

**cahpr Public Health Research Awards:
 Abstract submission Form**

Abstract details <i>Maximum of 150 words per section. Abstracts with blank fields will not be accepted</i>	
Title of abstract <i>(maximum 20 words)</i>	PHR(15)03 Enabling health and wellbeing by promoting participation in physical activity: a mixed methods multisite study of children with motor impairments
Abstract	
Relevance: <i>How does this relate to the PHE Priorities?</i>	<p>Participation in physical activity is an effective way to promote all children’s physical and psychosocial health and well-being, development and learning, and quality of life. UK guidelines¹ recommend that all children be active from birth as the benefits have been shown to apply to all children, including children with motor impairments. In children with motor impairments, physical activity is also a way to prevent secondary health problems and disability.</p> <p>Few UK children meet the recommended activity levels. Children with motor impairments are at especially high risk of inactivity.² E.g. levels of physical activity in 5-18-year-olds with cerebral palsy are 13-53% lower than in typically developing children.²</p> <p>There is a general lack of effective interventions for increasing children’s participation in physical activity.³ <u>Developing</u> better interventions is a top priority.³ The first step of developing better interventions is to identify modifiable factors related to physical activity to be targeted for change.</p>
Purpose <i>What was the major reason for doing the study? State the aims and objectives and any secondary objective</i>	<p>The aims of the present study were:</p> <ol style="list-style-type: none"> 1) To identify modifiable bio-psycho-social factors related to participation in physical activity in children (6-8-years-old) with motor impairments. 2) To propose specific factors as potential targets for interventions to increase the children’s participation in physical activity.
Methods <i>What methodological approach and methods were used. For research reports</i>	A mixed methods intervention-development research study was conducted. ⁴ The study used the WHO framework International Classification of Functioning, Disability and Health (ICF). Children (6-

<p><i>describe selection criteria and sample size</i></p>	<p>8yrs) with motor impairments, mobilising independently with/without equipment, and seen by physical or occupational therapists in six regions in the United Kingdom, and their parents, were recruited. Self-reported participation in physical activity was assessed by physical activity items of the Children’s Assessment of Participation and Enjoyment (CAPE). Data about modifiable factors were collected by therapists’ observations, parent questionnaires, and child-friendly interviews.</p> <p>The target sample size for the quantitative data collection was approximately 280 children. This was determined by a combination of requirements of (i) the multiple regression analysis (below) and (ii) feasibility. A target sample size for the interviews was 25; this was based on feasibility and a maximum number of children likely to be required for clusters of issues (‘strong themes’) to emerge.</p>
<p>Analysis <i>Describe the type of qualitative / quantitative data analysis used to assist you in interpreting your data.</i></p>	<p>CAPE, therapist, and parent data were analysed using descriptive statistics and linear regression. Interview data were analysed for emerging themes using inductive thematic analysis which allowed exploration of the issues in both depth and breadth.</p> <p>Four research-active senior therapists independently reviewed the list of possible target factors, and judged whether the factors were plausibly: i) causally related to participation in physical activity, and ii) modifiable by therapists. Variables were excluded if at least three of the judges reported the factors were unlikely to be causal or modifiable.</p> <p>Quality assurance methods: 1) Coverage and understanding of the issues were deepened by using multiple sources and modes of data collection, and comparing findings between them. 2) Alternative themes and rival explanations were systematically searched through critiquing among the research team. 3) The emerging results were presented at three different times to a range of critical peers (n=106) including parents, professionals, and scientists.</p>
<p>Results <i>Briefly summarise the main findings derived from your analysis.</i></p>	<p>Children’s (n=195) participation in physical activity [mean 18 times/week (IQR=11-25)] was mainly ‘recreational’ (e.g., pretend play, playing with pets) rather than ‘active physical’ (e.g. riding a bike/scooter).</p> <p>Parents (n=152) reported positive beliefs about children’s participation but varying levels of family participation in physical activity. Therapists reported 23 unique impairments (e.g., muscle tone), 16 activity limitations (e.g., walking), and 3 personal factors (e.g., child’s confidence). Children (n=17) reported strong preference for being</p>

	<p>active, but indicated that adults regulated their participation through daily routines.</p> <p>Family participation in physical activity, and impairment in the child's movement-related body structures, explained 18% of variation in children's participation in physical activity. Family participation explained most variation.</p> <p>The number of children recruited was below the target sample size; however, the number of variables entered in the regression analysis was also lower than allowed for in the estimation. Data saturation was reached for the interviews.</p>
<p>Conclusions <i>What can be concluded from the analysis of your data? What are the suggestions for future work?</i></p>	<p>The study found that family participation in physical activity was the strongest factor explaining variation in the children's participation. This was supported by children's reports that the daily routines and ways of doing things as established by adults were the main thing influencing participation. Further work is needed to understand family participation and its relationship to child participation.</p> <p>Therapists considered family or other environmental factors with only three children, indicating that therapists rarely consider these factors as pathways to change. Instead, therapists focused on the child's impairments and basic motor activities.</p> <p>This is the first study to apply, together and systematically, health behaviour and clinical research approaches to the study of participation in children with disabilities. The study's methods (i.e. participants across multiple sites and settings, and use of data sources and collection methods that closely resemble UK clinical practice) provide strong external validity and applicability of the results.</p>
<p>Impact and Implications <i>For clinical practice and or,/ management, education, policy etc.</i></p>	<p>Implications for practice: The present study is the first to investigate whether the child's problems as identified by therapists in routine practice relate to participation outcomes for children. The results indicate that there is a poor correspondence between therapist-identified problems and children's participation in physical activity. Therapists need to broaden the scope of factors they consider, especially to include family participation and routines.</p> <p>Implications for education: Therapist education should incorporate elicitation of information about family participation and the child's daily routines. Identification of the routines would provide an avenue to enabling the family to integrate physical activity into existing routines.</p>

	<p>Implications for policy: The results support the view that child participation is related to <i>family</i> activity (as opposed to only parent or child activity) and that family is the key unit of analysis with these children.</p>
<p>Funding Acknowledgement <i>Please acknowledge all funding sources that supported your work. If the work was unfunded please state this.</i></p>	<p>The study was funded by the UK Medical Research Council (ref: G0902129). LM and CR are funded by the Chief Scientist Office of the Scottish Government Health Directorates. The authors accept full responsibility for the abstract. Funders were not involved in the conduct of the study or preparation of the abstract.</p>
<p>References (up to 5, please use Vancouver referencing system)</p>	<p>(1) Department of Health. Start Active, Stay Active: a report on physical activity from the four home countries' Chief Medical Officers. London: Department of Health; 2011.</p> <p>(2) Carlon S, Taylor N, Dodd K, Shields N. Differences in habitual physical activity levels of young people with cerebral palsy and their typically developing peers: a systematic review. <i>Disabil Rehabil</i> 2013;35(8):647-655.</p> <p>(3) Gillis L, Tomkinson G, Olds T, Moreira C, Christie C, Nigg C, et al. Research priorities for child and adolescent physical activity and sedentary behaviours: an international perspective using a twin-panel Delphi procedure. <i>Int J Behav Nutrition Physical Activ</i> 2013;10(1):112.</p> <p>(4) Kolehmainen N, Ramsay C, McKee L, Missiuna C, Owen C, Francis J. Participation in physical play and leisure in children with motor impairments: mixed methods study to generate evidence for developing an intervention. <i>Physical Therapy</i> 2015; ePublication ahead of Print.</p>