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Challenges faced by women oncologists in Africa: a mixed methods study

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ABSTRACT

Objective Recent studies have identified challenges facing women oncologists in Western contexts. However, similar studies in Africa have yet to be conducted. This study sought to determine the most common and substantial challenges faced by women oncologists in Africa and identify potential solutions.

Methods and analysis A panel of 29 women oncologists from 20 African countries was recruited through professional and personal networks. A Delphi consensus process identified challenges faced by women oncologists in Africa, and potential solutions. Following this, focus group discussions were held to discuss the results. Descriptive statistics were used to identify the most common challenges indicated by participants and thematic analysis was conducted on focus group transcripts.

Results African women oncologists experienced challenges at individual, interpersonal, institutional and societal levels. The top-ranked challenge identified in the Delphi study was 'pressure to maintain a work–family balance and meet social obligations'. Some of the challenges identified were similar to those in studies on women oncologists outside of Africa while others were unique to this African demographic. Solutions to improve the experience of women oncologists were identified and discussed, including greater work flexibility and mentorship opportunities.

Conclusion Women oncologists in Africa experience many of the challenges that have been previously identified by studies in other regions. These challenges and potential solutions exist at all levels of the social-ecological framework. Women oncologists must be empowered in number and leadership, and gender-sensitive curricula and competencies must be implemented. A systems-level dialogue could bring light to these challenges and foster tangible action and policy-level changes.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Although there has been a steady rise in female representation in oncology, reviews by the American Society of Clinical Oncology (ASCO) and the European Society for Medical Oncology (ESMO) document severe challenges faced by women oncologists in America and Europe. While highly valuable for the academic community, these articles are focused on Western perspectives and experiences. The challenges faced by women oncologists in Africa have yet to be explored.

WHAT THIS STUDY ADDS

⇒ The findings present the first, to our knowledge, documented lived experience of African women oncologists. This new exploration provides valuable information on the role and experience of African women oncologists and offers important suggestions regarding ways to improve the lived experience of this population.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The results of this study provide recommendations for changes at various levels of the social-ecological model. This study will inform subsequent initiatives focused on professional development for African women oncologists, including initiatives related to mentorship and leadership.

INTRODUCTION

Africa faces an increasing burden of cancer. If current trends persist, an estimated 1 000 000 cancer-realted deaths will occur annually in sub–Saharan Africa.[1] Increasing the oncology workforce is critical to mitigating this crisis, as Africa currently experiences the highest health workforce deficits in the world, including in oncology.[2]

A healthcare workforce that reflects the gender-diverse populations they serve is important for the well-being of communities. Women have a unique role to play in health systems in Africa, where they can help mitigate some of the sociocultural barriers preventing women from accessing healthcare.[3 4] Despite composing over 75% of the healthcare workforce in many countries,[5]

women are under-represented in leadership positions across all specialties including oncology.[5] There are no adequate statistics on the number of female oncologists in Africa, however, there is emerging evidence that women are assuming significant leadership roles in the last few years.[6]

Although there has been a steady rise in female representation in oncology,[5] reviews by the American Society of Clinical Oncology (ASCO) and the European Society for Medical Oncology (ESMO) document severe challenges faced by women oncologists in America and Europe.[5 7] While highly valuable for the academic community, these articles are focused on Western perspectives and experiences. The challenges faced by women oncologists in Africa have yet to be explored.

This study aimed to launch a professional development activity through the African Organization for Research and Training in Cancer (AORTIC) Education and Training Committee to determine the most common and substantial challenges in work-life balance, workplace, career development and leadership facing women oncologists in Africa. To do so, a task force was formed after recruiting 29 women oncologists across the continent. A modified Delphi process was executed alongside a series of focus group discussions to illuminate some of the challenges African women oncologists face and potential solutions.

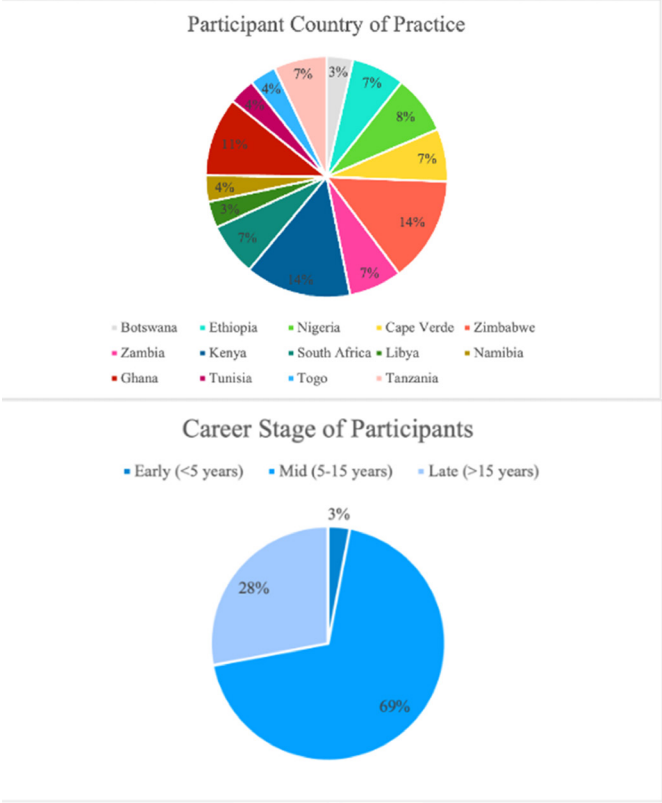

Figure 1 Participant information.

MATERIALS AND METHODS

The AORTIC Education and Training Committee launched a professional development activity for African women oncologists from different countries and career stages.

After an initial meeting to review common terminology, a three-stage modified Delphi technique was used to gather opinions on the challenges facing African women oncologists and potential solutions. All study interactions were conducted virtually. Surveys were conducted via REDCap (Research Electronic Data Capture), a secure web-based software platform, and focus group discussions were held over Zoom. The Delphi method is an efficient, systematic way of making judgements through an iterative process using questionnaires. This methodology allows relevant opinions and views from experts with knowledge about a particular topic and facilitates consensus building and prioritisation of issues and recommendations.

Following the Delphi process, a rank-order list of challenges was developed and disseminated to the task force. A focus group discussion was held via Zoom, where members of the task force were asked to comment on the rank-order list and expand on the challenges they had experienced or witnessed in their careers.

Following the focus group discussion, the recording was transcribed, and open coding was performed on the transcript. Codes were iteratively reviewed for clarity and coherence throughout the coding process. Following initial code development, codes were grouped into themes for analysis. This process was repeated for a list of previously identified solutions. Solutions were reviewed in two 60 min focus group discussions where data saturation was obtained.

The study followed appropriate ethical guidelines and informed consent was obtained from all participants.

Patient and public involvement

There was no patient nor public involvement in the creation or conduct of this study.

RESULTS

29 women oncologists from different specialties, career stages and countries in Africa participated (figure 1). Response rates for the three modified Delphi rounds were 66%, 66% and 53%.

Identification and ranking of challenges and solutions

Refer to table 1

Qualitative analysis

Focus group discussions were conducted to obtain a deeper understanding of the challenges and solutions identified. Thematic analysis produced a grouping of themes that aligned with the social ecological model.[8] Challenges and solutions were categorised as the following: individual; interpersonal; institutional; and societal levels. Interpersonal items involved issues of relationships and social networks; institutional items related to the workforce and environment; and the societal

Table 1 Delphi ranking of challenges and solutions

Challenge	Total score (out of 90)
Pressure to maintain a work-family balance and meet social obligations	74
Lack of female support and networks	73
Microaggressions	71
Delivered by women, led by men (skewed work distribution at the level of leadership)	70
Lack of mentors	69
Lack of support (eg, financial, research)	68
Lack of access to support, including staff, infrastructure, operating times, leadership/ management support	67
Being perceived as less competent than male counterparts	67
Dysfunctional and leaky pipeline	67
Glass ceiling	66
Lack of intellectual attribution	64
Access to networks	63
Diversion of patients to male colleagues	59
Motherhood penalty	58
Sexual harassment	49
Wage gap	46
Solution	**Total score (out of 90)**
Increase the flexibility of working arrangements for mothers (ie, working from home when possible)	83
Increase mentorship opportunities for women	83
Advocate for external funders to support female researchers in low and middle-income countries	81
Provide adequate maternity leave and parental leave for family emergencies	80
Develop an international network of mentors for women in oncology	80
Increase reporting and disciplinary mechanisms for sexual harassment in the workplace	80
Increase awareness and education of gender-based discrimination and challenges faced by women in oncology	80
Implement greater maternity protection for career progression	79
Implement emotional intelligence training in the workplace	78
Increase opportunities to contribute to international research groups	78
Implement more opportunities for women to hold leadership positions	78
Improve workplace infrastructure	77
Increase the availability of courses on research methods and manuscript writing for clinicians	77
Develop associations for female oncologists	74
Implement protected time each day for breastfeeding women up to 1 year post-partum	72
Increase pay for support staff	71
Limit the number of terms for which leadership positions can be renewed	67
Encourage paternity leave	66

category involved structural and systemic elements. (See tables 2 and 3 for a complete summary of the thematic analysis)

Challenges

Individual level

At the individual level, challenges were grouped into two categories: work–life balance, and personality traits. The focus group discussions revealed that many of the participants had difficulties balancing work and family. They repeatedly described an internal tension between dedicating time and resources towards one's career or family. These conflicting priorities were dually exacerbated by the high workload burden facing oncologists as well as the disproportionate burden of social and family responsibilities on women.

The tension associated with the work–family balance was also articulated in terms of personal intrinsic desires to care for loved ones. The socially and culturally embedded role that women play as caregivers and nurturers proves to intensify the conflicts faced by women oncologists.

The other category of individual challenges relates to personality traits that are stereotypically assigned to women. For example, many participants commented on the empathetic and caring nature of women or expectations of behaviours consistent with those characteristics as adding to their workload. Furthermore, participants commented on the fact that many women put pressure on themselves to succeed and exhibit perfectionist tendencies that may impede their success.

Thus, the conditioned role of the female identity presents challenges at the individual level in the professional sphere of oncology practice. This occurs both through social expectations and what respondents described as personality traits that may reflect adaptations to those societal expectations.

Interpersonal-level challenges

Participants commented on challenges regarding social norms and past interactions which involved

Table 2 Challenges identified in focus group discussions

Theme	Subtheme	Relevant quotes
Individual	Work-life balance	"I first had to finish studying and I had to specialize, and I only got married in my 30s and I only had my baby in my 30s and I couldn't have another because I wasn't fertile anymore. So it's the choices we make. So if I had to maybe choose not to have a child, who knows, I could have been a professor by now." "The other thing I was penalized for was being a mother. You know, having to take four months off work to take care of the kids and you come back and it's like you are starting from scratch. So that's something that I really lived through at work." "For me, the pressure to maintain a work-family balance was such a key thing for me because there's a family at home that has their own needs and demands and then the demands at work. I've been accused of not burning the midnight oil to achieve my objectives at work…" "…It always feels like we are not enough, like we have to do more."
	Female traits and tropes	"So sometimes, you know, and obviously being more empathetic it means that we are going to be spending more time to listen to the patients and not rush a consultation, and go beyond the clinical needs of the patient, and look at what are their emotional and psychological issues which maybe they may not feel comfortable talking about with the male counterparts." "I mean I sit here 5 o'clock, 6 o'clock I worry about what my husband and son are going to have for supper because that's just how we're wired. We are carers." "Even in the clinic I feel I have more workload than male. Female patients take more time and discuss issues with women oncologists that they may not mention it to men and oncologists." "Imposter syndrome is so real even for women who have achieved so much." "I think it also goes back to who we are as women. We like things being perfect before we present them." "For myself, I also feel like I need this thing to be perfect before I can move on to something else, so maybe we also spend too much time focusing on that."
Interpersonal	Microaggressions	"(It is a common belief that) females tend to do less or to deliver less." "… I used to chair these meetings…and there was this younger male colleague who was a head of department…he would call everybody else in the meeting by their titles or by their surname and he would address me as my first name…" "Someone decides to comment on what you are wearing and your figure in what you are wearing." "…what I think was a lived experience was probably something like microaggressions. Being a young woman, possibly very enthusiastic about what I'm doing and so on could be taken as stepping on people's toes. And kind of being pressured to slow down rather than being supported to accelerate with what you wanted, were probably things I related to."
	Female competition	"females…experience shows they have a kind of competitiveness for the few roles that are existing and therefore young and up-and-coming professionals often do not get the support they require."
Institutional	Barriers to leadership	"…I think some of this work has been shown elsewhere that the women in most cases, we take over some of the backend secretarial work and do most of the heavy lifting, and somebody else takes the credit." "…women will do a lot of work on the ground, whereas as REDACTED said, the men will get the reward either in recognition or with higher positions" "We don't see a lot of female doctors applying for promotion even when having an equal amount of work, why? Maybe because we have that subconscious pressure." "Barriers to promotion start early in career it seems"
Societal	Resources	"In terms of lack of access to support, I think those things pertain to the environment we work in. Most of them are due to the fact that it's a low- or middle-income country and you just don't have those things available in country…." "But a lot of it, I think it depends on the country that you live in, the political situation in the country, the culture, the religion. So, I come from a country where equality is important, it's one of our tenets. Women are protected….in the professional sphere, women have as many opportunities" "And I don't think it's just because we are female in Africa that we are that busy. I don't know what's happening in the other departments, but I think everyone just feels so absolutely overwhelmed with the workload. And we're all understaffed." "…perhaps it's our environment and the issue of mentoring and mentorship has not always been there."

microaggressions and subtle forms of sexual harassment. Many participants recalled experiences of differential treatment between men and women colleagues. This included the diversion of patients to male colleagues, as well as affording males greater 'slack' in professional and social domains. In these examples, a clear theme of competence emerged. Many participants reported that women were viewed as being less competent than their male counterparts. These perceptions led to some women oncologists developing compensatory behaviours, such as imposing high standards and 'perfectionism' on themselves.

Table 3 Solutions identified in focus group discussions

Theme	Subtheme	Relevant quotes
Individual	Increase mentorship opportunities	"[Mentorship] has huge importance for women in oncology especially junior oncologists", claiming that a mentor "guides you, connects you to opportunities unlike a usual supervisor." "Like, the medical women's association in Zambia has actually taken it upon themselves as one of their mandates to mentor other women. So, I think it's something that we can do through an organization, like you've said, because it has to be systematic." "We have a 400-year …"mentorship gap." We have not been mentored when we were young, and the opposite is seen in high-income countries." "where you [could] have perhaps one senior person but maybe mentoring about 4–5… rotating at certain times such that the few people are not necessarily feeling pressure to perhaps do more in-depth mentoring". "As you start to become more of a leader, you advance in your career, you get some position ahead, that's exactly the time when you need more support, more mentorship, and more training."
Interpersonal	Celebrate the identity and value of women oncologists	"Sometimes, especially with mastectomy, they don't want to but when they go to the male colleagues you know they refuse, they decline. And empathy - most of our patients are really women anyway… So, we [female oncologists] are able to guide them, you know. so being a woman in that unique setting is really vital and it's important and for me I've seen quite a number of times when they've gone through my male colleague and then they come to me and there's a change in acceptance of the treatment that was offered." "[Female patients] tend to prefer female oncologists" "…research gets done and certain people take credit for research but the people on the ground actually don't even get the credit…" "…the first thing one of my professors said to me is that 'you have the opportunity to do anything you want. And I think that's been the joy of being an oncologist and then being a female African oncologist is that there's so much to do."
Institutional	Integrate childcare centres at health facilities; strengthen the workforce	"…we don't have enough human resources so that we could be for one or two days off… We are few physicians and we have so many patients…". "It's about systems on a country level or on a general level. I've never understood why we don't have daycares assigned to government institutions where women who are working in a particular building can actually bring their children and leave them there." "Working arrangements go beyond maternity leave as motherhood extends beyond first period after giving birth"
	Strengthen maternity leave policies	"In a country like Ethiopia where women has long been [the] house wife, the system has not been designed to accommodate working mothers." "I think less than six months generally should be – I think six months should be the cut-off of adequate leave. And the reason is you are able to organize things in your home place before you get back to work. But say in the hospital for example we work in it's three months and then you have to settle back to work and actually start doing calls immediately after. In terms of a woman who's coming back, it's quite unfair right? So I agree with REDACTED, six months should be the bare minimum." "In addition to solid six months, I think less working hours for the next six months should be considered. That way I feel adequate." [referring to maternity leave]
	Implement protected time	"So, the challenges are finding time – protected time – for research, that's something that we'd really love to have."
Societal	Increase accountability and reporting mechanisms	"Institutions should be held accountable for how women are doing." "…parity doesn't always equal equality" "I think we need to put awareness and things as part of the constitution…we need to find a way of making it part of the legislation of a country…" "If you don't talk about it, you know people will let it just sit on the shelf and gather dust but if you deliberately have programs or you know sessions about it in the workplace, that would help." "The solutions for proposal should really be systemic, meaning it's not really at an individual level that we should look at managing things." "I think from a legislative and institutional aspect, I think there's lots that can be in place to ensure women are treated fairly." "Maybe [creating] women oncologist associations in each institution with well-organized reporting system for potential issues raised by women in oncology"

Interpersonal challenges were also reported in more explicit ways, such as through overt sexual harassment. Despite the relatively low priority that sexual harassment was afforded in the Delphi process, participants commented that this was likely due to an issue with conceptual understanding. It was discussed that certain acts are often not labeled or understood as 'sexual harassment', such as commenting on a woman's figure or her clothing at work.

Table 4 The African woman oncologist different roles and associated challenges

Role	Challenges	Solutions
Community member/spouse/mother	Motherhood penalty, housework, greater expectation of participation in community activities such as weddings and funerals	Strengthen maternity leave policies, increase division of domestic labour, strive for female equality in society
Mentor	Time, resources, recognition of work	Increase protected time, increase resources/funds for mentors
Academic/researcher	Lack of opportunities for promotion, lack of opportunities for research training, lack of funding, lack of mentors	Increase protected time, increase mentoring networks/opportunities
Clinician	Internalised and externalised doubt, workplace inequities, significant workload	Strengthen social and professional support systems, train more oncologists
Leader	Limited resources, limited time, lack of recognition and paucity of leadership training and pathways	Increase protected time, increase institutional support for women and recognition of their leadership
Oncologist in a global context	Recognition of work, opportunities to be part of international research teams or networks	Increase funding for local research in LMICs, increase leadership positions in LMICs; increase international mentorship networks, decolonise research authorship and publication practices

LMICs, low- and middle-income countries.

Lastly, interpersonal challenges were reported on a woman-to-woman basis as well. Participants discussed a common feeling of competition among female colleagues, contributing to a notion of scarcity of opportunities in the oncology field.

Institutional-level challenges

At the institutional level, several barriers to professional advancement were reported, especially regarding leadership opportunities. Participants described unequal attribution and recognition afforded to women oncologists collaborating with male colleagues. Participants also noted gender disparities in promotions, though it was mentioned that these barriers are not only related to gender but also age and career level. Respondents discussed challenges in attaining promotions based on skills and competencies, arguing that there are rigid conceptions of success associated with age and career stage.

When investigating reasons behind gender-related promotion disparities, lack of access to mentorship and support networks were identified as significant barriers. Participants reported that women oncologists are often too busy to dedicate time to mentorship programmes, and the relatively recent increase in female participation in oncology limits the amount of established female mentors. Some participants even commented on their own hesitancy to take on mentoring positions due to the intense clinical workload and a plethora of other commitments.

Refer to table 4.

Societal-level challenges

These challenges are related to structural issues involving policies, norms and national resources. The role of the environment was noted to have both positive and negative impacts on gender equality. For example, several participants stated that oncologist wages are standardised in their country, reducing the issue of the gender wage gap. Another positive impact of the environment was the presence of a supportive family network, which was suggested by one participant to mitigate some of the work–life balance challenges faced by others. Regarding negative elements, several respondents commented that the status of their country as low-income or middle-income presented resource-related challenges, which affect all oncologists in the region—not women alone.

Individual-level solutions

A potential solution for individual-level challenges was to implement more opportunities for women's skill development. These included mentorship programmes and specialised training courses.

With mentorship, it was also discussed that the burden of responsibility on senior oncologists who are sought out as mentors should be mitigated. Competing existing responsibilities make mentoring a challenge for many senior oncologists, and thus a 'pod' structure for mentorship programmes was suggested, constituting a group mentorship format rather than traditional one-on-one mentoring.

Developing training programmes for leadership skills was noted as a potential solution. Respondents recognised that leadership programmes are not only important during early career but may even be more relevant as one's career advances.

Interpersonal-level solutions

Discriminatory social norms and behaviours towards women oncologists need to be addressed. Although

some respondents noted that the belief that women are less likely to deliver drove them to work harder, it was agreed that this notion perpetuates harmful perceptions of female incompetence. To overcome these, the value of women oncologists should be more widely recognised.

Importantly, several respondents claimed their female identity had served as a strength when working with female patients. This unique value that women oncologists offer should be acknowledged and celebrated. A need for acknowledgement extends beyond patient interactions, as well. African women as patients need the sense of empowerment that comes from provider-gender concordance. At the policy level, women oncologists must be empowered in number and leadership, while gender-sensitive curricula and competencies must be implemented.

Several participants noted that their professional contributions have gone unacknowledged. Though not exclusively related to gender, this too highlights an experience of oncologists being under-recognised for their contributions. Respondents suggested practical strategies to enhance acknowledgement, such as national or international awards competitions.

Institutional-level solutions

To overcome challenges with workplace expectations and norms, one proposed solution was to improve work flexibility through enhancing infrastructure for virtual service delivery. Many respondents noted that working remotely enables a better balance of work and home responsibilities. However, it was also noted that integrating such arrangements requires a strengthening of the workforce to ensure that adequate staff is available to see patients. A potential strategy proposed to increase the cadre of women oncologists is to actively promote the benefits of being a woman oncologist to undecided junior medical learners.

Women oncologists should also be offered more professional development opportunities. Regarding work–life balance, several respondents recommended that workplaces integrate childcare centres for employees. Integrating childcare into hospitals and health facilities may be a strategy to meaningfully support working mothers.

Societal-level solutions

Proposed solutions included policy change, systems-level dialogue and greater tracking and accountability mechanisms for gender policy. One suggested policy change was implementing a minimum 6-month maternity leave. Though many respondents reported that their respective countries offered maternity leave, participants claimed that this leave was often not mandated and that many women often return to work well before the end of the leave, due to expectations and norms. For example, one respondent from West Africa stated that even though her hospital encourages women returning from maternity leave to only work half days during the last 6 months of maternity leave, they often still work full schedules due to their heavy clinical responsibilities. A more concerted effort must be made to protect maternity leave and reduced working hours for women with children.

Improving accountability and reporting mechanisms was also proposed. This includes reporting mechanisms for sexual harassment or discrimination, and monitoring of trends in female representation in oncology. Importantly, however, a participant commented that tracking participation is not enough to ensure equity, stating, ‘parity doesn’t always equal equality’. Thus, collecting data on metrics beyond basic representation is critical.

Finally, a solution presented in response to many concerns was the amplification and acknowledgement of the challenges facing women in oncology. A systems-level dialogue is required to bring light to these challenges and foster tangible action and policy-level changes that will be supported by male colleagues to ensure sustainability.

DISCUSSION

This paper is the first, to our knowledge, to document the lived experience of African women oncologists. Our results show that women oncologists experience challenges at various levels based on individual, workplace and societal factors. However, women oncologists in Africa strongly feel that they have a unique role to play in the health ecosystem and much to contribute to cancer care provision.

Both ASCO and ESMO have identified significant challenges that women oncologists in Europe and America face, which may help explain why women compose only 28.4% of the oncology workforce.[7] Many challenges identified by women oncologists in Africa were similar to those previously identified in these studies, but others were unique to this demographic.

The gender wage gap is a familiar and enduring challenge, despite equal-pay legislation in many countries.[7] Our cohort from Africa did not report perceptions of pay asymmetries which could be explained by the fact that many of the oncologists in our cohort worked in public facilities with a fixed salary. Anecdotally, the trend might be seen in the public–private sector with women reporting fewer referrals and less monthly earnings. Similarly, 40% of women oncologists in India stated that they do not get equal patient referrals especially early in their careers which can be mitigated by working in a team with a women lead.[9]

Women are often regarded as less competent than men, despite possessing equivalent experience and qualifications.[7] This was felt strongly in the cohort. Behavioural double standards have also been well-documented and must be addressed. Men who strive for leadership positions are praised for their ambition, while women who do so are portrayed as being bossy and rude.[10] Furthermore, the focus group discussions revealed that women put pressure on themselves to succeed and rise above societal expectations of incompetence, potentially leading women

in medicine to feel pressure to go above and beyond in ways that may manifest as perfectionism.

There is also a dysfunctional pipeline in medicine, in which men and women do not succeed at the same rate.[11] This is reflected in medical leadership, which is disproportionately male-dominated.[5] Our cohort expressed similar views with interpersonal, institutional and societal barriers hampering their ability to progress academically or in leadership roles.

Testimonials from women oncologists across the USA have identified the 'womanhood penalty' as a significant barrier, which suggests that regardless of parity, women are not succeeding at the same rate nor receiving equal compensation compared with their male counterparts.[5 12] Study participants felt that this barrier was particularly accentuated in Africa due to the increased socio-cultural and community demands on African women. As this was felt to be the greatest hindrance to personal development, strategies to improve these were noted to be of utmost urgency and included developing childcare facilities, improving maternity leave, enforcing parental leave, and developing flexible working hours.

Mentorship is critical for women's career success as it can reduce gender inequity by building resilience, teaching negotiation skills, offering opportunities and providing support networks.[5 12] There is a paucity of mentors available to guide young women in oncology early in their careers. African women also acknowledge that despite mentoring being essential, they themselves do not have the capacity to meet the demands of mentorship. The task force noted this paucity but suggested expansion by developing international networks and innovative strategies, such as the development of mentorship pods.

Sexual harassment was not identified as a major problem in this study, but it emerged during the discussion that this may be due to a lack of recognition of what sexual harassment entails. Starting in medical school, women in medicine experience more sexual harassment compared with other STEM (Science, Technology, Engineering, Mathematics) disciplines.[13 14] Several researchers have highlighted how sexist norms embedded in work environments further perpetuate sexual harassment.[15–17] The cultural conditioning of women to normalise and even expect unwanted verbal and physical conduct could explain their lack of identification in the Delphi process. Sexual harassment significantly affects the advancement of women in medicine.[18] Education of female and male oncologists to recognise sexual harassment will help identify the problem, estimate its effects and enable the development of culturally relevant solutions.

Regarding solutions at the individual level, women oncologists must develop personal strategies to thrive. Female sex has been identified as a risk factor for burnout in several studies, although this has not been maintained in multivariate analysis.[19 20] Practising self-care and taking regular time off will reduce burnout.[21 22]

At the institutional level, challenges faced by women should be openly recognised and discussed and solutions proffered. Psychosocial support should be provided when needed. Formal protocols in tackling sexual harassment should be available to all persons within the institutions and must be part of orientation processes. Channels for reporting harassment including subtle microaggressions should be opened. Grievances must be investigated and perpetrators punished to serve as a deterrent to others.

Avenues for attaining leadership roles must be outlined and opened to all qualified personnel irrespective of gender. The use of affirmative action or quotas as used in other sectors to improve diversity can be replicated to bolster female leadership. Such high-achieving women will serve as role models for early career women oncologists. Government policies should also reflect a desire for women to thrive in positions of power. Investment in training a robust oncology workforce will mitigate the effect of workload pressures, enabling oncologists to engage in more research and leadership.

Our study revealed that African women oncologists lack access to research training and funding. A recent analysis showed that sub-Saharan African female authors comprised the lowest percentage of authors in a major global oncology journal.[23] The global oncology community must support and acknowledge African women oncologists and researchers.

This study has several strengths—most notably, its unique account of the lived experience of African women oncologists. The cohort that was established here will serve as valuable champions for future projects geared towards African women oncologist empowerment and development. However, limitations should be noted. The group was a non-random sample, and thus the opinions expressed may not be generalisable to the broader population of African women oncologists. Further, discussions were only held in English, limiting opportunities for non-English speaking participants. As well, the non-anonymised format of the discussions may have limited opportunities for participants to speak freely about their experiences, particularly for those with existing relationships with fellow participants. However, no discomfort or hesitancy to speak was observed by the moderators of the study.

Despite increases in female representation in oncology, challenges facing women oncologists prevail at every level of the social-ecological model. This multilevel nature suggests a need to intervene with multifaceted, comprehensive interventions. The solutions proposed here offer a hopeful glimpse into the future for African women oncologists.

It is essential to assess the gender gap over time to gauge progress or lack thereof. A recent update of the ESMO women study found that while some progress took place between 2016 and 2021, there is still a substantial gap.[24] Future research for African female oncologists should incorporate perspectives from men, quantitative methods such as wider surveys to include more women from across the continent and continuously update the

data to take stock of progress and inform gender transformative policies.

CONCLUSION

Women oncologists in Africa experience challenges balancing work and family responsibilities, and face barriers to leadership, including a lack of mentorship opportunities. These challenges persist at the individual, interpersonal, institutional and societal levels. Potential solutions for these complex challenges exist at these same levels.

Action should be taken at all of these levels to mitigate and eliminate the challenges faced by African women oncologists. This study will inform subsequent initiatives focused on professional development for African women oncologists, including initiatives related to mentorship and leadership.

This initial study established a cohort of accomplished, engaged women oncologists across the African continent who will serve as valuable champions for the advancement of equity and acknowledgement of women oncologists in Africa and globally.

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REFERENCES

1 Ngwa W, Addai BW, Adewole I, *et al*. Cancer in sub-Saharan Africa: a lancet oncology Commission. *Lancet Oncol* 2022;23:e251–312. 10.1016/S1470-2045(21)00720-8 Available: https://doi.org/10.1016/S1470-2045(21)00720-8
2 Ahmat A, Okoroafor SC, Kazanga I, *et al*. The health workforce status in the WHO African region: findings of a cross-sectional study. *BMJ Glob Health* 2022;7:e008317.
3 Okereke E, Unumeri G, Akinola A, *et al*. Female clients' gender preferences for frontline health workers who provide maternal, newborn and child health (MNCH) services at primary health care level in Nigeria. *BMC Health Serv Res* 2020;20:441.
4 Standing H. Gender – a missing dimension in human resource policy and planning for health reforms. *Health Resour Health Dev J* 2000.
5 Hofstädter-Thalmann E, Dafni U, Allen T, *et al*. Report on the status of women occupying leadership roles in oncology. *ESMO Open* 2018;3:e000423.
6 Mutebi MC, Aryeetey NA, Carson LM, *et al*. Female representation in oncology leadership in Africa: analysis of trends in the African Organization for cancer research and training in cancer (AORTIC). *JCO* 2022;40:11052.
7 Kirkwood MK, Kosty MP, Bajorin DF, *et al*. Tracking the workforce: the American society of clinical oncology workforce information system. *J Oncol Pract* 2013;9:3–8.
8 Kilanowski JF. Breadth of the socio-ecological model. *J Agromedicine* 2017;22:295–7.
9 Chopra S, Viswanathan A, Mittal P, *et al*. Reducing gender disparity in Oncologists in India: an opportunity to address workforce challenges. *Clin Oncol* 2018;30:805–9.
10 Valian V. Why so slow? the advancement of women. Why so slow? the advancement of women. *The MIT Press* 1998:401–xvii.
11 Gharzai LA, Jagsi R. Ongoing gender inequity in leadership positions of academic oncology programs: the broken pipeline. *JAMA Netw Open* 2020;3:e200691.
12 Adams H. *Women in Oncology: Breaking down Barriers and Looking to the Future*. ASCO Connection2016,

13 Menon A. Sexism and sexual Harassment in medicine: unraveling the web. *J Gen Intern Med* 2020;35:1302–3.
14 The National academies collection: reports funded by National Institutes of health. In: *Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine. National Academies Press (US) Copyright 2018 by the National Academy of Sciences. All rights reserved*. 2018.
15 Kearns MC, D'Inverno AS, Reidy DE. The association between gender inequality and sexual violence in the U.S. *Am J Prev Med* 2020;58:12–20.
16 de Haas S, Timmerman G. Sexual Harassment in the context of double male dominance. *European Journal of Work and Organizational Psychology* 2010;19:717–34.
17 Venugopalan V, Tripathi SK, Nahar P, *et al*. Characterization of Canthaxanthin isomers isolated from a new soil Dietzia SP. and their antioxidant activities. *J Microbiol Biotechnol* 2013;23:237–45.
18 Vogel L. Sexual Harassment rampant in science and worst in medicine, says report. *CMAJ* 2018;190:E842–3.
19 Elbarazi I, Loney T, Yousef S, *et al*. Prevalence of and factors associated with burnout among health care professionals in Arab countries: a systematic review. *BMC Health Serv Res* 2017;17:491.
20 West CP, Dyrbye LN, Shanafelt TD. Physician burnout: contributors, consequences and solutions. *J Intern Med* 2018;283:516–29.
21 Rich A, Aly A, Cecchinato ME, *et al*. Evaluation of a novel intervention to reduce burnout in doctors-in-training using self-care and Digital wellbeing strategies: a mixed-methods pilot. *BMC Med Educ* 2020;20:294.
22 De Hert S. Burnout in Healthcare workers: prevalence, impact and preventative strategies. *Local Reg Anesth* 2020;13:171–83.
23 Hornstein P, Tuyishime H, Mutebi M, *et al*. Authorship equity and gender representation in global oncology publications. *JCO Glob Oncol* 2022;8:e2100369.
24 Linardou H, Adjei AA, Bajpai J, *et al*. Challenges in oncology career: are we closing the gender gap? results of the new ESMO women for oncology committee survey. *ESMO Open* 2023;8:100781.