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PERSPECTIVES OF CERVICAL CANCER SCREENING AMONG FIRST-GENERATION NIGERIAN IMMIGRANTS LIVING IN DIASPORA

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Cite this article:

Ohize S.O., Woodall J. (2022), Perspectives of Cervical Cancer Screening Among First-Generation Nigerian Immigrants Living in Diaspora. International Journal of Public Health and Pharmacology 2(2), 31-41. DOI: 10.52589/IJPHP-JE3OW6IQ

Manuscript History

Received: 22 Jan 2022 Accepted: 13 Feb 2022 Published: 28 Dec 2022

Copyright © 2022 The Author(s). This is an Open Access article distributed under the terms of Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0), which permits anyone to share, use, reproduce and redistribute in any medium, provided the original author and source are credited. **ABSTRACT:** *Despite the drop in cases of cervical cancer across* the western world, there is still an ethnic inequality with lower cervical screening rates and higher incidence of cervical cancer reported among ethnic minorities and immigrants from developing nations. This study aims to explore reasons for this, through the perspectives of female, first-generation Nigerian immigrants regarding cervical cancer screening. The study utilises a cross-sectional design. It takes a qualitative approach using one-on-one in-depth interviews of female participants who are Nigerian-born immigrants currently living in Leeds, United Kingdom. By relying on thematic analysis, the study found that the country of origin of immigrants plays a significant role in shaping perspective towards cervical screening; hence, the health-seeking behaviours of immigrants. It is therefore imperative that a global health approach that also addresses cervical cancer screening challenges including lay perspectives in developing nations be adopted.

KEYWORDS: Cervical Cancer, Screening, Lay Perspective, Community Participation

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INTRODUCTION

Cervical cancer is the fourth most prevalent female cancer worldwide, with about 570,000 new patients diagnosed, killing 311,000 women (Arbyn et al., 2020). The incidence rate ranges from less than 2 to 75 per 100000 women, with most of the affected women in the less developed nations (Hoque & Hoque, 2009). Cervical cancer is caused by a sexually transmitted viral infection known as the human papillomavirus HPV (World Health Organization, 2013). The introduction of screening for early cervical cancer and human papillomavirus vaccination resulted in a decline in cases and deaths from cervical cancer in the developed world, including countries like the United Kingdom, Nordic countries, Iceland and Canada (Denny & Wright, 2016).

Although a reduction in cases has been recorded in developed countries, the uptake of cervical cancer remains low amongst immigrants from developing countries (Aminisani et al., 2012; Anaman-Torgbor et al., 2017). The low screening uptake has been associated with an increased risk for severe disease and death with factors such as knowledge, perceptions, attitudes, religious and cultural beliefs identified as barriers to screening uptake.(Birhanu et al., 2012; Morema et al., 2014) A recent study that modelled cervical cancer screening in England by ethnicity found minority groups had a disproportionate share of cervical cancer and suggested that increasing cervical screening service uptake in ethnic minorities could eliminate the cervical cancer inequality(Ginsburg & Paskett, 2018).

While previous studies demonstrate the inequality that exists in screening uptake, this study seeks to gain an understanding of the reasons for such inequality with immigrant communities, especially as the Global Migration Data Analysis Centre (2016) recorded the highest ever number of international migrants (244 million) with almost half being women and many from the African region (Heyer, n.d.). This changing demography of developed nations and the increasing call for a global health approach necessitated this study, as the perception, practises and beliefs of immigrants have impacts on the health status of their host communities and countries (Gushulak et al., 2009). The study aims to explore the perspectives of female first-generation Nigerian immigrants regarding cervical cancer screening; describe the barriers and facilitators to cervical cancer screening uptake among Nigerian immigrants and inform strategies to increase its uptake.

THEORETICAL UNDERPINNING

Concerning epistemology, the study takes a constructivist approach, seeking a better understanding of the multiple realities of the participants. (Braun & Clarke, 2006). Previous studies have demonstrated in numbers the existence of ethnic inequality in cervical cancer incidence and screening uptake (Ginsburg & Paskett, 2018) hence the research methodology aims to uncover lay perspectives by allowing for dialogue in a power-sharing environment where the participants share power with the researcher by ensuring cultural sensitivity and providing opportunities for participation (Das, 2010). This contrasts with the traditional positivist approach in which power lies with the researcher (Gray, 2013). Although the research looks to answer the research objective, it also allows data to emerge inductively. This approach allows for an understanding of the participants perspective and treats context as important (Blaikie, 2007; Gray, 2014). This is in keeping with the health promotion's value of empowerment as true empowerment takes place in the context of people's lives. (Wallerstein

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& Bernstein, 1988) This epistemological approach distinguishes this study from previous works.

METHODOLOGY

A qualitative cross-sectional design was used allowing for the investigation of perceptions and personal experiences. As with most qualitative studies, the sample size for this study is much smaller than for those used in quantitative studies. According to Ritchie, Lewis and Elam (2003), a point of diminishing return is usually reached at a point in a qualitative study when a further study does not necessarily lead to more information (Ritchie et al., 2003). The study sample consisted of six females aged 25 to 64 currently living in Leeds, United Kingdom. The homogeneity of the sample population also affected the sample size since as Guest, Bunce and Johnson (2006, p. 78) concluded following a systematic analysis of data from a study of sixty women that for studies with a high level of homogeneity "a sample size of six interviews may [be] sufficient to enable the development of meaningful themes and useful interpretations" (Guest et al., 2006).

The age range was chosen in line with the screening age used in the National screening programme in the United Kingdom (Bryant, 2012). Criterion sampling method was used in the study. Inclusion criteria include female, Nigerian born first-generation immigrants, who understand and speak English and can give written consent to participate in this study.

A semi-structured interview was used. The interviews were conducted in English using an open-ended, semi-structured interview guide (van Schalkwyk et al., 2008). The interview questions included questions exploring the influence of knowledge about cervical cancer, cervical screening experiences, perspectives, beliefs, and barriers to screening practises. The interview process was flexible to allow for additional questions to be asked while being flexible enough to allow data to emerge freely in an inductive way. The nature of questions was refined using pre-tested questions for feedback among six female Nigerian immigrant students. This is to provide feedback on the clarity and wordings of the questions and was not included in the final analysis. The interviews were conducted in a convenient place agreed upon by the researcher and the participants lasting about 30 minutes on average. The rigour (validity and reliability) are influenced by different factors however, based on the epistemology and research purpose of reaching richness and ambience, it may be challenging and epistemologically counter-intuitive to define and seek validity and reliability in the quantitative sense.

Thematic analysis was used as a systematic method to generate the outcome, theory and principles; it is considered a foundational method for qualitative analysis.(Braun & Clarke, 2006) Using the 6-phase guide proposed by Braun and Clarke (2006), data was captured by recording, transcribed manually to achieve familiarisation with data, and the script repeatedly read allowing for in-depth knowledge of the transcript (Braun & Clarke, 2006). The data were coded using structural coding by applying conceptual phrases representing aspects of research objectives relevant to the segments of the data. These initial codes are collated into organising codes in line with emerging themes and clustered into groups, forming the thematic categories (Crowe et al., 2015).

Reflexivity: The primary researcher in this study is a young male within the age boundaries of some of the participants. This may influence the responses from the participants (females) who



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may be concerned about expressing views of sexual health to a person of another gender. However, the researcher has years of working experience in the sub-Saharan nation of Nigeria promoting and screening women for cervical cancer in western and northern Nigeria and has gained reasonable experience in gaining and maintaining trust and openness. By leveraging on the soft skills gained through his career, the researcher can allow the women to speak freely. Also, the primary researcher's predisposition to cervical screening as an important factor in the reduction of cancer rates may influence the interview question by presenting the screening process in a positive light.

Participants were assured of confidentiality by keeping their identities anonymous. Participants were also made aware they can raise issues and withdraw from the research before, during or after the interview up to the point when analysis of data begins as it will be difficult to separate information from then onwards. There were no issues with intellectual property rights.

FINDINGS

From the findings of the interviews, the following themes were established:

Perception and Understanding of Cervical Cancer

Although all the participants knew about the screening services in Leeds, they admitted to having little or no knowledge of cervical cancer before arriving in the United Kingdom.

"Honestly, I don't know anything about it, all I know is it has to do with your uterus and your vulva and around that area, but I don't know much about cervical cancer itself."

Some of the participants admitted to having never heard of the condition before arriving in the United Kingdom; responding empathically to the question about having knowledge of cervical cancer from Nigeria.

"No, I haven't." "No! The first time it was here."

All the participants knew about the role of screening and early detection in the prevention of cervical cancer. Although most were yet to present for the screening, they expressed some knowledge about cervical cancer prevention as obtained from the information leaflet enclosed in the invitation letter from the NHS.

"Maybe they are looking for a bacterium or something, and if that bacteria is present in you, then there is a likelihood of a person having cervical cancer."

"Honestly, in terms of prevention, I just know the advice to get tested regularly... I really don't know for sure."

There was also misconceptions about the relationship between cervical cancer and sexual activity. Although cervical cancer was correctly associated with sexual activity by some,

"...well in terms of prevention, not having unprotected sex with anybody."



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"They say when you are not sexually active, you are not really at risk, so I wasn't until very much recently."

When asked about screening services in Nigeria, including a possible awareness campaign, they expressed doubt as to its availability in their home country as most of the women were never screened or invited for screening.

"I don't know if they offer screening services in Nigeria."

"...in Nigeria, I don't think anybody goes for the screening."

However, all participants have received a higher awareness about screening services availability in Leeds as invitations for screening

"I know for the United Kingdom once you are above twenty-five years of age, they normally send an invitation for you to do it."

"I do know that it's from the age of twenty-five, then the NHS sent an email out to people who are about to turn twenty-five, they can come for cervical screening."

Barriers and cues to action

Most of the participants believe a lack of knowledge and awareness of the significance of prevention and early detection is the most important reason why there is a lower uptake of screening services amongst minority ethnic groups.

"I think it is awareness and understanding. I think it is a difficult one because if people understand what it is and what causes it, that should encourage people to go for it [screening]."

"So, maybe a lot just have a basic knowledge, and they don't know the implication of why they are screening just to have early detection and what they can do to prevent it."

Asked about why the participants were yet to be screened, most didn't see it as necessary, an issue to be urgently attended to. Some expressed doubts

"To be honest, I don't believe cervical cancer is common with the black people because I did a lot of research on these things and if you look at cancer generally it is common in developed countries not in Africa."

"I just probably don't think it's important..."

Others consider the busy work schedule of urban life in the United Kingdom as a barrier to screening. Having to spend time working and addressing more pressing issues have made them fail to book a clinic appointment for screening.

"When I got the letter, I was very busy, and I did not have time."

Some participants who believed it would be a painful procedure were apprehensive about it. This could have been responsible for failure to make a screening appointment.

"For those that have done it, they describe it as quite painful so when I got the first letter I was like this painful thing."

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However, one of the participants who had been screened in Leeds and initially had a fear of being screened because of the potentially painful experience said the procedure wasn't painful and was rather quick and simple.

"Well at first, I was asking questions like every other woman, thinking if it was going to be painful ... when I got there, it wasn't as I thought. It was just quick, simple and in less than ten minutes."

Cultural beliefs around cervical screening and cancer in general also plays a role in influencing a woman's decision to take up screening services. Being examined around the genitalia raises concern about the gender of the healthcare provider. The mostly conservative nature of the Nigerian population also makes discussing such sensitive issues difficult.

"Maybe culture or maybe being a conservative country, they are like why should I take a swap because it is a private area of a woman's body so a lot of people are a bit reserve unlike here [Leeds] everything is opened, and you can talk about anything, but in Nigeria, I don't think they are as much open..."

Lay perspective for improving action.

When asked about how best they think the cervical screening uptake could be improved amongst Nigerian immigrants in their community in the United Kingdom, the participants preferred an educational approach including seminars at schools, work and other places of gathering.

"Probably if they can do a campaign or like educational promotion. Something to promote and make people understand and have more knowledge about cervical cancer."

"I will say education about the disease in terms of what it is? How often do people get it? Because I don't think a lot of people are aware of this statistic"

"addressing some of the myths around the procedure and things like that. I think education."

The participants also believed the process of educating people and raising awareness should go beyond just home invitations and leaflets. Locations, where people are gathered as a community, like churches, schools and workplaces. Also, opportunistic screening was encouraged for women who visit health centres for related or unrelated conditions.

"I think it is just making people more aware about it, it could be in school, at work and anywhere really that they could be asked if they have done this, and maybe they could be of assistance if they haven't."

"I think the church is also a good avenue"

Another method raised was giving incentives to encourage screening; however, some were against the idea of giving incentives. It was considered ethically wrong as it would amount to 'bribery' and may even be inimical to the ultimate goal of increasing screening uptake.

"I don't feel like people should be, it's like being paid to look at yourself. It doesn't sound right to me... It's your life, and you live it the way you want! That is my view anyway, that is my thought."

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DISCUSSION

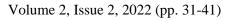
This study relies on the Health Belief Model (HBM) as a theoretical framework to help organise and examine the research objective, however, it does so loosely to allow for the inductive approach of the research. The HBM has been used to understand health behaviours and explore possible reasons why individuals and communities fail to comply with recommended health action or behavioural change.(Becker & Rosenstock, 1984; Tarkang & Zotor, 2015). The HBM has been modified in various ways since its first use in the 1950s, it now comprises six psychosocial variables, which includes perceived susceptibility, perceived severity, perceived benefit, perceived barrier, cues to action and self-efficacy (Glanz et al., 2008). This study deems health behaviour as a reflection of an individual's appreciation of the potential benefit of an action and its potential to minimise or avoid an undesirable health outcome (Weld et al., 2008).

Poor Knowledge

This study finds that all the women who participated were aware of the free cervical screening services provided in the United Kingdom. However, none was aware of other preventive measures like the HPV vaccine. The finding is similar to those of studies conducted in Nigeria even amongst educated individuals (Hyacinth et al., 2012). Although all the participants received information leaflets alongside the routine invitation letters from the health authority, they still failed to express adequate knowledge of cervical cancer.

The approach of information leaflets has not been successful in offering these women adequate knowledge about cervical cancer. This mode of health communication utilises the traditional one-way model of communication (Clampitt, 2016). This approach is narrow and oversimplifies the nature of health communication while also downplaying the real complex and rich nature of human communication (Rogers, 1983). This method of sending invitation letters and information leaflets lacks a feedback loop and ultimately ignores lay perspective in favour of a top-bottom approach (McQuail & Windahl, 2015).

The recommendations from the participants all involved a model in which the community members get to engage in a two -way communication. This alludes itself more to Hubley's (2004) two-way communication model, which allows for the different actors within the communication loop to shape and influence the communication process (Hubley, 2004). Feedback provides the necessary link required to complete the communication circuit between the message receiver and the message source. This ultimately ensures the accuracy of information provided while also promoting evidence for practice from the evaluation of how effective the health promotion activities are. Such robust communication has the potential of influencing the components of the HBM by allowing the individual/community to appreciate their level of risk, degree of seriousness and the benefits of screening. As the perception of severity has been demonstrated as an indicator of a woman's desire to screen for cervical cancer (Saha et al., 2010). However, this approach must be careful not to result in a shock tactic that uses fear to motivate action. Evidence around the effectiveness of using shock tactics is inconclusive as it can result in some maladaptive responses such as fatalism, avoidance, denial or even further reliance on superstitious cultural and religious beliefs (Peters et al., 2013).





Modifying factors to behaviour

In addition to inadequate knowledge, the study also found additional barriers such as perceived little or no benefit to screening; a busy schedule; and fear of a possible painful procedure. This is similar to findings in a cross-sectional study conducted across Nigeria where barriers to screenings were attributed to the multi-religious and multicultural nature of the Nigerian society (Modibbo et al., 2016). Also, a systematic review of eight studies exploring reasons for poor utilisation of cervical screening in sub-Saharan Africa reported similar barriers despite cultural diversity in the region (Lim & Ojo, 2017). These barriers include possible violation of privacy and embarrassment, fear of the cervical screening procedure and negative outcome, societal stigmatisation, low level of awareness of screening services, waiting-time and health care personnel attitude.

To overcome these barriers, it is important to involve the community and ensure that their perspective is used in programme design. The result of assuming the experts know best ignores the receivers' agency and treats the receiver as one devoid of knowledge that needs filling (Freire, 1972). This is inadequate to cause a behavioural change towards screening. To overcome barriers to screening, especially in a setting where the services are readily available, health authorities need to walk alongside the people. By working alongside the community and engaging in discussions involving significant barriers facing the community, the health system can align itself with Freire's empowerment theory which allows for the community to be able to know, feel and speak for themselves (Glass, 2001). Although lay perspectives can be different from the professional's way of knowing health, Williams and Popay (2013) have argued that lay ideas should not be considered as inferior and can indeed be equally sophisticated and complex (Kelleher et al., 2013).

Even for those who have had heard about cervical screening from their country of origin, cervical cancer screening interventions amongst several sub-Saharan African countries does not involve robust community health education programmes.(Sankaranarayanan et al., 2001) Hence the need for a more international and global health approach to cervical cancer prevention; knowing the health-seeking behaviour of an immigrant may be influenced by their country of origin.

Limitation of the study: To be able to determine what happens in the population, the researcher must be able to confidently state that the study sample is representative of the population (Cohen et al., 2013). This is not the case in this study as a criterion sampling method was used and a limited number of participants – rationale given in method section-, the variety of opinions collected is reduced, however, using an in-depth approach to the interview increased the quality of data collected.



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IMPLICATION TO PRACTICE

The

- 1. NHS screening modality should involve a two-way communication system in which feedback from the minority groups is felt or explore other communication models that allow for feedback.
- 2. Community participation and ensure that their perspective is used in programme design
- 3. There is a need for a global health approach to cervical cancer prevention particularly as with the current global call to action for the elimination of cervical cancer(Gultekin et al., 2020)

CONCLUSION

This study adds valuable information to the knowledge, attitudes and practice of the National Health scheme cervical screening programme particularly as it targets ethnic minorities. The study shows that there is a uniqueness to various groups based on their country of origin as barriers to screening in various countries could influence the degree of screening uptake by immigrants from these countries. The findings also make a case for a global health approach to cervical cancer as perceptions and attitudes of individuals – can impact healthcare systems even in the developed world. The consideration of black minority groups in England as a homogenous group hinders the ability of programme planners and policymakers to appropriately address barriers related to countries of origin. It is therefore imperative that appropriate considerations be given to the country of origin and their perspective.

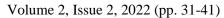
FUTURE RESEARCH

Studies relating to perceptions of other major ethnic groups in the developed world

Ethical approval: Leeds Beckett University Ethics Committee

Funding: Commonwealth Scholarship Commission in the United Kingdom

The authors declare no conflict of interest."





REFERENCES

- Aminisani, N., Armstrong, B. K., & Canfell, K. (2012). Cervical cancer screening in Middle Eastern and Asian migrants to Australia: a record linkage study. Cancer Epidemiology, 36(6), e394--e400.
- Anaman-Torgbor, J. A., King, J., & Correa-Velez, I. (2017). Barriers and facilitators of cervical cancer screening practises among African immigrant women living in Brisbane, Australia. European Journal of Oncology Nursing, 31, 22–29.
- Arbyn, M., Weiderpass, E., Bruni, L., de Sanjosé, S., Saraiya, M., Ferlay, J., & Bray, F. (2020). Estimates of incidence and mortality of cervical cancer in 2018: a worldwide analysis. The Lancet Global Health, 8(2), e191--e203.
- Becker, M. H., & Rosenstock, I. M. (1984). Compliance with medical advice. Health Care and Human Behaviour, 175–208.
- Birhanu, Z., Abdissa, A., Belachew, T., Deribew, A., Segni, H., Tsu, V., Mulholland, K., & Russell, F. M. (2012). Health seeking behaviour for cervical cancer in Ethiopia: a qualitative study. International Journal for Equity in Health, 11(1), 83.
- Blaikie, N. (2007). Approaches to social enquiry: Advancing knowledge. Polity.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. In Qualitative research in psychology (Vol. 3, Issue 2, pp. 77–101). Taylor & Francis.
- Bryant, E. (2012). The impact of policy and screening on cervical cancer in England. British Journal of Nursing, 21(Sup4), S4--S10.
- Clampitt, P. G. (2016). Communicating for Managerial Effectiveness: Challenges | Strategies | Solutions. SAGE Publications.
- Cohen, L., Manion, L., & Morrison, K. (2013). Research methods in education. Routledge.
- Crowe, M., Inder, M., & Porter, R. (2015). Conducting qualitative research in mental health: Thematic and content analyses. Australian & New Zealand Journal of Psychiatry, 49(7), 616–623.
- Das, C. (2010). Considering ethics and power relations in a qualitative study exploring experiences of divorce among British-Indian adult children.
- Denny, L., & Wright, T. (2016). Strategies for overcoming the barriers to cervical cancer Screening in low-resource settings. Global Library of Women's Medicine. 2009.
- Freire, P. (1972). Education: domestication or liberation? Prospects, 2(2), 173–181.
- Ginsburg, O., & Paskett, E. D. (2018). Ethnic and racial disparities in cervical cancer: lessons from a modelling study of cervical cancer prevention. The Lancet Public Health, 3(1), e8--e9.
- Glanz, K., Rimer, B. K., & Viswanath, K. (2008). Health behaviour and health education: theory, research, and practice. John Wiley & Sons.
- Glass, R. D. (2001). On Paulo Freire's philosophy of praxis and the foundations of liberation education. Educational Researcher, 30(2), 15–25.
- Gray, D. E. (2013). Doing research in the real world. Sage.
- Gray, D. E. (2014). Theoretical perspectives and research methodologies. Doing Research in the Real World, 3, 15–38.
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. Field Methods, 18(1), 59–82.
- Gultekin, M., Ramirez, P. T., Broutet, N., & Hutubessy, R. (2020). The World Health Organisation calls for action to eliminate cervical cancer globally. In the International Journal of Gynecologic Cancer (p. ijgc-2020). BMJ Specialist Journals.



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- Gushulak, B. D., Weekers, J., & MacPherson, D. W. (2009). Migrants and emerging public health issues in a globalised world: threats, risks and challenges, an evidence-based framework. Emerging Health Threats Journal, 2(1), 7091.
- Heyer, C. (n.d.). Global Migration--A Geopolitical Approach.
- Hoque, E., & Hoque, M. (2009). Knowledge of and attitude towards cervical cancer among female university students in South Africa. Southern African Journal of Epidemiology and Infection, 24(1), 21–24.
- Hubley, J. (2004). An action guide to health education and promotion. Communicating Health. Price: Macmillan Press.
- Hyacinth, H. I., Adekeye, O. A., Ibeh, J. N., & Osoba, T. (2012). Cervical cancer and pap smear awareness and utilisation of pap smear test among Federal civil servants in North Central Nigeria. Plos One, 7(10), e46583.
- Kelleher, D., Gabe, J., & Williams, G. (2013). Challenging medicine. Routledge.
- Lim, J. N. W., & Ojo, A. A. (2017). Barriers to utilisation of cervical cancer screening in Sub Saharan Africa: a systematic review. European Journal of Cancer Care, 26(1), e12444.
- McQuail, D., & Windahl, S. (2015). Communication models for the study of mass communications. Routledge.
- Modibbo, F. I., Dareng, E., Bamisaye, P., Jedy-Agba, E., Adewole, A., Oyeneyin, L., Olaniyan, O., & Adebamowo, C. (2016). Qualitative study of barriers to cervical cancer screening among Nigerian women. BMJ Open, 6(1).
- Morema, E. N., Atieli, H. E., Onyango, R. O., Omondi, J. H., & Ouma, C. (2014). Determinants of cervical screening services uptake among 18--49 year old women seeking services at the Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu, Kenya. BMC Health Services Research, 14(1), 335.
- Peters, G.-J. Y., Ruiter, R. A. C., & Kok, G. (2013). Threatening communication: a critical reanalysis and a revised meta-analytic test of fear appeal theory. Health Psychology Review, 7(sup1), S8--S31.
- Ritchie, J., Lewis, J., & Elam, G. (2003). Designing and selecting samples. London: Sage.
- Rogers, R. W. (1983). Cognitive and psychological processes in fear appeals and attitude change: A revised theory of protection motivation. Social Psychophysiology: A Sourcebook, 153– 176.
- Saha, A., Chaudhury, A. N., Bhowmik, P., & Chatterjee, R. (2010). Awareness of cervical cancer among female students of premier colleges in Kolkata, India. Asian Pac J Cancer Prev, 11(4), 1085–1090.
- Sankaranarayanan, R., Budukh, A. M., & Rajkumar, R. (2001). Effective screening programmes for cervical cancer in low-and middle-income developing countries. Bulletin of the World Health Organisation, 79, 954–962.
- Tarkang, E. E., & Zotor, F. B. (2015). Application of the health belief model (HBM) in HIV prevention: A literature review. Central African Journal of Public Health, 1(1), 1–8.
- van Schalkwyk, S. L., Maree, J. E., & Dreyer Wright, S. C. (2008). Cervical cancer: the route from signs and symptoms to treatment in South Africa. Reproductive Health Matters, 16(32), 9–17.
- Wallerstein, N., & Bernstein, E. (1988). Empowerment education: Freire's ideas adapted to health education. Health Education Quarterly, 15(4), 379–394.
- Weld, C. P. T. K. K., Padden, D., Ramsey, G., & Bibb, S. C. G. (2008). A framework for guiding health literacy research in populations with universal access to healthcare. Advances in Nursing Science, 31(4), 308–318.
- World Health Organisation. (2013). WHO guidelines for screening and treatment of precancerous lesions for cervical cancer prevention. World Health Organisation.