



A Methodological Protocol for Testing a Modified Brick-by-Brick Construction Programme on Visuospatial Abilities and Vocational Readiness in Zambian Adolescents with Intellectual Disabilities

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Abstract

Adolescents with intellectual disabilities in Zambia encounter substantial barriers to vocational participation. Deficits in visuospatial abilities frequently contribute to reduced employability. Construction skills present a potential vocational pathway, yet structured, evidence-based programmes tailored for this population in low-resource contexts are scarce. This methodology article details the protocol for a study designed to test the feasibility and preliminary efficacy of a modified 'Brick-by-Brick' construction programme. The primary objectives are to evaluate its impact on visuospatial abilities and vocational readiness amongst adolescents with intellectual disabilities in Lusaka, Zambia. A mixed-methods, quasi-experimental design employing a single-group pre-test/post-test structure is used. Approximately 30 adolescents with mild to moderate intellectual disabilities will undertake a 12-week, twice-weekly programme. The intervention adapts standard construction tasks using graded physical and pictorial aids. Quantitative measures include the Developmental Test of Visual Perception – Adolescent and Adult and a vocational readiness checklist. Qualitative data will be collected via semi-structured interviews with participants and facilitators to explore experiential themes. As a protocol article, empirical study results are not presented. Preliminary pilot work, however, suggested a theme of improved participant self-efficacy when tasks were segmented into smaller steps. Recruitment feasibility is estimated at approximately 80% consent rate from approached families. This protocol establishes a rigorous methodological framework for evaluating a culturally relevant vocational intervention. It addresses a gap in occupational therapy practice by detailing a structured approach to skill development for a marginalised adolescent population. Subsequent research should employ randomised controlled designs and incorporate longer-term follow-up to assess vocational outcomes. Programme modifications informed by the forthcoming feasibility results should be considered to improve scalability in comparable settings. intellectual disability, adolescent, vocational rehabilitation, visuospatial

perception, occupational therapy, Zambia, low-resource setting, methodology This article contributes a detailed methodological protocol for occupational therapy research in a low-resource African context, focusing on a tangible vocational intervention for adolescents with intellectual disabilities.

Keywords: *Intellectual disability, Vocational rehabilitation, Visuospatial cognition, Sub-Saharan Africa, Intervention study, Adolescents, Construction skills training*

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