


A Biopsychosocial Approach to Understanding and Treating Bowel and Bladder Problems in School-Age Students: The Role of the School Nurse

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Learning Objectives

- Recognize the biological, psychological, and social factors that may contribute to bowel and bladder problems in school-age children
- Identify and implement new ways to support and help students and parents in the school setting who are affected by bowel and bladder problems



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Urinary Incontinence/Enuresis ^{1,2}


Repeated voiding of urine into bed or clothes, whether involuntary or intentional, in a person who is at least 5 years old.

May be present:

- during the day (diurnal)
- at night (nocturnal)
- Both (nocturnal and diurnal)

>90% of children achieve daytime urinary continence by 5 years old


Nighttime continence may take longer.



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Causes of Daytime Incontinence ^{1,2}

- Anatomical
- Neurological
- Functional
 - Irritated bladder
 - Overactive bladder
 - Urethrovaginal reflux

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Rates of Daytime Incontinence ^{2, 3, 4, 5}

- Up to 12% of children ages 6-12 years
- 1%-3% of children ages 15-17 years

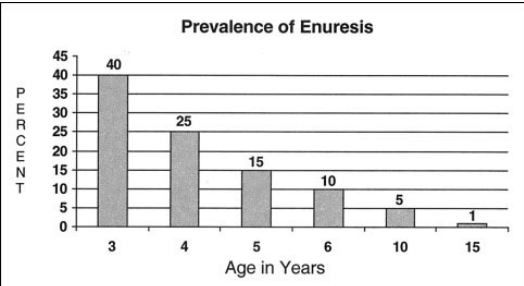
When daytime incontinence is defined as at least 1 episode/week in children after 5 years of age:

- 3.3%-6.3% for daytime without nighttime wetting
- 1.8% - 4% for daytime with nighttime wetting


Daytime wetting rates tend to be higher in girls than boys

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Nighttime Incontinence ⁶




Age in Years	Prevalence (%)
3	40
4	25
5	15
6	10
10	5
15	1

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Management of Urinary Incontinence ^{1,7}

- Education about normal bladder function
- Bowel management
- Behavioral intervention
- Avoidance of caffeinated, carbonated, and highly acidic fluids
- Biofeedback
- Medication

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Fecal Soiling/Encopresis ⁴


Passage of formed, semi-formed, or liquid stool into the child's underwear after 4 years of age

Encopresis affects between 1.5% and 7.5% of children ages 6-12 years

- 4.1% of children at 5-6 years
- 1.6% at 11-12 years


Higher rates of soiling in boys as compared to girls

- At 7 years old, 2.4% of boys and .7% of girls

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Causes of Fecal Soiling


- Anatomical
- Neurological
- Functional
 - ~90% of cases, fecal soiling is due to constipation
 - 35% girls and 55% boys who are constipated also have fecal soiling

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Constipation


≥ 2 of the following 6 during the last 8 weeks:


- ≤ 2 bowel movements in the toilet per week
- ≥ 1 episodes of fecal incontinence per week
- History of retentive posturing or excessive volitional stool retention
- History of painful or hard bowel movements
- Presence of a large fecal mass in the rectum
- History of large diameter stools that may obstruct the toilet

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Constipation Epidemiology and Sx


- Worldwide prevalence varies from 0.7 to 29.6%
- 3% of visits in the gen ped outpatient setting
- 25% of pediatric GI consultations



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Constipation, Painful Defection, and Stool Withholding

- Painful defecation is the most frequently reported event causing constipation
 - 68 – 86% report pain before or during defecation
 - Leads to withholding which creates a cycle of pain
- 89-100% report stool withholding behavior
 - 80% of stool withholders also have toileting refusal

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Effects of Chronic Constipation

- Constant rectal pressure and fullness can:
 - Stretch the rectal area or cause kids to get used to the sensation of fullness
 - Alter thresholds of detection
 - Weaken the external anal sphincter
- Once regular evacuation is achieved for several months, sensation, peristalsis, and sphincter strength usually return to normal



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Relationship Between Bowel and Bladder Problems ⁴

4 profiles of wetting and soiling:

- **Normative:** low prevalence of wetting/soiling at 4.5 years and a low prevalence after that
 - Wetting: 86.2%
 - Soiling: 89%
- **Delayed:** steadily decreasing prevalence of daytime wetting/soiling from 4.5 years to 6.5 years to 9.5 years
 - Wetting: 6.9%
 - Soiling: 4.2%



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Relationship Between Bowel and Bladder Problems ⁴

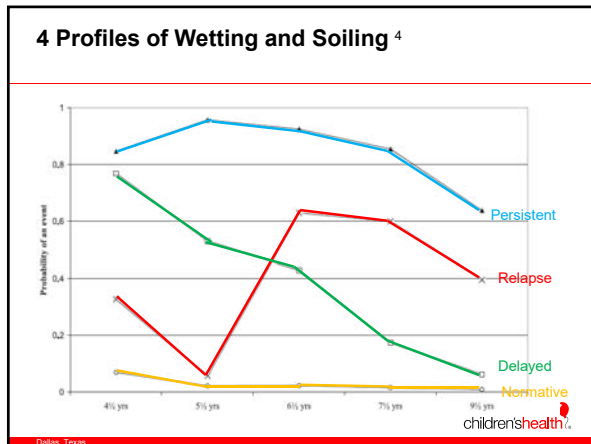
- **Persistent:** frequent wetting/soiling until 7.5 years and some reduction by 9.5 years
 - Wetting: 3.7%
 - Soiling: 2.7%
- **Relapse:** low prevalence of wetting/soiling at 4.5 years and less at 5.5 years, but increasing at 6.5 years, then decreasing again.
 - Wetting: 3.2%
 - Soiling: 4.1%



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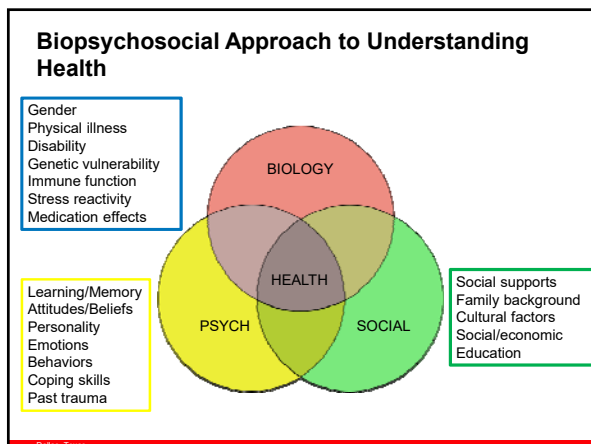
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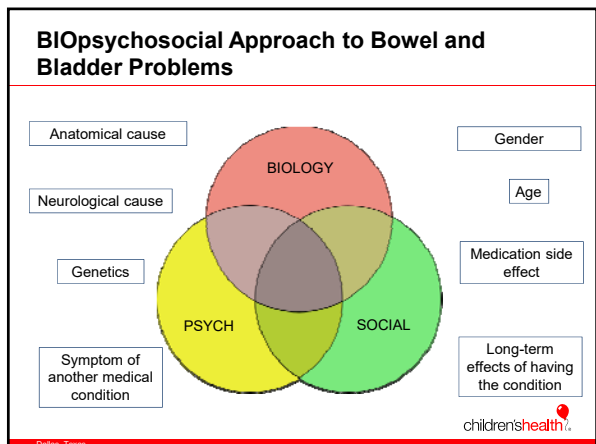


Relationship Between Bowel and Bladder Problems ⁴

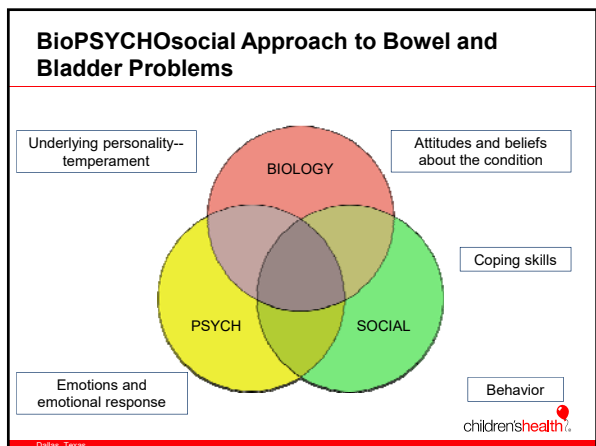
- Bladder control delays are often **NOT** related to bowel control delays, and vice versa.
 - 1.8% of group had atypical development of bowel **AND** bladder control
- Daytime wetting and soiling are more likely to co-occur in the **persistent** trajectory groups.
- In the persistent wetting group, smaller percentage of children who had normal development of bowel control.
- Less than 50% of children with persistent soiling had normal development of bladder control.

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- ### BIOpsychosocial Approach to Bowel and Bladder Problems ^{8, 9, 10, 11}
- Developmental delays (motor, communication, social skills)
 - UTI
 - Family history of wetting among male siblings
 - Paternal family history of wetting
 - Family history of constipation
 - Effects of chronic constipation on bowel function
- The 'children'shealth' logo is at the bottom right, and 'Dallas, Texas' is at the bottom left.



BioPSYCHOsocial Approach to Bowel and Bladder Problems ^{8, 9, 10, 11, 12, 13, 14, 15}

Daytime Wetting:


- Difficult temperament (less adaptable, negative mood) at 18-24 months
- Emotional stress
- ADHD
- Externalizing behaviors

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BioPSYCHOsocial Approach to Bowel and Bladder Problems ^{12, 13, 15}

Encopresis:


- Difficult temperament (less adaptable, negative mood) at 18-24 months
- Emotional Stress
- Coping
- Psychiatric co-morbidity
 - Attention problems
 - Disruptive and oppositional behaviors
 - Withdrawn
 - Depression
 - Anxiety

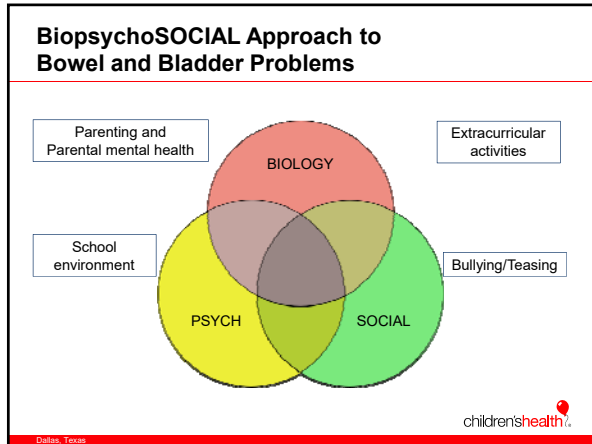
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BioPSYCHOsocial Approach to Bowel and Bladder Problems ^{12, 16}

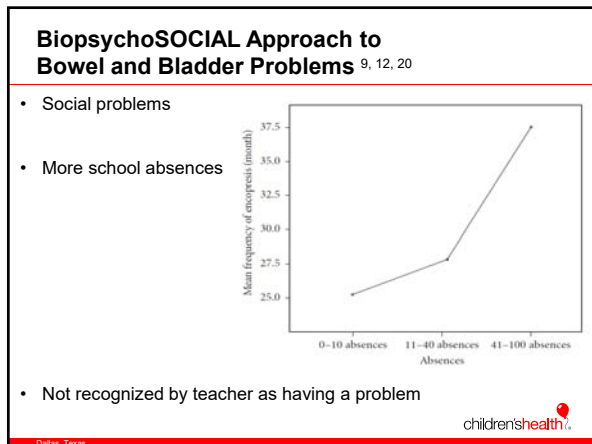
Encopresis

- Higher rates of attention, obsessions and compulsions, and oppositional behavior in children with encopresis who soil frequently compared to children who soil occasionally
- Lower performance on standardized measure of reading and spelling
- Lower levels of self-esteem

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- ### Biopsychosocial Approach to Bowel and Bladder Problems
- 8, 11, 12, 15, 17, 18, 19
- Maternal psychiatric functioning
 - Inappropriate parental expectations for toilet training
 - Parenting behaviors
 - Coercive discipline and lack of encouragement for child to express himself
 - Children lacked autonomy and lived under parental authority
 - Families in which family members are not interested in each other and place little value on each others activities and concerns
 - Families in which no established patterns of behaviors and where tasks are assigned without clarity and equity
 - Families in which children decided on their own eating and sleeping habits
 - Child maltreatment
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Biopsychosocial Approach to Bowel and Bladder Problems ¹⁷

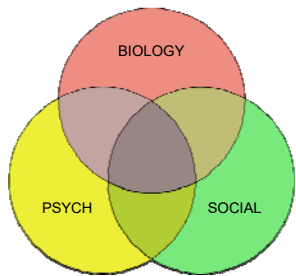
- **Cleanliness** of and **access** to school bathrooms
 - 15% **always** avoid using the toilet at school
 - 52% stated that they **sometimes** avoided using the toilets at school
 - 4%-16% they would **never** urinate in the school toilets
 - 40%-63% they would **never** defecate in school toilets
 - 68% reported foul smell in the toilet
 - 70% reported urine or feces on the floor, wall, or toilet seat.
 - 30% of restrooms in school did not have soap in the bathrooms
 - 27% did not always have toilet paper
 - 17% did not have toilet paper dispensers in all of the bathrooms

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Constipation and Encopresis Case Example

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Opportunities for Intervention by School Nurse




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**Opportunities for Intervention by School Nurse:
Biological Realm ⁵**

Education


- Parents (one-on-one, through parent-teacher association meetings, newsletter/article that appears on school website)
- Teachers (orientation for new kindergarten and elementary teachers to promote early intervention)
- Students with bowel and bladder problems

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**Opportunities for Intervention by School Nurse:
Biological Realm**


Education may include:

- Basic anatomy and physiology of urinating and defecating and how problems can occur
- Information regarding options for treatment (specialist visit, medication, behavioral)
- How the school can support the student

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**Opportunities for Intervention by School Nurse:
Biological Realm ²¹**

- Development of Individualized Health Plan (IHP) and Section 504 Plan.
 - In a small study where IHPs were implemented for children with elimination issues, over the course of 4-6 weeks children experienced 92% increased continence after implementation of IHP.
- Serve as liaison between parent and teacher regarding bathroom use.

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**Opportunities for Intervention by School Nurse:
Psychological Realm**

- Informal or refer for more formal screening for mental health problems associated with bladder and bowel problems
- Encourage visits to school counselor, when appropriate
- Provide safe, nonjudgmental space for children to get clean
- Use of nonjudgmental language that encourages empowerment
- Provide support to parents, which may have indirect effect on child's mental health



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**Opportunities for Intervention by School Nurse:
Social Realm**

- Advocate for clean and well-stocked restrooms
- Allow for use of nurse's restroom, when appropriate
- Advocate for children around bullying issues
- Parenting
 - Suggest seeking help of specialist when parents are demonstrating frustration, negligence, depression, anxiety
- Encourage parents to send their child to school (with appropriate accommodations in place)
- Encourage good adherence to medication regimen



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Take Home Points

- It is very rare that there is a simple cause or solution to bowel and bladder problems in children.
- A biopsychosocial perspective of the causes will provide a comprehensive understanding of appropriate intervention for resolution.
- School nurses are in a great position to help students and families who are experiencing bowel and bladder problems.
- School nurses have many possible interventions that can significantly impact the trajectory of the student's problem.



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References

1. Merck Manual, Consumer Version, Urinary Incontinence in Children. Retrieved from www.merckmanuals.com
2. Schaeffer, A.J. & Diamond, D.A. (2014). Pediatric urinary incontinence: Classification, evaluation, and management. *African Journal of Urology*, 20, 1-13.
3. Loening-Baucke, V. (2007). Prevalence rates for constipation and faecal and urinary incontinence. *Archives of Disease in Childhood*, 92, 486-489.
4. Heron, J., Joinson, C., Croudson, T., & von Gontard, A. (2008). Trajectories of daytime wetting and soiling in a United Kingdom 4 to 9-year-old population birth cohort study. *The Journal of Urology*, 179, 1970-1975.
5. Rivers, C.L. (2010). School Nurse Interventions in Managing functional urinary incontinence in school-age children. *The Journal of School Nursing*, 25 (2), 115-120.
6. Lawless, MR & Moelderry, DH (2001). Nocturnal enuresis: Current concepts. *Pediatrics in Review*, 22, 399-406.
7. Wolfe-Christensen, C., Manolis, A., Guy, W.C., Kovacevic, N., Zoubi, N., El-Baba, M.,...Lakshmanan, Y. (2013). Bladder and bowel dysfunction: Evidence for multidisciplinary care. *The Journal of Urology*, 190, 1864-1868.
8. Joinson, C., Heron, J., von Gontard, A., Butler, U., Gelding, J., Ermond, A. (2008). Early childhood risk factors associated with daytime wetting and soiling in school-age children. *Journal of Pediatric Psychology*, 33 (7), 739-750.
9. Sureshkumar, P., Craig, J.C., Roy, L.P., & Knight, J.F. (2001). Daytime urinary incontinence in primary school children: A population-based survey. *The Journal of Pediatrics*, 137 (6), 814-818.
10. Blum, N.J., Taubman, B., Nemeth, N. (2004). During toilet training, constipation occurs before stool toileting refusal. *Pediatrics*, 113 (6), e520-e522.
11. Amendola, S., De Angelis, P., Dall'Oglio, L., Federici di Abriola, G., & Di Lorenzo, M. (2003). Combined approach to functional constipation in children. *Journal of Pediatric Surgery*, 38, (5), 819-823.



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References

12. Cox, D.J., Morris Jr., J.B., Borowitz, S.M., & Sutphen, J.L. (2002). Psychological difference between children with and without chronic encopresis. *Journal of Pediatric Psychology*, 27 (7), 585-591.
13. Baeyens, D., Roeyers, H., Dhaese, L., Pieters, F., Hoebeke, P., & Walle, J.V. (2006). The prevalence of ADHD in children with enuresis: Comparison between a tertiary and non-tertiary care sample. *Acta Paediatrica*, 95, 347-352.
14. Van Dijk, M., Benninga, M.A., Grootenhuys, M.A., & Last, B.F. (2010). Prevalence and associated clinical characteristics of behavior problems in constipated children. *Pediatrics*, 125 (2), e309-e317.
15. Cengel-Kultur, S.E., Akdemir, D., & Salik-Temizel, I.N. (2014). Comparison of familial and psychological factors in groups of encopresis patients with constipation and without constipation. *The Turkish Journal of Pediatrics*, 58, 504-531.
16. Joinson, C., Heron, J., Butler, U. von Gontard, A., & The Avon Longitudinal Study of Parents and Children Study Team. (2006). Psychological difference between children with and without soiling problems. *Pediatrics*, 117 (5), 1575-1584.
17. Phillips, E.M., Peeters, B., Teeuw, A.H., Leenders, A.G.E., Boluyt, N., Brillstijper-Kater, S.N., & Benninga, M.A. (2015). *Journal of Pediatric Gastroenterology and Nutrition*, 61, 384-392.
18. Rajindrajith S., Devanarayana, N.M., Perera, B.J.C., & Benninga, M.A. (2016). Childhood constipation as an emerging public health problem. *The World Journal of Gastroenterology*, 22 (30), 6864-6875.
19. Mota, D.M. & Barros, A.J.D. (2008). Toilet training: methods, parental expectations, and associated dysfunctions. *Jornal de Pediatria*, 84 (1), 9-17.
20. Olaru, C., Diaconescu, S., Trandafir, L., Gimiga, N., Olaru, R.A., Stefanescu, G., ...Iorga, M. (2016). Chronic functional constipation and encopresis in children in relationship with the psychosocial environment. *Gastroenterology Research and Practice*, 1-7.
21. Boisclair-Fahey, A. (2009). Can individualized health care plans help increase continence in children with dysfunctional elimination syndrome? *The Journal of School Nursing*, 25 (5), 333-341.



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