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Correlation between Socioeconomic Status and Patterns of Drug Usage across Various Stages of Breast Cancer Patients

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Abstract

The purpose of the present study was to investigate the correlation between the socioeconomic status and the breast cancer stage at diagnosis with beneficial treatment pattern. The cancer hospitals in which eligible breast cancer patients were diagnosed and undergo with follow-up were reviewed. Socioeconomic indicators were used to calculate by cluster of comparative analysis. The associations between socioeconomic status and stage at diagnosis were analyzed by "COUNTIF" and "COUNTIFS" functional calculation through EXCEL 2007. The statistical results were performed to estimate ratio for individual demographic characteristics effects on cancer stages at diagnosis level and survival rate of the breast cancer patients. The individual demographic and pathologic characteristics of breast cancer cases were significantly influenced on patient survival rate. Here among the studied sample 76.12% patient came from the higher SES who continued their treatment protocol and were in 2-5-year survival range. For the treatment protocol out of 75 samples treated with 81.33% Doxorubicin, 74.67% 5FU and cyclophosphamide as 6th cycle of chemotherapy (FDC). For reduced the side effect of chemotherapy prechemotherapy was given 84% "Dexamethasone" as steroids, 54.67% "Granisetron" as antiemesis and 74.33% "Ranitidine" as antihistamine drugs used significantly among the sample. Few people were taken post chemotherapy 9.33% taken normal saline regarding their physical condition. This research would facilitate diagnosed at an early stage, particularly for populations living at deprived SES and decrease breast cancer mortality and improve surviving rate.

Keywords: Breast cancer; Grading; Socioeconomic status; Retrospective study; Chemotherapy; Survival rate

Introduction

Breast cancer is a malignant tumor originating from breast cells, typically starting in the inner lining of milk ducts or lobules. Risk factors include DNA damage and genetic mutations, with estrogen exposure being linked to increased risk. Individuals with a family history of ovarian or breast cancer are at an increased risk due to inheritance of DNA and gene defects. The immune system's failure to effectively destroy cancer cells and damaged DNA may lead to breast cancer, influenced by the disruption of growth factor and other signaling systems. It is estimated that in the United States 209,060 cases of breast cancer will be diagnosed and 40,230 people will die from this disease in 2010. Breast cancer is the most common cancer among women, with mortality decreasing due to early detection, advanced diagnostics and improved treatment. Screening methods include self-examination, clinical examination and mammography. Advances in breast cancer treatment are facilitated by the knowledge gained from tumor biopsy and pathology. These techniques allow doctors to develop individual treatments for each patient based on their distinctive tumor biology. Tests used in breast cancer detection and diagnosis are breast exam, mammography, ultrasound, breast MRI, fine needle aspiration, core needle biopsy, breast tumor pathology, sentinel lymph node biopsy. A multidisciplinary team is involved in a breast cancer patient's treatment. The team may consist of an oncologist, radiologist, specialist cancer surgeon, specialist nurse, pathologist, radiologist, radiographer and reconstructive surgeon. The team will take into account several factors when deciding on the best treatment for the patient, including surgery, radiation therapy, chemotherapy, hormone therapy and targeted therapy. Breast cancer, accounting for 22.9% of all cancers in women, caused 458,503 deaths in 2008, with 23% in Bangladesh being a leading cancer, with 70% dying due to lack of treatment. The study aimed to analyze the correlation between disease states and treatment protocol, considering socioeconomic diagrams and compare treatment variations among a multidisciplinary team treating breast cancer patients. Breast cancer treatment depends on factors like type, stage, grade, hormone sensitivity, patient's health, age and personal preferences. Surgery is the first step, followed by radiotherapy and chemotherapy. Chemotherapy is recommended for high risk, large tumors, metastasized cancer and reducing symptoms. Hormone therapy is used for hormone-sensitive breast cancers, known as ER and PR positive. Hormone blocking therapy, targeted therapy like Trastuzumab, Lapatinib and Bevacizumab, is used post-surgery to prevent cancer recurrence in breast cancer treatment [1].

A study in England found that socioeconomic status significantly impacts breast cancer diagnosis, tumor stage and 5-year survival rates. Living in deprived areas increased the likelihood of stage III or IV disease, reduced surgery and increased mortality. Canadian clinical oncologists often use antracyclines-taxanes for triple-negative breast cancer, despite poor prognosis. Early detection was lower among Hispanic and black women. Tomi, et al.'s 2013 study found that black women have a 53% higher mortality rate from breast cancer and 32% more from any cause compared to white women. This disparity is due to individual socioeconomic status, not all-cause mortality. In China, women with lower socioeconomic status are more likely to be diagnosed at later stages, with partial mastectomy being the most common treatment. The study aimed to identify the relationship between factors affecting breast cancer management and disease management, comparing different diagnosis stages, nutritional stages and physical status. It investigated the relationship between social deprivation indexes and increased awareness of breast cancer among all socioeconomic levels. The study encouraged healthcare providers and governments to prioritize early diagnosis and proper palliative care for healthy lives and increased survival rates [2].

Materials and Methods

A prospective analysis of retrospective data from 100 breast cancer patients at Ahsania Mission Cancer General Hospital in Mirpur, Dhaka, spanning 2010-2012, aims to compare the sample in the institution. Random sampling and retrospective data are collected for the studies. The research proposal was approved by a supervisor, formal permission was obtained from the director of Ahsania Mission Cancer General Hospital (AMCGH) and data was collected from the hospital's registered records. The study spanned from March 2012 to April 2013, with four months dedicated to research proposal approval, topic selection, protocol development, official communication, data collection, analysis, report writing and submission. As the study involved anonymized questionnaire-based data analysis, the study did not engage any direct communication with the patient or with the attendance of the hospital. The study analyzed retrospective data of breast cancer patients in a hospital, focusing on factors like age, BMI, menstruation cycle history, family income, cancer history, family size and past illness history in relation to disease conditions. Data was analyzed by the "COUNTIF" and "COUNTIFS" functional calculation system to make a comparative relationship among the factors and disease through the Microsoft excel software through which all the parameters were allied with disease state. Time limitations in clinical studies can lead to standard deviations, standard errors and impacted results. All-time records data maintenance can also affect data analysis, affecting the study's accuracy and ultimate goals [3].

Results

In the clinical based survey 100 samples of female women patients collected who were suffering at different stages of breast cancer through random sampling during one year study period according to method discussed earlier [4].

Age distribution of breast cancer patients

The prevalence of breast cancer in female patients was tabulated and graph was drawn as follow:

From the Table 1, it was observed that the most significant portion (50%) of female affected were in age in the range between ≥ 46. The second largest portions (48%) were in age range 31-45 yr and rest of the part is (2%) age range 18-30 yrs [5].

Sl. no	Age distribution	Percentage (%)
1	18-30 yr	2
2	31-45 yr	48
3	≥ 46	50

Table 1: Age distribution of breast cancer patients (n=100).

Educational status of breast cancer patients

From the below Figure 1 it was observed that, the highest range of patients (45%) were at higher school grade level, second highest range of patients came from primary school level (21%) and the prevalence of illiterate, SSC, graduate level was respectively 1%, 16%, 17% [6].
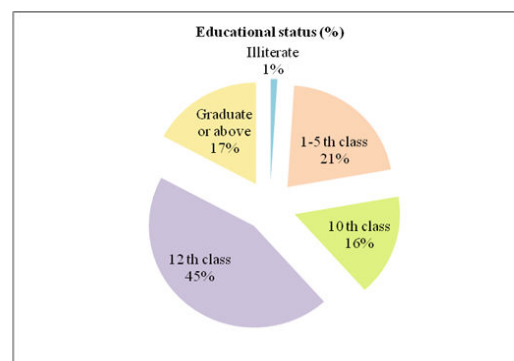

Figure 1: Prevalence of educational status of breast cancer patients (n=100).

Socioeconomic status of breast cancer patients

From the below Figure 2 it showed that income range above 1, 00,000 patients were large number (67%) who came to continue the treatment. The other patients range of income 25,000-49,999 (17%), 10,000-24,999 (9%) and below 10,000 (3%) within the studied sample [7].

Figure 2: Percentage of socioeconomic status of breast cancer patients (n=100).
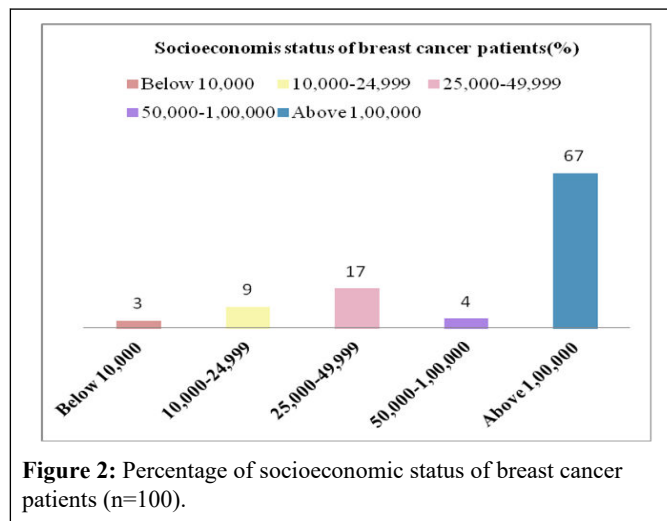
Comparison study of number of patients 2-5 yrs survival rate with different range of socioeconomic status

From the Table 2, it observed that, in 57 patients 2-5 yrs 51 patients were came from higher income range (76.12%). 11.76% from 25,000-49,999 and 11.11% from 10,000-24,999 [8].

Sl. no	Socioeconomic status	Number	No with range	Percentage (%)
1	Below 10,000	3	3	100
2	10,000-24,999	9	1	11.11
3	25,000-49,999	17	2	11.76
4	Above 1,00,000	67	51	76.12
		Total=96	Total=57	

Table 2: Comparison with 2-5 years survival range among socioeconomic status variable.

Prevalence of history of family planning

From the Table 3 it has been observed that 35% patients use OCP and 12% patient uses other methods and 53% were did not go through this [9].

Sl. no	Oral contraceptive pill	Percentage (%)
1	Yes	35
2	Other	12
3	No	53

Table 3: Prevalence of history of family planning (n=100).

Prevalence of history of menstruation cycle

From the Figure 3 it observed that 35% patients continue their menstruation cycle, 43% patients undergo menopause and 22% patients have complication in the sample [10].

Figure 3: Prevalence of history of menstruation cycle (n=100).
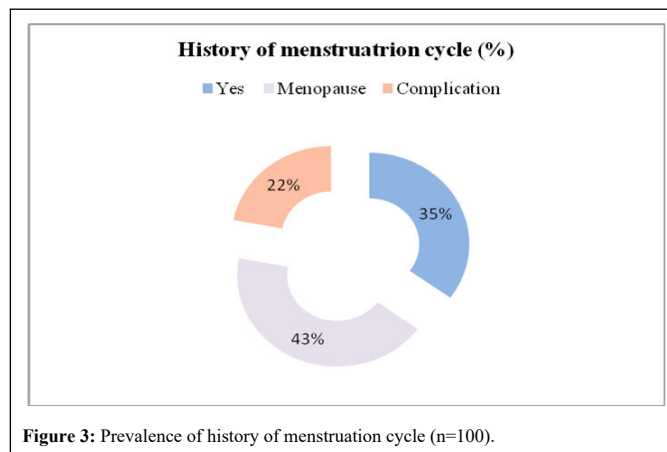
Prevalence of body mass index of breast cancer patients

From the Table 4 it observed that 8%, 56%, 26% and 10% patient were among the sample respectively underweight, normal weight, over weight and obese [11].

Sl. no	BMI	Percentage (%)
1	Under weight	8
2	Normal weight	56
3	Over weight	26
4	Obesity	10

Table 4: Prevalence of body mass index of breast cancer patients (n=100).

## Prevalence of history of coexistence disease of breast cancer patients

From the Table 5 it shown that 54% patients in the sample have no coexistence disease before yet and 46% people presence of co-existence disease [12].

Sl. no	Co-existence disease	Percentage (%)
1	Absent	54
2	Present	46

Table 5: Prevalence of history of co-existence disease (n=100).

Prevalence of family history of cancer

From the Figure 4 it observed that only 8% patients in the sample have family history of cancer. 92% populations in the sample have not any family of cancer [13].

Figure 4: Prevalence of family history of cancer (n=100).
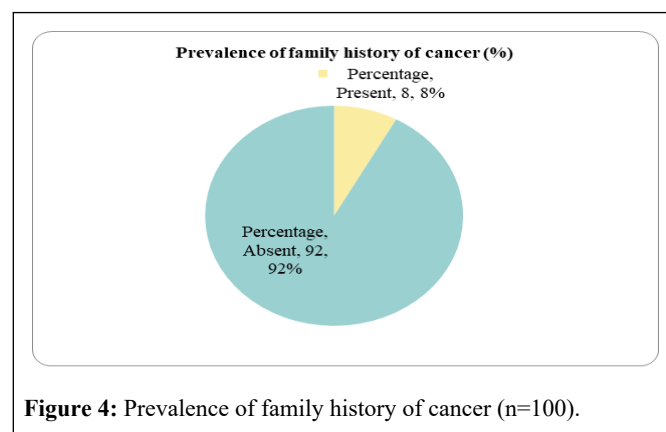
Prevalence of clinical features of breast cancer women

From the Figure 5 it observed that 25% patients have (no lump) only palpable lymph node, pain and swelling symptoms are present,

21% have mixed clinical features,19% patients have (Lump+palpable lymph node+pain), 14% patients have lump in the breast features among the sample. Only 5% have (Lump+chest pain+burning sensation) symptoms [14].
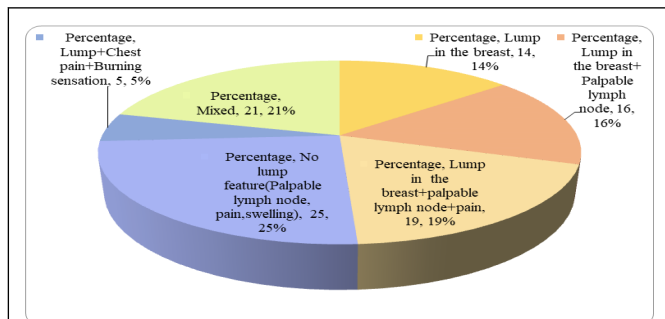

Figure 5: Prevalence of clinical features of breast cancer women (n=100).

Presentation at diagnosis of breast cancer patients

From the Figure 6, it observed that 37% patients were diagnosed with (tumor with lymph node) diagnosis level, 29% patients' diagnosis were unknown, 22% patients were metastasis level and rest of the 7%, 5% respectively were primary and regional lymph nodes level.
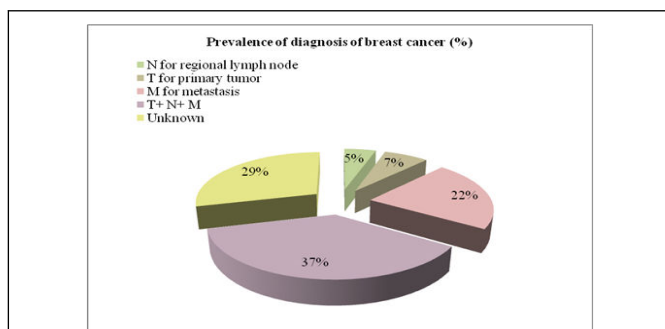

Figure 6: resentation at diagnosis of breast cancer patient (n=96).

Staging of breast cancer patients

From the Figure 7, it stated that 44% patients under stage III diagnosed level of cancer. 19%, 6%, 5% and 26% were under stage II, stage IV, stage I and unknown staging level.
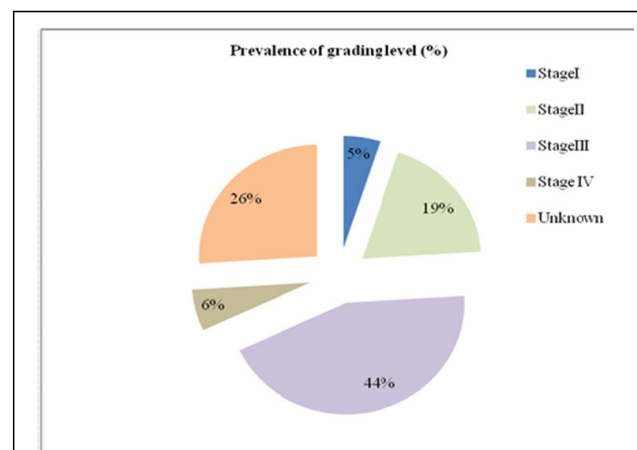
Figure 7: Staging of breast cancer (n=96).

Prevalence of treatment protocol of breast cancer patients

From the Table 6, it observed that 39% taken chemotherapy and undergoes surgery, 36% taken chemotherapy followed by radiotherapy and surgery. In the sample 17% only undergo operation 8% have taken anothepes of treatment protocol [15].

Sl. no	Treatment received	Percentage (%)
1	Operation+Chemotherapy	39
2	Operation+Chemotherapy+Followed by radiotherapy	36
3	Operation	17
4	Other	8

Table 6: Prevalence of treatment protocol (n=100).

Prevalence of survival rate of breast cancer patients

From the Table 7 it observed that 34% patients <2 yrs survival, 57% patients 2-5 yrs survival and 9% patients >5 yrs survival.

Sl. no	Duration of illness	Percentage (%)
1	<2 yr	34
2	2-5 yr	57
3	>5 yr	9

Table 7: Prevalence of survival rate of breast cancer patients (n=100).

Comparison with age range with complicated history of menstruation cycle

From the Table 8, it observed that 28% patients came from $\geq$ 46, 15.09% patient came from 31-45 age range.

Age range	Number	Patients with complication	Percentage (%)
18-30 yr	2	0	0
31-45 yr	48	8	15.09
$\geq$ 46 yr	50	14	28
	Total=100	Total=22	

Table 8: Comparison with complicated history of menstruation cycle with age.

Comparison with the diagnosis level with the history of OCP

From the Figure 8 it observed that 37.84 of the patient's used OCP with diagnosed breast cancer (Tumor+lymph node+metastasis level) and 41.38% patient's diagnosis was unknown.
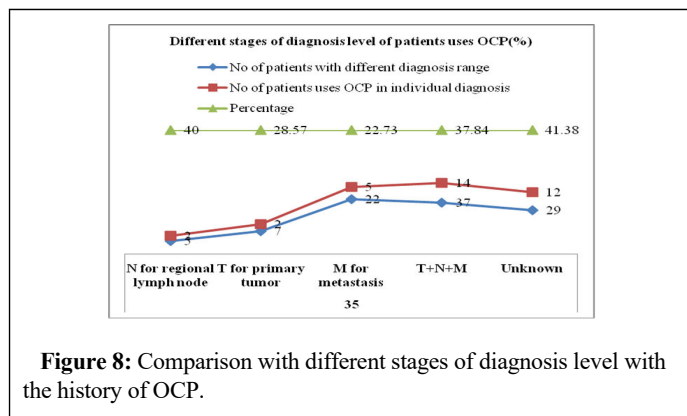
OCP=Oral contraceptive pill.

Figure 8: Comparison with different stages of diagnosis level with the history of OCP.

Comparison with patients continues MC with history of clinical features

From the Figure 9 it observed that 42.105% patients had (lump, pain and palpable lymph node) clinical features who continued their menstruation cycle in the sample and 47.619% patients mixed clinical features, 35.71% lump in the breast, 31.25% (lump, palpable lymph node), 24% (no lump) and 20% (lump, chest pain, burning sensation) [15].

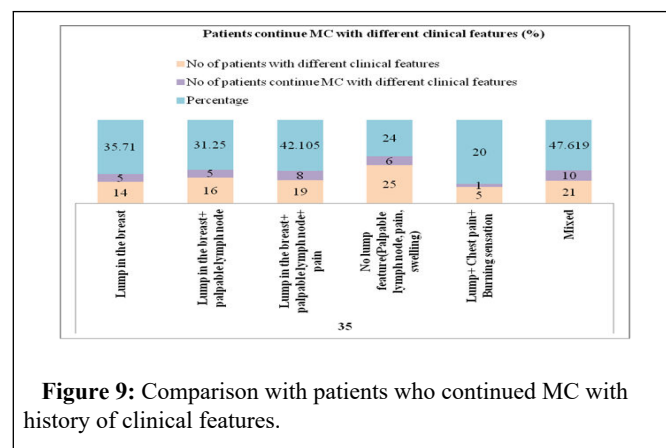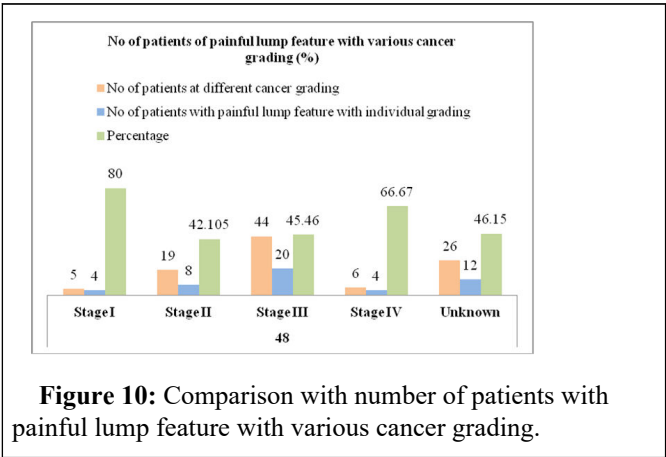**Figure 9:** Comparison with patients who continued MC with history of clinical features.

Comparison with patients of painful lump feature with various grading stage

From the Figure 10, it observed that in stage I 80% were painful lump feature, 42.105%, 45.46%, 66.67% and 46.15% patients were painful lump feature respectively grading category were stage II, stage III, stage IV and unknown.

Figure 10: Comparison with number of patients with painful lump feature with various cancer grading.

Figure 11: Comparison patients with coexistent disease with various clinical features.

Comparison patients with coexistence disease with various clinical features

From the Figure 11, it observed that out of 46 patients with coexistence disease 57.14% (mixed), 52% (no lump feature), 50% (palpable lymph node 47.368% (lump in the breast, palpable lymph node, pain), 28.57% (lump in the breast) clinical features were present among the sample.
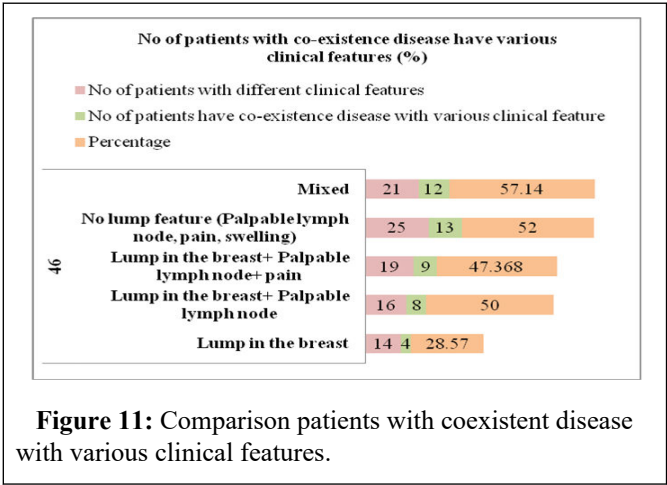
Comparison with patients suffered level of diagnosis with age range ≥ 46

From the Table 9, it observed that out of 50 patients age range ≥ 46, 71.43% patients were in tumor level, 68.18% in metastasis level, 51.35% were in (T+N+M) 34.48% were in unknown diagnosed, 20%in regional lymph node level.

Diagnosis level	No.	Dx level with age ≥ 46	Percentage (%)
N for regional lymph node	5	1	20
T for primary tumor	7	5	71.43
M for metastasis	22	15	68.18
T+N+M	37	19	51.35
Unknown	29	10	34.48
	Total=100	Total=50	

Table 9: Comparison with patients suffered level of diagnosis with age range ≥ 46.

Comparison with patients received treatment protocol with stage III

From the Figure 12, it observed that out of 44 patients at stage III, 50% patients taken (Operation+CT+Followed by RT), 48.72% taken (Operation and CT) for the remedies from cancer [16].

Figure 12: Comparison with patients received treatment protocol with stage 3.
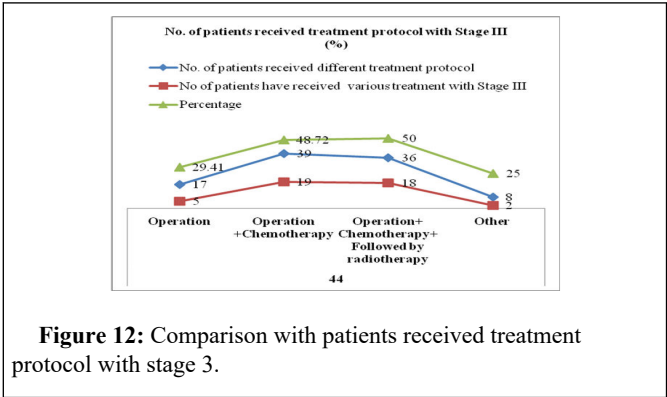
Comparison of patients with coexistence disease and menopause under different diagnosis level

From the Table 10 it, observed that patient with coexistence disease and menopause 42.857% patients were in tumor diagnosis level, 27.28% patients were in metastasis level, 17.24% patient diagnosis was unknown 13.51% was (T+N+M).

Diagnosis	Number	CED and MC under Dx level	Percentage (%)
T for primary tumor	7	3	42.857
M for metastasis	22	6	27.28
T+N+M	37	5	13.51
Unknown	29	5	17.24
	Total=95	Total=19	
Note: CED: Co-Existence Disease; MC: Menstruation Cycle; Dx: Diagnosis			

Table 10: Comparison of patients with coexistence disease and menopause under diagnosis level.

Comparison with OCP used patients and painful lump feature with different treatment pattern

From the Table 11 it observed that patients used OCP and lump features 41.76% have taken operation, 20.51% have taken operation and chemotherapy and 13.89% have taken operation, chemotherapy and radiotherapy [17].

Treatment protocol	Number	OCP with PLF and TP	Percentage (%)
Operation	17	7	41.76
Operation+CT	39	8	20.51
Operation+CT+Followed by RT	36	5	13.89
	Total=92	Total=20	
Note: TP: Treatment Protocol; OCP: Oral Contraceptive Pill; PLF: Painful Lump Features			

Table 11: Comparison with OCP used patients and painful lump feature with different treatment pattern.

Comparison of patients with menopause and stage III with clinical features

From the Table 12, it observed that patient with menopause and stage III 80% have (lump, chest pain, burning sensation), 21.42% have lump in the breast, 20% have no lump feature (palpable lymph node, pain and swelling), 18.75% have (lump in the breast, Palpable lymph node) 15.78% have (lump in the breast, palpable lymph node and pain) and 4.76% have mixed clinical features.

Clinical features	Number	MC and stage III with C/F	Percentage (%)
Lump in the breast	14	3	21.42
Lump in the breast+Palpable lymph node	16	3	18.75
Lump in the breast+Palpable lymph node+pain	19	3	15.78
No lump feature (Palpable lymph node, pain, swelling)	25	5	20
Lump+chest pain+burning sensation	5	4	80

Mixed	21	1	4.76
	Total=100	Total=19	
Note: MC: Menstruation Cycle; C/F: Clinical Features			

Table 12: Comparison of patients with menopause and stage III with clinical feature.

Comparison of patients with age range 31-45 yr use OCP with painful lump feature with treatment protocol

From the Table 13, it observed that patients with 31-45 age range, used OCP and have painful lump feature 29.41% received operation, 20.51% received operation and chemotherapy and 8.33% have received operation, chemotherapy and radiotherapy [18].

Treatment protocol	No.	31-45 yr, OCP and PLF comparison TP	Percentage (%)
Operation	17	5	29.41
Operation+CT	39	8	20.51
Op+CT+Followed by RT	36	3	8.33
	Total=92	Total=16	
Note: OCP: Oral Contraceptive Pill; PLF: Painful Lump Feature; Op: Operation; CT: Chemotherapy; RT: Radiotherapy; TP: Treatment Protocol			

Table 13: Comparison of patients with age range 31-45 yr use OCP with painful lump feature with treatment protocol.

Comparison with patients of T+N+M diagnosis level with treatment protocol with survival rate

From the Table 14, it observed that patients with T+N+M diagnosis level, have received operation, chemotherapy and radiotherapy among the sample 33.33% were under the range of >5 years survival rate, 23.529% were <2 year survival rate, 7.02% were in 2-5 year survival rate.

SR	No.	(T+N+M), TP, With SR	Percentage (%)
<2 yr	34	8	23.53
2-5 yr	57	4	7.02
>5 yr	9	3	33.33
	Total=100	Total=15	
Note: TP: Treatment Protocol; SR: Survival Rate; Dx: Diagnosis; CT: Chemotherapy; RT: Radiotherapy			

Table 14: Comparison with patients of T+N+M diagnosis level with treatment protocol with survival rate.

Prevalence of pre chemotherapy drug of breast cancer patients

From the Table 15, it observed that out of 75 samples received chemotherapy 84% treat with dexamethasone, 74.67% treat with ranitidine, 69.33% normal saline, 54.67% granisetron, 38.67% promethazine,18.67% palonosetron, 16% ondansetron, 6.67% omeprazole, 4% promethazine, 4% DA, 1.33% methandienone have taken prechemotherapy medication.

Sl. no	Category	Generic name	No.	Percentage (%)
1	Steroid hormone	Dexamethasone	63	84

2	Antihistamine	Ranitidine	56	74.67
3	Normal saline	-	52	69.33
4	Antiemesis	Granisetron	41	54.67
5	Antihustamine with anticholinergic	Promethazine	29	38.67
6	Antiemesis	Palonosetron	14	18.67
7	Antiemesis	Ondansetron	12	16
8	Proton pump inhibitor	Omeprazole	5	6.67
9	5% DA	-	3	4
10	Neuroleptic	Promethazine	3	4
11	Steroid hormone	Methandienone	1	1.33

Table 15: Prevalence of different category pre-chemotherapy drug used of breast cancer patients in the sample studied (n=75).

Prevalence of chemotherapy received of breast cancer patients

From the Table 16, it observed that out of 75 samples taken chemotherapy 81.33% treat with doxorubicin, 74.67% treat with cyclophosphamide and 5 flurouracil, 21.33% docetaxel, 17.33% tablet tamoxifen, 8% pacitaxel, 6.67% epirubicine, 4% cisplatin and carboplatin, 2.67% tab letrozole, 1.33% methotrexate and capecitabine.

Sl. no	Category	Generic name	Number	Percentage (%)
1	Antibiotics	Doxorubicin	61	81.33
2	Antimetabolites	5FU	56	74.67
3	Alkylating agent	Cyclophosphamide	56	74.67
4	Antimiotic	Docetaxel	16	21.33
5	Antiandrogen	Tab tamoxifen	13	17.33
6	Antimiotic	Pacitaxel	6	8
7	Anthracycline	Epirubicine	5	6.67
8	Miscellaneous	Cisplatin	3	4
9	Miscellaneous	Carboplatin	3	4
10	Antineoplastic agent	Tab Letrozole	2	2.67
11	Antimetabolites	Methotrexate	1	1.33
12	Antimetabolites	Capecitabine	1	1.33

Table 16: Prevalence of chemotherapy received of breast cancer patients (n=75).

Prevalence of post chemotherapy of breast cancer patients

From the Figure 13, it observed that out of 100 patients 75 have taken chemotherapy and within them have taken post chemotherapy drugs 9.33% normal saline, 5.33% Fidaplex, 4% vitamin B complex, Furosamide, Filgrastrim and 1.33% Lenograstrim, Granisetron, Palonosetron.

Figure 13: Prevalence of pattern of post chemotherapy drug used in breast cancer (n=75).
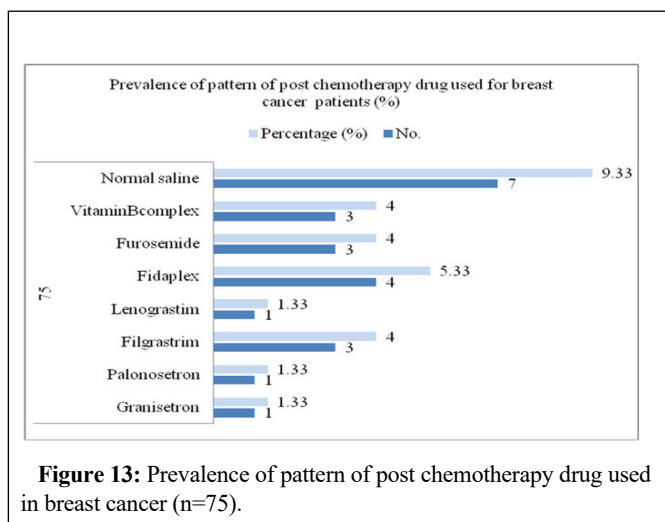
Discussion

Breast cancer is the one of the leading causes of death for women in the world. The study quantify the prevalence of various factors and disease stages within the hundred samples which taken from a cancer treatment institute.

Prevalence of age distribution

From the Table 1, half of the women (50%) were coming from the ≥ 46 age range. So the risk of developing of breast cancer increases for older patients. It observed that older patients with high BMI level, complicated history of menstruation such as (amenorrhea), complicated condition of chronic disease (e.g. uncontrolled diabetes, liver cirrhosis), long term used steroids and hormonal imbalance (ER, HER, PR) also the predisposing factors for causing the breast cancer like this age range women.

Prevalence of educational status

In the studied sample from the Figure 1, the prevalence of education 45% patients were studied up to HSC level. It assumed that the women were less conscious about their health care and most of them were house maker. This was also similar to a 10 years survey studied on breast cancer in China.

Prevalence of history of OCP, BMI, family cancer, coexistence disease, menstruation cycle

From the Table 4, prevalence of BMI 8% patients were under weight, 26% overweight and 10% obese patients. So, it predicted that obese women produce more estrogen, which can fuel the development of breast cancer and overweight patients also had the risk of cancer. From the Figure 4, it showed that 8% patients had the family history of cancer (such as ovarian, pancreases, breast cancer).

From Figure 3, another important factors history of menstruation cycle, out of 100 samples 22% had complication, 43% menopause and 35% continued their menstruation cycle. So, it concluded that after menopause, late menopause early periods it was increasing the risk of developing breast cancer for women (especially at previous complicated history).

Influence of socioeconomic status in the breast cancer women

The socioeconomic status of the studied sample Figure 2 showed that 67% patients came from the monthly family income range above 1,00,000. So above correlation it concluded that better socioeconomic status help to increase the survival rate of the breast cancer and get a desirable treatment. It could assume that for the cancer treatment patients need to have economical sufficiency to continue the desirable treatment. Because chemotherapy drugs were taken 6th cycle for completing the treatment protocol, this drugs were highly expensive and physicians need the recent investigation test records for continuing the treatment protocol. Patient was facing difficulty to continue their treatment as well. In China 10 years studied on breast cancer patients observed that low SES of patients were significantly influenced the diagnosis of breast cancer in women at early stage.

In England this types of similar study resulted that living in more deprived area increased mortality and reduced taking the rate of surgery and receiving radiotherapy and SES affected the stage of diagnosis, tumor stage, and 5 year survival rate in breast cancer patients. Similarly this study in Table 7 showed the same result when the survival rate was compared with SES, 76.12% patients came from better economical condition. So, socioeconomic diagram play statistically significance role in breast cancer disease among studied sample.

Comparison with factors and disease state

The comparative studied between BMI and history of menstruation cycle, Table 4, it observed that 36% patients with high BMI level influence and complicated menstruation cycle and it was the one of the risk factors for breast cancer.

From the Table 5, 54% patients with co-existence disease and overweight range so, it assumed that disease profiles and BMI level an influencing factor for development of breast cancer.

Prevalence of clinical features, lump features, diagnosis, grading of breast cancer women

From the Figure 5, prevalence of clinical features of breast cancer patients 25% patient had no lump feature (Palpable lymph node, pain and swelling), 21% patients had mixed features and 19% (lump, palpable lymph node pain) features. In breast cancer related article, it showed that as the cancer grows, symptoms may lump in the breast occur, change in the size, shape or feel of the breast or nipple and advanced breast cancer may include pain (specially chest pain, abdominal pain and bone pain), ulcers, swelling.

Figure 6, prevalence of diagnosis level 37% patients were diagnosed cancer at tumor lymph node, 29% diagnosed were unknown. So, it concluded among the sample delayed of diagnosis is the one of the prime impingement for the successful treatment strategy of breast cancer.

From the Figure 7, prevalence of grading observed that, 44% patients under stage III level of breast cancer. So it assumed that large numbers of patient in the sample cancer staging were poorly diagnosed level, because of delayed in early diagnosis of disease.

Correlation with factors, diagnosis, treatment protocol and survival rate of breast cancer patients

Comparison with OCP between diagnosis levels in the studied Figure 8, 37.84% and 41.38% patients used long term OCP had respectively (T+N+M) and unknown level of diagnosis. Uses of OCP were the risk factor for the breast cancer which influences the diagnosis level of cancer. OCP abuses patients 47.619% had mixed clinical features.

Comparison between continued menstruation cycles and clinical features among the figure 9, it showed that 47.619% had mixed and 42.105% had (Lump, palpable lymph node and pain) features. So, breast cancer women who continue their menstruation cycle had higher risk of these types of clinical features.

Comparison with painful lump feature and staging Figure 10, it observed that 80% patients came from stage I and 66.67% came from stage IV. So it concluded that painful lump features were more common in stage I among the sample.

Comparison with CED and clinical feature Figure 11, observed that 57.14% patients among sample mixed and 52% had no lump (palpable lymph node, swelling). So it might be difficult to predetermine the specific clinical feature for patients with CED.

Comparison with diagnosis and age ≥ 46 Table 9, 71.43% were primary tumor level and 68.18% had metastasis level. Comparison with stage III and lump variations it Table 9 it observed that 46.43% patients were no lump in diagnosis. From the Table 6, prevalence of received the treatment protocol 39% patients taken operation and chemotherapy and 36% patients taken chemotherapy followed by radiotherapy among the studied sample.

From the Table 7, prevalence of survival rate 57% patients were 2-5 year survival range and 34% <2 year undergoes follow up. So it concluded that if the breast cancer diagnosed properly patients remain survived and treatment protocol succeed. The comparison with treatment protocol with staging at stage III Figure 12, observed that 50% patients taken (operation+CT+followed by RT). In similar article of breast cancer it showed that at stage III treatment involved surgery, followed by chemotherapy hormone therapy and biologic therapy.

Comparison with patients had menopause and CED Table 10, it observed that 42.857% patients had primary tumor level. Factors were OCP with painful lump feature when compared with treatment protocol Table 11 it observed that 41.76% taken operation. Factor were menopause and grading III Table 12, it observed that 80% patients among the sample had (Lump, chest pain, burning sensation) clinical features.

Comparison with factors 31-45 year age range patients with used OCP and painful lump feature Table 13, 29.41% patients taken operation (lumpectomy, mastectomy). From the Table 14, comparison with T+N+M diagnosis level taken treatment (operation, chemotherapy and followed by radiotherapy) 33.33% patients survival >5 year among the sample. So, it observed that in this treatment pattern improved the disease condition and enhanced the survival rate.

Prevalence of pattern of drug used in breast cancer women

From the Table 15, the treatment strategy of patients taken different types of prechemotherapy drugs among them taken 84% dexamethasone, 74.67%, ranitidine, 69.33% normal saline, 54.67% granisetron was significant. Before given chemotherapy most of the patients treatment by antiemesis drugs for avoiding the vomiting and antihistamine, steroids for allergic reaction, saline for nutritional support to avoid the diminished condition of chemotherapy.

From the Table 16, prevalence of chemotherapy drugs among them taken 81.33% Doxorubicin, 74.67% 5FU and cyclophosphamide were significant. FDC (5FU+Doxorubicin+Cyclophosphamide) antimetabolites, antibiotics, alkylating agent used as chemotherapy drugs to suppressed the tumor. 17.33% taken tablet Tamoxifen (antiandrogen), in another similar related article it showed that, it approved for breast cancer prevention in women aged 35 and older who were at high risk.

Fewer patients have taken post chemotherapy drugs. This depends on patient age, nutritional condition, physical stability (e.g. HB level, blood counts and body weight) and patient compliance with chemotherapy. From the Figure 13, studied sample 9.33% taken normal saline, 4% Filgrastrim, vitamin B, furosemide as post chemotherapy drugs.

Conclusion

In summary, the effects based on Socioeconomic Status (SES) were complex and multidimensional. Women in lower SES areas may be more likely to ignore symptoms for a variety of economic, social and cultural reasons. Women in lower SES areas tend to be less educated and may not understand disease progression, may not seek treatment until developing of cancer at later stage. The available research data for effective and efficient cancer control decision making were extremely limited in these courtiers. This research study suggested that developing countries socioeconomic conditions, breast cancer control programs should focus on ensuring adequate access to screening and improving breast cancer awareness and education. This would facilitate diagnosed at an early stage, particularly for populations living in deprived areas and would in turn decrease breast cancer mortality and improve surviving patients' quality of life.

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