Introduction

• Bladder function has been defined primarily through the presence or absence of lower urinary tract symptoms (LUTS) rather than corresponding indices of health.
• Promotion of optimal bladder function and prevention of LUTS is particularly important for women.
• Women are at higher risk than men for specific LUTS such as urinary incontinence and urinary tract infections.

To date, neither bladder health nor normal bladder function(s) have been adequately defined in women or girls for research purposes.

The Prevention of Lower Urinary Tract Symptoms (PLUS) Research Consortium was established in 2015 with a mission to:

- Identify “bladder health” (BH) as a state to preserve and protect bladder health.
- In the area of clinical practice
- On policies that impact bladder health
- Beyond the detection and treatment of LUTS to the promotion and preservation of bladder health and prevention of LUTS in women and girls.

Consistent with the World Health Organization’s definition of health, the PLUS Research Consortium conceptualizes bladder health as:

- A complete state of physical, mental, and social well-being that is independent of the absence or presence of LUTS.

The PLUS definitions for Bladder Health (BH) in women and girls have been established which “permits daily activities, adapts to short term physical or environmental stressors, and allows optimal quality of life (e.g., travel, exercise, social, occupational or other activities).”

A number of data have been published for certain bladder function measurements in women. However:

- The study populations are typically described as “normal,” “healthy,” or “asymptomatic.”
- Descriptions of health are based on the absence of one or more LUTS symptoms.
- Absence of LUTS may not necessarily equate to healthy function.

The objective of this paper is to present PLUS Research Consortium research definitions for healthy bladder functions.

Methods

A subgroup of PLUS investigators that included research and clinical experts convened into a Terminology and Conceptual Framework & Models (TOCMF) Intellectual Resource Group (IRG) to develop definitions for research purposes. The process by which the PLUS Research Consortium developed a research definition of BH has been reported.

After development of the BH definition, TOCMF members continued to develop and refine specific terminology and definitions for elements of healthy bladder function related to storage, emptying, and bioregulatory.

Our initial objective was to propose BH research definitions that could be developed, organized, and displayed in a similar and parallel fashion to existing International Continence Society (ICS) defined LUTS.14

A broad search and review of the literature was conducted for current bioregulatory, LUTS, and bladder health terminology or definitions.

• The search included the active/current ICS Standardization and Terminology Reports and Documents.
• The search confirmed an absence of published research definitions of bladder health or healthy bladder functions.

• Terms and definitions were developed based on the recognized “two-phase” concept of bladder function (Storage and Emptying) described by Wein et al.11

Published LUTS definitions provided definable starting points for developing bladder health function definitions.

Novel concept of bioregulatory function was acknowledged.

Definitions were revised in an iterative process over a 14-month period.

Results

The PLUS research definitions for Bladder Health (BH) in women and girls, across the elements of bladder function are presented.

These definitions include:

- Definitions of "storage", "emptying," and "bioregulatory functions"
- 7 elements of storage-related definitions
- 7 elements of emptying-related definitions
- 3 elements of bioregulatory-related definitions

Conclusions

• Proposed bladder health research terminology and definitions:
  - Represent a transdisciplinary approach to standardizing definitions for the elements of bladder function from a perspective of bladder health rather than dysfunction
  - Provide a framework of bladder function and definitions of BH for research to study clinical practice, public health promotion and LUTS prevention.

These definitions are currently being used to develop novel instruments to measure BH across a broad socio-demographic spectrum of women and girls.

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References


