**THE EFFECTS OF AEROBIC EXERCISE ON REPETITIVE BEHAVIOURS AND TASK PERFORMANCE FOR ADULTS WITH AUTISM SPECTRUM DISORDER AND AN INTELLECTUAL DISABILITY**

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**Objectives:** Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder that is characterized by (a) deficits in social and communicative functioning and (b) behaviours, interests and activities that are restricted and repetitive in nature. Thirty-one percent of individuals with ASD also have an Intellectual Disability (ID) and there is a negative correlation between IQ and the severity of repetitive behaviours (RB) exhibited. These behaviours may interfere with an individual’s ability to learn new tasks and/or perform familiar tasks. Exercise is an intervention that has been shown to reduce the number of RB exhibited by individuals with ASD. Thus, the purpose of this study was to determine whether individuals with ASD and ID (ASD-ID) would (1) exhibit fewer RB and for shorter durations immediately following a moderate-vigorous aerobic exercise session, (2) show an improvement in task performance immediately following each exercise session, and (3) exhibit a long-term reduction in the severity of RB after engaging in an 8-week exercise intervention.

**Methods:** Case studies were conducted on six adults (>18 years of age) with a diagnosis of ASD-ID. Participants exercised on a stationary bike twice a week for eight weeks plus a familiarization day. Exercise intensity was tracked with the BODYMEDIA® armband. Eight-minute video observations and a modified form of the Jebsen Hand Function Test (JHFT) were conducted immediately pre- and post-exercise. The Repetitive Behaviour Scale-Revised (RBS-R) was administered to a support worker, parent, or guardian before and after the 8-week exercise intervention.

**Results:** Three of the participants showed a decrease in RB immediately after exercising, suggesting support for the first hypothesis. Further analysis on each participant’s RB suggested that: (a) there was a unique set of RB for each individual, (b) there was an interaction between certain RB, and (c) some RB were positive expressions and did not need to be reduced. For the second hypothesis, the JHFT results indicated that, for most participants, RB may not influence performance on short-duration tasks. The RBS-R, used for the third hypothesis, may not be a reliable measure of change in RB severity for this study due to a number of discrepancies that were identified. Finally, the participants’ level of exercise intensity at the start and throughout the program varied between individuals.

**Discussion/Conclusion:** People with ASD-ID have a wide range of abilities and display unique sets of RB. Conducting case studies provided the ability to assess specific RB as well as each participant’s progress throughout the program. This allowed for the development of guidelines and suggestions for individuals intending to implement aerobic exercise for adults with ASD-ID. For example, future programs would benefit from providing alternative forms of exercise, tailoring the frequency and duration of exercise to participant needs, and applying different methods to motivate participants. Moreover, this study uncovered areas that future studies should address, such as identifying and reducing specific RB that are deemed maladaptive rather than attempting to decrease all RB. Additionally, future research should determine which RB are influenced by changes in anxiety and how exercise influences those RB.

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