

Anxiety, Distress and Pain in Pediatric Urodynamics

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Introduction

- To obtain best possible urodynamics (UDS) results, patients typically kept awake and interactive throughout testing
- Children can experience physical and emotional discomfort while undergoing procedure
- In a study of children undergoing VCUG, certain steps were found to be significantly distressful



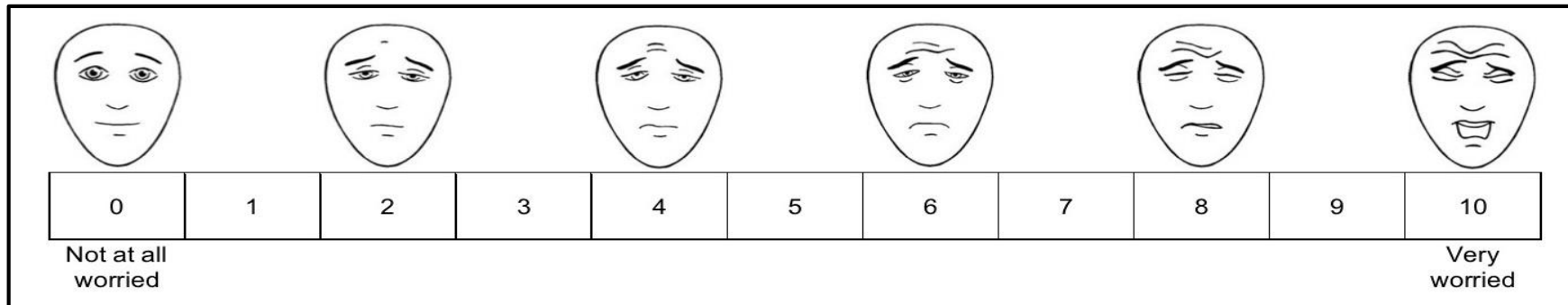
Introduction

- No one has assessed UDS to determine those steps that elicit the greatest anxiety, distress and pain in children
- Aim: To systematically evaluate the pediatric patient UDS experience



Methods

- **Prospective** study of patients **aged 5 and older** undergoing UDS over 6-month period
- Upon arrival, patients completed **Visual Analogue Scale for Anxiety (VAS-A)** about upcoming procedure



Methods Continued

- Research assistant (RA) observed all UDS studies, including those with an external urethral sphincter needle EMG
- RA assessed patient's behavior during each major UDS step using validated observational measurement method: **Brief Behavioral Distress Scale (BBDS)**
 - *Non-interfering behavior* = minor verbal distress, cry, whine, moan
 - *Potentially-interfering behavior* = scream, tense muscles, grit teeth
 - *Interfering behavior* = escape, disrupt, avoid, aggress



Methods Continued

- Nursing staff obtained patients' pain ratings using the Faces (<8 years) or numeric (8+ years) **pain scale (0-10)** for these key steps
- Immediately after UDS, each patient completed **post-test VAS-A** along with a brief investigator-developed **survey about UDS experience**



Results

- 76 UDS observed: 35 patients (46.1%) underwent UDS with needle EMG

Median Age (IQR)	10.5 (8.0-14.9)
Female Sex	36 (48%)
Full Perineal Sensation Present	49%
History of Prior UDS Study	87%
History of Urinary Catheterization	95%
History of Urologic Surgery	53%



Results

- Mean Patient VAS-A score (0-10):
 - Pre UDS = 2.3
 - Post UDS = 0.8



Results

43% demonstrated interfering or potentially interfering behaviors at some point during UDS testing

Highest proportion during EMG needle insertion (31%) and urethral catheter insertion (29%)

In agreement with highest mean pain scores of 3.2 and 2.7, respectively



Results

	Mean Pre-VAS-A Score (0-10)	Demonstrated Interfering or Potentially Interfering Behaviors	Mean Urethral Catheterization Pain Score	Mean EMG Needle Insertion Pain Score*
<u>History of prior UDS</u>				
No (N=10)	3.9	60%	6.3	7.3
Yes (N=66)	2.0	38%	2.2	2.3

*if performed



Results

- 54% patients did **not** completely know what to expect before UDS

	Mean Pre-VAS-A Score (0-10)	Demonstrated Interfering or Potentially Interfering Behaviors	Mean Urethral Catheterization Pain Score	Mean EMG Needle Insertion Pain Score*
<u>Reported Preparation Level</u>				
Did Not Completely Know What to Expect (N=38)	2.7	50%	3.4	4.5
Completely Knew What to Expect (N=32)	2.0	23%	1.8	1.7

*if performed



Conclusions

- Undergoing EMG needle and urethral catheter placement, initial testing and not knowing what to expect were associated with greater distress and pain
- Highlights importance of pre-test preparation and need for resources to ease distress for children undergoing UDS
 - Incorporated child life specialist
 - Offering virtual reality as active distraction

