



## Confirmatory factor analysis of the supports intensity scale for children



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### ABSTRACT

Support needs assessment instruments and recent research related to this construct have been more focused on adults with intellectual disability than on children. However, the design and implementation of Individualized Support Plans (ISP) must start at an early age. Currently, a project for the translation, adaptation and validation of the supports intensity scale for children (SIS-C) is being conducted in Spain. In this study, the internal structure of the scale was analyzed to shed light on the nature of this construct when evaluated in childhood. A total of 814 children with intellectual disability between 5 and 16 years of age participated in the study. Their support need level was assessed by the SIS-C, and a confirmatory factor analysis (CFA), including different hypotheses, was carried out to identify the optimal factorial structure of this scale. The CFA results indicated that a unidimensional model is not sufficient to explain our data structure. On the other hand, goodness-of-fit indices showed that both correlated first-order factors and higher-order factor models of the construct could explain the data obtained from the scale. Specifically, a better fit of our data with the correlated first-order factors model was found. These findings are similar to those identified in previous analyses performed with adults. Implications and directions for further research are discussed.

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## 1. Introduction

Diagnosis and classification of intellectual disability has been a topic of major interest to those attempting to understand this phenomenon in relation to the complexity of intervention in this field. However, since the adoption of the new socio-ecological approach to the study of intellectual disability, evaluation in this field is currently defined as a systematic collection of information to fulfill three functions (Schalock et al., 2010; Schalock & Luckasson, 2013a,b): (1) diagnosis; (2) classification; and (3) support profile/planning, which emphasizes the importance of intervention systems based on support needs assessment.

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Support needs are defined as “a psychological construct that refers to the pattern and intensity of supports necessary for a person to participate in activities linked with normative human functioning” (Thompson et al., 2009, p.135). Most psychological constructs are not directly observable and latent variable methodologies must be used to capture them. Specifically, Verdugo (1994) claimed that the most recommended tools to infer such constructs in people with intellectual disabilities and help professionals develop clinician judgments were standardized measurement scales.

However, developing proper instruments requires a long and rigorous process yet assessments have not kept pace with the rapid developments in theoretical understanding of intellectual disability. Specifically, the shortage of support needs assessment instruments is an obstacle to the implementation of Individualized Support Plans (ISP) and, ultimately, to organizational change (Schalock & Verdugo, 2012).

One of the methods used to solve this problem was to estimate support needs once the scores had been obtained using adaptive behavior scales. The Inventory for Client and Agency Planning (ICAP) (Bruininks, Hill, Weatherman, & Woodcock, 1986) was one of the scales most commonly used for this purpose. However, many differences between the two constructs and the way in which they should be evaluated have been showed (Thompson, McGrew, & Bruininks, 2002b; Thompson et al., 2009). In assessing adaptive behavior, respondents report on whether a person performs specific skills; however, assessing supporting needs requires clarification of the support a person needs in order to perform life activities (Shogren et al., 2014). Furthermore, other related studies (Arnold, Riches, & Stancliffe, 2014b; Wehmeyer et al., 2009) have found that the support needs construct better predict allocation and funding needs.

For that reason, creating an assessment scale to provide indices and profiles for specific support needs has become one of the greatest demands of planning teams and the scientific community (Thompson et al., 2002a). Specific support needs assessment instruments have recently been developed for people with intellectual and developmental disabilities: (a) Service Need Assessment Profile, SNAP (Gould, 1998; Guscia, Harries, Kirby, Nettelbeck, & Taplin, 2005); (b) North Carolina Service Need Assessment Profile, NC-SNAP (Hennike, 2002; Hennike, Myers, Realon, & Thompson, 2002, 2006); (c) Instrument for the Classification and Assessment of the Support Needs, I-CAN (Arnold, Riches, & Stancliffe, 2014a; Llewellyn, Parmenter, Chan, Riches, & Hindmarsh, 2005; Riches, Parmenter, Llewellyn, Hindmarsh, & Chan, 2009a, 2009b; and (d) supports intensity scale for adults, SIS or SIS-A (Thompson et al., 2004; Thompson et al., in pressa).

However, the lack of valid instruments and research regarding support needs in people with intellectual disability is still evident. The SIS is the only scale with considerable international evidence of reliability and validity (e.g., Schalock, Thompson, & Tassé, 2008; Thompson, Tassé, & McLaughlin, 2008) that has been translated in Spanish (Verdugo, Arias, Ibáñez, & Gómez, 2006; Verdugo, Arias, Ibáñez, & Schalock, 2010; Verdugo, Arias, & Ibáñez, 2007).

This scale measures the type, frequency, and daily time of the support that the person needs in a total of 49 daily activities, which are grouped into six life-activity areas (Home Life, Community Living, Lifelong Learning, Employment, Health and Safety and Social). Similarly, the SIS gathers supplementary information related to protection/advocacy support needs, and exceptional medical and behavioral conditions.

Although the SIS has been specifically developed to assess support needs in adults (16–64 years old) with intellectual disability, its potential for a modified version to be used for assessing support needs in adults with support needs relating to disabilities other than intellectual disability has also been explored (Bossaert et al., 2009; Cruz, Jenaro, Pérez, & Robaina, 2010; Jenaro, Cruz, Pérez, Robaina, & Vega, 2011; Smit, Sabbe, & Prinzie, 2011). Moreover, this instrument has demonstrated its usefulness as part of the development of ISP (van Loon, 2006, 2009), its efficacy to predict resource allocation (Chou, Lee, Chang, & Yu, 2013; Fortune et al., 2008; Giné et al., 2014; Wehmeyer et al., 2009) and its relationships with clinical scores (Weiss, Lunskey, Tassé, & Durbin, 2009).

Despite the multiple advantages and the widespread use of this scale, it cannot be administered to children with intellectual disability, as the development of this scale was based only on typical adult activities. Therefore, taking into account the positive impact of this tool, as well as the right of children with intellectual and developmental disabilities to receive early interventions that guarantee their participation in the community (Colver, 2005), the American Association on Intellectual and Developmental Disabilities (AAIDD) has built up an international project focused on developing a support intensity scale for children (SIS-C) (Thompson et al., in pressb).

After the creation and study of an original pool of items (Thompson et al., 2014) to adapt this scale to the typical activities in childhood, a rigorous procedure was carried out to adapt and validate these items in the Spanish context (Guillén, Verdugo, Arias, & Vicente, 2015; Verdugo, Arias, Guillén, & Vicente, 2014). The development of the SIS-C in Spanish has been successfully developed according to the seven-step process proposed by Tassé and Craig (1999) as required to effectively adapt items to any context different from the original: (1) translation/adaptation; (2) consolidation of translation/adaptation; (3) validation of preliminary translation; (4) revisions/adjustments; (5) pilot testing; (6) revisions/adjustments; and (7) field testing validation.

The aim of this paper is to describe an empirical study focused on examining the internal factor structure of the support needs construct as measured by the Spanish version of the SIS-C. Regarding the same structures previously analyzed in the Spanish version of the SIS-A (Verdugo et al., 2007), three factor solutions are defined and tested by a confirmatory factor analysis (CFA): (1) support needs is a unidimensional construct; (2) support needs consists of seven-correlated factors; and (3) support needs can be understood through a hierarchical model with one second-order factor created by seven subscales of the SIS-C.

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