



# Psychometric properties of a new individualised measure of quality of life (QoL) for teenagers with diabetes mellitus: the ADDQoL-Teen

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## Introduction

Existing diabetes-specific QoL measures are either not designed for children<sup>1,2</sup> and/ or are not sufficiently individualised<sup>3</sup>. This study evaluated the psychometric properties of a new individualised, patient-centred questionnaire, the ADDQoL-Teen, measuring perceived impact of diabetes mellitus on the QoL of teenagers. Design of the ADDQoL-Teen was influenced by the ideas underpinning the SEIQoL<sup>4</sup> interview method and the ADDQoL<sup>2</sup> questionnaire (for adults with diabetes).

## Methods

- The ADDQoL-Teen has 30 domain items designed during qualitative interviews and focus groups reported elsewhere<sup>5</sup>. Respondents rate the frequency of each aspect of life applicable to them and then how much that domain bothers them. (See Fig. 1). Multiplying 'frequency' and 'bother' ratings for each applicable domain gives a domain weighted impact score (range -9 to +3).
- Young people, [mean age 16.4 (sd 2.4) years, N = 152], attending 6 UK diabetes clinics, completed the questionnaire.
- Cronbach's alpha coefficients were determined in reliability analyses, and factor structure explored with Principal Components Analysis using Varimax rotation.

## Results & Discussion

- Five domains were found to detract from the reliability and factor structure of the measure and were analysed separately: *extra things, holidays, get out of a fix, clinic, sleep away*.
- There were 2 subscales: (1) a 10-item Impact-Self subscale (measuring impact of diabetes and its treatment on the individual); (2) a 15-item Impact-Other subscale (measuring impact on interactions with others and the external world). (See Table 1 for subscale domains).
- The 25-domain ADDQoL-Teen and the two subscales had good internal consistency reliability:

	Cronbach's alpha	N
Whole scale	0.91	133
Impact-Self	0.82	142
Impact-Other	0.88	138

- An overall Average Weighted Impact score (ADDQoL-Teen AWI) can be calculated by summing weighted impact scores for all applicable domains, before dividing by the number of domains applicable to the individual.

Figure 1: ADDQoL-Teen domain item

- Domains reported as most severely (and negatively) impacted by diabetes were:

	mean weighted impact ± sd
<i>lie in bed</i>	-3.68 ± 3.41
<i>interrupting activities</i>	-3.50 ± 3.23
<i>worry about the future career</i>	-3.45 ± 3.28
	-3.43 ± 3.15

- The majority (62%) felt that having diabetes had a negative impact on QoL, but 36% considered it had no impact on QoL.

Table 1: Subscale domains

Impact-Self subscale	Impact-Other subscale
<i>insulin</i>	<i>others fuss</i>
<i>bleed</i>	<i>drink</i>
<i>finger tests</i>	<i>interrupt do</i>
<i>moody</i>	<i>lie in bed</i>
<i>unwell</i>	<i>career</i>
<i>wake nights</i>	<i>not allowed</i>
<i>low blood glucose</i>	<i>sport</i>
<i>high blood glucose</i>	<i>social life</i>
<i>worry future responsibility</i>	<i>sweets</i>
	<i>eat</i>
	<i>control diabetes</i>
	<i>miss events</i>
	<i>feel 'different'</i>
	<i>family life</i>
	<i>go toilet</i>

## Conclusions

- The ADDQoL-Teen is a new measure of perceived impact of diabetes and its treatment on QoL of teenagers.
- It will help health professionals consider QoL as well as medical outcomes when caring for young people with diabetes.
- It may be used in clinical trials and for routine clinical monitoring.

## References

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## Access to ADDQoL questionnaires

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