

Impact of a programme for motor development on cognitive function in preschool children in Alexandra township, Johannesburg



Background and aim

Little Champs is a programme for motor development for preschool age children, and has both commercial and outreach branches. Research conducted in 2007 by the UCT/MRC Research Unit for Exercise Science and Sports Medicine, University of Cape Town assessed the impact of the Little Champs programme (outreach division) on gross motor skills in preschool children from Gugulethu, a low-resource setting in Cape Town. In this study, Little Champs programme participants (exposed for eight months) performed significantly better in gross motor skill tasks than age-matched control participants from the same community. Although these findings show that physical activity can improve gross motor development in preschool children, the impact of physical activity on cognitive function in this age group has not been well established. The aim of the current study was therefore to assess the impact of the Little Champs programme on the cognitive functioning of children participating in the outreach arm of the programme.

Methods

Children from six Early Childhood Development Centres (ECDCs) located in Alexandra township, a low-resource settings in Johannesburg, were selected to participate in this study. Three were offered the opportunity to participate in Little Champs, and three ECDCs were designated as delayed-intervention sites. The Herbst Test was used to test the cognition function of selected children from these six ECDCs (n=83), pre- and seven months post-intervention. The Herbst Test is a validated scale that was developed for the assessment of cognitive and motor development tasks believed to underlie school readiness in toddlers and preschoolers. This test is particularly suitable for use with children from disadvantaged settings, and is easy to translate into local African languages, which was the case in this study.

Results

A significant improvement in scores ($p=0.001$) was noted for children who participated regularly in the programme (n=22), compared to children from ECDCs that did not participate (n=61). It should however be noted that of the three ECDCs that were offered the opportunity to participate in the programme, only one of the ECDCs actually participated in the programme on a regular basis prior to post-testing. Therefore, if an 'intention-to-treat' analysis was conducted, Little Champs would not have been effective in improving cognitive function. Consultation with programme implementers provided insight into the reasons for ECDCs' lack of participation, and revealed the challenge of limited cooperation from principals and teachers at ECDCs that were offered the programme.

Conclusion

Results suggest that relatively limited exposure to a programme for motor development can positively impact cognitive function in preschoolers in a low-resource setting, thereby improving school readiness. However, if this programme is to be expanded or implemented in new settings, it is essential that the challenges mentioned above are explored and addressed as they pose a serious obstacle to the programme's sustainability and viability. Further investigation into factors contributing to these challenges is also essential.

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