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The Diabetic Care Health Professional Support Questionnaire (child form): a preliminary study

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ABSTRACT

The aim of this pilot study was to develop and assess the preliminary psychometric properties of the Health Professional Support Questionnaire for diabetic children, an instrument to assess the perceived support from the health professional (doctor or nurse) attending children. A sample of 112 children with insulin-dependent diabetes mellitus (IDDM), recruited from several diabetes associations, completed the scale. The final version was found to have an adequate internal consistency and analysis revealed one primary factor which account for 40.53% of the variance.

INTRODUCTION

Social support has been identified as a crucial psychosocial factor that affects treatment compliance among diabetic population (Sherbourne et al., 1992). Particularly, for children with insulin-dependent diabetes mellitus (IDDM) social support from family has emerged as an important variable to cope with day-to-day diabetes management (La Greca, 1998). As well as family support, the supportive bevaviors from health professionals can be considered of paramount importance in helping children successfully manage this complex treatment regimen (DCCT Research Group, 1994). Despite this relevance, little research has been aimed to examine the ways that health care professionals provide support from diabetic children's perspective.

In light of this and with the purpose of gathering specific information about the perceived support from doctors/nurses attending young diabetics, we have designed The Diabetic Care Health Professional Support Questionnaire (DCHPSQ). The scale assesses the frequency of several supportive behaviors

which may fulfill different functions (mainly, emotional and informational aids) for support receipt: child with IDDM.

The objective of this pilot study are to analyze the factor structure and reliability of this new instrument.

METHOD
Scale development
Phase I: A pool of items was generated from: (a) review of the literature about support from health professionals and provider-patient relationship in diabetic population, (b) 5 expert opinions, and (c) information collected from interviews with 21 diabetic children.

Phase II: 3 expert researchers were asked to judge the relevance of the items.

Phase III: an initial version was administered to 19 children with IDDM attending a diabetes summer camp.

Phase IV: Redundant items were deleted and several items were rewritten. Final version: 26 items.

Items were measured using a 3-point scale, ranging from 1 (never) to 3 (always). Children were asked to assess the health care provider (physician/nurse or educator) more frequently attending them.

Subjects and procedure
Entry criteria for the study population were:
- Age $\geq$ 7 and $\leq$ 15 years
- Duration of IDDM $\geq$ 1 year
- No symptoms of transient remission or "honeymoon"

The participants for the study consisted of 112 children with IDDM who were recruited from six diabetes association located in three different provincies at southern in Spain. Table 1 displays the characteristics of sample.

Table 1. Characteristics of sample

Sex (%)	
Boys	47.3 (n=53)
Girls	52.7 (n=59)
Mean age (yr)	11.40±2.03 (7-15)
Mean duration Of IDDM (yr)	5.2±3.23 (1-15)

The scale was administered by trained interviewers at children's homes after written informed consent was asked to their parents or tutors.

RESULTS
Factor Structure

An exploratory Principal Axis Factor Analysis with oblique rotation was used to determine the factor structure of the 26 items that make up the scale. It were predetermine the following criteria:

- To determine the number of factors to extract:
1. Eigenvalues > 1.00
2. Analysis of patterns of decrements in the scree plot
3. Percentage of variance associated to each factor
- To retain an item to factors:
1. Factor loading > 0.40

Analysis revealed one primary factor which accounted for 40.53% of the variance. Factor loadings ranged from 0.46 to 0.73 (see **Table 2**).

Table 1.
DIABETIC CARE HEALTH PROFESSIONAL SUPPORT QUESTIONNAIRE (form child)

The physician/the nurse:

	Factor Loading	Item-total correlation
1. praises to you when your glucose records are good	0.63	0.61
2. explains what you have to do to care yourself using clear words	0.58	0.55
3. encourages you to comply with your treatment	0.73	0.70
4. teachs you how to give an insulin shot, to test your glucose, and so on	0.61	0.60
5. reminds you what to do for care yourself though he/she had already told before	0.68	0.65
6. explains you what to eat according to your sugar levels	0.59	0.58
7. says how well you complete your treatment	0.61	0.60
8. may be called by your parents when a problem arises	0.46	0.44
9. explains how you must exercise according to your glucose levels	0.62	0.61
10. encourages to keep on caring yourself when you do it well but your blood glucose is high	0.68	0.66
11. explains what to do for your sugar neither goes "up" nor "down"	0.62	0.60
12. uses to talk with you about your problems	0.72	0.69
13. teachs you tricks to resist the temptation of eating too much	0.49	0.49
14. says you'll be very healthy if you care yourself	0.61	0.59
15. says you're very responsible when your glucose records are well	0.59	0.58
16. encourages you to tell him/her everything you do about your treatment	0.71	0.69
17. teachs tricks for testing your sugar levels	0.61	0.60
18. understands your problems	0.57	0.55
19. listens to you when you tell him/her your way of doing your treatment tasks	0.64	0.61

20. explains how your diabetes goes	0.66	0.64
21. teachs you tricks for doing better with your insulin shots	0.62	0.62
22. gives you books, brochures and things to read	0.57	0.56
23. explains you the food you may or not eat	0.70	0.69
24. explains you how to change your insulin doses in according to your sugar levels	0.65	0.63
25. explains what to do if your sugar is very high or very low	0.66	0.63
26. gives advices for you to do better with your insulin shots	0.70	0.70

Reliability and Item analysis

To determine internal consistency Cronbach's alpha was calculated for the total scale. The DCHPSQ showed high internal consistency (**alpha=0.94**). Item analysis revealed item-total correlations (see table 2).

Descriptive findings

Total scale mean and standard deviation for study sample were 60.88±2.18 (possible range: 0-78). Total results were compared by sex, age and duration of IDDM. Table 3 depicts findings of these analyses.

Table 3. Comparison of scores on DCHPSQ

	Mean ± SD	P value
Sex		
Girls	61.37 ±12.15	
Boys	60.33 ±12.32	0.65
Age (yr)		
7-9	53.95 ±14.29	
10-12	62.08 ±11.35	
13-15	63.68 ±10.33	0.005
Duration of IDDM		
1-2	60.88 ±12.22	
3-5	60.70 ±14.08	
6-15	60.36 ±11.36	0.985

CONCLUSIONS

Results of the present study suggest a single factor underlying the items of the scale according to previous research on social support and doctor-patient relationship arguing that information giving may fulfill an emotional supportive function. However, it is necessary a confirmatory analysis to validate the unidimensionality. We conclude that these results must be endorsed in further studies with larger samples and have to be completed analyzing the validity of the scale to predict adherence in children with IDDM.