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Original Research Article

Caregivers' perception and reported challenges experienced by children affected with nocturnal enuresis in Ibadan, Nigeria

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ABSTRACT

Background: Nocturnal enuresis (NE) is bedwetting (BW) at night; it is a childhood problem that involves a large number of children. However, the study aimed at investigating caregivers' perception, and challenges experienced by the children affected with NE in Ibadan, Nigeria.
Methods: The study utilized a descriptive case study to explore caregivers' perceptions and challenges of NE on children and families using a multistage sampling technique to select 309 respondents. A semi-structured questionnaire was used in collecting data for this study and descriptive analysis statistics and Chi-square test were used for the analysis.
Results: The results showed that 86.5% perceived NE as a psychological problem, and 83.3% perceived that bedwetting can be a result of the spiritual spell, NE as a source of shame (87.3%), bedwetting as a serious behavioural problem (94.4%) and teenage bedwetting as abnormal (94.8%). The study also that that 35.7% of the children exhibited unruly attitudes, 23.8% were bullied, 100.0% felt nervous most times, 39.7% felt intimidated, and 47.6% will rather keep to themselves by not socializing.
Conclusions: The occurrence of nocturnal enuresis was high among children above ten years of age. Almost all caregivers perceived nocturnal enuresis as negative to the family. Hence, there is a need to design health promotion programs aimed at addressing these challenges and empowering both children and caregivers in the process for the resolution of the problem.

Keywords: Caregivers, Children, Nocturnal enuresis

INTRODUCTION

Nocturnal enuresis (NE) is bedwetting (BW) at night; it is a childhood problem that involves a large number of children. It is a habit characterized by functional difficulty on bladder control in normal healthy children above the age of eight years. Many children are affected with NE in every culture but it is not perceived as a public health problem until a very late age when the damage would have been done. Most adolescents no longer bed wet, but for the small percentage of adolescents who are affected, this can be a devastating problem at home where the child is frequently punished for wetting the bed at night, and at school where the stigma sets the child back.[1] This is more devastating when it affects the girl child where it brings about rejection for intimate relationships and delay in marriage. The occurrence of NE among children aged 6 to 12 years in Igbo-Ora, a rural community in South West Nigeria, was 17.6%. In a similar study in Ibadan, children challenged with NE accounted for 21.3% which indicates a high prevalence of NE among children in Nigeria and other parts of Africa.[2] Nocturnal enuresis subjects these children to experience indescribable humiliation, anxiety,

embarrassment, and loss of self-esteem; with a negative effect on self-perception, interpersonal relationships, quality of life, and school attendance as the child grow.[3] The psychological trauma, emotional challenges and management of NE can be considerably traumatizing on the child and family. The effects of the stigma vary with individuals. The aftermath of NE can limit socialization opportunities such as school camps, and sleepover parties; it affects building relationships with peers; and negatively influences choice in marriage later in life. Also, it presents a financial burden to families with increased costs for laundry, disposables, and medical care. It is important and more profitable to address the phenomenon early in life than to subject the child and family to the consequences and public health importance of a neglected NE. The overall prevalence varies from one place to the other; 22.3% among healthy children in a study in Idikan, an urban community in Ibadan Nigeria, and 17.6% from Igbo-Ora, a rural community in Southwest Nigeria.[4,5]

El Said et al concluded that the problem that confronts the child with enuresis is enormous.[6] These problems range from the adoption of negative defense mechanism to the child's inability to accept invitations to sleep away from home, to urinary tract infection to depression as a result of the enuresis treatments that failed to anxiety, and inferiority complex as adolescence approaches. This study was therefore designed to investigate caregivers' perception, and the implication of attitudes, challenges and burdens of NE on the children in Ibadan, Nigeria.

METHODS

Study design

A descriptive study design was adopted to explore caregivers' perceptions, and challenges experienced by the children affected with nocturnal enuresis (NE) in Ibadan. It considered the reported impact of NE from caregivers who have children challenged with nocturnal enuresis in five (5) LGAs in the Ibadan metropolis.

Study area

This study was carried out in Ibadan which is the capital of Oyo state and the third-largest metropolitan city in Nigeria with an estimated population of 3,847,472 in 2007. Ibadan is comprised of 11 LGAs of which five are urban and six are rural-based on locations of their headquarters. There are six rural LGAs (Oluyole, Ona-Ara, Egbeda, Ido, Akinyele, and Lagelu) and five urban LGAs (Ibadan North, Ibadan North East, Ibadan North West, Ibadan South West and Ibadan South East). Ibadan is divided into three socio-economic and cultural zones which cut across the LGAs: a traditional inner core, a transitional, and a suburban periphery. The inner core areas form the old part of the city, inhabited, for the most part, by people with a low level of education. These areas are highly congested and overcrowded, have few and poor roads, possess limited amenities, and have many other public health problems. The transitional area is an interface between the inner core and elite areas. The suburban periphery is described as the elite area, containing modern low-density residential estates, occupied by professionals and other high-income groups.[7]

Study population

The study population for this study are caregivers (father, mother, grandparents, and senior siblings) of children challenged with NE.

Inclusion criteria

Caregivers of children aged 10 to 16 years identified to be challenged with NE for at least one wet night per month for three consecutive months and those residing in the study areas who volunteered to participate in the study.

Exclusion criteria.

Those who have children below 10 years with NE and diurnal enuresis or enuresis as a result of disease conditions (organic enuresis) were excluded.

Sampling technique

The study adopted a multistage sampling technique. In stage one, all the eleven local government areas (LGAs) were written out and assigned numbers from one to eleven. The selection was done using the toss of the fair coin, with 'head' representing even numbers and 'tail' representing odd numbers. An exhaustive selection of even numbers was carried out for the selection of LGAs. The decision of the fair coin gave the group (even or odd number group) to be selected. Five (5) LGAs among those listed in the head (even numbers) were selected from the eleven LGAs in Ibadan for the study, which was also achieved by the tossing of a fair coin. All the wards in each of the five (5) even-numbered LGAs were included in the study. Any respondent with a child (above 10 years of age) challenged with NE was purposively selected. The principal investigator and research assistants trained on data collection went from house to house, market or convenient places to identify caregivers with children challenged with NE in the communities. A convenient sampling technique was adopted in subject selection. The selection was based on the interest of the people and the number of children challenged with the burden of bedwetting. Only those residing in the selected LGAs and willing to participate were selected for the study.

Sample size determination

Yamane (1973) formula was used for sample size determination in the study.[15] The population in these LGAs was calculated using wards and area square meter coverage. The population and wards are tabulated below.

Table 1: Wards of Ibadan.

LGA census (years 2006)	Wards per LGA	Population per m^2/ward
Ibadan north	12	168
Ibadan south east	12	37
Egbeda	11	172
Ido	10	112
Akinyele	12	36
Total population/m^2	57	525

Yamane formula:

$$n = \frac{N}{1 + N(e)^2}$$

Whereby; n = the required sample size; N = the total population in square meter per ward (m^2/ward) of the study and e = the error of tolerance (5%)

Yamane formula: $n = \frac{N}{1+N(e)^2}$

$$n = \frac{525}{1 + 525(0.05)^2}$$

$$n = \frac{525}{2.31}$$

n= approximately 227.

Assuming a non-response of 10%

$$n = \frac{100 \times N}{100 - r}$$

where N = sample size; r = non-response rate (10%)

$$n = \frac{100 \times 227}{100 - 10}$$

n = 252.22.

The sample size was increased by 10% to make up for the non-response rate, and to increase the power of observation. It increased the sample size to 252 caregivers plus 57 children from the five local government areas which equalled 309 respondents.

Instrument for data collection

A semi-structured questionnaire was used for data collection for this study which was collected in October, 2018. Section A inquired about respondents' socio-demographic characteristics while section B elicited information on respondents' perception of NE. There were 22 questions with Likert's scale measure using, strongly agree (SA), agree (A), disagree (D), strongly disagree (SD), and undecided (U). These consisted of 8 positive questions (SA= 4, A=3, D=2 SD=1 U=0), and 14 negative questions (SA=1, A=2, D=3, SD=4, U=0). The minimum obtainable score was 38, and the maximum was 88. Section C elicited information on the implication of attitudes, challenges and burdens of NE on the children.

Validity

To ensure variety and cogency of the instrument, a draft of the self-developed structured questionnaire was given to experienced researchers in the department of nursing, University of Ibadan, to explore questions for clarity, specificity of variables to be measured, and relevance of the contents of the questionnaire. This was intended to guide against errors and ambiguity for the final administration of the questionnaire.

Reliability

Instrument reliability was ascertained using a test-retest method among caregivers with children who wet the bed at night recruited for a pilot study in Oke-Ayo, a community in ward 8 of Ibadan South-west local government, Ibadan, Nigeria. This reliability test checked the internal consistency of items in the questionnaire. The pretest of the instrument helped the researcher to estimate the time that could be assigned to respond to the questionnaire. The reliability test of Cronbach Alpha for the instrument was 0.78

Data management and analysis

The questionnaire was collated and checked for completeness. The researchers rechecked all administered copies of the questionnaire one by one and edited them where necessary. A coding guide was developed and used to facilitate coding and data entry into the computer. Each questionnaire was coded and entered into the computer using Statistical Package for Social Sciences (SPSS) version 20. The information obtained was summarized and interpreted based on the computation of the outcome. Descriptive analysis for quantitative variables including mean, median, and standard deviation was computed, and self-esteem was measured using dichotomous (yes/no) responses. The data were organized and presented in simple tables and charts as applicable. Inferential analysis using the Chi-square test and independent student t-test were performed at a 5% level of significance.

Ethical consideration

Ethical approval was received from the University College Hospital/University of Ibadan Ethical Committee. Community leaders of the LGAs, heads of the religious organizations, and the family heads of the participating families in the study areas were duly informed before contacts were made with the respondents. Written or verbal consent was obtained from the caregivers before administering the questionnaires. Consent for children participation was obtained from

family caregivers, parents, and parent teachers association meetings. The respondents were duly notified that participation was voluntary, and they had the right to withdraw from the study at any time without reprisal or loss of benefit. Strict confidentiality of the information given before and after the data collection was assured.

RESULTS

Table 2 shows that the highest number of caregivers were within the age group of 31-40 years old (34.9%), with a mean age of 38.0±10.4 years. There were 72.6% female caregivers out of which 65.1% were married. Some caregivers were reported to be actively engaged in one occupation or the other. 73.8% of children reported that their mothers were self-employed. Likewise, 65.5% were self-employed fathers. The majority of these parents had formal education with 57.9% mothers reportedly having secondary education. Also, 63.5% of fathers had secondary education, and the majority (94.4%) of the respondents were Yoruba.

Table 2: Socio-demographic data of caregivers (n=252).

Significant others to the child	Categories	Frequency	%
Age of caregivers	21-30	63	25.0
	31-40	88	34.9
	41-50	78	31.0
	51-60	16	6.3
	61-70	7	2.8
Gender of caregivers	Male	69	27.4
	Female	183	72.6
Marital status of caregivers	Single	50	19.8
	Married	164	65.1
	Others	38	15.1
Reported occupation of mother of the child with NE	Employed	35	13.9
	Self-employed	186	73.8
	Unemployed	13	5.2
	Artisan	18	7.1
Reported occupation of father of the child with NE	Employed	52	20.6
	Self-employed	165	65.5
	Unemployed	14	5.6
	Artisan	21	8.3
Reported mother's educational status	Primary	52	20.6
	Secondary	146	57.9
	Tertiary	48	19.0
	None	6	2.4
Reported father's educational status	Primary	21	8.3
	Secondary	160	63.5
	Tertiary	68	27.0
	None	3	1.2
Parents' ethnic group	Yoruba	238	94.4
	Igbo	6	2.4
	Hausa	1	0.4
	Others	7	2.8

Bio-data of children challenged with nocturnal enuresis as identified by caregivers

Table 3 shows that most (90.1%) children challenged with nocturnal enuresis were in the age group 10-15 years old, with a mean age of 13.6±4.4 years respectively. The position of the children shows that one-third (33.7%) was first in the family. Many of the children challenged with nocturnal enuresis (46.0%) were in junior secondary school levels (JSS1-JSS3). Many children from home (70.6%) were challenged with nocturnal enuresis.

Table 3: Bio-data of children challenged with nocturnal enuresis as identified by caregivers (n=252).

Variables	Categories	Frequency	%
Age of the children that wet bed	10-15 years	227	90.1
	>15 years	25	9.9
Position of the child in the family	First	85	33.7
	Second	55	21.8
	Third	41	16.3
	Fourth	30	11.9
	Fifth	23	9.1
	Sixth	13	5.2
	Seventh	5	2.0
Class in the school of the child that wet bed	JSS1-JSS3	116	46.0
	PRY 2-6	94	37.3
	SS1-SS3	17	6.8
	Above SS3	8	3.2
Relationship of caregivers with child that wet bed	Father	45	17.9
	Mother	110	43.7
	Significant others	97	38.5
Children living in the same house with the child that bed wet	1-2	178	70.6
	3-4	69	27.3
	5-6	5	2.0

Caregivers' perception of nocturnal enuresis

Almost all the caregivers (99.2%) perceived nocturnal enuresis as negative to the family, and the child while few (0.80%) had a positive perception about nocturnal enuresis (Figure 1).

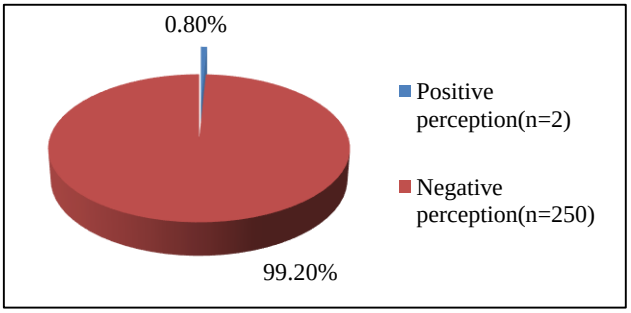

Figure 1: Pie chart showing measure of perception of caregiver.

Table 4: Caregivers' perception of nocturnal enuresis (n=252).

Caregivers' perception on (NE) (BW)	Strongly agree N (%)	Agree N (%)	Disagree N (%)	Strongly disagree N (%)	Undecided N (%)
Causes of BW are well known	53 (21.0)	129 (51.2)	39 (15.5)	28 (11.1)	3 (1.2)
BW could be kidney problem sign	0	6 (2.4)	120 (47.6)	116 (46.6)	10 (4.0)
BW could be sign of bladder disease	3 (1.2)	51 (20.2)	84 (33.3)	100 (39.7)	14 (5.6)
BW can be due to Spiritual spell	103 (40.9)	107 (42.5)	21 (8.3)	17 (6.7)	4 (1.6)
BW is a social problem	140 (55.6)	78 (31.0)	14 (5.6)	10 (4.0)	10 (4.0)
A bad omen for a big girl to BW	85 (33.7)	137 (54.4)	16 (6.3)	14 (5.6)	0
BW will affect marriage negatively	45 (17.9)	73 (29.0)	47 (18.7)	80 (31.7)	7 (2.8)
Taboo for mother/child urine to mix	23 (9.1)	66 (26.2)	45 (17.9)	90 (35.7)	28 (11.1)
Suitors will avoid girls who BW	163 (64.7)	72 (28.6)	6 (2.4)	9 (3.6)	2 (0.8)
A serious behavioural problem	128 (50.8)	110 (43.7)	9 (3.6)	5 (2.0)	0
BW is a neurological disease	20 (7.9)	30 (11.9)	48 (19.0)	122 (48.4)	32 (12.7)
Above 10 years BW is abnormal	152 (60.3)	87 (34.5)	4 (1.6)	5 (2.0)	4 (1.6)
Too much playing causes BW	205 (81.3)	44 (17.5)	1 (0.4)	2 (0.8)	0
No water at night stops BW	192 (76.2)	50 (19.8)	4 (1.6)	5 (2.0)	1 (.4)
Give herbal remedies to stop BW	19 (7.5)	19 (7.5)	40 (15.9)	125 (49.6)	49 (19.4)
Punishment makes child stop BW	41 (16.3)	85 (33.7)	35 (13.9)	89 (35.3)	2 (.8)
Commend the child each dry night	41 (16.3)	159 (63.1)	24 (9.5)	24 (9.5)	4 (1.6)
Enuresis dance helps to stop BW	12 (4.8)	16 (6.3)	32 (12.7)	191 (75.8)	1 (.4)
Show you are worried about BW	145 (57.5)	78 (31.0)	19 (7.5)	10 (4.0)	0
Show your anger when bed is wet	142 (56.3)	65 (25.8)	32 (12.7)	13 (5.2)	0
BW brings shame each wet night	166 (65.9)	54 (21.4)	21 (8.3)	11 (4.4)	0
Pass urine on hot ash stops BW	21 (8.3)	65 (25.8)	21 (8.3)	106 (42.1)	39 (15.5)

Table 5: The implication of attitudes, and burdens of NE on the child (n=252).

Implication of NE(BW)	Categories	Frequency	%
Attitudes	Unruly	90	35.7
	Bully	60	23.8
	Jittery	252	100.0
	Intimidated	100	39.7
	Un-socializing	120	47.6
Burdens of NE	Shameful behaviour	252	100.0
	abhorred by family	100	39.7
	Limits socialization	120	47.6
	Where to get help	252	100.0
	Stress in correcting	150	59.5
	Need for permanent solutions	252	100.0

Most (86.5%) perceived it as a psychological problem, 83.3% perceived that bedwetting can be a result of the spiritual spell. Most of the caregivers, (87.3%) viewed NE as a source of shame. Also, 94.4% viewed bedwetting as a serious, behavioural problem while the majority of caregivers 239 (94.8%) viewed teenage bedwetting as abnormal (Table 4).

The implication of attitudes, challenges and burdens of NE on the child

Table 5 summarized the implication of the challenges and burdens of NE on children. The table shows that 35.7% of children exhibited unruly attitudes while bullying was 23.8%, jittery was common to all, intimidation (39.7%), and 47.6% will rather keep to themselves by not socializing. Bedwetting is a shameful burden to all, abhorred by family (39.7%), a limitation to socialization (47.6%), and stress in correcting the situation to caregivers. Need for a permanent solution and where to get help were major problems confronting all the caregivers.

Test of hypotheses

Ho_1: There is no significant gender difference in the perception of NE among caregivers.

Table 6: Gender difference in perception of nocturnal enuresis.

Gender	N	Mean±SD	D	T	P value
Male	69	62.01±10.81	250	1.259	0.209
Female	183	60.33±8.94			

Table 6 shows no significant difference in perception of nocturnal enuresis among the caregivers [t (250) =1.259; p>0.05]. This implies that there was no significant difference in male and female caregivers' perceptions about nocturnal enuresis in children. Hence, the results confirmed the stated hypothesis, and it was not rejected in this study.

Table 7 below, shows a significant association between the classification of nocturnal enuresis, and the impact on the family (worried about the bedwetting) [χ^2 (249) =6.291; p<0.05]. This implies classification of nocturnal enuresis influences the family. Hence, the results did not confirm the stated null hypothesis, and it was not rejected in this study.

Table 7: Relationship between NE classification, and its impact on the family.

Classification of NE	Impact (worried)		Total	χ^2	DF	P value
	Yes	No				
Primary	128 (85.9)	21 (14.1)	149	6.291	2	0.043
Secondary	77 (93.9)	5 (6.1)	82			
Spell on child	21 (100.0)	0	21			

Note: Primary NE; child has never or seldom experienced a dry night. Secondary NE; child has experienced dry night then began bedwetting.

DISCUSSION

This study showed that majority of the respondents were in the age group of 10 to 15 years while the rest were above 15 years of age. The mean age of children challenged with NE was 13.6±4.4years, in line with Nerveus et al, Rouse et al as well as Mohammed et al joined other researchers to agree that the occurrence of bedwetting in schoolchildren aged between 10 and 14 years vary.[8-10] Findings revealed that almost all caregivers have a negative perception of nocturnal enuresis in the family. These negative perceptions were also observed in Idikan, Ibadan even in cases of frequency of NE as low as one episode in a month. This is in line with Hanan et al, and supported by Patrina who separately observed children challenged with NE having no marked emotional, social, or behavioural problems when compared with their non-enuretic peers.[1,11] Therefore, they opined that children challenged with enuresis seem to have accompanying psychological problems.

The finding also revealed the caregivers were worried as the act restricts decisions on visitation away from, and into the home. This consequently limits a child's freedom essential for socialization. Patrina also pointed out that children who wet beds often suffer acute shame and embarrassment as age increases.[1] In support of the findings, Shepard et al investigated the psychological problems associated with bedwetting, and combined (day and night) bedwetting in children.[12] They compared the rate of internalizing and externalizing problems, and problems with friendships, bullying, and unruly behaviour in children with bedwetting probably an ego defense mechanism. The study further pointed out some social burdens of bedwetting. Many children claimed being embarrassed which had an emotional impact on some. Some would not spend the night away from home probably to avoid embarrassing episodes away from the usual environment where the secret of BW is concealed. Mendhekar et al observed that these practices adopted in the management of NE still exist.[13] When NE is mismanaged, the child grows up with low self-esteem which could result in loss of self-confidence in building a relationship, and the exhibition of negative and unassertive behaviours later in life.[14]

There are some limitations of the study. There are eleven (11) local government areas in Ibadan. Being a descriptive mixed study of a stigmatized phenomenon, requiring individualized attention in children, the sample size was inevitably small; the sample size may not be a true representative of the population, and the result may not be generalizable in a population of 5,591,589 people. The sample size was based only on those who volunteered to respond to the questionnaire or be interviewed. No one was compelled to take part.

CONCLUSION

The occurrence of nocturnal enuresis was high among children above ten years of age. Almost all caregivers perceived nocturnal enuresis as negative to the family and the child, and the majority of them were worried about it. There is a significant association between classification and the emotional impact of nocturnal enuresis on the family. It is important to keep in mind that nocturnal enuresis is a common condition in young children. It requires a careful assessment and intervention together with the child and caregiver. There is a need to design health promotion programs aimed at addressing these challenges. Both children and caregivers should be empowered with effective strategies to resolve this menace.

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