

A Prospective Study to Explore the Association Between Psychogenic Causes and Nocturnal Enuresis in Paediatric Age Group, Using Perceived Stress Scale - Children

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ABSTRACT

Nocturnal enuresis is diagnosed when there is bedwetting after 5 years of age or anytime after 1 year of attaining nocturnal bladder control. It's a regressive behaviour. Regressive behaviours are a psychological defence mechanism in individuals going through trauma or stressful life situations. The purpose of this study is to establish the cause-effect relationship between psychogenic stress and nocturnal enuresis.

Methods: 40 patients of both sexes, between 6-18 years of age were chosen, screened for nocturnal enuresis through the Nocturnal enuresis parent questionnaire and then the children were asked to fill Perceived Stress Scale - Children (PSS-C) and severity of stress was assessed in all the children, with and without enuresis.

Result: 14 of the 40 cases, i.e., 35% with nocturnal enuresis also had a psychogenic stress factor. 17.5% had psychogenic stress factors but didn't have nocturnal enuresis. 15% with enuresis didn't have any stress factors.

Conclusion: This study proves that psychogenic causes play a major role in nocturnal enuresis and other regressive behaviour.

Keywords: Nocturnal Enuresis, Stress, Regressive behaviour, Pediatrics, Homoeopathy, Psychology

INTRODUCTION

Sleep enuresis or nocturnal enuresis, is incontinence of the bladder during sleep after

5 years of age. Like sleep-walking and night terrors, it is another parasomnia that occurs during sleep.[1,2]

A study exploring the association between psychogenic causes and nocturnal enuresis was done with the intention to understand the causatory or contributory effect of various stresses in a child's life, on nocturnal enuresis.

The development of a child is influenced heavily by their internal and external factors. These internal factors can be hereditary, constitutional or biological, intelligence, emotional factors and social nature. The external or environmental factors such as the parental influence, relationship with the siblings, academic performance and peer group influences can make them either feel secure or insecure depending on the interpersonal dynamics. In a child who is growing up with a sense of security, trust and affection, regressive behaviour and parasomnias are less likely to develop. But in a child who is maladjusted to his environment or has a negative influence, will tend to regress to a younger state.[3,4]

Studies have shown that emotionally deprived children and children vulnerable to negative impact often have perverted or voracious appetite, enuresis, encopresis, insomnia, crying spasms and sudden tantrums. Regressive behaviour such as enuresis and thumbsucking are noted in

children growing up in vulnerable situations.[5]

Dr Samuel Hahnemann in his Organon of Medicine, 6th edition, 9th Aphorism, has described the vital principle, which he says, is present in every organism and is a characteristic feature of health and life. This vital principle when disturbed produces a disturbance in health.[6] Herbert A Roberts recognised life in three parts: mind, body and spirit and called it the trinity, which is not independent of the other. The three are interdependent and function in harmony to give health and life.[7] Every effect has a cause and in homeopathic treatment we give importance to the cause, as we know that when the cause is removed, the disease is cured. Nocturnal enuresis being the effect, the most predominant cause seems to be psychosocial - which might either be the fundamental cause or the maintaining cause of nocturnal enuresis.

The aim and objective of this study was - to explore the association between psychogenic stress factors and nocturnal enuresis.

MATERIALS & METHODS

The following study was conducted in the Out-patient Department of a private homeopathic medical college and hospital in Deralakatte, Kankanady and other peripheral Outpatient units in Mangaluru, among patients who complied with the inclusion criteria. It was an analytical cross sectional study. The study includes children between the ages of 6-18 years, of both genders, cases fulfilling the diagnostic criteria as per ICD-10, F98.0 and those with both primary and secondary nocturnal enuresis. For this study, subjects with diurnal enuresis, enuresis of organic causes like

congenital anomalies, diabetes mellitus, neurogenic bladder, urinary tract infection and Seizure disorders were excluded.[8]

The sample size was calculated using the formula

$$N = Z^2P(1-P) / E^2.$$

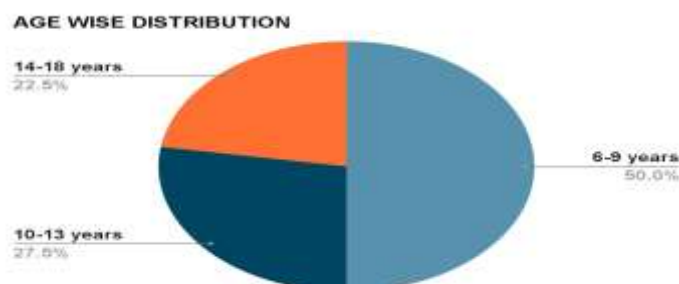
Where, Z= 1.96 at 95% confidence level and 85% power, with respect to Prevalence of 4-14%, the sample size comes up to be 40. [2] The method followed was Convenience sampling.

The patients were screened for nocturnal enuresis with Nocturnal Enuresis Parent Questionnaire which was filled by the parent/guardian.[2] The children who had nocturnal enuresis and fulfilled the inclusion criteria were further screened for psychological stress with Perceived Stress Scale - Children, which was filled by the children, who were assisted by either a parent, guardian or physician. The score of the Perceived Stress Scale-Children was noted.[9] In those with a significant score, the case was taken with a focus on the social situation, which revealed the extent of psychological burden on the child.

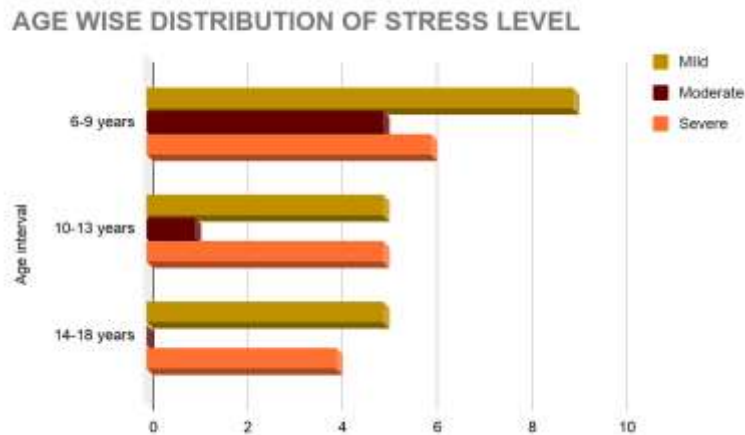
Data Analysis was done using Chi square test. A statistical package SPSS vers.23.0 was used to do the analysis. $p < 0.05$ was considered as significant.

RESULT

The following are the results and observations obtained over the course of the study. Out of the 40 respondents considered in the study, 21 of them were females and 19 of them were males. 50% of them were children between 6-9 years of age, 27.5% (11 of them) were between 10-13 years and 22.5% (9 out of the 40) were between 14-18 years.



Among the 50% who were between 6-9 years old, 30% had a severe stress level and 25% of them had moderate stress level, as per their PSS-C score.



It was observed that 61.9% of them faced stressful events in the family, 23.8% in the school and 14.3% in the peer group.

| SL NO. | STRESS LEVEL | PSS-C SCALE | NO. OF INDIVIDUALS |
|--------|--------------|-------------|--------------------|
| 1. | Mild | 1-13 | 19 |
| 2. | Moderate | 14-26 | 6 |
| 3. | Severe | 27-39 | 15 |

It was noted that out of the 40 respondents, 47.5% of them had mild levels of stress, 15.0% of them had moderate levels of stress and 37.5% had severe stress.

Out of the 40 participants, 20 did not have nocturnal enuresis. These cases were further analysed and of these, 4 cases with psychogenic stress had a parasomnia/regressive behaviour and 1 case without stress had a parasomnia. 3 cases with

stress did not have any regressive behaviour/parasomnia and 12 cases without stress did not have a parasomnia/ regressive behaviour.

It is observed that 20% of the entire study population had other regressive behaviours/parasomnias along with a significant stress level, while only 15% of cases with a significant stress level were without regressive traits.

| | | Other regressive behaviour/parasomnia | | |
|--------------------|---------|---------------------------------------|----------|-----------|
| | | Present | Absent | Total |
| Psychogenic stress | Present | 4 (20%) | 3 (15%) | 7 (35%) |
| | Absent | 1 (5%) | 12 (60%) | 13 (65%) |
| Total | | 5 (25%) | 15 (75%) | 20 (100%) |

$$\chi^2 = 5.91, p=0.015$$

The association between other regressive behaviours/parasomnias and significant stress level is statistically significant (p=0.015).

It was further noted that 60% of the individuals had regressive behaviours/parasomnias along with a significant stress level, while only 7.5% of cases with a psychogenic stress did not develop regressive traits.

| | | Regressive behaviour/parasomnia | | |
|--------------------|---------|---------------------------------|------------|------------|
| | | Present | Absent | Total |
| Psychogenic stress | Present | 24 (60%) | 3 (7.5%) | 27 (67.5%) |
| | Absent | 1 (2.5%) | 12 (30%) | 13 (32.5%) |
| Total | | 25 (62.5%) | 15 (37.5%) | 40 (100%) |

$$\chi^2 = 25.12, p < 0.00001$$

The association between other regressive behaviors/parasomnias and significant stress level is statistically significant ($p=0.00001$). 14 (35%) of the 40 cases had a psychogenic cause and also had nocturnal enuresis. 17.5%

of the cases had psychogenic stress factors but did not have nocturnal enuresis. 15% cases had enuresis but did not have any stress factors.

| | | Nocturnal Enuresis | | |
|--------------------|---------|--------------------|------------|------------|
| | | Present | Absent | Total |
| Psychogenic stress | Present | 14 (35%) | 7 (17.5%) | 21 (52.5%) |
| | Absent | 6 (15%) | 13 (32.5%) | 19 (47.5%) |
| Total | | 20 (50%) | 20 (50%) | 40 (100%) |

With a chi square value of 4.72 and DF of 1, the p value is 0.029. The result is significant at $p<0.05$. Thus the association between psychogenic causes and nocturnal enuresis has been established.

DISCUSSION

Nocturnal enuresis is bedwetting at any age after 1 year of attaining bladder control. Much like thumbsucking and nailbiting, it is considered to be a regressive behaviour. Like night terrors, somniloquy and somnambulism, it is also considered to be a parasomnia. Both parasomnias and regressive behaviour are commonly seen in children facing stressful situations, either at home, school or among peers. This has been extensively studied by various researchers over the years.

In a study conducted by E. Dimitriou et al. on children with nocturnal enuresis, it was found that there is a close relationship between a disturbed family environment and the frequency of enuresis. Positive and supportive attitudes of parents in their child's enuresis as opposed to negative comments and punitive measures were found to enable the child to regain bladder control quicker. Negative parental attributes and being reprimanded were observed to be the predisposing factors. In their study among children examined in the child guidance clinics by E. Dimitriou et al., it was found that though in about 5% of enuretic children the cause was organic, in most enuretic children, poor family environment was a major factor, irrespective of parental attitudes to enuresis itself.^[10]

In another study conducted on the enuretic children from the suburban region of

Istanbul, it was noted that enuresis was regarded as a normal developmental entity and that it will resolve spontaneously and that no treatment was required. In contrast, parents of enuretic children from the urban region considered it a psychological problem that required intensive psychological treatment.^[11]

It is pertinent to understand the dynamics of the child -parent relationship and rectify it along with therapeutic treatment, as studies suggest that many enuretic children will remain bedwetters for life if left untreated. Furthermore, the child is ashamed and feels guilt because of his nocturnal enuresis which threatens to give a significant impairment of self-esteem at an age when an intact self-image is extremely important for an optimal development of the child's personality.^[12]

In this study, with the Perceived stress scale - children, the stress level of children with enuresis and without enuresis were noted.

Out of the 40 cases, 20 cases (50%) had nocturnal enuresis, 20 (50%) did not have nocturnal enuresis. 35% of the cases had a psychogenic cause and also had nocturnal enuresis. 17.5% cases had psychogenic stress factors but did not have nocturnal enuresis. 15% cases had enuresis but did not have any stress factors. With a chi square value of 4.72 and DF of 1, the p value is 0.029. The result is significant at $p<0.05$. Thus the association between psychogenic causes and nocturnal enuresis has been established.

It was also observed that 60% of the individuals had regressive behaviours/parasomnias along with a significant stress level, while only 7.5% of cases with a psychogenic stress did not develop regressive traits. The association

between other regressive behaviors/ parasomnias and significant stress level is statistically significant ($p=0.00001$).

Further, Of the 20 cases without nocturnal enuresis, 4 cases (10%) with a significant stress level had a parasomnia/regressive behavior and 1 case without a significant level of stress had a parasomnia. 3 cases with a significant stress level did not have any regressive behavior/ parasomnia and 12 cases without stress did not have any parasomnia/regressive behaviour. It was observed that 20% of the individuals had other regressive behaviours/parasomnias along with a significant stress level, while only 15% of cases with a significant stress level were without regressive traits. The association between other regressive behaviors/parasomnias and significant stress level is statistically significant ($p=0.015$).

This study proves that stress is a very germane factor in nocturnal enuresis and other regressive behaviour/parasomnia in the pediatric age group. And treatment must never overlook these factors as treating these factors would, in most cases lead to resolution of the condition without the need for intervention.

Some setbacks in the study were the small size of study population and time constraints. A larger study group would help understand the stress factors more clearly. The study could have included problem resolution and its outcome, which weren't done due to time constraints.

CONCLUSION

This study proves that psychogenic causes play a major role in nocturnal enuresis and other regressive behaviours and parasomnias.

Declaration by Authors

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