

Health-related quality of life correlates with bladder and bowel dysfunction: the need for a new patient-centered questionnaire

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Background and Hypothesis

Children with voiding dysfunction (VD), such as incontinence or urinary frequency, may report lower quality of life (QOL) compared to their peers. QOL questionnaires which could be used in this population have several limitations. PinQ is a bladder-specific, health-related QOL questionnaire, but it was developed without stakeholder input and fails to separate symptoms from QOL. Kidscreen-10 is a generic QOL questionnaire. We aimed to understand how QOL captured using existing instruments correlates with VD severity in a cross-sectional study. We hypothesized that large differences in symptoms would correspond with large differences in bladder-specific QOL but small differences in generic QOL.

Methods

We recruited children 8-18 years old with VD at a pediatric urology clinic (June-July 2023). VD included daytime incontinence, enuresis, frequency, urgency, and dysuria. We excluded children with severe developmental delay, anatomical urological abnormalities, or history of urologic surgery. We captured demographics, symptoms (Vancouver Dysfunction Voiding Symptom Score, DVSS), and QOL (PinQ and Kidscreen-10). Questionnaire scores were compared to weighted means from previous studies. We calculated Spearman correlations and QOL differences corresponding with the reported 20-point range of DVSS scores.

Results

Twenty children (11 girls) at a median age of 10 years old participated (Table 1). Mean DVSS score was 14, similar to previous studies (weighted mean: 15). PinQ scores had a moderate positive correlation with DVSS scores ($r = 0.37$) with a 20-point DVSS difference corresponding to a 24% difference in PinQ scores (Figure 1). Kidscreen-10 scores had a moderate negative correlation with DVSS scores ($r = -0.33$) with a 20-point DVSS difference corresponding to a 12% difference in Kidscreen-10 scores (Figure 2).

Conclusions

Previously published QOL questionnaires have significant limitations, limiting their clinical use in the care of patients with VD. A new, patient-centered, highly specific, and sensitive health-related QOL questionnaire is needed.

Table 1: Patient Information	
n= 20	
Mean age years (SD)	
Parent	40 (11.1)
Child	10 (2.8)
% Female Sex	55%
Ethnicity	
White	80%
Black or African American	10%
Native American or Pacific Islander	0%
Hispanic or Latino	10%
Asian	0%
More than one race	5%
Other	5%
Yearly Household Income	
Less than \$20,000	0%
\$20,000-\$39,999	40%
\$40,000-\$59,999	10%
\$60,000-\$79,999	10%
\$80,000-\$100,000	10%
>\$100,000	25%
Parent Education	
Less than a high school degree	5%
High School Degree or equivalent	10%
Some college but no degree	20%
Associate Degree	30%
Bachelor Degree	30%
Graduate Degree	5%
Reason for Appointment	
Urine accidents at night	75%
They need to run to the bathroom to not have an accident	50%
Urine accidents during the day	40%
They go to the bathroom to pee too often	40%
They don't empty their bladder all the way	30%
Urinary tract infections (UTIs) without fevers	20%
They do not feel when they need to go to the bathroom	20%
It hurts or burns when they pee	5%
They rarely go to the bathroom. I'm worried about retention	0%
Other	10%

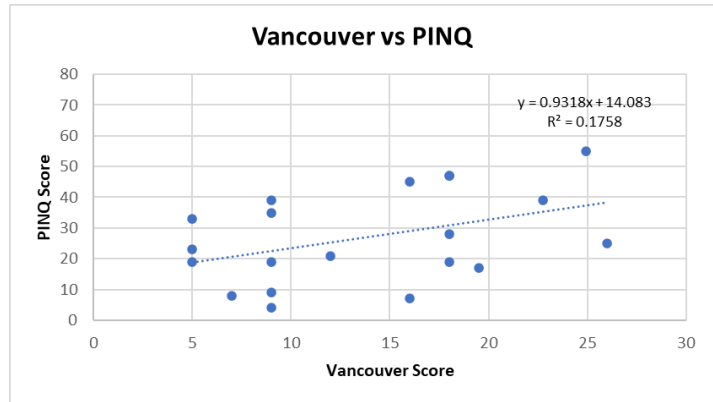


Figure 1: Vancouver DVSS scores correlation with PinQ scores ($r = 0.37$)

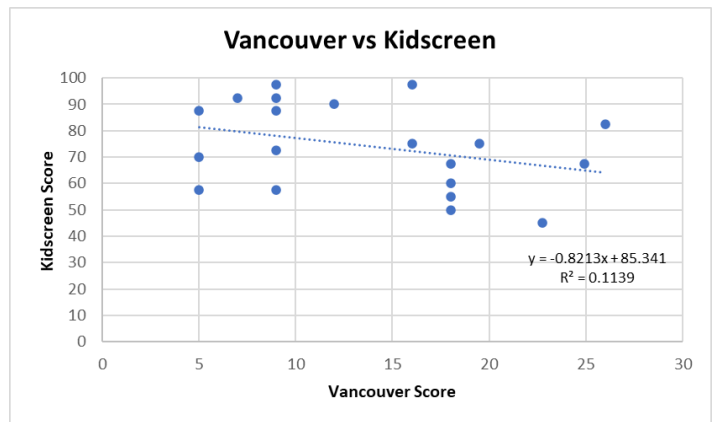


Figure 2: Vancouver DVSS scores correlation with Kidscreen-10 scores ($r = -0.33$)

Table 2: Questionnaire Scores					
Questionnaire	Mean	SD	Median	IQR	Previous Studies Weighted Average
Vancouver DVSS	14	7	14	9,18	15
PinQ	27	15	25	19,39	35
Kidscreen-10	74	16	74	59,88	n/a