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Diagnosis, Treatment, and Outcomes of Cervical Cancer in Lahore

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Abstract

This study provides an in-depth analysis of the diagnosis, treatment, and outcomes of cervical cancer cases within hospital settings of Lahore. The research adopted phenomenological research design and using a convenient sampling approach. In-depth interviews were conducted to collect data from doctors/physicians serving in certain wards of cancer at four selected private hospital, including Shaukat Khanum Memorial and Cancer Hospital, Mid City Hospital, Sheikh Zaid Hospital, and Anmol Cancer Hospital. After data collection, thematic analysis was conducted. The study revealed the importance of early detection in improving patient prognosis and highlighted the advancements in treatment methods for improved survival rates. However, it also identified disparities in diagnosis and treatment outcomes across different hospitals, potentially due to differences in resources, expertise, and patients' demographics. Overall, the study emphasized the need for a holistic approach to patient care, aiming to improve the quality of life during and after treatment. This research is an attempt to understanding the current state of cervical cancer care provided at private hospitals and identify areas for future improvement. The study suggests for promoting early detection and improving access to resources to address healthcare disparities and enhance quality of life of cancer patients. Further, it also emphasizes to invest in research encourage collaboration and share best practices to yield better results.

Keywords: Cervical Cancer, Treatment, Diagnosis, Healthcare Disparities, Early Detection

Introduction

Globally, cervical cancer ranks as the fourth most fatal cancer among women. In 2020, around 604,000 women were diagnosed, while 341,000 died with this disease. It's projected that most of these fatalities would occur in low and lower-middle-income countries (LI-LMICs), causing most of the

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cervical cancer burden in the future (Lindau et al., [2002](#)). The discovery of a link between persistent human papillomavirus (HPV) infection and cervical cancer has led to the creation of vaccines to avert HPV infection, thereby preventing cervical cancer. As a result, HPV vaccination has become a potent weapon in the fight against cervical cancer. Many affluent countries that have implemented preventive HPV vaccination and cervical cancer screening programs at the population level, are making significant progress towards achieving the World Health Organization's (WHO) cervical cancer elimination targets. However, in LI-LMICs, the lack of sufficient data on the burden of disease hinders crucial policy decisions, such as establishing national surveillance units to monitor progress towards disease elimination and implementing strategies for cervical cancer prevention and management (World Health Organization [WHO], [2020](#)).

Cervical cancer - a disease that affects the lower part of the uterus connecting to the vagina, is a significant global health concern, particularly for women. The WHO projected that more than half of the women would lose their lives to this disease, which was diagnosed in 600,000 women. On a global landscape, the incidence of cervical cancer is on the rise globally, with a noticeable decrease in the United States, while a high prevalence among Latino, Black, and Asian women.

The Cervical Cancer Elimination Initiative has motivated countries, partners, implementers, donors, and civil society to accelerate the adoption and access to cervical cancer prevention and treatment. The results achieved in recent years are remarkable, marking a global effort. In response to the latest guidelines on cervical cancer screening and treatment from the World Health Organization (WHO), 53 countries have adapted the recent policies or plans for further action (Denny et al., [2005](#)).

As per WHO's guidelines for cervical cancer prevention, it will be crucial to enhance the availability of safe and effective human papillomavirus vaccines and increase the frequency of screenings for HIV-positive women. Countries with high HIV rates often have the highest incidence of cervical cancer, and they have a considerable journey ahead before achieving elimination (WHO, [2020](#)). Literature informed that HIV has a significant impact on the incidence of cervical cancer in women. Adherence to WHO's elimination strategy, two lifetime cervical screenings, and extensive treatment coverage, has led to a substantial reduction in the age-standardized incidence of cervical cancer. Cervical cancer develops

when the cells of the cervix undergo abnormal changes and multiply rapidly, forming a tumor. Risk factors for this disease include sexually transmitted infections, multiple sexual partners, immune system dysfunction, and smoking (Adejuyigbe et al., [2015](#)). This underscores the urgent need for effective screening programs for women worldwide (Stelzle et al., [2021](#)).

Cervical cancer progresses through several stages. In stage IA1, the depth of the carcinoma is less than 3 millimeters. In stage IA2, the cancer is deeper than 3 millimeters but does not exceed 5 millimeters. When cervical cancer reaches stage IB1, it is at least 2 centimeters in size and its depth is more than 5 millimeters. Stages 2B, 3, and 4A are generally classified as locally advanced cervical cancer. Stage 4B is often regarded as an advanced stage (Cancer.Net, [2022](#)).

In Pakistan, over 70% of women diagnosed with cervical cancer are in an advanced stage of the disease. That's why the disease's morbidity and mortality rates are alarmingly high. The high death rate is partly due to the prevalence of human papillomavirus infections, which pose a significant risk for developing carcinoma, especially among those in lower socioeconomic positions with limited access to screening information. Although some improvement has been seen in cancer related mortality over the period, it is evident from statistics between 1994 to 2019, where cervical cancer consistently ranked among the top five cancers diagnosed in adult women at the Shaukat Khanum Memorial Cancer Hospital and Research Centers (SKMCH&RC), however, now ranked at fourth leading cause of cancer related deaths. Despite being a preventable disease, cervical cancer often goes unnoticed in terms of screening, prevention, and vaccination, leading to high morbidity and mortality rates (Aziz et al., [2019](#)).

In the above context cervical cancer remains a significant global health challenge, impacting millions of women worldwide. Despite advancements in understanding its causes and treatments, critical gaps persist, especially within local contexts (Birley, [1995](#)). This research endeavors to address these gaps by emphasizing the importance of conducting context-specific investigations. Each region, country, and community possess unique characteristics, including cultural practices, healthcare infrastructure, and socioeconomic factors, which significantly influence the prevalence, risk factors, and outcomes of cervical cancer. Local nuances, such as dietary habits, lifestyle choices, and environmental exposures, can diverge from



global trends, necessitating targeted research within specific populations. Disparities in access to healthcare services and awareness campaigns further exacerbate differences in cervical cancer burdens. Large-scale epidemiological studies within local communities are essential to provide valuable insights into prevalence, incidence, and region-specific risk factors. These studies can assess the effectiveness of existing screening programs, identify barriers to participation, and tailor strategies accordingly. Moreover, investigating treatment outcomes within local healthcare systems helps optimize patient management. Understanding the psychosocial impact of cervical cancer is also crucial, as coping mechanisms and mental health support vary across cultures. By addressing these research gaps, this study aims to inform culturally sensitive health education campaigns, emphasizing prevention, early detection, and vaccination, ultimately contributing to the global fight against cervical cancer.

Research Questions

This research has following research question:

1. How the pathway from diagnosis to treatment vary for cervical cancer patients across different private sector hospitals in Lahore?

Objectives

Following objectives were developed:

1. To analyze the pathway from diagnosis to treatment methods, used for cervical cancer patients within selected private hospitals.
2. To identify any disparities in the diagnosis, treatment, and outcomes of cervical cancer patients within selected private sector hospitals; and
3. To provide recommendation for improving the patients' care for cervical cancer.

Methodology

Philosophical Stance

This study adopted a qualitative research design, where the researcher subjectively observed realities. Aligned with the interpretivist approach, it argued that reality is unique to each observer, acknowledging its evolving nature. This approach also informs that individuals' perception and

interpretation of reality changes with their interaction with surrounding environment and each other. Thus, the fluidity of reality makes the research process a dynamic one, where the researcher continually refines their understanding as new data is gathered.

Research Design

The research employed a phenomenological design to interpret and understand the reality. This design will help to elucidate how individuals experience certain phenomena and how these experiences are reviewed.

Sample and Sampling Technique

The sample for this study comprised of doctors/physicians from various private sector hospitals in Lahore that handle cases of cervical cancer. These hospitals included Shaukat Khanum Memorial and Cancer Hospital, Mid City Hospital, Sheikh Zaid Hospital, and Anmol Cancer Hospital. The selection of the sample was carried out using a convenient sampling technique. Convenient sampling was chosen for this study due to its practicality and efficiency. This method allowed for the easy accessibility and availability of the subjects, which in this case are doctors from various hospitals in Lahore. A sample of 10 doctors was proposed, considering saturation.

Tool for Data Collection

In- depth interviews were conducted with 10 doctors, dealing with cervical cancer patients from different private sector hospitals of Lahore to give valuable insights into the research topic. It allowed the researcher to understand and gain a deep insight into the research topic by discovering experiences, patterns, and capturing a rich source of information. A guide was developed for in-depth interviews.

Ethical Considerations

This study included the ethical principles and practices adhered during the research process. It addressed aspects, such as confidentiality, informed consent, and the proper use of data, ensuring the integrity and respect for all participants involved in the study.

Data Analysis

As a qualitative study, data was analyzed using the thematic analysis technique. This comprised of categorizing or “coding” words, themes, and



concepts, followed by an analysis of the results. The thematic analysis technique is a powerful tool for the identification of patterns or themes within the data. It involved a rigorous process of data familiarization, data coding, and theme development and revision. This method not only provided a systematic approach to data analysis, but also allowed for flexibility in capturing the complexity and nuances of the data. The end goal of this process entailed a detailed and nuanced account of the data to interpret various aspects of the research topic. Ultimately, the insights gained from this analysis contributed to the overall understanding of the research question.

During analysis, a variety of themes and subthemes were developed to provide context and help with topic knowledge. Participants talked about their backgrounds and the circumstances that led to their medical care regarding diagnosis, treatment methods, and outcomes of cervical cancer cases across different hospitals. Further, participants' identifications and hospitals' identifications were removed to make data anonymous.

Findings

Overall, following codes and different themes were generated to conduct thematic analysis.

Figure 1

Codes

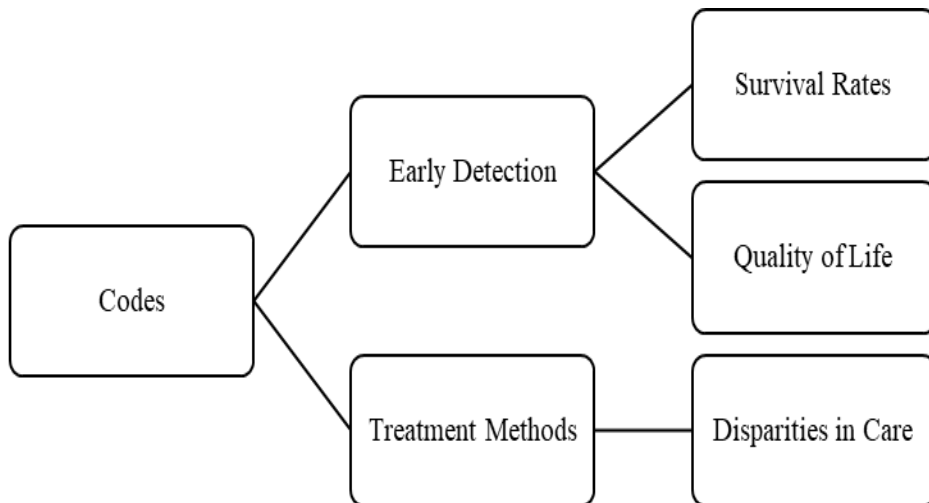
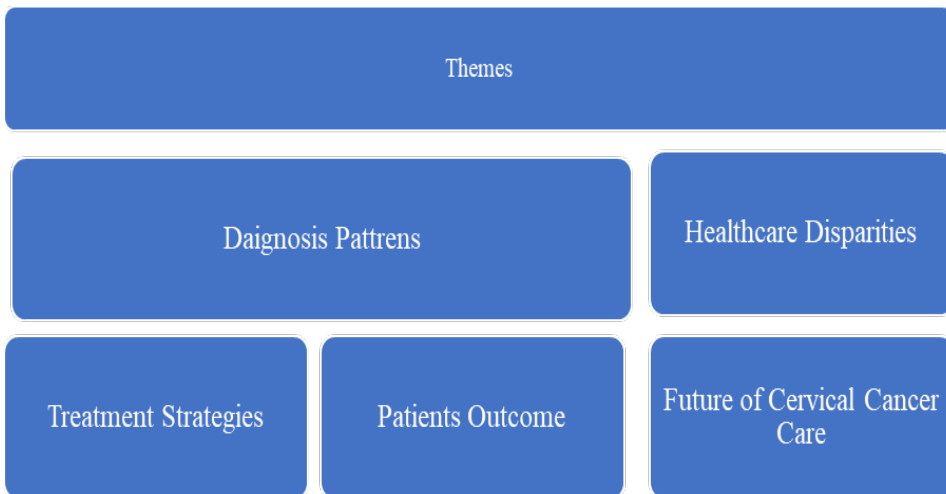


Figure 2

Themes



Following para highlights the key findings of this research.

Early Detection

According to the doctors, identifying the disease at an early stage significantly improves the patient’s prognosis. This is because early-stage cancers are usually easier to treat and have better survival rates compared to cancers detected at a later stage. As a doctor shared: “I’ve noticed a trend in the diagnosis of cervical cancer where early detection significantly improves the patient’s prognosis. Our treatment methods are constantly evolving to provide the best care possible”.

The doctors also mentioned that the treatment methods at their hospital are constantly evolving. This could mean that they are continually updating their practices based on the latest research and technological advancements in the field. This commitment to innovation and improvement is crucial in providing the best possible care for patients. As a doctor expressed:

In our observations, early detection plays a pivotal role in shaping the prognosis of cervical cancer patients. Identifying the disease at an early stage significantly enhances the chances of positive outcomes. At our hospital, we are continuously refining our treatment methods to ensure the delivery of the best possible care.

This statement from the physician highlighted the crucial importance of early detection in influencing the prognosis of cervical cancer cases. The emphasis on "our observations" suggested a data-driven perspective, indicating that these conclusions are drawn from practical experiences within the hospital. The analysis further stressed the proactive approach of the hospital in constantly refining treatment methods. This commitment to continuous improvement implies an active engagement with the latest developments in cervical cancer care, ensuring that patients receive the most effective and up-to-date treatments available.

Survival Rate

Analysis found that early diagnosis and treatment is also related to improving in survival rates, which is evident from a quotation of a doctor: "Our survival rates for cervical cancer patients have improved over the years due to advancements in treatment methods. However, recovery patterns vary greatly depending on the stage of cancer at diagnosis".

This improvement is attributed to advancements in treatment methods, which could include new drugs, therapies, or surgical techniques that have become available. These advancements have likely increased the effectiveness of treatments, leading to better patient outcomes and higher survival rates.

However, the doctors also noted that recovery patterns may vary greatly. This variation is largely dependent on the stage of cancer at diagnosis. Early-stage cancers are typically associated with better recovery patterns and higher survival rates because they are often easier to treat. On the other hand, cancers diagnosed at a later stage may spread to other parts of the body, making treatment more complex and recovery more challenging. A doctor shared insight:

While advancements in treatment have positively impacted survival rates, it's essential to recognize that recovery patterns significantly differ. Early-stage diagnoses generally correlate with better recovery, given their ease of treatment. Conversely, later-stage diagnoses pose challenges due to potential metastasis.

Analysis corroborated the findings discussed earlier, emphasizing the positive impact of treatment advancements on survival rates. The specific mention of early-stage diagnoses is aligned with the previous statement, highlighting their association with better recovery patterns. The

acknowledgment of challenges associated with later-stage diagnoses, including potential metastasis, adds depth to the understanding of recovery complexities. This further underscored the importance of early detection in cervical cancer care and emphasized the nuanced relationship between advancements in treatment, stage-specific recovery patterns, and overall survival rates.

Disparities in Diagnosis

Analysis also revealed disparities in diagnosis and treatment with certain socio-demographic characteristics. A doctor further elaborated: “There are disparities in the diagnosis and treatment outcomes of cervical cancer cases across different hospitals. These could be due to differences in resources, expertise, and patient demographics.”. Another doctor mentioned the same and highlighted disparities in the diagnosis and treatment outcomes of cervical cancer cases.

These disparities could be attributed to several factors, for instance, different hospitals may have varying levels of resources. This includes the availability of advanced diagnostic tools, the number of healthcare professionals, and the capacity to provide specialized treatments. Hospitals with more resources may be able to provide more comprehensive care, leading to better outcomes. Further, the level of expertise among healthcare professionals can also vary between hospitals. Those with specialized training in cervical cancer care may be more adept at diagnosing the disease accurately and providing effective treatment. The demographics of the patients treated at different hospitals can also contribute to disparities, such as age, overall health status, and stage of cancer at the time of diagnosis.

A doctor shared perspective: “In our hospital, we've noticed disparities in diagnosis, especially regarding the access to advanced screening technologies. Patients from certain demographics may face challenges in timely diagnosis due to resource limitations, influencing treatment outcomes.”

The key findings also provided a specific example of disparities in diagnosis, focusing on access to advanced screening technologies. The mention of "certain demographics" suggested that specific patient groups may encounter challenges in receiving timely diagnoses, potentially due to resource limitations within the hospital. This example added granularity to the understanding of disparities, highlighting that the disparities may not



only exist across public & private hospitals but also within the other healthcare institutions. The acknowledgment of such disparities emphasized the need for targeted interventions to address resource inequities and ensure equitable access to diagnostic tools for all patient demographics.

Quality of Life

Analysis found that there is a link between early diagnosis and treatment with the quality of life of cancer patients. A doctor shared:

Our objective is not only to treat cervical cancer but also to improve the quality of life of our patients during and after treatment. We believe that understanding the patterns in diagnosis and treatment can help us achieve this goal.

One of the participants emphasized that their objective extended beyond merely treating cervical cancer, aiming to improve the quality of life of their patients during and after treatment. This holistic approach recognized that healthcare is not just about curing diseases but also about enhancing patients' well-being.

Improving the quality of life could involve managing symptoms, reducing side effects of treatment, providing psychological support, and helping patients maintain a sense of normalcy in their lives (Rogers et al., 2008). This approach acknowledged the physical, emotional, and social challenges that come with a cancer diagnosis and treatment.

The doctors also highlighted the importance of understanding patterns in diagnosis and treatment. This knowledge can guide healthcare providers in tailoring their approach to each patient's unique circumstances, thus optimizing outcomes and improving patients' quality of life. As a doctor in Lahore stated: "At our hospital, we prioritize enhancing patients' overall well-being, not just treating the disease. This includes dedicated support services, nutritional guidance, and post-treatment rehabilitation to ensure a better quality of life."

The analysis further reinforced the commitment to enhancing patients' overall well-being. The emphasis of "dedicated support services, nutritional guidance, and post-treatment rehabilitation" illustrated specific actions taken by the hospital to address the various dimensions of patients' lives beyond medical treatment. This example showcased a comprehensive approach to improving the quality of life, encompassing not only medical

care, but also providing support services and lifestyle considerations. The importance on post-treatment rehabilitation also indicated a commitment to the long-term well-being of patients, aligning with the holistic perspective on healthcare and quality of life.

Future Improvements

One of the participants from a Hospital in Lahore emphasized the value of research to gain insights from relevant studies. According to the doctors, these insights are invaluable as this research provide a clear understanding of the current state of cervical cancer care along with treatment options. These also shed light on the effectiveness of current diagnosis methods, treatment strategies, and patient outcomes. As doctor in Lahore stated: "Insights from studies like these are invaluable. They help us understand where we stand and what we can do to improve cervical cancer care and outcomes in the future."

These insights also highlight areas for improvement to provide continuous guidance to healthcare providers in identifying gaps in care, developing new treatment methods, and implementing strategies to improve patient outcomes. Furthermore, these can inform policy decisions and resource allocation in healthcare institutions.

This study provided knowledge that early detection and continuous evolution of treatment methods are key strategies in managing cervical cancer effectively and improving patient outcomes. This insight underscored the need for regular screenings and staying abreast with the latest developments in cervical cancer treatment. While advancements in treatment methods have improved survival rates for cervical cancer patients, the stage of cancer at diagnosis remains a crucial factor in determining recovery patterns. This underscores the importance of early detection. All hospitals strive to provide the best care, disparities in diagnosis and treatment outcomes exist. These disparities underscored the need for equitable distribution of resources and expertise, as well as tailored care that considers patient demographics (Batool et al., [2017](#)). Understanding and addressing these disparities is crucial in improving cervical cancer care for all patients. The focus on quality of life underscores the need for a comprehensive and patient-centered approach in cervical cancer care. As a doctor shared thought: "Studies like these serve as a compass for progress. They guide us in refining our approaches, identifying areas for innovation,



and ensuring that our cervical cancer care is aligned with the latest standards, ultimately benefiting our patients."

Summing up, this research echoes the sentiment regarding the value of studies in guiding future improvements. The metaphorical use of "a compass for progress" emphasized the role of research in providing direction for refining approaches and fostering innovation in cervical cancer care. It highlighted the importance of aligning healthcare practices with the latest standards, ensuring that patients receive care that reflects the current advancements in the field (Kamb, [1995](#)). This perspective added to the understanding that research not only informs improvements but also serves as a catalyst for ongoing progress in the dynamic landscape of cervical cancer care.

Discussion

The current study provides a comprehensive overview of cervical cancer care in Lahore, drawing on the insights of healthcare professionals and building on previous research. The importance of early detection is emphasized, aligning with the findings of Aziz et al. ([2019](#)) that early detection significantly improves patient prognosis.

Advancements in treatment methods have led to improved survival rates, echoing global trends. However, recovery patterns were found to vary greatly depending on the stage of cancer at diagnosis, underscoring the need for continued emphasis on early detection (Bruni et al., 2022).

Disparities in diagnosis and treatment outcomes across different hospitals were observed, potentially due to differences in resources, expertise, and patient demographics. This resonates with Denny et al. ([2005](#)), who highlighted the need for equitable distribution of resources and expertise, as well as tailored care that considers patient demographics.

The study also underscores the importance of improving the quality of life of patients during and after treatment, reflecting a shift towards a more holistic approach to care. This approach recognizes the physical, emotional, and social challenges that come with a cancer diagnosis and treatment.

The commitment of healthcare providers, such as Anmol Cancer Hospital and Shaukat Khanum Hospital, to prioritize the quality of life for cervical cancer patients signifies a paradigm shift towards holistic and patient-centered care¹. This aligns with the broader trend in healthcare

towards recognizing the importance of well-being beyond medical interventions.

The physicians' recognition of the value of research in shaping future improvements in cervical cancer care is pivotal (Musa, [2017](#)). Studies like these serve as beacons guiding healthcare professionals in refining approaches, innovating practices, and aligning care with the latest standards.

This study not only contributes valuable insights into the current state of cervical cancer care but also provides a roadmap for future advancements. The findings underscore the need for a collective effort to address disparities, prioritize early detection, and continue evolving treatment methods to ensure optimal outcomes and improved quality of life for all cervical cancer patients.

Finally, the study highlighted the value of continuous research and learning for the future improvement of cervical cancer care. The insights gained from this study can guide healthcare providers in identifying gaps in care, developing new treatment methods, and implementing strategies to improve patient outcomes.

Conclusion

In conclusion, while significant strides have been made in cervical cancer care, there is still much work to be done (Saadi, [2021](#)). It is hoped that the findings of this study will contribute to ongoing efforts to improve cervical cancer care and outcomes in Lahore and beyond. The study underscored the importance of early detection, continuous innovation in treatment methods, a holistic approach to patient care, and ongoing research for the betterment of cervical cancer care.

Recommendations

Based on the above, the following are the proposed recommendations to improve cervical cancer care and outcomes. It is envisaged that they will contribute to ongoing efforts to combat this disease and enhance the quality of life for patients. Continuous research and learning are crucial for the future improvement of cervical cancer care, enabling healthcare providers to adapt to new challenges, innovate solutions, and ultimately enhance the quality of care for cervical cancer patients. Ensure equitable distribution of resources and expertise to address patients' related disparities. Encourage

collaboration among hospitals for sharing of best practices in the diagnosis and treatment of cervical cancer to promote a standardized and effective approach to cervical cancer care (Armstrong, 2005). Promote future research on this topic, entailing the point of views of both providers and patients.

Limitations

This research also encountered few limitations. The study used a convenient sampling technique, covering doctors from specific hospitals in Lahore which could limit the generalizability of the findings. Therefore, these limitations should be taken into account while interpreting the findings of this study. Future research could aim to address these limitations, for example, by using a more representative sampling technique, expanding the scope of the study, or employing methods to reduce subjectivity. The analysis may be impacted by incomplete data availability for all cervical cancer cases across various hospitals.

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