

Can an inclusive school-based music program enhance social inclusion and self-esteem of adolescents on the autism spectrum?

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Introduction

Background & Research Aim

- ❖ The inclusion of children on the Autism Spectrum (AS) in mainstream classrooms has become more common but remains a complex and poorly understood process (Humphrey & Lewis, 2008; Rotheram-Fuller, Kasari, Chamberlain, & Locke, 2010).
- ❖ The quality of relationships that students on the AS develop within and beyond the classroom can significantly impact their sense of belonging, peer acceptance, satisfaction with school, and overall well-being (Wentzel, Donlan, & Morrison, 2012).
- ❖ However, many adolescents on the AS report challenges such as loneliness, difficulty establishing friendships, and bullying by peers (Humphrey & Symes, 2010; Locke, Ishijima, & Kasari, 2010), which may contribute to limited social relationships and involvement.
- ❖ One potential approach to promoting social inclusion for adolescents on the AS is group music making, which has been shown to have intrinsic communication potential and to increase social interactions, self-esteem, and positive attitudes towards peers (Wigram, 2006; Hillier et al., 2012; Kim et al., 2009).
- ❖ Group music making is a cooperative and structured activity that offers a unique opportunity for social inclusion and support, as individuals with and without disabilities work together as a team to create music.

Aim: This study aimed to investigate the impact of an inclusive (vs. non-inclusive) 16-week group music program on indices of social inclusion, i.e., peer acceptance and social support, and on self-esteem.

Methods

Participants

- ❖ Participants recruited from specialized classrooms from a high school in Quebec, Canada.
- ❖ AS diagnoses verified via Quebec Ministry of Education codes.

| Measures | Inclusive Groups (N=22) | | Non-Inclusive Groups (N=21) | |
|----------------------------------|-------------------------|---------------|-----------------------------|---------------|
| | AS (N=14) | Non-AS (N=8) | AS (N=7) | Non-AS (N=14) |
| Age | | | | |
| M (SD) | 14.50 (1.09) | 15.13 (.35) | 15.71 (2.63) | 12.71 (.83) |
| Range | 12-16 | 15-16 | 12-18 | 12-14 |
| Sex | | | | |
| Male | 13 | 5 | 6 | 9 |
| Female | 1 | 3 | 1 | 5 |
| Raven's 2 Standard Score | | | | |
| M (SD) | 94.93 (22.71) | 87.00 (11.15) | 97.50 (6.03) | 85.08 (12.17) |
| Range | 40-120 | 69-105 | 93-109 | 66-106 |
| Years of Musical Training | | | | |
| M (SD) | .15 (.38) | .71 (.95) | .43 (.54) | .92 (.95) |
| Range | 0-1 | 0-2 | 0-1 | 0-3 |
| Number of Instruments | | | | |
| M (SD) | .77 (1.01) | .14 (.38) | .86 (1.22) | .85 (.90) |
| Range | 0-3 | 0-1 | 0-3 | 0-2 |

- ❖ The 16-week music-making program was conducted by Aprosh, a community organization supported by the ÉducaTED Foundation, who conduct school-based music programs for children and adolescents with developmental disorders. Aprosh has developed a percussion-based group music-making program focused on facilitating social interactions through rhythmic communication, such as performing rhythms as a group in a drum circle and creating original music as a group.
- ❖ Students primarily learned how to play the djembe as well as other percussion instruments including drums, clave, maracas, cymbals, chime. Furthermore, they learned to play a set of 30-50 rhythms, using those instruments, and were encouraged to improvise and sing as part of the creative process, which led to original musical compositions.

Measures

| | |
|---------------------------|--|
| Raven's 2 | Raven's 2 Digital Short form (Raven's 2, Raven et al., 2018) |
| Musical Experience | Music Training and Experience Questionnaire (MTEQ, Quintin et al., 2011) |
| Self-Esteem | Rosenberg Self-Esteem Scale (SES; Rosenberg, 1989) |
| Social Support | Social Support Appraisals Scale (APP; Dubow & Ullman, 1989) |
| Peer Acceptance | Shared Activities Questionnaire (SAQ; Morgan et al., 1996) |

Results

| Measures | Inclusive Groups (N=22) | | | | Non-Inclusive Groups (N=21) | | | |
|------------------------|-------------------------|------|--------------|------|-----------------------------|-------|---------------|-------|
| | AS (N=14) | | Non-AS (N=8) | | AS (N=7) | | Non-AS (N=14) | |
| | M | SD | M | SD | M | SD | M | SD |
| SES | | | | | | | | |
| Time 1 | 21.36 | 2.13 | 18.25 | 3.06 | 22.29 | 2.56 | 18.00 | 6.98 |
| Time 2 | 26.36 | 1.08 | 21.25 | 6.04 | 25.00 | 2.52 | 18.57 | 7.76 |
| SS-A | | | | | | | | |
| Peer Support Time 1 | 32.65 | 8.54 | 26.63 | 5.44 | 32.57 | 13.16 | 35.65 | 9.72 |
| Peer Support Time 2 | 33.65 | 7.50 | 25.38 | 4.27 | 27.86 | 9.21 | 36.35 | 14.56 |
| Teacher support Time 1 | 11.36 | 3.48 | 10.88 | 2.75 | 9.71 | 3.59 | 12.00 | 3.53 |
| Teacher support Time 2 | 10.43 | 2.98 | 10.25 | 3.33 | 8.86 | 4.10 | 9.93 | 3.63 |
| SAQ | | | | | | | | |
| Time 1 | - | - | 29.22 | 5.07 | - | - | 28.50 | 6.36 |
| Time 2 | - | - | 30.44 | 4.77 | - | - | 28.86 | 5.68 |

Note. Means (M), Standard Deviation (SD). SES: Rosenberg Self-Esteem Scale. SS-A: Social Support Appraisals Scale. SAQ: Shared Activities Questionnaire.

There were no statistically significant changes in perceived social support nor in the peer acceptance of students on the AS in either the inclusive or non-inclusive groups from Time 1 to Time 2 ($p > .05$).

1. Significant main effect of the group music program on self-esteem for the AS group

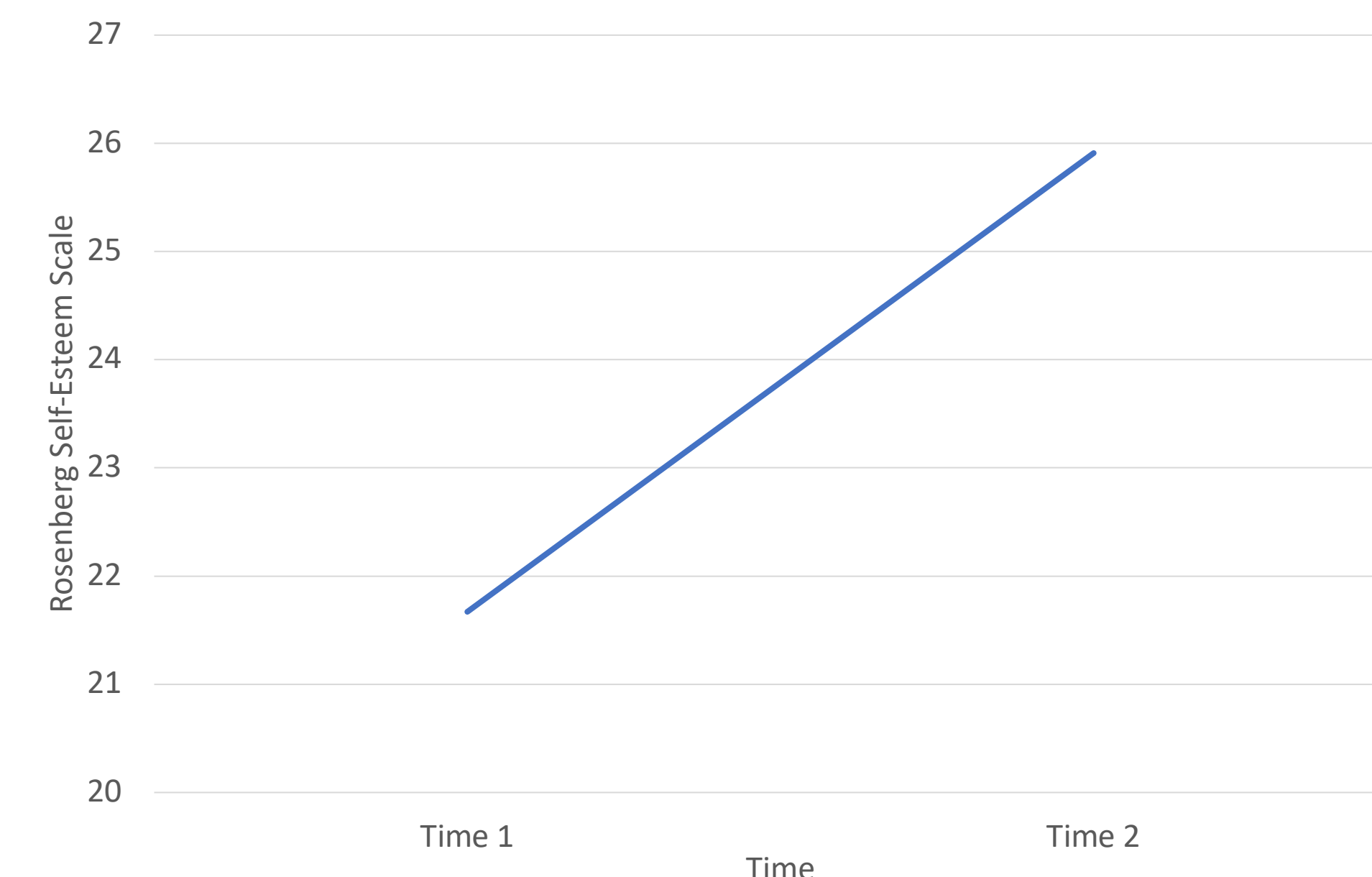


Fig 1. The main effect of time showed a statistically significant difference in the self-esteem scores of autistic students, $p < .001$. The mean score for self-esteem levels were higher at Time 2 after the music program ($M = 25.90$) compared to Time 1 before the music program ($M = 21.67$).

2. Enhanced effect of the group music program on self-esteem for participants on the AS in the inclusive vs. non-inclusive groups

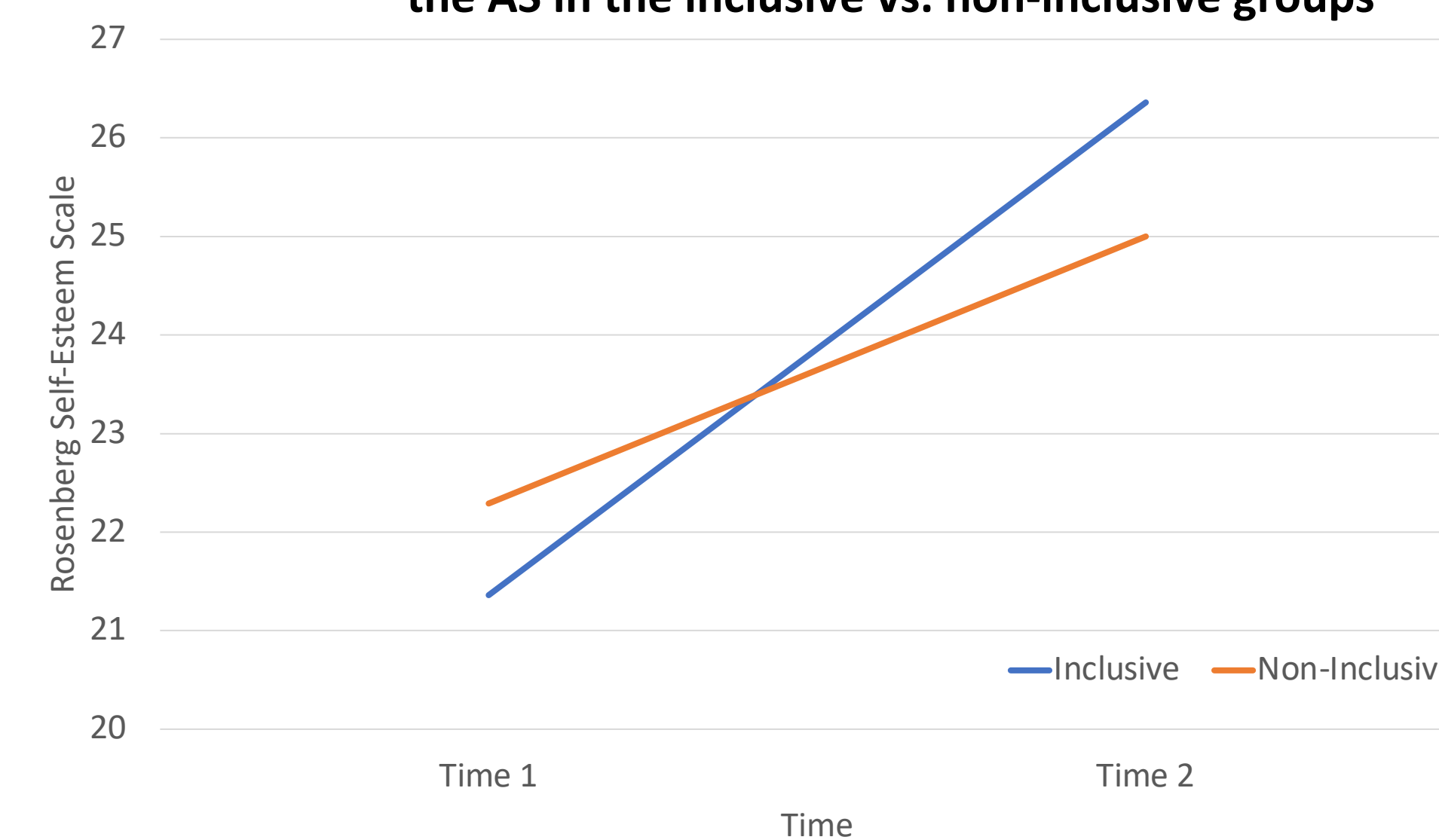


Fig 2. There was a significant interaction effect between self-esteem scores and condition, such that scores of autistic students were significantly higher after the music program vs. before the program for the non-inclusive group ($M = 2.71$, $SE = 0.60$, $p < .001$) as well as for the inclusive group ($M = 5.00$, $SE = .42$, $p < .001$); this increase was more pronounced for the inclusive vs. non-inclusive group.

Conclusion

- ❖ Our study findings indicate that inclusive music groups have a positive impact on self-esteem and do not negatively affect perceived social support and peer acceptance among students on the AS.
- ❖ This is consistent with existing research that demonstrates the benefits of social activities such as music, art, games, and robotics in fostering positive social interactions and friendships between children on the autism spectrum and their peers (Koegel et al., 2012; Dahary et al., 2021).
- ❖ One possible explanation for the increased self-esteem observed in our study could be the opportunities for reciprocal and positive interactions between students on the AS and their peers that are inherent to group music-making (Thompson et al., 2014). The inclusive setting may have provided a sense of belonging and acceptance for the students with autism, which could have also contributed to the positive effect on self-esteem.
- ❖ Drum circles, in particular, are known to promote a sense of group unity as they require cooperation and coordination among participants to create rhythmic sounds. This encourages comfortable cooperation, interaction, and "co-pathy" (the social aspect of empathy) among group members (Koelsch, 2013; Overy, 2012; Overy & Molnar-Szakacs, 2009; Pellitteri, 2000).
- ❖ These findings support the development of a novel line of inclusive interventions, including music programs, that can have beneficial effects for individuals on the autism spectrum and neurodiverse people. Implementation of such programs in family, educational, community, and mental health settings could foster social inclusion and positive outcomes for adolescents with and without neurodevelopmental disorders, promoting neurodiversity and inclusive practices.

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