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A PILOT STUDY TO COMPARE THE EFFECTIVENESS OF HOME BASED ENURESIS INTERVENTION VS EMOTIONAL SUPPORT IN REDUCING NOCTURNAL ENURESIS AND PSYCHOSOCIAL PROBLEMS AMONG CHILDREN WITH PRIMARY NOCTURNAL ENURESIS IN SELECTED COMMUNITY AREA AT COIMBATORE

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ABSTRACT
Inadequate and delayed support for enuresis can significantly impact the emotional wellbeing of children and family functioning. This pilot study aims to compare the Effectiveness of Home Based Enuresis Intervention Vs Emotional Support in reducing Nocturnal Enuresis and Psychosocial Problems among Children with Primary Nocturnal Enuresis in Selected Community area at Coimbatore. **Methods:** After obtaining written informed assent, children with primary nocturnal enuresis who fulfilled the inclusion criteria was recruited and enrolled in this study. Study subjects were assigned randomly to either experimental group I (n=5) or experimental group II (n=5). All 10 subjects were interviewed before intervention by assessing demographic variables. Nocturnal enuresis was assessed by using Parental Questionnaire Enuresis/ Urinary incontinence (PQ-EnU). Psychosocial problems were assessed by using Pediatric Symptom Checklist (PSC). Experimental group I received Home based enuresis intervention, given for the duration of 30 minutes, for the period of 3 months. Follow-up sessions were conducted on weekly basis, through telephone mode. Experimental group II received Emotional support which comprises of session I-IV and subsequent Follow-up sessions. Each session rendered for the duration of 30 minutes, for the period of 3 months. Follow-up sessions were conducted on weekly basis (between 5th and 12th week) through telephone mode. Posttest was conducted after follow up sessions by using the same assessment techniques in experimental group I & II. **Results:** From the pilot study findings, it can be concluded that Home based enuresis intervention Vs emotional support reduces the level of nocturnal enuresis and psychosocial problems among children with primary nocturnal enuresis.

KEYWORDS: Home Based Enuresis Intervention, Emotional Support, Nocturnal Enuresis, Psychosocial Problems, Primary Nocturnal Enuresis.

INTRODUCTION
The worldwide prevalence of enuresis among children aged 6–12 years is 1.4%–28% **(Yousef KA, 2011).** Indian data on incidence and prevalence are very limited. In general, prevalence of nocturnal enuresis is higher among male children than female children. The prevalence in India is 7.61%–16.3%. The prevalence is highest in children aged 5–8 years (and 6–8 years) and lowest in children aged 11–12 years (8–10 years). Nocturnal enuresis has been reported in 18.4% of children with sleep problems from a single center in India **(Solanki AN, Desai SG, 2014).**

Nocturnal enuresis or bedwetting is a common health problem in children in the age group of 5 to 15 years. In India the prevalence of nocturnal enuresis ranges from approximately 7% to 12.6%. The prevalence from other parts of the world ranges from 6% to 42% **(ICCS 2017).**

Bedwetting is the cause of significant psychosocial stress especially in older children. The results of the study showed there were no significant difference between gender and their positive self-esteem. Pediatric nurse, psychiatric nurse, community health nurse and school health nurse offer counseling services for the mothers and their children regarding nocturnal enuresis **(Hanan**

T. Elbahnasawy, 2015).

The primary care provider, the urologist and nephrologist frequently care for patients with PMNE (Primary Monosymptomatic Nocturnal Enuresis) and they must be aware of the potential accompanying psychological conditions. Screening for and addressing these comorbid psychological conditions and psychosocial consequences of PMNE is imperative. Behavioral medicine support should be employed and reassurance should be provided to the affected patients as effective treatments for PMNE **(Timothy P Lefeber, 2018).**

Guidance to staff to support children with nocturnal enuresis through a nurse- led Nocturnal Enuresis Program. The program can be offered for up to 12 weeks, dependent upon the clinical judgement of the enuresis nurse. If this goal is attained, the long-term program objective is for the child to remain dry for the following six months. Once achieved, clients are deemed to have mastered night time dryness **(Yoon PD, 2013).**

Most school-based epidemiology studies on child and adolescent psychiatric disorders in India have focused on disorders of concern like learning disability, mental retardation and attention deficit hyperactivity disorder with little or no reference to enuresis. The impact of nocturnal enuresis is under-recognized in India and data on prevalence in India are very limited. Hence the researcher is interested towards this area of study.

Methods

The research design used for the present study was true experimental design. After obtaining written informed assent, children with primary nocturnal enuresis who fulfilled the inclusion criteria was recruited and enrolled in this study. The total sample size was 10 for pilot study. Study subjects were assigned randomly to either experimental group I (n=5) or experimental group II (n=5). Snowball sampling technique was used to recruit the study subjects. Interview was conducted to identify the initial sample and further required subjects for the study was recruited based on the referrals of existing subjects.

All 10 subjects were interviewed before intervention by assessing demographic variables. Nocturnal enuresis was assessed by using Parental Questionnaire: Enuresis/ Urinary incontinence (PQ-EnU). Psychosocial problems were assessed by using Pediatric Symptom Checklist (PSC).

Experimental group I (Home based enuresis intervention)

Home based enuresis intervention was intervened through video demonstration-based training for parents to modify the enuresis pattern among children by using laptop.

Step by step approach incorporates the following

Video demonstration-based training steps	**Duration & Frequency**
Step: 1 Reduce evening fluid intake. Do not give the child anything to drink in the two hours before bedtime.	1 Minute, Daily night time
Step: 2 Behavior Training: Instruct the child to empty the bladder before going to bed and wake up once or twice using an alarm clock. Make sure the child has easy access to the toilet. Clear the path from their bed to the toilet and install night-lights.	1 Minute, Daily night time
Step: 3 Lifting and waking- Lifting the child from their bed while they sleep and waking the child from their sleep and taking them to the bathroom to pass urine.	2 Minutes, Daily night time
Step: 4 Stop-start training - Kegel & Pelvic Floor Exercise- Instruct the child while preparing to urinate, focus on stopping the urine stream. The child should think carefully about tightening only the muscles that stop their urine stream. Focus on the sensation of the pelvic floor muscles pulling inward, stopping the urine stream or at least slowing it.	5 -10 minutes, Twice daily, Day time
Step: 5 Bladder dairy- Helps both the child and parents to identify the bladder habits and patterns by recording the amount of times the child go to the toilet, how long the child can wait until go to the toilet and what the child drinks.	Daily, Day time

Home based enuresis intervention was given for the duration of 30 minutes, for the period of 3 months. Follow-up session was conducted on weekly basis, through telephone mode.

Experimental group II (Emotional support)

Emotional support comprises of session I-IV and subsequent Follow-up sessions. Each session rendered for the duration of 30 minutes, for the period of 3 months. Follow-up sessions were conducted on weekly basis (between 5th and 12th week) through telephone mode.

The session schedules were as follows

Session	Emotional support	Week, Duration, Frequency
Session I- Introduction & Verbal Reassurance	**Introduction** Trust worthy relationship was created by explaining the purpose of intervention during the first meet. Verbal expression of physical gesture of warmth, empathy and reassurance with deeper & more unconditional meaningful emotions and problems associated with nocturnal enuresis will be consummated. **Verbal Reassurance** ❖ Parents were reassured about their child's physical and emotional health and counseled about eliminating guilt, shame and punishment (High prevalence of enuresis, Relatively high spontaneous cure rate, Non-volitional nature of the symptom) ❖ Eliciting the detailed description of the symptom of nocturnal enuresis like repetitive voiding of urine during the night at inappropriate places.	During the first week, immediately after pretest introduction & verbal reassurance was given for 30 minutes.
Session II- Focus on Internalizing & Externalizing problems	❖ Both (child and parent) were made to ventilate regarding internalizing & externalizing problems of the child. ❖ **Internalizing problems** of the child includes anxious, depressive symptoms, social withdrawal and somatic complaints. ❖ **Externalizing problems** of the child includes aggressive, oppositional and delinquent behavior.	During the second week, Focus on Internalizing & Externalizing problems were given for 30 minutes.
Session III- Self esteem improvement strategies	❖ **Self-understanding-** Understanding his/her own personality and thinking. Clarify his/her strengths/weakness. ❖ **Personal relationship-** Find meaningful persons, Understand the types of interpersonal relationship, review his/her communication type, Understand and express the meaning of "want" ❖ **A sense of purpose/competence-** Find dream for the future.	During the third week, Self esteem improvement strategies were given for 30 minutes.
Session IV- Positive reinforcement	The investigator makes the child to draw a chart. Subsequently the child puts stickers on a chart or earns points for every night he or she remains dry. Once a certain number of stickers or points have been earned, the child is given a prize (chocolate).	During the fourth week, Positive reinforcement was given for 30 minutes.
Follow-up sessions were conducted on weekly basis (between 5th and 12th week) through telephone mode. Follow-up sessions comprises of self esteem improvement strategies and positive reinforcement.		

Posttest was conducted after follow up sessions by using the same assessment techniques in experimental group I & II. Descriptive, parametric and nonparametric statistical methods were used to analyze and interpret the data. The data were expressed as frequency, percentage distribution, mean, SE. Paired't' test was used for estimating the effectiveness of home based enuresis intervention and emotional support. UnPaired't' test was used to compare the effectiveness of home based enuresis intervention Vs emotional support among experimental group I & II. Chi square test was used to associate the nocturnal enuresis and psychosocial problems with selected demographic variables. A probability of 0.05 or less was taken as statistically significant. Statistical package for social science, PCT version 17 (SPSS Inc, Chicago) was used for analyzing the data.

RESULTS

Description of Sample Characteristics

Experimental group I

Distribution of children with primary nocturnal enuresis according to their age group shows that 40% of them were 5-6yrs, 40% of them were 7-8yrs and 20% of them were 9-10yrs. According to the gender 60% were female and 40% were male. Number of siblings showed 60% were under nil, 40% were having one siblings, none of them were under 2 and 3 or more siblings. Birth order showed that 60% were first born, 40% were under second birth order, none of them were in third or above birth order. Enuresis in siblings showed 20% reported yes and 80% were said No. According to sibling rivalry 20% reported yes and 80% reported No. In scholastic performance, 60% were at Good, 40% were Average and none of them were poor. Family history of enuresis showed 20% were positive and 80% were under negative. In monthly family income 20% showed less than Rs. 15000, 60% reported between Rs 15000 to Rs.50000 and 20% were between Rs50000 and above. According to type of family 80% were nuclear family, 20% were joint family and none of them in extended family. In Seizure, 100% reported no seizure. In respiratory infection, 60% reported yes and 40% reported no. in pinworm infection 80% were reported yes and 20% reported no. In anal itching 40% reported yes and 60% reported no.

Experimental group II

Distribution of children with primary nocturnal enuresis according to their age group shows that 80% of them

were 5-6yrs, 20%of them were 7-8yrs and none of them were under 9-10yrs. According to the gender 60% were female and 40% were male. Number of siblings showed 80% were under nil, 20% were having one siblings, none of them were under 2 and 3 or more siblings. Birth order showed that 80% were first born, 20% were under second birth order, none of them were in third or above birth order. Enuresis in siblings showed 20% reported yes and 80% were said No. According to sibling rivalry 20% reported yes and 80% reported No. In scholastic performance 80 were at Good, 20% were at Average and none of them were poor. Family history of enuresis showed 20% were positive and 80% were under negative. In monthly family income 20% showed less than Rs. 15000, 20% reported between Rs 15000 to Rs.50000 and 60% were between Rs50000 and above. According to type of family 80% were nuclear family, 20% were joint family and none of them in extended family. In Seizure 100% reported no seizure. In respiratory infection 80% reported yes and 20% reported no. In pinworm infection 60% were reported yes and 40% reported no. In anal itching 40% reported yes and 60% reported no.

The level of nocturnal enuresis among children with primary nocturnal enuresis

Table 1: Frequency and Percentage Distribution of Level of Nocturnal enuresis among Children with primary nocturnal enuresis (n=5, n=5).

Level of Nocturnal Enuresis	Experimental Group I				Experimental Group II			
	Pre Test		Post Test		Pre Test		Post Test	
	F	%	f	%	F	%	F	%
Mild Level	0	0	0	0	0	0	0	0
Moderate Level	1	20	5	100	0	0	5	100
Severe Level	4	80	0	0	5	100	0	0

In experimental group I, pretest showed (1) 20% with moderate level of nocturnal enuresis, (4) 80% with severe level of nocturnal enuresis and none of them under mild level nocturnal enuresis. In posttest, (5)100% experienced moderate level of nocturnal enuresis, none of the subjects were under mild and severe level of nocturnal enuresis. In experimental group II, pretest showed (5) 100% with severe level of nocturnal enuresis, none of them under mild and moderate level of nocturnal enuresis. In posttest, (5)100% in moderate level of nocturnal enuresis, none of them under mild and severe level of nocturnal enuresis (Table-1).

The level of psychosocial problems among children with primary nocturnal enuresis

Table 2: Frequency and percentage distribution of psychosocial problems among children with primary nocturnal enuresis.

Level of Psychosocial Problem	Experimental Group I				Experimental Group II			
	Pre Test		Post Test		Pre Test		Post Test	
	F	%	f	%	F	%	F	%
Mild Level	0	0	0	0	0	0	0	0
Moderate Level	0	0	3	60	0	0	5	100
Severe Level	5	100	2	40	5	100	0	0

The pretest level of psychosocial problems in experimental group I, showed 5(100%) were under severe level, none of the subjects were under mild and moderate level of psychosocial problems. In posttest 3(60%) were in moderate level psychosocial problems, 2(40%) were in severe level of psychosocial problems and none of them were under mild level of psychosocial problems. The pretest level of psychosocial problems in experimental group II, showed 5(100%) were under severe level of psychosocial problems, none of the subjects were under mild and moderate level of psychosocial problems. In posttest 5(100%) were under moderate level of psychosocial problems, none of the subjects were under mild and severe level of psychosocial problems (Table-2).

Effectiveness of Home based enuresis intervention Vs Emotional support on Nocturnal Enuresis among children with primary nocturnal enuresis

Table 3: Comparison of Mean, SD and Significance Test between Experimental group I and II.

(N_1-5, N_2-5)

Variables	Group	Test	Mean	SD	Significance of Paired 't'-test	Significance of unpaired 't'-test
Level of Nocturnal Enuresis	Experimental Group I	Pre Test	35.20	4.15	12.2984	2.5373
		Post Test	24.20	3.56		
	Experimental Group II	Pre Test	34.20	3.03	14.6462	
		Post Test	20	1.00		

Level of Significance- p<0.05, Table valve- 1.17

The mean scores in experimental group I decreased in the posttest and showed significant reduction in the level of Nocturnal enuresis and in experimental group II posttest mean score is decreased and showed significant reduction in nocturnal enuresis. The Paired t- test value of nocturnal enuresis scores showed statistical significance between pretest and posttest in experimental group I. The Paired t- test value of nocturnal enuresis scores showed statistical significance between pretest and posttest in experimental group II (Table-3).

Unpaired t- test calculated to determine the effectiveness of home based enuresis intervention Vs emotional support on nocturnal enuresis among children with primary nocturnal enuresis in both experimental group I and experimental group II. The level of nocturnal enuresis showed that there is significant difference between experimental group I and experimental group II. Compared to the experimental group I posttest mean scores (M=24.20) experimental group II mean scores (M=20) depicted reduction in nocturnal enuresis. Hence experimental group II was quite effective in reducing the level of nocturnal enuresis (Table-3).

The Null hypothesis was rejected and research hypothesis was accepted. Hence it can be concluded that there was significant difference between the posttest score on level of nocturnal enuresis among children with primary nocturnal enuresis.

Effectiveness of Home based enuresis intervention and Emotional support on psychosocial problem among children with primary nocturnal enuresis.

Table 4: Comparison of Mean, SD and Significance Test between Experimental group I and II.

Variables	Group	Test	Mean	SD	Significance of Paired 't'-test	Significance of unpaired 't'-test
Level of psychosocial problem	Experimental Group I	Pre Test	45.20	4.97	10.8887	3.0870
		Post Test	38	1.58		
	Experimental Group II	Pre Test	58.80	3.70	11.3888	
		Post Test	45.20	4.97		

Level of Significance- p<0.05, Table valve- 1.17

The mean scores in experimental group I decreased in the posttest and showed significant reduction in the level of psychosocial problems and in experimental group II mean posttest score decreased and showed significant reduction in psychosocial problem among children with primary nocturnal enuresis. The Paired t- test value of psychosocial problem scores showed statistical significance between pretest and posttest in experimental group I. The Paired t- test value of psychosocial problem scores showed statistical significance between pretest and post-test in experimental group II (Table-4).

Unpaired t- test calculated to determine the effectiveness of home based enuresis intervention Vs emotional support on psychosocial problems among children in both experimental group I and experimental group II. The level of psychosocial problems showed that there was significant difference between experimental group I and experimental group II. Compared to the experimental group II posttest mean scores (M=45.20) experimental group I mean scores (M=38) depicted reduction in nocturnal enuresis. Hence experimental group I was quite effective in reducing the level of psychosocial problems (Table-4).

The Null hypothesis was rejected and research hypothesis was accepted. Hence it can be concluded that there was significant difference between the posttest score on level of psychosocial problems among children with primary nocturnal enuresis.

Association between pre-test level of nocturnal enuresis and selected demographic variables among children with primary nocturnal enuresis in experimental group I & II

Association between pre-test level of nocturnal enuresis and selected demographic variables among children with primary nocturnal enuresis in experimental group I & II reveals that there was no significant association between age, gender, number of siblings, birth order, enuresis in siblings, sibling rivalry, scholastic performance, family history, monthly family income, type of family, seizure, respiratory infection, pinworm infection and anal itching.

Association between pre-test level of psychosocial problems and selected demographic variables among children with primary nocturnal enuresis in experimental group I & II

Association between pre-test level of psychosocial problems and selected demographic variables among children with primary nocturnal enuresis in experimental group I & II reveals that there is no significant association between age, gender, number of siblings, birth order, enuresis in siblings, sibling rivalry, scholastic performance, family history, monthly family income, type of family, seizure, respiratory infection, pinworm infection and anal itching.

DISCUSSION

Pilot study was executed to check the feasibility and time requirement of the study. From the pilot study findings, it can be concluded that Home based enuresis intervention

Vs emotional support reduces the level of nocturnal enuresis and psychosocial problems among children with primary nocturnal enuresis.

Simple behavioral interventions can be used as a starting point. Limiting fluid intake in the hours before bed is often encouraged, but has not been systematically studied. Waking the child at night to attempt to urinate; lifting the sleeping child onto the toilet and then waking him or her to urinate; bladder training and instituting reward systems, such as star charts, are all reasonable interventions that appear to be more effective than no treatment, but less effective than bed alarm therapy **(Caldwell PH, 2013).** However, the long-term effectiveness of these methods remains unclear **(Nunes VD, 2010).**

Full-spectrum home training (FSHT) is a combination with alarm, cleanliness training, and retention control training in the daytime. To maximize the effect, the FSHT needs to be overlearned (giving extra fluids at bedtime after successfully becoming dry). The conclusions were that DBT or FSHT was better than control in efficacy and relapse rate and marginally superior to alarm alone. Either complex behavioral interventions removing alarm or control intervention was inferior to alarm alone or complex behavioral interventions supplemented by alarm. There is no evidence for the comparison between complex behavioral interventions removing alarm and control **(Glazener CM, 2005).**

The first step in treating Primary Nocturnal Enuresis (PNE) is to educate the child and parents about the condition and provide reassurance regarding spontaneous resolution (annual cure rate is 15%). The primary management is through behavioral intervention, including dry-bed training, motivational therapy, classic conditioning therapy using an enuresis alarm system and hypnotherapy. Motivational therapy involves a combination of providing reassurance, emotional support, eliminating guilt and rewarding the child for dry nights. Cleaning after bedwetting should not be performed as a punishment. The avoidance of dairy products, fruits juices and fluids before bedtime is also beneficial. Motivational therapy completely resolves enuresis in up to 25% of cases and the number of wet nights reduces in up to 70% of children **(Ramakrishnan K, 2008).**

Professionals should offer information, support, advice and referral for further treatment when needed. There are few other medical conditions that prevent children taking part in social activities, such as sleepovers, residential school trips and camping with their friends. All nurses who work with children and families are ideally placed to give support to those with bedwetting problems. They should offer accurate information and arrange further referral where indicated. ERIC provides information and leaflets and families can purchase alarms, bed protection and obtain information about local enuresis services from the charity **(Fleming E, 2012).**

REFERENCES

1. Bahnasy, W.S., El-Heneedy, Y.A.E., El-Seidy, E.A.S. et al. Primary monosymptomatic nocturnal enuresis: an etiological study. Egypt J Neurol Psychiatry Neurosurg, 2018; 54: 19.
2. Fleming E. Supporting children with nocturnal enuresis. Nursing Times, 2012; 108, 41: 22-25.
3. Hanan T. Elbahnasawy, Psychological Impact of Nocturnal Enuresis on Self-esteem of School Children. American Journal of Nursing Research, 2015; 3(1): 14-20.
4. Katayoun Bakhtiar, Yadollah Pournia, Farzad Ebrahimzadeh, Ali Farhadi, Fathollah Shafizadeh, Reza Hosseinabadi, "Prevalence of Nocturnal Enuresis and Its Associated Factors in Primary School and Preschool Children of Khorramabad in 2013", International Journal of Pediatrics, 2014; 2014: 7.
5. Solanki AN, Desai SG. Prevalence and risk factors of nocturnal enuresis among school age children in rural areas. Int J Res Med Sci., 2014; 2: 202-5.
6. Timothy P Lefeber, Olivia E Nield, Linda S Nield. Psychological Aspects of Enuresis in Childhood. Annal Urol & Nephrol, 2018; 1(1). Annals of Urology & Nephrology Volume 1-Issue 1 Page 3 of 3.
7. Yoon PD, Brown KM, Kim LH, Doyle A, Rashid P. Primary mono-symptomatic nocturnal enuresis: A review of management. Australian and New Zealand Continence Journal, 2013; 19(3): 78.
8. Yousef KA, Basaleem HO, bin Yahiya MT. Epidemiology of nocturnal enuresis in basic schoolchildren in Aden Governorate, Yemen. Saudi J Kidney Dis Transpl, 2011; 22: 167-73.
9. Caldwell PH, Nankivell G, Sureshkumar P. Simple behavioural interventions for nocturnal enuresis in children. Cochrane Database Syst Rev., 2013; 7.
10. Nunes VD, O'Flynn N, Evans J, Sawyer L; Guideline Development Group. Management of bedwetting in children and young people: summary of NICE guidance. BMJ., 2010; 341.
11. Glazener CM, Evans JH, Peto RE. Alarm interventions for nocturnal enuresis in children. Cochrane Database Syst Rev., 2005; 2.
12. Ramakrishnan K. Evaluation and treatment of enuresis. Am Fam Physician, 2008; 78: 489-96.