

Community health workers (CHWs) as oral health navigators in Mushin local government area in Lagos State: a pilot intervention

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ABSTRACT:

Objective: To assess the feasibility of CHWs to be oral health navigators and referral links within a local government area in Lagos state Nigeria.

Methods: Prospective mixed methodology assessment of a cohort of 24 consenting CHWs in Mushin local government area in Lagos, Nigeria. Qualitative-FGDs were conducted to determine job description, willingness to provide oral health services in the community and set up referral links to the government owned dental clinic in the community. Quantitative- pre and post intervention assessments on knowledge of common oral health conditions and measurement of community oral health referrals done after a three-day training workshop on diagnosis and appropriate management of common oral diseases and proper referral systems. The main outcome measures were dental referral inflow from the community health workers and effect of intervention on knowledge of oral health diseases among the CHWs.

Results: All (100%) CHWs reported willingness to be oral health navigators, although only 33 patients were referred during the 5-month study period. Less than 30% of referred patients reported to hospital with varying reasons for poor attendance, including perception of the hospital to which referral is being made. There was significant increase in the mean knowledge score among the CHWs (11.35 ± 5.8) $P=0.02$.

Conclusion: While CHWs indicated a willingness to act as oral health navigators, there is need to create functional oral health and referral structures within the Nigerian healthcare system and create an oral health CHW cadre of incentivize the process for existing CHWs to help improve the feasibility of CHWs being oral health navigators.

Keywords: Community health workers, oral health, referrals, mixed methods, oral health navigators

INTRODUCTION:

Provision of affordable and accessible oral health care services are necessary for the improvement in oral health indices of any nation. For communities to thrive with regards to oral health care, they require well trained and appropriate manpower, financial resources

and the buy-in of the communities.

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Community Health Workers (CHWs) are a frontline cadre of primary health care workers that provide health services within the communities they reside and have over time been trained in various aspects of health to ensure grassroots availability of such services to the communities. In Nigeria, CHWs are an established cadre in the primary health care system.

Nigeria has a high burden untreated oral disease¹⁻³ and a low level of utilization of existing oral health care services, most of which are located in the urban areas of the country.⁴⁻⁶ The National Oral Health Policy (NOHP) document from the Dental division of the Federal Ministry of Health reported that oral health care, human resources and dental services in Nigeria are grossly inadequate.⁷ One of the objectives of the NOHP in Nigeria is *to improve oral, dental and craniofacial health of the population through research, research training, dissemination of information and integration of oral health care into existing health care intervention programmes of relevant Government Agencies such as National Primary Health Care Development Agency (NPHCDA).*⁷

While there is no official national data on the prevalence and pattern of oral health diseases in the country or pattern of utilization of dental facilities, there are individual studies that provide some information. The closest survey to a nationwide study reported an oral health utilization rate of 26.4%⁸. In addition, it is reported that 4 to 30% of Nigerians have dental caries and the need for restoration is as high as 80%.⁹ Majority of Nigerians do not have access to affordable and available dental care, and where such exists, the level of utilization is low regardless of location (rural/urban). Olu-Awe *et al.* (2019) reported in Lagos, that despite close proximity to a tertiary oral health facility, less than 4% reported having ever utilized it⁵, while in the South-South geopolitical zone, it was also reported that utilization of oral health services in a ru-

ral location was poor¹⁰.

One of the ways of incorporating oral health into existing primary health programmes would appear to be training an existing frontline cadre to act as navigators of oral health. Studies bound in which community health workers have been trained to carry out different community-based health services¹¹⁻¹³ There was reduction of disease burden and uptake of various health initiatives where CHWs have been involved, regardless of the country's GDP.¹⁴ This improvement in health outcomes includes but is not limited to maternal and child health, diabetes, hypertension, immunization, HIV, tobacco cessation and oral health.^{11,14-16}

The aim of this study was to determine the feasibility of CHWs acting as oral health navigators within their communities to increase utilization of existing oral health services. We conducted a prospective mixed methodology assessment of a cohort of CHWs who participated in pilot of an enhanced oral health referral process.

METHODS

This study was carried out in Mushin Local Government Area (LGA), a densely populated urban area of Lagos state, Nigeria. Mushin LGA has 14 wards with five primary health centres (PHCs) and is home to the Lagos University Teaching Hospital (LUTH). The study population was CHWs actively working in Mushin LGA. All eligible participants were reached through the office of the Medical Officer of Health (MOH) at the Mushin Local Government Secretariat. Several meetings were set up with the CHWs where the purpose of the research was described and their consent was taken.

For the qualitative aspect of this study, two Focus Group Discussions (FGDs) were carried out at the Palm Avenue PHC – the venue of the CHWs monthly meetings. Participants

were randomly (via ballot) assigned into either FGD1 and FGD 2, with each focus group having a moderator, a note taker and audio recorder for the session. Each FG had a mix of older and younger participants as well as representation from the various wards in the LGA. A semi-structured discussion guide was used to obtain data on job description, perception of the Lagos University Teaching Hospital (LUTH), referral culture of the PHCs and proficiency in handling oral health cases in both FGDs to ensure comparability.

For the quantitative aspect of the study, pre and posttest surveys were carried out on all eligible CHWs who gave consent. The survey used a self-administered pre-tested questionnaire and included questions to obtain biodata, knowledge of oral health diseases (dental caries, gum disease, malocclusion) and willingness to be oral health navigators within their communities.

After the pretest, participants took part in an intensive three-day training programme which included topics on dental caries, gum disease, malocclusion, oral ulcers and referral systems. Posters and handbills were given to each Community health worker to act as reminders.

A referral form was created for the purpose of determining the referral culture of the PHCs and the LUTH. Colour coded referral slips were given to the CHWs in a bid to differentiate their referrals from others that might be brought in. The research assistants were assigned to their wards by a balloting system. The CHWs in the various wards liaised with the research assistants as well as the PI in order to facilitate patient attendance and monitor the level of referrals. The process was also monitored by impromptu visits to the PHCs. Ethical approval was obtained from the Lagos University Teaching Hospital (LUTH) HREC. ADM/DCST/HREC/APP/2713

Research assistants were oral health personnel who underwent a one-day training on conducting FGDs and programme monitoring. Qualitative data from the FGDs was recorded, transcribed, entered into the Nvivo software package. The data from the survey was entered into a secure passworded laptop, cleaned and analysed using the Statistical Package for Social Sciences (SPSS) programme version 21. Number and source of oral health referrals was captured by using record logs at both the PHC and the dental records section of the LUTH.

The qualitative analysis portion of this study was carried out based on thematic analysis approach as described by Braun and Clarke (2006) as a flexible qualitative analytical method that potentially provides a rich and detailed yet complex account of data.¹⁷ Generation of 'data driven' codes from the transcription which led to the generation of emerging themes was carried out. The process of obtaining emerging themes was repeated multiple times.

The quantitative data was analysed using the SPSS version 21. To determine the knowledge level of participants, a score of 1 was given for correct answer, and 0 for incorrect. The sum of all scores were graded into three categories: 0-<50 (poor knowledge), 50-69 (fair knowledge) and 70 and above (good knowledge). Univariate analysis was used to generate frequencies and means.

Tests of associations for categorical data were generated using the Chi square test with level of significance was set at $P < 0.05$. Paired t-test were carried out on the mean pre and posttest knowledge scores.

RESULTS

A total of 24 CHWs participated in this study while eight were either officially away on vacation or on sick leave (75% response rate). There were 22 females participants aged 23

to 53 years. Over 70% were Community Health Extension Workers, 20.8% of the participants were Community Health Officers

while the rest included a Public Health Officer and a Registered Nurse.

Table 1: Sociodemographic characteristics of participants

Variable (N=24)	Frequency (%)
Age (years)	
20-29	4 (16.7)
30-39	11 (45.8)
40-49	7 (29.2)
50-59	2 (8.3)
Mean ±SD	36.3±8.2
Gender	
Male	2 (8.3)
Female	22 (91.7)
Occupation	
Community health worker	17 (70.8)
Community health officer	5 (20.8)
Public health officer	1 (4.2)
Registered nurse	1 (4.2)

Focus Group Discussions

This research presents an overview of the CHWs perception to being oral health navigators within their communities and attitude towards referral of oral cases to the Lagos University Teaching Hospital. During the FGDs, participants were asked what their job description entailed. There were three major activity themes that emerged-Community based programmes, clinic-based treatments and trainings.

P9 FGD1 *“We have a series of training, we do train people, we train TBAs, voluntary health workers. Apart from the training and apart from taking health care to the doors of people we are part of the primary health care set up. We are trained to carry out all the components in the primary health care and we are given a backup which is our standing order”*

P4 FGD1: *“As a community health practitioner our job entails taking health care to the less privileged, to the door step of those people that need it the most. To their doorstep by knocking on their door, by making health their own priority habit and making them feel like they have control over their health. And making them to know that this their health it belongs to them alone. So in order to, we also do health education. So in order to increase their positive health habit and to change the negative one to a positive one voluntarily without being forced or coerced to change their behavior in an healthy manner.”*

The CHWS described the vast majority of their job as “prevention based”

P2: FGD2: *“As community health practitioner, our main focus is to prevent all diseases, common disease and promote health in our community”.*

The use of 'Standing order' which is the treatment codebook for CHWs was discussed. All participants reported not going beyond their brief in management of patients in the community

P6 FGD1: *"Thank you. The standing order is what we use. It is like our back up, just like our Bible. If you want to treat you go through the standing order, you'd ask for the age of the client either adults or children. Depending on the age there is a place you would go to, so you'd now use whatever the standing order says there for the patient"*.

Frequency of dental consultations

P8 FGD2 *"Oral health problem is common, I see cases very well at Alves but the most one we see is due to trauma. Falling down biting on the teeth, the tongue, the mouth, the cheek and all of that."*

P4 FGD1: *"I don't have any experience. I don't see any"*

P10 FGD1: *"According to the question that you asked how often do we usually see oral problem cases like that. In the community I think it is more in the community than in the clinic."*

The vast majority of the CHWs reported knowing about the referral systems and that it is a two-way process but acknowledged a lack of proper practice of the system.

P7 FGD2: *"When you refer the patient, the patient is supposed to give us feedback. The patient is supposed to take the feedback back to the clinic so that we would be able to follow up the patient, even after leaving the hospital back to the home, there would be follow up of the patient from that particular PHC primary health centre where he was transferred to monitor that patient until the patient is okay."*

P3 FGD2: *"Then the referral systems, we practice the two-way referral system from here to the*

General Hospital and then from the General Hospital down here and then we track them. If we want us to refer to LUTH for oral problems, we would need a two-way referral system"

Majority of respondents reported a poor perception of referral centre, both as health workers and from interactions with patients referred in the past.

P7 FGD 2 *"LUTH is a big hospital; I must say it. But the problem is, my experience with them was such that even when I become a MOH, I would never refer a patient to LUTH."*

P11 FGD1 *"I referred a patient to LUTH, three years ago, an aged woman to go to wash her teeth. The woman went around by 9am or past 9, she was finally attended to by 3 o'clock. When she came back, she told me a lot of things. She even said it to my face that please I should refer her to another hospital instead of LUTH."*

P5 FGD2: *"As a layperson, people always go to LUTH when they are about to die"*

P12 FGD1 *"That place eh, na another life if you are going just take along your bags and all your properties because when you get there"*.

All participants reported a willingness to act as oral health navigators within their communities, though none of them had had any formal training on oral health issues. Only one CHW reported ever having been trained on oral health issues.

Figure 1 shows the Knowledge score of respondents before and after the intervention. We gathered that almost half of the respondents had fair knowledge (45.83%) while 12.5% had good knowledge and 41.67% had poor knowledge. There is an obvious uptake in knowledge post intervention in all categories.

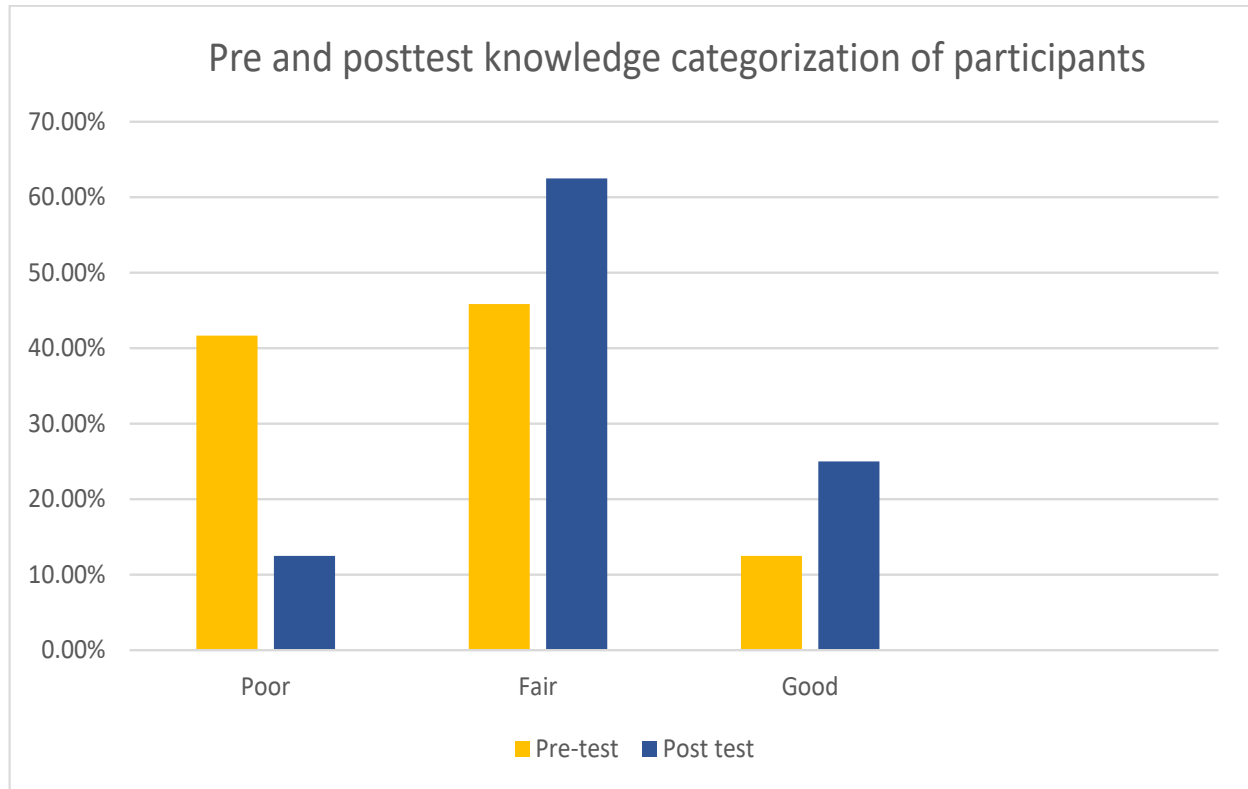


Figure 1: Pre & posttest knowledge categorization of participants

Table 2 shows that there is a statistically significant increase in the level of knowledge post intervention, with the mean score increasing by 11.35.

Table 2: Comparison of means for Pretest and Post test scores (N=24)

Variable	Mean	SD	95% CI		df	Sig (2 tailed)
			Lower	Upper		
Pretest scores	51.30	14.27	18.05	4.65	23	0.02
Post test scores	62.65	13.01				
Difference	11.351	5.86				

Prior to the start of the project, there were no documented referral cases from the CHWs to the LUTH dental clinic. Over a 5-month period (October 2019- February 2020), a total of 33 patients (an average of six patients/month) were referred to the LUTH dental centre from the CHWs, with 30% actually reporting at LUTH. Table 3 shows an overview

of the referred cases as well as patients who came to the dental centre from the CHWs. The majority of cases had periodontal disease, and least number of referrals were for oral ulcers and malocclusion. Only 10 (30.3%) of referred cases came to LUTH. There were more females in both categories.

Table 3: Overview of referred patients from Mushin LGA/ attended LUTH

Variables		Referred cases N=33 (%)	Seen cases n=10 (%)
Patients' age	Adult	27 (81.8)	8 (80)
	Paediatric	6 (18.2)	2 (20)
Gender	Males	13 (39.4)	3 (30)
	Females	20 (60.5)	7 (70)
Reasons for referrals	Gum disease	19 (57.6)	5 (50)
	Dental caries	7 (21.3)	2 (20)
	Oral ulcers	1 (3.0)	1 (20)
	Trauma	3 (9.0)	1 (10)
	Malocclusion	1 (3.0)	1 (10)
	Oral thrush (neonatal)	2 (6.1)	0

DISCUSSION

This study explored the feasibility of CHWs in Mushin LGA to act as oral health navigators within their communities as well as create a referral link system between the community and the dental centre within the LGA. All eligible and available participants were trained over a three-day period on simple oral health diseases-prevention, signs and symptoms, diagnosis and possible treatment within the community.

The majority of participants in this study were female with the modal age category being the fourth decade of life. The gender difference might be due to more females applying for jobs such as CHWs. This female preponderance is however different from a study (Lopes et al 2014) on CHWs carried out in Guinea-Bissau¹¹ in which the majority of CHWs were males. Age ranges for both studies were however similar.

One of the main strengths of this study is the mixed methods approach in which the FGDs

showed that all of the CHWs indicated a willingness to be oral health navigators within their communities and refer patients in need of dental treatment at the LUTH although the reported negative perception about LUTH could act as a barrier. The perception included- but was not limited to - patients' unwillingness to be referred to the tertiary institution as there is a deep sense of foreboding among the members of the community about going to the LUTH as it is seen as a place one goes 'to die'. In addition, there are long waits before patients get attended to as well as poor communication to the patients and long bureaucratic processes. The element of lengthy waiting time has been documented in other studies but it not limited to LUTH¹⁸. Globally, patient satisfaction is a major determinant of utilization of services which would invariably lead to referrals being made.

Furthermore, the FGDs revealed that about a tenth had good knowledge of oral health related issues. This could be considered too low a proportion as CHWs are the frontline

workers regarding health in their communities. In contrast, Eskandari *et al* (2016) reported the majority of the CHWs in their study in Iran, had good knowledge regarding oral health issues.¹⁹ In addition, not very many of them had routinely attended to patients with oral health needs. This could be as a result of patients choosing to self-medicate instead of going to a health facility, which is a common practice in Nigeria.²⁰⁻²²

The intervention of the three-day educational training was effective and improved the knowledge levels of the CHWs regarding common oral health diseases. This is in keeping with other educational training interventions.²¹⁻²³ There were no significant associations between improved knowledge levels and other variables. The greatest improvement however was in the poor knowledge category.

Although there was no official record of the patients who had been referred to the LUTH dental centre, anecdotal evidence seems to show there were hardly any referrals via this route. The CHWs were able to refer a number of patients before the COVID 19 epidemic caused a lockdown. During the study period, the CHWs referred an average of six patients in a month. This is a positive step in the right direction but may be considered a low referral rate considering the population of Mushin LGA but factors alluded to above may be responsible for such low numbers.

In addition, during monitoring visits to the CHWs, it was observed that they were almost always out on immunization visits to the community or carrying out administrative functions with regards to the immunization process. It is possible that the premium placed on immunization played a role in creating the scenario in which more time is spent on carrying out immunizations compared to oral health education. Furthermore, the subject of incentives arose with regards to referral of patients to the tertiary facility. It is pos-

sible that this might have also played a role in not having more referrals made. In order to achieve the integration of oral health into existing primary health, it might be necessary to create a separate cadre of CHWs to handle oral health issues within the community or incentivize the process for existing CHWs.

Less than a third of the patients who were referred from the CHWs reported to the hospital in person, again this may be due to the poor perception about the institution. Among those referred to LUTH for oral health concerns, there was a female preponderance and this also showed in the number of people who went to hospital which is keeping with other studies. The commonest cause for referral was gum disease which is the one of the commonest oral diseases among the Nigerian population⁸

A limitation of this study is that it is a pilot study, more research needs to be done to determine of the issues raised here cut across all LGAs in Lagos and across all states of the federation

CONCLUSION

Community Health Workers (CHWs) in this study indicated a willingness to be oral health navigators in their communities and refer patients to the tertiary institution within the LGA but there seem to be challenges associated with achieving this. These challenges include the community's perception of the tertiary institution in question and a need for possible incentivization of the process. There is a need to create an oral healthcare structure such that the CHWs have the time and resources to act as navigators as well as an improvement of the perception of the hospital of reference.

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REFERENCES

1. Oziegbe EO, Esan TA. Prevalence and clinical consequences of untreated dental caries using PUFA index in suburban Nigerian school children. *Eur Arch Paediatr Dent* 2013 Aug;14(4):227–31.
2. Dedeké AA, Denloye OO, Oke GA. Findings from a study in a defined urban population in South-western Nigeria using the PUFA index. *Afr J Med med Sci*. 2015;43(Suppl 1):179–85.
3. Dedeké A, Popoola O, Denloye O. The Burden of Untreated Dental Caries among 12 year olds in Southwest Nigeria. *African J Epidemiol*. 2014;2(1):65–70.
4. Sofola OO. Implication of Low Oral Health Awareness in Nigeria. *Niger Med J*. 2010;51(3):131–3.
5. Olu-Awe O, Dedeké A, Alade O, Uti O, Sofola O. Illness Behaviour and Utilization of Oral Health Care Facilities among Traders in Mushin Market. *Unilag J Med Sci Technol*. 2019;7(1):75–84.
6. Uguru N, Uzochukwu B, Uguru C, Onwujekwe O. Determinants and Inequities in the Utilization of Routine Oral Health Care Services in Southeast Nigeria. *J Dent Med Sci*. 2016;15(4):69–74.
7. Federal Ministry of Health. *The National oral health policy*. Abuja; 2012.
8. Olusile AO, Adeniyi AA, Orebanjo O. Self-rated oral health status, oral health service utilization, and oral hygiene practices among adult Nigerians. *BMC Oral Health*. 2014;14(1):1–9.
9. Akpata ES. Oral health in Nigeria. *Int Dent J*. 2004;54(S6):361–6.
10. Okeigbemen SA, Nnawuihe CU. Oral health trends and service utilization at a rural outreach dental clinic, Udo, Southern Nigeria. *J Int Soc Prev Community Dent* |. 2015;5(Suppl 2):118–22.
11. Lopes SC, Cabral AJ, de Sousa B. Community health workers: To train or to restrain? A longitudinal survey to assess the impact of training community health workers in the Bolama Region, Guinea-Bissau. *Hum Resour Health*. 2014;12(1):1–9.
12. Hartzler AL, Tuzzio L, Hsu C, Wagner EH. Roles and functions of community health workers in primary care. *Ann Fam Med*. 2018;16(3):240–5.
13. Lumsden C, Andrews H, Leu CS, Edelstein B. Changes in knowledge and beliefs of community health workers following an oral health intervention training program. *J Prev Interv Community*. 2019;47(1):54–65.
14. Perry HB, Zulliger R, Rogers M. Community Health Workers in Low-, Middle-, and High-Income Countries: An Overview of Their History, Recent Evolution, and Current Effectiveness. Ssrn. 2014;
15. Mirzoev T, Etiaba E, Ebenso B, Uzo-chukwu B, Manzano A, Onwujekwe O, et al. Study protocol: Realist evaluation of effectiveness and sustainability of a community health workers programme in improving maternal and child health in Nigeria. *Implement Sci*. 2016;11(1):1–11.
16. Javanparast S, Windle A, Freeman T, Baum F. Community Health Worker Programs to Improve Healthcare Access and Equity: Are They Only Relevant to Low- and Middle-Income Countries? *Int J Heal Policy Manag*. 2018;7(10):943–54.
17. Clarke V, Braun V. Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning Associate Professor in Sexuality Studies Department of Psychology Faculty of Health and Life Sciences University of the West of England

- Coldharbour Lane Br. *Univ West Engl.* 2013;26:120–3.
18. Sowunmi A, Fatiregun O, Alabi A, Zachaeus I, Kingsley I, Oyedeji S. Patient's perception of the quality of radiotherapy services in two teaching hospitals in Nigeria. *Niger J Med.* 2015;24(3):246–51.
 19. Eskandari A, Abolfazli N, Lafzi A, Golmohammadi S. Oral Health Knowledge and Attitudes of Community Health Workers in East Azerbaijan, Iran. *J Dent (Shiraz, Iran)* [Internet]. 2016;17(4):297–300. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/27942544><http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=PMC5136407>
 20. Anyanechi C, Saheeb B. Toothache and self-medication practices: A study of patients attending a niger delta tertiary hospital in Nigeria. *Ann Med Health Sci Res.* 2014;4(6):884.
 21. Dedeke A, Osuh M, Lawal F, Ibiyemi O, Bankole O, Taiwo J, et al. Effectiveness of an oral health care training workshop for school teachers: a pilot study. *Ann Ibadan Postgrad Med.* 2013;11(1):18–21.
 22. Abiodun OA, Olu-Abiodun OO, Sotunsa JO, Oluwole FA. Impact of health education intervention on knowledge and perception of cervical cancer and cervical screening uptake among adult women in rural communities in Nigeria. *BMC Public Health.* 2014;14(1):1–9.
 23. Mbachu C, Dim C, Ezeoke U. Effects of peer health education on perception and practice of screening for cervical cancer among urban residential women in south-east Nigeria: A before and after study. *BMC Womens Health.* 2017;17(1):1–8.