



Physical and Psychological Effects of Dancing on Children, Adolescents, and Young Adults: A Review

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Type of Publication: Original Research Paper

Conflicts of Interest: Nil

Abstract

Dance is choreographed movements that are usually performed to music. It can be performed by either an individual or a group, and is more popular among females than males. There are many different types of dance, including jazz, ballet, tap, street dance, and ballroom. This article aims to review the physical and psychological effects of dancing on children, adolescents, and young adults. To date, a number of studies have reported on the effects of dancing. There are certain beneficial effects associated with increased levels of physical activity, while improvements in bone mineral density and bone mineral content, aerobic and physical fitness can all be attributed to dance. Furthermore, dancing helps to reduce potential somatic symptoms. In addition to its physical effects, there are a number of psychological benefits associated with dance. Dance can reduce levels of depression and emotional distress. Additionally, there are benefits of “self” that can clearly be seen in the form of increased levels of self-expression, self-esteem, self-trust, self-confidence, and self-perception. However, although previous research has mainly focused on the positive effects of dance, it must be noted that dance may also have some negative physical and psychological effects on participants. Posting dancing videos on social media platforms has recently become quite popular among adolescents and young adults. As these platforms may be open to comments from viewers, they can be a source of criticism. It is important that further research on the psychological effects of this trend on dancers be conducted.

Keywords: dance, physical effects, psychological effects, children, adolescents, young adults

INTRODUCTION

Adolescence is a vital and formative stage in an individual’s development from childhood to adulthood. Providing adolescents with physical, social, and emotional support is essential in getting them ready for the transition to adulthood, as it allows them to grow and develop in a way that helps them have healthier and more successful lives [1].

However, in 2019, it has been reported by the World Health Organization (WHO) that the majority of adolescents all over the world are insufficiently physically active, which can endanger their present and future states of health. According to WHO researchers, more than 80% of school-aged teenagers

worldwide have not met the current guidelines of at least one hour of physical exercise each day — including 85% of females and 78% of males [1]. Regular physical activity has been shown to aid in the prevention and management of non-communicable diseases (NCDs) such as heart disease, strokes, diabetes, and a variety of malignancies. Additionally, it can aid in the prevention of hypertension, the maintenance of healthy body weight, the general enhancement of mental health, as well the quality of life and sense of well-being of an individual [2]. Around the world, mental health issues can also significantly affect the health of adolescents. In 2019, one in every seven teenagers was found to have a

mental health issue [3]. Therefore, for a society to have healthy adults, physical and mental disorders among adolescents and young people must be prevented or delayed.

To solve the global epidemic of physical inactivity among adolescents, different countries have established sets of guidelines to promote physical activity. For example, according to the Canadian government's 2002 guidelines, children and teenagers should engage in 30 minutes of moderate-to-vigorous physical exercise each day and then advance to 90 minutes of physical activity per day [4]. In the UK, the government launched a policy called Be Active, Be Healthy to promote physical activity and to improve the general health of the population [5]. In the United States, physical activity programs, such as physical education classes, organized sports, activity classes or lessons, and after-school programs, have been structured to promote physical activity [6].

Dance can be one of the activities that engage people in physical movement in a healthy way. It is a popular recreational activity, particularly among girls and young women [7, 8]. Dance involves certain movements that are different from the movement of other activities, such as walking and most sports. This is because the movements of dance are directly connected to music [9]. This may be the reason why it is so popular among females who tend to engage in lesser amounts of physical activity when compared to males.

Overview of dance

Dance is a type of human behavior that is composed of the coordination of intentional body movements [10]. These movements are usually accompanied by music and can be done alone or in a group. During the complicated process of self-expression that is associated with dancing, the combination of movement, rhythm, and music requires simultaneous use of the right and left sides of the brain. Actually, dance has the potential to be a more comprehensive mode of self-expression than either speech or writing [11].

The potential effects of dance have been studied among participants of different age groups. The therapeutic impact of dancing has largely been studied in adults and the elderly. For example, it has

been proven that dancing has had a positive effect on elderly individuals diagnosed with Parkinson's disease, dementia, and a range of mental illnesses [12-14].

In this paper, the physical and psychological effects of different types of dance on children, adolescents, and young adults will be reviewed. The different types of dance include ballet, jazz, tap, ballroom, as well as others. Dance can offer a number of physical and mental benefits to young people, which may help them lead healthy lives as adults.

Physical Effects Of Dance

Various studies have reported that dancing can have positive effects on our bodies. These benefits include enhanced physical activity which can lead to weight loss, improved bone mineral density and bone mineral content, a higher state of aerobic and physical fitness, and decreased stress-related symptoms in those who participate in the activity.

Physical activity

In the United States, adolescents are expected to meet the current physical activity guidelines of at least 60 minutes of moderate-to-vigorous physical activity each day (MVPA). Dance has been shown to enhance physical activity. As a scientific technique, accelerometry was used to monitor the physical activity of 137 adolescents aged 11 years and older who participated in ballet, jazz, or tap courses at dance studios in Columbia, South Carolina. It was found that dance courses contributed a significant amount of MVPA to the total weekly amount of MVPA of young girls, and these girls were found to have accumulated 70% higher MVPA on days that they attended dancing classes than on non-dance class days. Consequently, it has been concluded that dance classes play an important role in providing American teenage females with health-enhancing physical exercise and assisting them in meeting the current physical activity guidelines [6].

Childhood obesity is a major public health problem in the United States. It has impacted children of all races, ethnic groups, and socioeconomic statuses. In 2012, a research study was conducted to find out if a ballroom dancing classroom program complied with the national standards of MVPA and to assess the effects of the class on the body mass index (BMI) of each of the participating students. The participants

were comprised of 79 students from New York City public schools. MVPA levels were determined throughout the class time using the System for Observing Fitness Instruction Time (SOFIT) along with direct heart-rate monitoring. The BMI of the students was calculated using weight and height measurements. Throughout the ten-week period, relevant levels were recorded [15].

The outcomes of this study indicated that the ballroom dance program for elementary school children offered a means for students to be physically active in the classroom. The ballroom dance program promoted MVPA during at least 50% of the class time among 9 to 11-year-old children. The students who participated in the ballroom dancing program averaged 30.1 minutes of MVPA each class period, which was consistent with the established guidelines of Healthy People 2010. During periods of pre- and post-participation in the program, the percentages of overweight and obese individuals fell, while the percentage of individuals with a normal weight climbed. These modifications were reported to be statistically significant [15].

Bone mineral density and bone mineral content

In the year 2000, dance was found to increase bone mineral density (BMD) in dancers. The BMD of 78 pre- and early-pubertal beginner female ballet dancers of an average age of 9.6 years old was compared to that of 52 age-matched controls by researchers. Dancers exhibited 4.5% higher total hip BMD and 4.9% higher femoral neck BMD when compared with the controls. While genetics may have played a role in these findings, the researchers believe that the mechanical loading associated with dance training provided an adequate skeletal stimulus that resulted in a site-specific bone mineral density advantage. Consequently, taking part in dancing has been shown to be related to increased bone mineral density [16].

Another research study conducted in the year 2006 looked at the effects of ballet dancing on bone mineral accrual in female non-elite dancers and typically active controls over a three-year period across puberty. The participants included 82 ballet dancers and 61 controls aged 8-14 years old. Bone mineral content (BMC) of the total body (TB), including the upper and lower limb regions, was

assessed yearly, and the assessment of BMC at the proximal femur and lumbar spine (LS) using dual x-ray absorptiometry (DXA) was done biannually over a three-year period. Anthropometry, activity levels, and calcium consumption were also assessed twice a year. The results indicated that dancers had significantly greater BMC of the TB, lower limbs, femoral neck (FN), and LS than the controls. Notably, dancers had a 4% higher BMC than the controls during prepuberty and maintained this advantage throughout the pubertal years at the FN [17].

Aerobic and physical fitness

Participating in dance activity has been found to significantly increase aerobic and physical fitness and strength, while clearly decreasing body fat. In a study that focused on the effects of team dance participation on the physical fitness and self-images of female adolescents who participated on those dance teams, eight dancers were evaluated at two different points in time: once before and once four months after joining the dancing team. Eight participants who were matched in terms of age, weight, height, grade, and race were in the control group. They were assessed at the same time as the members of the dancer group. Physiological tests included maximum oxygen uptake, sit-and-reach exercises, one-repetition maximum bench press, assessment of skinfolds, and hydrostatic weighing. Coopersmith Self-Esteem Inventory, Tennessee Self-Concept Scale, and Body Cathexis Scale were used to form a self-concept test. It was found that dancers improved their maximal oxygen uptake and one-repetition maximum bench press, as was demonstrated by a substantial decrease in total skinfolds and a near-significant drop in percent body fat. The dancing team's maximal oxygen intake was considerably greater than that of the controls. These findings suggested that involvement in a dance team did effectively increase the physical fitness of the participants [18].

Another study that reported on the physical effects of dance involved a project called dance 4 your life. In this study, 55 females aged 14 years old from a secondary school in the UK participated in dance classes comprised of 5-12 hours. A portable handgrip dynamometer was used to measure their dynamic upper body strength. The dynamometer was adjusted

to each participant's hand size. Participants pressed the handle as hard as possible while repositioning the handgrip from above the head to the side (while keeping their arms stretched out). Participants performed one trial and two tests, with the best score being recorded for the purposes of analysis. Handgrip strength rose considerably from the pre- to the post-stage, indicating that an individuals' upper body strength had increased [5]. Additionally, the researchers of this study assessed aerobic capacity using the 20-metre shuttle run. In this activity, the participants sprinted from point A to point B within time constraints specified by pre-recorded beeps on accompanying CDs. Aerobic capacity rose considerably indicating that the dancing intervention had a beneficial effect on the level of aerobic fitness of the participants [5].

Somatic Symptoms

A study conducted in 2020 focused on the effects of dance intervention on somatic symptoms and emotional distress in adolescent girls. The researchers collected data through the administration of a questionnaire at 8, 12, and 20 months from a total of 116 girls aged between 13-18 years old exhibiting certain somatic symptoms such as headaches, stomach aches, tiredness, and aching shoulders. Furthermore, students experiencing mental health problems, such as nervousness, stress, and anxiety, were also included in the study. The dance intervention was organized after school twice a week. Different types of dance, such as African dance, show, jazz, and street dance, were offered with room for improvisation and spontaneous movement to promote creativity. Furthermore, there was a significant effect on the somatic symptoms of the subjects. After 12 months, the intervention group reported a greater reduction in symptoms than the control group. It was determined that dancing could reduce stress-related symptoms when it was taken in a social environment [19].

Psychological Effects Of Dance

Mental illness is a serious problem nowadays; however, dance can be used to treat certain forms of mental illness. Dance has a positive effect on depression and emotional distress. Moreover, the psychological effects of dance can be related to the concept of "self" in the manner of self-expression,

self-esteem, self-trust, self-confidence, and self-perception.

Depression and emotional distress

One of the most prominent forms of mental illness is depression. In 2009, researchers conducted a study on the effects of dance on depression. Dance was proven to be beneficial in combating depression in 120 voluntary male and female university students. The participants were split into two groups: a dance training group and a control group. A dance training program was organized 3 days a week. After 12 weeks, the dance training group showed significant improvements in depression levels. As a result, it has been determined that dancing can have a positive effect on the mental states of university students, while decreasing levels of depression among these subjects [20]. Moreover, it has been demonstrated that dance intervention can reduce emotional distress in adolescent girls. Therefore, researchers have suggested that dance may be used as an effective non-pharmacological complementary treatment for girls with emotional distress symptoms such as stress, nervousness, anxiety, and sadness [19].

Psychological effects of dance with regard to the concept of "self"

The concept of "self" plays an important role in assessing the psychological effects of dance; therefore, various aspects of "self" are being studied.

Self-expression

From a nursing viewpoint, dancing is a powerful and comprehensive intervention that has the potential to have profound effects on patients suffering from mental illness. Dance may benefit mental health by encouraging self-expression and social engagement. Mental illness frequently impairs a person's capacity to express himself or herself and communicate with others. For instance, if a person with a mental condition has difficulty communicating vocally, dancing can serve as a nonverbal mode of communication. By allowing a person to discover new facets of himself or herself via dance, they can improve their self-awareness and acceptance. Thus, dancing may be utilized to help people with mental health issues to express themselves. This has become evident since everyone that can move, can express themselves via movement [11, 21]. Another study focusing on adolescent girls with internalizing

problems has found that dance also served as a vehicle for them to communicate their emotions. Through dancing, they could express their anger, sadness, joy, and freedom. As a result, the act of dancing developed into a new language for them [22].

Self-esteem

The effects of dance on the self-esteem of participants have been of particular interest among researchers. The Rosenberg self-esteem measurement was used to assess the levels of self-esteem of the participants taking part in the dance 4 your life program. The chosen measurement of self-esteem was a “global” or “overall” measurement rather than a task or activity-specific degree of self-esteem. Self-esteem considerably rose from the pre- to post-periods of the study. The improvement in self-esteem might be attributed to the positive reinforcement and creativity of dancing classes. Participants were free to develop their own dancing phrases and sequences with peer assistance and criticism [5].

Self-trust

In 2016, research was aimed to study the experience of participants who joined dance intervention programs. The concept of self-trust was clearly demonstrated among 112 adolescent girls in a study conducted in Sweden. Self-trust is related to different forms of personal development, and it can help individuals acquire a positive attitude toward themselves. The researchers offered a program of after-school dance intervention that took place twice weekly for 8 months. Data were analyzed using qualitative content analysis with an inductive approach. Every day, the participants with internalizing problems experienced some degree of stress as a result of the pressures of societal standards and critical self-evaluation [22].

Dancing helped individuals cope with the stress of peer or self-evaluation. They could unwind, dance freely, and feel fantastic. In other words, for these students, the movement of creative dance embodied a newly discovered sense of liberation. [22] Additionally, dancing enabled the girls to connect with others who had similar issues and were subjected to the same pressures and demands that made them feel uneasy. The dancing intervention allowed participants to make new acquaintances,

which alleviated any sense of loneliness. Consequently, they felt involved and welcomed. The sense of unity obtained among members of the dancing group stressed acceptance and generosity in a welcoming environment. Almost every participant emphasized the importance of feeling connected and recognized the value of meeting new friends. As a result, self-trust in forms of personal development was increased, and it made them feel better about themselves [22].

Self-confidence

Apart from increasing self-trust, any negative thoughts and self-doubt experienced by the teenagers were diminished. These feelings had been supplanted by a sense of control and accomplishment. They even referred to some dancing moves as “incarnated” as they gained confidence in their abilities. These students discovered a renewed confidence in their own skills. They viewed themselves as being capable of pursuing new directions in life. From these findings, it can be concluded that a sense of self-confidence was established among these adolescents [22]. Another study found that a 12-week Latin dance training program improved the self-esteem of 60 university students. The level of confidence among participants was increased significantly when the pre-test and post-test scores were compared [23].

Self-perception

A dance intervention program was organized to study body image and physical self-perceptions among adolescent girls. It was found that physical self-perception and body image dissatisfaction among 50 British schoolgirls aged between 13-14 years were positively influenced by a 6-week aerobic dance intervention. The participants were separated into two groups: those who participated in aerobic dancing and those who participated in traditional physical education. Each participant completed the Body Attitude Questionnaire (BAQ) and the Children and Youth Physical Self-Perception Profile (CY-PSPP) at three different time points: before, mid, and post-tests. The results indicated that six weeks of aerobic dancing dramatically improved the body attitudes and physical perceptions of 13-14-year-old teenagers. It is possible that dance involvement led to weight reduction and muscular toning, resulting in a perception of being less obese, physically fit, and

feeling beautiful, as well as being less sensitive to the impression their weight and form may portray to others [24].

CONCLUSION

Studies have provided evidence that dance can have physical and psychological effects on children, adolescents, and young adults. In terms of physical effects, dance can increase levels of physical activity, bone mineral density, bone mineral content, aerobic and physical fitness. It can also reduce potential somatic symptoms. Apart from its physical effects, psychological effects associated with dance are provided. It can reduce levels of depression and emotional distress among participants having mental health issues. Additionally, various aspects of “self” in forms of self-expression, self-esteem, self-trust, self-confidence, and self-perception can be improved by participating in dance activities.

Although we have identified a number of positive psychological effects of dancing, it is noteworthy to mention that there may be some negative effects as well. Dancing can have some negative effects on the body. Ballet, tap, jazz, and other types of dance are all associated with certain distinct injury patterns. It has been determined that at least 50% of pediatric and teenage dancers will experience some type of injury from dancing. Among these, ankle sprains are the most frequently occurring acute injury. The most often sustained chronic injuries are to the lower limbs and back. While back, ankle, or foot injuries appear to be more prevalent in young dancers, knee problems tend to rise as dancers become older [25]. Moreover, most types of dance practice are performed in front of a mirror, so dancers might compare their bodies with others. For example, ballet dancers were reported to view their bodies in a negative way such as by considering themselves to be too tall or too fat. This could lead to lower levels of self-esteem and may even bring about unhealthy eating practices and diets [26].

Nowadays, adolescents and young adults spend so much time on social media platforms such as Instagram, YouTube, and TikTok. These media platforms offer space for people to post their dancing skills. Consequently, a study should be conducted on the effects of psychological effects of the users of these platforms with regard to the art of dance. For

example, K-pop cover dance has become famous on social media. The open-access of K-pop cover dance on YouTube can be a place that youth can showcase their talents in a public space. However, it needs to be recognized that youth can also be judged, criticized, harassed, and bullied by the viewers of these platforms as well. As a consequence, this behavior could potentially lead to some negative psychological effects.

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