

THE EFFECTS OF A ROCK DRUMMING INTERVENTION ON CHILDREN WITH ADDITIONAL EDUCATIONAL NEEDS

DRAPER, S.¹, LOWRY, R.², MARINO, L.¹, CORRIGAN, R.¹, SMITH, M.³, WILLIAMS, S.⁴

¹ HARTPURY UNIVERSITY, ² UNIVERSITY OF ESSEX, ³ CHICHESTER UNIVERSITY, ⁴ KINGS COLLEGE LONDON

INTRODUCTION: Rock drumming is a powerful model as a physical activity intervention since it combines physical activity, music and four limb coordination into an engaging and enjoyable activity. We have demonstrated how drumming can; be developed into a form of vigorous activity [1], result in significant changes in the brain [2] and be incorporated into the school day [3]. The aim of this study was to evaluate the effectiveness of a group drumming intervention in children with a wide range of additional educational needs including autistic spectrum disorder.

METHODS: Fourteen children (aged 12-14 y) from a large special education school, took part in the study. The children learned drumming at electronic drum kits arranged in a circle around the tutor's kit. Lessons were 30-40 minutes, twice per week for 10 weeks and included instruction as well as playing to popular music in the classroom. Pre and post the intervention, the children were assessed for motor skill (ABC2) and teachers completed the Strengths and Difficulties Questionnaire (SDQ). In addition, an electronic record of all lessons was made by capturing the MIDI data from the drum kits. Finally focus groups were held with parents and teachers post intervention to investigate benefits beyond those seen at the drumming lessons.

RESULTS: There was a significant improvement ($P=0.039$) in the internalising score for the SDQ (combination of emotional and peer problems). Whilst motor skill improvement was clear in the MIDI data capture, ABC2 scores were not significantly different (in this highly variable sample). However, focus groups indicated that parents and teachers had seen profound changes in behaviour and motor skill, for example one child could successfully clean his own teeth properly for the first time by the end of the short intervention.

CONCLUSION: Rock drumming using electronic kits is a valid and powerful form of physical activity intervention, yielding both physical and behavioural improvements in this population. Children involved in this study were also able to perform for their parents and carers for the first time in their school life. Furthermore, the school has adopted drumming onto their curriculum and continues to see benefits in the children participating.

References: 1. De La Rue, et al. (2013) *International Journal of Sports Medicine* 34, 868-872 2. Amad et al. (2017) *Cerebral Cortex* 27, 2010-2021 3. Lowry et al. (2019) *International Journal of Development Disabilities* 65, 152-161