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Creative Movement Dance Class for Adolescents with Autism Spectrum Disorder

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1 **Abstract**

2 Objective: The objective of this phenomenological study was to identify how an occupational
3 therapy developed Creative Movement Dance Class (CMDC) addresses social interaction skills
4 in adolescents with Autism Spectrum Disorder (ASD).

5 Method: Interviews were conducted with a Certified Occupational Therapist Assistant (COTA),
6 Occupational Therapist (OT), ballet instructor, student intern, teacher, and an aide that were
7 directly involved with the CMDC.

8 Results: Three themes were identified. The first theme, structure of the class, consisted of eight
9 sub-themes including opportunity to practice, fulfilling sensory needs, the Just Right Challenge,
10 classroom support, classroom expectations, interprofessional collaboration, themes, and format
11 of the class. The second theme, engagement techniques, consisted of five sub-themes including
12 peer modeling, turn taking, use of props, making choices, and coping skills. The third theme,
13 teaching techniques, consisted of four sub-themes including instructors body positioning,
14 verbal/physical/visual cues, instructor modeling, and communication (sentence strips, Personal
15 Exchange Communication System [PECS], and core vocabulary).

16 Conclusion: An occupational therapy developed CMDC addresses social interaction skills
17 through the structure of the class, engagement techniques, and teaching techniques. Many of the
18 techniques identified are supported in the literature for ASD and creative movement. Several
19 novel techniques were found that may prove to be effective in addressing social interaction skills
20 for adolescents with ASD through a CMDC.

21 **MeSH terms**

22 Adolescents, Autism Spectrum Disorder, Creative Movement, Dance, Social Skills

23

24 **Introduction**

25 Autism spectrum disorder (ASD) is a developmental disability characterized by
26 difficulties in social interaction, verbal and nonverbal communication, and repetitive behaviors
27 or narrow, obsessive interests (CDC, 2015). According to the Centers for Disease Control
28 (CDC), approximately 1 in 68 children are diagnosed with ASD, with a core symptom of ASD
29 being impaired social interaction skills (CDC, 2015). Children with ASD may fail to respond to
30 their name and often avoid eye contact with others. Additionally, they have difficulty
31 interpreting what others are thinking or feeling because they cannot understand social cues, such
32 as tone of voice or facial expressions. Many children with ASD do not know how to play
33 interactively with other children and can have restricted patterns of interest (CDC, 2015).

34 Creative movement dance therapy focuses on movement as nonverbal expression,
35 interaction, and communication in order to promote connectedness and the health of individuals
36 (Koch & Fischman, 2011). In creative movement dance therapy, the individual utilizes his or her
37 body and its movements as instruments for perceiving, feeling, thinking, and interacting. The
38 social benefits of dance include fostering the development of relationships, enabling
39 communication, assessing where communication is blocked, and intervening on nonverbal and
40 verbal levels (Koch & Fischman, 2011; Scharoun, Reinders, Bryden, & Fletcher, 2014).

41 There is limited research addressing the benefits of creative movement dance for social
42 interaction skills in individuals with ASD (Scharoun et al., 2014). Furthermore, there is no
43 research addressing creative movement dance as it relates to occupational therapy. Some studies
44 have investigated the motor benefits, sensory function benefits, and cognitive benefits of dance
45 classes (Arzouglou et al., 2013; Gronlund, Renck, & Weibull, 2005; Rosenblatt et al., 2011).

46 However, only three studies have researched creative movement dance classes (CMDCs), social
47 interaction, and ASD.

48 Although the research is limited, the evidence provided from these studies suggests that
49 CMDCs have the potential to be a valuable intervention to address social interaction skills for
50 this population. Several studies found that creative movement dance increased empathy in
51 participants (Koch, Mehl, Sobanski, Sieber, & Fuchs, 2015; Mateos-Moreno & Atencia-Doña,
52 2013). These studies also suggest that CMDCs help to increase the ability to form relationships
53 with others by improving self-modulation, mood regulation, and self-other awareness (Edwards,
54 2015; Koch et al., 2015). Mateos-Moreno and Atencia-Doña (2013) found an increased capacity
55 to modulate self-adaptive behaviors by avoiding extreme mood swings and behaviors such as
56 aggression towards others and greater self-control.

57 The purpose of this study was to evaluate how a CMDC, as developed by a certified
58 occupational therapy assistant (COTA), addressed social interaction skills in adolescents with
59 ASD. Additionally, this study aimed to describe how the CMDC and teaching techniques
60 reflected the Occupational Practice Framework-3rd Edition (OTPF-3). This study sought to
61 provide evidence that a CMDC addresses skills within the scope of occupational therapy
62 practice.

63 **Method**

64 *Sample*

65 In this qualitative phenomenological study, six interviews were completed with
66 individuals who were involved with a CMDC at a center-based school for students with
67 disabilities. This study utilized a convenience sample. The COTA in charge of the CMDC
68 supplied the researchers with a list of possible participants that have worked with the class for at

69 least once a week for a three-month time span and have an understanding of the class objectives.
70 The convenience sample included the COTA, OT, ballet instructor, student intern, a teacher, and
71 an aide that worked in the class.

72 *Procedure*

73 This study was approved by the institutional review boards at the university and school
74 which were relevant to this study. Informed consent was obtained from each participant prior to
75 their interview.

76 *Data Collection*

77 The three researchers were present for each of the interviews. The interviews were
78 conducted at a local university and the school where the CMDC was being held. Prior to the
79 interview the participants were given a brief introduction of the research study and given a sheet
80 of key terms and definitions to reference throughout the interview. Each participant was
81 instructed to refrain from mentioning identifying information of students in the class in order to
82 ensure confidentiality. The interview consisted of 30 questions which addressed topics such as
83 core skills, social skills, and communication skills. These questions were developed based on
84 components of creative movement dance classes as found in the literature. They were developed
85 to give the researchers a detailed picture of the methods used in the creative movement dance
86 class of interest.

87 *Data Analysis*

88 The interviews were recorded with a voice recorder and transcribed by a pre-occupational
89 therapy student who attended Grand Valley State University. First, each researcher individually
90 developed their own set of codes by reviewing each transcribed interview, highlighting key
91 phrases, topics, and quotes. The researchers then developed their own set of codes and typed

92 these into a Microsoft Word document. The researchers did this individually and then
93 collaborated in order to address triangulation. The researchers then collaborated to negotiate their
94 individual codes to develop a list of three themes with several sub-themes that represented the
95 data. Emerging themes were verified via member checking with several participants (via email)
96 to ensure for accuracy and to provide trustworthiness.

97 **Results**

98 This study found three overarching themes: Structure of the class, engagement
99 techniques, and teaching techniques. The first theme, structure of the class, consisted of eight
100 sub-themes including opportunity to practice, fulfilling sensory needs, the Just Right Challenge,
101 classroom support, classroom expectations, interprofessional collaboration, themes, and the
102 format of the class. The second theme, engagement techniques, consisted of five sub-themes
103 including peer modeling, turn taking, use of props, making choices, and coping skills. The third
104 theme, teaching techniques, consisted of four sub-themes including instructor body positioning,
105 verbal/physical/visual cues, instructor modeling, and communication (sentence strips, Personal
106 Exchange Communication System [PECS], and core vocabulary). Many of these themes follow
107 the Person-Environment-Occupational framework used by OT to drive client centered practice.
108 The themes embody the instructor's methods of adapting and modifying the environment and the
109 occupation in order promote success in the class.

110 **Structure of the Class**

111 One participant frequently stated that the most effective way the dance class builds social
112 interaction skills is by providing an opportunity to practice them. This was reflected in all of the
113 interviews. The class also provided a designated time in the students' school day to move

114 around, gain sensory input, and express themselves through creative movement in order for them
115 to be able to focus in the classroom following the CMDC.

116 Another sub-theme commonly discussed was how the class graded activities to create the
117 Just Right Challenge for the students. Activities were chosen to provide challenges for the
118 students to expand their skills within a supportive context. A participant stated, “We were
119 expecting the students to be challenged by [social regulation] and so they were essentially
120 challenged by the tasks and the activities but it was done in a supportive way to help teach them
121 social regulation skills.”

122 Each participant also described how there was additional teacher support in the classroom
123 during the CMDC including the dance instructor, one OT, one COTA, one OT fieldwork student,
124 the classroom teacher, and several teaching aides. The additional teacher support assisted the
125 dance class instructors in enforcing the classroom expectations. The CMDC required students to
126 behave appropriately during class. One participant stated:

127 The rule is you stay with the group until you don’t exhibit behavior that would be
128 advantageous to the group or the instructor. And then, you know, if we have to, we’ll
129 have a classroom aide leave with you, so you have the opportunity to recognize that and
130 to be able to change your behavior.

131 Additionally, the CMDC utilized interprofessional collaboration. Participants described
132 collaborating with a speech and language pathologist on using core vocabulary and sentence
133 strips, with social work to establish classroom expectations, and with classroom teachers to carry
134 over classroom goals and learning.

135 Finally, each participant described the use of themes during each CMDC. Commonly
136 mentioned themes were animals, space (sun, moon, and planets), square dancing, and weather.

137 These themes were incorporated throughout the entire format of the class. Each participant
138 described the progression of a typical class as starting with an introduction and warm-up,
139 watching a video clip to introduce the theme of the day, performing the chosen activities/dance,
140 and ending with a cool-down. One participant stated,

141 When we have a theme that's recognized or a theme that's a returning theme then we can
142 see the difference in the students that participated before. They are recognizing what it is
143 that we are doing and verbally or physically letting you know.

144 The CMDC provides the students with opportunities to practice these skills in a safe and
145 modified environment to allow optimal chances for learning and development.

146 **Engagement Techniques**

147 Each participant addressed the sub-themes of turn taking and peer modeling to build
148 social interaction skills. To describe one way the CMDC instructors promoted turn taking and
149 peer modeling, one participant stated:

150 Most of the time we are using a group activity, where half of the group is taking their turn
151 while the other half is seated. As we got towards the end there was turn taking with each
152 other within the actual activity like square dancing, where one person stands still and the
153 other person walks around, trades places, and then we repeat.

154 Furthermore, participants described offering choices to the students and working on
155 coping skills in enhance social interaction skills. One participant explained the opportunity for
156 making choices and using coping skills saying:

157 A lot of times we would ask students, especially if the students seemed frustrated or like
158 they didn't want to participate, we would give them a choice to participate in the activity
159 or take some time alone, and they would give us a clear answer.

160 This demonstrates the students' ability to use expressive communication and make an
161 appropriate choice. Another sub-theme that was consistently represented throughout the
162 interviews was the use of props to foster engagement and imaginative play. Common props that
163 were discussed were butterfly wings, dragon costumes, and hula hoops.

164 **Teaching Techniques**

165 Several participants reported using strategic instructor positioning when teaching the
166 CMDC. The instructors positioned themselves in front of the students in order to increase
167 attention and facilitate learning. Another sub-theme addressed was the use of verbal, physical,
168 tactile, and visual cues throughout the CMDC. A participant stated:

169 Typically, one person leads and everybody faces in a circle, the other people are doing
170 physical assists like hand-over-hand, verbal cues such as saying a student's name
171 repeatedly to get their attention to attend to what the instructor is doing or he may be
172 right in front of them doing the movement.

173 All participants stated that the instructors modeled appropriate social skills such as
174 introducing themselves, greeting others, personal space, and appropriate physical contact. They
175 also modeled the dance motions that were integrated into the class activities.

176 The participants reported that the instructors used communication systems familiar to the
177 students. PECS, sentence strips, and core vocabulary were three commonly used forms of
178 communication. A participant stated, "days that are really successful are when I can show
179 [students] a core card or a sentence strip and they spontaneously react to what I'm asking them to
180 do because we are communicating."

181

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Discussion

183
184 This study aimed to describe how an occupational therapy developed CMDC addresses
185 social interaction skills in adolescents with ASD. Three themes, each with several sub-themes,
186 emerged from six participants involved with the current CMDC. Several themes and sub-themes
187 reflect techniques reported in existing literature related to ASD and CMDC, several themes
188 reflect techniques shown to be useful for ASD but not specifically in a CMDC, and several
189 themes provide novel insight into the development of a CMDC in addressing social interaction
190 skills.

191 The current CMDC utilized the same class format each week. Previous studies have
192 demonstrated the benefit of having a set format of a dance class in order to enhance the
193 participation of individuals with ASD (Hartshorn, et al., 2001; Koch et al., 2015; Mateos-Moreno
194 & Atencia-Doña, 2013; Rosenblatt et al., 2011). Furthermore, the repetition of activities each
195 week was reported to be a valuable technique and is supported in the literature as necessary for
196 learning for those with ASD (Zilius, 2010). Additionally, the current CMDC has classroom
197 teachers and aides who assist the dance instructors during class which has been demonstrated to
198 be a beneficial technique (Hartshorn et al., 2001; Mateos-Moreno & Atencia-Doña, 2013;
199 Rosenblatt et al., 2011). Finally, the present CMDC reported using a variety of visual, verbal,
200 and physical cues to assist the students when participating in the dance activities. The literature
201 supports the use of cueing to enhance learning for those with ASD in a CMDC (Hartshorn et al.,
202 2001; Mateos-Moreno & Atencia- Doña, 2013).

203 The current CMDC uses video modeling which is well-supported by general ASD
204 research for improvements in social interaction skills (Alzyoudi, Sartawi, & Almuhiri, 2015;
205 McCoy & Hermansen, 2007; McDowell, Gutierrez, & Bennett, 2015). Additionally, the current

206 CMDC uses communication systems such as PECS and sentence strips that are widely supported
207 as effective interventions for individuals with ASD (Lerna, Esposito, Conson, & Massagli, 2014;
208 Jurgens, Anderson, & Moore, 2009). Although these techniques have not been reported in the
209 literature relating to ASD and CMDCs, they show potential for being effective methods of
210 addressing social interaction skills for adolescents with ASD in a CMDC.

211 Some techniques being implemented in the current CMDC have not been previously
212 demonstrated in literature as interventions for individuals with ASD in CMDCs. One of these
213 techniques is turn taking with partners and/or in groups as a method of peer modeling. Research
214 supports the use of peer modeling with peers who are typically developing (Hundert, Rowe, &
215 Harrison, 2014). However, no research has been conducted to study the effects of peer modeling
216 between peers who both have ASD diagnoses. The use of themes and offering choices as coping
217 skills have not yet been demonstrated in the literature as effective techniques when teaching a
218 CMDC for adolescents with ASD. However, based on the findings of this study, they have the
219 potential to be effective teaching techniques for developing social interaction skills as reported
220 by the participants.

221 A limitation to this study was the limited number of participants. Furthermore, the
222 participants included individuals who were involved in the dance class as well as the research
223 committee for this study creating a potential for bias. Another limitation was a lack of a
224 quantitative measure for social skills. Therefore, there is no quantitative data available to
225 determine the effect of the dance class on the improvement in social skills of the adolescents. A
226 final limitation was researcher bias due to previous knowledge of the current class objectives
227 when researching class structure and teaching techniques. Future studies should focus on the
228 effects a CMDC can have on social interaction skills in adolescents with ASD through

229 quantitative analysis. Furthermore, studies to assess parental perceptions of the effectiveness of
230 CMDCs and improvement of social interaction skills would provide a more comprehensive
231 understanding of the benefits from a CMDC.

232 **Implications for Occupational Therapy Practice**

233 OT's scope of practice includes education, play, leisure, and social participation, all of
234 which are addressed in a CMDC (American Occupational Therapy Association, 2014). In
235 addition, OT focuses on client-centered and holistic care leading to increased participation in
236 meaningful occupations. The Person-Environment-Occupational framework for OT drives
237 therapists to modify and adapt the person, environment, and environment (Strong, Rigby,
238 Stewart, Law, Letts, & Cooper, 1999). A CMDC combines all of these same aspects of to
239 improve social interaction skills in adolescents with ASD, which is a primary concern of
240 occupational therapists working with this population. Due to OT's scope of practice aligning
241 with the objectives of the current CMDC, this suggests that OT practitioners are uniquely
242 qualified to organize and implement a CMDC for adolescents with ASD.

243 **Conclusion**

244 Social interaction skills are an area of focus for occupational therapists as identified in the
245 OTPF-3 (American Occupational Therapy Association, 2014). This study aimed to describe how
246 an occupational therapy developed and lead CMDC addressed social interaction skills in
247 adolescents with ASD. The current CMDC addressed social interaction skills through the
248 structure of the class, engagement techniques, and teaching techniques. Many of the techniques
249 reported are supported in the literature for ASD and creative movement. However, several novel
250 techniques were found that may prove to be effective in addressing social interaction skills for
251 adolescents with ASD through a CMDC.

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