

Reliability and validity of the Swedish version of the Dental Subscale of the Children's Fear Survey Schedule, CFSS-DS

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A Swedish version of the Dental Subscale of Children's Fear Survey Schedule (CFSS-DS) was designed to be answered by parents on behalf of their children. The instrument was administered twice to the parents of 52 children aged 4 to 14 years. The children's behaviors were rated during the dental appointment immediately after the second administration. The CFSS-DS reached high values for test-retest reliability and validity. Scores equal to or exceeding 38 were found to be related to dental fear. □ *Behavioral dental sciences; dental anxiety*

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The Dental Subscale of Children's Fear Survey Schedule (CFSS-DS) is a psychometric method assessing dental fear in children (1). It consists of 15 items, with a score range of 15 to 75. Highly fearful children have been reported to have a mean score of about 38 on the CFSS-DS (2). The present investigation was carried out to test the validity and reliability of a Swedish version of the CFSS-DS.

Materials and methods

A total of 52 consecutive child dental patients (23 boys, 29 girls) referred to the Specialist Clinic at the Department of Pedodontics at the Faculty of Odontology, Göteborg, Sweden, were selected for the investigation. The main reason for referral was behavioral management problems in 31 children, whereas the other 21 were referred for other reasons, mainly oral surgical procedures. The children were 4 to 14 years old (mean age, 9.0 years).

The CFSS-DS was translated to Swedish

and designed to be answered by the parents on behalf of their children. The CFSS-DS was mailed to the parents with return post paid at the time their child was referred to the clinic. The CFSS-DS was then administered a second time to the parents in the waiting room immediately before the first visit at the clinic. The parents had not been informed about the second administration, which took place 5 weeks after the first test. During the first dental appointment the child's behavior was assessed by the dentist (trained pedodontists at the clinic) in accordance with the Kisling and Krebs (KK) scale (3). This behavioral rating scale has previously been commonly used in Sweden (4) and at the Specialist Clinic to assess clinical dental fear. It consists of four levels of acceptance: 0 = no acceptance, active physical resistance; 1 = negative acceptance, crying, no cooperation; 2 = reluctant acceptance, following directions with poor cooperation; 3 = positive acceptance, good cooperation. An additional assessment was also made using the dichotomy fearful or not fearful. The scores on the CFSS-DS were

unknown to the dentist performing the behavior ratings.

Product-moment correlation was used to calculate the test-retest reliability of CFSS-DS and to correlate CFSS-DS with KK, whereas Student's *t* test was used to compare CFSS-DS scores between fearful and not fearful children.

Results and discussion

The mean score on the first administration of CFSS-DS was 30.6 (SD, 12.5; range, 15–62) and on the second administration 30.1 (SD, 12.4; range, 15–60). There was a strong positive correlation between the first and second administration of CFSS-DS ($r = 0.97$; $p < 0.001$).

A total of 21 children were given scores 0 or 1, indicating dental fear, on the KK rating scale. The other 31 children were given scores 2 or 3, interpreted as not fearful. This division has previously been used by Holst (4) to define dental fear in children. The first group (scores 0 or 1) had significantly higher scores on the CFSS-DS administered in the waiting room just before the treatment than the second group (scores 2 or 3) (37.8 versus 25.0; $p < 0.001$). The same relationship was found when comparing the CFSS-DS scores of children assessed as fearful (28 children) and not fearful (24 children) in the dichotomy (38.1 versus 20.9; $p < 0.001$). There was a good negative correlation between the second administration of the CFSS-DS and the KK ($r = -0.62$; $p < 0.001$).

Test-retest reliability of the CFSS-DS was very high in this study, implying that the parents are sure of their interpretation of the levels of fear and anxiety in their children. The correlation between the CFSS-DS and

KK and the clear differences in CFSS-DS scores between children rated as fearful compared to not fearful, both in the KK and the dichotomy, indicate validity in the measurement of child dental fear. This validity is related to a clinically noticeable dental fear. Ratings of clinical behaviors are very common as measures of dental fear in children, and the validity of other measures such as psychometrics is often compared with these ratings (5). Mean values of 37.8 and 38.1 on the CFSS-DS in the group of children with scores 0 or 1 on the KK and the group rated as fearful children, respectively, indicate that CFSS-DS scores equal to or exceeding 38 represent dental fear in children. This finding is supported by Klingman et al. (2).

In conclusion, the results show that the Swedish parental version of the CFSS-DS is a reliable and valid instrument measuring dental fear in children. To establish normative data on this version of the CFSS-DS, the instrument should, however, be used in a larger population-based survey.

References

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