115

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REVISED INDWELLING URINARY CATHETER-RELATED QUALITY OF LIFE INSTRUMENT (C-IQOL2)

Hypothesis / aims of study

A catheter-related quality of life instrument (C-IQoL2) was revised and tested for psychometrics in 202 adults with long-term (indefinite use) indwelling urinary catheters.

Study design, materials and methods

The instrument was modified for a randomized trial and evaluated at baseline (Intake interview) with 202 persons, aged 19- 96 (51% males), and with 158 of the same individuals six months later. ICS guidelines had been used to develop the original instrument [1] which was based on an IQoL measure for incontinence related quality of life. To the 22 items in the previous C-IQoL, three new items were added related to typical catheter-related problems: concerns about catheter leakage, the catheter getting pulled out by accident, and about difficult or painful catheter changes. One item that had been removed was returned "I feel depressed" and modified to be more like the original item, i.e., "I feel depressed about my catheter." The item stems were changed from the original "I feel worried" to "I am concerned about" based on previous study participants' responses and suggestions. Thus, the C-IQoL2 consisted of 26 items, scored on a 1-5-Likert type scale, with agreement from 1 Strongly agree, 2 Agree, 3 Neutral, 4 Disagree, and 5 Strongly disagree. The questionnaire was administered by trained interviewers during a face to face home interview prior to randomization at entry to the study (Intake) and by telephone at six months, using a response card with the written scale.

Exploratory factor analysis (EFA) was conducted by six team members in an iterative process which involved discussion of items both theoretically (appropriateness to most catheter users and quality of life issues) and statistically (cross loadings, stability over time). Descriptive statistics were also used to compare means and SDs. A three factor solution worked best for both Intake and Six months' data. Six questions were deleted related to cross loadings on other factors and instability over time or if the item seemed to affect only part of the sample (Table 1). For instance, only 14% had ever had autonomic dysreflexia, and 23% had catheter pain. Sometimes people said the item did not apply, such as how the catheter might affect sex. Some deleted items might be of value in research with selected populations or when specific interventions are being tested. To assess construct validity and goodness of fit for model testing, confirmatory factor analysis (CFA) was conducted.

Table 1. Deleted items (N=202)

I am concerned about not being able to empty my drainage bag before it gets too full.
I have to watch what I drink.
I am concerned about how the catheter might affect my having sex.
I am concerned about doctors and nurses not knowing about autonomic dysreflexia (AD).
I am concerned about getting supplies for my catheter.
I have a hard time because of catheter pain.

Results:

Means and SD are presented for the Intake data only, which is the full sample of 202 prior to randomization. Table 2 presents the factors (subscales) identified during EFA, reliabilities of each subscale, and correlations of items to subscales and the full measure. Reliability for the 20 item scale was 0.90 (Chronbach's alpha). All of the reliabilities were viewed as satisfactory. Related to CFA, the following results suggest that, though not perfect, construct validity is adequate for the measure. Confirmatory factor analysis tests included: CFI (comparative fit index) 0.867; TLI (Tucker-Lewis Index) 0.848; RMSEA (root mean square error of approximation) Estimate 0.087 ; 90 % C.I.=0.077, 0.097 Probability <= .05 is 0.000; and the SRMR (Standardized root mean square residual) Value = 0.108.

Table 2. Final items and subscales in C-IQoL2   N=202

Items and Chronbachs' alpha of subscales	Means (SD)	Item to subscale correlation	Item to full scale correlation
Psychosocial (10 items) Alpha = 0.90			
I feel depressed about my catheter.	3.38 (1.31)	0.81	0.70
I don't feel free to leave my home for long periods of time.	3.35 (1.36)	0.67	0.56
I feel frustrated because catheter prevents me from doing what I want.	3.28 (1.30)	0.82	0.69
I am concerned about others smelling urine on me.	2.67 (1.37)	0.57	0.60
I am concerned about catheter causing more problems as I grow older.	2.71 (1.25)	0.63	0.65
I am concerned about being embarrassed or humiliated because of catheter.	3.26 (1.26)	0.75	0.68
My catheter makes me feel like I'm not a healthy person.	3.27 (1.27)	0.85	0.72
My catheter makes me feel helpless.	3.66 (1.10)	0.79	0.68
I get less enjoyment out of life because of my catheter.	3.37 (1.28)	0.85	0.72
My catheter limits my choice of clothing.	3.05 (1.27)	0.62	0.58

Concern about Problems (6 items) Alpha= 0.80	Means (SD)	Item to subscale correlation	Item to full scale correlation
I am concerned about catheter blockage.	2.39 (1.35)	0.75	0.50
I am concerned about getting a UTI.	1.88 (1.10)	0.67	0.46
I am concerned about catheter leakage.	2.34 (1.22)	0.79	0.47
I am concerned about getting the catheter pulled out by accident.	2.30 (1.27)	0.71	0.54
I am concerned about difficult or painful catheter changes.	2.60 (1.35)	0.68	0.62
I am concerned about getting wet because of catheter leaking.	2.57 (1.21)	0.63	0.52
Daily Life (4 items) Alpha= 0.74	Means (SD)	Item to subscale correlation	Item to full scale correlation
I am concerned about where toilets are in new places.	2.96 (1.32)	0.81	0.50
I am concerned about whether toilets are accessible and private.	2.77(1.39)	0.82	0.51
I am concerned about having to instruct care attendants about proper care for the catheter.	3.42(1.19)	0.69	0.48
I am concerned about conflicts in care management with my Drs. and/or nurses.	3.53(1.09)	0.67	0.54

Interpretation of results

Although three factors were in the first version of C-IQoL, some of the items "moved" to a different factor. For instance, some of the items that had been in Management (now Concern about Problems) are now in the Psychosocial subscale which increased from five to 10 items. The Interpersonal subscale was renamed Daily Life to better reflect content of items.

Concluding message

EFA, CFA, and alphas provided evidence that the revised C-IQoL2 performed satisfactorily in 202 people. Compared with the previous instrument,[1] the items are a better match conceptually with the factors in the subscales, and the new instrument is expected to better represent the typical issues in long-term catheter users.

References

1.   1. Wilde MH, Brasch J, Getliffe K, McMahon J, Anson E, & Tu X. A new urinary catheter-related quality of life instrument for adults. Neurourology and Urodynamics. 2010.67(6), 1254–1263. DOI: 10.1111/j.1365-2648.2010.05583.x

Disclosures