



# A preliminary examination of the effectiveness of the Drums-Alive Program and categories of attention in adolescents with special needs

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## Introduction

The Drums-Alive Program (DAP) is a series of activities involving the combination of drumming on large gymnastic balls with drumsticks while moving to music using aerobic movements. This type of activity has been demonstrated to be effective in improving attention focus for the normal population (Dawson-Cook, 2010). Knappová said it is a particularly suitable therapy for children with attention deficit disorder or attention deficit hyperactivity disorder. However, there is a paucity of research examining the effectiveness of DAP and attention focus in adolescents with special needs (ASN).

## Aim

To examine the effectiveness of DAP on three attention categories, including restlessness, initiation, and consistent in ASN.

## Methods

Nine adolescents with special needs participated in this study (3 girls and 6 boys). The Moss Attention Scale was used to assess: restlessness, initiation, and consistent (Whyte, J., Hart, T., Bode, R. K., & Malec, J. F. 2003). All the participants received DAP twice a week for eight weeks and each lesson lasted one hour. The data was collected at the start and end of this eight weeks intervention.

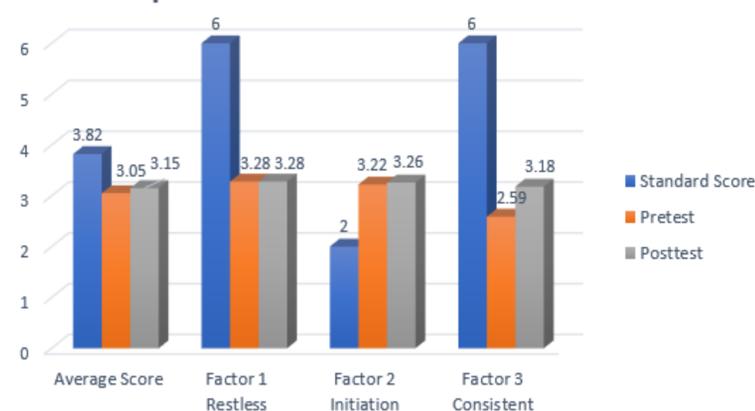
## Statistical Analysis

Multivariate analysis of a model with pre and post-test means for restlessness, initiation, and consistent demonstrated a significance between pre and post means differences for these variables collectively. Univariate analysis was performed to determine which pre and post-test means were significant in the model.

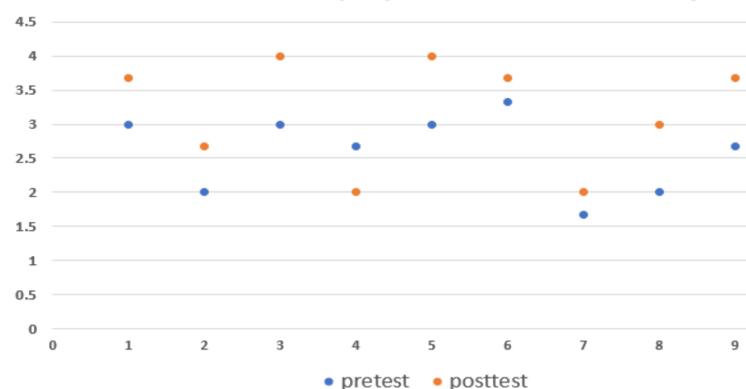
## Results

Multivariate analysis of a model with pre and post-test means for restlessness, initiation, and consistent demonstrated a significance between pre and post means differences ( $p = 0.02$ ) for these variables collectively. No significant pre and post-test means difference was demonstrated in restlessness ( $p = 1.0$ ), initiation ( $p = 0.9$ ), and consistent ( $p = 0.08$ ). However, the pre-test mean for consistent was  $2.59 \pm 0.58$  and the post-test mean was  $3.18 \pm 0.80$ . The effect size then for consistent was 0.96.

Comparison Attention Standard and Test Scores



Factor 3 - consistent pre-post-test score for each subject



## Discussion

Even though the univariate analysis for differences between the pre and post-test means for consistent was not significant, the difference was trending towards significance. Additionally, there was a large effect size of 0.96, considering those in combination with the large mean difference between the pre and post-test means for consistent. It would appear that after the DAP, one important category of attention was improved. If this finding was made in a normal population it would be less impactful, but in ASN this finding carries some level of practical significance. Although this is preliminary data, our initial findings are very intriguing and with an increase in the number of research participants, DAP could be found to be an effective tool for improving the attention focus in adolescents with special needs.

## Conclusions

There is no significant difference between the pre and post-test means in categories of attention in ASN, performing DAP. There are, however, indications that consistent is trending towards significance.

## References

- 1) Dawson-Cook, S. (2010). Drums Alive. American Fitness, 28(3), 42-43.
- 2) Knappová, V., & Kavalířová, G. (2014). Drums Alive® jako prostředek pohybové terapie a jeho využití u různých typů postižení. / Drums Alive® as a means of physical therapy and its use in various types of disabilities. Aplikované Pohybové Aktivity V Teorii A Praxi, 5(2), 25.
- 3) Whyte, J., Hart, T., Bode, R. K., & Malec, J. F. (2003). The Moss Attention Rating Scale for traumatic brain injury: initial psychometric assessment. Archives of physical medicine and rehabilitation, 84(2), 268-276.