

DETERMINANTS OF HEALTHCARE WORKERS' KNOWLEDGE ON ANDROPAUSE IN IBADAN NORTH EAST LOCAL GOVERNMENT AREA

Ademola Ogunleye

GP Registrar, NHS England

Titilope Olatorera Akinleye

Ladoke Akintola University of Technology

Ilori Oluwatosin Ruth

Department of Community Medicine,
Ladoke Akintola University of Technology, Ogbomosho.

Dr. Abdullahi Lawal Iyanda

Federal Ministry of Health, Department of Public Health, Port
Health Services division

Abdulrahman Kolawole Yaya

Kwaras State College of Health Technology, Offa

Abstract

Introduction

Andropause, a condition marked by a decline in androgen production in aging men, presents notable health challenges. Despite its impact, there are prevalent misconceptions and a lack of awareness, contributing to under-diagnosis and improper management. Bridging this knowledge gap is imperative, particularly given the increasing elderly population worldwide. This study investigates the varied comprehension of andropause among healthcare workers in Ibadan North East, Nigeria, with a specific focus 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: Structured questionnaires provided quantitative data, which underwent analysis through statistical methods encompassing descriptive statistics and inferential analyses. Knowledge levels were correlated with sociodemographic variables, employing chi-square tests and t-tests for comparisons. Qualitative data from open-ended questions underwent thematic analysis to extract key insights. Results: The study identified varying levels of knowledge among respondents, with age significantly

influencing understanding, as the 30-49 age group demonstrated a higher level of comprehension ($\chi^2 = 12.67$, $p < 0.05$). Marital status also played a crucial role, with married individuals exhibiting greater knowledge ($\chi^2 = 18.24$, $p < 0.01$). Professional experience showed a positive correlation with knowledge of andropause ($\chi^2 = 15.38$, $p < 0.05$), underscoring the importance of ongoing education. Discrepancies were observed in preventive measures and symptoms, with 42.9% highlighting the significance of avoiding excessive sugar intake, and 57.1% believing that local herbs could address symptoms. Conclusion: The study unveils a varied and intricate comprehension of andropause among healthcare workers. Notably, sociodemographic factors like age and marital status have a substantial impact on the levels of knowledge. It is crucial to address these disparities through customized educational initiatives to narrow the knowledge gap and foster a precise understanding of andropause. Recommendation: To improve healthcare workers' comprehension of andropause, it is essential to create targeted educational interventions that take into account the influence of age and marital status. Promoting open dialogues within both communities and healthcare settings is crucial to dispel the stigma surrounding andropause. This approach ensures that men receive the necessary support and medical guidance they require.

Key words: *Andropause, Aging Men, Knowledge Gap.*

Background

Andropause, characterized by a gradual decline in androgen production, including testosterone and related hormones, poses a significant health concern for aging men. While comparable to menopause in women, andropause manifests with distinct symptoms and affects a considerable number 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, adds complexity to its diagnosis and management. This complexity has led to ongoing debates and controversies within the medical community (Yialamas et al., 2001; Heaton and Orales, 2001; Wespes et al., 2002; Tan and Pu, 2002; Tenover, 2003; Morales and Lunfeld, 2006).

Andropause presents with a diverse range of clinical signs, encompassing short-term issues such as 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 results in underdiagnosis and mismanagement. Accurate diagnosis hinges on a comprehensive clinical history, physical examination, and laboratory assessments (Yialamas et al., 2001).

Given the aging global population and the associated increase in health issues related to andropause, addressing this condition is of utmost importance. Failing to recognize and manage andropause effectively can lead to a decline in the quality of life for aging men. The urgency for proactive intervention is particularly critical considering the expected rise in the elderly population, with estimates indicating that by 2050, individuals aged 60 and above will make up 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

This study was conducted in Ibadan North East Local Government Area, Ibadan North East Local Government Area is situated in Ibadan, Oyo State, Nigeria, which is the capital and one of the largest and most populous cities in the country. Specifically, Ibadan North East is an administrative division within the city. This local government area hosts numerous health centers to meet the healthcare needs of its residents. Additionally, it is home to strategically located primary health centers in various communities, serving as the initial point of contact for residents seeking healthcare services. These centers provide fundamental medical care, immunization, maternal and child health services, and health education, playing a pivotal role in preventive healthcare. Examples of such health centers include Ayekale Primary Health Centre, Iwo Road Primary Health Centre, Oje Primary Health Centre, and Oke'Badan Health Center, among others.

The area is supported by general hospitals that offer comprehensive medical services, encompassing 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 broad spectrum of health conditions. Specialized clinics, such as dental clinics, eye clinics, and mental health centers, cater to specific medical needs, providing specialized care and diagnostic services to residents. Maternity centers within health facilities contribute significantly to maternal and infant healthcare by offering prenatal, delivery, and postnatal care to expectant mothers.

Research Design

A cross sectional study design was used for this study. This approach was chosen because it enables data collection at a specific moment in time. This design was deemed appropriate for evaluating the understanding of andropause and its related factors among healthcare workers within a defined timeframe. It offered a snapshot of the situation, allowing researchers to investigate different sociodemographic variables and their correlation with the knowledge of healthcare workers regarding 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

The participants were selected through a multistage sampling technique from healthcare facilities in Ibadan North East Local Government Area (L.G.A). Initially, in the first stage, eight wards out of the thirteen in Ibadan North East L.G.A. were randomly chosen using a simple

random sampling technique involving balloting. Subsequently, in the second stage, twenty health centers were selected from the designated wards by listing all health centers and employing simple random sampling through balloting. Finally, respondents or participants were chosen from these health centers using a systematic sampling technique in the last stage. The study included a total of 350 respondents.

Data collection and Management

Information was collected using structured questionnaires and interviews, crafted to evaluate the knowledge of healthcare workers regarding andropause. The data sought included details about their years of experience, educational background, and specific training in geriatrics and endocrinology. To encourage comprehensive responses and capture qualitative insights, open-ended questions were included in the questionnaire and interview process.

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

The evaluation of participants' knowledge of andropause employed diverse scoring methods. Responses to the question about the concept of andropause were categorized as very knowledgeable, fairly knowledgeable, or poorly knowledgeable. For general questions, a score below half of the maximum total was considered indicative of poor knowledge, while a score equal to or above the average indicated good knowledge. Specific questions, scored on a scale of 1 to 7 points, gauged responses on topics such as andropause symptoms and prevention methods. An overall score, with a maximum of 36 points, was computed, and a score below 18 indicated poor knowledge, while 18 or more indicated good knowledge.

Ethical Consideration

The research was conducted in eight wards within the Ibadan North East Local Government Area of Oyo State. Full permission was obtained through a letter issued to me from the department and addressed to the Primary Health Care Coordinator (PHCC). All provided information was handled with strict confidentiality.

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	d f	P-value
	Good knowledge(≥18)	Poor knowledge (<18)			
Age (years)					
20-29	60(64.5)	15(35.5)	8.631	3	*0.035
30-39	68(88.9)	3(11.1)			
40-49	100(81.5)	11(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	24(54.5)	10(45.5)	14.526	3	*0.002
Married	250(85.1)	28(14.9)			
Divorced	3(100.0)	0(0.0)			
Widowed	3(60.0)	2(40.0)			
Educational status					
Secondary	15(62.5)	9(37.5)	2.664	2	0.264
Tertiary	230(82.1)	78(17.9)			
Vocational	3(100.0)	0(100.0)			
Designation					
Nurse	221(81.8)	54(18.2)	8.494	4	0.075
Pharmacist	4(50.0)	4(50.0)			
Laboratory scientist	6(85.7)	1(14.3)			
CHO	41(89.1)	5(10.9)			
Others	6(66.7)	3(33.3)			
Religion					
Christian/Orthodox	12(80.0)	3(20.0)	6.028	4	0.197
Christian / protestant	3(50.0)	3(50.0)			
Islam	210(82.9)	50(17.1)			
Christian / catholic	1(50.0)	1(50.0)			
Others	2(100.0)	0(0.0)			
Length of service (years)					
<10	74(75.5)	24(24.5)	9.454	5	*0.043
11 – 15	44(78.6)	12(21.4)			
16 – 20	47(78.3)	13(21.7)			
21 – 25	54(91.7)	14(8.3)			
26 – 30	42(80.8)	10(19.2)			
>30	7(100.0)	0(0.0)			

*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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