The DTSQ

Background

The Diabetes Treatment Satisfaction Questionnaire (DTSQ) was first developed in the early 1980s. It is now widely used, particularly in clinical trials, but also for routine clinical monitoring. It is available in more than 60 languages. The original DTSQ is now referred to as the status version (DTSQs) in order to distinguish it from the DTSQ change version (DTSQc), which has been developed to overcome potential ceiling effects (i.e. where respondents score maximum or near-maximum satisfaction at baseline and can show little or no improvement at follow-up).

Availability

The DTSQs and c can be obtained from: Prof Clare Bradley [address below].

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Website: www.healthpsychologyresearch.com .

DTSQs and DTSQc: Choosing which version to use and when

People often use just the DTSQs. The DTSQc is relevant for studies involving an intervention (such as a change in insulin, tablets or education / training). Whether or not you use the DTSQc, you should always use the DTSQs at least once during your study, preferably at the beginning. This will anchor your findings on the DTSQc, if you do go on to use the change version as well as the status version. The DTSQc will tell you how people's satisfaction and perceived hyper- and hypoglycaemia has changed; it doesn't tell you whether it was high or low to start with, or where it is at endpoint. We recommend that you use the DTSQs at baseline and endpoint (and at one or two interim points in a 12-month trial) and the DTSQc (if used) at one follow-up only.

1. DTSQs

1.1 Using the DTSQs

We recommend use of the DTSQs at follow-up to provide a 'difference' score for comparison with the many earlier studies that used the DTSQs alone. However, if you use the DTSQs *and* the DTSQc at follow-up, it is important to administer the DTSQs before the DTSQc.

If you are having a long gap between baseline and endpoint (e.g. a year or more), you may wish to repeat the DTSQs in order to have a picture of how satisfied people are during that period. The DTSQs can usefully be used at intervals throughout a treatment period and when steady increases in DTSQs scores are seen (e.g. Witthaus et al 2001), this provides useful evidence that scores are determined by experience and are not simply an initially hopeful response to a new treatment, which subsequently declines.

1.2 Scoring the DTSQs

The status version has 8 items and produces the following measures:

- *Treatment Satisfaction:*
  Items 1, 4, 5, 6, 7 & 8 are summed to produce a Treatment Satisfaction score (range: 0 to 36). The higher the score, the greater the satisfaction with treatment.
- *Individual satisfaction with treatment items (items 1, 4, 5, 6, 7 & 8) can be considered separately:*
  All rated: 6 (very satisfied, convenient, flexible, etc.) to 0 (very dissatisfied, inconvenient, inflexible, etc.). The higher the score, the greater the satisfaction with each aspect of treatment.
- *'Perceived frequency of hyperglycaemia' (item 2) & 'Perceived frequency of hypoglycaemia' (item 3):*
  Both rated: 6 ('most of the time') to 0 ('none of the time'). Here, lower scores indicate blood glucose levels closer to the ideal. Higher scores indicate problems.

2. DTSQc

2.1 *Choosing the DTSQc*

If you have a study with a series of follow-ups over a long period (say 2 years), we recommend that you use the DTSQc just once. It is possible that one year is as long a gap as can be managed before there is too great a risk of the patient forgetting what the experience of the previous treatment was like. Thus, it is recommended that the DTSQc is used at 12 months in a study that is of 12 months duration or longer. The status version, DTSQs, can nevertheless be used at any later time point.

Please state clearly in your protocol when you plan to administer the DTSQs and the DTSQc.

2.2 Scoring the DTSQc

The change version has the same 8 items as the status version, with a small alteration to the wording of Item 7. The DTSQc instructions and response options differ from those of the DTSQs to produce measures of relative change in satisfaction rather than measures of absolute satisfaction:

- *Treatment Satisfaction (Change):*
  Items 1, 4, 5, 6, 7 and 8 are summed to produce a Treatment Satisfaction (change) score (range: +18 to –18). The higher the score, the greater the improvement in satisfaction with treatment; the lower the score, the greater the deterioration in satisfaction with treatment. A score of 0 represents no change.
- *Individual satisfaction with treatment change items (items 1, 4, 5, 6, 7 and 8) can be considered separately:*
  All rated: +3 ('much more satisfied', 'much more convenient', 'much more flexible', etc.) to –3 ('much less satisfied', 'much less convenient', 'much less flexible', etc.). The higher the score, the greater the improvement in satisfaction with each aspect of treatment and the lower the score, the greater the deterioration in satisfaction with each aspect of treatment.
- *Two remaining items ('Perceived change in frequency of hyperglycaemia' (item 2) and 'Perceived change in frequency of hypoglycaemia' (item 3)) are treated individually:*
  Both rated: +3 ('much more of the time now') to –3 ('much less of the time now'). Here, negative scores indicate fewer problems with blood glucose levels. Positive scores indicate more problems than before.

2.3 Wording of the DTSQc instructions

The wording at the beginning of the instructions needs to relate to the particular intervention in your study. Thus it may need to be changed to be suitable for your particular study. We have produced a wording for the beginning of the introduction that is as generic as possible to minimise the need for changes, but you may need to adapt the wording to be suitable for the study duration and type of intervention. The wording has been based on the study design in which it is most commonly used (i.e. a randomised controlled trial). It may therefore need to be changed for use in an observational type of study. Please note that the last two sentences beginning "Please answer each question…", are the same for all occasions. These latter sentences should not be changed.

Please include in your protocol the details (in English and any other language to be used) of any change to the wording of the DTSQc instructions for your particular study. If a run-in treatment period is included and involves a change of treatment for at least some people, the comparison is probably best made with treatment prior to commencement of the study. For crossover studies we would recommend that you

make one comparison at the very end of the study, asking participants to compare their current treatment with the previous treatment[1].

Selected references

DTSQs

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[1] **Example for a crossover design:**

For the past *N** weeks you have used either X** or Y**. Today we would like to know how your experience of this treatment for diabetes (including medication and diet) has changed from your experience of the previous treatment, which you used in the *N* weeks before you changed to the treatment you are using now. Please answer …etc.

Where:

* *N = the number of weeks / months in each treatment period*

** *X and Y = the two treatments being compared*

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