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## ABSTRACT

The study was aimed at ascertaining the prevalence of prostate enlargement Benign Prostatic Hyperplasia BPH) among males > 50 years of age who were treated at Abia State University Teaching Hospital (ABSUTH), Aba from 2010-2014, Four objectives, four research questions and four null hypotheses guided tile study. Related literatures were reviewed and summarized. Ex-post facto -research design was used for the study. The population of the study consisted of all the males > 50 years of age whose records were kept in the hospital record room for prostate enlargement from 2010-2014. Self Developed Data Collection 'Scheme (SDDCS) was used as the main instrument for data collection. Data were validated by jury of Public Health Lecturers in the I mo State University, Owerri and its reliability was ascertained by split half technique. Data were analyzed by descriptive statistics of frequency/ nomadic percentage and inferential statistics of chi-square at 0.05 significant level. Result indicated that the prevalence of benign prostatic hyperplasia progresses with aging. The least prevalence was in the age bracket of 50-54 years - 1 (50-54) year while the highest prevalence was in 70-72 years of age bracket and above - 252 (70-72) years. There were significant differences in the prevalence of benign prostatic hyperplasia BPH in marital status/ occupational status and age of males > 50 years of age who were treated at ABSUTH from 2010-2014. There were relatively high prevalence of BPH among married and sedentary life males while unmarried and physical activity males indicated fairly low prevalence of BPH. This study recommends extensive education and awareness campaign programme to improve knowledge on BPH, its prevalence and risk factors to help males take precautionary measures to reduce prevalence and take adequate/timely treatment to prevent complications.

**Keywords:** prostate enlargement, males > 50 years of age, Abia State University Teaching Hospital, Aba, 2010-2014.

### **INTRODUCTION**

Virtually, every human male child is born with the prostate gland for reproductive function(s) later in life. The structures in the male reproductive system include the testes, the vas deferens (ductus deferens), seminal vesicles, the penis and certain accessory glands such as the prostate gland and cowper's gland or bulb urethral gland. The prostate gland develops from the epithelial imagination from the posterior urogenital sinus during the third month of gestation. For the normal prostate gland, formation to occur the presence of 5-alpha dihydrotestosteron is required (Wilson, 1981). The constitution of the human male prostate remains relatively the same at the pre puberty period. However, morphologic changes of the prostate that are noticeable in

adult males begin at puberty (25 to 35 years of age). The prostate gland is the largest accessory gland of the male reproductive system located under the urinary bladder and lying between the bladder and the penis, surrounding the urethratube from the bladder through which urine flows out as males urinate. The prostate is conical in shape and it is classically described as "walnutshaped". The state contains muscles, secretory glands and fibrous tissues and functions biologically the secretion of small fluid which mixes with sperm when a man ejaculates (Obeagu et al., 2017) . This fluid produced by the prostate secretory glands and is alkaline in nature. The fluid neutralizing the acidic nature of the vagina to make the sperm cells able to move belter, further and to survive longer. This increases the chances of a man fertilizing the egg in his partner. The cell functions of the prostate are influenced and regulated by the male hormone-a type of testosterone called dihydrotestosterone (DHT). The muscles of the prostate also help to expel or push sperm when a man ejaculates and/or push urine when a man urinates (Amory & Wang, 2007).

However, the prostate can give rise to health problems when it enlarges. Enlarged prostate is known and called benign prostatic hyperplasia (BPH). Benign prostate hyperplasia is an increase in the number of prostate cells. Although some people call enlarged prostate benign prostatic hypertrophy meaning a growth in the size of individual prostate cells; this is a misnomer. Benign prostatic hyperplasia (BPH) simply means benign enlargement of the adenofibromyomatous prostate (BEP) or hyperplasia. Benign prostatic hyperplasia (BPH) involves hyperplasia rather than hypertrophy. It is the hyperplasia of prostate stromal and epithelial cells that lead to the formation of large, fairly discrete nodules in the transition zone of the prostate (Cunningham & Kadmon, 2013). Benign Prostatic Hyperplasia (BPH) does not cause or lead to cancer although the serum prostate specific antigen (PSA) levels may be increased above 1.5 ng/1 in BPH-Patients and this is as a result of increase in prostate volume above about 30ml and inflammation due to urinary tract infections (Bostwick, 2002). When the enlarged prostate is sufficiently large, the nodules compress the urethral canal to cause either partial or complete obstruction of the urethra and this interferes with the normal How of urine from" the urinary bladder. An enlarged prostate impinges on the urethra, increases

resistance to urine flow from the bladder and this is referred to as obstruction(Ofor, et al.,2016). Resistance to urine flow requires the bladder to work harder during voiding leading to a progressive hypertrophy, instability, weakness of the bladder muscles that constitute the clinical lower urinary tract symptoms that are worrisome and grossly dissatisfied to man (BostWick, 2002) and these consist of the voiding symptoms, the storage symptoms, complication of bladder outlet obstruction that lead to acute urinary retention and bladder bleeding. The voiding symptoms result to hesitance, poor flow, intermittent stream, dribbling sensation/irritation of the weak bladder empting and the episode of near retention (Barry & Fowler, 1998; Mcneal, 1990). The storage symptoms result to frequency, nocturia. urge incontinence. nocturnal incontinence and urgency. Complications of the bladder outlet obstruction lead to acute retention due to instability to pass urine supra pubic-constant dull aching pain. Whereas chronic retention that can lead to overflow incontinence results to hernia, hemorrhoid and related symptoms leading to retention and features of uremia resulting to headache, fits and drowsiness (Parson & Im, 2009). Other lower urinary tract symptoms (LUTS) include weak urinary stream, prolonged emptying of the bladder, abdominal straining, irregular need to urinate, incomplete bladder emptying, post-urination dribbling, irritation during urination, bladder pain and hematuria, and these can be problem in ejaculation (Joycee and Black 2005). Prostate enlargement is believed to begin at about the age of 80 years in males. While the incidence, prevalence and risk factors statistics or data are well documented and made available in developed countries like US, Europe and Asia, it is not so well documented in Nigeria especially Aba and other developing countries of the world. It is against this background of healthy living that the researcher was motivated towards ascertaining prevalence of prostate enlargement (benign prostatic hyperplasia BPH among males >. 50 years who used ABSUTH Aba from 2010 -2014)

### Aim

The aim of this study was to ascertain the prevalence of prostate enlargement (benign prostatic hyperplasia-BPH) among Males > 50 years of age who used ABSUTH Aba from 2010 - 2014.

#### **MATERIALS AND METHOD**

#### Design

Facto Research Design was adopted for the study.

### Area of the study

This study was conducted in Aba, Abia State, Nigeria. Aba is a popular city and it lie main trading centre in Abia State.

#### **Demographic Composition**

Age of the adult males above 50 years in the area under study, educational status/ literacy levels, occupation, marital status, area of residence and previous source of information will be the demographic composition of the research study.

#### **Population of the Study**

All the males > 50 years of age whose records were kept in the hospital record room for prostate enlargement (benign prostatic hyperplasia BPH) from 2010-2014 were used for the study. There were no sample and sampling technique.

#### **Instrument for Data Collection**

The main instrument for data, collection was Self Developed Data Collection Pro forma SDDCP (Appendix A) This solicited for information on records of prevalence of prostate enlargement among males > 50 years of age who used ABSUTH Aba from 2010-2014.

#### **Method of Data Analysis**

Data collected were analyzed using descriptive statistics of frequency, charts, average normative percentage, bar chart and pie chart as well as inferential statistics of chi-square  $(X^2)$  at 0.05 level of significance. Appropriate degrees of freedom were worked out. Research questions were answered using percentages; while the null hypotheses were tested using chi-square.

#### **RESULTS**

**Tablel(a).** Frequency distribution of Age prevalence of prostate enlargement among males > 50 years of age who used Abia State University Teaching Hospital Abia in 2010.

Year	Age	р	%
2010	50-54	0	0
	55-59	1	1
	60-64	7	8
	65-69	34	38
	70-74 +	48	53
Total		90	100

**Tablel(b).** Frequency distribution of age of prevalence of prostate enlargement among males > 50 years of age who used Abia State University Teaching Hospital Abia in 2011.

Year	Age	F	%
2011	50-54	0	0
	55-59	10	10
	60-64	19	19
	65-69	25	25
	70-72 +	46	46
Total		100	100

**Tablel(c).** Frequency distribution of age of prevalence of prostate enlargement among males > 50 years of age who used Abia State University Teaching Hospital Abia in 2012.

Year	Age	F	%
2012	50-54	1	1
	55-59	4	5
	60-64	14	17
	65-69	18	23
	70-72 +	43	54
Total		80	100

**Tablel(d).** Frequency distribution of age of prevalence of prostate enlargement among males >50 years of age who used Abia State University Teaching Hospital Abia in 2013.

Year	Age	F	%
2013	50-54	0	0
	55-59	0	0
	60-64	20	18
	65-69	30	27
	70-72 +	60	55
Total		110	100

**Tablel(e).** Frequency distribution of age of prevalence of prostate enlargement among males > 50 years of age who used Abia State University Teaching

Year	Age	F	%
2014	50-54	0	0
	55-59	0	0
	60-64	15	16
	65-69	25	26
	70-72 +	55	58
Total		95	100

Hospital Abia in 2014.

**Table2.** Frequency distribution of influence of marital status on prevalence of prostate enlargement from 2010-2014.

Year	Married	Unmarried	Total
2010	46	29	75
2011	48	23	71
2012	57	35	92
2013	70	50	120
2014	62	55	117
Total	283	192	475

**Table3.** Frequency distribution of prevalence of prostate enlargement among males > 5.0 years of age who used Abia State University Teaching Hospital Abia from 2010 - 2014.

Year	Sedentary Life	Physical Activity	Total
2010	47	23	70
2011	55	29	84
2012	60	31	91
2013	70	35	105
2014	80	45	125
Total	312	163	475

**Table4.** Represents the frequency distribution of prevalence of prostate enlargement long males >50 years of age who used Abia State University Teaching Hospital Aba from 2010-2014.

	Age Range					
YEAR	50-54	55-59	60-64	65-69	70-72 +	Total
2010	0	1	7	34	48	90
2011	0	10	19	25	46	100
2012	1	4	14	18	43	80
2013	0	0	20	30	60	110
2014	0	0	15	25	55	95
Total	1	15	75	132	252	475

**Table5.** Frequency distribution of influence of age on the prevalence of prostate enlargement among males > 50 years of age who used Abia State University Teaching Hospital Abia from 2010-2014.

Year	Frequency	% Age of Prevalence
2010	90	19
2011	100	21
2012	80	17
2013	110	23
2014	95	20
Total	475	100

**Table6.** Represents the frequency distribution between married and unmarried (marital status) males in the prevalence of prostate enlargement between married and unmarried males >50 years of age at Abia State University Teaching Hospital, Aba from 2010-2014.

Year	Married	Unmarried	Total
2010	46(16.25%)	29(15.10%)	75(31.35)
2011	48(16.96%)	23(11.97%)	71(28.93)
2012	57(20.14%)	35(18.23%)	92(38.37)
2013	70(24.73%)	50(26.00%)	120(50.73)
2014	62(21.92%)	55(28,70%)	117(50.60)
Total	283(100%)	192(100%)	475(199.98%)

**Table7.** shows the frequency distribution in occupational status involving physical activity and sedentary life of males in the prevalence of prostate enlargement among males > 50 years of age at Abia state university, teaching hospital ABSUTH, Aba from 2010-2014.

Year	Sedentary Life	Physical Activity	Total
2010	47(15%)	23(14.11%)	70(30%)
2011	55(18%)	29(17.79%)	84(35%)
2012	60(19%)	31(19%)	91(38%)
2013	70(22%)	35(21.47%)	105(43%)
2014	80(26%)	45(26.39%)	125(52%)
Total	312(100%)	163(100%)	475(200%)

### **DISCUSSION**

Result(s) of the study tables(s) l(a), lb, Ic, Id and le revealed that the prevalence of prostate enlargement among males > 50 years of age at Abia State University Teaching Hospital, Aba from,2010-2014 increases with aging.

The prevalence in 2010 was 54.52%, 2011 was 79.05%; 2012 was 62.52%; 2013 was 74.01% while 2014 was 80.74% at estimated age range of 70 years and above. The least prevalence was noticed at an estimated age ranges of 50-54 years of age as shown in the tables 1(a, b, c, d and e) above. Each year (2010, 2011, 2012, 2013 and 2014) shows progressive increase in the prevalence of prostate enlargement with substantive increase in age and these were illustrated with bar charts in figures 1, for 2010, 2 for 2011, 3 for 2012, 4 for 2013 and figure 5 for 2014 respectively.

The finding of the research is in line with literature reports that was carried out in Iranian

men 40 years old and older that says that the prevalence of prostate enlargement increased with age from 1.2% in men 40 - 49 years to 36% in those greater than 70 years (Mohammed *et al.*, 2006). Rayashekar (2015) that observed that prostate enlargement can be seen in the vast majority of men as they age, particular over the age of 70 years around the world and India and Baltimore longitudinal study of aging done in USA that shows that the prevalence of prostate enlargement increases from 8% in men aged 31 to 40, to 50% in men aged 51 to 60 years and over 80% in men older (Aldroy & Jacobson, 2008).

The researcher observed minimum average age of prevalence to be 67.40(1930%) the highest age of prevalence to be 72.94 years among males > 50 years of age at ABSUTH Aba from 2010 - 2014.

Dimitropoulin (2009) suggests that frequent safe, sexual activity among couples (more than

10 encounters per month) tends to bestow a "small" amount of protection against prostate enlargement and/or problems as ejaculation improves prostate health at an estimated age of 40 years and above and that men who are sexually active early in life who had more than 20 times ejaculation in their 20s and 30s (age of single or unmarried) are more likely to develop prostate enlargement and cancer as such is known as unsafe sexual activity.

This is supported by the result of Parson (2008) that says that the level of protection from prostate enlargement by physical activities and muscular exercise like in Farmers, athletes and Footballers etc increase in physical activity helps to keep the body in standard shape through reduction in accumulation of fat and cholesterol, obesity, overweight and diabetes as well as the risk of becoming hypertensive which are factors responsible for developing prostate enlargement.

This findings of the researcher is also in line with the literature report which says that physical and muscular activity and exercise such as in farmers reduced the risk of prostate enlargement and lower urinary tract symptoms LUTS by about 25% relative to sedentary lifestyle (Parson and Kashefi, 2008).

Within that age group and year under study, in 2012, prevalence started at the estimated age of 62 (10.45%) and progresses with increase in age. The highest age of prevalence in both 2011 and 2012 were at 72 years, 72(62.52%) respectively. In 2013 and 2014, table Id and le figures 4 and 5 show that there was no case of prostate enlargement in about the age of 52 years of age 52(0%). In both years cases, of prostate enlargement were recorded at an estimated age of 57(5.85%) and 57(4.3%) respectively. From the year 57 years and above the levels of prevalence show steady increase with aging with 72 years plus as the highest age of prevalence in both 2013 and 2014 recorded 72(74.01%) and 72(80.74%) respectively. The research findings are in line with the work of Mohammed (2006) and Raxashekar (2015) that says that the prevalence of prostate enlargement increase with age from 1.2% in men 40-49 years to 36% in men greater than 70 years of age.

In table 6 prevalence cases in 2010 among married males 46(16. 25) and unmarried 29(15.10) was relatively more among married than unmarried males and were more applicable in 2011 to 2012 i.e. 48(16.96%) married.

23(11.97%) unmarried in 2011 as well as 5% (20.14%) married and 35(18.23%) unmarried cases respectively. Generally, the research found that frequency of cases in 2010 to 2014 including the overall cases (283) were higher among married than unmarried total cases from 2010-2014 Of 192. The yearly prevalence appears to be higher among married men. The research findings are also in agreement with the report of Dimitropoulin (2009) that frequent safe sexual activity among adult couples (more than 10 encounter per month) tends to bestow a "small" amount of protection against prostate enlargement as ejaculation improve prostate health at an estimated age of 40 years and above and men who are sexually active early in life who had more than 20 times ejaculations in their 20s and 30s (age of single or unmarried) are more likely to develop prostate enlargement and/or cancer as such is known as unsafe sexual activity. The researcher therefore may be of the opinion that this may be responsible for the relatively higher percentage of prevalence of prostate enlargement among unmarried or single males than in married males in 2013 and 2014 respectively in the area under study.

The least percentage prevalence 23(14.11%) in table 7 is observed among the physical activity workers whereas the difference 37 (0.42% between the highest prevalence in both nonphysical activity workers 82(25.97%) and physical activity workers 45 (26.39%) was relatively low. Although the % prevalence in physical activity workers 45(26.39%) is relatively higher than in non-physical activity workers 82(25.97%), the number of cases in non-physical activity workers 82(25.97%) is extensively greater than that of physical activities of 45(26.39%). This is in line with Parson and Im (2008) which suggests physical activity and aerobic exercise such as in farmers, lowers the level of risk of prostate enlargement and lower urinary tracts symptoms LUTS by about 25% in males relative to sedentary life style. This is attributed to the reasoning that moderate to vigorous activity and exercise help to keep the body in standard shape, reduced accumulated fat and cholesterol, obesity, overweight and risk of hypertension which are predisposing factors for the prostate enlargement in males > 50 years of age.

### CONCLUSIONS

The prevalence of prostate enlargement among males > 50 years of age who used ABSUTH

from 2010-2014 varies in respect of age, marital and occupational status as independence prevalence variables. The of prostate enlargement among males >50 years of age at ABSUTH varies from 1.52-54.52% in 2010: 0-79% in 2011; 0-62% in 2012. 0-74.01% in 2013 and 0-80.74% in 2014. The average age of prostate enlargement among males > 50 years of age at ABSUTH from 2010-2014 ranges from 67.4 -72.9 years and above i.e. 67.4 years in 2010 to 72.94 years in 2014. There was high prevalence of prostate enlargement among married males than unmarried/single males > 50years of age at ABSUTH, Aba from 2010-2010. There was significance difference in prostate enlargement among males in various occupations in the prevalence of prostate enlargement among males > 50 years of age at ABSUTH, Aba from 2010-2014. There were higher prevalence cases of prostate enlargement among clerks, teachers, accountants and sedentary males than in farmers and physical activity workers. There was significance difference in marital status in the prevalence of prostate enlargement among males > 50 years of age who used ABSUTH Aba from 2010-2014.

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