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RISK FACTORS ASSOCIATED WITH CERVICAL CANCER AMONG PATIENTS AT PARIRENYATWA HOSPITAL IN 2023

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE HONOURS DEGREE OF BACHELOR IN MEDICAL LABORATORY SCIENCES IN THE COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES

2024

Abstract

Globally, cervical cancer is still a major health concern, especially in low- and middle-income nations. The purpose of this study was to determine and examine the risk factors for cervical cancer in patients treated at Parirenyatwa Hospital in 2023. Comprehending these risk variables is essential to developing successful preventative measures and enhancing the prognosis for cervical cancer. Thirty individuals with cervical cancer were involved in a retrospective case-control study and medical records served as a means of data collection. According to preliminary research, there are a number of important risk factors for cervical cancer at Parirenyatwa Hospital in 2023. Among them were HIV, tobacco usage, low socioeconomic status, multiple sexual partners, human papillomavirus (HPV) infection, and low socioeconomic status. According to the results of the logistic regression analysis, the biggest predictor of cervical cancer was HIV.This research adds to the body of knowledge by offering insightful information about the particular risk factors linked to cervical cancer at Parirenyatwa in 2023. The findings highlight the necessity of comprehensive programs aimed at reducing these risk factors and enhancing cervical cancer prevention, diagnosis, and treatment results in the area. For the purpose of effectively controlling cervical cancer, more research is necessary to investigate new variables and improve preventive measures. This study has implications for future avenues in research as well as for clinical practice and public health policies. HIV has been found to be a significant predictor, which emphasizes the urgent need for integrated approaches to cervical cancer and HIV therapy. Improving access to healthcare services, raising public awareness, and bolstering screening initiatives are critical first steps in lowering the incidence of cervical cancer in the study group and beyond. In summary, the risk factors for cervical cancer among patients treated at Parirenyatwa Hospital in 2023 are clarified by this dissertation. The results highlight the significance of all-encompassing treatments that improve cervical cancer prevention, and treatment outcomes by focusing on the identified risk factors. In order to better understand the etiology of cervical cancer and create global strategies for combating the disease, research efforts must continue.

Keywords: Cervical, Cancer, Human Papillomavirus

Declaration Page

I declare that this research proposal is my original work, except where sources have been cited and acknowledged. This work has never been, nor will it be submitted to another university for the award of a degree.

SPATNOS RUVARASHE GUMBIRA

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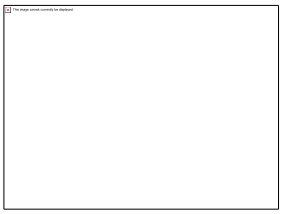
Student's name Student's signature



Mr Tawanda Thabani Dzvairo

Supervisor's name **Supervisor's signature**

24/04/2024

Date

Copyright

Acknowledgements

I would like to express my deepest gratitude and appreciation to all those who have supported and contributed to the completion of this dissertation on the topic of "Risk Factors Associated with Cervical Cancer at Parirenyatwa in 2023."First and foremost, I am sincerely thankful to my supervisor, Mr Dzvairo, for their guidance, expertise, and unwavering support throughout the entire research process. His invaluable insights, constructive feedback, and encouragement have been instrumental in shaping this dissertation. I would also like to extend my heartfelt appreciation to the staff and administration of Parirenyatwa Hospital for granting me access to the necessary resources and data required for this study. Their cooperation and assistance were vital in conducting this research effectively. Furthermore, I would like to acknowledge the support and encouragement from my friends and family throughout this journey. Their unwavering belief in my abilities and their constant motivation have been a source of strength for me. I would also like to express my gratitude to the academic community, including the faculty and staff of Africa University, for providing a conducive learning environment and fostering an atmosphere of intellectual growth. Lastly, I would like to thank all the researchers, scholars, and authors whose work and publications formed the foundation of this study. Their contributions to the field of cervical cancer research have been invaluable, and I am grateful for their insights and findings that have shaped this dissertation. Although it is not possible to mention every individual who has contributed to this research, please know that your support has been acknowledged and deeply appreciated. Thank you all for your immense support, guidance, and encouragement throughout this journey.

Acronyms and Abbreviations

HPV	Human papillomavirus
DES	Diethylstilboestrol

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CHAPTER 1: INTRODUCTION

1.1 Introduction

This chapter will examine the research's historical context before moving on to the problem statement. This research's reasoning will also be thoroughly explained. The research objectives and research questions that served as a guide for the study are also included in this chapter. The limitations and delimitations of the research, which briefly looked into some of the strengths and weaknesses of the study, will round up the chapter.

1.2 Study Background

Even though cervical cancer has probably existed for much longer, it was only officially identified in 1886 and since that time it has been increasing at an alarming rate. Cervical cancer claims the lives of 266 000 people per year. In Eastern and Central Africa, it is the main factor in cancer fatalities. According to Ngonidzashe (2017) In Zimbabwe, 5,000 new diagnoses are made and 1000 deaths occur each year. By studying the risk factors there is more awareness about the disease providing everyone with access to comprehensive cervical cancer prevention and control programs, which have the potential to provide all girls with the HPV vaccine and all at-risk women with pre-cancer screening and treatment?

The conclusion offers suggestions for improving the documentation and use of data on social factors in cervical cancer research and care, including - raising awareness of the significance of including social factors in clinical research; enhancing testing and documentation of social factors by incorporating them into journal guidelines and reporting stratified results; and incorporating social factors to improve current tools

that assess cervical cancer risk and assign risk categories. By taking into account the social demography contexts in which cervical cancer patients live and are treated, implementing the suggested modifications would allow for more effective intervention design and execution and contribute to the elimination of cervical cancer disparities.

In general cervical cancer risk factors include human papillomavirus (HPV) infection which is the main cause of cervical cancer risk. There are around 150 viruses that make up the HPV family Cohen (2019). Some of these result in papillomas, a form of development more popularly known as warts. Sexual history may increase risk of cervical cancer due to a number of variables. The risk is most likely impacted by factors that increase the likelihood of HPV exposure, such as starting to use sexual activity at a young age (particularly before the age of 18) and having numerous sexual partners .According to the American Cancer Society (2023) cervical cancer may run in some families ,if the mother or sister had cervical cancer, the chances of developing the disease are higher than if no one in the family had it .Certain experts believe that a hereditary issue that makes certain women less able to fight off HPV infection than other women may be the root cause of some uncommon cases of this familial tendency Sweats (2019). Other times, it may be more probable for women in the same family as a patient who has already received a diagnosis to have one or more of the additional non-genetic risk factors stated above.

1.3 Problem Statement

During my attachment at Parirenyatwa Hospital Histology Laboratory , l noted the worrying increase in number of uterus specimen of around 50 but of that figure 30 had cofirmed cervical cancer hence the study to research more about the risk factors of

cervical cancer soo as to have more awareness on the disease providing everyone with access to comprehensive cervical cancer prevention and control programs.

1.4 Study Justification

Worldwide, cervical cancer is the fourth most frequent cancer in women and in developing countries like Zimbabwe it has high mortality rate . The purpose of this study is to research more about the disease hence spreading awareness therefor reducing the mortality of Cervical cancer in Zimbabwe. If caught in its earliest stages, cervical cancer is extremely treatable and largely preventive hence the study on the risk factors as well as the social demography of the cancer patients. The incidence and mortality of cervical cancer are extraordinarily high in low- and middle-income (LMIC) countries were they are less educated about cervical cancer.

1.5 Research Objectives

1.5.1 Broad Objective

To analyze the risk factors associated with cervical cancer among patients at Parirenyatwa Hospital in 2023.

1.5.2 Specific objectives

I. To determine the demographic factors associated with cervical cancer among patients at Parirenyatwa Hospital in 2023.

II. To determine behaviors practices associated with cervical cancer among patients at Parirenyatwa Hospital in 2023.

III. To determine social-economical factors associated with cervical cancer among patients at Parirenyatwa Hospital in 2023.

IV. To determine diseases associated with cervical cancer among patients at Parirenyatwa Hospital in 2023.

1.6 Research Questions

i. What are the demographic factors associated with cervical cancer among patients at Parirenyatwa Hospital in 2023.
ii. What are the behavior practices associated with cervical cancer among patients at Parirenyatwa Hospital in 2023.
iii. What are the social-economical factors associated with cervical cancer among patients at Parirenyatwa Hospital in 2023.
iv. What are the diseases associated with cervical cancer among patients at Parirenyatwa Hospital in 2023.

1.7 Study Limitations

Incomplete forms by patients hence some information can not be fully acquired

Biased information as some patients are not willing to disclose their full data such as sexual information

1.8 Study Delimitations

Parirenyatwa Histology laboratory is no longer the biggest laboratory as some other private sectors are growing more due to the economy hence less information than l would have wanted is attained.

1.9 Summary

This chapter has the study background in general risk factors associated with cervical cancer among patients at parirenyatwa hospital. It also consist of the justification of the study followed by all the objectives and research questions that is then concluded

the limitations and delimitation to the study of , risk factors associated with cervical cancer among patients at Parirenyatwa hospital in 2023

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Literature review refers to the searching and evaluation of the available literature of my given subject or topic of interest this chapter shall focus on the literature review for this study research. This involves the conceptual framework of risk factors associated with cervical cancer among patients at Parirenyatwa Hospital in 2023. In addition, the chapter will also look at some literature from past studies that were done on the topic mentioned.

2.2 Conceptual framework for factors associated with cervical cancer

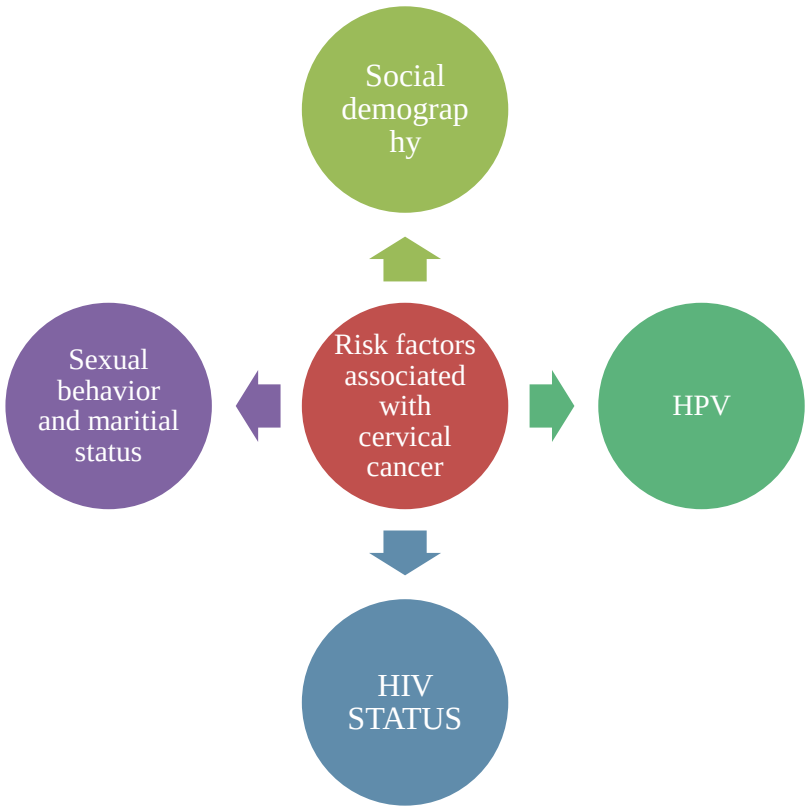

Figure 1: Conceptual framework for factors associated with cervical cancer

Cervical cancer has many risk factors and this include, HPV, HIV status, sexual history, contraceptives, economic status, family history of cervical cancer and smoking.

The human papillomavirus, a DNA virus belonging to the papillomavirus family, is the source of an HPV infection and one of the main risk factors that causes cervical cancer. There are almost 200 types of HPV and multiple HPV infections are possible in a single person Skerlev (2014). HPV is sexually transmitted hence sexual history can increase the risk of cervical cancer most certainly, increasing the likelihood of HPV exposure. Early onset of sexual activity (particularly before the age of 18) as well as having multiple sexual partners are also risk factors that are associated with cervical cancer. According to Canadian Cancer Society (2023) having many partners can raise the risk of contracting HPV, a virus spread through sex. Thus, there is a correlation between multiple sexual partners and an increased risk of cervical cancer. However, a woman who has only had one sexual partner can still have HPV. It appears that women are also more likely to have cervical cancer if their male partners have had multiple sexual partners or if they have had female companions who have had the disease.

The virus that causes AIDS, known as the human immunodeficiency virus (HIV), impairs immunity and increases the likelihood of HPV infections. The immune system plays a key role in eliminating cancer cells and reducing their rate of development and dissemination. Cervical pre-cancer may progress more quickly to an invasive carcinoma in women living with HIV than it would otherwise American Cancer society (2020)

Birth control tablets, often known as oral contraceptives, can help prevent unintended pregnancies and reduce the risk of several cancers. However, they may also increase your risk of developing cervical cancer Nivin (2022) the two hormones that the body normally produces are progesterone and estrogen. Because of their receptors, certain cancer cells can use these hormones to fuel their growth. An individual may be at higher risk if they use oral contraceptives since they contain synthetic (lab-made) versions of these hormones, this is because they might alter cervical cells in some manner, increasing risk of infection by the high-risk human papilloma virus (HPV), which is the root cause of nearly all cervical malignancies

Poverty has been linked to an increased risk of cervical cancer in women, along with other sociocultural practices like early marriage, high parity, and, to a lesser extent, polygamy. Low socioeconomic status has consistently been cited as being a risk factor in the development of cervical cancer. Ngelangel et al. (1998) noted that women who had low socioeconomic status were associated with cervical cancer. An increased risk in the lower socioeconomic populations has been associated with poor access to the health care preventive services and excessive risk-taking behavior (Chambers, 2001). It is also more prevalent in populations where access to cervical cancer screening is limited. Individuals from low-income homes, Black people, Hispanic people, and American Indian people are more likely to belong to such demographics ASCO (2023)

2.3 Review of related literature in relation to objectives

Based on a study by Dominik (2021) HIV enhanced human papillomavirus .The author also mentioned how the HIV impairs immunity and increases the likelihood of HPV infections as well as the immune system playing a key role in eliminating cancer cells and reducing their rate of development and dissemination however the contribution of

HIV to cervical cancer in this study was not quantified. In another study by Global Ecology(2016) the author noted down that the prevalence of precancerous lesions were more dominant in HIV positive women compared to HIV negative women with 71.8% and 13.5% respectively.

In a long-term research by Encancer medical science (2022) oral hormonal contraceptives were stated to be long-term cancer risks. Prolonged use of the pills were mentioned to be increasing chances of getting cervical cancer. National Cancer Institute (2018) mentioned a similar fact and noted that women who used oral contraceptives for5 or more years had a higher risk than those who never used...Furthermore women who had used the contraceptives for less than 5 years were reported to have had 10% increased risk and 60 % increased risk for those who had used the contraceptives for 5-9 years of use.

According to Began (2021) having a mother or a sister with cervical cancer can also be a risk factor not because it is a hereditary but because of home environment often meaning similar risk factors especially if it's sociocultural risk factors. . Although some inherited factors such as faulty immune response genes and DNA repair genes might increase the risk factors of cervical cancer. In the same study it was also mentioned how a drug called diethylstilboestrol (DES) which was used during 1940s and 1970s to prevent miscarriage increased the risk of developing cervical cancer

Virol (2008) mentioned that smoking was a risk factor to cervical cancer but unfortunately did not mention how it would ,however Gyneco (2011) noted that smoking inhibited the immune system as well as having carcinogens were explanations to smoking being a risk factor associated to Cervical cancer.

Chapter 3: Research Methodology

3.1 Introduction

This chapter is meant for indicating the type of the research design which will be used to conduct the research study, the tool which will be used for data collection, how the research data will be collected, study population, sampling, data analysis and ethics

3.2 Research design

This research was a retrospective descriptive study. Retrospective descriptive study is a type of observational that focuses on individual's relationship between the exposure and the outcome George (2023).

3.3 Study Population

The study participants for this research were patients with cervical cancer at Parirenyatwa Hospital in 2023.

3.4 Exclusion Criteria

- Patients who were not diagnosed with cervical cancer at the Histology Laboratory in 2023 at Parirenyatwa Central Hospital

3.5 Inclusion Criteria

- The 30 patients who were diagnosed with cervical cancer at the Histology Laboratory in 2023 at Parirenyatwa Central Hospital

3.6 Sample Size

The sample size for this study was 30 which includes all individuals who met the predetermined inclusion criteria census

3.7 Sampling Procedure

The sample population was obtained from my target population which is the patients who have cervical cancer.

3.8 Pilot Study

I carried out a pilot study at Sally Mugabe Hospital. I checked risk factors of only 10 patients and this patients were not included on the 30 on my inclusion criteria.

3.9 Study Setting

This research study was carried out at Parirenyatwa Central Hospital and it is a referral hospital in Zimbabwe where many people with different infections are treated. It was suitable for this research study to be carried out at because that is where patients with cervical cancer most of them were and their pap smear were viewed at the Histology laboratory

3.10 Data Analysis

The data for this research was presented in bar graphs through the application of Microsoft Excel to illustrate the data statistics. The risk factors of cervical cancer was noted using graphs

3.11 Ethical Consideration

AUREC (Africa University Research Committee) will provide an ethical approval letter which will assist in obtaining the clearance from the Parirenyatwa Group of Hospitals Superintendent to conduct my research at the hospital. The information which l will obtain in this study will be kept private and confidential as well as used for research purpose only. The information l get will be stored in my laptop and will not be disclosed to anyone.

CHAPTER 4 DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter will cover the analysis, presentation and interpretation of the findings resulting from this study. The data on the demographic, behaviour practises .social economical and diseases associated with cervical cancer will be presented in the form of a table, a pie chart and a line graph

4.2 Social Factors associated with cervical cancer of study participants

Factors	Variables	Predictors	Percentage
Social factors	Education	Illiterate	57
		Educated	43
	Residence	Rural	66
		Urban	34
	Marital status	Single	17
		Married	83

Table 1: Social Economic factors which are associated with cervical cancer

Figure 1 shows the social economic factors which are associated with cervical cancer and the extent in percentage to which the variables are in relation to the opposite.

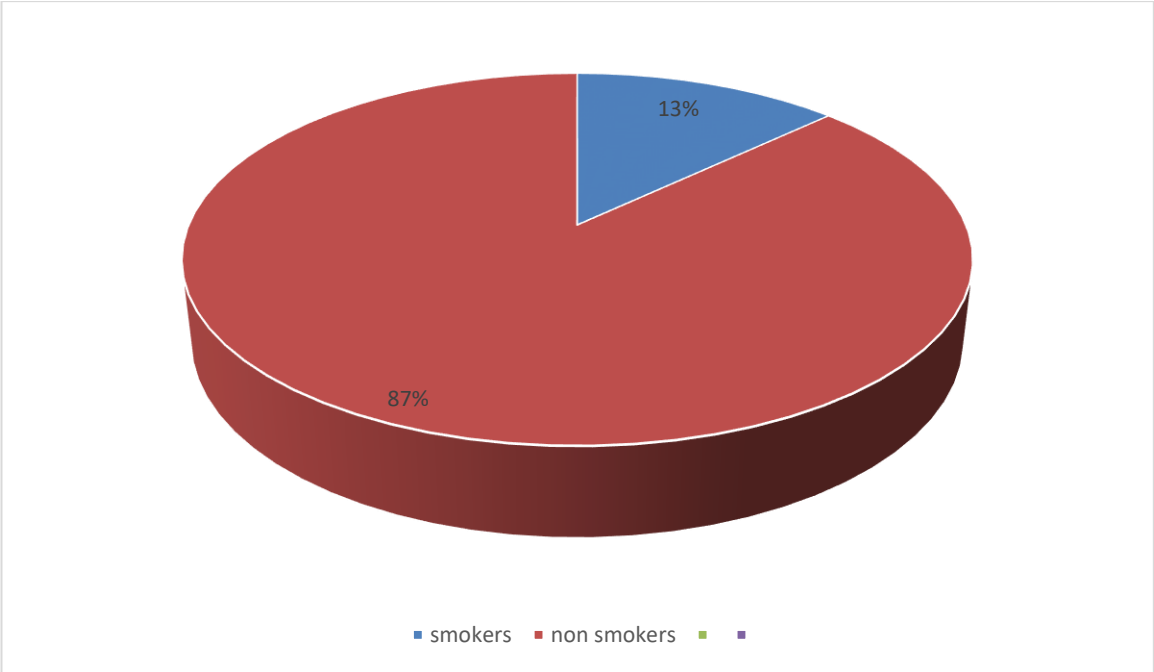

Figure 2: Percentage contribution of smoking to cervical cancer

Figure 2 shows percentage of smokers among participants. Smokers were 13% and non-smokers were 87%.

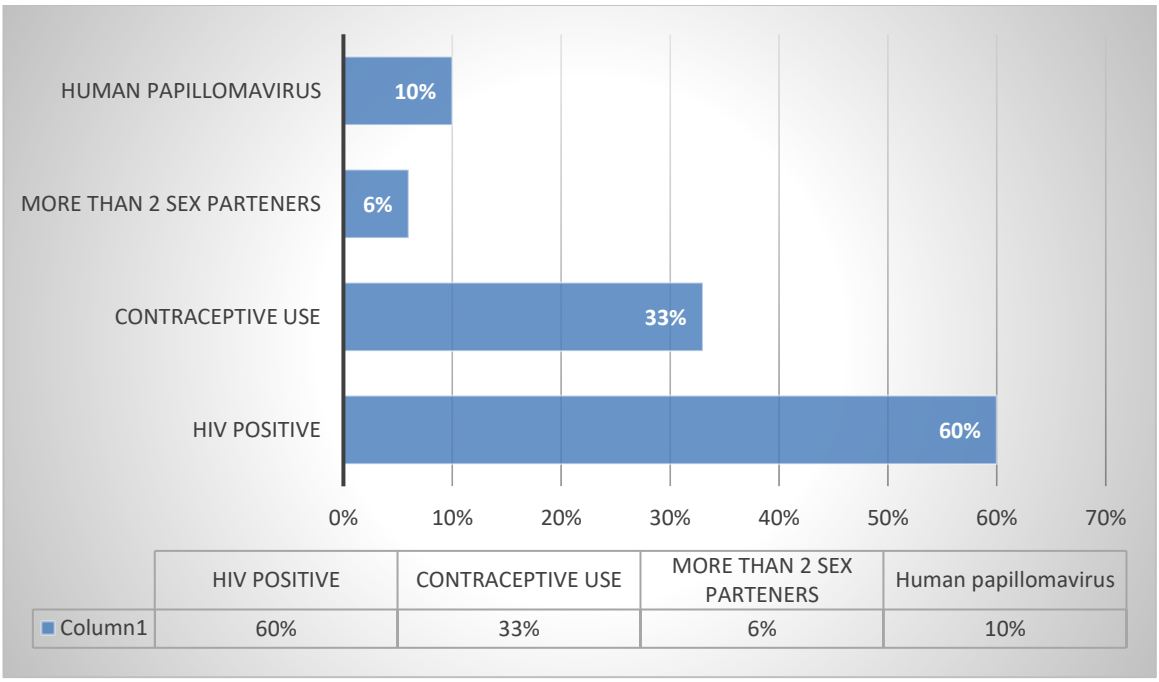

Figure 3: Sexual behaviour practises and diseases associated with cervical cancer among participants

Figure 3 shows the percentage of women who were HIV positive among participants, participants who used contraceptives, who had more than one sexual partner and participants that tested positive to HPV.

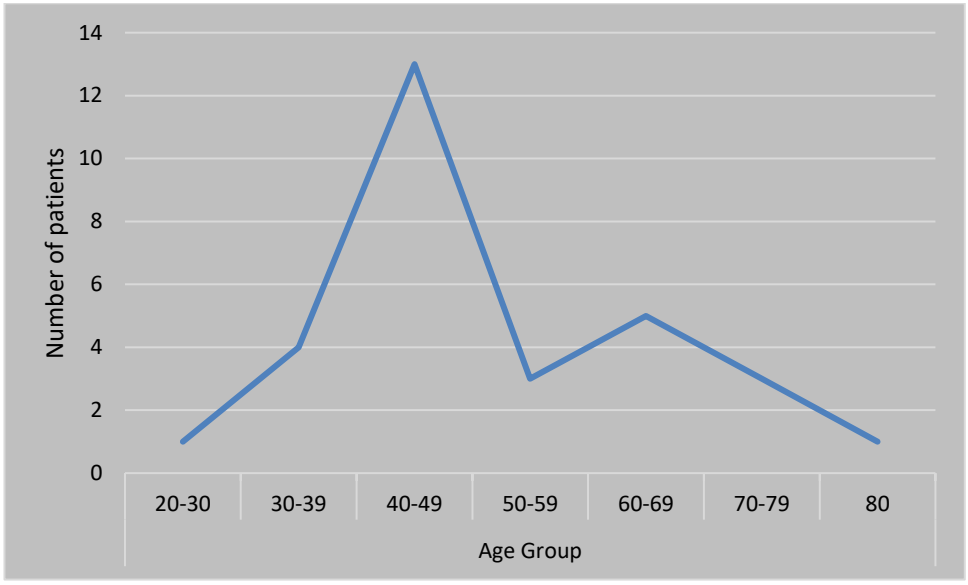

Figure 4: Age demography of patients with cervical cancer

Figure 4 shows the age demography of the 30 patients who had cervical cancer at Parirenyatwa Group of hospitals in 2023 being highest at 40-49 range.

CHAPTER 5: DISCUSSION, CONCLUSIONS AND RECOMMENDATION

5.1 Introduction

The identification and evaluation of the risk factors connected to cervical cancer are the main topics of this chapter. The goal of this chapter is to give readers a thorough understanding of the different elements that, in 2023, may lead to cervical cancer development in patients at Parirenyatwa Hospital. This study intends to add to the body of knowledge in the field by examining these risk variables and offer guidance for the creation of successful preventive measures.

5.2 Discussion

One of the research objectives of this study was to identify the demographic factors associated with cervical cancer among patients at Parirenyatwa Hospital in 2023 Several significant discoveries were obtained from the examination of demographic parameters. Women between the ages of 40 and 49 account for the majority of instances of cervical cancer, indicating that age is a key risk factor. This result is in line with other studies and can be explained by the combined impact of long-term exposure to risk factors, lower screening rates in older women, and other considerations.

The study also discovered that marital status affected the risk of cervical cancer. This may be related to variations in sexual behaviour, access to medical treatment, or other sociocultural elements that need more investigation.

Another research objective was to identify behavioural practices associated with cervical cancer It has been determined that some behaviours significantly increase the risk of developing cervical cancer. The study found a significant correlation between

the incidence of cervical cancer and high-risk sexual activities. Patients with cervical cancer were highly consistently shown to have a history of sexually transmitted infections (STIs), including HIV, early sexual debut, several sexual partners, and other factors. Patients who smoked made a tiny additional contribution .The significance of thorough sexual education, safe sexual behaviours, and routine screening for early detection is underscored by these findings.

Another objective was to research if socioeconomic factors contributed to risk factors associated with cervical cancer at Parirenyatwa hospital in 2023. The results of the study showed that cervical cancer risk was impacted by socioeconomic factors shown in fig 1 as the numbers clearly shown how illiterate and patients coming from rural areas had a higher percentage. A higher incidence of the disease was linked to lower socioeconomic level, less education, and ignorance of cervical cancer and screening. For women from underprivileged families, access to healthcare services—including cervical cancer screening and vaccination—was also found to be a major obstacle. Reducing the incidence of cervical cancer can be achieved by addressing these socioeconomic variables through focused interventions, public health campaigns, and enhanced healthcare infrastructure.

Lastly diseases associated with cervical cancer was an objective that was to be identified. The relationship between particular diseases and cervical cancer was investigated in this study. It has been determined that infection with the human papillomavirus (HPV) and the human immunodeficiency virus (HIV) provide a serious risk for cervical cancer. Cervical cancer is known to be caused by high-risk HPV strains, and the risk of acquiring the disease increases with continued infection. HIV infection raises the risk of HPV persistence and the development of cancer from HPV-related cervical lesions by weakening the immune system. These results emphasize the

significance of integrated HIV treatment, routine cervical cancer screening, and HPV vaccination for prevention and early detection.

5.3 Conclusion

The discussion of research findings highlights the multifactorial nature of cervical cancer risk at Parirenyatwa Hospital in 2023. Cervical cancer incidence has been found to be significantly influenced by a number of factors, including behavioural patterns, social and economic factors, demographics, and co-existing illnesses including HIV and HPV infections. The study highlights the necessity of all-encompassing preventive strategies that deal with these risk factors through focused interventions, such as health education initiatives, the encouragement of safe sexual behaviour, better access to medical care, early identification and treatment of associated illnesses, and the integration of HIV care. It is feasible to lessen the prevalence of cervical cancer and enhance the general health of women in the Parirenyatwa Hospital community by taking care of these issues.

5.4 Recommendations

1. Programs for Health Education and Awareness: Creating and carrying out extensive health education and awareness campaigns aimed at women in the neighbourhood. These campaigns should emphasize the value of early detection, routine cervical cancer screenings, safe sexual behaviour, and HPV vaccination. The identified risk factors, such as behavioural patterns and socioeconomic variables, should be addressed by these programs, along with information on how to reduce them.
2. Combining HIV Treatment with Screening for Cervical Cancer: Provide integrated healthcare services that include screening for cervical cancer and preventive measures in addition to HIV treatment. With this strategy, women

living with HIV may be guaranteed routine screenings, proper follow-up care, and essential treatment for both HIV and cervical cancer.

3. Interventions for High-Risk Groups: Creating a tailored interventions for women who have been recognized as high-risk due to their increased incidence of cervical cancer. To meet the unique needs and difficulties experienced by these women, these interventions could include specialized health education campaigns, better access to screening facilities, and support networks.
4. Encouraging cooperation and collaborations between Parirenyatwa Hospital, neighbourhood healthcare facilities, civic associations, and governmental entities. This cooperative strategy can improve the efficiency of efforts to prevent and control cervical cancer, make resource sharing easier, and advance a thorough strategy for managing and preventing the disease.

5.5 Dissemination of the data

It is essential to share the information I have gathered on the risk factors for cervical cancer with the public, legislators, and healthcare professionals in order to increase awareness and eventually aid in the prevention and treatment of cervical cancer.

5.6 Suggestions for further research

A similar research should be done to examine in detail the particular socio-economic factors that influence the risk of cervical cancer. Examining the effects of variables on the incidence and prognosis of cervical cancer, including occupation, income, education, and access to healthcare. This study can shed light on the underlying mechanisms and aid in the creation of focused therapies.

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Appendices

Timetable/Gantt chart

	2023		2024			
	November	December	January	February	March	April
Chapter 1 and 2						
Chapter 3						
Data pre & analysis						
Conclusion						
First Draft						
Completing Research						

Budget

Commodity	**Total Cost** (USD)
Travel/Transport	$25.00
Stationery materials and supplies	$5.00
Total	**$30.00**

Data collection tool

Patient ID	Age	Ethnicity	Marital Status	Occupation	Smoking Status	Human Papillomavirus (HPV) Infection	Sexual Activity	Hormonal Contraceptive Use	Family History of Cervical Cancer

AUREC Approval Letter

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AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC)

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Ref: AU3189/24

20 March, 2024

SPATNOS RUVARASHE GUMBIRA

C/O Africa University
Box 1320
MUTARE

RE: RISK FACTORS ASSOCIATED WITH CERVICAL CANCER AMONG PATIENTS AT PARIRENYATWA HOSPITAL IN 2023

Thank you for the above-titled proposal that you submitted to the Africa University Research Ethics Committee for review. Please be advised that AUREC has reviewed and approved your application to conduct the above research.

The approval is based on the following. a) Research proposal

- **APPROVAL NUMBER** AUREC3189/24
  This number should be used on all correspondences, consent forms, and appropriate documents.
- **AUREC MEETING DATE** NA
- **APPROVAL DATE** March 20, 2024
- **EXPIRATION DATE** March 20, 2025
- **TYPE OF MEETING**: Expedited
  After the expiration date, this research may only continue upon renewal. A progress report on a standard AUREC form should be submitted a month before the expiration date for renewal purposes.
- **SERIOUS ADVERSE EVENTS** All serious problems concerning subject safety must be reported to AUREC within 3 working days on the standard AUREC form.
- **MODIFICATIONS** Prior AUREC approval is required before implementing any changes in the proposal (including changes in the consent documents)
- **TERMINATION OF STUDY** Upon termination of the study a report has to be submitted to AUREC.

Yours Faithfully

MARY CHINZOU

ASSISTANT RESEARCH OFFICER: FOR CHAIRPERSON
AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE