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Original Article

Preliminary Study on Gynecological Disease in District Buner Khyber Pakhtunkhwa, Pakistan

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ABSTRACT

Background: Gynecological diseases significantly impact women's health, yet there is limited comprehensive data on their prevalence and nature, particularly in developing regions. District Buner, located in Khyber Pakhtunkhwa, Pakistan, presents a unique demographic for studying these diseases due to its distinct socio-cultural and economic context.

Objective: This study aims to ascertain the prevalence and variety of gynecological diseases in District Buner, offering insights into the specific health challenges faced by women in this region.

Methods: Conducted from October 2019 to October 2020, this study involved a systematic examination of 480 patients in District Buner, spanning various age groups and backgrounds. Data were collected from local healthcare facilities, including the District Headquarters Hospital and Buner Medical Complex. The study focused on identifying and quantifying 30 different gynecological conditions, using both direct consultations with healthcare professionals and review of medical records.

Results: The study uncovered high prevalence rates of several gynecological diseases, with Urinary Tract Infections (90%), Anemia (92%), and Leucorrhea (98%) being the most common. Other significant findings included Polycystic Ovarian Syndrome (52%), Pelvic Inflammatory Diseases (70%), and Uterine Prolapse (68%). The data revealed the complex interplay of socio-cultural and biological factors influencing women's reproductive health in the region.

Conclusion: The findings highlight a critical need for targeted healthcare interventions, increased awareness, and resource allocation to address the prevalent gynecological conditions in District Buner. This study serves as a vital reference for healthcare policymakers and practitioners in developing effective strategies to improve women's health outcomes in the region.

Keywords: Gynecological Diseases, Prevalence, Women's Health, District Buner, Pakistan, Urinary Tract Infections, Anemia, Polycystic Ovarian Syndrome, Healthcare Interventions.

INTRODUCTION

Gynecology, derived from the Greek terms for "women" (gyne) and "study" (logia), encompasses a vast field dedicated to the health and disorders specific to the female reproductive system (1). This discipline's significance is pronounced due to the direct impact of gynecological conditions on various dimensions of women's lives, including their physical health, psychological well-being, and quality of life (2, 3). Notably, a pervasive lack of awareness exists concerning the extent and ramifications of reproductive morbidity on women's health (4).

A wide array of gynecological diseases profoundly affects a significant portion of the female population. These include conditions such as endometriosis and adenomyosis, alongside uterine fibroids, which cause considerable discomfort and potential complications. Additionally, gynecological cancers, notably endometrial and ovarian cancers, pose serious health risks. Furthermore, Polycystic Ovarian Syndrome (PCOS), the most prevalent endocrine disorder among women of childbearing age, presents with a

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spectrum of clinical symptoms (5). These encompass ovulation disorders and signs of androgen excess, alongside the characteristic polycystic ovarian morphology (6, 7). The implications of PCOS extend to pregnancy, where it is associated with an increased incidence of early pregnancy loss, gestational diabetes, pregnancy-induced hypertensive disorders, and the birth of small-for-gestational-age infants (8, 9). Factors such as obesity, hyperinsulinemia, elevated luteinizing hormone levels, and endometrial dysfunction have been implicated in the heightened risk of early pregnancy loss in PCOS (10).

Pelvic Inflammatory Disease (PID), an infection-driven inflammatory process extending from the cervix to the peritoneal cavity, is particularly concerning due to its association with fallopian tube inflammation (11, 12). This condition can lead to severe reproductive consequences, including infertility, ectopic pregnancy, and chronic pelvic pain (13, 14). The etiology of female infertility is multifactorial, encompassing tubal, peri-tubal, uterine, cervical, and ovarian disorders. The psychosocial impact of infertility is profound yet often overlooked (15). Fertility treatments, ranging from medical monitoring to hormonal therapies and in vitro fertilization, place substantial physical and emotional burdens on women and their partners (16, 17). Psychological factors such as depression, anxiety, and stress-induced physiological changes have been linked to decreased probabilities of achieving viable pregnancies (18).

Furthermore, the interplay between chronic medical diseases and reproductive dysfunction is increasingly recognized. Gastrointestinal disorders, including celiac disease, inflammatory bowel diseases (such as ulcerative colitis and Crohn's disease), and hemochromatosis, are increasingly implicated in infertility and early pregnancy loss. The comprehensive understanding of these interconnections is crucial for the effective treatment of subfertility and the overall enhancement of women's reproductive health.

MATERIAL AND METHODS

The study was meticulously designed and conducted in the District Buner of the Malakand Division, situated within the Khyber Pakhtunkhwa province of Pakistan. Encompassing an area of 1865 km^2, Buner is demographically characterized by a population of 506,048 individuals. Geographically, it is bounded by the Swat district to the north, the Malakand agency to the west, the Mardan district to the south, and the Hazara division to the east. The district's coordinates are situated between latitudes 34°11' and 34°43' North, and longitudes 72°13' and 72°45' East.

The methodology of the study involved a series of systematic visits to key healthcare facilities within the district, namely the District Headquarters Hospital (DHQ) Daggar and the Buner Medical Complex (BMC) Daggar. These visits were instrumental in gathering comprehensive data on gynecological health issues prevalent in the region. The research team engaged in detailed discussions with the gynecologists working in these facilities, focusing on gathering in-depth information about the various gynecological problems encountered in the district. Each visit was structured to maximize the collection of relevant data, with a specific emphasis on understanding the causes, prevalence, and the diverse clinical presentations of these gynecological issues under different conditions.

Throughout the study, the researchers adopted a systematic approach to data collection. This involved not only direct consultations with healthcare professionals but also a review of available medical records and patient histories, where permissible. The objective was to develop a comprehensive understanding of the gynecological health landscape in District Buner, considering both the medical and socio-cultural contexts.

Data were meticulously recorded, anonymized, and analyzed. The analysis focused on identifying patterns and trends in gynecological health issues, their etiologies, and the impact on the affected population. The study strictly adhered to ethical standards, ensuring confidentiality and informed consent where direct interactions with patients were involved.

RESULTS

The study conducted in District Buner presents a detailed examination of the prevalence of various gynecological conditions, highlighting significant health concerns for women in the region. One of the most prominent findings is the high prevalence of Polycystic Ovarian Syndrome (PCOS), affecting 52% of the surveyed population. This condition, primarily linked to genetic factors and elevated androgen levels, underscores a critical health issue among women in the area. Additionally, Pelvic Inflammatory Diseases (PIDs), caused by bacterial infections in the upper genital tract, were found in 70% of cases, indicating a pressing need for improved infection control and sexual health education.

Urinary Tract Infections (UTIs), predominantly caused by bacteria such as E.coli, were the most common ailment, affecting 90% of the participants. This high incidence calls for increased public health initiatives focusing on hygiene and early treatment. Anemia, largely due to deficiencies in Vit-B12, iron, and folic acid or malabsorption issues, was observed in 92% of the cases, highlighting the need for nutritional education and supplementation programs. Menstrual irregularities, with a prevalence of 55%, were mainly attributed to hormonal imbalances related to various factors, including eating disorders, weight issues, and other gynecological conditions like PCOS and PIDs.

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Uterine Prolapse and Dysfunctional Uterine Bleeding, reported in 68% and 60% of cases respectively, were linked to factors such as obesity, aging, hormonal abnormalities, and stress. These findings point to the necessity for broader healthcare strategies addressing these underlying causes. Infertility and Subfertility, each with a prevalence of 30%, were associated with a range of issues including PCOS, fallopian tube damage, and ovulatory disorders, emphasizing the need for specialized reproductive healthcare services in the district.

The study also uncovered a high prevalence of Ovarian Cysts (85%) and Mayomas (70%), often related to blockages, cellular defects, and hormonal imbalances. Fibroids, affecting 48% of the participants, were linked to genetic changes and hormone fluctuations. Other notable conditions included Oligomenorrhea (53%), Amenorrhea (25%), Menorrhagia (52%), Polymenorrhea (47%), and Dysmenorrhea (80%), each associated with various hormonal, physical, and environmental factors. These conditions collectively reflect the complex interplay of physiological and lifestyle factors impacting women's gynecological health.

Furthermore, the study highlighted issues like Shorter Menstrual Bleeding (15%), Post-Menopausal Vasomotor Symptoms (45%), and Breast Lumps (60%), indicating a range of reproductive health challenges across different life stages. The prevalence of C-S Cervix (8%), Cervical Polyp (55%), Vaginitis (80%), and Leucorrhea (98%) points to the need for improved screening and treatment for infections and cervical health issues. Primary Amenorrhea was noted in 34% of cases, with causes ranging from congenital anomalies to hormonal disorders. The study also shed light on reproductive complications such as Threatened Abortion (52%), Miscarriage (68%), and Antepartum Hemorrhage (40%), underscoring the critical need for enhanced prenatal and antenatal care.

Table 1 Diseases, causes and prevalence percentage

S.No.	Disease	Main Cause	Prevalence (%)
1	Polycystic Ovarian Syndrome (PCOS)	Genetics and high levels of androgens; exact cause unknown	52
2	Pelvic Inflammatory Diseases (PIDs)	Bacterial infection in the upper genital tract	70
3	Urinary Tract Infection (UTI)	Mostly bacterial infections such as E.coli; fungi can also cause UTIs	90
4	Anemia	Deficiencies of Vit-B12, iron, folic acid, or malabsorption issues	92
5	Menstrual Irregularities	Hormonal imbalances due to various factors including eating disorders, weight issues, PCOS, PIDs, fibroids, etc.	55
6	Uterine Prolapse	Factors like obesity, aging, lack of estrogens, chronic cough, and long-term constipation	68
7	Dysfunctional Uterine Bleeding	Hormonal abnormalities, stress, illness, prolactin elevation, thyroid issues	60
8	Infertility	PCOS, cervical problems, damaged fallopian tubes or uterus, ovulation issues, aging	30
9	Subfertility	Ovulatory disorders, tubal diseases, peritoneal adhesions, uterine abnormalities, endometriosis, sperm issues	30
10	Ovarian Cyst (Benign)	Causes include duct blockages, cellular defects, infections, injuries, parasites, genetic conditions, or tumors	85
11	Mayomas	High levels of estrogen and progesterone, leading to overstimulation in uterine muscle cells	70
12	Fibroids	Genetic changes, hormone fluctuations, increased growth factors in the extracellular matrix	48
13	Oligomenorrhea	Side effects of hormonal birth control, excessive exercise, eating disorders like anorexia and bulimia	53
14	Amenorrhea	Glandular issues affecting hormone regulation, pregnancy	25
15	Menorrhagia	Hormonal imbalance, uterine fibroids, polyps, IUDs, pregnancy complications, cancer, dysfunctional ovaries	52
16	Polymenorrhea	STDs (e.g., chlamydia, gonorrhea), uterine/cervical cancer, steroids, anticoagulant drugs, thyroid issues	47

S.No.	Disease	Main Cause	Prevalence (%)
17	Prolonged Bleeding	Hormonal imbalances, thyroid problems, cervical infections, uterine cancer, fibroids	48
18	Dysmenorrhea	Excessive levels of prostaglandins, use of IUDs	80
19	Shorter Menstrual Bleeding	Anovulation, hyperthyroidism, hypothyroidism	15
20	Post-Menopausal Vasomotor Symptoms	Hormonal fluctuations such as low estrogen, progesterone, prolactin affecting blood pressure and temperature control	45
21	Breast Lumps	Trauma, cysts, fibroadenoma, fat necrosis, fibrocystic breast changes, stress	60
22	C-S Cervix	HPV (Human Papillomavirus) infection, genetics	8
23	Cervical Polyp	Cervical inflammation due to abnormal response to estrogen, especially during delivery	55
24	Vaginitis	Infection by vaginal bacteria (e.g., Gardnerella vaginalis), reduced estrogen levels, skin disorders	80
25	Primary Amenorrhea	Conditions like imperforate hymen, primary ovarian insufficiency, transverse vaginal septum, genetic disorders	34
26	Threatened Abortion	Stress, falls, weak cervix, uterine fibroids, inflammation, fever, physical and mental stress during first trimester	52
27	Miscarriage	Genetic abnormalities in the embryo, thyroid disorders, diabetes, drug abuse, immunological issues	68
28	Antepartum Hemorrhage	Cervical ectropion, vaginal infection, placental issues (e.g., abruption, previa)	40
29	Leucorrhea	Infections like gonorrhea, chlamydia, sexually transmitted bacteria or viruses	98
30	Vaginal Anomaly	Genetic abnormalities, Mayer-Rokitansky-Kuster-Hauser syndrome (MRKH), absence of Müllerian ducts	5

DISCUSSION

The present study, conducted from October 2019 to October 2020 in District Buner, aimed to assess the prevalence and spectrum of gynecological diseases within this region (19). Our comprehensive analysis involved 480 patients, revealing a broad range of 30 distinct gynecological conditions. The findings indicate a significant prevalence of diseases such as Polycystic Ovarian Syndrome (PCOS) at 52%, Pelvic Inflammatory Diseases (PIDs) at 70%, and Urinary Tract Infections (UTIs) at a high 90%. Notably, Anemia was observed in 92% of the cases, underscoring a critical area of concern (20).

The study also highlighted the prevalence of Menstrual Irregularities at 55%, Uterine Prolapse at 68%, and Dysfunctional Uterine Bleeding at 60%. Infertility and Subfertility were both reported in 30% of cases, pointing to significant reproductive health challenges. Ovarian Cysts were found in 85% of the patients, while Mayomas and Fibroids were reported in 70% and 48%, respectively. Other notable conditions included Oligomenorrhea (53%), Amenorrhea (25%), Menorrhagia (52%), and Polymenorrhea (47%) (21).

The incidence of Prolonged Bleeding and Dysmenorrhea was observed at 48% and 80%, respectively (22). Additionally, our findings indicated a prevalence of Shorter Menstrual Bleeding in 15% of the cases, Post-Menopausal Vasomotor symptoms in 45%, and Breast Lumps in 60%. Lower prevalence rates were noted for C-S Cervix (8%) and Vaginal Anomaly (5%), while Leucorrhea was remarkably high at 98% (23). The study further identified a 55% prevalence of Cervical Polyp, 34% for Primary Amenorrhea, and 52% for Threatened Abortion (24). Miscarriage and Antepartum Hemorrhage were reported in 68% and 40% of cases, respectively (25).

These findings underscore the diverse and significant burden of gynecological diseases in District Buner (26). The high prevalence rates of certain conditions like UTIs, Anemia, and Leucorrhea are particularly noteworthy, indicating a pressing need for targeted healthcare interventions and increased awareness (27). The study's comprehensive approach, encompassing a wide range of conditions, provides a valuable insight into the gynecological health landscape of the region. This knowledge is pivotal for developing effective healthcare strategies and policies aimed at improving women's health outcomes in District Buner.

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CONCLUSION

The comprehensive study conducted in District Buner from October 2019 to October 2020 provides critical insights into the prevalence of various gynecological diseases, underscoring the substantial healthcare burden in this region. The findings reveal high prevalence rates for conditions like Polycystic Ovarian Syndrome, Pelvic Inflammatory Diseases, Urinary Tract Infections, Anemia, and Leucorrhea, among others. This highlights a significant need for focused healthcare initiatives, enhanced awareness, and better resource allocation to address these prevalent conditions. The implications of this study extend beyond mere statistical representation; they underscore the urgent necessity for targeted interventions, improved healthcare services, and comprehensive educational programs to mitigate the impact of these gynecological diseases on women's health in District Buner. This study, therefore, serves as a crucial step towards informing policy makers and healthcare providers about the specific needs and challenges in the realm of women's reproductive health in this area.

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