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Research Article

URINARY INCONTINENCE: PREVALENCE, CORRELATES AND UTILIZATION OF PHYSIOTHERAPY AMONG PAROUS WOMEN IN ENUGU, SOUTH-EASTERN NIGERIA

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ABSTRACT

Background: Literature on the prevalence and correlates of urinary incontinence among Nigerian women is limited and the utilization of physiotherapy for its management is unknown. **Objective:** This study assessed prevalence and correlates of urinary incontinence as well as the utilization of physiotherapy for its management. **Materials and Methods:** 150 consenting parous women completed a structured questionnaire, investigating socio-demographic characteristics, prevalence of urinary incontinence and utilization of physiotherapy. Data were analyzed using Chi square and logistic regression at the 0.05 α level. **Results:** Participants' mean age was 28.08 ± 5.73. 22.7% of the women had urinary incontinence. First childbirth experience at or above 30 years (OR = 29.96), > one previous caesarean birth (OR = 23.84) and > one previous vaginal birth were the major determinants of urinary incontinence. 12.7% were aware of physiotherapy management of urinary incontinence and none (0%) of the affected women had utilized physiotherapy for the management of urinary incontinence. **Conclusion:** Urinary incontinence is prevalent among parous women in Enugu, Nigeria. First childbirth experience at or beyond 30 years, more than one caesarean and one vaginal births and multiparity were the major determinant factors of urinary incontinence. Women have poor knowledge of the roles of physiotherapy and have not been utilizing its services for the management of urinary incontinence. Health education by women's health Physiotherapists is necessary and appropriate referrals from other health care providers is recommended.

INTRODUCTION

Urinary incontinence is a common global health issue, particularly amongst women. Based on the recent definition by the International Incontinence Society, urinary incontinence (UI) is "any form of urine leakage" that includes the entire population of individuals who have either complained or are currently having urine leakage (Minassian *et al*., 2003; Abrams *et al*., 2010). UI is usually accompanied by psychosocial distress (Bogner, 2004; Brittain and Shaw, 2007) with a negative impact on quality of life and self-esteem (Araki *et al*., 2005; Obioha *et al*., 2015).

Globally, studies have reported prevalence of UI among women (Harrison and Mendel; 1994; Hannestad *et al*., 2000; Minassian *et al*., 2003; Wesnes *et al*., 2007; Huebner *et al*., 2010). In Nigeria, several studies have shown similar trends of occurrence among women (Adaji *et al*., 2010; Ojengbede *et al*., 2011; Rabin *et al*., 2015; Udokang *et al*., 2015; Obioha *et al*., 2015). Generally, women with UI have a poor treatment-seeking behaviour (Burgio *et al*., 1994; Shaw *et al*., 2001; Badejoko *et al*., 2016) despite the wealth of available treatment options. Various treatment options with known benefits include physiotherapy, medical and surgical procedures (Goldstein *et al*., 1992). However, studies have reported low cure rates with the surgical procedures (Schussler, 1994; Black and Downs, 1996). Commonly, conservative treatment options including, lifestyle changes, pelvic floor muscle training, behavioural techniques, electrical stimulation and drugs, and combinations of these individual therapies are recommended and utilized (Herbison and Dean, 2002; Wallace *et al*., 2004; Shaikh *et al*., 2006; Nabi *et al*., 2006; Imamura *et al*., 2013). Physiotherapy offers most of these treatment options (pelvic floor muscle

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training, electrical stimulation, biofeedback, vaginal cones) available for the management of UI (Ghaderi and Oskouei, 2014). Numerous studies (Lagro-Janssen *et al*., 1991; Bumsz *et al*., 1993; Bie *et al*., 1998; Bo, 2004; Dumoulin and Hay-Smith, 2010; Herderschee *et al*., 2011) have reported positive outcomes of physiotherapy procedures in the management of UI. Despite the wealth of existing evidence on the efficacy of physiotherapy procedures in the management of UI in other populations, there is limited literature on the outcomes of physiotherapy in the management of UI in Nigeria. Nevertheless, there is anecdotal evidence that physiotherapists are less involved in the management of UI in Nigeria and there is also paucity of data on the utilization of physiotherapy by affected Nigerian women. In addition to the aforementioned, there is need for more information on the prevalence and factors associated with UI in south eastern Nigeria. To address these gaps in knowledge, this study was designed to evaluate the prevalence and associated factors of UI among south-eastern Nigerian women as well as the utilization of physiotherapy services by the affected women.

MATERIALS AND METHOD

Participants

One hundred and fifty (150) women in their childbearing years, who had undergone at least one childbirth were conveniently selected for this cross-sectional survey. Participants were conveniently selected from three rural-based women's health clinics (University of Nigeria Teaching Hospital, Balm of Gilead Hospital Ogui New Layout and Mother of Christ Specialist Hospital Ogui New Layout) in Enugu Nigeria. Women with a history of urinary incontinence prior to their first pregnancy as well as pregnant women were excluded from the study. Ethical approval was sought and obtained from the University Of Nigeria health research ethics committee. Eligible women gave signed informed consents before participation in the study.

Instrument for data collection

The self-administered study questionnaire was structured by experts for the purpose of this study. In three distinct sections (A, B and C), the 25-item questionnaire consisted of open and close- ended questions. Section A was on socio-demographic and obstetric characteristics while B and C were on prevalence of UI and utilization of physiotherapy services, respectively. For a better understanding, UI was defined as 'any form of urine leakage' (Abrams, 2010; Adaji, 2010) in the study questionnaire. This instrument was translated into an Igbo version for an effective understanding by subjects who are not literate in English Language. Three experts carried out face and content validation of the instrument while the reliability coefficient of the English and Igbo versions of the instrument was 0.80 and 0.76, respectively using the Cronbach alpha.

Data analysis

Data were summarized with descriptive statistics of mean, standard deviation, frequency and percentages. Inferential statistics of Chi-square and Logistic regression were used to test for association between prevalence of UI and each of socio-demographic and obstetric characteristics. Data analysis was done using SPSS (version 22.0) with alpha level set at p = 0.05.

RESULTS

180 questionnaires were given out and 150 were completely filled and returned, yielding a response rate of 83%. The mean age of the respondents was 28.08 ± 5.73 years.

Table 1 Socio-demographic and maternal characteristics of the participants (n = 150)

Variable	Frequency	Percentage (%)
Age (years)		
20-25	33	22
26-30	45	30
31-35	48	32
36-40	18	12
41-45	6	4
Marital status		
Single	0	0
Married	124	82.7
Separated	26	17.3
Divorced	0	0
Parity		
Primiparous	105	70
Multiparous	45	30

Table 2 Chi square and logistic regression test results of association between prevalence of urinary incontinence and obstetric characteristics of the participants

Variable	Prevalence of urinary incontinence N (%)	χ^2 (p-value)	Odds Ratio	95% confidence interval
Parity				
Primiparous	30 (88.2)	6.962	1	
Multiparous	4 (11.8)	(0.008)*	0.95	0.10 – 8.90
Previous vaginal births				
None	4 (11.8)	7.484	1	
One	23 (67.6)	(0.024)*	5.56	0.40-77.87
> one	7 (20.6)		21.59	1.75-266.9
Previous caesarean births				
None	17 (50.0)	18.538	1	
One	13 (38.2)	(<0.001)*	1.38	0.36-5.25
> one	4 (11.8)		23.84	5.57-102.02
History of episiotomies				
Yes	23 (67.6)	0.020	1	
No	11(32.4)	(0.965)	1.316	0.37-4.68
Age at first childbirth (years)				
Below 20	1 (2.9)	8.906	1	
20 – 29	32 (94.2)	(0.031)*	0.95	0.10-8.90
≥ 30	1 (2.9)		29.96	0.81-1107.15
Birth weight of biggest baby born (kg)				
≤ 3.17[a]	4 (11.8)	0.182	1	
≥ 3.17	30 (88.2)	(0.669)	0.46	0.11-1.97
History of urinary tract infections				
Yes	0 (0)	0.594	1	
No	34 (100)	(0.441)	0.000	-
History of bladder disorder or surgery				
Yes	0 (0)	0.594	1	
No	34 (100)	(0.441)	0.000	-

* Significance at α = 0.05

[a] 3.17kg is the mean birth weight of babies born among Igbos in Eastern Nigeria (Adimora *et al*., 2004).

The socio-demographic and maternal characteristics of respondents are presented in Table 1. Majority of the women were within The age range of 31-35 years (32%) and most were married (82.7%). More than half (70%) of the participants were primiparous. 34 participants (22.7%) reported urine leakage while 116 (77.3%) reported no experience of urine leakage. In table 2, the Chi-square and logistic regression test results of the association between prevalence of UI and obstetric characteristics of the participants were presented. The results showed a significant association between prevalence of UI and each of previous caesarean births (χ^2 = 18.538; p = < 0.001), parity (χ^2 = 6.962; p = 0.008), previous vaginal births (χ^2 = 7.484; p = 0.024) and maternal age at first childbirth (χ^2 = 8.906; p = 0.031). Having first childbirth experience at ≥ 30 years (OR = 29.96; CI = 0.81-1107.15), more than one ceaserean birth (OR = 23.84; CI = 5.57-102.02) and more than one vaginal birth (OR = 29.96; CI = 0.81-1107.15) were the commonest determinant factors of UI among the participants. Multiparous women had about 5 times chances of developing UI than primiparous women.

Information on the awareness of physiotherapy for the management of UI among the participants and the utilization of its services among the affected women are presented in table 3. Few of the participants (12.7%) were aware of physiotherapy as a management option for UI. None of the affected women had received physiotherapy interventions for the management of UI.

Table 3 Awareness and Utilization of physiotherapy for the management of UI among the participants

Variable	Frequency	Percentage (%)
Awareness of physiotherapy for the management of UI		
Yes	19	12.7
No	131	87.3
Total	150	100
Utilization of physiotherapy for the management of UI		
Yes	0	0
No	34	100
Total	34	100

DISCUSSION

This study assessed the prevalence and correlates of UI and the utilization of physiotherapy services for its management among parous women in Enugu, Nigeria. 22.7% of the participants reported urine leakage. Other studies have previously shown varying prevalence rates of UI among Nigerian women (Okonkwo *et al*., 2001; Adaji *et al*., 2010; Ojengbede *et al*., 2011; Adedokun *et al*., 2010; Rabin *et al*., 2015; Udokang *et al*., 2015; Obioha *et al*., 2015). The prevalence rate of UI in this study is in a similar range with the findings of Adaji *et al*. (2010) and Okonkwo *et al*. (2001), who reported prevalence of 21.1% and 19.5% respectively, among women in Northern and Eastern Nigeria. However, Ojengbede *et al*. (2011), Rabin *et al*. (2015) and Obioha *et al*. (2015) reported lower prevalence rates. Conversely, Udokang *et al*. (2015) showed a higher UI prevalence among women in Akwa Ibom State, Nigeria. These variations may be attributed to geographical factors and lifestyle practices of women in different cultures. Also, the study participants were aged between 20 and 40 years which tentatively lies within the child-bearing age of Nigerian women (Odetola, 2015; Orazulike, 2015; Onyemenam, 2016). Child bearing is an established risk factor for UI among women (Ogbong, 1984) and the child bearing years have been associated with increased reports of UI (Thorp *et al*., 1999; Morkved and Bo, 1999; Wesnes *et al*., 2007).

This study showed significant associations between the prevalence of UI and some obstetric factors including, parity, age at first childbirth, previous vaginal and caesarean births. This finding corroborates other studies which have reported significant associations between UI and parity (Foldspang *et al*., 1992; Milson *et al*., 1993; Ojengbede *et al*., 2011). However, the direction of the existing associations in these studies contradicts the findings of the present study which showed a higher prevalence (88.2%) of UI in primiparous women. This trend may be attributed to a greater wealth of experience possessed by multiparous women on the prevention and management options of UI. On the other hand, the findings of this study disagree with previous studies (Burgio *et al*., 1994; Okonkwo *et al*., 2001; Connolly *et al*., 2007) which have reported no significant association between parity and prevalence of UI.

The study revealed that women who had their first childbirth experience at or beyond thirty years had about 30 times chances of experiencing urine leakage than women who had their first childbirth experience below thirty years. This relationship between age at first childbirth and prevalence of UI agrees with the findings of other authors (Persson *et al*., 2000; Dietz and Lanzarone, 2005; Rortveit and Hunskaar, 2006; Groutz *et al*., 2007), who revealed a preponderance in the prevalence of UI among women who had their first childbirth at ages above 29 years. It is possible that as age advances, the integrity of the pelvic floor muscles get compromised. Contrary to the findings of the present study is the result of Altmann *et al*. (2006) which found no significant association between age of first childbirth and prevalence of UI.

From the results, women with more than one caesarean births were about twenty-four times at more risk of developing UI unlike those with one or no caesarean births. However, there is limited literature to compare this study finding. Meanwhile, women with more than one previous vaginal birth were also at more risk of experiencing UI (OR = 21.59) as compared to their counterparts with one or no vaginal births. Similar associations were shown in other studies (Kuh *et al*., 1999; MacLennan *et al*., 2000; Persson *et al*., 2000; Rortveit *et al*., 2003; Ojengbede *et al*., 2011) which showed a relationship between vaginal delivery and prevalence of UI. This may be attributed to the processes involved in vaginal deliveries including over stretching of and trauma to the perineal structures. Delancey *et al*. (2003) reported abnormalities in the Levator Ani muscle after vaginal deliveries and other authors have also stated that vaginal birth is the single most important risk factor for the development of pelvic floor dysfunctions including UI (Viktrup *et al*., 1992; Skoner *et al*., 1994; Mant *et al*., 1997).

Furthermore, this study revealed that only 12.7% of the women were aware of physiotherapy as a treatment option for UI and one of the 34 women that reported urine leakage had ever

utilized physiotherapy services for the management of their condition. Many factors influence the decision to seek care for a health condition including poor knowledge of treatment options (Shaw *et al*., 2008). Thus, it is possible that the poor utilization of physiotherapy services by the participants in this study may be as a result of poor awareness levels. Many studies have also reported poor health-seeking behaviours among Nigerian women with UI (Adaji *et al*., 2010; Adedokun *et al*., 2012; Udokang *et al*., 2015). Usually, most women feel shy to discuss their experience of urine leakage even to their healthcare providers. Other reasons for the poor health-seeking behavior of women with UI may exist but the scope of this study did not cover that. Anyway, it is possible that the poor health seeking behavior as previously reported may be one of the factors affecting non-utilization of physiotherapy among the participants in this study.

There is paucity of data on the role and utilization of physiotherapy in the prevention and management of UI in Nigeria. Typically, utilization of physiotherapy services in Nigeria is dependent on the knowledge and attitudes of physicians towards physiotherapy (Odunaiya *et al*., 2013). Physiotherapy services in Nigeria are utilized by patients only on referral basis. Poor awareness and knowledge of physiotherapy among physicians in Nigeria have been previously reported (Ogbona, 1984) whereas more recent studies have revealed otherwise (Odunaiya, 2013). Relative to women's health, the findings of Odunaiya *et al*. (2013) revealed that obstetricians and gynaecologists in Nigeria showed a good knowledge of physiotherapy. However, physicians still possess poor attitudes of patient referral for physiotherapy. A recent study (Oke and Kubeyinje, 2013) in one of the tertiary hospitals in Nigeria reported poor referral rates to physiotherapy especially from the obstetrics and gynaecology department whereas they had the highest number of admissions annually. They attributed this gap to ineffective communication between physicians/ surgeons and the physiotherapists, inadequate knowledge and skepticism or lack of awareness of the components of physiotherapy (prevention, therapy and rehabilitation) among the physicians/ surgeons. Therefore, it is possible that women who with good health-seeking behavior may not have been referred to physiotherapy by their physicians. There is need for a better inter-disciplinary relationship between physiotherapists and other health professionals in Nigeria. This will undoubtedly improve patient outcomes (Odunaiya, 2013). Improved health policies on the accessibility of physiotherapists in Nigeria is recommended in order to reduce dependence of patients' utilization of physiotherapy services on physicians' referrals only. Proper education of women is also paramount in enhancing the utilization of physiotherapy services. Health-care professionals especially women's health physiotherapist should aim at promoting therapeutic and lifestyle practices towards the prevention of UI in the child-bearing years as this will not only increase the awareness and utilization of their services among women but will help in reducing the risks and prevalence of UI.

CONCLUSION

Urinary incontinence is prevalent among parous women in Enugu, Nigeria. First childbirth experience at or beyond 30 years, more than one caesarean and one vaginal births and multiparity were the major determinant factors of urinary incontinence. There is poor awareness and non- utilization of physiotherapy services for the management of UI among the women.

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