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Psychometric evaluation of the Diabetes Treatment Satisfaction Questionnaire for Inpatients (the DTSQ-IP) and investigation of predictors of satisfaction

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Aims: To evaluate psychometric properties of the newly designed Diabetes Treatment Satisfaction Questionnaire for Inpatients (DTSQ-IP) and assess predictors of diabetes inpatient treatment satisfaction in a UK Hospital.

Methods: The DTSQ-IP, based on the original DTSQ for outpatients, was distributed to 770 adult diabetes inpatients at the Norfolk and Norwich Hospital (UK). Data were also collected on duration of diabetes, insulin use, diabetes monitoring and length of hospital stay (LOS). Questionnaires were completed by 408 (53%) inpatients: 366 reported having insulin treatment during their inpatient stay. Psychometric properties were evaluated with Principal Components Analysis (PCA) and reliability analysis. Unpaired t-test or Mann Whitney U tests assessed subgroup differences with multiple regression analysis to identify independent contributors to DTSQ-IP score.

Results: All 19 DTSQ-IP items except 2 and 3 (perceived frequency of hyperglycaemia and hypoglycaemia, respectively) loaded highly onto a single component in PCA. Items 2 and 3 are analysed individually, as in the original DTSQ, while summing the remaining items. Cronbach's alpha (excluding items 2 and 3) indicated excellent internal consistency reliability (0.92). Mean DTSQ-IP score was 79.2 (possible max=102). Hypoglycaemia was a major concern with 53% feeling that their blood glucose levels had frequently been too low while 21% had concerns about hyperglycaemia. Considerable dissatisfaction was reported with meal choices and timings. Inpatients who were women, had longer duration of diabetes and insulin use, more injections pre-admission, longer LOS and those on surgical wards were significantly ($p < 0.05$) more dissatisfied. Multiple regression accounted for 8.2% variation in DTSQ-IP scores with LOS and injection frequency preadmission as significant independent contributors.

Conclusions: DTSQ-IP shows strong psychometric properties and is sensitive to subgroup differences. The DTSQ-IP will be useful in designing and evaluating interventions to improve diabetes inpatient satisfaction.