The role of clinical management practices in minimizing the prevalence and risks of cervical cancer disease in Sub-Saharan Africa (SSA)

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Abstract:

The healthcare system of most African countries suffers because of manmade problems that encompass political and technical developments, financial resources, human resources, and developments that are linked to politics. According to Walboomers et al. (1999), clinical management of cancer in Africa takes three main forms, most like in other parts of the world. These include primary care, secondary care and tertiary care. The first focuses on reducing infection rates, thereby lowering the prevalence rates of the disease, and this can be achieved through HPV vaccine mainly. The second focuses on detecting the cancer early, or even before it becomes a cancer. This is achieved through screening exercise. Based on the result of the test, treatment is done using viable methods, and WHO has approved some viable options to help clinically manage cervical cancer in African regions, and this includes visual inspection with Lugol's iodine, and visual inspection with acetic acid. The third is done for women who are found to have invasive cervical cancer or precancerous lesions. This study attempts to underline the role played by clinical management and nursing intervention strategies in minimizing the prevalence and risks of cervical cancer disease in Sub-Saharan Africa (SSA). The study applied literature review and inclusion and exclusion criteria to collect data. The found that healthcare providers play a key role in reducing the prevalence of cancer among women as understood in three forms including primary, secondary and tertiary care, but detection of cervical cancer occurs late due to insufficient infrastructure. The study further reveals that patients in SSA are unlikely to get chemotherapy, radiotherapy or even hysterectomy. Thus, the treatment option is palliative and pain management Care.

Keywords:	Epidemiology of cervical cancer, cervical cancer prevalence, cervical cancer risk, clinical management
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Table of Contents

1 Introduction 4

2 Background 6

2.1 Concept of health in the society 6

2.2 Overview of Cancer and cervical cancer 7

2.2.1 Understanding cancer and its prevalence 7

2.2.2 Cervical cancer 8

2.3 Clinical Management Practices 9

2.3.1 Clinical management practices in modern healthcare environment 9

2.3.2 Clinical Management Practices in Sub-Saharan Africa 11

3 Theoretical Framework 14

3.1 Theoretical conceptual framework 14

3.2 The Nursing Neuman Systems model 15

4 Research purpose, questions, and objectives 18

5 Methodology 19

5.1 Data collection 19

5.2 Inclusion and exclusion of data 20

5.3 List of articles 53

5.4 Ethical considerations 23

6 Findings 24

6.1 Effectiveness and efficacy of clinical management practices in minimizing the risk and prevalence of cervical cancer in SSA 24

6.2 Role played by the healthcare practitioners in minimizing risks of cervical cancer 26

7 Discussion 27

8 Conclusions 30

8.1 Conclusions 30
8.2 Limitations of the study 31
8.3 Recommendations for future research 31

References 32

Appendices 49

Appendix 1: Summary of the literature focusing on the primary management practices 49
Appendix 2: summary of the literature focusing on the secondary management practices 50
Appendix 3: summary of the literature focusing on the tertiary management practices 52

1 INTRODUCTION

According to the World Health Organisation (WHO), cervical cancer disease presents a big public health challenge to the women located in Africa. Out of the 20 countries that are leading with the burden of cervical cancer globally, 19 are found in Africa. This is corroborated by Njuguna et al. (2020), who state that among the twenty nations thought to have the highest incidence of this condition, sixteen are in Africa. Almost 20 percent of the overall cancer deaths reported among women in Sub-Saharan Africa (SSA) have been attributed to cervical cancer (Ralaidovy et al., 2018). Additionally, the infection contributed to almost 7 percent of the overall number of new reported cases (Bray et al., 2015). Findings from a 2018 global analysis of the incidence and mortality of cervical cancer conducted by Arbyn et al. (2019), showed estimated cases of 570,000 of cervical cancer and 311,000 mortalities. It was the fourth most common cancer disease in females after breast, colorectal, and lung cancer. The 2018 Global Cancer Observatory data covering East Africa showed cancer as having the highest incidence with more than 37,000 fatalities and about 52,000 reported (WHO International Agency for Research on Cancer, 2018). According to Mwaka et al. (2015), cervical cancer remains as the "leading cause of morbidity and mortality among women in the low- and middle-income countries" (p.855).

Possible reasons linked to high incidence and mortality rates of cervical cancer in Sub-Saharan Africa (SSA) were insufficient knowledge of the disease among the people, policymakers, and healthcare personnel. Despite cancer being one of the most preventable, inadequate access to screening, prevention, and treatment services, has contributed to 90 percent of the fatalities. Another complication is that the disease is active and common among females with HIV. Thus, the trend of HIV and cervical cancer typifies the experience of young females in Africa facing several obstacles to good health. Detection of cancer in developing economies normally occurs late, primarily due to insufficient fundamental healthcare and treatment interventions. Issues like poor screening procedures, inadequate follow-up, late diagnosis, and delayed results have significantly contributed to the cancer illness being a health burden nationally in low- and middle-income countries (LMIC) (Ngugi et al., 2012).

In their study, Njuguna et al. (2020) tried to show how policy mapping is applied in availing evidence regarding effective interventions besides highlighting the important modifications of health policies. The purpose of the research was to conduct legal mapping to "identify and assess health policies for the prevention and management of cervical cancer in East African countries" (Njuguna et al., 2020, p.1520). The research underscored the function of law in health and the essence of clear regulatory and legal tools to further reduce cervical cancer mortality in East African (EA) nations. Further, the delayed detection and treatment of cancer may be attributed to individual ignorance as revealed by a qualitative study conducted by Hasahya et al. (2016) among women in Uganda. In particular, the study, which focused on perceptions, cultural dogmas, taboos, and health-seeking behaviours regarding cervical cancer, showed late diagnosis as a major impediment to minimization of cervical cancer. The experience associated with diagnosis and treatment of chronic conditions such as cancer is a traumatizing one. It is a burden that is not only financially draining, but also depriving both psychologically and psychosocially. There is a need to have effective healthcare policies and programmes that address such burdens. It is on this basis that the current study tries to assess the role(s) played by clinical management practices in abating the prevalence and risk(s) concomitant with cervical cancer infections in Sub-Saharan Africa (SSA).

Given the incidence and mortality rate(s) of cervical cancer among women globally, the study attempts to underline the role played by clinical management and nursing intervention strategies. Most importantly, the research highlights the need to address psychosocial and psychological needs of cervical cancer patients and their families, right from the diagnosis stage through the treatment and healing phase, not forgetting, palliative care provided during the death stage.

2 BACKGROUND

This chapter firstly underpins the concept of health in society, followed by the role played by cancer to impact normal health among individuals. The chapter then narrows down to cervical cancer and its causes and impacts. The other important issue of discussion in this chapter is the place of clinical management practices in the mitigation and management of cervical cancer prevalence and risks. Throughout the chapter, references are made to extant literature, with statistical evidence given where necessary to paint a picture of the current space on the topic in question.

2.1 Concept of health in the society

The concept of health is dynamic and has evolved significantly over time. The classical view of health saw it has a state of body and mind, where it was seen as the ability to "perform valued family, work and community roles" (White et al., 2019). Agreeing with this premise, Kantola et al. (2017) defined health as the ability to deal with social, psychological, physical and biological stresses." However, beginning mid-20th century, the view of scholars regarding what health means underwent a paradigm shift, when the World Health Organization proposed a more encompassing definition. According to WHO (1958), health refers not merely to the absence of infirmities in the body, but to the state of social, mental and physical well-being. Critics have argued that this definition is both too vague, and also too broad to measure. In fact, for decades after this definition, practitioners did not use it, returning instead to the earlier biomedical approach.

In 1980s, WHO proposed another definition of health, which now shifted to viewing it as a process, in a manner similar to the new definition that saw disease as not a state but a process.

According to WHO (1984), health refers to "the extent to which an individual is able to cope with their environment and realise their aspirations in life." From this perspective, the WHO argued that health should not be the end, but a means to the end, a resource for living, which encompasses mental resources, personal as well as social and physical capacity of an individual. Agreeably, Jonathan et al. (2013) saw health as the ability of a living body to recover from insults and maintain homeostasis. This new perspective opened up the purview of what health is, introducing social health, emotional health, as well as intellectual and mental health. With this broader definition, health has been construed as something that transcends into even skill squassation, ability to deal with stress, and the skill to maintain relationships, as all these resources become necessary for an individual to have an independent and resilient life (Jadad, 2016).

Because of its significance in life, health has attracted a significant amount of attention geared towards preventing or curing problems that may reduce a person's ability to live a healthy life. These studies and research have focused on what causes unhealthy living, including spiritual, social, and economic issues, also referred to as health determinants (WHO, 2011). Among other conditions that affect health, some of the most prevalent in the 21st century have been terminal conditions and chronic diseases, one of the most common of which is cancer.

2.2 Overview of Cancer and cervical cancer

This section provides a comprehensive overview of cancer in general and its prevalence globally and then narrow down to discuss clinical cancer and its prevalence internationally.

2.2.1 Understanding cancer and its prevalence

Unlike health, cancer as a disease is well-defined among researchers and practitioners. The World Health Organisation (WHO, 2018) defines cancer as a group of diseases that involve abnormal cell growth, and their main characteristic being their ability to spread or affect other body parts. The main difference between cancer and benign tumour is that the latter does not spread (Jayasekara et al., 2016). According to WHO (2018), cancer symptoms may include changes in bowel movement, inexplicable coughs, abnormal bleeding as well as a lump in some

parts of the body. In terms of prevalence, it was reported in 2015 that some 90 million people had cancer, and in 2019, another study by the Global Burden of Disease (GBD) showed that nearly 18 million people got cancer per year (GBD, et al., 2015; Sciacovelli, et al., 2020). According to GBD, about 8.8 million people die of cancer annually.

The National Cancer Institute (2007) points out that more than 100 types of cancers have been identified within healthcare and medical research and practice. Of this, the most common types are different for males than females. In males, the top five recorded cases are stomach, colorectal, prostate and lung cancer, whereas in females, the top cases are from breast, colorectal, lung and cervical cancer (WHO, 2014). In terms of cost, it is estimated that as of 2010, cancer costs more than USD 1.16 trillion annually (WHO, 2014). It is because of its adverse impact on human health as well as the high cost to patients that cancer has become an important issue for modern medicine and healthcare practice and research.

2.2.2 Cervical cancer

As its name suggests, cervical cancer is the cancer of the cervix, and it is caused by cells that grow abnormally around that region, and sometimes spread to other organs of the body (National Cancer Institute, 2007). The WHO (2017) points out that in most cases, this type of cancer has no symptoms, but later when they manifest, they are likely to include pain during sex, pain in the pelvic region, as well as vaginal bleeding. World Cancer Report (2014) found that this disease is caused mainly by human papillomavirus (HPV) infection, which accounts for up to 90% of the recorded cases, while other risk factors have also been noted to include birth control pills, weak immunity, as well as smoking. Cervical cancer can be grouped into many types, but the two largest categories are adenocarcinoma (10%) and squamous cell carcinomas (nearly 90%). Dunne (2013) points out that the disease is typically diagnosed through cervical screening and biopsy, although when there is need to see to what extent it has spread, medical imaging becomes necessary.

In terms of prevalence among women, cervical cancer has been noted to be the fourth most common cause of cancer in general, and also the fourth most cause of death, with more than half a million cases being registered in 2012, as well as about 266,000 deaths. Overall, cervical cancer killed 8% of all people who died from cancer, with 90% of those deaths, and 80% of all cases, being recorded in developing countries of the world (Tran, 2014). To reduce the risk and

treat the disease, various treatment and management options have been tried, including HPV vaccines, which have been found to be highly effective in preventing cervical cancer (Dune, 2013). Canavan (2000) and Dunne (2013) also advice on the use of condoms, maintaining low or no sexual partners, regularly taking pap tests. For treatment, radiation, surgery, chemotherapy, or a combination of all these is sometimes used, and in the US, an average survival rate of 68% was found among people who sought treatment (National Cancer Institute, 2014).

2.3 Clinical Management Practices

2.3.1 Clinical management practices in a modern healthcare environment

Hospitals require good management practices in order to influence the patient outcomes, health service quality and impact the performance of the health professionals (Gile et.al. 2015). Healthcare managers therefore shape the organizations by making decisions that are important. These decisions constitute the recruiting of staff, spending and allocation of financial resources, and technology acquisition, among others. Managers must then make decisions, based on internal and external factors (domains) in order to facilitate them in making these decisions. The internal factors address challenges like staffing, quality of care and financial performance. These are the day-to-day activities. External factors, on the other hand, mainly consider the population, community needs, reimbursements to insurers, and Medicare. These are the influences, activities and resources that exist outside the boundaries of the organization but are important, nonetheless. In support of this Leggat et.al. (2010) was able to pinpoint management practices that had positive effects. In lieu with that Bloom et. al. (2014) also finds that poor HR practices poor operations, as well, a low performance of employees are key causes of low-quality healthcare. Most organizations that deal in health care practice functional organizational structure. This is defined by the functions that are carried out and the management position assigned to these very functions. The structures are dictated by the size and structure of the

organization. This hierarchy, which is vertical in structure like a pyramid, operates on a strict line of reporting and chain of command. Thus, management practices are mostly linked to better financial and clinical outcomes for hospitals (Bloom et.al. 2014). To add to this, Bloom et.al. (2014), postulate that good management practices link strongly to improved employee performance which then turns to good quality of healthcare, and good financial and non-financial results (Bloom et. al. 2014).

Researchers in these modern times have shown that operations management in healthcare environments go towards promoting technological developments. These allow medical processes to be redesigned, whereby changes are made from the traditional ways where you had to wait to get treatment, to modern faster ways of diagnosing and treating. Modern operations management aim to also reduce discomfort in patients, as well as improve healthcare, reduce complaints in patients and enhance the intervention quality of the accomplishments (Spear, 2005). Thereby, sound management should be in effect if a hospital was to accomplish its goal of improving patient outcomes and improving the care quality of the health (Jacobson, 2012). In addition, good clinical management practices support business chains that manage the supply of medicine, and thus simplify the performance of the employees in terms of dealing with the patients (Subramanian &Ramanathan, 2012). With this, the hospital is also able to identify when resources are scarce (Jacobson, 2012), and ensure adequate supplies. Patient experiences can also be examined from the onset to the end with efficient management practices. This will go a long way to improve services at hospitals from the facilities design, management of supplies and scheduling diagnosis. Smoother patient flows will also be enhanced (Goldstein et.al 2002). Modern management techniques need an infusive teamwork strategy that entails cooperation between the management and employees to give them a readiness to work towards satisfying

customers, increasing value added activities and reducing waste, while still maintaining the service cost (Japers et.al, 2011). In support of this, Salge & Vera (2009), advocate those functional outcomes of patients are connected to employee performance and management practices and vary from patient to patient. The characteristics of the patient, medical complications, illness, and quality care are all dependent on management techniques that enhance the quality of the care provided.

2.3.2 Clinical Management Practices in Sub-Saharan Africa

A total of 46 countries have been listed by the United Nations Development Program (UNDP) as sub-Saharan Africa. This is with the exception of Somalia, Morocco, Sudan, Tunisia, Egypt, Libya and Algeria (Haldevang, 2016). This regions healthcare system is characterized by inadequate resources, health systems that are weak, and low capacity to respond and identify to outbreaks of diseases, rendering them vulnerable. (Atun et.al. 2017). These countries then need improved clinical management systems, as well as aggressive preventive measures to manage these challenges (Huang et. al., 2014). Consequently, healthcare systems in sub–Saharan Africa suffer from underfunding, and neglect which makes them visibly underwhelmed against directives of the World Health Organization (WHO) in the delivery of healthcare (Oleribe et.al., 2019). Their healthcare system suffers because of man-made problems that encompass political and technical developments, financial resources, human resources, and developments that are linked to politics (Oleribe, 2019). The African healthcare system is also often inundated by a myriad of management challenges due to its diversity. These are the for example, managers with limited skills, new drugs, new technologies and changing diseases. These limit the effectiveness to manage. As such, services often vary and are diverse therefore making it hard to tailor uniform responses to communities and clients. Healthcare workers must then be motivated to manage well in whatever situations they come across.

Hospital management practices in Sub-Saharan Africa normally struggle with decentralizing senior management as opposed to generally strengthening the entire management process. This would greatly improve the performance of hospitals (Adindu, 2013). The failure of clinical management often in this region mainly occurs due to poor human resource management. This is often caused when appointments need to be made and the process is slowed down, hence overburdening the rest of the staff. Another challenge of management would be the lack of proper training and leadership among its staff. Training is an important process as the world of health constantly changes in dynamics in regard to handling pandemics and diseases that are emerging. The governments also do not provide adequate support systems through provincial offices and districts to run these hospitals effectively. In addition, there is often a disconnect between management and tackling these problems. Consequently, the selection of unskilled staff in leadership positions due to rampant cases of corruption also hampers effective clinical management practices.

A lack of proper monitoring systems in the hospitals sum up all these challenges. Doctors, nurses and other health professionals normally report to managers that are of the same discipline. Doctors even in management capacities still get involved with the day-to-day cases in these hospitals, as opposed to senior nurses that generally act as managers, or administrators. The hierarchy of nurses is often run by a manager in charge of nursing services, while a medical manager oversees all other professionals that deal in health (Doherty, 2014). A hospital manager then chairs these two positions together with a finance manager and a human resource manager. The hospital manager does not have to have any clinical background to sit in this office (Doherty, 2014). There is often a gap in clinical management systems here because of identifying the health problems that affect healthcare quality and how these problems are addressed due to poor lines of communication (Doherty, 2014). Thus, in Africa, clinical

management systems are required to be monitored in order to provide adequate health services for its population.

3 THE THEORETICAL FRAMEWORK

3.1 Theoretical conceptual framework

The capacity to provide effective care for patients, relatives, and communities is premised on evidence-based research and theories that provide a conceptual framework for healthcare practitioners. Theories are important since they guide nursing to provide excellent care during practice. In particular, oncology nursing is enhanced by conceptual models and theories that focus on many components. For this particular study, the theoretical conceptual framework will be covering the following sections as indicated by the figure below; oncology care model, behavioural determinants and biology systems, clinical reasoning and decision making, patient navigation, caring, relationships and communication between patient and care provider, integrative healthcare, and phases of cancer experience. Further explanation is provided under individual components of the provided theoretical framework.

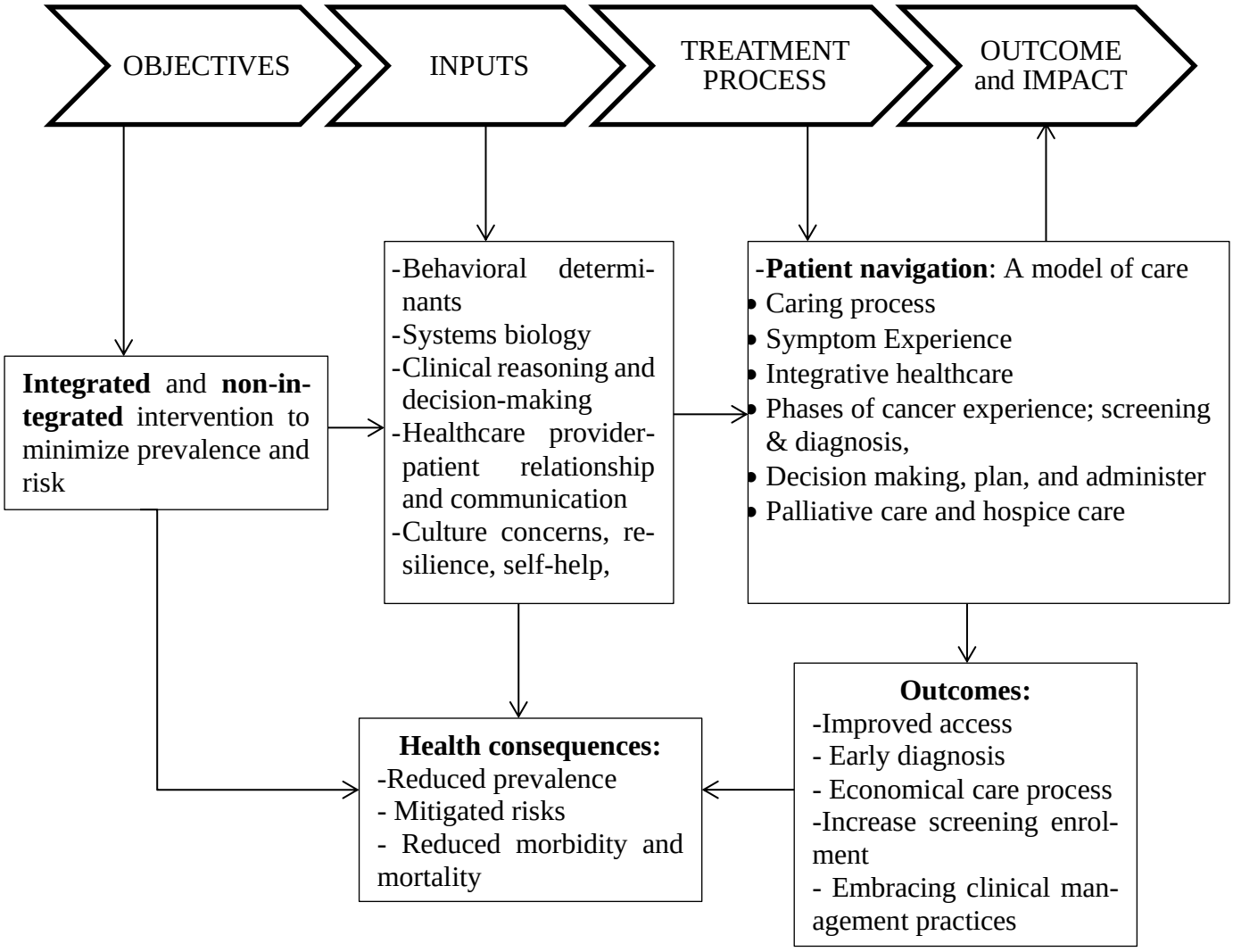

Fig. 1: The theoretical conceptual framework guiding the study (By the author)

3.2 The Nursing Neuman Systems model

The clinical work of nursing staff can lead to job satisfaction and personal joy as well as resulting in exhaustion or burnout. Thus, resilience has been considered as an important component for those involved in nursing activities because of the related stressors (Hannoodee and Dhamoon, 2020). Hannoodee and Dhamoon (2020) opine that one of the notable issues pertaining to nursing profession is that they "provide support for patients through the most intimate times of vulnerability and pain, such as surgical procedures and traumas, tragedies and infirmities, and personal and physical losses" (Turner et al., 2015 as cited by para. 2). Hannoodee and Dhamoon, 2020, para. 2). In the midst of all this, nurses provide psychological, physical, and emotional support to the patients. As such, physical and emotional stress is placed on the nurses, which can impact on their health and those of their patients besides their psychological well-being and social life.

The Neuman system model highlights four components encompassing the meta-paradigm of nursing including health, environment, nursing, and person (Fawcett and Foust, 2017). The model facilitates nurses to comprehend and fit easily to the wider scope of nursing skills related to daily nursing experiences. According to the Neuman system model, a person is regarded as a client (or client system) consisting of inherent attributes embedded within a particular structure. Further, a problem linked to an individual, family, or community is viewed as a mixture of psychological, physiological, spiritual, socio-cultural, and developmental variables with each one of them composed of a primary core and adjacent concentric protective rings. The client (or client system) develops defence responses in series for protection purposes during the interaction with the environment; the environment against which the defence is provided is referred to as "defence lines". A series of defences is developed by the client during interaction with the environment (defence lines), and the typical line of defence is thought to be a normal level of the client's wellness. Beyond the defence line is another flexible line of defence that protects the client system from stressor invasion(s). In this case, the system is kept free from stressor symptoms (or reactions). Generally, the resistance lines are located within the normal defence lines. When a stressor from the environment breaks past the normal lines of defence and results in an adverse response, the lines of resistance are activated to protect the

client system core's basic structure. In case the environmental stressor breaks through the lines of resistance, the fundamental structure of the client system is exposed posing a potential danger to the system. More so, the impact of the stressor is influenced by the stressors' intensity, quantity of stressors at a particular time, and the well-being (or stability) of a system (Gehrling and Memmott, 2008).

Similarly, nurses and patients can be linked to such vulnerable systems unless resilience is developed. Protective factors may entail intrinsic attributes that play a role of protecting individuals against adverse scenarios and can be psychological or physiological. Additionally, methodologies to gain knowledge in stress management as well as strategies to cope with stress management have been significantly enhanced and improved resilience among patients and nurses. Fundamentally, the stakeholders involved in clinical management practices for chronic illnesses like cervical cancer fit in this particular model hence its relevance in regard to the current study. The diagram below shows the client system, defence lines, resistance lines, and environmental stressors.

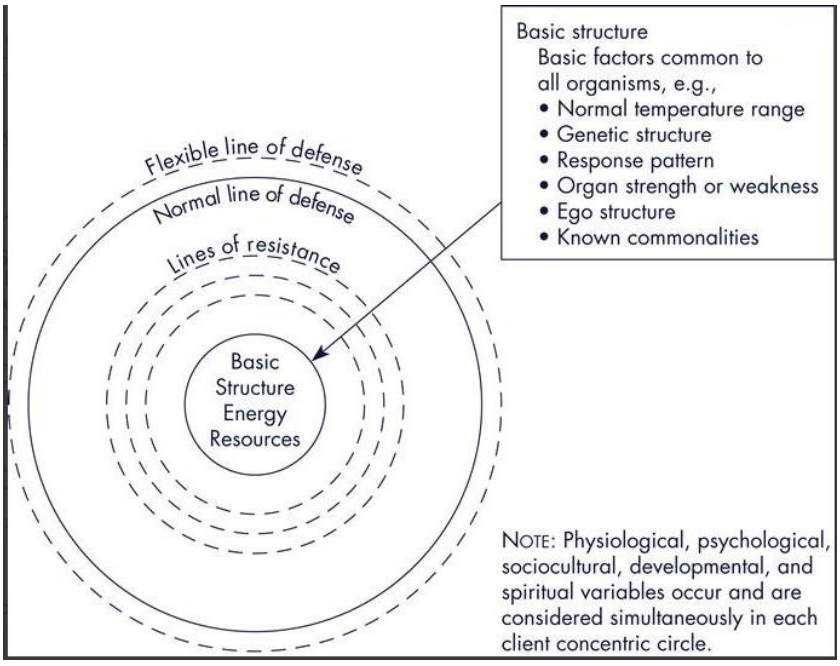

Fig. 2: A schematic diagram representing the Neuman Systems model (Turner and Kaylor, 2015)

4 RESEARCH PURPOSE, QUESTIONS, AND OBJECTIVES

The aim of this research is to investigate the role of clinical management practices in addressing the prevalence and risks of cervical cancer in the Sub-Saharan African (SSA) communities. Relatively, the study is guided by two research objectives and their relevant research questions. The first objective is

To find out the effectiveness and efficacy of clinical management practices in minimizing the risk and prevalence of cervical cancer in the Sub-Saharan African (SSA) communities

The relevant question to be answered to fulfil this objective is:

i) To what extent are the primary, secondary and tertiary treatment methods available for cancer patients in Africa useful in minimizing the risk and prevalence of cervical cancer in Sub-Saharan African?

The second research objective is: To assess the role(s) played by the healthcare practitioners in minimizing the risks associated with cervical cancer

The relevant question to be answered to fulfil this objective is.

ii) What duties and responsibilities do healthcare providers in Sub-Saharan Africa have to their patients found to have cervical cancer?

5 METHODOLOGY

This thesis will include a literature review, whereby we will identify, select, and review the existing research in order to obtain answers to the research posed (Benito, 2016). Using this method allows us to compare evidence which is specific and quantitative, thereby informing practices and policies (Snyder, 2019). The methodology will then consist of methods and sources that data extraction will be used to formulate the analysis.

5.1 Data collection

In the process of data retrieval, querying Sage journals, Science Direct and google scholar as databases was the first step, in order to select and limit our research. This was done by using a variety of phrases and key words that were related to the key questions that were asked. To begin with, we started with Science Direct. This is because it leads the world with all medical, technical and scientific research (Bruno, 1997), which would then direct us to more specific results. We used the words "clinical management" and "sub–Saharan Africa" to narrow down the search in science direct, before advancing to "cancer prevalence" and "cancer risk" in Africa, which resulted in 3317 hits. This was inclusive of publications that were written within the last ten years from 2001 to 2021. This search put forth 1199 hits. The search was further narrowed by searching articles that were reviewed, as well as poring over articles that had full texts, which then resulted to a further 115 outcomes. Consequently, the final stage was arrived at by evaluating the abstracts and titles that were in the 115 articles so that we arrive at the final documents to be picked which totaled 13.

In the journals that were SAGE, the advanced search option yielded 1855 hits, by typing the same keywords "clinical management practices" and "sub–Saharan Africa", then advancing to "cancer prevalence" and "cancer risk" in Africa. Publications that were written over the last ten years (2001-2021), were also included thereby yielding 765 results. Again, from this, peer reviews and full text articles were further analyzed narrowing them down to 25 articles, in which 17 articles were found to be the ones closest to the research.

EBSCO was the third database to be used. This site is normally used for elite academic searches. It yielded 452 results by typing the same key words "cervical cancer in sub-Saharan Africa", "prevalence and risks" and "clinical management practices". We then further specified the

search by reducing the hits to the last ten years (2001-2021) which gave a total of 343 articles. From this, a further 201 were found after selecting “full text articles” and “reviewed articles”. Following that, we reviewed the abstracts and titles, and this was further narrowed down to 39 articles that contain the key words and closest to the study.

From this entire process, the final full text from the peer reviewed articles after all the inclusion and exclusion criteria was a total of 69 articles that could be used to make summations on the topic at hand, in order to arrive at a conclusion. Figure 1 shows the data collection breakdown.

Figure 1: Research process

Source: Author

5.2 Inclusion and exclusion of data

Inclusion and exclusion criteria refer to the scientific method of selecting sample subjects that defines which attributes or properties would make a sample be included in a study, and which attributes would make samples be excluded from a study respectively (Meline, 2006). In the present case, the inclusion criteria were used first, whereby all articles with the key words mentioned in the above section were added to the study, as long as they were in the results page. The exclusion criteria were more rigorous, and the initial stages of this process required an abstract screen and a title to be performed. This required meticulous reading of publications, and after that accessing them for quality and relevance in regard to the research questions and the topic. Elimination was done for those articles that did not meet the threshold of the criteria that needed to be included in the paper. This led to a total of only 69 articles that could be used.

The criteria that were used to identify them were, a) articles that gave focus to clinical management practices for cancer patients, b) articles that focused on cancer prevalence in sub-Saharan Africa, c) articles that monitored risks of clinical management of cancer in Africa and d) How cancer prevalence could be minimized in Sub-Saharan Africa in regard to technical innovations and medicine. All other articles that had a general view of cancer and were not supported by documented evidence were discarded. This also included research that was not within the time period that had been specified for this research (2001-2021), and those articles that did not feature Africa as a case study. Figure 2, as well as table 1 shows the summary of the process.

Figure 3: The total results in each stage per source and in total

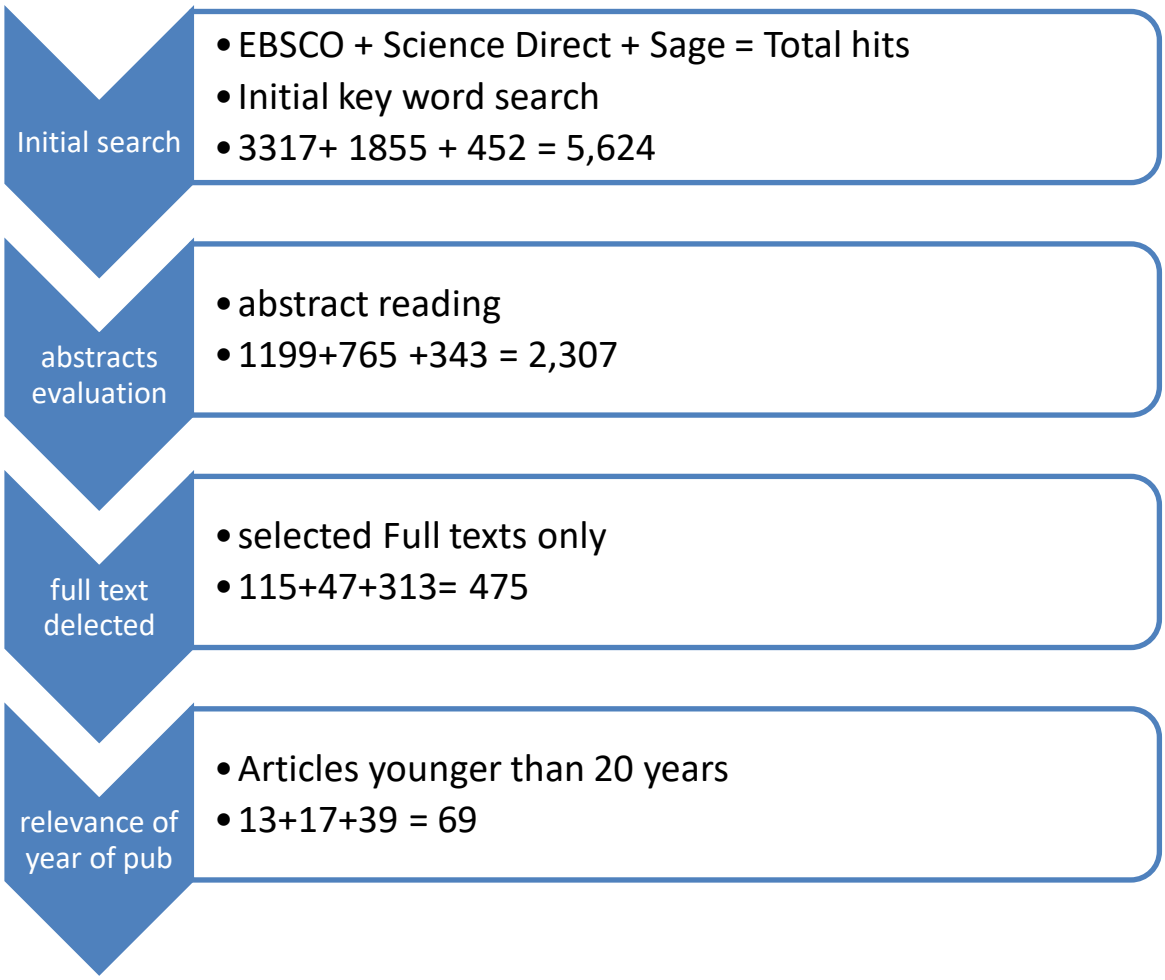

Figure 2: Data collection flow chart total results in each stage per source and in total

Source:

Table 1: summary of the research process

Consideration	Number of articles found

	EBSCO	SCIENCE DIRECT	SAGE	TOTAL
Initial keyword search	3317	1855	452	5624
Title and abstract assessment	1199	765	343	2,307
Full text assessment	115	17	343	475
Relevance assessment	13	5	68	86

Source: Author

5.3 Ethical considerations

According to Assasi et al. (2014), ethical considerations refer to the view of right or wrong that researchers have to grapple with while undertaking their study to define what is morally acceptable and unacceptable to do. Agreeably, Vergnes et al. (2010) also adds that different ethical considerations exist, and that they are different depending on whether the researcher is conducting a primary or secondary research. In the present case, the secondary approach is used, and the first critical ethical consideration is author attribution. At all times, all the arguments, counteragents, theories and empirical evidence cited in this work were referred clearly to the original author, and their name was both cited in the body of text, and also added to the list of references at the bottom of this dissertation.

Secondly, care was made to ensure that originality is observed. Despite citing all the authors whose thoughts helped frame this study, it was also important that the present work is not merely a copy-and-paste regurgitation of their original work, but rather, a thought out and deliberate material that comes from synthesis of extant knowledge. This is recommended by Stretch et al. (2013), who points out that often times, even when one does not directly quote other authors, it is important to go beyond just reassembling their work. Additionally, it was important that the sources used in this study be reliably and trustworthy sources. To attain this consideration, care was taken to use only approved databases that are known to have highly ranked peer-reviewed journals and publications. This access was gained through the student online library through the Arcada portal. The significance of this is that it helped eliminate the need for pirating original research by other scholars while at the same time avoiding the need for paying additional finances to gain access.

Additionally, it was important to give all the articles generated for the systematic review an equal opportunity to be included or excluded in the study. As such, after consultations, and with references to the Acarda's guidelines and the work of Vergnes et al. (2010), it was resolved that the decision to include or exclude an article would be done by more than one person, and that the rationale for exclusion and inclusion would be strictly the one we discussed. The reasons for inclusion were further documented and made part of the study for the sake of transparency. All these considerations helped make the study better.

6 FINDINGS

The findings of this study are grouped into two themes based on the objectives. As noted earlier, the first objective was to find out the effectiveness and efficacy of clinical management practices in minimizing the risk and prevalence of cervical cancer in the Sub-Saharan African (SSA) communities. This was done by grouping the findings of extant reviews into those that focused on primary prevention, then going to those that focused on secondary prevention, then looking at those that focused on tertiary prevention.

6.1 Effectiveness and efficacy of clinical management practices in minimizing the risk and prevalence of cervical cancer in SSA

From all the 45 articles that were looked into, 33 of them discussed HPV vaccine and the role it plays in clinical management of cervical cancer. The remaining focused on clinical management of cervical cancer using different other methods, and of those the most recurring ones were the use of condoms and circumcision of males. These latter group of studies were mainly found to be based in Uganda. It was interesting to note that no clinical management of cervical cancer was proposed by any of the studies that advocated for starting sex later in life rather than within the normal ranges [1, 2, 3, 4, 5, 6, 8, 9, 10, 16, 17, 18, 19, 20, 21, 22, 23]. No study suggested that abstinence can help reduce cervical cancer, and at the same time, no study argued that cervical cancer could be reduced by limiting the number of sexual partners one has.

From a different perspective, the studies also had different primary focus even though their overall subject was cervical cancer. Particularly, it was found that one study focused on condom use, another on diaphragm (female condom use), and five focused specifically the male condom use. Notably as well, two focused on the male population, whereas two focused on the role of immunology. A single study focused on the connection between cervical cancer and people living with HIV, 20 focused on the role of HPV vaccines whereas 5 focused on the attitudes and knowledge of the patients and families of people living with cancer [3, 6, 7, 11, 12, 14, 24].

A total of 26 articles were found that focused purely on secondary prevention. Out of these, 6 focused on the role and need for screening, while 2 focused on the impacts of the screening methods used in clinical cancer management in Africa. There was also a focus on the role of attitudes, education as well as awareness in the acceptance of screening among cancer patients,

which was the focus of 3 studies, and at the same time, 7 studies focused on how the knowledge and attitude of women influenced their view on the impact of the disease on their lives. The remaining focused on more than one issue, and some of the featured discussions included intervention using HPV among males, the use of cancer programs and centres of awareness as well as ongoing treatment [25, 26, 27, 28, 29, 30, 31, 32, 33].

Another area of interest for the data that was found for this section was the methods for testing. As discussed in the literature, the two most common testing approaches used in the African region and recommended by the WHO for their efficiency and low-cost nature are VILI and VIA. There were two articles that focused on them, and one other article which looked at how these tests worked based on how the sample of the participants were done. This latter literature contended that four different approaches were used to collect clinical samples for patients, and they included the use of tampons, dried cervical spots, as well as physician collected samples and self-collected samples. Nearly all the articles had a section on the barriers as well as challenges that face healthcare facilities when trying to implement secondary clinical management approaches. It is important to note at this point that a majority of these literature sources used cross-sectional data collection approach, whereby data was collected at two different periods using the pre-post method. A consistent conclusion that was also common among the articles was that for the few women who were fortunate enough to get offered treatment options such as medicine and treatment with cryotherapy, they had strong positive attitudes, with nearly 100% of them accepting the treatment interventions. [29, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48].

For the tertiary prevention, a total of 11 articles were identified and they focused on the various aspects of tertiary prevention, including how the precancerous lesions were treated in African counties, as well as how the diagnoses and staging was implemented. A single article focused on the treatment of HIV patients that also had cancer, while a single other focused on the ways in which African cancer centres dealt with the issue of invasive cervical cancer. Another article focused on how feasible different treatment options were, and at the same time, another focused on the fractions of women living with HIV who have cancer, and how many of them had symptoms and how late diagnosis affected their health [49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60].

6.1.1 It was seen that one of the treatment methods used was LEETZ, which refers to large loop excision of the transformation zone, although other methods used in treating CIN (cervical intraepithelial neoplasia) ware also used as this helps to prevents cancerous growth [29, 12, 38, 68]. It was also found that some studies focused on the acceptance of treatment methods, and it was evident that a majority of the patients accepted most of them across different studies. Additionally, it was of interest to note that dome articles focused on the feasibility rather than implications for certain interventions that are used in Africa. One concluded that lack of awareness, infrastructure, access, and cervical cancer management tools significantly impacted the ability to implement proper care [62, 63, 64, 65, 66, 67, 68].

6.2 Role played by healthcare practitioners in minimizing risks of cervical cancer

The second objective was to assess the role that healthcare practitioners play in minimising the risks associated with cervical cancer. In this regard, a total of 14 articles were found to be relevant from the sample of the data collected which focused on Africa, although a lot more data was found that focused on other countries especially in the Northern America and European regions. Out of this total that focused on Africa, one was focused on how palliative care could be used to improve patients' lives, while another was focused on how a combination of spiritual, social, emotional and psychological aspects could be used to improve the quality of life. At the same time, a source looked at the role of patients in need of quality care getting support from their partners [20, 21, 22, 23, 24, 49, 50, 51, 52, 53, 54].

It was interesting to find that some of the patients that were reported to be receiving quality of care in these studies were still also receiving active treatment from the primary and secondary approaches discussed in the literature review section [15, 49, 61, 64, 65, 69]. This is interesting because, as it was pointed that patient who receive treatment generally get a few more years to live than those who do not, it seems that patients still want to come to terms with the looming end of life even while their primary and secondary treatments are still on course.

7 DISCUSSIONS

7.1 Effectiveness of clinical management practices

As the findings show, the effectiveness of the clinical management practices used in Sub Saharan Africa to manage cervical cancer, together with the role played by healthcare workers, can be understood along three main treatment categories. According to Ngugi et al. (2012), clinical management of cancer in Africa takes three main forms, most like in other parts of the world. These include primary care, secondary care and tertiary care. Primary prevention is concerned with reducing risk of infection, and minimising prevalence of the HPV (Li et al., 2011). According to Clifford et al. (2003), HPV, which is among the most common STIs with a 75% prevalence rate among the sexually active population, is usually controlled using two types of vaccines: quadrivalent vaccine, which targets types 6 and 11, and bivalent vaccine, which targets HPV type 18 and 16. According to Kreimer et al. (2011), vaccination should target people between nine and thirteen years of age because studies (Dobson et al., 2013) have indicated that up to a third of women infected by HPV were infected within two years from when they became sexually active, and this has been estimated to be around 13 to 15 years among girls in Africa (Romanowski et al., 2014).

While WHO recommends that HPV vaccination should be part of the national vaccine programs of the government, Cagney (2013) contends that most countries in Africa still lack these vaccines, while a majority of others have not made it a priority. In fact, globally, only 58 countries had HPV vaccines as a national program, with countries in Africa having an efficient national program being South Africa, Lesotho, Rwanda and Uganda (Friedman et al., 2014). Beginning in 2013, several more countries were included in a new vaccine program by Global Alliance for Vaccines and committed to expand the program into a total of 23 countries across sub-Saharan Africa. However, several barriers have emerged for these vaccination programs, including less emphasis for vaccination of boys as well as lack of parental acceptance of the vaccines and access to some areas (Katahoire et al., 2008). Additional methods that have been used also include advocacy for condom use during sex, circumcision among males, as well as reducing the number of sexual partners.

7.2 Role played by healthcare practitioners

Practitioners play various roles in different levels of clinical management, beginning from secondary to tertiary. The secondary methods of prevention that have been suggested and tried included screening, which according to Plummer et al. (2002), help detect the cancer early, or even before it becomes a cancer. In countries that have plenty of resources, early prevention has been seen to prevent up to 80% of cancers due to early detection, and this is done using Pap smear, which was made a routine testing procedure since 1940s. According to Auvert et al. (2009), women who show positive signs during this routine screening undergo cervical cytology or confirmatory colposcopy, neither of which is common in most African countries. Several reasons explain why. First, most African hospitals lack the infrastructure necessary to conduct the required tests (Serwadda et al., 2010). Secondly, even for those who may come in for the initial tests, according to Tobian et al., (2009), most hospitals lack the ability to track their patients once they come for the follow up tests. Thirdly, while some hospitals have these facilities, they are only found in major cities, and this is why studies have shown that only up to 1% of women in Ethiopia, and less than 25% of women in South Africa, have ever conducted the Pap smear test (Ports et al., 2015). Hyacinth et al. (2012) add that Pap smear test was a major cervical cancer source, with routine antenatal care (ANC) acting as a major reason for women to get cervical cancer screen and Pap smear test standing at 10.2 percent utilization rate. The study further found that awareness about Pap smear test, educational level, cervical cancer traceability and cervical cancer preventability were among the major factors that indicated a statistically significant relationship with Pap smear test utilization (Hyacinth et al., 2012).

For this reason, WHO has approved some viable options to help clinically manage cervical cancer in African regions, and this includes visual inspection with Lugol's iodine, and visual inspection with acetic acid. According to Denny et al. (2006), both methods have a high detection rate of cancerous and pre-cancerous lesions in both people infected with HIV as well as those without HIV, making them both effective alternatives in low-resource areas. Additionally, clinical care in African countries has also involved cryotherapy, which can be done even by nurses. Another important factor for screenings is the frequency and the period it should happen, and according to (Abotchie et al., 2009; Tebeu et al., 2008), it should happen between three and five years, but because in most African countries it cannot happen too frequently, then it is recommended that it happens when the woman is between 30 and 39 years.

Tertiary prevention is also a clinical method for managing cancer of the cervix, and this is usually done for women who are found to have invasive cervical cancer or precancerous lesions. When dysplasia of the cervix is not treated early, it can turn severe and this increases its likelihood of causing cancer (Ayinde et al., 2004). Despite this fact, between a half and two thirds of women in case countries studies such as Nigeria, Kenya and Tanzania with cervical cancer were found only after the cancer had advanced in stage (Eze et al., 2012). While several tests can be done to detect severe cervical cancer, including urinary bladder and rectal exam, as well as parametrium and vaginal assessment, once again the problem of limited facilities becomes a hindrance. For this reason, Ezechi et al. (2013) points out that treatment options are also affected, and the patients are unlikely to get chemotherapy, radiotherapy or even hysterectomy. The only options that then remains is palliative care, which only focuses on controlling the symptoms and helping the patient manage the pain, and in some countries such as Nigeria, Uganda and Zimbabwe, even this is not available for a larger fraction of the demographic (Rosser et al., 2015).

Because of the inadequacy of proper cervical cancer treatment facilities in African countries, the number of people who die from the disease is disproportionately high, with one study placing it at three times the mortality rate for cervical cancer among women in developed countries (Hoque et al., 2010). This is because treatment helps reduce the risk of dying from cervical cancer by increasing the survival rate to 70%-90% (Wright et al., 2012). By contrast, lack of treatment leaves one with a survival chance of only 30%. Among patients in Zimbabwe Uganda who were diagnosed with cervical cancer, the average number of years that they were expected to live was 30%.

8 CONCLUSIONS

8.1 Conclusions

This study focused on the role of clinical management practices in minimizing the prevalence and risks of cervical cancer disease in Sub-Saharan Africa (SSA). This study was found to be significant because cancer is becoming an increasing concern as out of the 20 countries that are leading with the burden of cervical cancer globally, 19 are found in Africa. Another complication is that the disease is active and common among females with HIV. Detection of cancer in developing economies normally occurs late, primarily due to insufficient fundamental healthcare and treatment interventions. Issues like poor screening procedures, inadequate follow-up, late diagnosis, and delayed results have significantly contributed to the cancer illness being a health burden nationally in low- and middle-income countries (LMIC). Narrowing down to cervical cancer, the WHO (2017) points out that in most cases, this type of cancer has no symptoms, but later when they manifest, they are likely to include pain during sex, pain in the pelvic region, as well as vaginal bleeding.

On the second objective, the study found that healthcare providers play a key role in reducing the prevalence of cancer among women. More particularly, it is clear that cervical cancer has been noted to be the fourth most common cause of cancer in general, and also the fourth most cause of death, with more than half a million cases being registered in 2012, as well as about 266,000 deaths. As Oleribe (2019) found, the healthcare system of most African countries suffers because of manmade problems that encompass political and technical developments, financial resources, human resources, and developments that are linked to politics. According to Ngugi et al. (2012) clinical management of cancer in Africa takes three main forms, most like in other parts of the world. These include primary care, secondary care and tertiary care. The first focuses on reducing infection rates, thereby lowering the prevalence rates of the disease, and this can be achieved through HPV vaccine mainly. The second focuses on detecting the cancer early, or even before it becomes a cancer. This is achieved through screening exercise. Based on the result of the test, treatment is done using viable methods, and WHO has approved some viable options to help clinically manage cervical cancer in African regions, and this includes visual inspection with Lugol's iodine, and visual inspection with acetic acid. The third is done for women who are found to have invasive cervical cancer or precancerous lesions. The

findings show that in Africa, patients are unlikely to get chemotherapy, radiotherapy or even hysterectomy. Thus, the treatment option is palliative and pain management care.

8.2 Limitations of the study

One of the main limitations of this study was that the number of articles found for the study was quite a lot, and it was quite necessary to tighten the exclusion criteria to narrow the pool of results, which inadvertently led to elimination of otherwise material. This includes material that may have shed more light on the disease epidemiology as well as development of cancer medicine for African cancer research.

8.3 Recommendations for Future Research

It is recommended that future researchers consider two issues. First, there is need to have a study that focuses on the ways in which cervical cancer in Africa is being improved, and specifically narrow down to what is being done to alleviate the dire picture that extant study is painting of the situation. At the same time, there is also need to focus on the role of governments and NGOs in providing solutions, especially to the people who stay in rural communities.

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APPENDICES

Appendix 1: Summary of the literature focusing on the primary management practices

Country	Type of literature	Focus
Mali, Botswana, South Africa, Tanzania, Kenya, Zimbabwe, Malawi, Mozambique, and Guinea	Original research and review articles	Primary prevention using HPV vaccine
Uganda, Tanzania, South Africa Zimbabwe Zambia	Original research, review articles	Non-vaccine prevention using condoms, male circumcision, lubrication and diaphragm

Appendix 2: summary of the literature focusing on the secondary management practices

Country	Type of literature	Focus
Angola DRC Gambia Ivory Coast Mali, Madagascar Botswana, Nigeria South Africa, Tanzania, Niger Kenya, Zimbabwe, Guinea Cameroon	Original research and review articles Lessons learned Policy documents	Secondary prevention using screening methods of different varieties, including VILI and VIA Comparisons of different tests Colposcopy Cytology HPV tests
Africa as a whole	Original research, review articles	Secondary methods focusing on awareness, attitudes, update, knowledge, as well as

Global context Kenya Ivory Coast Nigeria		cost-effectiveness of interventions.
Africa Tanzania Nigeria Kenya	Original research Review of literature	Secondary interventions that focused on screen and treat methods, guidelines and overviews, as well as cryotherapy
Global environment, Morocco		
Kenya Tanzania Ghana Africa	Original research Critical review	Secondary treatment focusing on HIV positive people and using screening

Appendix 3: summary of the literature focusing on the tertiary management practices

Country	Type of literature	Focus
Kenya Nigeria South Africa	Original research and review articles	Tertiary prevention based on cryotherapy A combination of LLETZ and late diagnosing and staging
Tunisia Nigeria Morocco Zimbabwe South Africa	Original research and review of articles	Invasive cancer treatment Combination therapy Radiotherapy Surgery
Malawi Kenya Egypt South Africa Uganda	Original research and review of articles	Tertiary treatment of patients with HIV and cervical cancer using: CIN and ICC ICC and HIV treatment Awareness training and palliative care

Appendix 4: List of articles

After implementing the exclusion and inclusion criteria as described in the sections above, the final list of articles used was as follows:

1. Li N, Franceschi S, Howell-Jones R, Snijders PJ, Clifford GM. (2011). Human papillomavirus type distribution in 30,848 invasive cervical cancers worldwide: Variation by geographical region, histological type and year of publication. *Int J Cancer. Feb 15; 128(4):927-35.*

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