

Publications on the DTSQ Diabetes Treatment Satisfaction Questionnaire: status (DTSQs) and change (DTSQc)

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**Clare Bradley PhD
Professor of Health Psychology
Royal Holloway, University of London
Egham, Surrey, TW20 0EX**

Chapter on the current DTSQs and its development

Bradley C (1994) The Diabetes Treatment Satisfaction Questionnaire: DTSQ. In Bradley C (Ed) (1994) *Handbook of Psychology and Diabetes: a guide to psychological measurement in diabetes research and practice*. Chur, Switzerland: Harwood Academic Publishers.

Original development work on the DTSQs

Bradley C and Lewis KS (1990) Measures of psychological well-being and treatment satisfaction developed from the responses of people with tablet-treated diabetes. *Diabetic Medicine* 7, 445-451.

Relationship between the DTSQ and the ADDQoL measure of the impact of diabetes on quality of life

Bradley C and Speight J (2002) Patient perceptions of diabetes and diabetes therapy: assessing quality of life. *Diabetes Metabolism Research and Reviews* 18: S64-S69.

Commentary on FDA draft guidance on patient reported outcome measurement

Bradley C (2006) Feedback on the FDA's February 2006 draft guidance on Patient Reported Outcome (PRO) measures from a developer of PRO measures. *Health and Quality of Life Outcomes* 4 (1) 78, <http://www.hqlo.com/content/4/1/78>.

Response to review of diabetes-specific patient reported outcome measures

Brose LS, Mitchell J and Bradley C (2009) Comments on Speight et al.'s 'Not all roads lead to Rome – a review of quality of life measurement in adults with diabetes'. *Diabetic Medicine* 26 (9) 1076-1077.

World Health Organisation/ International Diabetes Federation Guidelines

Bradley C and Gamsu DS for the psychological well-being working group of the WHO/IDF St. Vincent Declaration Action Programme for Diabetes (1994). Guidelines for encouraging psychological well-being: Report of a working group of the World Health Organisation Regional Office for Europe and International Diabetes Federation European Region St. Vincent Declaration Action Programme for Diabetes. *Diabetic Medicine*, 11, 510-516.

Development of the DTSQc (change version)

Current Change Version Articles

Bradley C (1999) The Diabetes Treatment Satisfaction Questionnaire (DTSQ): change version for use alongside status version provides appropriate solution where ceiling effects occur. *Diabetes Care* **22**, 3, 530-2.

Bradley C, Plowright R, Stewart J, Valentine J and Witthaus E (2007) The Diabetes Treatment Satisfaction Questionnaire change version (DTSQc) evaluated in insulin glargine trials shows greater responsiveness to improvements than the original DTSQ. *Health and Quality of Life Outcomes* **5** (5) 57, <http://www.hqlo.com/content/5/1/57>

Howorka K, Pumpřla J, Schlusche C, Wagner-Nosiska D, Schabmann A and Bradley C (2000) Dealing with ceiling baseline treatment satisfaction level in patients with diabetes under flexible, functional insulin treatment: assessment of improvements in treatment satisfaction with a new insulin analogue. *Quality of Life Research* **9**: 915-930.

Early Change Version Article (now superseded)

Lewis KS, Bradley C, Knight G, Boulton AJM and Ward JD (1988) A measure of treatment satisfaction designed specifically for people with insulin-dependent diabetes. *Diabetic Medicine* **5**, 235-242.

Validation of translations (See www.healthpsychologyresearch.com [Information] for list of available language versions)

Dawsey R, Sweeney E, Plowright R, Wilson A and Bradley C (2014) Linguistic validation of the DTSQ: challenges with Arabic and French for Algeria. *Value in Health* **17** (in press).

Felici A, Plowright R, Wilson A and Bradley C (2011) Diabetes Treatment Satisfaction Questionnaire (DTSQ) for Spain and Latin America: are Multiple Language Versions Really Necessary? *Patient Reported Outcomes (PRO) Newsletter* **45** (Spring), 19

Howorka K et al (2000) referenced above. (Validating German DTSQs and c).

Ishii H, Bradley C, Riazi A, Barendse S and Yamamoto T (2000) The Japanese Version of the Diabetes Treatment Satisfaction Questionnaire (DTSQ): translation and clinical evaluation. *Journal of Clinical and Experimental Medicine* **192**, 7, 809-814. (A Japanese Journal publishing in Japanese).

Plowright R, Witthaus E and Bradley C (2000) Psychometric evaluation of Diabetes Treatment Satisfaction Questionnaire in 8 languages. *Proceedings of the British Psychological Society* **8** (2) 43.

Witthaus E, Stewart J and Bradley C (2001) Treatment satisfaction and psychological well-being with insulin glargine compared with NPH in patients with Type 1 diabetes. *Diabetic Medicine* **18**, 619-625.

Wredling R, Stalhammar J, Adamson U, Berne C, Larsson Y and Ostman J (1995) Well-being and treatment satisfaction in adults with diabetes: A Swedish population-based study. *Quality of Life Research* **4**, 515-522.

Comparison of standard and computerised versions of the DTSQ

Pouwer F, Snoek FJ, van der Ploeg HM, Heine RJ and Brand AN (1998) A comparison of the standard and the computerized versions of the Well-Being Questionnaire (WBQ) and the Diabetes Treatment Satisfaction Questionnaire (DTSQ). *Quality of Life Research* **7** (1), 33-38.

Review papers including the DTSQ

Bradley C and Gilbride CJB (2008) Improving treatment satisfaction and other patient-reported outcomes in people with Type 2 diabetes: the role of once-daily insulin glargine. *Diabetes, Obesity and Metabolism* **10** (Suppl.1), 50-65. <http://www.blackwell-synergy.com/toc/dom/10/s2> <http://eprints.rhul.ac.uk/712/>

Speight J, Reaney MD and Barnard KD (2009) Not all roads lead to Rome—a review of quality of life measurement in adults with diabetes. *Diabetic Medicine* **26** (4), 315-327.

Crossectional and audit studies of diabetes using the DTSQ

Petterson T, Lee P, Hollis S, Young B, Newton P, and Dornan T (1998) Well-being and treatment satisfaction in older people with diabetes. *Diabetes Care* **21**, 930-935.

Ward, J, Lin M, Heron, G and Lajoie V (1997) Comprehensive audit of quality-of-care and quality-of-life for patients with diabetes. *Journal of Quality in Clinical Practice* **17**, 91-100.

[Note: the authors have misinterpreted the scale (and the patients' responses to it) for the perceived frequency of hyper- and hypoglycaemia items: it is not actual number of episodes but a more general indication of frequency that these items measure]

Wredling R, Adamson L, Berne C, Dahlen M, Ostman J, Larsson Y and Stalhammar J (1993) Quality of life among a representative sample of people with diabetes mellitus in Sweden. *Diabetes, Nutrition and Metabolism* **6**, 393-395.

Use of DTSQ in comparison of different treatment regimens for type 1 diabetes

Ashwell SG, Bradley C, Stephens JW, Witthaus E and Home PD (2008) Treatment satisfaction and quality of life with insulin glargine plus insulin lispro compared with NPH insulin plus unmodified human insulin in people with type 1 diabetes. *Diabetes Care* **31** (6) 1112-7. http://www.ncbi.nlm.nih.gov/pubmed/18339977?ordinalpos=433&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum

Bradley C (1999) On calculating treatment satisfaction. *Diabetes Care* **22**, 10, 1760.

Gale EAM for the UK Trial Group: Alban-Davies H, Bilous RW, Bradley C, et al (2000) A randomized, controlled trial comparing insulin lispro with human soluble insulin in patients with Type 1 diabetes on intensified insulin therapy. *Diabetic Medicine* **17**, 3, 209-214.

Home PD, Lindholm A and Riis A (2000). Insulin aspart vs. human insulin in the management of long-term blood glucose control in Type 1 diabetes mellitus: a randomised control trial. *Diabetic Medicine* **17** (11), 762-770.

- Johansson UB, Adamson UCK & Lins PES and Wredling RAM (2000) Improved blood glucose variability, HbA_{1c} and less insulin requirement in IDDM patients using insulin lispro in CSII. The Swedish multicenter lispro insulin study. *Diabetes & Metabolism (Paris)* **26** (3), 192-196.
- Janes JM, Bradley C and Rees A (1997) Preferences for, and improvements in aspects of quality of life (QoL) with insulin lispro in a multiple injection regimen. *Diabetologia* **40**, suppl 1, A353.
- Kawamori R, Kadowaki T, Ishii H, Iwasaki M and Iwamoto Y (2009) Efficacy and safety of insulin glulisine in Japanese patients with type 1 diabetes mellitus. *Diabetes, Obesity and Metabolism*, **11**, 891-899.
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 [This paper is an example of a study that shows, appropriately, no change in treatment satisfaction or in perceived frequency of hyper- or hypoglycaemia, when patients switch between two treatments which are used in the same way and have similar effects on blood glucose control.]
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 [Note: error in reporting of DTSQ scores (all 8 items in DTSQ combined instead of 6 items that should form the treatment satisfaction score) pointed out by Bradley C (1999) On Calculating Treatment Satisfaction. *Diabetes Care* **22**, 10, 1760, and corrected figures supplied by Pfützner A (1999) Response to Bradley. *Diabetes Care* **22**, 10, 1760. Letters also discuss substantial and interesting carryover effects observed when patients switch back from Lispro to standard soluble in crossover trials and show marked reductions in satisfaction with standard soluble]
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Use of DTSQ in comparing treatment regimens for Type 2 diabetes

- Best JH, Boye KS, Rubin RR, Cao d, Kim th and Peyrot M (2009) Improved treatment satisfaction and weight-related quality of life with exenatide once weekly or twice daily. *Diabetic Medicine* **26** (7) 722-728.
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 [See also Houlden et al (2007) for more detailed analysis of patient reported outcomes and Bradley and Gilbride 2008 review (listed above) for critique]
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 [N.B. used DTSQc as well as DTSQs]
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Wilson M, Moore MP, Lunt H (2004) Treatment satisfaction after commencement of insulin in type 2 diabetes. *Diabetes Res Clin Pract* **66**, 263–267.

Witthaus E, Stewart J and Bradley C (2000) Improved psychological outcomes after initiation of insulin treatment in patients with Type II diabetes. *Diabetologia* **43**, suppl 1, A205. Yki-Jarvinen H, Juurinen L, Alvarsson M, Bystedt T, Caldwell I, Davies M, Lahdenpera S, Nijpels G and Vahatalo M (2007) Initiate Insulin by Aggressive Titration and Education (INITIATE): a randomized study to compare initiation of insulin combination therapy in type 2 diabetic patients individually and in groups. *Diabetes Care* **30** (6) 1364-1369.

Yoo BK, Triller DM, and Yoo DJ (2006) Exenatide: a new option for the treatment of type 2 diabetes. *Ann Pharmacother* **40** (10) 1777-1784.

Use of DTSQ in evaluating educational interventions

DAFNE Study Group* (2002) Training in flexible, intensive insulin management to enable dietary freedom in people with type 1 diabetes: the dose adjustment for normal eating (DAFNE) randomised controlled trial. *British Medical Journal*, **325**, 746-749 (full 6 page version of paper published on BMJ website <http://bmj.com/cgi/content/full/325/7367/746>).

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Deakin TA, Cade JE, Williams DRR and Greenwood DC (2006) Structured patient education: the Diabetes X-PERT Programme makes a difference. *Diabetic Medicine* **23** (9): 944-954.

Kinmonth A-L, Woodcock A, Griffin S, Spiegel N and Campbell MJ (1998) Randomised control trial of patient-centred care in general practice: impact on current well-being and future disease risk. *British Medical Journal* **317**, 1202-1208.

Rogers H, Turner E, Thompson G, Hopkins D and Amiel SA (2009) Hub-and-spoke model for a 5-day structured patient education programme for people with Type 1 diabetes. *Diabetic Medicine* **26**, 915-920 [3-item short-form used in routine monitoring of the outcomes of DAFNE training]

Speight J, Amiel S, Bradley C, Heller S, James P, Oliver L, Roberts S, Rogers H, Taylor C and Thompson G (2007) The Dose Adjustment For Normal Eating (DAFNE) Trial: improvements in HbA1c still apparent and quality of life benefits well maintained at 4-year follow-up. *Diabetic Medicine* **24** (Suppl 1) 95, P224.

Insulin delivery systems

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[N.B. uses the wrong reference to DTSQ development work. Should have referred to Bradley and Lewis, 1990]

Korytkowski M, Bell D, Jacobsen C and Suwannasari R (2003) A multicenter, randomized, open-label, comparative, two-period crossover trial of preference, efficacy, and safety profiles of a prefilled, disposable pen and conventional vial/syringe for insulin injection in patients with type 1 or 2 diabetes mellitus. *Clin Ther* **25** (11) 2836-2848.

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Adaptations of the DTSQ for teenagers and for parents of children with diabetes (DTSQ-Teen and DTSQ-Parent)

Bradley C, Loewenthal K, Woodcock A and McMillan C (2009) Development of the diabetes treatment satisfaction questionnaire (DTSQ) for teenagers and parents: the DTSQ-Teen and the DTSQ-Parent. *Diabetologia* 52: (Suppl 1) S397, Abstract 1013.

Adaptations of the DTSQ for inpatients with diabetes (DTSQ-IP)

Bradley C, Singh H, Walden E, Jones C, Dhatariya K and Sampson MJ (2008) Psychometric evaluation of the Diabetes Treatment Satisfaction Questionnaire for Inpatients (the DTSQ-IP) and investigation of predictors of satisfaction. ISOQOL Conference Abstracts Issue October 2008, *Quality of Life Research*, A-86, Abstract 1204.

Rutter CL, Jones C, Dhatariya KK, James J, Irvine L, Wilson ECF, Singh H, Walden E, Holland R, Harvey I, Bradley C and Sampson MJ (2013) Determining inpatient diabetes treatment satisfaction in the UK – the DIPSat study. *Diabetic Medicine* **30** (6) 731-738. DOI: 10.1111/dme.12095.
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Adaptations of the DTSQ for other conditions

HIV

Jordan J, Cahn P, Goebel F, Matheron S, Bradley C and Woodcock A (2005) Abacavir Compared to Protease Inhibitors as Part of HAART Regimens for Treatment of HIV Infection: Patient Satisfaction and Implications for Adherence. *Aids Patient Care and STDs* **19** (1) 9-18
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Woodcock A and Bradley C (2001) Validation of the HIV Treatment Satisfaction Questionnaire (HIVTSQ). *Quality of Life Research* **10**, 517-531.

Woodcock A and Bradley C (2006) Validation of the revised 10-item HIV Treatment Satisfaction Questionnaire status version (HIVTSQs) and new change version (HIVTSQc). *Value in Health* **9** (5) 320-333. <http://www.ncbi.nlm.nih.gov/pubmed/16961550>

Renal Failure

Barendse SM, Speight J and Bradley C (2005) The Renal Treatment Satisfaction Questionnaire (RTSQ): A Measure of Satisfaction With Treatment for Chronic Kidney Failure. *American Journal of Kidney Diseases* **45** (3) 572-579.

Diabetic Retinopathy

Brose, LS & Bradley, C (2009). Psychometric development of the Retinopathy Treatment Satisfaction Questionnaire (RetTSQ). *Psychology, Health & Medicine*, **14**(6), 740-754

Woodcock A, Plowright R, Kennedy-Martin T, Hirsch A, ffytche T and Bradley C (2005) Development of the new Retinopathy Treatment Satisfaction Questionnaire (RetTSQ). *Proceedings of Vision 2005; International Congress Series*, Vol 1282, 342-346.

Macular Disease

Mitchell J, Brose LS, Bradley C (2007) Design of a measure of satisfaction with treatment for Macular Degeneration (MacTSQ). *ISOQOL 14th Annual Conference. Quality of Life Research 2007:A-120*.

Eye Diseases generally - including cataract and glaucoma as well as retinopathy and macular disease

Brose LS, Plowright R, Mitchell J and Bradley C Individualised Quality of Life (QoL) and Treatment Satisfaction Questionnaires for People with Eye Conditions: EyeDQoL and EyeTSQ Design. *Accepted by ISOQOL 2009 as Abstract 1361*.

Genital Herpes

Taback NA and Bradley C (2006) Validation of the Genital Herpes Treatment Satisfaction Questionnaire (GHerpTSQ) in status and change versions. *Quality of Life Research* **15** (6): 1043-1052.

Hypothyroidism

McMillan CV, Bradley C, Woodcock A, Razvi S and Weaver JU (2004) Design of new questionnaires to measure quality of life and treatment satisfaction in hypothyroidism. *Thyroid* **14** (11) 916-925.

Fertility

The Frozen Embryo Replacement Treatment Satisfaction Questionnaire: FERTSQ (FERTSQ) is currently under evaluation.