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Narrative Review on Awareness, Challenges, and Vaccine Uptake of Cervical Cancer in Sub-Saharan Africa

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ABSTRACT: Cervical cancer is among the distressing problems in many countries in the world, while many cases are revealed in sub-Saharan Africa. Consequently, the objective of this paper was to provide a narrative review on awareness, challenges, and vaccine uptake of cervical cancer in Sub-Saharan Africa (SSA) using online and offline library resources in a documentary review design where different publications on the theme were extracted and discussed. The review employed a content analysis approach. The findings of this review show that there is low awareness of cervical cancer, the screening process, and the Human Papillomavirus vaccine. The challenges hindering cervical cancer screening and vaccine uptake are related to: lack of health personnel; social myths and stigma; fear of cancer; cultural practices among Africans; and health personnel's attitude. It is concluded that, given the status of awareness of people about cervical cancer, the mitigation measures for containing and reducing the transmission of cervical cancer are less effective in sub-Saharan Africa and other countries. Hence, there is a need for more location-specific evidence on sociocultural factors that may hamper the adoption of recommended practices to address the problem.

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Cervical cancer is among the alarming health problems that affect many women and girls, leading to the loss of lives worldwide (Ntekim, 2012; Asempah, 2021). It is more prevalent in African countries (Ngcobo *et al.*, 2021), whereby 35 new cases are found out of 100,000 women, and 23 out of 100,000 women die from the disease each year (Anaman-Torgbor *et al.*, 2020). Moreover, 342,000 women died of cervical cancer in the world, of which 22.5% occurred in Africa only (WHO, 2021). According to Zibako *et al.* (2021), cervical cancer is among the major killing diseases in low-income countries, including sub-Saharan Africa (SSA). According to the Centers for Disease Control and Prevention (CDC) (2022), cervical cancer is caused by an infection resulting from human papillomavirus (HPV), and it is transmitted through skin contact with the genital area through sexual intercourse. This raises an alarm about having regular tests for females engaging in sexual relationships. The World Health Organization (WHO) has made efforts to eliminate cervical cancer by establishing the Global Strategy to Accelerate the Elimination of Cervical Cancer through the introduction of the HPV vaccine to girls aged 15 years and above (WHO, 2021). The target of the strategy is to have 90% of fully vaccinated girls,

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70% of women aged 35 to 45 screened, and 90% of women identified with cervical disease to receive proper treatment (ibid.) by the year 2030. Although the WHO had released the mentioned global strategy, governments in SSA are observed to have little attention to the adoption of the strategies (introducing the HPV vaccine) (Asempah, 2021), which perpetuates more transmissions and deaths of women and girls. According to Anaman-Torgbor *et al.* (2020), the absence of cancer prevention programs that are accessible to all women in developing countries results in under-screened or unscreened women, which results in the loss of their lives. Studies portray that the elimination of cervical cancer is hampered by poor health care systems, failure to meet screening costs, lack of diagnosis and treatment facilities, and low awareness of the disease (Denny and Anorlu, 2012; Ngcobo *et al.*, 2021). Moreover, different studies reveal several incidences of new cases of women with cervical cancer in many African countries (Anaman-Torgbor *et al.*, 2020; Zibako *et al.*, 2021). Studies also show that the knowledge of cervical cancer and management strategies is low, mostly in SSA, where many infections and deaths occur (Ntekim, 2012; Anaman-Torgbor *et al.*, 2020). This raises many questions on whether communities are aware of cervical cancer, specifically on the transmission, curing, and prevention; and whether there are challenges in the containment process, including the screening process and vaccine uptake. In this case, it is important to review the awareness of cervical cancer within communities and the challenges facing the process of containing cervical cancer in SSA. The results of this review can be useful to the ministries of health and health organizations, specifically in preparing different strategies to eradicate cervical cancer in SSA. Implementing the proposed strategies by the ministries of health and health organizations can be among the useful measures in meeting Sustainable Development Goal No. 3, which is aimed at ensuring health and well-being. Consequently, the objective of this paper was to provide a narrative review on awareness, challenges, and vaccine uptake of cervical cancer in Sub-Saharan Africa (SSA)

MATERIALS AND METHODS

This review explored the overview of cervical cancer in SSA, specifically on awareness and challenges in screening and vaccine uptake. This is because there is an increasing rate of cervical cancer incidences in SSA despite different efforts made to contain it, including the provision of screening services and vaccine uptake. While different studies have been conducted on the same topic, this review provides a synthesis of the existing knowledge to guide the development of strategies for containing cervical cancer in SSA. The review employed a content analysis approach where different studies conducted in SSA on the same topic were gathered and arranged in tables; then the themes were extracted from the designed tables and discussed by comparing them with similar studies elsewhere. Extracting themes from the studies in the tables provided a wider range of understanding of the extent of cervical cancer in terms of awareness and challenges facing the screening process and vaccine uptake in SSA. It has also assisted in suggesting the best practice in the whole process of containing cervical cancer in SSA. The method used in this review is documentary review, where the search words were awareness of cervical cancer; cervical cancer symptoms, transmission, and prevention; cervical cancer vaccine and uptake; challenges of cervical cancer screening; waiting time and personnel's attitude in cervical cancer screening; cervical cancer services availability; social myths and stigma on cervical cancer; fear of cancer pain and embarrassment; and cultural practices and their impact on cervical cancer screening and vaccine uptake. The review process is as shown in Table 1.

Table 1: The review process on awareness and challenges of cervical cancer screening and vaccine uptake

Identification	Sources of the identified studies: Google scholar = 2588 Pubmed = 102 Ajol = 152 Online library = 52 Research gate = 79	Duplicate = 304 Ineligible =1964
Screening	Screened studies = 705	Excluded studies after screening = 594
	The intended studies to be retrieved = 111	Studies not retrieved = 43
Included in the review	The studies included in the study = 68	

RESULTS AND DISCUSSION

Awareness of cervical cancer in SSA: This section presents different studies revealing awareness of cervical cancer in SSA in terms of its symptoms, transmission, and prevention. The results are as presented in Table 2.

Table 2: Results on awareness and challenges of cervical cancer in SSA

Studies	Results
Knowledge, Attitude, and Experience of Cervical Cancer and Screening among SSA Female Students in a UK University (Ogbonna, 2017)	186 African female students attending one of the major Universities in the UK were interviewed, where: 38.2% of the students were aware of cervical screening, but only 10.8% reported having knowledge of cervical cancer.
How the Cervical Microbiota Contributes to Cervical Cancer Risk in SSA? *(Klein et al., 2020)*	Results reveal low knowledge of cervical cancer in SSA
Spousal support and knowledge related to cervical cancer screening: Are SSA immigrant men interested? *(Adegboyega et al., 2019)*	The study found that men have: Inadequate knowledge of cervical cancer Low willingness and strategies for support, and Shared versus autonomous decision making for screening.
Comprehensive knowledge about cervical cancer is low among women in Northwest Ethiopia (Getahun et al., 2013)	The study reveals low knowledge of cervical cancer
Knowledge and Awareness of Cervical Cancer and Human Papillomavirus among Female Students in an Ethiopian University: A Cross-sectional Study (Tesfaye et al., 2019)	59.6% of 267 interviewed female students in Ethiopian University were not aware of the main causes of cervical cancer and 83.9% of the respondents were not aware of other causes of cervical cancer
Awareness of cervical cancer risk factors and symptoms: cross-sectional community survey in post-conflict northern Uganda (Mwaka, 2016)	The study reveals high cervical cancer education among respondents in northern Uganda, specifically on the causes, including: Multiple sexual partners, Human papillomavirus infection, and Early onset of sexual activity *Others believed that prolonged use of family planning pills and injections caused cervical cancer* Symptoms such as: Inter-menstrual bleeding Post-menopausal bleeding and Offensive vaginal discharge
Assessing the Effectiveness of a Community-Based Sensitization Strategy in Creating Awareness About HPV, Cervical Cancer and HPV Vaccine Among Parents in North West Cameroon (Wamai et al., 2012)	The study found that despite being aware of cervical cancer, parents were hesitant to vaccinate their girl children
Awareness of cervical cancer and willingness to be vaccinated against human papillomavirus in Mozambican adolescent girls (Bardají et al., 2018)	Girls from the HPV demonstration districts showed higher awareness of HPV and cervical cancer, and willingness to be vaccinated.
Cervical Cancer: Community Perception and Preventive Practices in an Urban Neighborhood of Lagos (Nigeria) (Wright et al., 2014)	Awareness about cervical cancer was significantly higher with increasing age in the total population due to the established cancer prevention programs
Cervical cancer awareness and cervical screening uptake at the Mater Misericordiae Hospital, Afikpo, Southeast Nigeria (Eze et al., 2012)	Awareness of cervical cancer and the screening uptake was low
Awareness, Knowledge, and Attitudes Towards Cervical Cancer Amongst HIV-Positive Women Receiving Care in a Tertiary Hospital in Nigeria (Adibe & Aluh, 2018)	The study found poor knowledge of cervical cancer among women attending the HIV clinic in the Nnamdi Azikiwe University Teaching Hospital, Nnewi.
Knowledge towards cervical cancer prevention and screening practices among women who attended reproductive and child health clinic at Magu district hospital, Lake Zone, Tanzania: a cross-sectional study (Mabelele, et al., 2018)	The majority of women have low awareness of cervical cancer, and few utilize screening services.
Predictors of cervical cancer screening among Kenyan women: results of a nested case-control study in a nationally representative survey (Ng'ang'a et al., 2018)	Results show that awareness of cervical cancer was determined by geographical and educational level, where: women who were educated and living in urban areas were aware of cervical cancer screening. Those with no formal education and living in rural areas had low awareness of cervical cancer screening

Results in Table 2 reveal that awareness of cervical cancer in SSA can be viewed in terms of knowledge of cancer, specifically on the causes, transmission, and prevention. Results in Table 2 show that, in other countries, the knowledge level of cervical cancer is determined by educational level, the relationship between spouses, and geographical position, i.e., rural and urban (Wright *et al.,* 2014; Bardají *et al.,* 2018; Ng'ang'a *et al.,* 2018). Based on the studies, women who are living in urban areas and are educated were found to have a higher knowledge of cervical cancer (causes, transmission, and prevention) than those who had a low education level and lived in rural areas. This implies that residing in urban areas and being educated provides the opportunity for women to access health information as well as medical services more than residing in rural areas and being less educated. The power of education in fighting cervical cancer is revealed from different studies; for example, Randall and Ghebre (2016) reveal the contribution of primary and secondary cancer prevention programs in reducing the rate of cervical cancer prevalence in places of its implementation in SSA.

Randall and Ghebre's (2016) study is similar to the results in Table 2, which show that girls from the HPV demonstration districts showed higher awareness of HPV and cervical cancer and their willingness to be vaccinated (Bardají *et al.,* 2018; Johnson *et al.,* 2018). In the same note, respondents in the study by Mwaka (2016) in Northern Uganda, where cervical cancer prevention programs were implemented, were able to mention different ways in which cervical cancer can be transmitted. Among the mentioned transmission ways are having multiple sexual partners, human papillomavirus infection, and early onset of sexual activities. The respondents' answers are supported by the information from WHO (2022) that HPV is mainly transmitted through sexual contact with an infected person. The American Cancer Society (2020) adds that people who are exposed to sexually transmitted diseases are at high risk of developing cervical cancer. This proves that cervical cancer is mainly transmitted through sexual intercourse, among other ways.

Studies also show that men have low support for cervical cancer prevention within families and communities (Lim and Ojo, 2016; Adegboyega *et al.,* 2019; Munthali *et al.,* 2022), which ultimately contributes to low knowledge on cervical cancer as revealed by other studies (Ogbonna, 2017; Adibe and Aluh, 2018; Mabelele *et al.,* 2018; Klein *et al.,* 2020). In African countries, men are termed as heads of houses and decision-makers; therefore, their little support on health issues, including cervical cancer, may lead to its transmission and can also act as a course of other types of cancer that are caused by the same virus (HPV), such as throat cancer (Aksoy *et al.,* 2017). Given the experience from those who were involved in the cervical cancer programs and others who could access the information based on their educational levels, it is important to find strategies to include men in the process to foster its containment. This is because being as parents, men can decide on matters affecting their families, including cervical cancer screening and vaccine uptake, which remain a challenge to many African communities. The important lesson from the studies is that there is an opportunity to eradicate cervical cancer in SSA if education is properly provided to communities. However, this can be possible where there is readiness and support within communities, well-trained professionals, and financial support from governments and responsible health organizations.

In the same note, results in Table 2 also reveal that there were parents who were aware of cervical cancer, but they were hesitant to take their girl children for screening and vaccination (Wamai *et al.,* 2012). The hesitancy was mostly caused by misinformation about HPV vaccination. The study by Wiyeh *et al.* (2019) shows that parents hesitated to vaccinate their girl children due to the rumor that the vaccine had effects on the reproductive organs and that their girls were used for research purposes.

Other causes of hesitance are shown by the study conducted by Cordoba-Sanchez *et al*. (2022), where the respondents doubted the safety of the vaccine and the existing connection between HPV and sexuality. It is very difficult for a parent to expose a child to a health service that, in the end, has a huge negative impact on her life.

Thus, misinformation can hinder community response towards and health project implementation. It is therefore important to research and know what is in the minds of community members about any kind of health service before implementing it. Knowing so provides a room for clearing the doubts about the health service and increasing their participation.

Challenges on Cervical Cancer Screening and Vaccine Uptake in SSA: Cervical cancer screening is a crucial step in combating cervical and other types of cancers transmitted by the same virus (HPV). Different studies present different setbacks on cervical cancer screening, which also affect the vaccine uptake in SSA. Their results are presented in Table 3.

Table 3: Results on Cervical Cancer Screening and Vaccine Uptake in SSA

Studies	Results
Cervical cancer screening uptake in SSA: a systematic review and meta-analysis (Yimer, et al., 2021)	There was low uptake on cervical cancer screening due to: Educational level & age, Human Immune Deficiency Virus (HIV) status, Contraceptive use, Perceived susceptibility and awareness about screening locations
Mapping Evidence on Management of Cervical Cancer in SSA: Scoping Review (Zibako et al., 2022)	Cervical Cancer screening uptake was hindered by: Lack of knowledge and awareness, and Unavailability of screening services.
Cervical cancer screening behaviours and challenges: a SSA perspective (Anaman-Torgbor et al., 2020)	Cervical cancer screening is being hindered by: Competing funding priorities, Low prioritization of cervical cancer Cultural practices across Africa
Eliminating Cervical Cancer in Mali and Senegal, Two Sub-Saharan Countries: Insights and Optimizing Solutions (Haque et al., 2020)	Acceptance of cervical cancer vaccination is hindered by: Lack of awareness, Social myths, Reluctance to vaccine acceptance Stigma of sexually transmitted diseases
Integrated Review of Barriers to Cervical Cancer Screening in SSA (McFarland, et al., 2016).	Results from 10 countries in SSA found the following as hindrances to cervical cancer screening; **client barriers:** lack of knowledge and awareness about Pap smear screening, fear of cancer, belief of not being at risk for cervical cancer, and that a Pap smear is not important unless one is ill, and cultural or religious factors. **Provider barriers**: failure to inform or encourage women to screen & unavailability and inaccessibility of the Pap test
Barriers to utilisation of cervical cancer screening in SSA: a systematic review (Adewumi et al., 2022)	Eight studies done in SSA reported the following barriers for cervical screening; Fear of screening procedure and negative outcome, Low level of awareness of services, Embarrassment and possible violation of privacy, Lack of spousal support, Societal stigmatisation, Cost of accessing services and health service factors like proximity to facility, facility navigation, waiting time, and health care personnel attitude.
A scoping review: Facilitators and barriers of cervical cancer screening and early diagnosis of breast cancer in SSA health settings (Pierz, et al., 2020)	**Identified barriers are:** lack of knowledge about cervical and breast cancer among patients, gaps in education and training among providers, and lack of resources and health infrastructure at the facility level and within the overall health system. **Facilitators and barriers are:** Perceived risk of cancer, Support and encouragement of the provider, utilization of novel approaches in low-resource settings by health systems.
Prevention of Cervical Cancer in SSA: The Advantages and Challenges of HPV Vaccination (Black & Richmond, 2018)	Cervical cancer screening program has been hindered by; Financial, Logistical, and Sociocultural factors
Barriers and Facilitators to Cervical Cancer Screening in Western Kenya: a Qualitative Study (Adewumi et al., 2022)	The study found low awareness of cervical cancer ***The barriers were:*** **Community-based barriers** Fear of pain and Embarrassment during screening pelvic exam. **Providers barrier** Huge workload and lack of supplies and trained staff
Barriers to Cervical Cancer Screening in Rural Kenya: Perspectives from a Provider Survey (Rosser et al., 2015)	The identified barriers to cervical cancer screening included: Staffing shortages, Lack of trained staff, Insufficient space and supply issues**.**

Results in Table 3 show different challenges on Cervical Cancer Screening and Vaccine Uptake in SSA, which are presented and discussed in the following subsections:

Little Awareness of Cervical Cancer Screening and HPV Vaccine: Based on the results in Table 3, little awareness of cervical cancer screening and the HPV vaccine is among the hindrances in reducing its prevalence in SSA (Eze *et al.,* 2012; McFarland *et al.,* 2016; Adewumi *et al.,* 2022; Zibako *et al.,* 2022). According to the CDC (2021), the cervical cancer vaccine is provided to girls from 11 to 12 years and women to protect them from the disease. The information from the mentioned center continues to explain that the virus that causes cervical cancer i.e., HPV can also lead to other types of cancer, including vaginal and vulvar cancers in women, penile cancer in men, anal cancers in both men and women, cancers of the tonsils, the base of the tongue, and the back of the throat (oropharyngeal cancer) in both men and women. HPV infections can also cause anogenital warts. This implies that practicing sex with a person with cervical cancer can lead to other types of cancers, as mentioned earlier. Thus, the CDC (2021) explains that the HPV vaccine can prevent over 90% of cancers caused by HPV. Moreover, the WHO has recommended the required HPV vaccine doses based on age: girls aged 9-14 years and women aged 15-20 are supposed to get one or two doses, and two doses with an interval of six months for women older than 21 years old (WHO, 2022).

Given the above, it is important for the beneficiaries of any provided health service, including the HPV vaccine, to understand its importance and/or benefits to their lives. The studies indicate that most people are not informed about the disease and its impact on their health (McFarland *et al.*, 2016; Zibako *et al.*, 2022), which results in their reluctance to engage in the screening process and vaccine uptake. This is proved by the result in Table 2, specifically in the study by McFarland *et al.* (2016), who indicate that some of the respondents had a notion that it is not important to be screened for cervical cancer unless a person is sick. This study is also supported by Wong et al. (2009) and Marlow *et al.* (2014), who observed that some people were waiting for the cervical cancer symptoms to go for screening and vaccination. Ideally, the main aim, as reported by the CDC (2021), is not for a person to be vaccinated when she observes some of the signs of cervical cancer; rather, it aims at protecting girls and women from contracting the HPV. This is because waiting until an individual observes the signs of the disease contributes much to the spread of cervical cancer and increases the number of deaths for women and girls. It is therefore important for governments and other health organizations to continue providing education to rescue women from dying of cervical cancer, specifically in SSA, where the rate is high.

Health Personnel, Cervical Screen Service Access and Availability: The presence of qualified health personnel with the required equipment is key in the implementation of any required health service to communities. Results in Table 3 show that unavailability and/or few qualified health personnel and cervical cancer screening services are among the challenges towards containing cervical cancer in SSA (Rosser *et al.,* 2015; Adewumi *et al.,* 2022; Zibako *et al.,* 2022). The rate of transmission of cervical cancer needs special attention, including making sure that the qualified health personnel and the required equipment are available in different areas, including rural settings. This can definitely contribute to speeding up the process to ensure that people live a healthy life. Worth noting, the qualified health workers need to have skills on how to communicate effectively with patients or the intended group. Inversely, results in Table 3 show that some of the health workers were lacking communication skills, which led to a low return of women and girls to the cancer screening services and vaccine uptake (Rosser *et al.,* 2015; Adewumi *et al.,* 2022; Adewumi *et al.,* 2022). Thus, it is important to provide proper training to the health service providers, specifically on handling people within communities. In supporting the proposition, the study by Okolie *et al.* (2022) recommends that trained health workers visit family planning clinics and antenatal care units as well as introduce the maternal and child health weeks to provide education to women on cervical cancer screening and vaccine uptake. Additionally, Sadoh *et al.* (2018) suggest peer education as a way of creating awareness of cervical cancer screening and vaccine uptake for women and girls. This can act as a way of attracting more women and girls to the intended service, which will lead to minimizing the spread of cervical and other types of cancer that are spread by HPV. In the same note, geographical position can contribute to the success of any intended health service, including cervical cancer screening, for the community. This is because the farther the health service, the more discouragement the users. This has been revealed from different studies in Table 3, which found that women were not able to be screened because of geographical location, which had an impact on their economic status (Sancho-Garnier *et al.,* 2013; Lim and Ojo, 2016). It is difficult for most women to go for the cervical cancer screening at a faraway health center, especially when they do not have any signs of sickness. Moreover, a far distant place requires traveling, which is costly. Different studies show that those who are residing far from health centers where cervical cancer screening service is provided are hardly being screened

(Wanyenze *et al.,* 2017; Powell *et al.,* 2018; Buskwofie *et al.,* 2020). Thus, only people who understand the importance of cervical cancer screening and have money can act on the call. However, understanding the importance of cervical cancer screening requires awareness creation specifically on who is to be screened and why; for instance, results in Table 3 show that other respondents understood that people can only go for screening when they have signs of cancer or feel sick (Bardají *et al.,* 2018), which is not the case. Thus, there is a need to ensure that the health services are provided closer to the people, probably by using the mobile laboratories, but also by being educated about the same. This can assist in fostering the exercise by ensuring that women and girls understand the importance of cervical cancer screening and vaccine uptake.

Social Myth and Stigma: Results in Table 3 reveal that social myths and stigma are among the hindrances to cervical cancer screening and vaccine uptake (Haque *et al.,* 2020; Adewumi *et al.,* 2022). The study by *Major et al.* (2018) revealed some of the myths, such as "*a person found with cervical cancer is the one who sleeps with many men*." This creates fear in women because if they are found with cervical cancer, they will be seen as prostitutes and stigmatized by their family members and the community. This shows that the community is less/not aware of how cervical cancer is transmitted. It has to be understood that even a single partner who is infected can transfer HPV, which causes cervical cancer, because, according to Ee (2023), not all HPV causes cervical cancer. The only way to remain safe is to be screened for cervical cancer and get vaccinated, as well as have safe sex to reduce the transmission and loss of lives to many women and girls. The same study (Major *et al.,* 2018) added another myth that *"the uterus must be removed from a woman or a girl with cervical cancer, which leads to barrenness*." This is also an obstacle, especially to girls who intend to start their family life. African societies value children within marriages; therefore, telling girls that their uterus is going to be removed is chasing them away from the services. This also implies little awareness of the containment process of cervical cancer. According to Ee (2023), cervical cancer can complicate the pregnancy, but it does not lead to the removal of the placenta or the inability to conceive. Other studies also reveal another myth that "*cervical cancer is inherited*" (Senkomago, 2018; Ee, 2023). The truth from the myth is that, although other types of cancer, such as ovarian and breast, can be inherited (Ee, 2023), cervical cancer is not hereditary, but it is being transferred from one infected person to the other by HPV (Senkomago, 2018). The myth, however, can cause reluctance in women and girls who have never heard of anyone with cervical cancer in their family history to go for the screening services and vaccine uptake. This may expose them to a high risk of contracting cervical cancer and ultimately death. Based on the myths that result in stigma and avoidance of cervical cancer screening, it is important to research to understand what the community knows and believes about what cervical cancer entails, transmission, the symptoms, and its prevention. This will assist in preparing materials and strategies to create awareness of the same in the community, which, in the end, will save women from being infected with the HPV virus.

Fear of Cancer, Pain, and Embarrassment : Results in Table 3 show that some of the respondents could not dare to go for cervical cancer screening because they were fearing the disease, pain, and embarrassment during the screening process (Pierz *et al.,* 2020; Adewumi *et al.,* 2022). The study by Hanprasertpong *et al.* (2017) shows that the fear of cervical cancer was based on what would happen to the family after being diagnosed with the disease, the pain resulting from the disease, and disease progression. The discussed myth that having cervical cancer is a result of having sex with many men could be among the issues that accelerate the fear of being found with the disease. This can act as one of the hindrances to cervical cancer screening within communities. Others fear the pain that might result when a health service provider uses a device called a speculum to collect the samples for laboratory tests. According to Ee (2023), during the screening process, an individual may face some discomfort and pain, but they are advised to communicate with the service provider(s) so the device can be changed, and other measures to reduce pain can be taken. Based on the results in Table 3, some people also feel embarrassed by the screening process (Adewumi *et al.,* 2022). This implies that most people are not well informed about the disease and the screening process; thus, the results of this study raise the alarm to the ministries of health, specifically in African countries, to create strategies to ensure that people within communities are well informed of the cervical cancer screening process and vaccine uptake. The results are also informing the health policies on different strategies that can be used to implement any health project in the community, including researching the community's knowledge on the intended health program, the existing myths and beliefs, perceptions, and their worries. This can assist in having a proper plan for ensuring that the community is clear on the

implementation of health projects for their healthy life.

Cultural Practices along Africa: The culture of a certain place can sometimes act as a barrier when implementing health projects within communities. Results in Table 3 show that cultural practices across Africa were among the challenges facing cervical cancer screening and vaccine uptake (Lim and Ojo, 2016; Black & Richmond, 2018; Anaman-Torgbor *et al.,* 2020). The findings are also supported by the study by Sancho-Garnier et al. (2013), who mentioned social-religion and cultural barriers as among the hindrances to cervical cancer screening and vaccine uptake in Africa. Moreover, another study by Mutambara *et al.* (2017) exposed that some religions were preventing their members from seeking any medical care when they felt sick; instead, they should trust in the almighty God to heal them. The community needs to understand that there are environmental, nutritional, body makeup, and heredity factors that may, in one way or the other, result in discomforts and diseases in the human body. When this happens, the important thing is to go to the health professionals for treatment, but also to stick to the advised health practices for prevention of different diseases. Thus, relating health issues with faith without taking health action can sometimes be detrimental to human health. On the other hand, religion has a positive impact on the prevention of different diseases. In supporting this contention, different studies have pointed out the influence of religion on human health by forbidding some of the issues like drinking alcohol, smoking, and fornication, which may lead to the spread of STDs/HIV, cervical cancer, mental health, and others (Rumun, 2014; Persynaki *et al.,* 2017; Papaleontiou–Louca, 2012). Some issues, such as fasting and praying, have been encouraged, which, in one way or another, help in improving human health by assisting in weight management (Persynaki *et al.,* 2017).

In the same note, some studies show that to some communities in Africa, traditional medicine is believed to be powerful in the treatment of all types of cancer, including cervical (Mwaka, 2014; Anaman-Torgbor *et al.,* 2020). It has to be understood that most traditional medicine has no clear measurements on both quality and quantity. Thus, it is hard to know whether you have taken the required dose. In the case of cancer, including cervical cancer, it is not easy to know the stage of the cancer the patient is in. Thus, taking unverified traditional medicine may sometimes be dangerous to human health. Carmona and Pereira (2013) appreciate the usefulness of traditional medicine but advise that the scope and limits of these drugs should be established for effective curing. Based on this study, cultural beliefs in terms of religion and traditional healers can act as a hindrance to cervical cancer screening. This is because the proposed group (women and girls) may think that they have an alternative (traditional healers), which is available and probably cheaper than the proposed health service (screening and vaccine uptake).

Waiting Time and Health Care Personnel Attitude: Based on the results in Table 3, waiting time to the health service and personnel's attitude were among the hindrances to cervical cancer screening and vaccine uptake in SSA (Black and Richmond, 2018; Adewumi *et al.,* 2022). The attitude of a health worker can attract individuals to opt for the health service and vice versa. The study by Moore *et al.* (2016) revealed that stereotypical attitudes from professionals were among the hindrances in the implementation of the health project. A stereotypical person is normally tending to treat or judge people unfairly, which can be based on their age, skin color, ethnicity, weight, occupation, and gender, among others (Pickering, 2015; Liang *et al.,* 2022). Thus, having health care personnel of this kind can be a cause of the failure of the implementation process of any health project, including cervical cancer screening and vaccine uptake. It is therefore important to ensure that healthcare providers are professionally and ethically trained to be fair to all individuals targeted for the service. Having stereotypical health care personnel can also result in a long waiting time, specifically for those who are outside the health care professionals' preferences. This can result in losing interest from people who were intended for the health service, specifically those who do not have any signs of cervical cancer, as portrayed in Table 3 results. This not only hinders cervical cancer screening services but also causes other sick people to opt for traditional medicine. This is because, to them, going to the health center is stressful and wastes a lot of their time. Different studies show that high and low satisfaction of the patient is related to the waiting time to be serviced by health institutions (Michael *et al.,* 2013; McMullen and Netland, 2013; Bleustein *et al.,* 2014; Al-Harajin *et al.,* 2019). Thus, the lower the waiting time, the higher the satisfaction of the beneficiaries and vice versa.

Conclusion: The review and analysis of the empirical literature indicate that there is low awareness of the causes and impacts of cervical cancer. The global and local initiatives undertaken to control the spread of cervical cancer are hampered by a mix of factors, including inadequate medical personnel, social and

cultural factors. Based on this review, it is recommended that there is a need for the health ministries from different countries in SSA and other health organizations to develop location-specific strategies on cervical cancer and HPV vaccines, and develop some awareness campaigns to challenge the existing myths and misconceptions on cervical cancer and HPV vaccines.

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