pharmacological treatment" to relieve anxiety. In addition, they also discussed that "low to moderate-intensity exercise" can have a significant impact on decreasing anxiety symptoms. In another study, they examined that implementing cardiovascular training reduces anxiety symptoms [18]. Research shows that the correlation of physical activity is tied to maintaining anxiety. Therefore, adolescents can benefit from physical activity by being able to



manage their anxiety better and be more resilient in overcoming daily life stressors, which results in better health outcomes.

### ***Depression***

A study discussed that physical activity has more advantages in helping reduce depressive symptoms when compared to no physical activity [5]. In addition, they also include "physical activity can be used as an anti-depressant." In another study, they described "aerobic exercises" can help decrease depression [18]. Furthermore, they also discussed that physical activity serves as a "therapeutic intervention" towards depressive symptoms. In addition, in short amount of time from "20-30 minutes of aerobic exercise" could help increase mood levels. Moreover, this is certain that physical activity can help improve mental health symptoms of depression. Therefore, adolescents can be more resilient in handling situations that may be overwhelming for others who do not participate in physical activity.

### **Theoretical Framework**

The Catharsis theory and the transactional theory of stress and coping were used to examine the connection between physical activity and emotional regulation. The catharsis theory is a concept of Freud's psychoanalytic theory that releases aggression, feelings, and emotions [15]. Richard Lazarus and Susan Folkman developed the transactional theory of stress and coping to help people manage stressful situations using productive coping strategies [23]. These theories were chosen as a theoretical framework because they provide the researcher with a foundation and a lens to see the problems of adolescents having difficulties managing their emotions. In addition, the theoretical framework connects the researcher to existing theories and concepts relevant to the topic in this paper.

### ***Catharsis Theory***

Merriam-Webster defines catharsis as "purification or purgation of the emotions (such as pity and fear) primarily through art and/or bringing about spiritual renewal or release from tension" [14]. In Greek, the word "katharsis" means to "cleanse or purge" [15]. That said, the catharsis theory offers individuals a means to express and release their negative emotions, thus mitigating mental or emotional distress [15]. Moreover, it empowers individuals to enhance their emotional resilience through the release of "anger, trauma, or fear," enabling them to progress [15]. Although this theory does have its limitations to reinforce aggressive behavior; however, applying the catharsis theory appropriately can be beneficial, especially in adolescents [15].

Moreover, research has shown that adolescents were able to "blow off steam" appropriately by engaging in physical activity [27]. In a similar study, they discussed that participating in physical activity allowed individuals to release built-up energy or stress to "let off steam and, therefore, manifest a cathartic response to experience psychological relief" [17]. In addition, when individuals experience a "stress-response" it serves as a drive to relieve or cleanse themselves of the built-up energy through physical activity. Therefore, participating in physical activity while appropriately applying the catharsis theory aids in the reduction of aggression, anxiety, and stress, contributing to emotional regulation.

### ***Transactional Theory of Stress and Coping***

The transactional theory of stress and coping "presents stress as a product of a transaction between a person (including multiple systems: cognitive, physiological, affective, psychological, and neurological) and his or her complex environment." [22]. This depends on how an individual assesses the stressor and having the necessary attributes to handle the stressor [22]. Furthermore, this theory is based on appraisals that consist of primary, secondary, and

reappraisal [22]. Primary appraisal involves "determining whether the stressor poses a threat" [22]. Secondary appraisal involves "the individual's evaluation of the resources or coping strategies at his or her disposal for addressing any perceived threats" [22]. Reappraisal is "ongoing and involves continually reappraising both the nature of the stressor and the resources available for responding to the stressor" [22]. Adolescents often encounter various stressors, including academic pressures, peer relationships, and family dynamics [22].

Developing effective coping skills is essential for effectively managing stress in everyday life [1]. Furthermore, studies indicate that the majority of adolescents tend to experience lower levels of stress during physical activity compared to other subjects, and they often find it to be a stress-relieving activity [1]. Engaging in physical activity offers valuable opportunities to create a learning experience that nurtures the development of coping skills and effective strategies, ultimately strengthening students' resilience. [1].

Stress serves as a predictor of adverse mental health outcomes, including heightened anxiety and depression [24]. This suggests that the elevated stress levels experienced by adolescents plays a critical role in the high prevalence of mental health challenges in this target population [24]. Given the inevitability of a stressor, it is essential to discover strategies that can assist adolescents in effectively managing stress, promoting improved mental health and well-being, leading to reduced levels of anxiety and depression. [24]. Furthermore, this theory aids adolescents in directing their attention toward their emotions, enabling them to cope by altering their cognitive or emotional responses to stressful situations [24].

Establishing effective coping skills is vital for successful stress management and preventing stress in everyday life [23]. In response to stressors, adolescents assess the perceived threats or risks and their ability to influence the situation and control their negative emotional

reactions [23]. The success of the coping process depends on their concrete efforts directed at problem-solving and emotional regulation [23]. Responses to stressors can either encourage or hinder the adoption of healthy behaviors and impact an individual's motivation to change or sustain unhealthy habits [23]. As a result, adolescents who incorporate healthy coping strategies, such as physical activity, gain the capacity to overcome stressors, leading to improved emotional management and greater control over their mental well-being.

### **Recommendations**

#### ***Recommendations for Action***

The study revealed that physical activity impacts emotional regulation in adolescents. It showed that daily physical activity can improve their emotional well-being by overcoming their triggers or stressors, hence, increasing resiliency. Furthermore, the findings support that physical activity reduces stress, improves mood, and regulates emotions. In addition, regular physical activity improves mental health deficits and helps decrease symptoms of anger, depression, and anxiety. Also, the findings revealed that adolescents who engaged in daily physical activities were more likely to cope with their triggers, stressors, or negative moods than their peers who were less active. Research has shown that physical activity should be recommended as a critical intervention for adolescents because it alleviates symptoms of emotional and behavioral problems that results in adolescents being more resilient and having more control of their emotions.

Moreover, research has shown that the results of this study should not be overlooked and should be a priority. In addition, the results of this study can be disseminated to relevant academic journals in psychology, health sciences, or related fields that specialize in adolescent development, stress management, coping, and physical activity. Furthermore, mental health

professionals can benefit from this research to support mental health in adolescents. The school systems can also benefit from this research by implementing more physical activities. Also, the parents of adolescents can benefit from this research by gaining the knowledge and understanding the essentials to physical activity to help their children better manage their emotions and gain positive coping skills that supports a healthy lifestyle. Therefore, the findings from this research can enlighten individuals and groups that support the overall health and well-being of adolescents.

### ***Recommendations for Further Study***

Recommendations for future studies on the catharsis and transactional theory of stress and coping with physical activity and emotional regulation in adolescents can help advance our understanding of the complex relationship between these variables. Depending on certain circumstances, social support, cultural perspectives, and interventions provided in school can significantly impact mental health outcomes. Exploring longitudinal studies, contextual factors, interviews, or focus groups is a need to gather more data. Longitudinal studies are needed to better understand the relationship between physical activity and emotional regulation over time. Contextual factors can further explore adolescents' social environment and how they cope. Interviews or focus groups can better understand adolescents' physical activity experiences impacting emotional regulation. By pursuing these recommendations, future studies can enrich our knowledge of how physical activity and emotional regulation interact within the framework of the catharsis theory and the transactional theory of stress and coping in adolescents. However, these recommendations are needed to investigate this topic further. These insights show that developing targeted interventions and strategies can promote better mental health and well-being during adolescents' crucial developmental stages. Therefore, physical activity is a positive coping

strategy that carries on into adulthood to better manage their emotions and promote a healthy lifestyle.

### **Conclusion**

This research paper conducted an in-depth content analysis to explore the intricate relationship between physical activity, emotional regulation, and mental health in adolescents, grounding its examination in the catharsis theory and the transactional theory of stress and coping. Furthermore, the study identified key themes that highlight the significance of physical activity in enhancing emotional regulation skills among adolescents. Physical activity influences emotional regulation and mental health to overcome stressors to reduce anger, anxiety, and depression. Furthermore, physical activity could build strength and adaptability for adolescents to have the ability to bounce back from minor set-backs, which allows them to regulate their emotions and manage their mental health symptoms. The literature review revealed many critical points about how important physical activity towards mental health can be and how it can benefit adolescents to better control their emotions.

The catharsis theory suggests that engaging in physical activity serves as a means of releasing and purging negative emotions and stress. Simultaneously, the transactional theory of stress and coping provides insight into how adolescents perceive and respond to stressors such as academic pressures, peer influence, familial issues, bullying, body image concerns, and self-esteem. The research findings underscored the role of physical activity in addressing these issues, promoting emotional regulation, and bolstering mental well-being.

While this study investigated the interplay between physical activity, emotional regulation, and adolescent mental health, it also recognized the need for further research in this field. Nonetheless, the results point to the potential benefits of integrating physical activity

programs and exercise interventions within educational settings, providing adolescents with essential coping skills, and promoting a healthier lifestyle. This not only prepares them for adulthood but also supports the development of positive behaviors.

The theoretical literature review and framework were established through the collection and analysis of journals articles, consolidating the existing knowledge on the subjects. This framework highlights the positive impact of physical activity on emotional regulation and mental health in adolescents, particularly as a valuable coping strategy in response to stress. Numerous studies have revealed a strong correlation between emotional regulation and physical activity, especially in the context of appropriate emotional release. Engaging in cardiovascular exercises and participating in leisure sports have been shown to reduce anger, stress, anxiety, and depression in adolescents. Although, additional research is needed to gain a more comprehensive understanding, the study emphasizes the potential for physical activity to foster emotional regulation among adolescents, ultimately enhancing their overall health and well-being.

In conclusion, this research paper synthesizes prior research to emphasize the connection between physical activity, emotional regulation, and mental health in adolescents, leveraging insights from the catharsis theory and the transactional theory of stress and coping. Recognizing physical activity as an effective coping strategy has the potential to inspire educators to integrate more physical activities into school policies. Therefore, physical activity serves as the best practice for adolescents to enhance emotional regulation and their mental well-being. This, in turn, can empower adolescents to better manage their stress and emotions, reduce anxiety and depression, and establish a positive coping strategy that extends into adulthood, prompting a healthier and more balanced lifestyle.

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