

Prevalence and Associated Factors of Nocturnal Enuresis among School-Going Children Aged 6–14 Years in Urban Bengaluru - A Cross-Sectional Study

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Abstract

Nocturnal enuresis, traditionally described as “Shayya mutra” in classical Indian medical literature, remains one of the most common paediatric complaints; yet region-specific epidemiological data from urban India are limited. This cross-sectional study was under taken to estimate the proportion of enuresis and to identify its associated factors among school-going children aged 6 to 14 years in Bengaluru.

A total of 400 children from selected urban schools were enrolled over an 18-month period. Socio-demographic characteristics and potential risk factors were recorded using a structured, pre-validated, parent-completed questionnaire, and children fulfilling the fifth edition of

the Diagnostic and Statistical Manual of Mental Disorders criteria for enuresis were included for detailed analysis. Descriptive and inferential statistics, including the chi-square test, were applied using the Statistical Package for Social Sciences, version 22.0, with a p value of less than 0.05 considered significant. Of the 400 children screened, 51 (12.75%) had a history of enuresis; after excluding those with underlying renal disease, 48 children were analysed in detail. Enuresis was more common among boys (58.33%) and in the 6–8-year age group (54.17%) and most cases (68.75%) were consistent with primary rather than secondary enuresis. A family history of bedwetting was present in one quarter of affected children, and daytime urinary

incontinence coexisted in 72.92% of cases. Statistically significant associations were observed with urine-holding behaviour, pre-bedtime fluid intake, caffeine consumption, sleep disturbance, snoring, emotional stress, and an adverse family or school environment (all $p < 0.05$). Despite this burden, 68.75% of affected families had never sought medical consultation for the condition. Enuresis remains a common yet under-recognised problem among urban school children, following a predominantly primary and multi factorial pattern, with low healthcare-seeking behaviour. These findings underscore the need for greater parental awareness, structured school-based screening, and timely paediatric intervention.

Keywords: Nocturnal Enuresis, Bedwetting, School Children, Prevalence; Risk Factors, Cross-Sectional Study, Daytime Urinary Incontinence, Family History, Psychosocial Impact, Bengaluru.

Introduction

Nocturnal enuresis, traditionally referred to as Shay yamutra in classical Indian medical literature and commonly known as bedwetting, remains one of the most frequent paediatric clinical concerns.¹ It is clinically defined as the repeated, involuntary voiding of urine into bed or clothing at least twice per week for a minimum of three consecutive months in a child aged five years or older, in the absence of congenital or acquired abnormalities of the central nervous system.² The condition is broadly classified into primary nocturnal enuresis, in which the child has never achieved sustained nighttime continence, and secondary nocturnal enuresis, in which a child who had been dry for at least six months subsequently relapses.

Although most children attain adequate bladder control by around five years of age, a considerable proportion

continue to experience persistent nocturnal urinary incontinence, with reported prevalence ranging from approximately 3% to 24% across different populations and gradually declining with age.^[3,4] Boys are more frequently affected than girls, with a reported male-to-female ratio of roughly 3:2 in several series.^[4] Indian data on the burden of enuresis remain comparatively limited, and existing literature suggests that the condition continues to be under-diagnosed and under-managed in routine paediatric practice in India.⁵

Enuresis is increasingly recognised not merely as a disease entity but as a symptom complex reflecting underlying physiological, developmental, behavioral, or psychosocial disturbances. Proposed mechanisms include abnormal sleep architecture, delayed maturation of bladder control, urinary tract infection, neurogenic causes, hereditary predisposition, and dysfunctional voiding patterns. Nocturnal polyuria arising from a blunted circadian rise in anti-diuretic hormone secretion is considered a key patho physiological contributor, resulting in nighttime urine production that exceeds functional bladder capacity.^{6,7}

Beyond its physiological basis, nocturnal enuresis carries a substantial psychosocial burden. Affected children frequently experience embarrassment, diminished self-confidence, and fear of stigma, particularly in school settings where the risk of disclosure among peers may invite ridicule or social exclusion. Children with primary enuresis have been shown to have lower self-esteem and more strained peer relationships compared with unaffected children.⁸ Standardized terminology and a structured diagnostic approach, as outlined by the International Children's Continence Society, are essential to differentiate enuresis

from other lower urinary tract symptoms and to guide appropriate evaluation.⁹

Management strategies range from simple behavioral measures — bladder training, restriction of fluids before bedtime, and enuresis alarm therapy — to pharmacological treatment in persistent or severe cases; behavioral interventions alone have reported success rates of up to 75%, whereas psychotherapy in isolation is less consistently effective for primary enuresis.¹⁰ Despite the availability of these interventions, enuresis is frequently under-reported, with many families regarding it as a self-limiting developmental stage that will resolve with age, leading to delays in seeking care; this is compounded in children from low-awareness settings, and enuresis has also been linked with a higher burden of behavioral and psychiatric co morbidity than is generally appreciated.^{11,12}

Given the wide variability in reported prevalence, the multi factorial a etiology, and the substantial psycho social impact of enuresis, region-specific epidemiological data are needed to better characterize its burden and determinants among Indian children.^[13] The present study was therefore undertaken to estimate the proportion of nocturnal enuresis and to identify the factors associated with it among school-going children aged 6 to 14 years in urban Bengaluru, with the aim of generating evidence to support improved awareness, early identification, and comprehensive management of the condition.

Materials and Methods

Study design, setting, and duration

A cross-sectional, questionnaire-based study was conducted among school-going children in selected urban schools of Bengaluru, Karnataka, over a period of 18 months, after obtaining approval from the

Institutional Ethics Committee of Kempegowda Institute of Medical Sciences and Research Centre, Bengaluru.

Sample size

The required sample size was calculated using the standard formula for estimating a population proportion, $N = Z^2 (1-\alpha/2) \times p(1-p)/\delta^2$, taking a 95% confidence interval ($Z = 1.96$), an anticipated prevalence of enuresis of 14.3% based on prior literature, and a margin of error of 0.05. This yielded a base sample size of 185, which was inflated using a design effect of 2.0 ($N = 370$) to account for heterogeneity in sample characteristics, and was further rounded up to 400. The final study population therefore comprised 400 school-going children aged 6 to 14 years.

Participants

Children aged 6 to 14 years who fulfilled the diagnostic criteria for enuresis as per the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders were included for detailed risk-factor analysis. Children with a known diagnosis of diabetes mellitus, diabetes insipidus, chronic renal disorders, spina bifida, or similar structural or metabolic conditions, and children already receiving diuretic or antipsychotic medication, were excluded.

Data collection

Prior permission was obtained from the respective school authorities, and written informed consent from parents together with assent from participating children was secured before enrolment.

A structured questionnaire, available in both English and the regional language, was developed to capture socio-demographic details and the proportion and risk factors associated with enuresis. Questionnaires were distributed to be completed by parents at home, with children and teachers briefed on the purpose of the study and a

contact number provided for clarification. Completed questionnaires were collected on a pre-announced day and used for analysis; the proportion of enuresis was determined from the full sample of 400 children, after which risk factors were analysed among children meeting the case definition, following application of the exclusion criteria.

Statistical analysis

Data were analysed using the Statistical Package for Social Sciences (SPSS), version 22.0 (IBM Corp., Armonk, New York, United States). Quantitative variables were expressed as mean $\pm$ standard deviation, and categorical variables as frequencies and percentages. The chi-square test was used to test associations between enuresis and categorical risk factors, and a p value of less than 0.05 was considered statistically significant.

Results and Discussion

Socio-demographic profile of the study population

Of the 400 children enrolled, 256 (64.00%) were male and 144 (36.00%) were female. The majority (208, 52.00%) were studying in classes 4 to 6, corresponding to middle childhood, while 112 (28.00%) were in classes 1 to 3 and 80 (20.00%) in classes 7 to 10. The mean weight of the study population was 31.36 ± 8.46 kg and the mean height was 132.83 ± 18.97 cm. Most children belonged to families with one or two siblings (68.00% combined), and 352 (88.00%) had parents living together. Regarding monthly family income, the largest proportion (36.00%) belonged to the ₹30,000–₹60,000 group, and parental education was generally at least of high-school level, with fathers marginally more educated than mothers. A pre-existing medical illness was reported in 26 children (6.50%), most commonly urinary tract infection, and none of the 400 children were on regular diuretic or antipsychotic medication.

Table 1: Socio-demographic and anthropometric profile of the study population (N = 400).

Variable	Category	n	%
Gender	Male	256	64.00
	Female	144	36.00
School standard	1st–3rd	112	28.00
	4th–6th	208	52.00
	7th–10th	80	20.00
Siblings	0	96	24.00
	1	112	28.00
	2 or more	192	48.00
Parental status	Living together	352	88.00
	Divorced/separated	48	12.00
Pre-existing illness	None	374	93.50
	Any (mainly UTI)	26	6.50

Proportion of nocturnal enuresis

Fifty-one of the 400 children screened (12.75%) had a history of nighttime or daytime wetting; three of these had a demonstrable renal disorder and were excluded, leaving 48 children (12.00% of the total sample) for detailed risk-factor analysis. This proportion is comparable to that reported by Nakate et al. in a large school-based study from southern Maharashtra, in which 11.4% of 1,710 children had enuresis ^[14], suggesting a broadly consistent burden of the condition across different Indian urban and semi-urban school populations, notwithstanding minor regional variation.

Age and gender distribution among affected children

Among the 48 children with enuresis, the majority (26, 54.17%) were aged 6–8 years 11 months, followed by 20 children (41.67%) aged 9–11 years 11 months, and only 2 (4.16%) aged 12–14 years, indicating that enuresis was concentrated in early-to-middle childhood. Males pre

dominated, accounting for 28 cases (58.33%) compared with 20 females (41.67%). Sixty-eight point seven five percent of children (33/48) had never experienced a symptom-free interval exceeding six months, indicating that the majority of cases represented primary rather than secondary enuresis.

This pattern of younger-age predominance is consistent with observations by Khadke et al., who found that 84% of affected children were below eight years of age^[15],

and by Bakhtiar et al. and Gaonkar et al., both of whom reported the highest burden of enuresis in the 6–8-year age group.^[16,17] The male predominance observed here mirrors most published series, although some studies, such as that of Afram et al. among children with secondary enuresis, have reported a reversed female preponderance, illustrating that the gender distribution of enuresis may vary with subtype and study population.¹⁸

Table 2: Clinical and behavioral characteristics associated with enuresis among affected children (n = 48)

Characteristic	n	%	χ^2	p value
Male gender	28	58.33	—	—
Age 6–8 years 11 months	26	54.17	—	—
No prior dry period >6 months (primary pattern)	33	68.75	—	—
Positive family history of enuresis	12	25.00	12.00	0.0005
Daytime urinary incontinence	35	72.92	10.08	0.0014
Urinary urgency	7	14.58	24.08	0.0009
Urine-holding behaviour	11	22.92	14.08	0.0001
Pre-bedtime fluid intake	14	29.17	8.33	0.0038
Regular caffeinated-beverage intake	12	25.00	12.00	0.0005
Sleep disturbance	6	12.50	27.00	0.0002
Bedroom-sharing	11	22.92	14.08	0.0001
Snoring	9	18.75	18.75	0.00001
Private toileting facility available	26	54.17	0.33	0.560
Punishment for bedwetting	10	20.83	16.33	0.00005
Constipation/defecation difficulty	9	18.75	18.75	0.00001
Emotional concerns (stress/worry)	15	31.25	6.75	0.009
School- or peer-related difficulty	16	33.33	5.33	0.020

Family/home-environment influence	13	27.08	10.08	0.0014
Systemic symptoms (weight loss/nausea)	5	10.41	30.08	0.0041
Increased nighttime thirst/fluid intake	17	35.42	4.08	0.043

Daytime lower urinary tract symptoms

Daytime urinary incontinence after the age of five years was present in 35 of 48 children (72.92%, $\chi^2 = 10.08$, $p = 0.0014$), indicating that a substantial majority of children with nocturnal enuresis also had associated daytime symptoms. Daytime voiding frequency was variable, with 22 children (45.8%) voiding one to two times daily and the remainder voiding three or more times. Urinary urgency (14.58%) and urine-holding man oeuvres such as tiptoeing, leg-crossing, or genital holding (22.92%) were present in a minority but were both statistically significant.¹⁹ These figures are somewhat higher than the 7–10% daytime incontinence reported in a review by Nieuwhof-Leppink et al.²⁰ and higher than the 36% daytime urgency reported by De Sousa et al. among Indian primary-school children²¹, suggesting that the coexistence of daytime and nighttime symptoms may be under-recognised and warrants systematic screening rather than isolated attention to nocturnal symptoms alone.

Lifestyle, sleep, and dietary factors

Pre-bedtime fluid intake (29.17%, $p = 0.0038$) and regular consumption of caffeinated beverages (25.00%, $p = 0.0005$) were both significantly associated with enuresis in this cohort, in keeping with findings by Mayow et al., who reported that 81.4% of children with nocturnal enuresis consumed fluids before sleep compared with 51.8% of unaffected children ($p < 0.001$).²² Sleep disturbance (12.50%), snoring (18.75%), and bedroom-sharing (22.92%) were each significantly associated with enuresis, although present in a minority

of affected children. This is broadly consistent with, though somewhat lower in magnitude than, the findings of Wada et al., who reported snoring in nearly half of the children they studied and identified sleep-disordered breathing as a contributor to disrupted arousal and enuresis²³; the lower prevalence observed here may reflect differences in population characteristics and in the method of ascertaining snoring.

Family history and psychosocial factors

A positive family history of enuresis was reported in 12 of 48 children (25.00%, $\chi^2 = 12.00$, $p = 0.0005$), supporting a familial or genetic contribution to the condition, although this proportion was lower than the 41.2% reported by Pyarejan and Muthiah¹⁹ in a comparable Indian cohort, again indicating population-level variation in the strength of this association. Psychosocial correlates were also common: emotional concerns such as stress or worry were reported in 31.25% of affected children ($p = 0.009$), school- or peer-related difficulty in 33.33% ($p = 0.020$), and an adverse family or home environment in 27.08% ($p = 0.0014$). Punishment specifically for bedwetting was reported in 20.83% of cases ($p = 0.00005$). These findings parallel earlier work by Bakhtiar et al. and Özkan et al., both of whom demonstrated that punitive parental or school responses to bedwetting were associated with a significantly higher prevalence and persistence of enuresis^{16,24}, and support the broader observation of Nørgaard et al. that inappropriate parental management is linked to a higher prevalence of the condition.²⁵ A minority of children in the present study also reported

systemic symptoms such as weight loss or nausea (10.41%) and increased nighttime thirst with frequent waking to drink water (35.42%), both of which reached statistical significance and merit clinical attention to exclude an underlying organic or endocrine cause.

Functional impact and healthcare-seeking behaviour

Nighttime or daytime wetting caused at least moderate interference with daily home activities in 45.83% of affected children, and psychosocial consequences — including embarrassment or guilt (12.50%), reduced confidence (14.58%), fear of sleeping away from home (10.42%), and stress or anxiety (8.33%) — were reported despite one-third of children showing no overt functional impairment. Among parents, 60.42% reported no significant impact of their child's enuresis, though a

notable minority described embarrassment, anger, or an increased caregiving burden. Notwithstanding this burden, 68.75% of affected families had never sought medical consultation for the condition, with 20.83% adopting a wait-and-watch approach and only a small number pursuing medication or fluid restriction. This pattern of low treatment-seeking closely mirrors the 82.3% untreated rate reported by Karničnik et al. among Slovenian children with primary nocturnal enuresis²⁶, and reinforces that under-treatment of enuresis is a cross-cultural phenomenon likely driven by the expectation of spontaneous resolution, limited parental awareness, and social stigma rather than by lack of access to care alone.

Table 3: Comparison of the proportion of nocturnal enuresis with other published studies.

Study (first author)	Setting	Sample size	Reported prevalence
Present study	Urban Bengaluru, India	400	12.75%
Nakate et al. ¹⁴	Southern Maharashtra, India	1,710	11.4%
Khadke et al. ¹⁵	India	—	Peak burden <8 yr (84%)
Alshahrani et al. ²⁷	Riyadh, Saudi Arabia	—	18.2% (mixed severity)
Karničnik et al. ²⁶	Slovenia	—	82.3% untreated

Strengths and limitations

This study benefits from a calculated, adequately powered sample size, a structured bilingual questionnaire, and simultaneous assessment of clinical, behavioral, familial, and psychosocial domains, which together provide a comprehensive picture of enuresis in this population.

However, several limitations should be considered. As a cross-sectional design, the study cannot establish causal relationships between the identified factors and enuresis. Data were parent-reported and may be subject to recall

or reporting bias, and the study was restricted to urban schools, which limits generalisability to rural populations. Psychological and behavioral parameters were assessed using study-specific questions rather than standardized, validated scales, and children were not followed up longitudinally to assess symptom progression or response to any intervention.

Future longitudinal, multi centric studies incorporating rural populations and validated psychometric tools would help to overcome these limitations and better characterise the natural history of the condition.

Conclusion

This cross-sectional study demonstrates that nocturnal enuresis remains a significant, though under-recognised, health concern among urban school-going children, with a prevalence of 12.75% in this population. The condition was more common among boys and children in early-to-middle childhood, and the majority of cases followed a primary rather than a secondary pattern, frequently coexisting with daytime urinary symptoms. Family history, pre-bedtime fluid and caffeine intake, sleep-related factors, and a range of psychosocial and environmental influences were all significantly associated with enuresis, confirming its multi factorial a etiology. Despite this considerable clinical and psycho social burden, more than two-thirds of affected families had never sought medical consultation, highlighting a persistent gap in awareness and healthcare-seeking behaviour. These findings support the need for structured school-based screening, parental education, and a low threshold for paediatric referral, so that children with enuresis can be identified early and managed appropriately, thereby reducing its psychological and social impact.

References

1. Sarngadhara. Sarngadhara Samhita, with Dipika commentary by Adhamalla and Gudhartha - dipika commentary by Kasirama. Sastri PP, editor. Prathama Khanda, Balaroga Sankhya Adhyaya, Verse 188. Reprint ed. Varanasi: Chau khamba Krishnad as Academy; 2013. p.131.
2. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Fifth ed. Washington DC: American Psychiatric Association; 2013.
3. Rushton HG. Nocturnal enuresis: epidemiology, evaluation, and currently available treatment options. *J Pediatr*. 1989; 114:691-6.
4. Bower WF, Moore KH, Shepherd RB, Adams RD. The epidemiology of childhood enuresis in Australia. *Br J Urol*. 1996; 78:602-6.
5. Reddy NM, Malve H, Nerli R, Venkatesh P, Agarwal I, Rege V. Nocturnal enuresis in India: are we diagnosing and managing correctly? *Indian J Nephro*. 2017; 27:417-26.
6. AbdelFatah D, Shaker H, Ismail M, Ezzat M. Nocturnal polyuria and nocturnal arginine vasopressin: a key factor in the patho physiology of mono symptomatic nocturnal enuresis. *Neuro urol Urodyn*. 2009; 28:506-9.
7. Nørgaard JP, Djurhuus JC, Watanabe H, Stenberg A, Lettgen B. Experience and current status of research into the patho physiology of nocturnal enuresis. *Br J Urol*. 1997; 79:825-35.
8. Theunis M, Van Hoecke E, Paesbrugge S, Hoebeke P, VandeWalle J. Self-image and performance in children with nocturnal enuresis. *Eur Urol*. 2002;41:660-7.
9. Nevéus T, von Gontard A, Hoebeke P, et al. The standardization of terminology of lower urinary tract function in children and adolescents: report from the standardisation committee of the International Children's Continence Society. *J Urol*. 2006;176:314-24.
10. Rama krishnan K. Evaluation and treatment of enuresis. *Am Fam Physician*. 2008; 78:489-96.
11. National Clinical Guideline Centre (UK). Nocturnal Enuresis: The Management of Bedwetting in Children and Young People. London: Royal College of Physicians (UK); 2010.
12. Shreeram S, He JP, Kalaydjian A, Brothers S, Merikangas KR. Prevalence of enuresis and its

association with attention-deficit/hyperactivity disorder among U.S. children: results from a nationally representative study. *J Am Acad Child Adolesc Psychiatry*. 2009; 48:35-41.

13. Pole R, Vankar GK, Ghogare AS. A clinical review of enuresis and its associated psychiatric comorbidities. *Ann Indian Psychiatry*. 2022;6:4-14.

14. Nakate DP, Vaidya SS, Gaikwad SY, Patil RS, Ghogare MS. Prevalence and determinants of nocturnal enuresis in school going children in Southern Maharashtra, India. *Int J ContempPediatr*. 2019; 6:564-8.

15. Khadke DN, Dasila P, Kadam NN, Siddiqui MS. Prevalence of nocturnal enuresis among children aged 05 to 10 years. *Int J ContempPediatr*. 2023;10:1783-8.

16. Bakhtiar K, Pournia Y, Ebrahimzadeh F, Farhadi A, Shafizadeh F, Hosseinabadi R. Prevalence of nocturnal enuresis and its associated factors in primary school and preschool children of Khorramabad in 2013. *Int J Pediatr*. 2014;2014:120686.

17. Gaonkar N, Parmar S, Desai P, et al. Reliability of nocturnal enuresis questionnaire in 6-15 years typically developing school children. *Int J Health Sci Res*. 2016;6:172-7.

18. Afram RI, Saeed EAWM, Mohammed QH. A study of the factors causing secondary nocturnal enuresis in children. *Curr Pediatr Res*. 2021.

19. Pyarejan KS, Muthiah R. Clinical profile and risk factors of enuresis in children. *Int J Con temp Pediatr*. 2020; 7:546-50.

20. Nieuwh of-Leppink AJ, Schroeder RPJ, van de Putte EM, de Jong TPVM, Schappin R. Daytime urinary

incontinence in children and adolescents. *Lancet Child Adolesc Health*. 2019;3:492-501.

21. De Sousa A, Kapoor H, Jagtap J, Sen M. Prevalence and factors affecting enuresis amongst primary school children. *Indian J Urol*. 2007;23:354-7.

22. Mayow ASA, Elmi AH, Mukhtar MS, et al. Prevalence and factors associated with nocturnal enuresis among children aged 6-14 years in Mogadishu: a hospital-based cross-sectional study. *Pediatric Health Med Ther*. 2026; 17:559350.

23. Wada H, Kimura M, Tajima T, et al. Nocturnal enuresis and sleep disordered breathing in primary school children: potential implications. *Pediatr Pulmonol*. 2018; 53:1707-14.

24. Özkan S, Durukan E, Iseri E, Gürocak S, Maral I, Bumin MA. Prevalence and risk factors of mono symptomatic nocturnal enuresis in Turkish children. *Indian J Urol*. 2010; 26:200-5.

25. Nørgaard JP, Rittig S, Djurhuus JC. Nocturnal enuresis: an approach to treatment based on pathogenesis. *J Pediatr*. 1989; 114:705-10.

26. Karničnik K, Koren A, Kos N, MarčunVarda N. Prevalence and quality of life of Slovenian children with primary nocturnal enuresis. *Int J Nephrol*. 2012; 2012:509012.

27. Alshahrani A, Selim M, Abbas M. Prevalence of nocturnal enuresis among children in Primary Health Care Centers of Family and Community Medicine, PSMMC, Riyadh City, KSA. *J Family Med Prim Care*. 2018; 7:937-41.