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# Associations between maternal sense of coherence and controlling feeding practices: The importance of resilience and support in families of preschoolers



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#### ABSTRACT

Sense of Coherence (SOC) measures an individual's positive, or salutogenic, orientation toward her/his capacities, environment, future, and life. SOC comprises three factors: comprehensibility (the sense of one's own life as ordered and understandable); manageability (the perception of available resources and skills to manage stressors); and meaningfulness (the overall sense that life is filled with meaning and purpose). In numerous studies, SOC has been associated with resilience to stress. However, associations between parental SOC and controlling feeding practices have yet to be studied. This study examines the validity of the SOC 13-item, 3-factor questionnaire, associations between SOC and maternal and child characteristics, and associations between SOC and use of pressuring or restrictive feeding, among mothers of 4-year-olds. 565 mothers (23.5% of foreign origin, 30.3% with overweight/obesity) recruited via the Swedish population registry (response rate: 65%), completed the SOC-13, the Child Feeding Questionnaire (CFQ), and a background questionnaire. The validity of SOC-13 was examined using confirmatory factor analysis; associations with background characteristics and feeding practices were tested with structural equation modeling. SOC-13 validity testing showed acceptable fit (TLI = 0.93, CFI = 0.94, RMSEA = 0.06, SRMR = 0.04) after allowing one pair of error terms to correlate. The Cronbach's alpha for meaningfulness was 0.73, comprehensibility 0.76, and manageability 0.75. SOC increased with mothers' Swedish background and education, and decreased with higher BMI. Child gender, age, and BMI, were not associated with SOC. Lower SOC was associated with controlling practices and with concern about child weight and eating. The associations between SOC and feeding suggest that SOCrelated parameters could inform childhood obesity research, and that prevention should address the socioeconomic barriers that parents face in building resilience to stress.

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#### 1. Introduction

Stress, and the responses it elicits, is central to decision-making

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and emotional wellbeing throughout a person's life. Parents who are stressed, anxious, or depressed tend to engage in less responsive feeding practices (El-Behadli, Sharp, Hughes, Obasi, & Nicklas, 2015; Goulding et al., 2014; Haycraft, Farrow, & Blissett, 2013; Mitchell, Brennan, Hayes, & Miles, 2009; Shankardass et al., 2014); moreover, moments of stress can have immediate impact on parenting practices (Dunton et al., 2015; Engel et al., 2016).

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Mothers with depression are more likely to use controlling feeding (Goulding et al., 2014; Haycraft et al., 2013; Hurley, Black, Papas, & Caulfield, 2008; Mitchell et al., 2009), and to perceive their children as fussy eaters (Kochanska & Kim, 2013; Natsuaki et al., 2010). Mothers with depressive symptoms are also more likely to use food to comfort children, and less likely to be responsive to children's feeding cues (Savage & Birch, 2016). These dynamics of affect, responsiveness, and feeding may lead to obesity; associations between depressive symptoms in mothers and increased obesity rates in children have been reported in three systematic reviews that included cross-sectional and longitudinal studies (Benton, Skouteris, & Hayden, 2015; Lampard, Franckle, & Davison, 2014; Milgrom, Skouteris, Worotniuk, Henwood, & Bruce, 2012). While these studies have highlighted the importance of mothers' negative affect for child feeding and weight status, it is important to examine how mothers' resilience to stress, as measured by sense of coherence, might impact on feeding.

Sense of Coherence (SOC) is a theoretical concept that stems from salutogenesis – a positive psychology approach that emphasizes protective factors that enable people to stay well (Eriksson & Lindstrom, 2006; Griffiths, Ryan, & Foster, 2011). SOC describes an individual's positive orientation toward her/his capacities, environment, future, and life, and is comprised of three interrelated dimensions - comprehensibility, manageability, and meaningfulness (Antonovsky, 1993, 1996). Specifically, comprehensibility measures the person's sense that her/his own life is ordered and understandable; manageability measures the person's perception that resources and skills to manage stressors are readily available; and meaningfulness measures the person's overall sense that life is filled with meaning and purpose, and that it is, therefore, worthwhile to manage stressors. In numerous studies with both clinical and non-clinical populations SOC have been associated with individuals' ability to cope with stress (Agardh et al., 2003; Anke & Fugl-Meyer, 2003; Moksnes & Haugan, 2015; Zielinska-Wieczkowska, Ciemnoczolowski, Kedziora-Kornatowska, & Muszalik, 2012); therefore, SOC is often referred as a measure of resilience to stress.

Using SOC with parents of preschoolers to assess the relationship between parental resilience to stress and feeding practices can add valuable insights to the development of childhood obesity interventions. Parents with a poorer sense of coherence may be more likely to use controlling feeding strategies linked to childhood obesity – that is, restriction, pressure to eat and monitoring. Since restrictive and pressuring feeding practices are not aligned with children's own hunger cues, these practices might reduce children's ability to regulate their eating (DiSantis, Hodges, Johnson, & Fisher, 2011 McPhie, Skouteris, Daniels, & Jansen, 2014). Consequently, controlling feeding practices have been associated with higher weight status in children (Birch, Fisher, & Davison, 2003; Faith & Kerns, 2005; Fisher & Birch, 1999a; Rollins, Savage, Fisher, & Birch, 2015; Ventura & Birch, 2008). However, longitudinal research found associations between controlling feeding and children's weight loss (Campbell et al., 2010), implying that, in some cases, such strategies can be used effectively to manage children's obesity. Recent longitudinal studies have indicated that feeding practices and child weight have a bidirectional association, with children's overweight both prompting, and resulting from, changes in parental feeding practices (Afonso et al., 2016; Jansen et al., 2014; Rhee et al., 2009).

Maternal and child characteristics may be of interest when examining the association between SOC and controlling feeding practices. According to Antonovsky, people who have high SOC levels have a greater capacity to recognize and use 'general resistance resources (GRR)' — both internal (person-based, such as education) and external (environment-based, such as social support)

- in coping with stress (Antonovsky, 1979, 1993, 1996). Research has confirmed that higher education and social support are two factors often associated with higher SOC levels (Ahlborg, Berg, & Lindvig, 2013; Groholt, Stigum, Nordhagen, & Kohler, 2003; Wolff & Ratner, 1999). Mothers of older children report higher SOC, which suggests that being a parent of small children is especially stressful (Ahlborg et al., 2013). Maternal education has also been associated with use of controlling feeding practices; most studies have found that mothers with higher education use controlling feeding less often (McPhie et al., 2014). The potential influence of child characteristics, such as age and gender, on parents' use of controlling feeding remains largely unstudied. Only one study has examined associations between parental feeding practices and the child's gender, finding no significant differences (Blissett, Meyer, & Haycraft, 2006). Even less is known about the potential influence of the child's age on parental feeding practices (Baranowski et al., 2013; Musher-Eizenman & Kiefner, 2013).

The aims of this study were three-fold. The first was to confirm the validity of the SOC-13 in mothers of preschoolers, by examining its psychometric properties in this population for the first time to our knowledge. The study predicted that the three factors would be closely related, as suggested by Antonovsky (Antonovsky, 1993) and as shown in previous validation studies (Larsson & Kallenberg, 1999; Soderhamn & Holmgren, 2004). The second aim was to test associations between SOC-13 scores and self-reported maternal and child demographics. Because research on links between SOC and background factors is inconclusive, the study examined the influence of all available background factors, with the guiding assumption that parental education and foreign origin would show clear links to SOC. The third aim was to examine associations between SOC and controlling parental feeding practices, adjusting for child and parental characteristics. The working hypothesis was that higher total scores on the SOC-13 would be associated with reduced likelihood to engage in restrictive or pressuring feeding practices.

#### 2. Method

#### 2.1. Data collection

The addresses of all female guardians of children aged 4 years residing in Malmö in July 2009 were collected using the Swedish Population Registry. During the first phase of the study, a total of 3007 female guardians (referred to as "mothers" in the rest of the paper; 98% of participants reported they were the children's biological mothers) received the Child Feeding Questionnaire (CFQ) (Birch et al., 2001), a background demographic and anthropometric questionnaire, and a participant information sheet with a consent form. A reminder message was sent by post within one week of the initial questionnaire mailing. Of the 3007 women contacted for the study, 876 completed and mailed the background questionnaire and the CFQ back to the research group. Those who responded in phase 1 were representative of the Malmö population, with regard to body mass index (BMI) and country of birth; however, the mothers who took part in the study were more likely to have had higher education (59% had university or college education, versus 42% of women in the general population). Among the children, a larger proportion than expected had overweight or obesity (12.8% versus 10% in the general population). In the second phase of the study, the CFQ and background questionnaires were sent again to the 876 participants who completed these questionnaires in phase 1, and the SOC-13 questionnaire was added to the assessment battery. A total of 565 participants completed and returned all questionnaires in phase 2 (65% response rate). The only difference between those who participated in phase 1 only and those who participated in both phase 1 and phase 2 was in level of education,

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