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# Gender and generational differences in perspective about gender inequality in medical and dental research institutions in Nigeria

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## Abstract

**Background** The discourse surrounding gender inequality within research and academic institutions in Nigeria is experiencing a positive shift. This study aimed to investigate the variations in opinions across different generations regarding the perpetuation of gender inequality in medical and dental research institutions in Nigeria.

**Methods** This study is part of a larger study. This qualitative research study used the interpretative phenomenological approach. The in-depth interviews were conducted in English between March and July 2022 and involved 54 male and female medical and dental staff recruited from 17 universities in Nigeria. Participants were selected purposively, and after each interview, participants were asked to refer colleagues who met the eligibility criteria for potential recruitment. The interviews were audio-recorded, transcribed verbatim, and anonymized. Inductive analysis was employed to generate themes. The respondents were stratified by age (below 50 years, 50 years and above) and by sex at birth (male, female) for analysis purposes. The “younger generation” comprised participants below 50 years, while the “older generation” included participants aged 50 years and above. The emerged themes were categorized into four perspectives: (1) experiences of gender inequality in medical and dental research institutions; (2) obstacles related to sex and gender in research; (3) opportunities related to sex and gender in research; and (4) recommendations for promoting gender equality in research and academia.

**Results** The study revealed inter-generational and intra-generational gender differences in perspectives. Among the younger generation, both males and females shared a common view on gender inequality in leadership positions and research opportunities, particularly disadvantaging female academics. They emphasized the necessity for change from a human rights perspective. Conversely, the older generation exhibited divergent opinions. Males acknowledged the presence of gender inequality in leadership and research opportunities, but proposed changes based on



commodifying women. Older females adhered to traditional views regarding gender inequality. Recommendations for change included removing barriers to education for girls, which restrict their access to capacity-building opportunities.

**Conclusion** The findings suggest a generational shift in attitudes toward gender equality in academia, with younger faculty members more inclined to challenge existing norms. Targeted, generation-sensitive strategies, such as inclusive mentorship, institutional policy reforms, and gender equity training, may address the persistent barriers and empower the next generation of academic leaders to drive sustainable and systemic change in the institutions.

**Keywords** Higher educational institution, Gender sensitivity, Generational gaps

## 1 Introduction

Gender inequality pertains to the unequal treatment, opportunities, and outcomes experienced by individuals based on their gender, often favouring one gender over the other [1]. It is a social and cultural construct that encompasses disparities in economic, political, educational, social, and cultural domains, which are rooted in societal norms, stereotypes, and power dynamics. These norms and dynamics assign distinct roles, expectations, and privileges to individuals based on their gender [1–3]. Gender inequality is perpetuated through societal expectations and stereotypes regarding gender roles and behaviours, which can constrain individual choices and perpetuate discriminatory attitudes and practices [4, 5].

Perceptions and awareness regarding gender equality have changed, and different generations may hold distinct views and perspectives on the issue [6]. Older generations may have been raised during a time when gender inequality was more prevalent and accepted. They may have directly witnessed or personally experienced explicit gender biases within research institutions, which can shape their perspectives on gender equality differently compared to younger generations. Gender bias, which contributes to inequity, has significant adverse effects on the careers, mental well-being, and work-life balance of underrepresented groups in academia, including those in the scientific field [7]. Furthermore, despite achieving nearly equal gender representation across disciplines at earlier career stages, gender inequality persists in more senior academic positions [8].

Gender bias can manifest implicitly, leading to automatic judgments of individuals based on discrimination, prejudices, and stereotypes without the individual's conscious awareness [9, 10]. It affects all women, but those whose gender intersects with other identities often experience heightened discrimination and greater adverse effects [11]. Gender bias also influences the enrolment of women in science programs across various countries [12, 13]. Gender stereotypes play a role in shaping how men and women define themselves and how others treat them, thereby perpetuating these stereotypes [14]. The combination of implicit perpetuation and acceptance of gender bias as societal norms contributes to the institutionalization of practices, systems, and structures that enhance gender inequality within institutions. In environments where gender inequality is normalized, the likelihood of explicit expression of gender bias increases, wherein conscious and intentional evaluations of individuals are conducted with varying degrees of favouritism or disfavour [15].

Gender inequality practices are prevalent within Higher Educational Institutions [16]. However, education plays a vital role in achieving gender equality, and universities have

the potential to act as influential agents for promoting gender equality in society. Unfortunately, there remains a persistent issue of inadequate gender integration across academic disciplines and activities, as well as a lack of incorporation of gender perspectives into teaching and research within higher education institutions [17, 18]. The institutionalization of gender inequality within medical and dental research institutions in Africa stems from the institutionalization of male dominance, which originates from patriarchal societal practices that translate into routine administrative practices within these institutions. This institutionalized process leads to men in research having a greater quantity and quality of research outputs, while women in research face barriers to advancement and occupy fewer top positions within research institutions [19, 20].

In Nigeria, there is an evolving discourse surrounding gender inequality within research and academic endeavours, driven by women who are championing change within research institutions. Female medical and dental researchers are challenging the prevailing androcentric norms in knowledge production, questioning the entrenched patriarchal values that contribute to a lower representation of women in medical and dental training, fewer research outputs from women, and limited women in senior managerial positions within the medical field [21]. Interestingly, female dental researchers in Nigeria have demonstrated higher research productivity compared to their male counterparts, with more publications, higher citations per female author, and greater representation as first authors [22].

These efforts to reshape the gender narrative in Nigeria may reflect the perspectives of the younger generation, who have grown up in more progressive social environments with greater exposure to gender equality issues. The younger generation often receives a more comprehensive education on gender equality and the importance of inclusivity, leading to heightened awareness and sensitivity towards these issues [23]. Consequently, they are more likely to perceive gender inequality as unacceptable and advocate for greater inclusivity and equity within research institutions. Education and awareness play pivotal roles in shaping attitudes towards gender inequality [24]. Therefore, the younger generation of medical and dental researchers may have stronger expectations for gender diversity in leadership roles. Conversely, older generations may have become accustomed to male-dominated hierarchies.

Research on generational gaps indicates a growing convergence in support for women's leadership, although the younger generation tends to exhibit stronger support compared to older generations. However, a consistent generation gap persists in attitudes towards working mothers and the division of labour between public and private spheres, with younger generations showing greater support for gender equality and older generations holding onto more traditional views [25]. These findings suggest that cultural shifts in attitudes towards gender equality may not occur uniformly across all aspects.

A shift towards gender equality is emerging in higher education and research institutions in Nigeria, with ongoing efforts to address entrenched gender disparities. However, there is limited understanding of how these efforts are perceived across different academic generations, especially regarding their impact on career advancement, leadership opportunities, and institutional culture within medical and dental research settings. Gaining insight into how these disparities are perceived and perpetuated across generations in academia is vital for developing informed, context-specific interventions. By examining generational differences in perceptions of gender bias and career progression

within medical and dental research institutions, this study can contribute valuable knowledge to inform policies and institutional reforms that foster gender equity.

The purpose of this study, therefore, was to examine generational differences in gender inequality within medical and dental research institutions in Nigeria. Specifically, the study aimed to explore variations in opinions regarding the perpetuation of gender inequality within these institutions across different generations. In addition, the study sought to investigate generational differences in perceptions of gender bias in opportunities for leadership positions and the challenges faced by female researchers in their professional careers. We hypothesize that there are generational differences in the perceptions of gender inequality with career progression within medical and dental research institutions in Nigeria. The expected generational difference is that younger people should be more aware of, and more likely to challenge, gender inequality from a rights-based perspective, while older people are more likely to accept existing gender norms or frame equality through traditional or utilitarian lenses.

## **2 Methods**

### **2.1 Ethical clearance**

Ethical approval for the study was obtained from the Institute of Public Health Research Ethics Committee (Reference: IPH/OAU/12/1617). All study participants gave written consent.

### **2.2 Study design**

The current study was a secondary analysis of qualitative data gathered from 54 male and female medical and dental staff members affiliated with 17 universities in Nigeria. The primary study aimed to understand and address the gender disparities in scientific research in Nigeria. The data collection took place in February 2022. An interpretive phenomenological approach was used for the study design. Details of the primary study had been published [21].

### **2.3 Study population**

Participants were eligible for inclusion in the study if they identified as female or male faculty members affiliated with one of 17 universities in Nigeria that hosted both medical and dental schools. Participants were required to be able to read and communicate in English, self-identify as academics in the fields of health, medical, or dental education, and be actively involved in promoting, designing, conducting, or disseminating biomedical, clinical, or socio-epidemiological research within Nigeria for six months or more. All participants had to reside in Nigeria during the study period, be 18 years and older, and provide informed consent to take part in a one-hour interview. There were no exclusion criteria.

### **2.4 Sample size**

The data of the primary study was generated from 54 participants from 17 universities, including professors, readers, senior lecturers, and lecturers, thereby capturing the full academic hierarchy in Nigerian universities. Further stratification was done to achieve a balanced representation of professional backgrounds, with slots equally divided between dental and medical faculty. A gender-based allocation was also employed, with a 2:1

ratio in favour of female interviewees, thereby promoting the inclusion of women's perspectives in academic research roles. Details of the final allocation of interview slots to each institution were reported in the primary study [21].

## 2.5 Sampling procedure

Participants were selected through a purposive and convenience sampling approach. To ensure diversity, participants were selected across academic ranks. Initial recruitment was done through professional peers of the principal investigator, who then identified eligible participants. Next, snowball sampling was employed, with each participant asked to refer other potential participants. Prospective participants who declined were replaced with other eligible individuals. Eligible individuals were contacted via phone, email, or WhatsApp, and written informed consent was obtained before interviews. Further details on the sampling procedure had been reported in the primary study [21].

## 2.6 Data collection procedure

Data for the primary study was collected through in-depth interviews conducted between March and July 2022. This interview guide for the study was shaped by a conceptual framework that recognised three key domains of influence on gender inequality in West Africa —societal, institutional, and individual influences. The interviews explored the influence of patriarchal cultural, religious, and societal norms on women's career progression, institutional barriers, and individual differences that could influence research productivity [26].

Interviews were conducted in English via Telegram and WhatsApp during the COVID-19 pandemic. Participants enabled video to ensure privacy, and interviews were audio-recorded with consent. Discussions focused on gender disparities in career progression among medical and dental researchers in Nigeria and barriers to equity for future female researchers. Interviews lasted 26–71 min (mean: 55 min). Details on the data collection process had been reported in the primary study [21].

## 2.7 Data analysis

The analysis followed the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines [27]. The interviews conducted were transcribed verbatim and underwent a process of anonymization. Personal identifiers and names of places and institutions were not transcribed. Interview transcripts were imported into Atlas. Ti.

To facilitate the analysis, the respondents were initially divided into two age groups: participants aged 50 and older were categorized as the older generation, while those below the age of 50 were classified as the younger generation. The age 50 was used as the cut-off mark for the elderly because it aligns with national and regional health policies in many African countries that recognize individuals aged 50 and above as older adults due to lower life expectancy and earlier onset of age-related health conditions. The Minimum Data Set project on Ageing, supported by the World Health Organization and the U.S. National Institute on Ageing, designates individuals aged 50 and above as the older population in Africa [28, 29]. Within each age group, further stratification was done based on the participants' gender, resulting in distinct categories for both male and female respondents.

The transcriptions were then recoded by strata and analysed using an inductive approach to identify codes, categories, and recurring themes relevant to gender equality in medical and dental research. A codebook was developed based on emerging themes and analytical questions, and coding was primarily led by the first author, with a second researcher consulted to ensure intercoder reliability. New codes that emerged during analysis were added, and transcripts were re-read using the updated codebook until thematic saturation was reached. Data were organized into themes supported by illustrative quotes, including deviant cases. Findings were compared by age groups and by gender. Participant language was used to define concepts, and reflexive journals were consulted to minimize researcher bias.

### 3 Results

The participants were all drawn from 17 different medical and dental institutions in Nigeria. There were 54 participants, of which 28 (52%) were males, 25 (46%) were practicing medicine and basic sciences, 35 (65%) were younger than 50 years, and 12 (22%) had reached the professorial cadre. Further details on the profile of study participants had been reported in the primary study [21].

Four themes were generated from the inductive analysis, namely: (1) Intersecting Generational and Gendered Experiences of Inequality in Medical and Dental Research Institutions; (2) Gendered obstacles in research that disadvantage women; (3) Gendered career development opportunities; and (4) Generation- and gender-informed strategies for advancing equality in research and academia.

#### 3.1 Intersecting generational and gendered experiences of inequality in medical and dental research institutions

In a previous report based on the primary data, it was found that women in medical and dental research institutions in Nigeria perceived themselves as underrepresented, while men were perceived as overrepresented across various fields [21]. These had also been observed in prior studies [30, 31]. However, the current analysis reveals differences in perspective between and within generations. Among respondents below the age of 50, both male and female participants shared a common view that male dominance persists in terms of published manuscripts and leadership positions within research institutions. In contrast, respondents aged 50 and older held divergent opinions based on gender, with males acknowledging the existing male dominance in medical and dental research while acknowledging ongoing changes, while females perceived no gender disparity despite providing suggestive information about gender equality within the system. This contrast is exemplified by the following illustrative quotes:

*In most organizations, in most countries, I think men are leading research purposes, especially in the sciences. This is because men have better educational opportunities than women, and I'm speaking in terms of placement of men in the universities, research institutions, and also in organizations that are involved in one form of research or the other. Those educational opportunities have given men better opportunities to obtain grants and be involved in research, especially in the sciences. - DPH, Male, below 50 years.*

*There is also this saying that as a woman, you have to be twice as good to be half as recognized, and it's our reality. It is a patriarchal society. You know it, and you live with it*

*because you can't fight institutions that have been their time immemorial. – CS, Female, below 50 years.*

*I still believe that you see more men; more men are into research, though I can see more women coming in. – JA, male, 50 years and above.*

*I would say there has not been any disparity. I'm one of the first females, and I flow very easily with the males. I wouldn't say there was inequality. I was exposed to the same kind of facilities, the same kind of research they are doing, I don't think I was pushed aside as a female –EE, female, 50 years and above.*

Moreover, there were distinct differences in perceptions regarding the reasons for including women on research teams between the two generational groups. The younger generation believed that women should be included as research teammates based on principles of equality. On the other hand, men in the older generation viewed the inclusion of women as valuable because their inclusion could enhance research practices or as an activity that could improve the chances of securing grants.

*My opinion is about how both men and women can have equal rights, equal pay, the same opportunity at the place of work, the same career opportunities, as well as career development. Both men and women should have equal rights to carry out research and have the same opportunities in research. – AO, male, below 50 years.*

*You see, most times, if you involve female researchers, it improves your chances of being considered for a research grant. – JA, male, 50 years and above.*

*I think the females seem to be more research-oriented. They are thorough. Research needs to be thorough, and it needs patience. I feel the female seems more interested in research based on their qualities –LI, male, 50 years and above.*

In addition, older women expressed the perception that gender inequality is immutable and cannot be altered. They viewed gender inequality as a natural and inherent order of things.

*I may not want to use that word equality for so many reasons, but equity is what I want us to be looking at most of the time. We can never be equal. We are created differently. We all have our strengths and weaknesses, and we are made specifically to each of this gender. AA, female, 50 years and above.*

### 3.2 Gendered Obstacles in research that disadvantage women

Both across generations and genders, there was a consensus that females encounter numerous obstacles in their research careers, which impede their professional advancement. These obstacles include cultural expectations that place a higher emphasis on women's caregiving responsibilities for children and the household, resulting in limited time available for research and causing delays in career progression. The prioritization of family commitments was also seen as a barrier for women in pursuing travel opportunities for capacity building, thereby hindering their ability to stay at the forefront of knowledge. It was noted by one participant that women are often overlooked as potential team members and are only consciously selected when they possess the specific expertise and competencies required. Furthermore, it was shared that men have an advantage in conducting community-based research due to negative community biases that question the professional competence of women. Another participant pointed out that women are frequently absent from spaces where ideas are exchanged and decisions are made within



the dental and medical field, as cultural norms restrict their participation in gatherings primarily attended by men.

*Females are shy to stay in the consultants' lounge, and that's where most discussions, most collaborations, and a lot of other things take place. That's where they exchange of ideas. Everything practically takes place there. Even when things are being published, they start discussing them there. When you go, you meet a lot of males and because of our social background, we don't easily mix up with them. - HA, female, below 50 years.*

*I went to a local government, and I had to introduce myself, and I was just ignored. I'm sure if it was a male, they would probably not have ignored him when he demanded to see somebody he could talk to there. - EE, female, 50 years and above.*

*I still believe women might not be able to get certain career posts because of their gender, and sometimes they might not be able to rise as much as they would have if they were not female. - AI, male, below 50 years.*

### 3.3 Gendered career development opportunities

Participants expressed a consensus regarding the presence of sex and gender disparities in career development opportunities. It is widely acknowledged that the availability of opportunities is influenced by an individual's network, and these opportunities tend to increase as one progresses in their career. Additionally, there was an agreement that men have greater access to information about these opportunities through their networks and are more likely to be able to capitalize on them. It was also recognized that men encounter fewer barriers when it comes to utilizing these opportunities compared to women.

*For example, in the department and in our lounge, where most of the consultants stay, that's where most discussions, most collaborations, a lot of things take place. Everything practically takes place there ... exchange of ideas ... even when things are being published, they start discussing them there. I don't think female even goes there because of the structure of the place. So, we are not free most of the time to even join them. Most opportunities end up rallying around them, the opposite sex, intentionally or unintentionally. HA, female, under 50 years.*

An older-generation male respondent identified that males might have to deal with a lot more financial challenges when conducting research. Whereas younger male respondents spoke of the many grant opportunities that are skewed to the advantage of females.

*But in terms of funding, I've not received kobo from anybody; maybe you will give me money ma. Money is a big challenge for my research. (KO Male 50 years and above)*

*Female researchers are not limited. I even think that female researchers have more opportunities than males because I see a lot of calls that will be tailored towards females. Females of a particular age: I don't see calls or opportunities that they will say they are specifically looking for men. What I see is programs tailored for females. (AA Male under 50 years)*

*Like I said, females are producing, males are producing. If it's based on assessment, I think we are treated equally. If it's based on funding opportunities, I think the females are slightly better than us now, us males (AI Male under 50 years).*

*Most times, I notice that when I want to apply for some grants, some grants are tagged for black women, women in academics, women in the health sector, and all*



*that. So, to me, it seems like women have more opportunities than even the male sex.*  
(EA Male under 50 years)

### 3.4 Generation- and Gender-Informed strategies for advancing equality in research and academia

Participants belonging to the younger generation expressed the need for proactive measures to increase the representation of women in academic spaces. They emphasized the importance of amplifying women's voices in policy formulation and advocating for a work environment that is supportive of women. Furthermore, there was an acknowledgment of the significance of female mentors in driving the necessary changes and bridging the gender inequality gap.

*There should be policies not only at the level of granting organizations but also at the level of the universities, the faculties, and some other research institutions so that females can, over the years, be able to build their capacity and be able to have all these opportunities.* (AO, Male Under 50)

*Mentorship is not there because you don't have a lot of females, and those at higher positions that could put you through, serve as mentors for you, to serve as teachers and role models for you to follow; most of them are males. So, and again, with the mentality here, they don't agree that a woman should lead, so you must prove beyond reasonable doubt that you have something very good to offer and you are quite ready to like to take on that research for them to agree to even follow you as a lead researcher. So, finding a female mentor is a challenge* (BM Female under 50 years).

On the other hand, some participants from the older generation, as well as a few participants from the younger generation, believed that addressing gender inequality requires changes in cultural and religious norms that perpetuate such inequalities. They highlighted the importance of improving girls' education, addressing religious sensitivities that restrict interactions between males and females, and promoting traditional gender roles.

*So, working conditions are important, and all the cultural contexts or social contexts suggest that women are weaker and emotional. I think that a mindset change should emerge. I think that this stuff is being done to change the mindsets of people, or to change the mindset of the jealousy between males and females. Also, the cultural status of women is being changed, and I think that will open up and create more interaction between both genders. A good working relationship, a change of the mindset when it comes to culture, will help* (HA Female under 50 years).

*As you know, in this part of the world, getting an education is just gaining some prominence. Males are dominant in education. So, the same thing is happening even in the departments. You know, comparing the number of consultants that are here on the ground now, we have 23 consultants, and only two are females.* (LI Male 50 years and over)

One female participant from the older generation suggested that promotion criteria should be adjusted based on gender, taking into consideration the additional societal responsibilities that women often bear. This would account for the slower pace of career

progression for women compared to men. However, it was also mentioned that in some situations, women may face challenges in gaining elective opportunities due to the larger number of male voters and prevailing patriarchal perspectives within the system.

*In academia, I don't think it can ever be equal because women have more responsibilities than men that you try to juggle with - merging your career with academia, children and husbands, and the society. You have several things to do at the same time, unlike the men, who can stay focused on one aspect of the care of the home and their career as an academic. So, there is pronounced inequality. And I hope the institution will factor this in when they are considering promotion, because women must compete with their male counterparts, even though they have other responsibilities that they're doing. Some women are also in a position of leadership, and that's an added responsibility. But then, it is the way it is, though, they say that women know how to multitask. But studies have shown that multitasking doesn't equal effectiveness and efficiency. It leads to more struggles, including mental tussles. So, I feel it can never be equal. .... It can't be balanced, except that the men consciously help the women, and then the institution investigates that when they're doing promotion, but I don't think they do that. They feel that you are capable; that's why you came into academia. So, it can never be equal. It's not possible. (BP Female 50 years and over)*

Interestingly, a few female participants from the older generation and a male participant from the younger generation expressed the perspective that no gender inequality exists, as career progression is based solely on merit in the system.

*For me, I don't think there is any restriction or limitation for female researchers in dental practice. Everybody has equal opportunity. If you are qualified enough, you pick up the position, carry out research. I don't think anybody will look at it that maybe because you are female or male, you are not qualified, no. From my observation in my workplace, everybody has equal opportunity. (TB Male under 50 years)*

*If you are speaking with regards to gender, I'm not sure that I've had anything specifically with regards to gender [differences]. I've gotten some specialty training that the hospital allowed me to attend, and the university gave me some sponsorship. I wouldn't put a gender coloration to that because there are other females and other males who have gotten such things from their different fields. (EE Female 50 years and over)*

#### 4 Discussion

The findings of this study underscore the complex interplay of generational and gendered perspectives on inequality within Nigeria's medical and dental research institutions. Rooted in Nigeria's deeply patriarchal societal fabric, these institutions reflect broader cultural norms that prioritize male leadership and reinforce traditional gender roles. Younger generations of Nigerian academics, raised in an era marked by global advocacy for gender equality and improved access to education for women, demonstrate a heightened awareness of systemic disparities. They advocate for transformative change grounded in human rights principles. In contrast, older generations, particularly women, often perceive the status quo as immutable, shaped by decades of socialization

within rigid gender hierarchies. This divergence highlights how Nigeria's evolving socio-cultural dynamics intersect with entrenched norms to shape attitudes toward gender equity.

The findings confirmed the study hypothesis, showing a notable shift in attitudes towards gender inequality among younger male and female participants, who acknowledged its existence and emphasized the importance of actively promoting equal opportunities for women. On the other hand, older male participants recognized gender inequality but suggested addressing it by promoting gender equality based on traditional gender stereotypes and the value attributed to feminized virtues. In contrast, older female participants seemed unaware of gender inequalities, considering the current norms as normal and advocating for career progression based solely on merit for women in academia.

This study had strengths that enhanced its credibility and relevance. It captures a broad range of perspectives across academic ranks, and the nuanced exploration of inter- and intra-generational differences allowed for the identification of patterns that might be missed in a less structured analysis. As a secondary analysis of a previously published dataset, it is also grounded in an established research foundation, adding new layers of understanding to the original findings.

However, the study also has limitations. The analysis did not extensively consider broader structural influences such as national policies or societal norms beyond the academic setting. As with many qualitative studies, reliance on self-reported data introduces the possibility of recall bias and social desirability effects. In addition, the study focused solely on binary gender categories, excluding perspectives from individuals with non-binary or other gender identities, which may limit the inclusivity and comprehensiveness of the findings. Despite these limitations, the study provides valuable insights into the experiences of inequality in academic medical and dental research institutions in Nigeria.

Previous research has acknowledged the existence of generational differences in perspectives on gender inequality [25]. However, the present study provides new evidence that these generational differences also manifest within the medical and dental research academia in Nigeria. A critical insight specific to Nigeria is the paradox of older female academics—those who could spearhead institutional reforms—remaining passive or resistant to challenging inequality. This resistance stems from the normalization of male-dominated structures, a reflection of Nigeria's patriarchal systems where women's leadership is often culturally undervalued [32]. For instance, older female participants dismissed gender disparities as inevitable, attributing career progression solely to merit despite evidence of systemic barriers like caregiving burdens and limited networking opportunities. This normalization perpetuates a cycle where younger women lack role models and mentors, hindering their professional advancement in a system already skewed toward male privilege.

Gender equality is a fundamental human right and crucial for creating a peaceful, prosperous, and sustainable world. Despite some progress, the current trajectory is not on track to achieve gender equality by 2030 [33]. Achieving gender equality requires support for equal opportunities, resources, and choices for both men and women, enabling them to shape their lives, contribute to their communities, and drive

sustainable development [34]. It is equally important to address gender inequality within the research career pathways of medical and dental professionals.

The study reveals that older female academics in the medical and dental fields, who could play a pivotal role in driving change, seem entrenched in outdated perspectives on gender inequality, considering it an unchangeable norm. The traditional societal role ascribed to women as custodians of culture may contribute to resistance to change among older women, leading to a blind spot when it comes to recognizing gender inequalities. Moreover, cultural and religious values can reinforce gender disparities and resistance to change [35]. The older generation has experienced a different era with rigid gender roles and limited opportunities for women, resulting in a belief that significant transformation is unlikely or unattainable. These factors contribute to the perception that gender inequality is a fixed norm, making older women hesitant or skeptical about challenging and changing deeply ingrained social norms and structures.

In addition, the study also reveals nuances in how generational attitudes intersect with Nigeria's religious and ethnic diversity. For example, older male participants acknowledged gender disparities but framed solutions through commodified roles for women (e.g., leveraging their "thoroughness" for grant success). Such perspectives align with cultural narratives that valorize women's contributions only when they align with stereotypical traits rather than advocating for structural equity [36]. Younger males, however, aligned more closely with younger females in critiquing systemic barriers, signaling a cultural shift influenced by Nigeria's growing emphasis on gender empowerment in the political and education sphere and its relation to national development [37].

Nigeria's recent strides in female academic productivity—such as the higher research output of female dental researchers [22]—highlight the potential for progress. Yet, systemic inequities persist, particularly in leadership roles. Institutional practices, such as male-dominated decision-making spaces (e.g., consultants' lounges), exclude women from critical networking opportunities, a barrier exacerbated by cultural norms restricting mixed-gender interactions. The exclusion is further compounded by cultural norms and societal expectations that restrict interactions between men and women in professional settings. In many parts of Nigerian society, these norms enforce gender segregation, which creates barriers to women's advancement. Such restrictions hinder the development of mentorship opportunities and can limit women's visibility and influence in academic and professional spaces. While there is a strong push toward gender equality, societal norms and institutional structures often lag [38]. The challenge lies in reconciling these traditional values, which are deeply ingrained in Nigerian society, with the push for modern policies that promote gender equality and inclusion in academia and other spheres of influence.

The observed persistence in upholding traditional gender norms by older women in medical and dental research institutions poses challenges for mentorship and the creation of professional networks that can support and guide younger female academics. While research suggests that male mentors may not be the best choice for female mentees [39], male mentors can still play a significant role in advancing the careers of female mentees by supporting their capacity building and research skills. Male mentors should use their influence to promote workplace cultures of gender equality, provide gender-aware mentoring and coaching, and practice leadership that prioritizes the well-being of others [40]. Without adequate support and mentorship, early-career female researchers

may feel isolated, hindering their professional development. This, however, does not preclude the need to invest in education about gender inequalities and the way it manifests in various institutions to be able to wean the support of a few older women. Women who advance gender equality may be better able to play the role of mentors for early-career researchers.

It is important to recognize that generational differences in perspectives on gender inequality can intersect with other factors, such as socioeconomic background. Socioeconomic factors may influence individuals' awareness and understanding of the challenges faced at the intersection of multiple identities, leading to variations in intra-group perspectives [41]. In addition, societal progress toward gender equality is driven not only by generational shifts but also by broader social, cultural, and policy changes [42, 43]. However, the current study did not explore the influence of socioeconomic background on respondents' perspectives or analyse the impact of broader societal factors on their views. Further research is needed to understand the roles of these influences in shaping perspectives on gender inequality, particularly within the science profession, including medicine and dentistry [44, 45].

The younger generation of medical and dental researchers recognizes the importance of creating inclusive and equitable research institutions. They emphasize the need for collective efforts to foster dialogue, raise awareness, and implement policies that address gender disparities. Additionally, there is a growing demand for female academics with mentoring capabilities to drive the necessary change and bridge the inequality gap. Nigeria's medical and dental academia possesses a critical mass that can drive the desired change, but efforts must focus on building the competency to enact this change. Recent research outputs in dentistry in Nigeria suggest a positive shift [22], but a systematic process is needed to measure progress and ensure sustained improvement in medical and dental research institutions.

As expressed by the study participants, bridging the generational gap in gender equality practices can be achieved through the institution and implementation of policies and initiatives that promote gender diversity. This includes targeted recruitment efforts, family-friendly policies, and flexible work arrangements. Providing mentoring and networking opportunities for female researchers is crucial for their professional development. In addition, promoting gender awareness and sensitivity through training and education, as well as fostering conversations and intergenerational dialogues, can challenge and shift stereotypical beliefs about gender inequality. Such initiatives can inspire hope for change by showcasing positive examples and success stories. Moreover, it is essential to monitor institutional changes and evaluate evidence-informed interventions that address gender bias in research institutions.

## 5 Conclusion

The study highlights generational differences in opinions regarding gender inequality within medical and dental research institutions in Nigeria. While both younger men and women acknowledge the existence of gender inequality, older women seem unaware of it, and older men tend to promote gender equality through the commodification of femininity. Addressing gender equality in medical and dental research institutions in Nigeria requires strategic actions, anticipating that younger generations, when assuming leadership positions, will actively drive change.

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**Author contributions**

The study was conceptualized and designed by MOF. Data collection was by MOF. Data analyses was conducted by MOF and MO. The manuscript drafting and revision were carried out by M.O.F. and AG-C, MO, JL and GZM-P. All authors made contributions to the article and approved the final version for submission.

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**Availability of data and materials**

All data and materials supporting the findings of this study are included in the article. For further inquiries regarding the data, contact the corresponding author.

**Declarations****Ethics approval**

This study, approved by the Institute of Public Health Research Ethics Committee (Reference: IPH/OAU/12/1617).

**Consent to participate**

All study participants gave written informed consent. Confidentiality and participant privacy were maintained, and the research complied with the Declaration of Helsinki.

**Consent for publication**

Not applicable. This manuscript does not include any individual data requiring consent for publication.

**Competing interests**

The authors declare no competing interests.

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