Research Article

Pattern of Behavioural Responses to Enuresis Among Children in a Selected Community, Ibadan, Nigeria

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Abstract

In recent times, one of the most common distressful disorders among children is enuresis. It makes them highly vulnerable to the development of behavioural and mental health disorders, such as attention deficit disorder, conduct disorders, oppositional defiant disorders among others. This study aimed to determine the pattern of behavioural disorder in children with enuresis in a rural community in South-West, Nigeria. Descriptive research design using an interviewer-administered questionnaire to elicit information on the perceived pattern of behavioural disorder in children with enuresis. Mothers of children with enuresis (198) in a rural community were selected using accidental sampling method. Both descriptive and inferential statistical tests were employed in analyzing data collected for this study. One hundred and ninety-eight (198) questionnaires were retrieved and analyzed using tables, percentages and Pearson correlation. Ethical clearance was secured from the ethics committee of the University of Ibadan/University College Hospital community. The mean age of respondents was 7.00 ±1, with more male children with enuresis than females. The findings from the study revealed that the majority bedwets at least twice a week in the past six months, with 83.3% bedwetting at night only. The result showed that parents punished their children on wet days, but only a few encouraged on dry days. The pattern of behavioural response revealed significant internalized and externalized behavioural problems among children with enuresis. It is recommended that comprehensive enuresis awareness and management options be included in family health programs.

Introduction:

Enuresis is a common, genetically complex, and heterogeneous problem among children (Niemczyk, Wagner, and von Gontard, 2018). The Diagnostic Statistical Manual of Mental Disorders (IV) (DSM-IV) enuresis refers to the urination of children over five years old in clothes or in bed that happens twice a week for three consecutive months can occur at night, during the day, or a combination of these two, and is also called nocturnal enuresis (Özkan et al., 2010) (Baird, Seehusen, and Bode, 2014) Accordingto(Hashim et al., 2019)International Children's Continence Society's (ICCS) definition, enuresis is defined by an intermittent, wetting during sleep after organic causes have
been ruled out with minimum wetting frequency of once per month. Enuresis is a disease that many children and their families commonly confront. It is a worrying condition that involves repeated voiding of urine into clothes or bedclothes that persist beyond the normative age of maturation of urinary control. (Imoudu, Bugaje, and Aiktionb, 2014). It is a source of concern for families because it leads to considerable emotional distress in affected children. Parents reported some psychological consequences of enuresis (Kiddoo, 2012), such as low self-esteem (Salem, El-Shazly and Hassan, 2016) behavioural problems and specifically low school success (IS and O, 2012). (Mahmoodzadeh et al., 2013). Behavioural disorders among children include various forms of anxiety (Salem, El-Shazly and Hassan, 2016), attention deficit hyperactive disorder (ADHD), obsessive-compulsive disorder (OCD), depressive, disruptive (oppositional defiance disorder (ODD), conduct disorder (CD), developmental disorders, and pervasive disorders (Abrams et al., 2012), (Salem, El-Shazly and Hassan, 2016), (ELsayed, Hassan and Ibraheem, 2018). Behavioural problems appear as a result of emotional reactions to negative environmental influences linked with other children noticing, shyness, social isolation, being humiliated by peers, emotional and physical abuse from parents and guardian. (Niemczyk, Wagner and von Gontard, 2018), (Akyüz et al., 2016)

The relationship between enuresis and behavioural problems has been studied for several decades due to its importance to the growth of children (Gaonkar et al., 2018) (Alshahrani, Selim, and Abbas, 2018). A study among 401 children in a University Hospital of Rome between June 2013 and July 2018, evaluated the characteristics of patients with nocturnal enuresis (NE) (Ferrara et al., 2019). Of the 401 patients, 101 girls (25.2%) and 300 boys (74.8%), and the mean age of the children at first visit was 8.8 [+ - 2.44 years. The study demonstrated that there are a lot of comorbidities that are associated with NE. A cross-sectional (Defenderfer et al., 2017) (Niemczyk, Wagner, and von Gontard, 2018) carried out in Germany on the prevalence of incontinence among preschool children portrayed that attention-deficit/ hyperactivity disorder was common among enuretic children. Research assessing the prevalence of behavioural disorders among children that presented in a clinic documented a distinct pattern of the occurrence of internalizing and externalizing symptoms in this group of children. (Li, 2004) The prevalence of the internalizing symptoms (Abou-Khadr, Amin, and Ahmed, 2013) (depression and anxiety disorder) was 29% in the group. The prevalence of externalizing problems (Li, 2004) (conduct disorder and attention deficit and hyperactivity disorder) was 35%. On the rates of psychiatric comorbidity in a group of 1001 children with bladder and bowel dysfunction, (Niemczyk et al., 2019) (Niemczyk, Wagner, and von Gontard, 2018). The study showed that psychiatric symptoms were up to six times higher in urinary incontinent children than the rates seen in the general population with externalizing and internalizing disorders. A higher percentage of symptoms of the oppositional defiant disorder (ODD) in children was also seen in the study.

Few studies in Nigeria assessed the prevalence of enuresis in children (Anyanwu, Ibekwe and Orji, 2015) (Osungbade and Oshiname, 2003) (Senbanjo, Oshikoya, and Njokanna, 2011) (Enihe et al., 2015). In a cross-sectional descriptive study in Ebony State, Nigeria, the prevalence of enuresis among 216 children was 37.0%. More males had enuresis (67.5%, P = 0.028). Enuresis was associated with abnormal behaviour (P = 0.049) in 23.1% of participants. Attempts at stopping enuresis were based on frequent nighttime waking (96.2%), punishments (47.2%), and denial of fluids (75.5%). Onseeking treatment (17.5%; n = 14) had sought orthodox help, majority of caregivers were unconcerned (60.6%, n = 66). Most caregivers displayed poor attempts in stopping enuresis, which had shown to be ineffective in the child, reducing enuresis. (Anyanwu, Ibekwe and Orji, 2015) In a prospective cross-sectional epidemiological study of 1984 schoolchildren in randomly selected primary schools in Ankara, Turkey, aged 6-13 years, with a mean age of 7.96. (Sarici et al., 2016) The study was done to determine the prevalence and associated factors of nocturnal enuresis (NE) among primary schoolchildren. The prevalence of enuresis was 9.52%. The prevalence of NE among boys and girls was 12.4% and 6.5%, respectively. Daytime incontinence was present in 18% of the children. The majority of children (72.5%) received a combination of waking the child, child voiding, and fluid restriction. For the others (19.5%), their families viewed enuresis as an abnormal developmental condition and deemed that treatment was necessary. Multivariate analyses revealed that age, male gender, parents, a history of enuresis, and siblings’ history of enuresis were the significant predictive factors for NE (Sarici et al., 2016). In a study of 90 patients with complaints of nocturnal enuresis (Koca et al., 2014), the researchers investigated the effect of depression and self-esteem on enuresis. The mean age of the children was 10.76 years. The study confirmed the occurrence of depression, decreased self-esteem in the respondents, and concluded that NE has depressive effects on children. In a cross-sectional study in Igbura, Nigeria, to determine the prevalence and perception of enuresis in 44 children aged 6-12 years (Osungbade and
Oshiname, 2003), The prevalence was 17.6% and higher among boys than girls. A majority of the respondents were for the treatment of enuresis. In a hospital-based, cross-sectional descriptive study of 216 children in Ebonyi State, Nigeria, the prevalence of enuresis was 37.0%. (Anyanwu, Ibekwe and Orji, 2015) More males had enuresis 54 (67.5%, P = 0.028), and the frequency of enuresis decreased with increasing age (P < 0.001). Nocturnal enuresis was significantly associated with abnormal behavior (P = 0.049). Abnormal behavior was observed in 50 (23.1%) participants. Attempts at stopping enuresis were based on frequent nightwaking 51 (96.2%), denial of fluid 40 (75.5%), and punishments 25 (47.2%). On seeking treatment 17.5% (n = 14) had sought orthodox help, majority of caregivers were unconcerned (60.6%, n = 66). This finding shows the inconsistency of poor health-seeking behavior, which is a determinant of child health in Nigeria and other resource-poor countries. Most caregivers made poor attempts at curbing enuresis. Such attempts have been shown to reinforce negative feelings in the child without any positive effects in reducing the frequency of enuresis.

In Nigeria, there is a lack of information on enuresis in children and adolescents. (Osungbade and Oshiname, 2003) The formative period in children determines in no small extent personality and behaviors to be exhibited throughout their lives; the effect of enuresis during this period contribute to their chances of developing behavioral and personality disorder. This study assessed the pattern of behavioral problems among children living with enuresis.

Methods:
This is a descriptive cross-sectional study that aims at determining the pattern of behavioral problems among children living with enuresis in Ibadan. The study setting is a populated residential neighborhood in Ibadan, with most houses closely located within short distances within proximity to a famous market.

The study population was 198 mothers of children with enuresis within the ages of 5-12 years, living in a rural community in Ibadan, accidental sampling technique was used to select available participants who met the eligibility criteria. An interviewer-administered structured questionnaire was utilized to collect relevant information from the respondents. The instrument for data collection was pretested with a Cronbach alpha of 0.78.

Ethical approval was obtained from the University of Ibadan Ethics Review Committee, Ibadan. Consent was obtained after they had been briefed about the objective of the research. Data collected were cleaned for errors, and analysis was done using IBM-SPSS version 21. Descriptive statistics of simple percentage frequency counts, bar chart, pie chart, mean and standard deviation were used to summarize and present the result. Chi-square test was used to investigate whether the association between enuresis and patterns of behavioral disorder among enuretic children is statistically significant at a 5% level of significance.

Results:
Of the total children, 58.1% were male, and 41.9% were female. By implication, more mothers with male children living with enuresis participated in this study. The children were between 6-12 years with a mean of 7 and SD of [+] or [-] 1. About 62% of the respondents are between the ages of 6-7 years, 31% between the age of 8-9 years, ages 9-10 years, and 1.0% of the respondents were 12 yrs and above. Most of the children were living with parents (80.8%), 17.8% living with single parents, 1.5% of and stays with widowed parents.

The mothers reported that the majority of the children bed-wets at least twice a week in the past six months, with 83.3% bedwetting at night only. By implication, most of the children bed-wets only at night and do not meet DSM IV criteria for the diagnosis of enuresis. Almost half the respondents agreed that other children know their children bed wet (49%), out of which 40% agreed that other children make jest of the child when he/she bed-wets. Most of the parents punish their child on wet days (55.1%), but only a few encourage their child on dry days (14.6 %), by implication majority of the mothers utilize negative reinforcement compared to positive reinforcement (Table 1).

Table 1: Report of enuresis among the children.

|                                | Agree | Undecided | Disagree | Mean | St.Dv |
|--------------------------------|-------|-----------|----------|------|-------|
| My child bed-wets at least twice a week in the past six month | 82(41.4) | 5(2.5) | 111(56.1) | 1.85 | 0.357 |
| He/she bed wets both during the day and at night | 22(11.1) | 11(5.6) | 165(83.3) | 1.28 | 0.253 |
Other children know he/she bed wets  | 97(49.0) | 8(4.0) | 93(47.0) | 2.02 | 0.400
Other children make jest when he/she bed wets  | 80(40.0) | 16(8.1) | 102(51.5) | 1.89 | 0.374
I encourage my child on dry days  | 29(14.6) | 3(1.5) | 166(83.8) | 1.31 | 0.259
I punish my child on wet days  | 81(40.9) | 8(4.0) | 109(55.1) | 1.86 | 0.368

The majority (96%) of the mothers had never sought any form of treatment, while those who did (3.6%) used the hospital (Table 2)

Table 2: showing treatment-seeking behavior by mothers of enuretic children.

| Have you ever sought any form of treatment? | Yes | No |
|--------------------------------------------|-----|----|
| Mode of treatment                          | Hospital | None |

Research Question:
What is the pattern of behavioral responses in children with enuresis in Ibadan?

On the pattern of behavioral response of the children, 66.6% (\(\bar{x}=4.52, SD=0.89\)) were always in a hurry to get from one place to the other, 47.4% (\(\bar{x}=3.37, SD=0.67\)) of the children prefer to participate in quiet games than active games, full of energy 70.3% (\(\bar{x}=5.05, SD=1.00\)), and like rough and rowdy games 74.3% (\(\bar{x}=5.19, SD=1.03\)). On shyness, the children shy away from new acquaintances 80.7% (\(\bar{x}=5.44, SD=1.08\)), and sometimes shy even around people he/she has known a long time 60.0% (\(\bar{x}=4.68, SD=0.93\)). The mothers reported that their children get frustrated when prevented from doing things he/she likes 77.7% (\(\bar{x}=5.20, SD=1.03\)) and when angry about something, he/she tends to stay angry for ten minutes or longer 53.6% (\(\bar{x}=4.33, SD=0.86\)). Most of the respondents agreed that their children seem to feel depressed when unable to accomplish some task 65.1% (\(\bar{x}=5.74, SD=0.94\)), a large number of respondents reported that their child hardly ever complain when ill 60.6% (\(\bar{x}=4.69, SD=0.93\)), a majority of the respondents agreed that it is slightly true that their child is very difficult to soothe when he/she becomes upset 56.0% (\(\bar{x}=4.78, SD=0.95\)), most of the respondents agreed that their child gets angry when he/she can't find something to play with 58.6% (\(\bar{x}=4.69, SD=0.93\)). This implies that the majority of the children like trying new things in their daily activities and easily get upset when obstructed from doing what they desire. (Table 3)

Table 3: Pattern of behavioural responses among children with enuresis EU- extremely untrue  QU- quite untrue  SU- slightly untrue  NTNF- neither true nor false  ST- slightly true  QT- quite true  ET- extremely true  NA- not applicable

| My child | Untrue EU | QU | SU | NTNF | True ST | QT | ET | NA | Mean \(\bar{x}\) | St.Dv S.D |
|----------|-----------|----|----|------|--------|----|----|----|----------------|-----------|
| Seems always in a big hurry to get from one place to the other | 29 (14.6) | 22 (11.1) | 11 (5.6) | 14 (7.1) | 39 (19.7) | 44 (22.2) | 39 (19.7) | 0 (0) | 4.52 | 0.894 |
| Prefers quiet games to active games | 58 (29.3) | 44 (22.2) | 9 (4.5) | 10 (5.1) | 27 (13.6) | 33 (16.7) | 14 (7.1) | 3 (1.5) | 3.37 | 0.668 |
| Is sometimes shy even around people he/she has known a long time | 11 (5.6) | 27 (13.6) | 25 (12.6) | 13 (6.6) | 28 (14.1) | 66 (33.3) | 25 (12.6) | 3 (1.5) | 4.68 | 0.927 |
| Is full of energy, even in the evening | 10 (5.1) | 17 (8.6) | 21 (10.6) | 11 (5.6) | 37 (18.7) | 51 (25.8) | 51 (25.8) | 0 (0) | 5.05 | 0.999 |
| Likes rough and rowdy games | 8 (4.0) | 18 (9.1) | 15 (7.6) | 7 (3.5) | 41 (20.7) | 58 (29.3) | 50 (25.3) | 1 (0.5) | 5.19 | 1.028 |
| Sometimes turns away shyly from new acquaintances | 5 (2.5) | 13 (6.6) | 6 (3.0) | 10 (5.1) | 47 (23.7) | 69 (34.8) | 44 (22.2) | 4 (2.0) | 5.44 | 1.078 |
| Gets frustrated when | 15 | 19 | 10 | 44 | 88 | 22 | 0 | 5.20 | 1.029 |
Discussion:
This study examines the pattern of behavioural response to enuresis in children of a community in Ibadan. A total of 198 respondents participated in the study. The findings revealed that there were males than female children with enuresis. Our study confirmed the prevalence of enuresis among children. One of the major challenges of studies relating to enuresis is in its definition, as various studies utilize various criteria in the selection of respondents. This study included all children that bed-wets with a majority of the children bedwetting only at night. Though, do not meet DSM IV criteria for the diagnosis of enuresis. However, it was in line with (ICCS) definition of enuresis. The children were between ages 6-12years with a mean of 7 and SD of [+ or -] 1. The mean age of our respondents is lower than that recorded in some other studies (Sarici et al., 2016)(Ferrara et al., 2019)(Osungbade and Oshiname, 2003). Rather, it is in line with epidemiological study of 1984 schoolchildren in 10 randomly selected primary schools in Ankara, Turkey (Sarici et al., 2016) However, the Rome study is in line with this study finding on male predominance among the children with enuresis (Ferrara et al., 2019)(Li et al., 2018)(Sarici et al., 2016)

This study further revealed that the majority of the parents punished their children on wet days, but only a few encouraged on dry days. This implies that the majority of the parents utilize negative reinforcement and not positive reinforcement. This is in line with a hospital-based, cross-sectional descriptive study in Abakaliki, Ebonyi state. (Anyanwu, Ibeke and Orji, 2015) The study reported that attempts at stopping enuresis were based on frequent nighttime, denial of fluids, and punishments. In the same vein, most of the respondents claimed they never sought any form of treatment but relied on herbs.

The result is in line with a study in Ebonyi, Nigeria, that reported that the majority of caregivers were unconcerned, so only a few sought help. But, on the contrary with Igbo ora study where respondents rely on herbs (Osungbade and Oshiname, 2003) (Sarici et al., 2016) This study confirmed that enuresis at after the culturally acceptable age exposes a child to ridicule among peers as other children make jest of a child that bed-wet which inadvertently affect the children interaction. This is reinforced by other studies where children’s self-esteem was altered as a result of shame by peers (Koca et al., 2014)

On the pattern of behavioural response of the children, The study revealed that there is a significant internalized and externalized behavioural problems among the children with enuresis. This is in line with other studies that confirmed the comorbidity of behavioural disorders in children with enuresis. (Sarici et al., 2016)(Akyüz et al., 2016) Externalizing problems in the form of impulsivity, aggressiveness, and disruptiveness. (Liu, 2004) Internalizing problems were displayed as shyness, loneliness, social withdrawal, and depression. (Mubarak et al., 2016)(Hamed, Yousf and Hussein, 2017) Though externalizing problems were more prominent than the internalizing problems. This
It is noteworthy, to document that the majority of children in Primary School (2015) ‘Nocturnal enuresis: Prevalence and risk factors among school-aged children’ Journal of Paediatrics and Child Health, 49(2). DOI: 10.1111/jpc.12017.

The implication of the Study to Nursing:
The inclusion of a comprehensive enuresis awareness education into family health will assist nurses in their health education delivery and guide parents in on the recognition and early management of enuresis. From the perspective of mental health nursing, early detection and understanding of behavioural deviations in childhood will prevent later life juvenile delinquency, thus, promoting healthy growth and development among these children.

Summary and Conclusion:-
This study described the behavioural responses of 198 children of a rural community in Ibadan, Nigeria. The reviewed literature confirms the comorbidity of behavioural problems with enuresis. The authors concluded by confirming the prevalence of childhood externalizing and internalizing behaviours in children with enuresis, which constitute a risk for the development of juvenile delinquencies. It is noteworthy, to document that the majority of parents of children reported externalizing and internalizing behaviours but did not associate these behaviours to enuresis. Furthermore, the parents did not seek help as they did not relate enuresis as a medical problem requiring hospital visitation and treatment of the children.

This study followed a rigorous data collection and analysis process. However, there are some limitations. The data collected was purely quantitative, and we relied on the perceived responses of the mothers to the questions on enuresis. This might have provided room for the mothers’ inaccurate reporting through overestimation or underestimation. A future survey might add qualitative methods for the triangulation of data. Furthermore, the questionnaire used was only pretested but not a standardized tool; thus, it may be subject to measurement error. Lastly, the result of this study is not generalizable as representing the general behavioural responses of Nigerian children to enuresis. Further research is needed to broaden the scope of understanding enuresis in Nigeria. It is believed that improved awareness of the comorbidity of behavioural disorders with enuresis might promote early diagnosis and consequently prevent later life adolescent delinquencies.

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