



## Effect of a combined dance/movement and music therapy on young adults diagnosed with severe autism



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### ABSTRACT

Current literature is scarce on the potential effects of combined dance/movement and music therapy on adults diagnosed with severe autism, particularly in distinguishing these effects on different areas of psychopathological disorders. We set two goals: first, to assess the effectiveness based on the score the participants obtained from the Revised Clinical Scale for the Evaluation of Autistic Behavior (ECA-R) after a series of dance/movement and music therapeutic procedures on adults with severe autism; second, to contrast the differences in effectiveness in concrete areas defined by subscales of the ECA-R, especially in its defined 2 factors and 12 functions. An overall of 36 one-hour sessions were carried out during 17 weeks on a sample of 8 participants with severe autism (approximately 2 sessions per week). During the treatment 8 measurements were taken (1 every 3 weeks) from this sample and from a control sample, which was also comprised of 8 subjects who were equally monitored at the same care center by two independent psychologists. Our experimental study seems to suggest that combined dance/movement and music therapy could be effective if used regularly for the improvement of autistic symptoms in adults diagnosed with severe autism.

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Autistic spectrum disorder (ASD) is a deeply heterogeneous and chronic psychopathology characterized by a severe and generalized deficit in the following developmental areas: reciprocal social interaction abilities, communication abilities, and stereotyped behaviors following the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 2000) and the World Health Organization's definition (2004). The qualitative deficit found is different in its severity depending on the subject's level of development or mental age. Music therapy (MT) and dance/movement therapy (DMT) constitute two tools for intervention based on "creative arts in therapy", as referred to by the Spanish association for DMT (Asociación Española de Danza Movimiento Terapia, ADMTE). These therapies are used for the prevention or rehabilitation of adults and children with physical, mental or emotional disorders (ADMTE, 2001). In the case of autistic disorders, these techniques are used for the rehabilitation as seen in an increasing number of studies (e.g. Erfer, 1995; Kalish, 1968; Loman & Sossin, 2008; Parteli, 1995; Simpson & Keen, 2011; Tortora, 2008; Turry & Marcus, 2001) which provides serious evidence of the positive effects of the separate use of DMT and MT on the autistic population. For an updated general history of development in MT, we suggest consulting the work of Reschke-Hernández

(2011), whereas the work of Devereaux (2012) offers the same guidance in the field of DMT.

The number of studies using a combination of both therapies is far less than those studies which use either DMT or MT. As an example, a search in the ProQuest database using the keywords *music dance therapy* yields no more than 12 results, with none fully dedicated to the autistic population. This is an astonishing fact given the possible links that could be established between the two therapies. Indeed, Karkou (2012) has explored the differences and similarities between both therapies and highlighted their particular suitability for an affiliation.

Among the very limited number of studies that mentioned or fully addressed the impact of a realistic combination of MT and DMT on an autistic population Freundlich, Pike, and Schwartz's (1989) work stands out. Directed to autistic children, this qualitative research devised the treatment potentiality by retrieving positive feedback from parents and families involved, whom reported spending more "quality time" (Freundlich et al., 1989: 52) with their children during the therapy. In this line, we argue that the association of MT & DMT could actually contribute to an improvement in communication disorders and to fostering adequate social behaviors in the autistic population, as reported by Freundlich et al. (1989). This is due to at least the following three theoretical reasons: the distinctly peculiar channels of communication used by music and dance/movement, which are similar to emotions that excite the limbic brain (Brown, Martinez, & Parsons, 2004), and differ from regular channels governed by logic; their power for

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facilitating social interaction and integration (see Clair & Memmott, 2008); and the obvious multiple ludic possibilities of musical activities and dance, which may possess a motivational value for personal and collective expression. The characteristic presence in ASD of severe deficits in social behavior and communication should then make an intervention of such power of great importance for this population, consequently making research on combinative MT & DMT very relevant.

Concurrently with the limited research on the topic, it has already been acknowledged that works published to date in the field of art therapy on the autistic population commonly explore the effects of short-term interventions (Boso, Emanuele, Minazzi, Abbamonte, & Politi, 2007). This is usually just a week, instead of testing long-term therapeutic programmes. Also, studies mainly focus on youths or children, with a lack of severely affected adults being tested, which leads to a greater necessity for studies at that stage (Simpson & Keen, 2011).

All the aforementioned reasons led us to pursue our present work as a means to overcome the existing limitations in current literature, providing at least some preliminary evidence on the effects of long-term combined MT/DMT on severely affected ASD adults. This would warrant carrying out future randomized controlled long-term trials combining MT and DMT with larger samples. Additionally, our study aims to identify the potential effects on concrete areas of autistic disorders.

## Methodology

### Participants

A total of 16 participants attending the same care center took part in the experiment, divided into two paired samples constituting the experimental and control group with  $n=8$  subjects per group. Patient selection was conducted incidentally by the staff of the specialized care center where all participants were being continuously monitored, thus not disrupting pre-existing settings and minimizing the reactive effects of the experimental procedures employed (Dimitrov & Rumrill, 2003). Participants were diagnosed with severe autistic syndrome by an independent psychiatrist specializing in ASDs who made the diagnosis according to the guidelines of the Structured Clinical Interview for Axis I DSM-IV Disorders, Patient Version. The eligibility criteria established for inclusion was a score of at least 37 on the Childhood Autism Rating Scale, which is the standard threshold used to distinguish severe autism (Schopler, Reichler, Devellis, & Daly, 1980). Ages were similar between the control ( $M=25.62$ ,  $SD=8.05$ ) and experimental ( $M=25$ ,  $SD=4.10$ ) groups. In terms of gender, all participants were males with the sole exception of one female present in the experimental group. Their instruction in music or dance was similarly non-existent.

### Procedures

Participants in the experimental group were the recipients of our designed intervention, while participants in the control group were not engaged in a similar intervention. Prior to execution of the experiment researchers acted as mere observers of the subject's usual procedures carried out at the care center for a period of two weeks.

The intervention consisted of 36 sessions of combined MT & DMT therapy, lasting approximately one hour at a regular frequency of two days per week. Sessions were led by both a music and a dance accredited therapist, who were aided by three assistants. We found that this staff-to-participant ratio afforded our participants sufficiently little opportunity to maintain self-stimulatory

distracting behaviors. All sessions were carried out in a peaceful and well defined environment.

With the main aim of improving autistic behavioral symptoms, a plurisensory approach based on the practice of DMT and MT constituted our key procedure. This consisted of the realization of a number of varied MT and DMT activities in each session, where the typical methods of these therapies (Wigram, Pedersen, & Bonde, 2002) were used in conjunction with games. Eight activities were the normal ratio per session. Usual materials included dolls, cardboards, hoops, elastic straps, balls, drums and tambourines. The core of each session consisted of the following: dance, instrumental practice, singing, and observation/mimicking of movement.

In more detail, the musical activities were clearly related to the Orff method and instruments: patients sitting in a circle beat a tempo with percussive instruments imitatively and creatively with or without background music; song tunes in a limited tessitura; corporal percussion and dancing while singing; and 'gesturalized' song's and lyric's meanings/feelings. The selection of music was cautious to meet the required conditions for each activity and to foster their engagement, many times choosing or adapting musical pieces from their close environment. Background classical music was always present while patients were entering, sitting and leaving the room, and also used in the background at various points during the sessions.

The specific dance/movement activities similarly involved a great variety during the length of the treatment: to massage the classmate with a small ball while he/she is adopting different corporal static positions; to imagine and simulate situations (e.g. a bird flying, a fish swimming, etc.); to imitate or guess emotions showed in pictures; to move on the ground in different positions; to role-play in different situations taken from tales they were very familiar with, such as *Little Red Riding Hood* or *A Ghost In The Castle*, showing and mimicking the emotions that each character would experience; dancing individually, in pairs or the whole group with selected music; drawing things/letters/objects in the air; moving as a 'flamenco' dancer; and playing with or moving objects such as hoops, balls or elastic straps. Session time was split approximately into halves for MT/DMT.

The working model was based on a double system: intra-active (referring to the internal activity of subjects) and inter-active (referring to the relation with others), for psychotherapeutic intervention and evaluation as described by Capello (2008). Equally, frequent methods specifically used in educational settings with ASD individuals (Holmes, 1997; Rivière, 2001; Schmidt & Beth, 2004) were carried out during each session: primarily errorless learning, shaping, positive and negative reinforcement, and physical restraint.

### A sample session

A Room was prepared with benches forming an 'L' against the walls, with lights on, hoops forming a circle on the floor, and background music being played before participants enter the room. The participants were then invited to enter the room and sit holding hands in a circle inside the hoops. At this point the music was stopped. The ritual for the beginning of the session encompasses each participant being requested to say his/her name to the others and to answer questions regarding how s/he is feeling that day. The therapist used corporal percussion and/or a chant to interact with participants, inviting them to respond also using these resources. Questions were repeated or reformulated depending on the perceived reactions of the participants and were adapted to the abilities and developmental level of each participant. They were also invited to mimic or recreate musically theirs' or others' answers. When a participant was at all unable to respond with an understandable message, the detected intentionality such as movements, gazes and noises/sounds were taken as answers. Thereafter,

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