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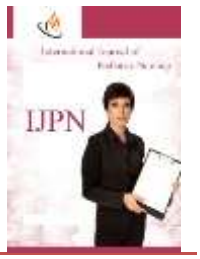

EFFECTIVENESS OF BEHAVIORAL MODIFICATION THERAPY ON NOCTURNAL ENURESIS AMONG CHILDREN OF PRIMARY CARE GIVERS (6-12YEARS) AT SELECTED URBAN AREA, VELLORE.

Saritha[1] & Dhanalakshmi N.[2]

[2]Professor, Sri Narayani College of Nursing, Thirumalai Kodi, Vellore-55, Tamilnadu, India.

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ABSTRACT

Childhood holds a very important place in the life of every human being. Children can have emotional and behavioral problems that are real and painful. The behavioral problems seen in middle childhood are stuttering, pica, sleep problems, enuresis, encopresis and tics. Aim of the study: To assess the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers (6-12years). Methods: Pre Experimental, one group pre and post-test design. Judgemental sampling technique was adopted to select 35 children of primary care givers. Descriptive and inferential statistics were used for analysis and interpretation of data. Results: The assessment findings revealed that there was a significant difference at ($p<0.001$) in the mean score of pre and post assessment on effectiveness of behavioral modification therapy. There was an improvement in levels of nocturnal enuresis scores among children after behavior modification therapy. There was a significant association ($p<0.05$) between the post assessment scores of nocturnal enuresis and the selected demographic variables such as age of the child, sex of the child and past history of enuresis in siblings. Conclusion: From the study findings, it can be concluded that the behavioral modification therapy was effective in improving the levels of nocturnal enuresis among children.

INTRODUCTION

Enuresis is the second most common disorder among children after the allergic disorders and is one of the greatest problems during childhood. It denotes to the inability of control of urination and involuntary urination in a child during night in an age period the bladder function control must be achieved. According to DSM-IV criteria, enuresis is involuntary urination in a child above five years within cloths or in bed at least two in a week for three consecutive months [1].

Corresponding Author

Dhanalakshmi N
Email: dhanalh73@gmail.com

This disorder is a common, genetically complex and heterogeneous problem among children. This clinical problem is a main concern for family because it leads to considerable emotional distress and worry in affected children, their parents and results in certain psychological consequences, such as low self–esteem in children, some other psychological problems and particularly low school success. Bed wetting can be diagnosed at 5 year old and beyond; clinically, It is generally left untreated until the children are 7-8 years old [2-6].

Primary enuresis is often related with a familial history of delayed urinary bladder control. Secondary enuresis may also be due to urologic and neurological

problems, disorders of the spinal cord, and recurrent urinary tract infection. Ninety percent of enuresis cases are primary, and its occurrence usually changes with age. Several studies have been conducted on nocturnal enuresis and its related factors. The review of the relevant literature showed considerably different occurrence rates for enuresis, so that the prevalence rates in different regions and in children older than 5 years old have been reported to be 5– 20% (5).

As researcher herself had a personal first hand experience of nocturnal enuresis in her cousin's child, researcher has seen the difficulties faced by the children and parents in managing the problems, especially due to their lack of knowledge in managing nocturnal enuresis. Considering the above one, if the mothers are having adequate knowledge, they would be able to practice behavioral modification therapy effectively and thus can manage their children's problem of enuresis effectively. The researcher observed behavioral problems in child as the child started to isolate herself. The researcher felt the need for behavioral modification therapy on nocturnal enuresis among children of primary caregivers.

Aim of the study:

To assess the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers (6-12years) at selected urban area, Vellore.

Objectives:

- To assess the levels of nocturnal enuresis among children of primary care givers.
- To evaluate the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers.
- To find out association between the post test scores of nocturnal enuresis and the selected demographic variables.

Hypotheses:

- H1 There is a significant difference between the pre and post-test scores of nocturnal enuresis behavior among children.
- H2 There is a significant association between the post-test nocturnal enuresis scores among children and their selected demographic variables.

METHODOLOGY

A pre experimental, one group pre-test and post-test design was used. The study was conducted at selected urban area, Vellore. The sample in this study includes among children of primary care givers (6- 12years), and who fulfilled the inclusion criteria. Sample size for the study was 35. Those who fulfilled the inclusion criteria were selected after their verbal consent. Pre-test was done on day using self-administered questionnaire followed by the behavioral modification therapy was given by using power point presentation. The behavioral modification therapy was conducted in the home of children's at urban setting. Duration of 10 minutes was spent for each topic such as night lifting, waking with alarm, stop-start-training, good bladder health recommendation, good bowel health recommendation, retention control training and reinforcement therapy. Total of 1:10 minutes was spent for behavior modification therapy for each sample.
Post assessment was carried out during 6th week of data collection period. Post assessment was conducted for children of primary care givers, to assess the levels of nocturnal enuresis and related factors, by using the same questionnaire. Duration of 45 minutes was spent for each group for post assessment at the home setting.

Description of Tool

SECTION A:

Part-I: Demographic variables

It consists of selected demographic variables of the children with nocturnal enuresis such as sex, birth order of the child, no of siblings, income of the family, education levels of father, mother, and guardian, occupation of father, mother and guardian, parents are living together, history of enuresis in parents, history of enuresis in siblings.

Part-II: Clinical profile

Clinical profile is comprised of clinical profile of the children with nocturnal enuresis such as history of UTI, pain during voiding, day time incontinence, day time urgency, age bladder training started, habit of bedwetting, bed wetting time at night, any consultation with physician for children with nocturnal enuresis.

Part-III: Contributing factors of nocturnal enuresis related to school

Contributing factors associated with nocturnal enuresis such as, problem in studying, going to school is frightening, teacher has punished/scolded in front of others, fighting with friends in school, comfortable with school toilets, avoid school toilets.

Part-IV: Contributing factors of nocturnal enuresis related to home

Contributing factors associated with nocturnal enuresis such as, frightening situation in family, being compelled for academic achievement, fear of toilet, having nightmare, fear of animals, having punished the for bed wetting, self- esteem is affected by bed wetting habit, feel bad about habit of bedwetting.

SECTION-B

Part-I: Nocturnal enuresis rating scale related to frequency of nocturnal enuresis:

It consists of one item related to frequency of nocturnal enuresis in children.

Score interpretation	Frequency of Nocturnal enuresis
Mild	2-3times per week x 3months
Moderate	4-5times per week x 3months
Severe	5-6times per week x 3months
Profound	> 6 times per week x 3months

Part-II: Nocturnal enuresis related factors rating scale.

It includes 4 items such as, sleep interrupted with bed wetting, wakes up but avoid going to toilet, drinking water frequently in the evening hours, complaints of constipation. All the items were scored as below. Each items scored least score of 0 and highest score 4. The maximum score was 16.

Score interpretation	Score
Nil	0
Rarely	1
Occasionally	2
Frequently	3
Always	4

Score interpretation for nocturnal enuresis behavior:

- 1-5- Mild nocturnal enuresis behavior
- 6-10 - Moderate nocturnal enuresis behavior
- 11-16- Severe nocturnal enuresis behavior

VALIDITY:

The content validity of the tool was obtained from experts in the field of Child Health Nursing and Bio-statistics. Questionaires with demographic variables (13) , Clinical profile (10), Contributing factors related to nocturnal enuresis (13), Contributing factors related to Nocturnal enuresis rating scale for frequency (1), Nocturnal enuresis related factors rating scale (4), were given for validity and expert suggestions did not recommend any change in the questionnaires.

RELIABILITY:

Reliability is defined as the extent to which the instrument yield the same results on repeated measures, concerned with consistency, accuracy, stability and homogeneity.

Test and retest method was employed to obtain the reliability of the tool for nocturnal enuresis related factors rating scale. As the co-efficient co-relation was 1.00 the tool was found to be highly reliable.

RESULTS:

Demographic Variables

Results of the demographic variables of children and primary care givers shows that nearly half of the children 15(43%) were the age group of 6 to 8 years. Around 19(54%) were male children. More than half of the children 22 (63%) were in the birth order of one. Nearly three fourth of children 24(69%) have one sibling. All 35 (100%) children were taken care by mothers. Less than fifty percent of children 16(46%) had family income of Rs.10,001 to 15,000. More than one quarter of the children 14(40%) fathers had upto primary education, whereas mothers 12(34%) were illiterate. Majority of the fathers 28(80%) were unskilled laborers, 30(86%) mothers were homemakers, 31(89%) children parents were living together, 4(11%) were not living together, because 3(9%) children of parents were separated and 1(3%) child's father has died. More than half of children parents 22(63%) had previous history of nocturnal enuresis and 20(57%) children had previous history of nocturnal enuresis in siblings.

Clinical profile:

Clinical profile of children reveals that majority of the children 28(80%) had no history of UTI. None of the children 35 (100%) had a history of surgery in genital area. More than half of the children 23(66%) had no pain during voiding. Majority of the children 33(94%) had day time incontinence, 32(91%) had day time urgency. All the children 35 (100%) were started on toilet training, among them 31(89%) children started their toilet training after the age of 3 years, whereas 4 (11%) children started their toilet training between the age of 3 years. All the children 35 (100%) had habit of bedwetting for more than three months. More than one quarter half of the children 13(37%) had bedwetting time at midnight or early morning. Majority of the children 30(86%) have not consulted with a physician for bedwetting. All the children 35(100%) have tried behavior modification therapy for nocturnal enuresis such as, fluid restriction prior to bed time and mothers reminding the children to urinate before going to bed.

Contributing factors:

School related factors

The results of school related contributing factors among children with nocturnal enuresis reveals that majority of the children 29(83%) had no problem in studying. Nearly half of the children 18(51%) felt going to school is frightening. Majority of the children 31(89%) were punished/scolded by teachers in front of others. Nearly three fourth of the children 24(69%) had history of fighting with friends in school. More than half of the

children 20(57%) were not comfortable with school toilets. Nearly three fourth of the children 22(63%) were using school toilets, whereas 13(39%) children avoided using school toilets.

Home related factors:

The study reports shows that nearly three fourth of the children 24(69%) had no frightening situation in the family. More than half of the children 22 (63%) were being compelled for academic achievement. Around 20 (57%) children had no fear of toilet, 18(51%) had no history of night mares. Majority of the children 31 (89%) were found having fear of animals. Around 34 (97%) children were punished for bedwetting, 18 (51%) children felt guilty because of bedwetting habit. Majority of the children 31(89%) felt bad about habit of bedwetting.

SECTION B:

Figure 1 shows that, least number of children 3(9%) had mild levels of nocturnal enuresis, 7 (20%) had moderate levels of nocturnal enuresis, more than one quarter of the children 10(28%) had severe levels of nocturnal enuresis, nearly half of the children 15(43%) had profound levels of nocturnal enuresis during pre-assessment, whereas after behavioral modification therapy, nearly half of the children 14(40%) had mild levels of nocturnal enuresis, less than half of the children 12(34%) had moderate levels of nocturnal enuresis, less than one quarter 7(20%) children had severe levels of nocturnal enuresis and least number of children 2(6%) had profound levels of nocturnal enuresis.

Figure 2 shows that, less than one quarter of the children 4(12%) had mild levels of nocturnal enuresis, more than half of the children 19 (54%) had moderate levels of nocturnal enuresis, less than half of the children 10(28%) had severe levels of nocturnal enuresis during pre-test. After behavioral modification therapy, majority of the children 27(77%) had mild levels of nocturnal enuresis, below the one quarter of the children 8(23%) had moderate levels of nocturnal enuresis, none had severe levels of nocturnal enuresis.

SECTION C: Effectiveness of behavioral modification therapy among children of primary care givers.

Table 1 shows that in pre-test mean score is 9.50 and SD ± 3.23, whereas after behavioral modification therapy the mean score decreased to 4.22 and SD decreased to ± The calculated paired 't' test value 13.46 is greater than that of the table value 2 (3.65), which is significant at $p<0.001$ level. There was improvement of levels of nocturnal enuresis scores among children after behavior modification therapy which shows effectiveness. Hence hypothesis 1 was accepted.

SECTION D: Association between levels of nocturnal enuresis and demographic variables in post- test for children of primary care givers.

Results represents that, age of the child, sex of the child, past history of enuresis in siblings are statistical significant level at ($p<0.05$) whereas, birth of order of the child, numbers of siblings, care taker, monthly income , father's education, mother's education, father's occupation, mother's occupation, both parent's are living together ,previous history of enuresis in parent's are not significant. Hence it is interpreted the difference in mean score values are true. Hence hypothesis 2 was accepted.

Figure 1: Cone graph showing percentage distribution of children according to pre and post assessment of nocturnal enuresis.

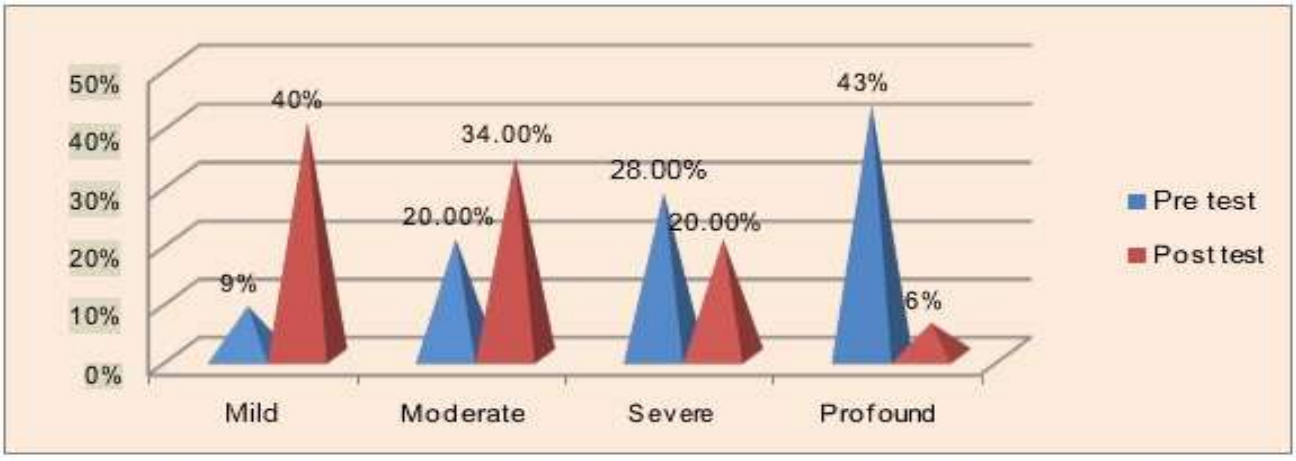

Figure 2: Cylinder graph showing percentage distribution of children according to pre and post assessment levels of nocturnal enuresis related factors.

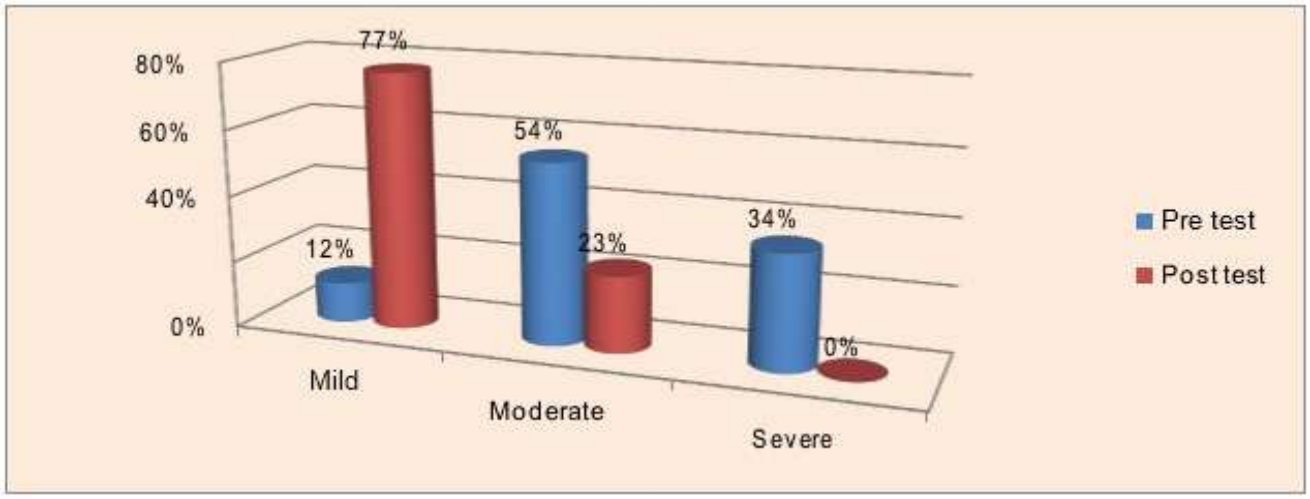

Table 1: Comparison of Pre and Post assessment mean levels on nocturnal enuresis among children of primary care givers.

S.no.	Behavioral Modification Therapy	Mean	Standard Deviation	Mean difference	Paired 't' test
1.	Pre test	9.50	3.23	5.28	13.46*
2.	Post test	4.22	1.95		

Note * statistically significant (p<0.001).

DISCUSSION

The first objective of the study was to assess the levels of nocturnal enuresis among children of primary care givers.

Nocturnal enuresis rating scale

In this study, least number of children 3(9%) had mild levels of nocturnal enuresis, 7 (20%) had moderate levels of nocturnal enuresis, more than one quarter of the children 10(28%) had severe levels of nocturnal enuresis, nearly half of the children 15(43%) had profound levels of nocturnal enuresis during pre-assessment, whereas after behavioral modification therapy, nearly half of the children 14(40%) had mild levels of nocturnal enuresis, less than half of the children 12(34%) had moderate levels of nocturnal enuresis, less than one quarter 7(20%) children had severe levels of nocturnal enuresis and least number of children 2(6%) had profound levels of nocturnal enuresis.

The above findings are supported with the findings of a study done by Jessie. F (2013) that assessed the clinical trial of a behavioral therapy to reduce nocturnal enuresis in boarding children at Fuxin city, China. Total sample of 133 children were selected in seven boarding schools. The result concluded that the therapy became effective after 6 weeks of training. By the final month of training, in treatment group, children's wet episodes had been reduced by 0.6 episodes per day, a 26% reduction over baseline. This reduction in the number of wet episodes was statistically significant, both with respect to this group's baseline levels of nocturnal enuresis and in comparison with the performance of the children in control group. The number of wet episodes in the control group remained about the same throughout training and the 22-week follow-up period (3).

Nocturnal enuresis related factors rating scale

In this study, the nocturnal enuresis factors such as sleep interrupted with bed wetting, a wake but avoid going to toilet, drinking water frequently in the evening hours, complaints of constipation, it revealed that less than one quarter of the children 4(12%) had mild levels of nocturnal enuresis, more than half of the children 19 (54%) had moderate levels of nocturnal enuresis, less than one third of the children 10(28%) had severe levels of nocturnal enuresis during pre-test. After behavioral modification therapy, majority of the children 27(77%) had mild levels of nocturnal enuresis, below the one quarter of the children 8(23%) had moderate levels of nocturnal enuresis, none had severe levels of nocturnal enuresis.

These study findings were supported by the findings of a study done by Jeanette s. Brown et.,al (2013) that evaluated the levels of nocturnal enuresis and urinary

incontinence (UI) in children at Karve Area, Pune. A total of 48 children were selected for the study. The study result showed that children in the immediate intervention group had mild levels of nocturnal enuresis compared with the wait-list control group ($p<0.001$).The immediate intervention group experienced 60% reduction (30% to 89%) in weekly UI episodes, compared with 15% (9% to 25%) in the wait-list control group ($p<0.05$) and had greater improvement in nocturnal enuresis scores (4).

The Second objective of the study was to evaluate the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers.

In this study, during pre-assessment mean score is 9.50 and SD ± 3.23, whereas after behavioral modification therapy, the mean score decreased to 4.22 and SD decrease to ± 1.95. The calculated paired 't' test value 13.46 is greater than that of the table value 2 (3.591), which is significant at $p<0.001$ level. There was improvement on levels of nocturnal enuresis scores among children after, behavior modification therapy which shows effectiveness, hence hypothesis 1 was accepted.

The above findings are supported by the findings of a study done by Rodrigo F (2012) that assessed the behavioral alarm treatment for nocturnal enuresis in Brazil, South America. A total of 84 children and adolescents received alarm treatment together with weekly psychological support sessions for individual families or groups of 5 to 10 families. The results concluded that 71% of the participants achieved success of 14 consecutive dry nights. The result was similar for children and adolescents and for individual or group support (7).

Third objective of the study was to association between the post test scores of nocturnal enuresis and selected demographic variables.

The 'chi- square' test was used to find out the association between post- test levels of nocturnal enuresis and selected demographic variables such as age, sex of the child, past history of enuresis in siblings are statistical significant level at ($p<0.05$)whereas, birth of order of the child, numbers of siblings, care taker, monthly income , father's education, mother's education, father's occupation, mother's occupation, both parent's are living together, previous history of enuresis in parent's are not significant. Hence it is interpreted that the difference in mean score values are true and the hypothesis 2 was accepted.

The study findings were supported by the findings of study done by Bradbury M (2011) that assessed the efficacy of alarm treatment among children in UK. A total of 35 children were selected. The result concluded that at the end of the treatment period, children receiving combination therapy had dry nights per week (mean: 4.8) than children using an alarm alone (mean: 6.1).In addition, more children achieved an initial success (4 weeks of dryness). Following combination treatment (27 children [75%]) compared with alarm therapy (16 children [46%]. which was statistically significant at $P < 0.005$) (2).

CONCLUSION:

The present study assessed the "Effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers (6-12years) at selected urban area, Vellore."

Before the behavioral modification therapy the levels of nocturnal enuresis were high in children. After the behavioral modification therapy the results revealed that nocturnal enuresis rate was decreased. This shows that the behavioral modification therapy was effective as there was positive mean difference (5.28). So educating the children of primary care givers regarding nocturnal enuresis and its management will help for early detection and prevention of effects of nocturnal enuresis. Many studies had strongly emphasized the impact of information that would focus on nocturnal enuresis and behavioral modification therapy will promote good health, less stress among children and their family, which will prepare them for future generations.

CONFLICT OF INTEREST:

My study had no conflict of interests.

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