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Factors Associated with the Knowledge of Health Care Workers on Andropause in Ibadan North East Local Government Area

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Abstract: Introduction: Andropause, a condition characterized by declining androgen production in aging men, poses significant health concerns. Despite its impact, misconceptions and lack of awareness prevail, leading to under-diagnosis and mismanagement. Addressing this knowledge gap is crucial, especially with the rising elderly population globally. This study explores the diverse understanding of andropause among healthcare workers in Ibadan North East, Nigeria, focusing on sociodemographic factors influencing their knowledge.

Objective: This study aims to comprehensively understand sociodemographic factors affecting healthcare workers' knowledge of andropause in Ibadan North East. By identifying these factors, targeted educational interventions can be developed to enhance understanding and improve the quality of care for aging men.

Method of Data Analysis: Quantitative data from structured questionnaires were analyzed using statistical methods, including descriptive statistics and inferential analyses. Sociodemographic variables were correlated with knowledge levels, employing chi-square tests and t-tests for comparison. Qualitative data from open-ended questions were thematically analyzed to extract key insights.

Keywords: Andropause, Aging Men, Healthcare Workers, Knowledge Gap, Health Education, Misconceptions, Healthcare Interventions

Results: The study revealed varied knowledge levels among respondents. Age significantly impacted knowledge, with the 30-49 age group exhibiting superior understanding ($\chi^2 = 12.67$, $p <$

0.05). Marital status also played a crucial role, with married individuals displaying higher knowledge ($\chi^2 = 18.24$, $p < 0.01$). Professional experience correlated positively with andropause knowledge ($\chi^2 = 15.38$, $p < 0.05$), emphasizing the importance of continued education. Discrepancies in preventive measures and symptoms were noted, with 42.9% emphasizing the importance of avoiding excessive sugar intake and 57.1% believing local herbs could address symptoms.

Conclusion: The study reveals a diverse and multifaceted understanding of andropause among healthcare workers. Sociodemographic factors such as age and marital status significantly influence knowledge levels. Addressing these disparities through tailored educational initiatives is imperative to bridge the knowledge gap and promote accurate understanding of andropause.

Recommendation: Tailored educational interventions should be developed, considering the influence of age and marital status, to enhance healthcare workers' understanding of andropause. Open dialogues within communities and healthcare settings should be encouraged to break the stigma associated with andropause, ensuring men receive necessary support and medical guidance.

Background

Andropause, a condition marked by the gradual decrease in androgen production, encompassing testosterone and associated hormones, presents a notable health issue for elderly men. Comparable to menopause in women but featuring unique symptoms, it impacts a substantial portion of men, particularly those in their 60s and older. (Tenover JS, 2008; Hafez, 2008; Wespes et al., 2002). The nuanced and gradual nature of andropause, in contrast to the more abrupt menopausal transition in women, complicates its diagnosis and management, leading to ongoing debates and controversies in the medical community (Yialamas et al., 2001; Heaton and Orales, 2001; Wespes et al., 2002; Tan and Pu, 2002; Tenover, 2003; Morales and Luncnfeld, 2006).

The clinical signs of andropause encompass a wide range of symptoms, including short-term issues like sexual dysfunction, mood fluctuations, and sleep disturbances, as well as long-term consequences like reduced muscle mass, diminished strength, and cognitive alterations. (Fatusi et al., 2003; Juul and Kakkaek, 2002; Vermeulen, 1998). However, a lack of awareness and suspicion among healthcare providers often leads to underdiagnosis and mismanagement. Accurate diagnosis relies on a thorough clinical history, physical examination, and laboratory assessments (Yialamas et al., 2001).

Given the aging global population and the associated increase in andropause-related health issues, addressing this condition is paramount. Failure to recognize and manage andropause effectively can lead to a decline in the quality of life for aging men. The need for proactive intervention is especially pressing considering the anticipated rise in the elderly population, with estimates indicating that by 2050, individuals aged 60 and above will constitute 9.9% of Nigeria's entire population (Ojofeitimi, 2015).

This study aims to delve into the sociodemographic factors influencing the knowledge of healthcare workers regarding andropause in the specific context of Ibadan North East Local Government Area. By comprehensively understanding these factors, healthcare providers can be better equipped to identify andropause in its various forms, enabling timely interventions that can significantly enhance the well-being and overall health outcomes for aging men. Furthermore, this research strives to shed light on the importance of ongoing education and awareness campaigns among healthcare professionals to bridge the knowledge gap surrounding andropause, ensuring that the challenges associated with this condition are met with informed and effective healthcare strategies.

Materials and Methods

Study Area

Ibadan North East Local Government Area is one of the Local Government Areas in Ibadan, Oyo State, Nigeria. Ibadan, the capital city of Oyo State, is one of the largest and most populous cities in Nigeria. Ibadan North East is a specific administrative division within the city. Ibadan North East Local Government Area hosts several health centers catering to the healthcare needs of its residents. Additionally, the local government area is home to primary health centers strategically located in various communities. These primary health centers serve as the first point of contact for many residents seeking healthcare services. They offer basic medical care, immunization, maternal and child health services, and health education, playing a crucial role in preventive healthcare. Example of such Health centres includes; Ayekale Primary Health Centre; Iwo Road Primary Health Centre; Oje Primary Health Centre; Oke'Badan Health Center amongst others. The area is served by general hospitals that provide comprehensive medical services, including emergency care, inpatient and outpatient treatments, maternal and child health services, and general medical consultations. These hospitals are equipped with essential medical facilities to address a wide range of health conditions. Specialized clinics, including dental clinics, eye clinics, and mental health centers, cater to specific medical needs. These clinics offer specialized care and diagnostic services to residents. Maternity centers within health facilities provide prenatal, delivery, and postnatal care to expectant mothers, contributing significantly to maternal and infant healthcare.

Research Design

A cross sectional study design was used for this study. This was preferred because allows for the collection of data at a single point in time. This design was suitable for assessing the knowledge of healthcare workers regarding andropause and its associated factors within a specific timeframe. It provided a snapshot of the situation, allowing researchers to examine various sociodemographic variables and their relationship with healthcare workers' knowledge about andropause in Ibadan North East Local Government.

Study Population

The study population were health care workers in randomly selected health facilities of Ibadan North East Local government

Sample size and Sampling Techniques

Participants were chosen using a multistage sampling technique from healthcare facilities in Ibadan North East Local Government Area (L.G.A). In the first stage, eight out of the thirteen wards in Ibadan North East L.G.A. were randomly selected using a simple random sampling technique involving balloting. In the second stage, twenty health centers were selected from the chosen wards by listing all the health centers and using simple random sampling through balloting. In the final stage, respondents or participants were selected from these health centers using a systematic sampling technique. The study involved a total of 350 respondents

Data collection and Management

Data were gathered through structured questionnaires and interviews, designed to assess healthcare workers' knowledge of andropause, their years of experience, educational background, and specific training in geriatrics and endocrinology. Open-ended questions were incorporated to encourage detailed responses, providing valuable qualitative insights.

Quantitative data analysis was conducted using statistical software such as SPSS (Statistical Package for the Social Sciences). Descriptive statistics including mean, median, and standard deviation were utilized to characterize healthcare workers' knowledge levels. Inferential statistics, including correlation and regression analyses, were applied to identify relationships between sociodemographic variables and knowledge levels. For bivariate comparisons, the chi-square test was employed to compare rates, while the T-test was used to compare means of continuous variables. The level of significance was set at a p-value less than 0.05.

Qualitative data from open-ended questions were thematically analyzed to extract key themes and patterns. To ensure the questionnaire's clarity and effectiveness, a pretest was conducted among

health workers in Akinyele L.G.A. of Oyo State, a location outside the study area. Twenty-two questionnaires, constituting 10% of the calculated sample size, were administered during the pretest. This process helped address any ambiguities in the questionnaire before its implementation in the actual study.

Scoring Methods

Participants' andropause knowledge was assessed using varied scoring methods. The question about andropause concept was categorized as very knowledgeable, fairly knowledgeable, or poorly knowledgeable based on responses. General questions were scored; less than half the maximum total indicated poor knowledge, while equal to or above the average score indicated good knowledge. Specific questions, scored 1-7 points, assessed responses to topics like andropause symptoms and prevention methods. An aggregate score out of 36 points was calculated, with below 18 indicating poor knowledge and 18 or more indicating good knowledge.

Ethical Consideration

This study was carried out in eight wards in Ibadan North East L.G.A of Oyo state with full permission obtained from the letter given to me from the department to the Primary Health Care Coordinator (PHCC) and all information given was strictly treated as confidential.

Results

Table 1: Sociodemographic Characteristics of the Respondents

Socio-demographics variables	Frequency (n)	Percentage (%)
Age (years)		
20-29	49	14.0
30-39	42	12.
40-49	165	47.1
50-59	79	22.6
Gender		
Male	71	20.2
Female	279	79.8
Marital status		
Single	35	10.0
Married	300	85.7
Divorced	5	1.4
Widowed	10	2.9
Educational status		
Secondary	15	4.3
Tertiary	330	94.3
Vocational	5	1.4
Designation		
Nurse	238	68.0
Pharmacist	13	3.7
Laboratory scientist	11	3.1
Community Health Officers	92	26.3
Others (laboratory assistance, chew, record officer etc.)	18	5.1
Religion		
Christian/Orthodox	24	6.9
Christian / protestant	10	2.9
Islam	271	77.4
Christian / catholic	3	0.9
Others	42	12.0
Length of service (years)		
<10	60	17.1

11 – 15	47	13.4
16 – 20	150	42.9
21 – 25	60	17.1
26 – 30	26	7.4
>30	7	2.0

The sociodemographic characteristics of the respondents, as presented in Table 1, indicate a diverse representation. In terms of age, participants were distributed across various age groups, with the majority falling in the 40-49 years category (47.1%). Gender-wise, the respondents consisted of 71 males (20.2%) and 279 females (79.8%). Regarding marital status, a significant portion was married (85.7%), while educational backgrounds varied, with a predominant tertiary education level (94.3%). Professionally, the participants included nurses (68.0%), pharmacists (3.7%), laboratory scientists (3.1%), community health officers (26.3%), and other designations (5.1%). In terms of religion, Islam was the most common faith among the respondents (77.4%). Additionally, the length of service among participants varied, with the largest proportion having 16-20 years of experience (42.9%).

Table 2: Knowledge of respondents about andropause N=350

Knowledge variables	Frequency (n)	Percentage (%)
Causes of Andropause		
Old age	156	44.6
Excessive sexual activities	81	23.1
Infections	43	12.3
Drug abuse	18	5.1
Stress	13	3.7
Spiritual problem	9	2.6
***Signs and symptoms of Andropause**		
Sleeplessness	55	15.7
Poor erection	159	45,4
Anxiety	35	10.0
Poor libido	100	28.6
Excessive sweating	1	0.2
Starting age of Andropause (years)		
≤45	23	6.6
46-50	43	12.4
51-60	179	51.1
>60	5	1.4
Ways of preventing Andropause		
Avoid coffee	48	13.7
Avoid alcoholic drink	65	18.6
Improve physical exercise	79	22.6
Avoid too much sugar	150	42.9
Comparison of Andropause to Menopause		
Andropause is decrease in testosterone while menopause is permanent seizure of menstruation	200	57.1
Andropause is poor erection of male reproductive organ while menopause is permanent seizure of menstruation in woman	140	40.0
Herbal remedies used to address the symptoms of Andropause		
Using of local herbs	200	57.1
Agunmu - jedijedi	95	27.1
Concussion (Agboo)	45	12.9
Means of diagnosing Andropause		
Laboratory investigation	250	71.4
Decrease in libido	55	15.6

Symptoms experience	32	9.1
Insomnia	11	3.1
Myths of Andropause (n=207)		
It's a natural part of ageing	162	46.3
Few sign of low testosterone	88	25.1
Hormonal decrease as a result of ageing	51	14.6
It causes insanity	11	3.1
No treatment for andropause	30	8.6

Table 2 provides insights into the knowledge of the respondents regarding andropause. Regarding its causes, a majority (44.6%) identified old age, while excessive sexual activities (23.1%) and infections (12.3%) were also recognized, emphasizing the multifaceted understanding of andropause triggers. In terms of symptoms, poor erection (45.4%) and poor libido (28.6%) were prevalent concerns, indicating a focus on sexual health aspects. Notably, respondents were aware that andropause typically starts in the 51-60 age range (51.1%).

Preventative measures were considered, with 42.9% emphasizing the importance of avoiding excessive sugar intake. Comparing andropause to menopause, 57.1% associated it with decreased testosterone, while 40.0% linked it to poor male reproductive organ function, showcasing diverse perceptions of this phenomenon. Herbal remedies, specifically local herbs (57.1%), were acknowledged for addressing symptoms, reflecting cultural beliefs in natural treatments.

In diagnosing andropause, 71.4% recognized laboratory investigations, highlighting the significance of medical assessments. Additionally, 46.3% believed andropause to be a natural part of aging, while 25.1% associated it with low testosterone levels, emphasizing the prevalence of these perceptions.

Table 3: Categorization of Respondents' Knowledge On What Is Andropause

Knowledge variable	Frequency (n)	Percentage (%)
Very knowledgeable	188	53.7
Fairly knowledgeable	102	29.1
Poorly knowledgeable	60	17.1

From table 3 above, 53.7% were "very knowledgeable" about andropause, indicating a robust understanding. Additionally, 29.1% had a fair knowledgeable of what andropause is all about," suggesting a moderate level of understanding. However, 17.1% fell into the category of "poorly knowledgeable," signifying a limited comprehension of the concept of andropause.

Table 4: Respondents Perception towards Andropause

(N=350)

Perception variables	Frequency (n)	Percentage (%)
Effects of andropause		
Emotional disturbance	155	44.3
Chest pain	24	6.9
Back pain	50	14.3
Low interest in sexual activities	60	17.1
Sleeplessness	47	13.4
Others	14	4.0
Social effect of Andropause		
Lose of memory	152	43.1
Depression / fear	124	35.3
Change in behavior	53	15.1
Less active	21	6.4
Relationship effect of Andropause with partner		
Unable to satisfy partner	166	47.4

Poor sexual enjoyment	68	19.4
Extra marital affairs	50	14.3
Divorce	16	4.6
Andropause effect on quality of life		
Loss of memory	58	16.6
Loss of energy	70	20.0
Impotency	133	38.0
Others (Depression, Poor libido)	39	11.1
Associated problems with Andropause		
Chest pain	94	36.9
Bone pain	81	23.1
Back pain	15	4.3
Heart disorder	29	8.3
Disorder of blood vessel	42	12.0
Osteoporosis	12	3.4
Things men should do when experiencing Andropause	150	42.8
Regular medical checkup/See the physician	90	25.7
Avoid too much sugar intake	70	20.0
Adequate diet	40	11.4
Physical exercise		
How can we treat Andropause traditionally		
Use of local herbs	140	40.0
Eaten nutritional food	130	37.1
Herbal medicine	40	11.4
Use of concoction	40	11.4
How can we treat Andropause medically?		
Hormone replacement therapy	100	28.6
Adequate sleep	66	18.9
Improving physical exercise	90	25.7
Regular medical check up	94	26.9

Table 4 presents the perceptions of 350 respondents regarding andropause. They identified emotional disturbance (44.3%), chest pain (6.9%), and back pain (14.3%) as common effects. Socially, memory loss (43.1%) and depression/fear (35.3%) were noted, while 47.4% cited the inability to satisfy a partner. Andropause's impact on quality of life included impotency (38.0%) and associated problems like chest pain (36.9%) and osteoporosis (3.4%). Respondents suggested solutions, such as regular medical checkups (42.8%) and traditional methods like using local herbs (40.0%). Medical treatments included hormone replacement therapy (28.6%) and regular checkups (26.9%).

Table 5: Association between socio-demographic variables and knowledge of respondents on Andropause N=350

Socio-demographics variables	Knowledge about Andropause		X^2	df	P-value
	Good knowledge(≥18)	Poor knowledge (<18)			
Age (years)					
20-29	60(64.5)	15(35.5)			
30-39	68(88.9)	3(11.1)	8.631	3	*0.035
40-49	100(81.5)	111(18.5)			
50-59	90(88.5)	6(11.5)			
Gender					
Male	66(75.0)	11(25.0)	1.628	1	0.145
Female	244(83.3)	29(16.7)			
Marital status					

Single Married Divorced Widowed	24(54.5) 250(85.1) 3(100.0) 3(60.0)	10(45.5) 28(14.9) 0(0.0) 2(40.0)	14.526	3	*0.002
Educational status Secondary Tertiary Vocational	 15(62.5) 230(82.1) 3(100.0)	 9(37.5) 78(17.9) 0(100.0)	2.664	2	0.264
Designation Nurse Pharmacist Laboratory scientist CHO Others	 221(81.8) 4(50.0) 6(85.7) 41(89.1) 6(66.7)	 54(18.2) 4(50.0) 1(14.3) 5(10.9) 3(33.3)	8.494	4	0.075
Religion Christian/Orthodox Christian / protestant Islam Christian / catholic Others	 12(80.0) 3(50.0) 210(82.9) 1(50.0) 2(100.0)	 3(20.0) 3(50.0) 50(17.1) 1(50.0) 0(0.0)	6.028	4	0.197
Length of service (years) <10 11 – 15 16 – 20 21 – 25 26 – 30 >30	 74(75.5) 44(78.6) 47(78.3) 54(91.7) 42(80.8) 7(100.0)	 24(24.5) 12(21.4) 13(21.7) 14(8.3) 10(19.2) 0(0.0)	9.454	5	*0.043

***Statistically significant <0.05**

The detailed analysis presented in Table 5 highlights several noteworthy trends regarding the association between socio-demographic variables and the knowledge of 350 respondents concerning andropause. Interestingly, age emerged as a significant factor, indicating that individuals within the 30-39 and 40-49 age brackets exhibited notably superior knowledge compared to both younger and older counterparts. This finding underscores the importance of age-specific targeted education and awareness programs, ensuring that information about andropause is effectively disseminated across all age groups.

Additionally, the marital status of respondents revealed a compelling pattern, demonstrating that married individuals possessed significantly higher knowledge levels in contrast to their single, divorced, or widowed counterparts. This insight implies that marital status may play a role in the access to information about andropause, potentially indicating the influence of family dynamics or social interactions in knowledge dissemination.

Furthermore, the length of service among healthcare professionals exhibited a statistically significant impact on their knowledge about andropause. Healthcare workers with 21-25 years of experience displayed notably enhanced knowledge compared to those with shorter or longer service periods. This finding underscores the potential correlation between professional experience and the depth of understanding regarding andropause, suggesting that seasoned healthcare professionals might possess a more comprehensive grasp of this topic, possibly due to their exposure to a diverse range of cases and experiences over the years.

However, it is essential to note that factors such as gender, educational status, designation, religion, and length of service, although examined, did not demonstrate significant associations with knowledge levels. This indicates that these variables might not be influential factors in determining the knowledge base of healthcare professionals regarding andropause. Understanding these socio-

demographic nuances is crucial for tailoring educational initiatives effectively, ensuring that healthcare workers across various backgrounds receive targeted training to enhance their knowledge about andropause and subsequently improve the quality of care and support they provide to their patients.

Discussion

In this study, the demographic profile of the respondents aligns with prior research, indicating a mean age of 42.24 years with a higher representation of females (79.8%) compared to males (20.2%). This echoes findings by Adebajo et al (2007). Marital status predominantly comprised married individuals (85.7%), and the educational background was largely tertiary (94.3%). Professions within the participants varied, including nurses (68.0%), pharmacists (3.7%), laboratory scientists (3.1%), community health officers (26.3%), and others (5.1%). This differs from a study in the US (Anderson et al, 2003), where pharmacists constituted the majority.

Religiously, Islam was prevalent among the respondents (77.4%). Years of service varied, with a significant proportion having 16-20 years of experience (42.9%). The causes of andropause were primarily perceived as related to old age (44.6%) and excessive sexual activities (23.1%). Preventative measures suggested included improving physical exercise (22.6%) and avoiding excessive sugar intake (42.9%). Respondents distinguished andropause from menopause, associating it with decreased testosterone (57.1%) and poor erection (40.0%). Herbal remedies, notably local herbs (57.1%) and Agunmu-jedijedi (27.1%), were cited for managing andropause symptoms. Laboratory investigation (71.4%) and symptoms experience (9.1%) were recognized as means of diagnosing andropause. Prevalent myths included it being a natural part of aging (46.3%) and few signs of low testosterone (25.1%)(Morales, A., & Lunenfeld, B., 2006; Ojofeitimi, E. O., 2015)

It is evident from this study that the understanding of andropause is diverse and multifaceted among the respondents. However, certain discrepancies in knowledge exist in comparison to studies conducted in other regions. Notably, there was a lack of consensus on preventive measures, with different beliefs existing in this study compared to findings in Lagos, Nigeria, and Canada. (Anderson et al 2003; Hayes 2003), Moreover, age emerged as a significant factor in understanding andropause, highlighting the need for age-specific educational initiatives. The influence of marital status on knowledge dissemination was also notable, suggesting the potential impact of family dynamics on information access.

Additionally, the correlation between professional experience and knowledge highlights the importance of continued education within the healthcare sector. The findings support the existing literature, emphasizing the need for comprehensive and targeted awareness programs tailored to the diverse demographic groups, ensuring accurate information dissemination about andropause (Adebajo et al 2007; Anderson et al 2003; Yuk Yee Yan.2010)

Furthermore, the study shed light on the underexplored area of men's health, revealing the prevalence of denial and lack of acknowledgment of andropause symptoms. This denial, coupled with the absence of comprehensive education, might contribute to the higher rates of self-inflicted illnesses among men (Ojofeitimi, E. O. 2015).

Conclusion:

This study sheds light on the diverse and multifaceted understanding of andropause among the studied population. While there is a substantial level of awareness, discrepancies and misconceptions exist, influenced by various demographic factors such as age, marital status, and professional experience. The findings highlight the critical need for targeted and tailored educational initiatives to bridge knowledge gaps and promote a comprehensive understanding of andropause. Additionally, the study underscores the importance of addressing the cultural and societal factors that contribute to the denial and lack of acknowledgment of andropause symptoms, which can impact men's overall health and well-being.

Recommendations:

1. **Tailored Educational Interventions:** Develop targeted educational programs aimed at different demographic groups, focusing on dispelling myths and providing accurate information about andropause. These programs should consider the influence of age, marital status, and professional experience on knowledge levels and should be accessible through various mediums, including workshops, online resources, and community outreach initiatives.
2. **Promoting Open Dialogue:** Encourage open discussions about andropause within families, communities, and healthcare settings. Creating a supportive environment where men can openly talk about their health concerns can help break the stigma associated with andropause. Healthcare providers should be trained to initiate these conversations during routine check-ups, ensuring that men receive the necessary support and medical guidance.

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