

Original Research Article

Reliability of Nocturnal Enuresis Questionnaire in 6-15 Years Typically Developing School Children

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Received: 10/10/2016

Revised: 24/10/2016

Accepted: 25/10/2016

ABSTRACT

Background and Objectives: Nocturnal enuresis is any type of bed wetting occurring in children at night when they are asleep in discrete amount after 5 years of age, according to International Children's Continence Society (ICCS). It leads to frustration in the child leading to poor self esteem, social withdrawal causing family stress. There are various methods to assess and evaluate the condition, but questionnaire is one of the popular and widely used methods in conducting big inquiries. It can be used as an outcome measure for evaluating the prevalence and awareness; hence our aim was to construct a new questionnaire on nocturnal enuresis in children with emphasis on awareness among parents on nocturnal enuresis by considering the standard definition.

Materials and Methods: Questionnaire was formulated by thorough literature review, opinions and comments from the medical professionals and language translation from the university professor. Questionnaire consist of 2 components, to assess the prevalence and to know the awareness among parents on nocturnal enuresis. 30 typically developing children from 6-15years of either gender were assessed. Questionnaire was filled by the parents, response was obtained using close ended questions. Reliability of the questionnaire was done for English and the local language Kannada. Completely filled questionnaires were further evaluated for the analysis.

Results and Conclusion: The r value for test-retest reliability for prevalence and awareness components were $r=0.9547$; $r=0.9874$ respectively. For determining the internal consistency cronbach's alpha values were obtained in both the languages, for night time wetting component the cronbach's value was 0.8420 for English, 0.7221 for Kannada. In Awareness component it was 0.9258 for English and 0.8678 for Kannada. It was concluded that the self administered questionnaire on nocturnal enuresis is a reliable instrument tool to assess the prevalence and awareness.

Key words: Nocturnal enuresis, Reliability, Questionnaire, Children, Parents, Awareness

INTRODUCTION

As per the Standardization Committee of the International Children's Continence Society, defines enuresis as incontinence in discrete episodes while the child is asleep after 5 years of age. In many published studies enuresis has been defined into various forms and hence it becomes difficult for the medical practitioners to

follow particular guidelines. International Children's Continence Society serves to be a standard tool and provide clear guidelines. Further it is easier, reduces uncertainty and confusion among researchers for comparing the studies, thus can be used in all the settings world-wide. [1] Awareness among parents on signs and symptoms of nocturnal enuresis can contribute to their ability to

identify enuresis and seek professional help on time. It is important to understand the factors associated which lead to enuresis among children in order to guide public awareness and future education. Awareness of nocturnal enuresis in the society among the parents is still in its infancy hence with increase in awareness it could put the health professionals in a better position to aptly manage this condition. There is a need of awareness among parents as it can inculcate healthy lifestyle and devoid associated secondary complications in the growing period of a child. Evidence is lacking on transferring awareness into behavioural change and on what makes the population not to receive help seeking behaviour. The continence awareness should be a part of the main stream and on-going health education and advocacy programs with emphasis on eliminating stigma, promoting disclosure and help-seeking behavior and improving quality of life.^[2]

To know the awareness it is essential to have an objective measure to quantify the knowledge about the condition and thereby creating awareness among parents. In most of the studies questionnaire was used as it is most popular method.^[3-10] It is useful in conducting big inquiries, can be adopted by research staff, personal individuals, organizations which can be public or private and governments.^[11] Hence the questionnaire can be considered as an outcome measure for evaluating the awareness level among parents.

In India few published studies gives a prevalence of 4 to 14% in school children. Variation is noted in prevalence rate, perhaps due to regional and racial difference and collection of the data by different methods. As per the literature searched there is lack of parental awareness on nocturnal enuresis among children in India.^[12] Enuresis is partially understood, which may lead to frustration in children and family members, leading to poor self-esteem of the child, social withdrawal and in turn causing family stress. Assessing the knowledge and attitude towards nocturnal enuresis is of

prime importance and the information can be obtained by giving pre-structured self administered questionnaire, mailed survey, structured interview and through schedules.^[2,9]

There is need to develop a reliable objective measure in the form of questionnaire which seems to be less cumbersome and easily applicable to know about the condition. The objective of the current study was to formulate a reliable objective measure in the form of questionnaire which is easily applicable to know about nocturnal enuresis, its prevalence in children with emphasis on awareness among parents. The need to take wide range of age group is that older children tend to suffer much more than younger children from the stigma of bed-wetting.^[13]

MATERIALS AND METHODS

The questionnaire was formulated in two languages, English and Kannada (local language). It comprises of 2 main components first component to assess prevalence of night time wetting. It consisted 3 sub components a) night time wetting [8 questions], b) medical/family history [8 questions] and c) in general behavioural wetting [9 questions]. The second component to assess the awareness among parents on nocturnal enuresis. It comprises of 3 subcomponents a) awareness about night time wetting [6 questions], b) knowledge about therapeutic/medical intervention [5 questions], and parent's attitude towards child's bed wetting [4 questions]. The questions were emerged from a number of different sources of literature review^[4,14] and opinions from medical professionals and language translation from university professor of Kannada. The enuresis in children and awareness among parents was measured using close ended questions.

To assess the reliability of the questionnaire, participants were selected based on simple random (systematic) sampling. Questionnaires were sent to the

parents in a sealed envelope through their children, from each class of Ist-Xth standard, which were in the age group of 6-15 years. Total of 30 typically developing school children and their parents were included in the study. The mean and standard deviations were obtained. Most of questionnaires were filled by fathers. Parents included in the study were educated, at least completed their higher secondary school and were able to read and write English as well as Kannada. Questionnaires were given twice to the parents for test retest and language reliability with the gap of 15 to 18 days.

RESULTS

The questionnaire was assessed of its test-retest reliability; r value obtained was 0.9547 and 0.9874 for prevalence and awareness components respectively, which

suggested that the self administered questionnaire is a reliable instrument tool. The internal consistency within the items of the questionnaire was evaluated by cronbach's alpha values, for both of the languages. For night time wetting component the cronbach's value was 0.8420 for English, 0.7221 for Kannada. In Awareness component it was 0.9258 for English and 0.8678 for Kannada. All the values obtained were above 0.7 which considered being having an acceptable reliability. [15,16] The designed questionnaire for the purpose of validity was evaluated by knowledgeable medical professionals which included a Physiotherapist, Paediatricians, Paediatric surgeons, Nephrologist and Psychiatrists. Based on their opinion necessary addition of components and deletion of the redunctant items were done.

Table 1: Questions (1-8) in English language analyzed for night time wetting component

Items	Item correlation	Cronbach alpha
NTW1	0.5048	0.8318
NTW2	0.4913	0.8335
NTW3	0.6928	0.8073
NTW4	0.7037	0.8056
NTW5	0.7380	0.8064
NTW6	0.6110	0.8190
NTW7	0.2495	0.8645
NTW8	0.6759	0.8094

*NTW- night time wetting

Summary	Value
Cronbach's alpha full scale	0.8420
Standardized alpha	0.8448
Correlation of 1st & 2nd half:	0.7897
Split-half reliability	0.8826

Table 2: Questions (1-8) in Kannada language analyzed for night time wetting component

Items	Item correlation	Cronbach alpha
NTW1	0.5225	0.6708
NTW2	0.3406	0.7086
NTW3	0.4974	0.6904
NTW4	0.6719	0.6432
NTW5	0.5866	0.6535
NTW6	0.4380	0.6894
NTW7	0.3841	0.7052
NTW8	0.0179	0.7714

*NTW- night time wetting

Summary	Value
Cronbach's alpha, full scale	0.7221
Standardized alpha	0.7368
Corr. 1st & 2nd half:	0.8204
Split-half reliability	0.9013

Table 3: Reliability analysis of questions (1-15) in English language for awareness component

Items	Item correlation	Cronbach alpha
AW1	0.4931	0.9250
AW2	0.5598	0.9235
AW3	0.6990	0.9193
AW4	0.7486	0.9178
AW5	0.7631	0.9184
AW6	0.6623	0.9205
AW7	0.3696	0.9291
AW8	0.7218	0.9186
AW9	0.6876	0.9197
AW10	0.6008	0.9223
AW11	0.7177	0.9187
AW12	0.7259	0.9186
AW13	0.8671	0.9133
AW14	0.7165	0.9188
AW15	0.3651	0.9281

*AW-Awareness

Summary	Value
Cronbach's alpha, full scale	0.9258
Standardized alpha	0.8245
Corr. 1st & 2nd half:	0.8527
Split-half reliability	0.9205

Table 4: Reliability analysis of questions (1-15) in Kannada language for awareness component

Items	Item correlation	Cronbach alpha
AW1	0.2557	0.8710
AW2	0.1313	0.8721
AW3	0.6365	0.8530
AW4	0.6811	0.8504
AW5	0.7049	0.8534
AW6	0.8015	0.8440
AW7	0.2557	0.8710
AW8	0.1313	0.8721
AW9	0.6365	0.8530
AW10	0.6811	0.8504
AW11	0.7049	0.8534
AW12	0.8015	0.8440
AW13	0.3374	0.8705
AW14	0.3407	0.8687
AW15	0.5300	0.8603

*AW-Awareness

Summary	Value
Cronbach's alpha full scale	0.8678
Standardized alpha	0.8612
Corr. 1st & 2nd half:	0.5344
Split-half reliability	0.6966

DISCUSSION

Number of studies are carried out to know the prevalence on nocturnal enuresis, pathophysiology, its associated risk factors, but as per the literature searched to the best of our knowledge, there is lack of information on parental awareness on nocturnal enuresis.

Enuresis is one of the paediatric health problem affecting child's psycho social behaviour, poor school performance and often leading to familial stress as well. [6,17,18] To find out the prevalence and awareness on nocturnal enuresis, there is scarcity of a valid and reliable tool such as questionnaire, which can be easily implemented. The mean and standard deviation values for age was 8.93 years (± 2.56), height 129.83cms (± 13.87), weight 27.77 kg's (± 10.07) and BMI 15.99 kg/m² (± 3.06). In our study the self administered parents questionnaire on nocturnal enuresis was produced by doing test retest reliability, split half reliability, also for the internal consistency cronbachs alpha values were obtained. It was been applied for questionnaires in both the languages in english as well as kanada. For the content validity, medical professionals evaluated the questionnaire. A similar study is been conducted on nocturnal enuresis to assess the reliability and validity of questionnaire on nocturnal enuresis and sleep interutions but it was in elderly population.

Hence our questionnaire was formulated for children with enureis and

was found to be a reliable tool. Reliability analysis was done for both the languages, the cronbach's alpha value is the coefficients of reliability to check the average inter correlation among items which was found to be having acceptable and good item correlation internal consistency for night time wetting and awareness components. A study conducted on research methods has indicated 0.7 to be an acceptable reliability coefficient but in some studies lower thresholds are even used. [15,16]

In our study there were no values for cronbach's alpha which were below 0.7, Hence this questionnaire can be acceptable as measurement tool and considered reliable. A prospective study was conducted among Turkish children who also used a self administered questionnaire to know the prevalence of enuresis but the study did not specified any validity or reliability of the questionnaire [19] corresponding with this and other studies we developed a questionnaire which was found to be a reliable tool.

CONCLUSION

The self administered questionnaire is a reliable instrument tool to assess the prevalence and awareness on nocturnal enuresis in typically developing children of 6-15 years old.

Limitations and Further Recommendations

We did not bring out the correlations of the sub components of questionnaire. Further the questionnaire can be studied in other languages to carry out prevalence and awareness studies.

ACKNOWLEDGEMENT

We are thankful to all the children, parents who participated in the study, schools for their help and cooperation, Dept. of Pediatric surgery, Department of Pediatrics, Psychiatry, Nephrology and the University Professor for helping out with the translation of questionnaire in Kannada.

Conflict of interest: None

Financial assistance: Self

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NOCTURNAL ENURESIS [Night Bedwetting]

Parent Questionnaire

Wetting at night time:

*Y / N

- 1) Does your child wet his/her bed (diaper) during night time?
If yes, since when please specify _____
- 2) In past 6 months has your child wet the bed? If yes, what is the frequency of urination?
2 or more than 2 times per week 1 time per week
2 times per month 1 time per month
- 3) Does your child wake up after bed wetting?
- 4) Does your child wet his/her pants during day?
- 5) Does your child appear to have pain with urination?
- 6) Does your child have constipation?
If yes, since _____
- 7) Has your child attained urinary/ faeces control?
If yes at what age urinary control was attained? _____
If yes at what age faeces control was attained? _____
- 8) Has your child been treated for night time bedwetting? If yes, what type of treatment did your child receive?
(Physiotherapy) (Medicines) (Wait for maturity) (Fluid restriction) (Alarm treatment)(Other)

PARENT AWARENESS QUESTIONNAIRE ON NOCTURNAL ENURESIS

Y / N / DK

Awareness about nocturnal enuresis

- 1) Are you aware of nocturnal enuresis?
- 2) Are you aware of your child's night time wetting?
- 3) Do you know if your child is wetting bed even after the age of 5 years than it is considered as atypical?
OR Do you know that children are expected to be dry by the age of 5 years?
- 4) Are you aware of the fact that bed wetting also often runs in families?
- 5) Do you know bed wetting at night may affect your child's sleep?
- 6) Are you aware that bed wetting can have a deep impact on a child's behavior or self esteem?

Knowledge about therapeutic/medical intervention

- 7) Are you aware that night time bed wetting can be treated?
- 8) Did you seek any medical advice/consulted a doctor?
- 9) Do you know that physiotherapy can help in curing the bed wetting problem?
- 10) Do you know that other treatments such as drugs/complementary therapies can help in treating bed wetting?
- 11) Are you aware nocturnal enuresis if not treated on time might lead to secondary complications or might have a psychological impact on a child?

Parent's attitude towards child's bed wetting

- 12) Are you bothered about your child's night wetting?
- 13) Have you punished your child for wetting the bed at night?
- 14) Do you consider nocturnal enuresis as a shameful condition and kept as secret?
- 15) Do you think more should be done for the children with nocturnal enuresis?

[*Y –Yes, N-No, DK-Don't Know]

How to cite this article: 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(11):172-177.
