



## Effect of Parental Training on Nocturnal Enuresis among Children.

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### ABSTRACT:

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Nocturnal enuresis (bedwetting) is a common pediatric condition that may cause psychological and emotional stress for children and their families. Parental knowledge plays a crucial role in effective management.

Objective: To assess the knowledge of the parents regarding Nocturnal Enuresis among Children.

To assess the effect of Parental Training on managing children with Nocturnal Enuresis.

Methods: A quasi-experimental study was conducted among 226 parents residing in rural Sambhajinagar using purposive sampling. A structured educational session on causes, consequences, and behavior modification strategies—such as enuresis alarms, fluid restriction, and reward systems was implemented. Parental knowledge was assessed before and three month after the intervention using a validated questionnaire, and implementation of strategies was measured using a checklist.

Results: The data show that nearly half of the parents, 109 (48.23%), had poor knowledge about the Nocturnal Enuresis, making it the largest group. A smaller proportion, 56 (24.77%), demonstrated an average level of knowledge and, 61 (26.99%) of the parents with good knowledge. Sleep duration showed highly significant differences before ( $\chi^2 = 70.99$ ,  $p < 0.0001$ ) and after intervention ( $\chi^2 = 117.37$ ,  $p < 0.0001$ ), indicating uneven distribution across sleep categories. Behavioral problems also showed strong significance before ( $\chi^2 = 42.50$ ,  $p < 0.0001$ ) and after intervention ( $\chi^2 = 86.72$ ,  $p < 0.0001$ ),

Conclusion: Behavior modification intervention significantly improved Child behavior incorporating such programs into pediatric healthcare can improve outcomes and reduce psychosocial burden.

### INTRODUCTION

Nocturnal enuresis, or bedwetting, is involuntary urination during sleep in children beyond the expected age of bladder control. It affects 15–20% of children aged five years globally, with prevalence decreasing with age. Despite being self-limiting in many cases, the condition may negatively affect a child's emotional well-being, Psychological behavior, often affecting family dynamics and parental stress levels.

According to the DSM-IV-TR, enuresis is defined as the repeated voiding of urine in the bed or clothes at least twice per week for at least three consecutive months by

a child who is at least 5 years of age. It is considered normal until at least age 6. Enuresis occurs in 40% in the age of 3-year olds, 10% of 6-year olds, and 3% of 12-year olds. Primary enuresis is twice as common as secondary enuresis. Nocturnal enuresis is more prevalent in boys whereas daytime wetting is more common in girls.<sup>5</sup>

Development of Bladder / Bowel Control, Bowel and bladder control are achieved at different times. Bowel control is achieved first, followed by bladder control in the majority of the children develop bowel control around the age of two years and bladder control around



the age of five years. The control over bowel and bladder is accomplished in a sequence order as bowel control while asleep, bowel control while awake, bladder control while awake, and bladder control while asleep. Though children are ready to be toilet trained by about 18 months, bladder control by day occurs 2.5- 4 years of age and night time bladder control occurs 3-5 years<sup>4</sup>.

Behavior modification strategies—such as enuresis alarms, scheduled nighttime waking, fluid management, and positive reinforcement—are considered first-line management approaches. Lack of knowledge or misconceptions may hinder early management and worsen psychosocial outcomes. Successful implementation depends largely on parental awareness, attitudes, and engagement in their child's care<sup>4</sup>.

## NEED OF THE STUDY

For children, the right to health is vital because they are vulnerable beings, more at risk to illness and health complications. When children are spared from disease, they can grow into healthy adults, and in this way, contribute to the development of dynamic and productive societies. Children require extra attention in order to enjoy the best possible health. This allows them to develop properly during their childhood and teenage years.

At every step of their physical and mental development, children have specific needs and different health risks. Additionally, a new-born is more vulnerable and more exposed to certain diseases than a young child or teenager (i.e. infectious disease, malnutrition.)

On the other hand, a teenager, due to his or her habits and behaviour, are exposed to other kinds of risks (sexual health, mental health, alcohol and drug use etc.)

Generally, a child who benefits from appropriate health care will enjoy a better state of health during the stages of childhood and can become a healthy adult.

Parents and other caregivers can guide children to develop lifestyle habits that will support their good health for years to come. We know that as a parent or caregiver you may not have all the answers. Like many Americans, you may even struggle to develop and stick with healthy habits of your own. One way to win this double struggle is to practice healthy lifestyle habits—together!

Bed-wetting in school-aged children can cause major stress. If left untreated, they can also lead to bladder and kidney problems for adults. For example, poor bladder emptying, repeat urinary tract infections, kidney or bladder stones and kidney failure are long-term problems that may result from childhood bladder dysfunction. Often, bladder problems in children are from a bad habit that can easily be corrected. As the brain matures, children gain more and more control over urinating. By 7 years and above, 90 percent of children are able to stay dry while they sleep at night.

## AIM OF THE STUDY

The aim of the study is to assess the knowledge of Parents on Nocturnal Enuresis and to assess the effects of parents training on Behavioral changes among Children.

## Objectives

To assess the knowledge of the parents regarding Nocturnal Enuresis among Children.

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## METHODOLOGY

Study Design is quasi-experimental research Design. Study Setting & Participants of this was

Parents of children aged 5–12 years in rural areas of Sambhajinagar.

Sample size: 226, selected through purposive sampling technique. Inclusion Criteria was Parents of children aged 5–12 years with Nocturnal Enuresis and those willing to participate and provide informed consent. Exclusion Criteria Children with neurological or urological conditions and those Parents who previously received structured education on enuresis. Behavioral modification intervention was provided to participated children like Rewards and Appreciation, Restricted Fluid Intake before Bedtime, Regular Alarm to Empty the Bladder, Stop-Start Void Control Exercise Retention Control Exercises. Data was collected by using Parental Knowledge Questionnaire, behavioral characteristics of children such as Assessment of Sleep Duration, Psychological Behavior (Angriness, Aggressive, Stress, Anxiety and Fear) and Academic Performance (Following the Instruction, Positive Attitude, Daily Study, Assignments and Homework). And data collection



followed by Behavior Modification Intervention. Procedure Pre-test assessment Behavior Modification Post-test assessment after three months Ethical Approval obtained from Institutional Ethics Committee as well as Data collection permission was obtain from Medical Officer of PHC and Sarpanch of concern Grampanchayat. Written informed consent was taken from parents for data collection and Implementation of Behavior Modification intervention.

### Results

**Table 1: Demographic Characteristics of Children (n = 226)**

Demographic Variable	Frequency	Percentage
<b>Age of Child</b>		
5–6 years	94	41.57
7–8 years	67	30.48
9–10 years	47	20.87
11–12 years	18	7.96
<b>Gender</b>		

**Table 2: Behavioral Characteristics of Children (n = 226).**

Behavioral Characteristics	Before Intervention			After Intervention		
	f	%	$\chi^2$ and p value	f	%	$\chi^2$ and p value
<b>Sleep Duration</b>						
4 hours	14	6.27	$\chi^2=70.99$ p<0.0001	6	2.65	$\chi^2=117.37$ p<0.0001
6 hours	38	17.06		27	11.94	
8 hours	88	38.77		99	43.80	
More than 10 hours	86	37.89		94	41.59	
<b>Behavioral Problems (Angriness/ Aggressive / Stress / Anxiety / Fear)</b>						
Normal	162	71.79	$\chi^2= 42.50$ p<0.0001	183	80.97	$\chi^2 = 86.72$ p < 0.0001
Abnormal	64	28.20		43	19.03	
<b>Academic Performance</b>						
Poor	34	15.04	$\chi^2=27.49$ p<0.0001	21	9.29	$\chi^2=46.26$ p < 0.0001
Average	59	25.92		66	29.20	

Boys	144	63.71
Girls	82	36.28
<b>Birth Order</b>		
First	65	28.85
Second	79	34.91
Third	59	26.00
More than third	23	10.21
<b>Caretaker</b>		
Mother	168	80
Father	36	17.14
Others	6	2.85

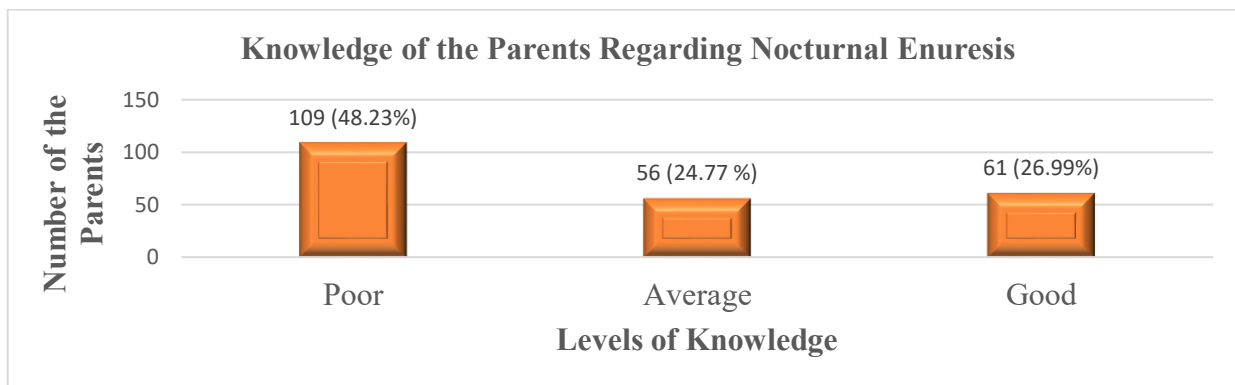
Above table 1 shows, that nocturnal Enuresis is more common in boys 144 (63.71%) than Girls 82 (36.28%). With most children belonging to the 5–6 and 7–8-year groups. The care of the children mostly taken by mother 168 (80%).



Good	87	38.68		91	40.26	
Excellent	46	20.35		48	21.23	

Table no. 2 showed Sleep duration highly significant differences before ( $\chi^2 = 70.99, p < 0.0001$ ) and after intervention ( $\chi^2 = 117.37, p < 0.0001$ ), indicating uneven distribution across sleep categories. Behavioral problems also showed significance before ( $\chi^2 = 42.50, p < 0.0001$ ) and after intervention ( $\chi^2 = 86.72, p < 0.0001$ ), with a higher difference proportion of normal behavior after intervention reduced respectively in Angriiness,

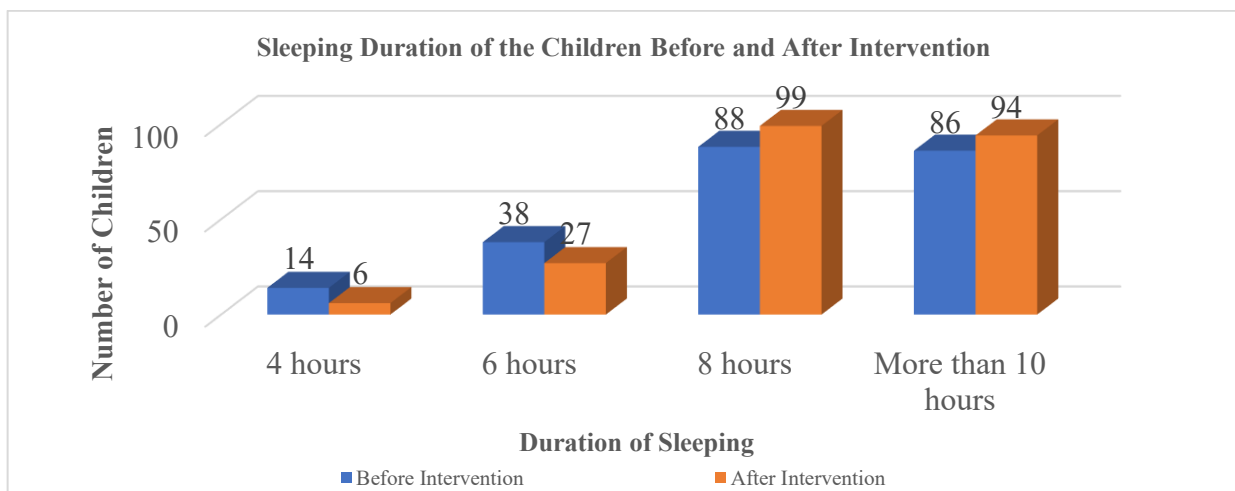
Aggressive, Stress, Anxiety and Fear. Academic performance exhibited significant variation before ( $\chi^2 = 27.49, p < 0.0001$ ) and after intervention ( $\chi^2 = 46.26, p < 0.0001$ ), with most children performing in the good and excellent categories. Overall, demographic variables revealed highly significant associations ( $p < 0.0001$ ), indicating meaningful differences in distributions across groups before and after the intervention.



**Graph 1: Shows the levels of Knowledge of the Parents regarding Nocturnal Enuresis among Children.**

The bar graph 1 illustrates the knowledge levels of parents regarding nocturnal enuresis. The data show that nearly half of the parents, 109 (48.23%), had *poor* knowledge about the condition, making it the largest group. A smaller proportion, 56 (24.77%), demonstrated

an *average* level of knowledge. Meanwhile, 61 (26.99%) of the parents had *good* knowledge. Overall, the graph highlights that a significant number of parents lack adequate understanding of nocturnal enuresis, indicating a need for educational interventions.

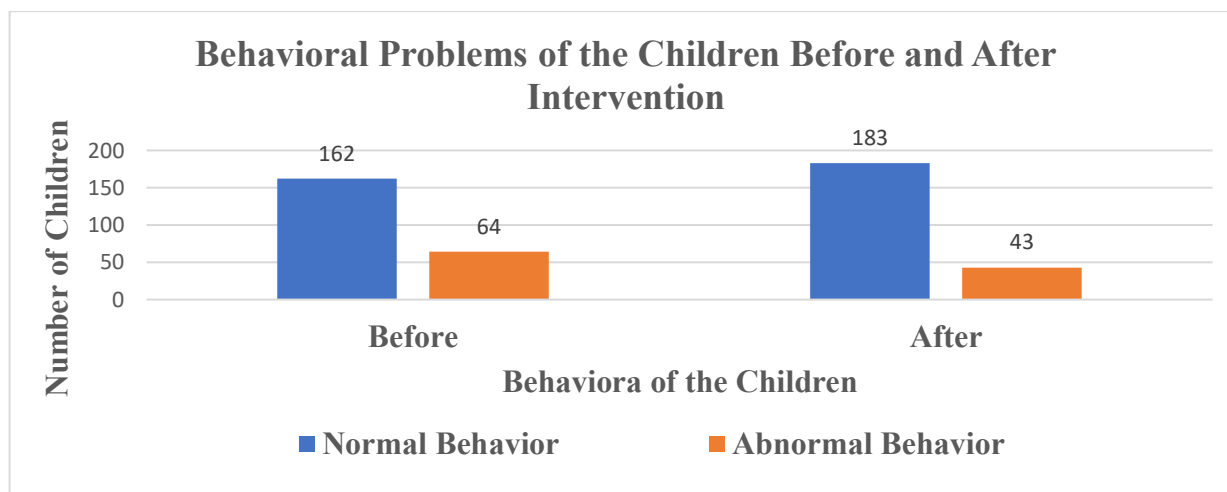


**Graph 2: Shows the Sleeping Duration of the Children Before and After Intervention**



The bar graph no. 2 depicts the sleeping duration of children before and after the intervention. Before the intervention, 14 children slept for 4 hours, 38 slept for 6 hours, 88 for 8 hours, and 86 for more than 10 hours. After the intervention, the number of children sleeping for 4 hours increased to 6 hours, and those sleeping for 6

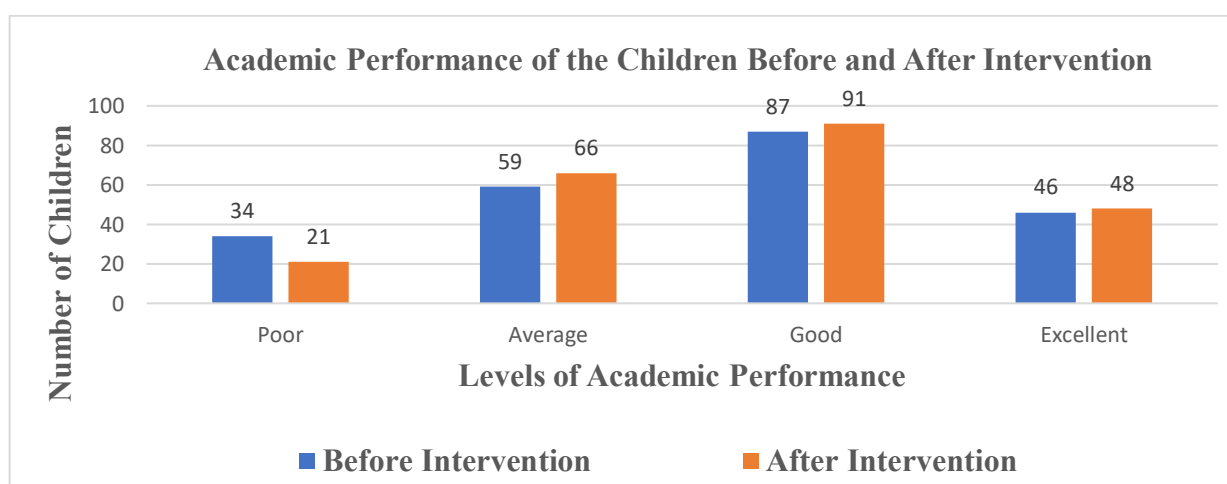
hours increased to 8 hours. In contrast, the number of children sleeping for 8 hours increased to 99, and those sleeping more than 10 hours increased to 94. Overall, the graph shows a positive improvement in sleep duration following the intervention, with more children achieving adequate sleep hours.



**Graph 3: Shows the Behavioural Problems of the Children Before and After Intervention**

The bar graph 3 presents the behavioral status of children before and after the intervention. Before the intervention, 162 children exhibited normal behavior and 64 showed abnormal behavior. After the intervention, the number of children with normal behavior increased to 183, while

those displaying abnormal behavior reduced to 43. Overall, the graph indicates a notable improvement in children’s behavioral patterns following the intervention, with a significant shift from abnormal to normal behavior.



**Graph 4: Shows the Academic Performance of the Children Before and After Intervention.**

The bar graph 4 illustrates the academic performance of children before and after the intervention. Before the intervention, the academic performance of 34 children

(poor), 59 children (average), 87 children (good), and 46 children (excellent) were recorded. After the intervention, there was a noticeable improvement as the number of



children with poor performance decreased to 21, while those with average (66), good (91), and excellent (48) performance increased. Overall, the graph shows a positive shift toward higher academic performance following the intervention.

## Discussion

The present study assessed parental knowledge regarding nocturnal enuresis and evaluated the impact of behavior modification strategies following a structured educational intervention. Findings showed that parental knowledge was initially limited, with a large proportion demonstrating poor understanding of nocturnal enuresis. This aligns with earlier studies by Butler (2017) and (Bower et al. 2021), which highlighted gaps in parental awareness and the influence of misconceptions on delayed management. After the behavioral intervention, there was a substantial improvement in mean knowledge scores, reflecting the effectiveness of targeted parent education, as supported by Sahakian et al. (2014). The study also found a significant increase in the implementation of behavior modification strategies such as enuresis alarms, fluid restriction, reward systems, and bladder control exercises. This improvement suggests that enhanced knowledge leads to better adherence to evidence-based practices, consistent with Longstaffe et al. (2000), who reported improved child outcomes when parents were properly trained.

Positive changes were also observed in children's sleep duration, behavioral patterns, and academic performance such as Following the Instruction, Positive Attitude, Daily Study, Assignments and Homework after the intervention. The reduction in abnormal behavior such as Angriness, Aggressive, Stress, Anxiety and Fear and the shift toward improved sleep duration indicate that structured parental involvement can modify nighttime bladder habits and reduce emotional stress associated with enuresis. Improved academic performance further suggests that better sleep quality and normal behavior contribute to enhance daily functioning. Parental knowledge and strategy implementation is the consequence for empowering parents to actively manage the condition.

Although the outcomes were encouraging, limitations include the use of purposive sampling, a short follow-up period, and reliance on self-reported adherence, which

may introduce bias. Future studies should consider randomized controlled designs, longer follow-up, and objective monitoring tools. Overall, the study demonstrates that structured parent-focused educational programs significantly enhance knowledge, promote consistent use of behavior modification strategies, and contribute to improved child outcomes. Integrating such interventions into pediatric and community health settings is recommended to reduce the burden of nocturnal enuresis and improve child and family well-being.

## Conclusion

The study demonstrated that structured educational interventions effectively enhance parental knowledge and significantly improve the management of nocturnal enuresis in children. Following the behavior modification training, parents showed greater understanding and adherence to recommended strategies such as fluid regulation, enuresis alarms, and positive reinforcement. These improvements were reflected in better sleep patterns, reduced behavioral problems, and enhanced academic performance among children. The strong correlation between parental knowledge and implementation highlights the crucial role of informed caregivers in achieving positive health and behavioral outcomes. Overall, integrating parental education and behavior modification strategies into routine pediatric and community health services can substantially reduce the psychosocial burden of nocturnal enuresis and promote healthier child development. Further studies with larger samples and longer follow-up periods are recommended to strengthen these findings and evaluate long-term effectiveness.

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