Systematic review of self-concept measures for primary school aged children with cerebral palsy

Sau Kuan Cheong [a,*], Leanne M. Johnston [b,c]

[a] School of Psychology, Australian Catholic University, 1100 Nudgee Road, Banyo, Queensland 4014, Australia
[b] Cerebral Palsy League, 55 Oxlade Drive, Brisbane, Queensland 4005, Australia
[c] School of Health & Rehabilitation Sciences, The University of Queensland, Australia

ABSTRACT

This study involved a systematic review aimed to identify self-concept measures that provided published psychometrics for primary school aged children (8–12 years) with cerebral palsy (CP). Six electronic databases (PubMed, MEDLINE, CINAHL, PsycINFO, PsycARTICLES and Web of Science) were searched to identify assessments that (1) measured self-concept; (2) in children aged 8–12 years; (3) with CP; (4) with psychometrics available. The Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN) checklist was used to evaluate psychometric properties and the CanChild Outcome Measure Rating Form was used to evaluate clinical utility. Search yielded 271 papers, of which five met inclusion criteria. These papers reported five measures of self-concept with psychometric properties for the target population: the Rosenberg Self-Esteem Index, Self-Description Questionnaire-I, Self-Perception Profile for Children (original) and two separate modifications of the Self-Perception Profile for Children. Currently, no self-concept measures published in English had sufficient psychometric data for children with CP. The Self-Description Questionnaire-I and the Self-Perception Profile for Children were promising options. Further research is required (a) to determine self-concept construct components important for children with CP and (b) to examine the relative strength, validity, reliability and clinical utility of self-concept measures for the target population.

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1. Introduction

Cerebral palsy (CP) is the most commonly reported physical disability in childhood with a prevalence of 2 per 1000 live births (ACPR Group, 2009). It is a permanent, non-progressive disorder of the development of movement and posture (Rosenbaum, Paneth, Leviton, Goldstein, & Bax, 2007). Current treatments for children with CP are commonly aimed at increase functioning, improving capability and maintaining health targeting on mobility, cognitive development, social interaction and independence (Krigger, 2006). In the last two decades, research had begun to address participation and quality of life (Cooley & Committee on Children With Disabilities, 2004; Imms, 2008; Imms, Reilly, Carlin, & Dodd, 2009; Voorman et al., 2006). This was in line with the introduction of the International Classification of Functioning, Disability and Health in 2001 which focused on four main areas; body functions, body structures, activities and participation, and environmental factors (World Health Organisation, 2011). However, little research has been carried out to investigate other

* Corresponding author. Tel.: +61 733588001.
  E-mail addresses: sscheo006@myacu.edu.au (S.K. Cheong), ljohnston@cplqld.org.au (L.M. Johnston).

aspects of well-being in children with CP. Self-concept is well researched in the general population but lacking amongst the CP population. Self-concept is important in promoting social functioning and independence leading to higher quality of life (Russo et al., 2008; Soyupek, Aktepe, Savas, & Askin, 2010).

Self-concept, broadly defined as an individual's perception of oneself, is a multi-dimensional construct arising from characteristics such as scholastic/cognitive competence, physical competence and appearance, behavioural competence, social acceptance, and gender and cultural identity (Marsh & Shavelson, 1985). Past studies have linked low self-concept with poor academic achievement (Trautwein, Lüdtke, Köller, & Baumert, 2006), behaviour problems (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005), and mental health problems (Emler, 2002). A systematic review of studies in self-concept of children (4–18 years) with CP compared to typically developing children consolidated six articles but found inconclusive results (Shields, Murdoch, Loy, Dodd, & Taylor, 2006). Other studies not included in the systematic review also revealed inconsistent findings. Some studies showed lowered self-concept amongst children with CP compared to typically developing children (Shields, Loy, Murdoch, Taylor, & Dodd, 2007; Ziebell, Imms, Froude, McCoy, & Galea, 2009). On the other hand, there were also studies which showed similar levels of self-concept between children with CP and their typically developing peers (Manuel, Balkrishnan, Camacho, Smith, & Koman, 2003; Schuengel et al., 2006). Most studies focused on comparing children with CP to typically developing children but there is limited research about self-concept development, difficulties or interventions in this population. A major barrier to research in self-concept of children with CP may be due to a lack of measures with suitable psychometric data and clinical utility for children with CP. Researchers had highlighted the importance of using a well validated instrument for its target population when conducting research on self-concept (Llewellyn & Chung, 1997; von der Luft, DeBoer, Harman, Koenig, & Nixon-Cave, 2008).

To enhance future research in self-concept of children with CP there is a need to identify accurate measures for this target population. Therefore, the aim of this systematic review was to identify self-concept instruments that provided published psychometrics for primary school aged children (8–12 years) with CP.

2. Methods

2.1. Search strategy

Articles were retrieved from a systematic search of six electronic databases (PubMed, MEDLINE, CINAHL, PsycINFO, PsycARTICLES and Web of Science) from the earliest possible date (1966–February 2013). The search strategy included keywords for population ("cerebral palsy" AND "children") AND construct of interest ("self-concept" OR "self-esteem" OR "self-perception"). To identify all possible assessments and psychometric information, secondary searching included: reference lists of identified articles, citation tracking of included articles, and electronic searches of included test titles and authors' names.

2.2. Inclusion/exclusion criteria

Articles were included if they: (i) involve children with CP; (ii) aged 8–12 years; (iii) reported original data from administration of a self-concept measure with psychometric data available for children with CP; (iv) in English language; (v) in a full text manuscript. A younger limit of eight years was selected because children younger than eight have been deemed to be less capable of making a subjective judgement about self-worth (Harter & Pike, 1984). A higher limit of 12 years was selected, narrowing the focus to pre-adolescence (Marsh, 1990), because research has showed more concerns regarding self-concept in this group (Soyupek et al., 2010). Articles were excluded if they (i) did not include the target population; (ii) were opinions or reviews without original data; (iii) reported a self-concept measure without psychometric data; (iv) were not published in English; (v) or were only conference abstracts or letters.

2.3. Data extraction and analysis

Both authors reviewed all articles from the initial search independently. Articles were excluded as able based on title and abstract. Then, if required the full text article was sourced. Decision of inclusion and exclusion was made in consensus between both authors. Full texts of all included articles were sourced to extract data for quality assessment. Psychometric properties evaluated included validity and reliability. Validity is a judgement of how well the instrument measures what it purports to measure, described as content validity, criterion-related validity and/or construct validity (Cohen & Swerdlik, 2010). The authors further explained reliability as a measure of instrument consistency reported using a reliability coefficient calculated from test–retest reliability, alternate-forms reliability, split-half reliability or inter-scorer reliability.

Psychometric quality of each self-concept instrument was evaluated using the Consensus-based Standards for the selection of health Measurement Instruments (COSMIN) checklist. The COSMIN checklist assesses the methodological quality of studies using 12 boxes (Mokkink, Terwee, Knol, et al., 2010; Mokkink, Terwee, Patrick, et al., 2010) assessing different aspects. Ten boxes assessing measurement properties scored using a 4-point scale (Terwee et al., 2012) to provide concrete comparison between studies. The statistical strength of each reported psychometric information was rated as good (+), intermediate (0), poor (−) or unknown (?) (Terwee et al., 2007). The methodological strengths of studies reporting psychometric properties were rated as strong (3 points), moderate (2 points), and limited (1 point) which were tabulated