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Drum Therapy: A Holistic Approach for Fighting Disabilities

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Abstract

This paper indicates that drumming accelerates physical healing, boost the immune system, and produces feelings of well-being through the release of emotional trauma. Holistic drumming approaches have been proven to be very successful in helping people with major medical issues. The initial investigations of 3 studies evaluated the methods of Drum Therapy in order to examine the effects of Drum Therapy on development of coordination, retention, social skills, and physical and cognitive functioning. Dyslexic individuals may also find improvisation difficult, especially when learning an instrument like the drums. For this reason, the Specific Isolated Instruction teaching method is so important. The results of this study concluded that Drum Therapy helps participants to learn problem-solving strategies, improve patience and perseverance, to develop coordination and retention.

Keywords: Holistic; Drum therapy; Healing; Disabilities

Abbreviations: Attention-Deficit Disorder (ADD); Attention Deficit Hyperactivity Disorder (ADHD); Oppositional Defiant Disorder (ODD); Pervasive Developmental Disorder (PDD)

Introduction

Drumming has always played an important role in both the medical and communication aspects of societal evolution. In addition, it has been used as a part of rituals, ceremonies, rites of passage, celebrations, and healing for centuries [1]. The art of drumming has proven to have therapeutic effects because of its natural power of rhythm and its associated effects for the power of healing. The practice of drumming as a healing art is a truly holistic, alternative medical approach to healing that has been proven to break down social barriers, promotes freedom of expression, unity, and cooperation [2].

Holistic drumming approaches have been proven to be very successful in helping people with major medical issues. It has been proven that drumming helps retrain the brain after a stroke, and that it also helps people with Parkinson's Disease move more steadily. Drumming has also been proven to help Alzheimer's patients to connect better with their loved ones [3].

Current clinical research indicates that drumming accelerates physical healing, boost the immune system, and produces feelings of well-being through the release of emotional trauma. Several clinical studies have proven that drumming has calming, focusing, and healing effects on individuals suffering from Alzheimer's disease, autistic children, combat veteran, emotionally disturbed teens, recovering addicts, trauma patient, prisoners, and homeless individuals. Drumming is also proven beneficial in the treatment of many medical conditions such as stress, fatigue, anxiety, addiction, hypertension, asthma, chronic pain, arthritis, heart disease, mental illness, and emotional disorders [4].

Pat Gesualdo who is an accomplished Drum educator, author, and pioneer of the healing art of drum therapy, and his team, have performed three investigations aimed to reveal that drum therapy has a proven benefit for mentally challenged and learning disabled children and adults for developing coordination, retention, social skills, and physical and cognitive functioning. Mr. Gesualdo is very passionate in regard to drum therapy and is living proof that drum therapy is an effective form of treatment for various disorders, as drum therapy allowed him to overcome his own childhood battle with various medical and cognitive disabilities.

Research Methodology

Characteristics of learning disabilities

Coordination and retention disabilities affect both males and females. It is estimated that 20% of the USA population suffers from learning disabilities and this condition occurs in males two times more often than in females [5]. About 1 in 6 children in the United States have a developmental disability [6]. From a treatment perspective, learning disabilities cannot be treated in the same manner as other mental illnesses [7]. Coordination disabilities are characterized by having difficulty with spatial relations and physical movement. Individuals suffering from retention disabilities find it extremely difficult to participate in tasks that require long periods of concentration, focus, and methodical comprehension. In addition, these individuals may suffer from mild to extreme hyperactivity.

Pre-study evaluation

The initial investigations of 3 studies evaluated the methods of Drum Therapy in order to examine the effects of Drum Therapy on development of coordination, retention, social skills, and physical and cognitive functioning. The primary objective was to determine if the modalities of Drum Therapy helped develop and expand coordination, retention, social skills, and physical and cognitive functioning. All the participants gave approval to participate in this research. There is no conflict of interest.

The purpose of this research is:

To determine if a newly developed Drum Therapy program at The

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Woodland Grange School in Surrey, England, was proven beneficial for two boys 15 years of age, with a separate and extreme history of ODD, coordination, and low functioning mathematical comprehension.

Study 1

This study evaluated the effects of Drum Therapy on two teenage boys with various extended disabilities. The study was designed to evaluate the effectiveness of Drum Therapy regarding developing coordination and improving retention, social skill interaction, and physical and cognitive functioning. The investigation of this theory focused on two 15-year-old boys who were introduced to the modalities of Drum Therapy in the Woodland Grange School in Surrey England. Drum Therapy sessions were held for 30 minutes per week, for 6 consecutive months. The students were overseen by educator and study investigator Christopher Topple, who was trained by Pat Gesualdo in his pioneering techniques of Drum Therapy. Teacher Assistant, Martin, was also present throughout the study for student 2 only. The study investigator independently evaluated any physical and/or cognitive progress these students experienced via treatment with the modalities of Drum Therapy.

Study investigator Christopher Topple, and Teacher Assistant Martin, conducted the Pre-Study evaluation and conducted each Drum Therapy session. School Principal, Collin, observed the overall progression of the students. Christopher Topple, and Teacher Assistant Martin, were present for the Post Study evaluation.

1. Student 1 suffered from extended difficulties with coordination, physical and cognitive functioning, and mathematical computation.
2. Student 2 suffered from extended difficulties with ODD and had behavioral and self-esteem issues.

In the first Drum Therapy session, the students were given a drum pad and a pair of drumsticks. In the very first meeting, the students were taught how to hold the drumsticks. They were then given random hand patterns, specifically (RLRLRLRL). They were then given specific commands and coordination exercises to follow. At the end of the first meeting, the students were given a review of all the commands and exercises.

- Student 1 struggled with coordination issues and the mathematical approach for adding and equaling beats and patterns.
- Student 2, said, from the very start of the session, that he "hated music" and walked out of the class.

The second session began with the exact commands and coordination exercises as the first meeting. Student 1 had extended coordination difficulties and the mathematical approach to counting and adding beats. The mathematical approach to music consists of playing two beats with right hand followed by two beats with left hand. He could not understand multipliers of 2, therefore, he was unable to comprehend that two beats with both hands equaled 4 total beats and was unable to tap out the 4-beat answer.

Student 2 refused to engage teacher and said, "*I hate music*." Study investigator had no idea if student 2 had any coordination difficulties, because he refused to play any rhythms or patterns until the 3rd session. Student 2 would talk about current news events throughout the study.

The fourth session student 1 had coordination improvement and started to count out loud, which seemed to help. He still extensive issues with mathematical comprehension.

Student 2 engaged the teacher for the very first time. Teacher Assistant informed study investigator that student 2 asked to take part in Drum Therapy session. Student 2 played the rhythms and patterns that were given to him. After a short break, he seemed happy to continue the session.

The Eighth Session Student 1 had improved coordination and was able to play a beat on the drum set. He initially struggled with multipliers of 2 and executing them and their answers by tapping them out on the drum pad. As he progressed, he started to apply correct mathematical equations and answers.

Student 2 actively engaged the teacher and was happy to play rhythms and patterns. He also started to play his own beats and patterns that he created and discussed the missing Malaysia flight 370.

Post study evaluation

By the end of the investigation, Student 1 was able to easily coordinate right and left hand and apply knowledge of multipliers 2 to 9 in rhythm form with both hands tapping out equations and answers.

By the end of the investigation, Student 2 was engaging others in conversation, was polite to others, and developed socially acceptable behavior. His Mother commented that she could not believe the change in his social skills and attitude.

Study 2

Pat Gesualdo and David Ciauro conducted a second investigation in the United States in order to determine if Drum Therapy was beneficial for four disabled people in Bergen County, NJ, and would help them develop coordination, retention, physical and cognitive functioning, and social skill interaction.

This study evaluated the effects of Drum Therapy on people with various disabilities in order to expand coordination, retention, social skill interaction, and physical and cognitive functioning. The investigation of this theory focused on 4 male adults between the ages of 30 and 55 who were introduced to the modalities of Drum Therapy in a Recreation Center in New Jersey, 30 minutes per week, for four consecutive weeks. The same individuals were tested 4 months later for 30 minutes per week, for three consecutive weeks, to evaluate if these individuals made any physical and/or cognitive progress via treatment with the modalities of Drum Therapy.

The 4 adults that were included in this study were diagnosed as severe ODD, PDD, and Retardation by medical doctors licensed by the State of New Jersey. Beverly, the recreation center director, David Ciauro, and study investigator, Pat Gesualdo, were present for the Pre-Study evaluation. Beverly, Pat Gesualdo, and David Ciauro were present in the Post Study evaluation.

Pre-study evaluation

In the first meeting, the students were given a drum pad and a pair of drumsticks. In the very first meeting, the students were taught how to hold the drumsticks. They were then given random hand patterns, specifically (RLRLRLRL). They were then given specific commands and coordination exercises to follow. At the end of the first meeting, the students were given a review of all the commands and exercises. After this first meeting, no physical or cognitive improvement was appreciated.

The second meeting began with the exact commands and coordination exercises as the first meeting. All study participants had

trouble remembering the commands and exercises. Coordination, retention, and behavior were identical as that of the first meeting. All study subjects had trouble following and executing all commands and coordination exercises.

The same commands and exercises were used for the last two meetings. In the third meeting, the students had small increase with retention and coordination of the exercises. Behavior was the same.

In the fourth meeting, recall and execution of the commands and exercises increased. Behavior had also improved. The ODD participant (Andre), verbally rejected, and still refused to take part in exercises and commands. The participant with severe retardation (Johnny) was able to count along with patterns and alternate hands and feet. The PDD participant (Larry) was able to alternate hand patterns slightly. The participants had the same retention and coordination as the third meeting. (Johnny), the participant with severe Retardation showed improvement with counting but coordination, especially between all four limbs, and alternation between hands and feet was not present. The PDD participant (Larry) was able to alternate hands and sticking patterns. The participant with severe retardation (Joe) could slightly alternate the hands for the patterns but did not want to follow directions.

Post study evaluation

Four months later, the participants were re-introduced to the same commands and exercises. In the first meeting of the Post Study, recall and execution of the commands and exercises increased. Behavior had also improved. The ODD participant (Andre) took part in commands and exercises without verbal rejection or refusal. The participant with severe retardation (Johnny) was able to count along with patterns and alternate hands. The PDD participant (Larry) was able to alternate hand patterns slightly. The participant with severe retardation (Joe) immediately started counting out loud and marching in place as soon as he saw study investigator Pat Gesualdo.

In the second meeting of the Post-Study, recall and execution of the commands and exercises further improved. All participants had improved physical and cognitive functioning. All the participants were interacting more with the study director, employees of the center, and people within their group. For all study participants, physical and cognitive functioning was equal to first Post Study meeting.

In the third meeting of the Post-Study, the ODD participant (Andre) was joining in the group and answering questions. However, he would not discuss anything further. The participant with severe retardation (Johnny) was able to coordinate both hands and both legs, together and separately, as well as reversing foot patterns to hand patterns, on command. The PDD participant (Larry) was able to execute commands and exercises, especially between both feet, separately. The participant with severe retardation (Joe) was able to coordinate both hands and feet. He would also engage in discussion and ask what time the following week he would be drumming.

Study 3

Pat Gesualdo conducted a study to see if Drum Therapy techniques can be used to help children with dyslexia and ADD to develop coordination, retention, fine motor skills, and physical and cognitive functioning.

Study purpose

To evaluate how Drum Therapy, and its specific teaching methods, can help children with dyslexia and ADD to develop coordination, retention, fine motor skills, and improve physical and cognitive functioning.

Study 4

This study investigated the theory that Drum Therapy, and repeated exposure to rhythms and patterns of drumming, helps people with various disabilities to expand physical and cognitive functioning, speed, retention, and coordination. In order to evaluate this theory, 3 male children, between the ages of 9 and 14, were given percussion exercises and a drum set. They were all monitored individually, for 30 minutes per week, for one year. Two children had dyslexia and one child had ADD, which were diagnosed by the New Jersey Board of Education [8].

Development stage

The students were given a drum pad, a pair of drumsticks, and a manuscript book. The very first meeting outlined basic music theory, such as note values, measures, and bar lines. The students were then taught how to hold the drumsticks. The students were then given rudiments (hand patterns), specifically a "Single Stroke Roll" (RLRLRLRL), and a "Double Stroke Roll" (RRLLRRLL). The single stroke roll was practiced first, for about 5 minutes, then the students were given the double stroke roll. At the end of the first meeting, the students were told to play these rudiments and review all the information for 15 minutes a day for one week.

The second meeting started with a complete review of the first meeting. The students were asked to identify the measures and bar lines, etc. All the students had trouble remembering these items. They were then asked to play the rudiments. Coordination was the same rate of speed as the first meeting. We then proceeded with an in-depth explanation of a basic rhythm. The Hi-Hat (cymbal) was on all four beats of the measure, with the bass drum on beats 1 and 3. The snare drum was on beats 2 and 4. This rhythm was described in detail, and performed at a very low rate of speed. The students were then asked to perform this rhythm. There was much difficulty. They were then told to play one line at a time, first the Hi-Hat, then the bass drum, and then the snare. After the students reviewed the exercises in this manner, they were able to play the rhythms much easier with perfect retention.

This method of specifically isolating each part of the rhythm was used throughout this entire study. The process of isolating sections of a rhythm and allowing the student to focus on one specific section at a time, helped develop reading comprehension, eye-hand coordination, and hand-foot coordination. It was much easier for students with dyslexia and ADD to develop retention and coordination by studying in this manner than it was for other students with dyslexia and ADD who did not study with the Specific Isolation approach. Isolating specific parts of a measure enabled these students to see how each specific part relates to another, which helped to develop coordination and comprehension.

In the third meeting, the students were asked to warm up with the rudiments. There was small increase in speed and coordination. Retention was very good. They were then asked to play the rhythms on the drum set. Physical execution was good in the 14-year-old. The younger student, who was 9 years of age, had more difficulty. Practicing was extremely difficult for the 9-year-old student as well. The student with ADD continued to have trouble concentrating.

Up to 6 months later, the students were able to play 12 and 16 measures in a row.

They were given other rudiments over the same time frame, specifically:

- "Single Paradiddle" (RLRR-LRLL)
- "Double Paradiddle" (RLRLRR-LRLRLL)
- "Triple Paradiddle" (RLRLRLRR-LRLRLRLL)
- "Single Ratamacue" (RRL-RLR, LLR-LRL)
- "Double Ratamacue" (RRL-RRL-RLR, LLR-LLR-LRL)
- "Triple Ratamacue" (RRL-RRL-RRL-RLR, LLR-LLR-LLR-LRL)
- "5 Stroke Roll" (RRLLR-LLRRL)
- "7 Stroke Roll" (LLRRLLR-LLRRLLR)
- "9 Stroke Roll" (RRLLRRLLR-LLRRLLRRL)

Results

To accurately assess increase in speed, the rudiments were measured with a metronome. The students measured below the lowest setting of the metronome 40 at the beginning of the study, therefore, their rate of speed was measured at 0.

The rate of speed for the first student increased from 0 before the study, to 72 for the single stroke roll, 100 for the double roll, and 54 for the 5-stroke roll at the conclusion of the study. The rate of speed for the second student increased from 0 before the study, to 116 for the single stroke roll, 84 for the double stroke roll, and 84 for the 5-stroke roll. The rate of speed for the third student increased from 0 before the study, to 126 for the Single Paradiddle, 88 for the Triple Paradiddle, and 63 for the Single Ratamacue, at the conclusion of the study.

It was found the rate of speed for coordination development needs to be developed mentally more than physically. In combination with this finding, an extremely interesting event occurred. The students often played the rhythms on the drum set. They also played these rhythms on the drum set with the use of a gum rubber drum pad on the snare, while their foot played the (live) bass drum. Whenever they practiced silently on the gum rubber pad, their coordination, retention and speed developed almost immediately. These two types of practice routines were tested with many students not involved in the study. The same increase occurred when the students, who were not involved with the study, practiced silently on the drum pad. The additional investigation revealed that practicing on the loud drum set without the drum pad interfered with the development of coordination, retention and speed. However, silent practice on the drum set with the drum pad, had an immediate development of coordination, retention and speed in both dyslexic and ADD students. As a result, it was found that the "cerebral cortex" (responsible for processing thought) was being distracted by the "primary auditory cortex" (responsible for processing sound).

Discussion

Most people with disabilities can fully understand a total concept and the way to perform specific functions. However, it is extremely difficult and frustrating for them to understand how specific parts work together to make up a whole. For example, a child knows how to ride a bicycle. He understands that he must pedal in order to make his bike move. However, if you tried to explain how the pedals were attached to a sprocket, which is then chain driven in order to make the tires move, an individual suffering from dyslexia may become confused by how the bike works. Once many of these people see the physical how and why things work the way they do, the process becomes as clear as day. That person will also repeat the task in the same exact manner which allowed them to originally comprehend the process. Dyslexic individuals may also find improvisation difficult, especially when learning an instrument like the drums. For this reason, the Specific Isolated Instruction teaching method is so important. This specialized teaching method enables people with disabilities to comprehend the physical workings of an instrument, process, or mechanical device first, and then try to apply what they have learned. This should be done instead of teaching solely by explanation. Specific Isolated Instruction re-enforces the complete and specific detail required for comprehension, coordination, and development for speed. This is especially helpful for understanding methods and instructions.

We have heard so much about children who find it difficult to do perform tasks in the school setting. Some dyslexic children even have difficulty understanding why certain things are done in certain ways. This lack of comprehension ability, plus reversal of words, letters, patterns and objects, makes learning extremely difficult for dyslexic children. This difficulty is particularly apparent classroom situation, where lessons move from one section to another rapidly. A child may not be able to comprehend the first part of a lesson, or several lessons combined, therefore, attempting to successfully accomplish more than one lesson at a time is an exercise in futility. It may take days or even weeks for disabled children to understand and fully recall the first section or lesson alone.

It is extremely important to detect learning disabilities in children as early as possible. The use Specific Isolated Instruction seems to indicate that it's use can be beneficial for children with learning disabilities. It helps to re-enforce a solid and complete understanding of an instrument or subject right from the start of instruction. Learning disabled children need to learn at a slower pace, suitable to their own comprehension level, and not at the level of their peers. Using Specific Isolated Instruction for teaching music, math, reading, spelling, or for any other subject or task that requires comprehension, would give a child with a disability the ability to learn with full comprehension and retention.

Coordination and the mechanics of drumming

Dyslexia is one of the common learning disabilities. Dyslexia effects coordination and reading ability, and as a result, this disability has a profound effect on the mechanics of drumming.

In the 1920's, Dr. Samuel Orton defined dyslexia in his known "Dominance Failure Theory" [9]. In this theory, he believed that for a child to learn, one hemisphere of the brain has to dominate the other. If this does not occur, it will give way to delay and confusion. This theory also suggests that there should be evidence of cross-lateral laterality in people with dyslexia. For example, a person will write with one hand and throw a ball with the other. There was no evidence of cross-lateral laterality in the study performed by Mr. Gesualdo.

All the children in this study started the rudiments, rhythms, and patterns, with their dominant hand and foot. This was done subconsciously and consistently. Any cross lateral movement would have shown and been repeated, because each limb plays a different part of the drum set.

On average, boys outnumber girls 2 to 1 for all types of learning disabilities. Fifty students were taught at the same time this study was conducted but were not included because of lack of learning disability. Four of the students, who were not included in the study, were girls

between the ages of 13-15. Their coordination was almost flawless and seemed to be naturally advanced. All rhythms, patterns, and rudiments were played to perfection almost immediately. Their rate of speed for reverse patterns (dominant hand against opposite foot) was extremely above average.

Drum Therapy combines the principals of physical and cognitive functioning and the art of drumming. Drum Therapy techniques are used as an intervention to provide the special needs community with the opportunity to participate in creative, verbal, and non-verbal expression. Psychologists, Neuroscientists, School Systems, Occupational Therapists, Physical Therapists, Behavioral Therapists, and Teachers throughout the world have used Mr. Gesualdo's pioneering techniques of Drum Therapy.

Drum Therapy techniques help children and adults with both physical and developmental disabilities. These techniques are a valuable diagnostic tool in expanding physical, mental, emotional, social, and cognitive development. They combine visual, rhythmic, auditory, and verbal approaches to help mainstream and special needs participants meet the goals and objectives for improvement in fine motor skills and physical and cognitive functioning. Participants grow both cognitively and emotionally and gain self-esteem through the creative process of Drum Therapy.

Drum Therapy helps participants to learn problem-solving strategies, improve patience and perseverance, to develop coordination and retention. In addition, Drum Therapy nurtures social skills, sensitivity, cooperation, and conflict resolution. Drum Therapy is has proven to be beneficial for all participants. The population targeted for these services are special needs children and adults whose disability has affected, impacted, or reduced their physical and/or cognitive capabilities. The non-threatening, enjoyable nature of Drum Therapy makes it appealing to all age groups. Participant's music abilities and works are not graded, and program modalities are specifically tailored to meet the specific needs of all participants.

Every participant can, and does, grow from Drum Therapy intervention. Participants in Drum Therapy sessions might have experienced failure in their previous school classes and/or social settings, either due to behavioral problems or a combination of their specific disability with a behavioral problem. As a result, these participants need to experience success, and will find success with Drum Therapy. As physical and cognitive abilities grow, participants are anxious to return to Drum Therapy sessions and a trusting relationship is built between each participant and the Drum Therapist. This trusting relationship opens the door to communication which becomes the foundation that allows for behavior modification and emotional healing to begin.

The second investigation, initiated by Mr. Gesualdo, focused on individuals who suffer from dyslexia, ADD/ ADHD and other disabilities. Individuals suffering from these conditions may find it extremely difficult to engage in activities that require extended periods of coordination, retention, and concentration. Drum instruction is no exception. Dyslexia and ADD are two of the most common learning disabilities. However, many people do not understand exactly what they are, or the consequences faced by individuals who suffer from these medical conditions.

Conclusion

While the results of these three studies are extremely promising in regards to the use of Drum Therapy and Specific Isolated Instruction, it is recognized Mr. Gesualdo and others involved with these studies that further evaluation of these forms of therapy and a greater number of study subjects is required to evaluate whether or not this form of therapy is beneficial for the entire population. However, these results are extremely promising for the use of Drum Therapy. As an appropriate alternative therapy for the treatment of dyslexia and ADD and has proven beneficial for mentally challenged individuals in both the pediatric and adult populations. In conclusion, the results of this study showed strong evidence that Drum Therapy and the repeated exposure to the rhythms and patterns of drumming, helped reduce symptoms of certain disabilities in both the child and adult populations.

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