Abstract

Pediatric lower urinary tract symptoms (pLUTS) remains a common childhood disease despite available treatment options that improve symptoms. The recommended first-line treatment option, urotherapy, consists of education on behavioral changes and lifestyle modification only; no medication or surgery is needed for functional causes of disease. Delays in treatment can lead to a worsening of symptoms, urinary tract infection, missed days from school/work, as well as continued, unchanged, healthcare spending.

Access to this type of health education is linked to healthcare access; families do not have access to urotherapy outside of a medical office. Based on our preliminary data, parents are unaware of urotherapy concepts, desire a standardized resource, and demonstrate readiness for a novel intervention. Meeting this stakeholder-defined need is critical to improving pLUTS care and disease incidence.

This project aims to pilot a novel digital health intervention, “Bladder Basics,” using a longitudinal pre-post intervention study design. We will examine the acceptability, feasibility, and preliminary educational and clinical outcomes of this program. Our central hypothesis is that a self-paced, online video curriculum that delivers comprehensive urotherapy within the home environment, leads to increased healthy bladder practices in children and improved bladder health knowledge in parents. This proposed study will be conducted at Stanford University Lucile Packard Children’s Hospital.

We will enroll parents of children with functional pLUTS ages 5-10 years old to watch 7 short videos over a 4-week time period. Impact on clinical outcomes will be measured using the Dysfunctional Voiding Symptom Score, and educational outcomes will be measured using previously piloted knowledge surveys. Feasibility will be measured using a combination of methods including participation completion metrics, open-ended feedback, and validated assessments of self-efficacy and education design. Data will be used to generate effect sizes and design a pilot randomized control trial. If effective, this intervention can support a first step in changing pLUTS care paradigms by delivering urotherapy within the home. It can also serve as an adjunct to health education by primary care providers and community health workers, thereby decreasing specialty care referrals.
Personal Statement

I am a Clinical Assistant Professor and Associate Program Director in the Department of Urology, Stanford University. I am an active clinician, mentor, and educator. I have specific training in ethnographic and qualitative study methods with a commitment to identifying and improving barriers to care for underserved populations. This makes me uniquely qualified to bring a novel community-engaged approach to the highly prevalent condition of pediatric lower urinary tract symptoms (pLUTS).

My long-term research goal is to reframe the current treatment of pLUTS, from a clinical encounter in the healthcare system, to a broader public health intervention at the community level. The prevalence of pLUTS has remained largely unchanged despite effective treatment options focused on behavioral change and lifestyle modification only (Urotherapy). Pediatric primary care providers and pediatric urologists are tasked with delivering much of this health education, adding to an already long list of competing clinical demands for both groups. Families waiting for pLUTS care experience worsening of symptoms, urinary tract infections, and missed school days, as they wait for health education that is tied to healthcare access - no gold-standard resource is freely available to the public. Trials studying the efficacy of urotherapy have focused on improving outcomes within a traditional clinic visit. However, little knowledge exists regarding the impact of urotherapy when delivered in the home environment, before a clinic visit. Addressing this gap in knowledge informs my research mission as well as the development of innovative strategies to deliver bladder health education.

I developed a novel online bladder health education program, Bladder Basics, as a tool to meet stakeholder needs for a free and equitable urotherapy resource. This proposal's objective is to examine the acceptability, feasibility and preliminary educational and clinical outcomes of this digital health intervention. The program consists of 7 short videos that address the components of urotherapy using songs, activities, and animation. Results from this proof-of-concept work can be used to design a pilot randomized control trial that tests the intervention's ability to improve patient-centered outcomes (knowledge, symptom burden, family satisfaction, access to equitable care). This work can be adapted to a number of settings (school, childcare centers) where children spend most of their time, in order to address healthcare disparities that prevent access to pLUTS care. This award support will allow me to gain the research experience, mentorship, and necessary pilot data to work towards my future career development goals of impacting incidence of pLUTS via novel community-engaged interventions, advocacy efforts, and health policy.