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Development of the Diabetes Treatment Satisfaction Questionnaire (DTSQ) for Teenagers and Parents: the DTSQ-Teen and the DTSQ-Parent.

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Introduction

The Diabetes Treatment Satisfaction Questionnaire^{1,2} (DTSQ) is widely used for adults but its content is too abstract for children. Design work on the DTSQ-Teen and DTSQ-Parent, including interviews with teenagers and parents of children with diabetes, is reported elsewhere³.

Here we report psychometric development. Views of teenagers and their parents are compared on items and on subscales.

Methods

The full 12-item DTSQ-Teen and 13-item DTSQ-Parent (see sample item) were completed by 38 adolescents with Type 1 diabetes (12-17 years), their parents, and a further 52 parents of children ≤11 years of age^A. Analyses included:

- 1. Principal components analyses with varimax rotation, and forced one-factor solutions.
- 2. Cronbach's α and α curves, to determine cohesiveness of the proposed subscales.
- 3. Comparison of Teen and relevant Parent scores, using correlations and matched-pair tests of differences. Two-tailed significance testing was used. Non-parametric tests were used whenever Kolmogorov-Smirnoff tests indicated non-normal distribution.

DTSQ-Teen(-Parent) Item

How satisfied are you with your (child's) current treatment?

very satisfied 6 5 4 3 2 1 0 very dissatisfied

Bradley C, Lewis KS. Measures of psychological well-being and treatment satisfaction developed from the responses of people with tablet-treated diabetes. *Diabetic Med*, 1990; 7(5) 445-51. Bradley C. The DTSQ. In Bradley C (Ed) Handbook of Psychology and Diabetes. Chur, Switzerland Harwood Academic, 1994;111-132

Woodcock A, McMillan C, Bradley C. Parent and teenager views about treatments for diabetes and the development of two condition-specific questionnaires: the DTSQ-Parent and DTSQ-Teer Therapeutic Pt Educ Congress, 2006, Italy

Results

Psychometric analyses indicated the following subscales:

1. Treatment Satisfaction (TS):

TS-Teen: 8 items, as below for TS-Parent, with family life and low discomfort removed: α =0.86. factor loadings: 0.50 to 0.87, n=38^B.

TS-Parent: 10 items: satisfied, ease, flexibility, school day, liked activities, family life, understanding. low discomfort. medical support. continue treatment:

 α =0.83, factor loadings 0.55 to 0.74, n=91^B. A smooth, rising curve (Fig 1) indicated cohesiveness.

2. Perceived Diabetes Control (PDC) (2 items: Control. Perceived frequency hyperglycaemia): PDC-Teen, α=0.77. Factor loadings 0.86, 0.81, n=41^B. PDC-Parent, α =0.60.

Factor loadings: 0.73, 0.83, n=92^B.

Figure 1: TS-Parent α Curve^c



Teen-Parent comparisons (Fig 2):

The TS-Parent and PDC-Parent scores correlated significantly with the equivalent Teen scores (TS r=0.36, p<0.05; PDC r=0.63, p<0.01, n=38^B) though only 6/12 individual items correlated significantly. Teens were more positive about their treatment than were their parents on 9/14 measures. Three differences were significant:







Conclusions

The DTSQ-Teen and DTSQ-Parent instruments include subscales to measure diabetes Treatment Satisfaction (TS) and Perceived Diabetes Control (PDC). These have clear structures and good internal consistency reliability, in addition to content validity previously demonstrated³.

Analyses confirm the importance of examining the teens' reports separately since these did not always relate closely to the parents' reports, differing significantly from them on the PDC scale, and on two individual items.

Both the TS and PDC scales are likely to be useful outcome measures in routine clinical practice and in clinical trials of diabetes treatments for children and teenagers.

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Notes

^ANote that DTSQ-Teen data were not obtained for children 11 years and under ^BNumbers of valid cases differed in different analyses. ^c Figures in parentheses indicate number of items retained in scale at that value of α .

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