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Socio-demographic Study of Patients with Endometrial Carcinoma in a Tertiary Hospital

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ABSTRACT

Background: Endometrial carcinoma is the most common gynaecological malignancy in developed countries and the sixth most common cancer among women worldwide. The main risk factor is excess endogenous or exogenous estrogen. Its incidence is also rising in low- and middle-income countries, including Bangladesh. Sociodemographic, reproductive, and metabolic factors influence their development and presentation. Limited region-specific data are available to guide interventions in Bangladesh. This study evaluates the sociodemographic, clinical, reproductive, and lifestyle characteristics of patients with endometrial carcinoma in a tertiary care hospital. ***Methods:*** This cross-sectional study was conducted at the Department of Gynaecological Oncology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh, from January 2023 to December 2024. This study included 95 histologically confirmed cases of endometrial carcinoma. Data from the medical records included patient demographics, symptoms, FIGO stage, histological type and grade, reproductive history, comorbidities, and lifestyle factors. Descriptive statistics were used for analyses. ***Results:*** The mean age was 62.1 ± 10.4 years, with 91.58% aged 50 years or above. Most patients were urban residents (75.79%), homemakers (88.42%), and had primary education or no formal education (64.21%). Abnormal uterine bleeding was the primary symptom (86.32%). Most of the patients were diagnosed with FIGO Stage I (64.21%) and endometrioid adenocarcinoma (83.16%). Grade 1 tumors were the most prevalent (45.26%). Most patients were postmenopausal (80.00%) or parous (85.26%), with 37.89% reporting hormonal contraceptive use. Obesity (43.16%), hypertension (28.42%), and diabetes (22.11%) were the common comorbidities. ***Conclusion:*** Endometrial carcinoma in this cohort affected older, urban, and postmenopausal women with low education and metabolic comorbidities. These findings underscore the need for public health strategies focusing on early detection, education, and prevention.

Keywords: *Endometrial carcinoma, Sociodemographic factors, Histopathology, Risk factors, Obesity.*

INTRODUCTION

Endometrial carcinoma takes the position as the most common malignant condition in female reproductive organs globally, while remaining among the six primary cancers affecting women worldwide. The worldwide new case count of endometrial carcinoma increased from 417,336 new diagnoses in 2020, while many low- and middle-income countries experienced rising incidence rates [1]. The prevalence of endometrial carcinoma increases throughout the world due to older population numbers and population movement trends, together with growing obesity and metabolic disease rates.

Endometrial carcinoma tends to develop because of continuous exposure to estrogen without counterbalancing effects that happen through early first menstruation, combined with delayed menopause, childlessness, or obesity. The process of

androgen conversion into estrogens in adipose tissue becomes more frequent because of obesity, resulting in increased endometrial cell proliferation [2]. Endometrial cancer risk becomes more prevalent when individuals present with diabetes mellitus and hypertension, as these conditions combine to raise the susceptibility [3].

Estrangement from childbearing capacities results in changes that affect endometrial cancer probability. Elevated estrogen exposure duration, which results from early onset of menstruation and delayed menopause, functions as a risk-increasing factor. Combined oral contraceptives and higher parity protect against endometrial cancer development because their progestogenic effects reduce the estrogen-induced endometrial proliferation [4,5]. The continuous use of oral contraceptives by 27,000 women throughout five years lowered their endometrial cancer risk by 25%, results that extend beyond the contraceptive period, according to meta-analytic findings [6].

Predictable trends of endometrial cancer occurrence and survival outcomes emerge based on organizational factors such as age, education level, employment status, and urban or rural population classification. The educational level and socioeconomic background of women affect their disease stage at diagnosis according to research studies because they influence health literacy, service access, and symptom-related awareness [7]. The socio-demographic characteristics of endometrial cancer patients in Bangladesh remain poorly documented due to the scarcity of data.

The clinicopathological characteristics of endometrial carcinoma have been studied throughout different regions, yet research about the Bangladeshi demographic remains limited. Patients from neighbouring countries usually experience abnormal uterine bleeding before early-stage diagnosis and show different grades of tumors and histological subtypes based on existing research evidence [8,9]. The distinct characteristics emphasize the importance of conducting region-appropriate investigations to design public health programs and clinical care plans.

The increasing endometrial cancer rates alongside socio-demographic effects on disease manifestation demand comprehensive knowledge about affected populations in Bangladesh. This study investigates the socio-demographic as well as clinical and reproductive history and lifestyle aspects of endometrial carcinoma patients visiting a tertiary hospital in Dhaka. This study aims to identify significant risk factors so programs and policies can be developed for early detection and reduction of endometrial cancer in Bangladesh.

Objective

The objective of this study was to evaluate the socio-demographic, clinical, reproductive, and lifestyle characteristics of patients diagnosed with endometrial carcinoma at a tertiary care hospital in Bangladesh.

METHODOLOGY & MATERIALS

This cross-sectional observational study was conducted at the Department of Gynecologic Oncology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh, from January 2023 to December 2024. A total of 95 patients diagnosed with endometrial carcinoma were included in the study. The study population consisted of women admitted to BSMMU for evaluation and treatment of endometrial carcinoma during the study period. All participants were newly diagnosed and histopathologically confirmed cases.

Sample Selection

Inclusion Criteria:

- Women with histologically confirmed endometrial carcinoma.
- Patients who provided written informed consent.

Exclusion Criteria:

- Women with incomplete medical records.
- Patients with recurrent or secondary malignancies.
- Critically ill patients are unable to provide information.

Data Collection Procedure: The study gathered data through a structured questionnaire and a review of medical records. Information was collected on socio-demographic details, reproductive history, clinical features, histopathological findings, and comorbidities. The questionnaire was administered in person, and clinical data were extracted from patient files. Informed consent was obtained from all participants, and the confidentiality of patient information was strictly maintained throughout the study.

Statistical Analysis: Data entry and analysis were conducted using SPSS software version 25.0. To summarize both categorical and continuous variables, descriptive statistics such as frequencies, percentages, means, and standard deviations

were employed. Where applicable, inferential statistics, including chi-square tests, were utilized to explore relationships between variables. A p-value of less than 0.05 was deemed statistically significant.

RESULTS

Table 1: Socio-Demographic Characteristics of Patients (n = 95)

Variable	Category	Frequency (n)	Percentage (%)
Age Group (years)	<50	8	8.42
	50–59	25	26.32
	60–69	46	48.32
	≥70	16	16.84
Mean Age		62.1 ± 10.4	
Residence	Urban	72	75.79
	Rural	23	24.21
Occupation	Homemaker	84	88.42
	Employed	11	11.58
Education Level	No formal education	24	25.26
	Primary	37	38.95
	Secondary	21	22.11
	Tertiary	13	13.68

Table 1 presents the socio-demographic characteristics of the study population. The mean age was 62.1 ± 10.4 years. Most patients were aged 50 years or older, with the largest group being 60–69 years (48.32%), followed by 50-59 years (26.32%), ≥70 years (16.84%), and <50 years (8.42%). Most patients resided in urban areas (75.79%). Occupationally, 88.42% were homemakers, while 11.58% were employed. For education, 25.26% had no formal education, 38.95% had primary education, 22.11% had secondary education, and 13.68% had tertiary education.

Table 2: Clinical and Histopathological Features (n=95)

Variable	Category	Frequency (n)	Percentage (%)
Presenting Symptom	Abnormal uterine bleeding	82	86.32
	Pelvic pain	7	7.37
	Others	6	6.32
FIGO Stage at Diagnosis	I	61	64.21
	II	14	14.74
	III	11	11.58
	IV	9	9.47
Histological Type	Endometrioid adenocarcinoma	79	83.16
	Serous carcinoma	9	9.47
	Clear cell carcinoma	4	4.21
	Others	3	3.16
Tumor Grade	Grade 1	43	45.26
	Grade 2	36	37.89
	Grade 3	16	16.84

Table 2 outlines clinical and histopathological features. Abnormal uterine bleeding was the main presenting symptom (86.32%), followed by pelvic pain (7.37%) and other symptoms (6.32%). For FIGO staging, most were diagnosed at stage I (64.21%), while stages II, III, and IV accounted for 14.74%, 11.58%, and 9.47%, respectively. Endometrioid adenocarcinoma was predominant, found in 83.16% of cases. Other types included serous carcinoma (9.47%), clear cell carcinoma (4.21%), and different types (3.16%). For tumor grade, Grade 1 was most common (45.26%), followed by Grade 2 (37.89%) and Grade 3 (16.84%).

Table 3: Reproductive and Hormonal History (n=95)

Variable	Category	Frequency (n)	Percentage (%)
Menopausal Status	Postmenopausal	76	80.00
	Premenopausal	19	20.00
Mean Age at Menarche (years)		12.6 ± 1.4	

Mean Age at Menopause (years)		49.5 ± 4.6	
Parity	Nulliparous	14	14.74
	Parous	81	85.26
Use of Hormonal Contraceptives	Yes	36	37.89
	No	59	62.11

Table 3 summarizes reproductive and hormonal history. Most were postmenopausal (80.00%), with the mean age at menopause of 49.5 ± 4.6 years. The mean age at menarche was 12.6 ± 1.4 years. Most patients were parous (85.26%), while 14.74% were nulliparous. Hormonal contraceptive use was reported by 37.89%, while 62.11% had never used them.

Table 4: Comorbidities and Lifestyle Factors (n=95)

Variable	Category	Frequency (n)	Percentage (%)
Obesity (BMI ≥30 kg/m²)	Yes	41	43.16
	No	53	55.79
Hypertension	Yes	27	28.42
	No	68	71.58
Diabetes Mellitus	Yes	21	22.11
	No	74	77.89
Smoking	Yes	2	2.11
	No	93	97.89

Table 4 details comorbidities and lifestyle factors. Obesity (BMI ≥30 kg/m²) was present in 43.16% of patients. Hypertension was documented in 28.42%, and diabetes mellitus in 22.11%. Tobacco smoking was reported by 2.11%, while most patients did not smoke (97.89%).

DISCUSSION

This study presents a comprehensive profile of patients diagnosed with endometrial carcinoma at a tertiary hospital in Dhaka, Bangladesh, emphasizing the complex interplay between socio-demographic, clinical, reproductive, and metabolic factors. This study found that endometrial carcinoma typically occurs in postmenopausal women since the patients had a mean age of 62.1 years, with most participants being older than 50 years. A study by Amant et al. confirmed the same demographics with advancing age demonstrating the highest association to endometrial cancer development [10]. During menopause, the natural ending of regular progesterone cycles leads to the revelation of estrogen's proliferative effects on endometrial tissue because of other present risk factors.

Patients from urban areas predominate across the sample population since these areas have better diagnostic facilities (75.79%). Presented risk factors both point to metabolic disorders and obesity, as well as indicate environmental and lifestyle factors such as stress from reduced physical activity and diets. These elements function as established dangers for endometrial cancer development. The study by Setiawan et al. shows that urban lifestyles and changing socioeconomic structures in low- and middle-income countries have amplified the occurrence of endometrial carcinoma as well as other obesity-related cancers [11]. Women who stayed home or had limited education (no formal or primary) represent 88.42% and 64.21% of the study population, indicating potential economic and social factors that might cause delayed medical help and diagnosis. Crosbie et al. documented a relationship between educational status and health literacy, which impacts cancer outcomes according to their observations [12].

The most prevalent reported symptom for patients was abnormal uterine bleeding (AUB). Clinical research by Clarke et al. found abnormal uterine bleeding in 90% of endometrial cancer patients, highlighting its significance as an early disease warning sign [13]. Among most patients, the diagnostic presentation at FIGO Stage I points to potential medical consultations resulting from AUB symptoms. The number of patients detected at late stages demonstrates why society needs better awareness about the consequences associated with postmenopausal bleeding.

Endometrioid adenocarcinoma appears as the principal histological subtype in 83.16% of cases according to previous research, which demonstrates this type represents 80% of global endometrial cancer diagnoses [14]. Well to moderately differentiated tumors made up most cases since Grade 1 or 2 was found in most instances; such tissue conditions typically exhibit favorable outcomes with early detection. The findings confirmed the Bokhman classification system that distinguishes the two main endometrial carcinoma types as Type I (low-grade estrogen-dependent endometrioid tumors) and Type II (non-estrogen-dependent high-grade tumors) because most of our cases fell under the first category [15].

Australasian College of Family Physicians data demonstrates established hormonal risk patterns since participants reported their reproductive background. 98.26% of patients in the study group experienced menopause along with childbearing, and 14.74% had not given birth. The prolonged exposure to progesterone during pregnancy typically provides protective benefits to parous women but other risk factors might have overridden this protection in this study group. The research participants disclosed using hormones as contraception in 37.89% of cases. Combined oral contraceptives provide a risk reduction of 30–40% for endometrial cancer, but this protection typically lasts over time. The protective effect of pregnancy-related progesterone exposure cannot compensate against primary risks caused by obesity and diabetes [6].

A significant finding from this study shows the extensive metabolic comorbidities that affect patients. Among the study participants, obesity affected 43.16% of patients, while hypertension and diabetes existed in 28.42% and 22.11%, respectively. The study data indicate metabolic syndrome rates similar to South Asian research, which shows higher endometrial cancer incidence as metabolic syndrome prevalence grows [16]. Research shows strong biological support for these results since adipose tissue functions as an endocrine organ to produce estrogen through aromatization and insulin resistance. Chronic inflammation triggers carcinogenesis [17].

The study observed minimal smoking behavior at 2.11% because Bangladeshi cultural traditions influence such habits. Some Western studies have reported an inverse relationship between endometrial cancer development and smoking behavior because nicotine can act as an anti-estrogen compound, but this association has not reached consensus. Smoking does not create clinically meaningful risks since its wider health hazards surpass this finding [18].

This research provides crucial implications that affect public health initiatives. The detection of postmenopausal bleeding needs greater public awareness, especially among poor and uneducated females. Health providers should embed cancer education material into their primary care practice and maternal healthcare operations. Targeted prevention approaches that address obesity and diabetes need to be implemented as part of prevention efforts because they represent modifiable risk factors. The implementation of community-based weight management and physical activity, along with dietary awareness programs, takes precedence.

CONCLUSION

This study shows that endometrial carcinoma mainly affects older, postmenopausal, urban women with low educational attainment. Abnormal uterine bleeding was the primary symptom, with endometrioid adenocarcinoma being the main histological type. Obesity and related comorbidities were prevalent, highlighting the need for prevention. Early detection and targeted public health interventions are crucial to improving outcomes.

Limitations and recommendations

This study was conducted at a tertiary care center with a small sample size, limiting the generalizability of the results. The retrospective design restricted the assessment of causal relationships. Future research needs larger, multicentric, prospective studies to confirm findings. The focus should be improving public awareness, providing early diagnostics, and addressing modifiable risk factors through prevention programs.

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