

**EVALUATION OF BENIGN BREAST DISEASES, A CROSS-SECTIONAL STUDY AT AL-KADHMIN MEDICAL CITY****\*Alani M., Talib S. and Al-Bassam S.**

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**ABSTRACT**

**Background:** a retrospective cross-sectional study of benign breast diseases concerned with their frequencies and risk factors conducted in Alkadhmain Medical City /breast clinic based on the data available in their archives between Jan 1st, 2015 to Feb 1st, 2016. **Methods:** all the (100) females included in this study had breast complaints. Histological and radiological investigations were done, and they were labeled according to BI-RADS classification and Page's classification of benign breast diseases. **Results:** 85% of all patients of benign breast disease fall in the reproductive age group of 15-40 years. A majority (38.75%) of them belong to the age group of 20-30 years, 87% were married. There was no correlation between BBD and educational level ( $p$  value < 0.05) compared to a study that showed that a higher level of education was positively related to fibrocystic breast disease but not fibroadenoma. 21% of BBD patients only received OCP. 81% with previous pregnancy and lactation. Family history of breast malignancy the majority, and it showed no correlation 4% smoking with no correlation and similar results in a study. **Conclusion:** OCP use and family history of breast cancer are not significant risk factors for benign breast diseases in this study.

**KEYWORDS:** Benign breast diseases, BBD, risk factors, screening.**INTRODUCTION**

Benign breast disease this is the most common cause of breast problems; up to third of the women will have a benign breast disorder requiring treatment at some time during their lives. The most common symptoms are pain, lumpiness, or mass. The aim is to exclude cancer and, once this has been done, to treat any remaining symptoms.<sup>[1]</sup>

Benign breast diseases are essential risk factor for later breast cancer, which can develop in either breast.

It include a spectrum of histologic entities, usually subdivided into non-proliferative lesions, proliferative lesions without atypia, and atypical hyperplasias, with an increased risk of breast cancer associated with proliferative or atypical lesions.

Mammogram has facilitated the diagnosis of benign breast diseases, and thus, having accurate risk estimates for women who receive this diagnosis is imperative.<sup>[2]</sup>

There is a wide variation in the incidence of breast carcinoma in different parts of the world. The United States has a high incidence, while in Japan the disease occurs less frequently. Histologic differences in the cancers of the two populations were previously reported in a cooperative study between the National Cancer

Center Hospital (NCCH) in Tokyo and Memorial Hospital (MH) in New YorkZ and by other.

Since various epithelial lesions of benign breast diseases have been associated with an increased risk for the development of breast cancer.<sup>[3]</sup>

Signs and symptoms of breast differ, Changes in the breasts may be caused either by benign (non-cancerous) conditions or cancer.

The most common symptoms are likely to be caused by benign conditions. Still, it's important to exclude malignancy:

Lumps, Skin thickening and/or redness, Pain & Nipple discharge.<sup>[4]</sup> it has been hypothesized that non-atypical proliferative forms of BBD, a proliferative disease with atypia, and in situ cancer represent successive steps preceding the development of invasive breast carcinoma.<sup>[5]</sup>

The aberrations of normal development and involution (ANDI) classification of BBD provides an overall framework for benign conditions of the breast that encompasses both pathogenesis and the degree of abnormality. It is a bidirectional framework based on the fact that most BBD arise from normal physiologic

processes.<sup>[6]</sup>

The incidence of benign breast lesions starts to increase during the second decade of life and tops in the 4th and 5th decades, as opposed to malignant diseases, for which the incidence continues to rise after menopause, although at a less rapid pace.<sup>[7]</sup>

Age at menarche is not associated with either fibrocystic breast disease or fibroadenoma. This association has only been assessed in case-control studies, none of which have suggested that age at menarche influences the subsequent risk of benign breast disease.

Age at menopause may be related to fibrocystic breast disease but not to a fibroadenoma. The evidence in favor of an increased risk of fibrocystic breast disease with later age at natural menopause.<sup>[8]</sup>

Patients with older age at first childbirth and lower parity had a higher chance of breast cancer in this study, consistent with the results of a previous study.<sup>[9]</sup>

Older women with nonfull-term pregnancies were at higher risk of having a positive ER status.<sup>[10]</sup>

Our data suggest that current cigarette smoking is negatively associated with the occurrence of benign breast diseases, while past smoking is generally unrelated to the likelihood of illness. This indicates that the influence of smoking on the existence of benign breast disease is reversible after the end of the exposure. There is growing evidence that cigarette smoking may affect estrogen-related processes and disorders. It is well documented that smokers have an earlier natural menopause than nonsmokers.<sup>[11]</sup>

It is concluded that there was no difference in breastfeeding among BBDs types, but lactation may affect the number of fibroadenomas. However, prospective studies would better define the correlation between breastfeeding and BBDs.<sup>[12]</sup>

In this population, women with a history of breast cancer in a first-degree relative were significantly more likely to report a diagnosis of BBD than those with no family history. This difference was most significant for younger women and almost disappeared by age 45–50 years. It is possible that this association resulted from an increased tendency for women who have a relative with breast cancer to seek medical advice for a breast lump.<sup>[13]</sup>

Education Studies in which the compared groups were not matched on a socioeconomic variable showed that a higher level of education was positively related to fibrocystic breast disease but has not been shown to be a risk factor for fibroadenoma.<sup>[8]</sup>

### The Aim

This study is directed to a group of women with benign

breast disease in all its diversities to study their frequency according to age groups.

### METHODS AND MATERIALS

Its a retrospective study based on the data available in the breast clinic that was conducted to 100 females visited the clinic, and they were divided into age groups to ease the study.

#### Histological and radiological criteria

Histological classification according to Page's classification of benign breast diseases into non-proliferative lesions, proliferative without atypia and proliferative with atypia.

#### Non-proliferative lesions

These conditions are not linked with the overgrowth of breast tissue. They do not seem to affect breast cancer risk, or if they do, the effect is minimal. They include:

- Fibrosis
- Cysts
- Mild hyperplasia of the usual type
- Adenosis (non-sclerosing)
- Phyllodes tumor (benign)
- A single (solitary) papilloma
- Granular cell tumor
- Fat necrosis
- Mastitis
- Duct ectasia
- Benign lumps or tumors (lipoma, hamartoma, hemangioma, hematoma, neurofibroma, adenomyoepithelioma)
- Squamous and apocrine metaplasia
- Epithelial-related calcifications

#### Proliferative lesions without atypia

These conditions are linked with the growth of cells in the ducts or lobules of the breast tissue. They seem to raise a woman's risk of breast cancer slightly (1½ to 2 times the usual risk):

- Moderate or florid ductal hyperplasia of the usual type (without atypia)
- Fibroadenoma
- Sclerosing adenosis
- Multiple papillomas or papillomatosis
- Radial scars

#### Proliferative lesions with atypia

These conditions are linked with the excess growth of cells in the ducts or lobules of the breast tissue, and the cells no longer look normal. They can raise breast cancer risk about 3½ to 5 times higher than usual:

- Atypical ductal hyperplasia (ADH)
- Atypical lobular hyperplasia (ALH)

Radiological classification according to BIRAD classification the latest version classifies lesions into six categories:

- BIRADS 0: incomplete, further imaging, or information is required, e.g., compression, magnification, special mammographic views, ultrasound. This is also used when requesting previous images not available at the time of reading.
- BIRADS I: negative, symmetrical, and no masses, architectural disturbances, or suspicious calcifications present.
- BIRADS II: benign findings, the interpreter, may wish to describe a benign-appearing finding, e.g.
  - o calcified fibroadenomas
  - o multiple secretory calcifications
  - o fat-containing lesions such as
    - § oil cysts
    - § breast lipomas
    - § fibroadenolipoma or mixed density hamartomas
    - § galactoceles
  - o simple breast cysts

o these all should have characteristic appearances, and maybe labeled with confidence; the interpreter might wish to describe intra-mammary lymph nodes, implants, etc. while still concluding that there is no mammographic evidence suggesting malignancy

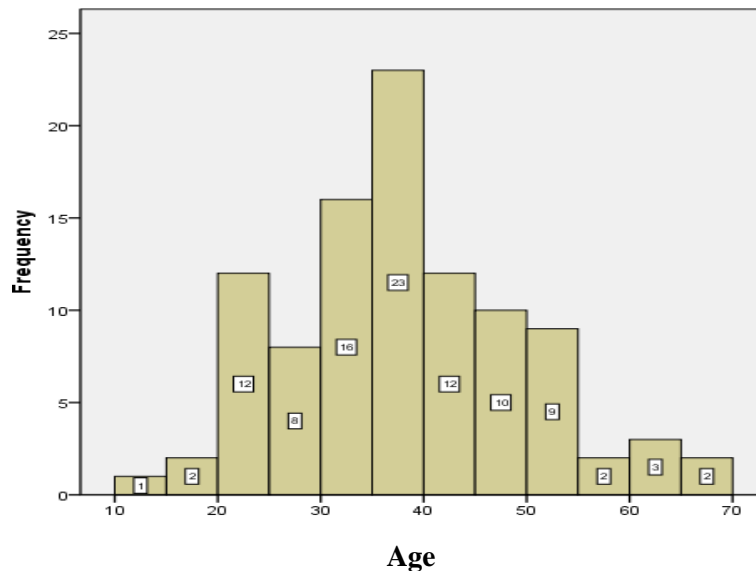
- BIRADS III: probably *benign*, short interval follow-up suggested
- BIRADS IV: suspicious abnormality
  - o there is a mammographic appearance which is suspicious for malignancy
  - o biopsy should be considered for such a lesion these can be further divided as
    - § BIRADS IVa: low level of suspicion for malignancy
    - § BIRADS IVb: intermediate suspicion for malignancy
    - § BIRADS IVc: moderate suspicion for malignancy
- BIRADS V: there is a mammographic appearance which is highly suggestive of malignancy, action should be taken.
- BIRADS VI: known biopsy-proven malignancy.

## THE RESULTS

### Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	14	1	1.0	1.0	1.0
	16	1	1.0	1.0	2.0
	18	1	1.0	1.0	3.0
	20	1	1.0	1.0	4.0
	21	3	3.0	3.0	7.0
	22	1	1.0	1.0	8.0
	23	2	2.0	2.0	10.0
	24	5	5.0	5.0	15.0
	27	2	2.0	2.0	17.0
	28	5	5.0	5.0	22.0
	29	1	1.0	1.0	23.0
	30	5	5.0	5.0	28.0
	31	1	1.0	1.0	29.0
	32	1	1.0	1.0	30.0
	33	2	2.0	2.0	32.0
	34	7	7.0	7.0	39.0
	35	5	5.0	5.0	44.0
	36	5	5.0	5.0	49.0
	37	3	3.0	3.0	52.0
	38	5	5.0	5.0	57.0
	39	5	5.0	5.0	62.0
	40	1	1.0	1.0	63.0
	41	2	2.0	2.0	65.0
42	2	2.0	2.0	67.0	
43	2	2.0	2.0	69.0	
44	5	5.0	5.0	74.0	
46	3	3.0	3.0	77.0	
47	4	4.0	4.0	81.0	
48	1	1.0	1.0	82.0	
49	2	2.0	2.0	84.0	
50	4	4.0	4.0	88.0	
51	1	1.0	1.0	89.0	
52	1	1.0	1.0	90.0	

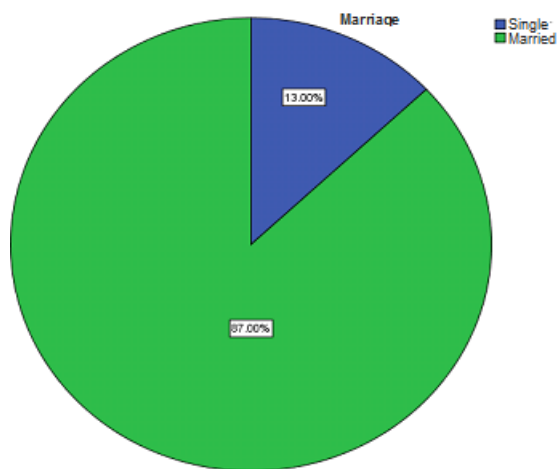
53	2	2.0	2.0	92.0
54	1	1.0	1.0	93.0
55	1	1.0	1.0	94.0
59	1	1.0	1.0	95.0
60	1	1.0	1.0	96.0
61	1	1.0	1.0	97.0
64	1	1.0	1.0	98.0
65	1	1.0	1.0	99.0
66	1	1.0	1.0	100.0
Total	100	100.0	100.0	



According to the age, the youngest patient with BBD was 14 years old and the oldest was 66 years old and the highest incidence was found in (35-40) age group.

**Marriage**

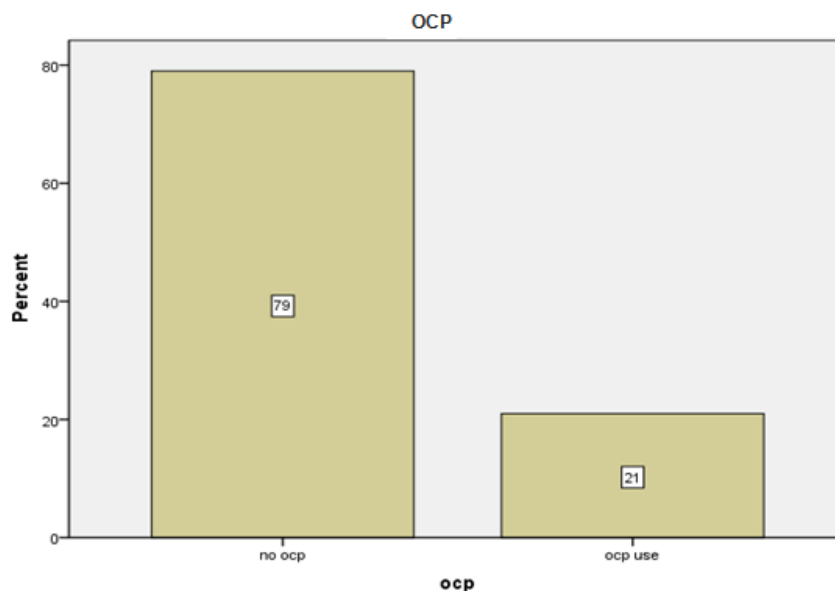
	Frequency	Percent	Valid Percent	Cumulative Percent
Single	13	13.0	13.0	13.0
Married	87	87.0	87.0	100.0
Total	100	100.0	100.0	



BBD was found in 13% of unmarried females and 87% of married females.

OCP

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No OCP	79	79.0	79.0	79.0
OCP use	21	21.0	21.0	100.0
Total	100	100.0	100.0	

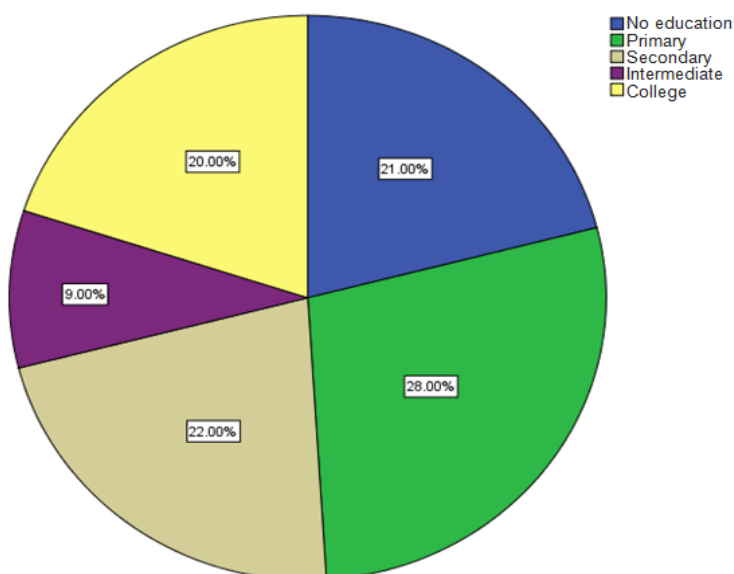


BBD was found in 21% of women with OCP usage and 79% of women without OCP usage.

Education

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No education	21	21.0	21.0	21.0
Primary	28	28.0	28.0	49.0
Secondary	22	22.0	22.0	71.0
Intermediate	9	9.0	9.0	80.0
College	20	20.0	20.0	100.0
Total	100	100.0	100.0	

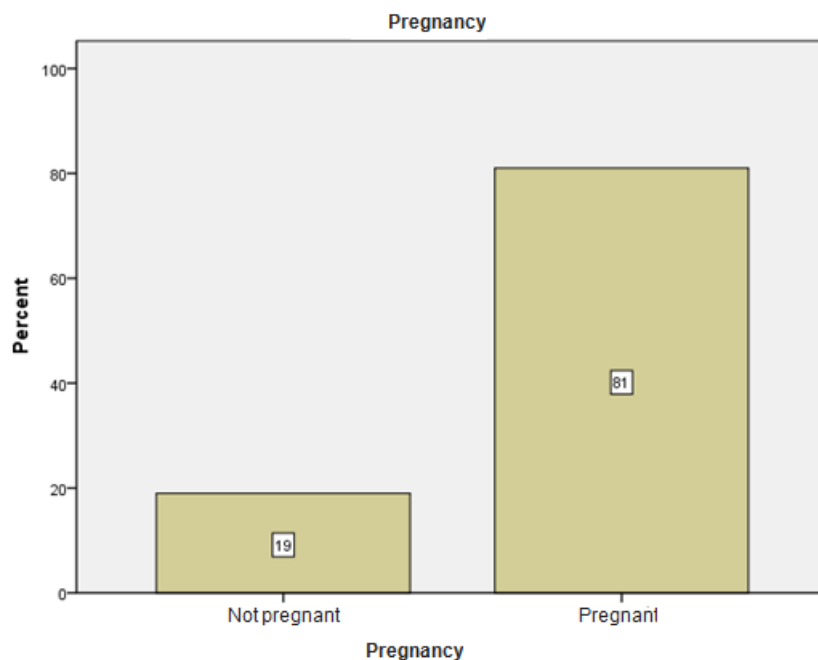
Education



Women with BBD was found 21% without education 28% with a primary school degree 22% secondary school degree, 9% intermediate school degree and 20% of college student and college degree.

**Pregnancy**

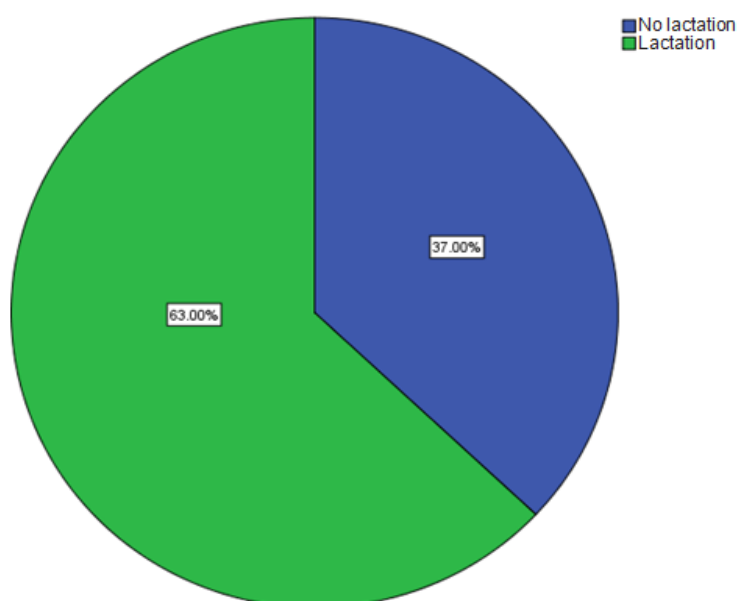
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Not pregnant	19	19.0	19.0	19.0
Pregnant	81	81.0	81.0	100.0
Total	100	100.0	100.0	



BBD was found in 81% of women with previous pregnancy and 19% of nulliparous women.

**Lactation**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No lactation	37	37.0	37.0	37.0
Lactation	63	63.0	63.0	100.0
Total	100	100.0	100.0	

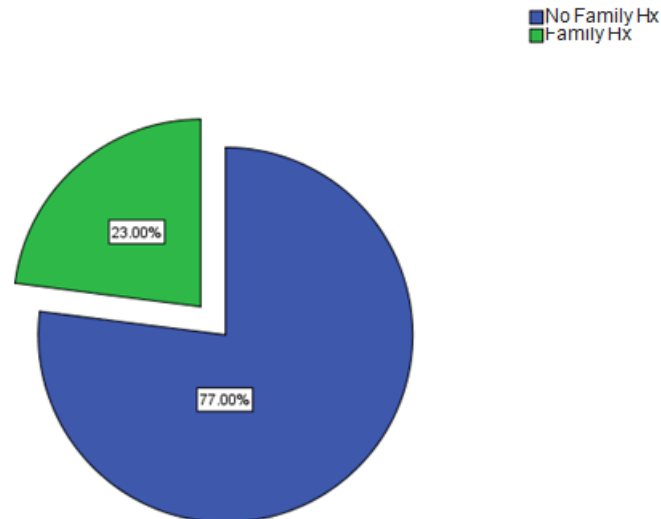


BBD was found in 63% of women with previous lactation and 37% of women without previous Lactation.

**Family Hx**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No family Hx	77	77.0	77.0	77.0
Family Hx	23	23.0	23.0	100.0
Total	100	100.0	100.0	

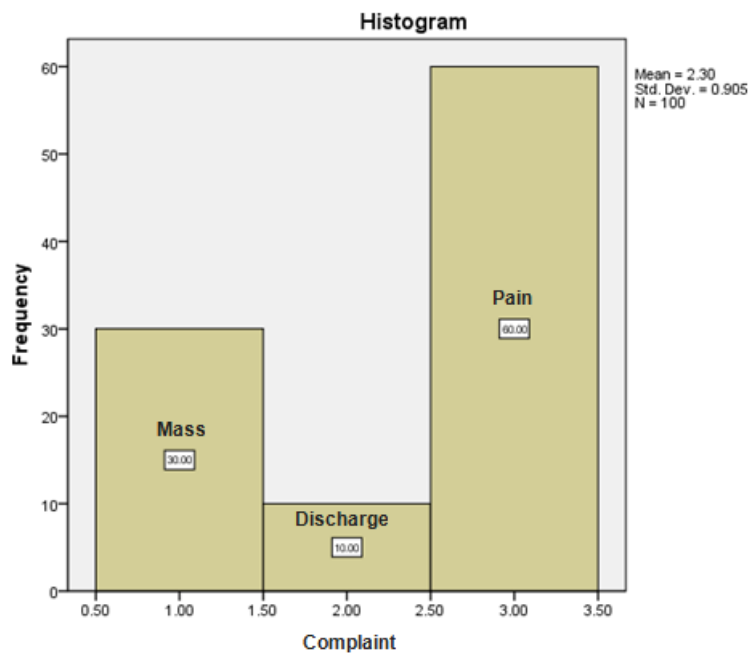
## Family History



BBD was found in 77% of women without family history of breast CA and 23% of women with history.

**Chief complaint**

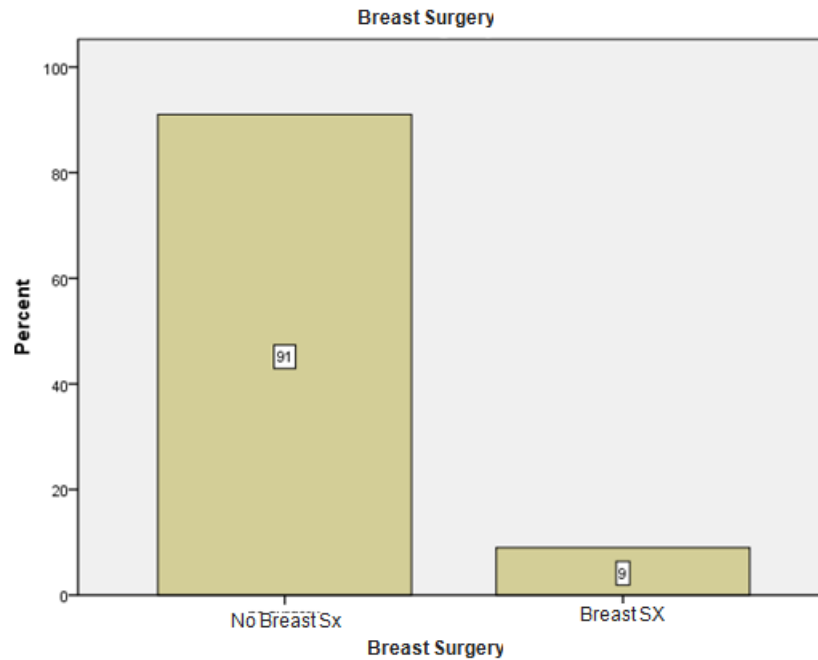
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Mass	30	30.0	30.0	30.0
Discharge	10	10.0	10.0	40.0
Pain	60	60.0	60.0	100.0
Total	100	100.0	100.0	



Women with BBD presented with 30% mass, 10% discharge and 60% pain.

**Breast surgery**

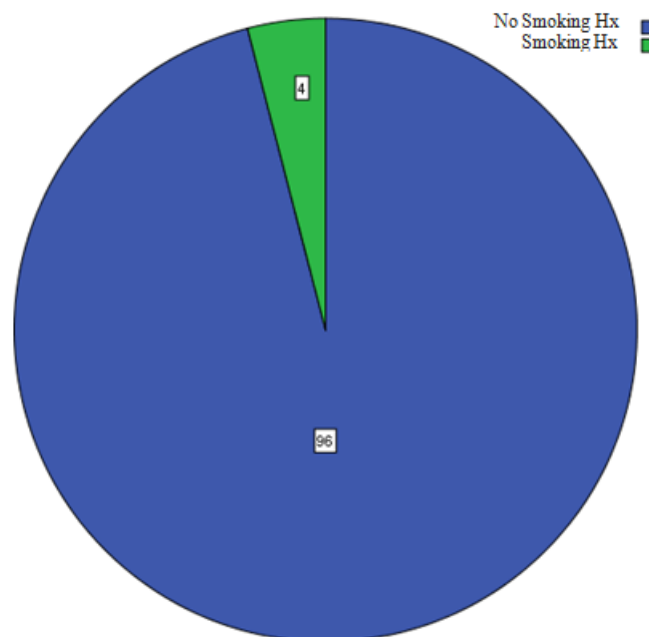
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No surgery	91	91.0	91.0	91.0
	Breast surgery	9	9.0	9.0	100.0
	Total	100	100.0	100.0	



In this study, 91% of women had no previous breast surgery and only 9% had one or more.

**Smoking**

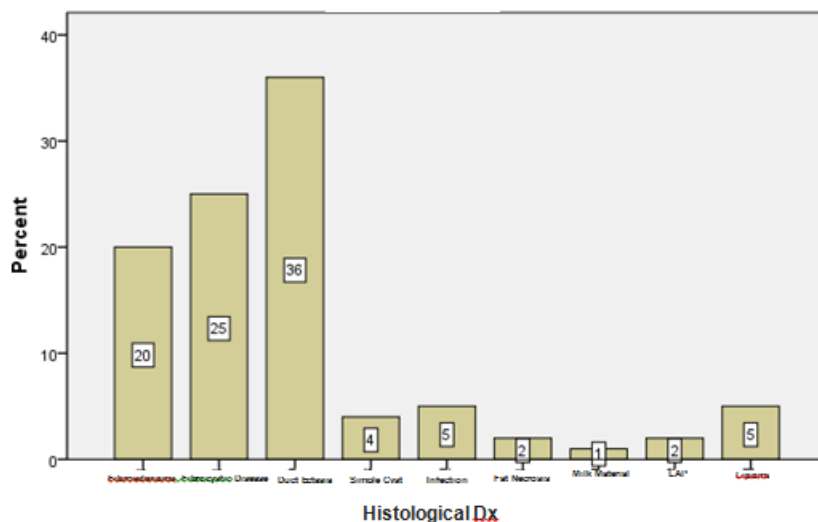
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No smoking Hx	96	96.0	96.0	96.0
	Smoking Hx	4	4.0	4.0	100.0
Total		100	100.0	100.0	



Women with BBD and smoking represent 4% of the sample and 96% without smoking.



## Histological Dx



The highest incidence of BBD in this study was found to be duct ectasia with 36% and the lowest was with milk material 1%, 20% with fibroadenoma, 25% with fibrocystic disease, 4% with simple cyst, 5% with mastitis, 5% with lipoma, 2% fat necrosis, 2% axillary LN.

## DISCUSSION

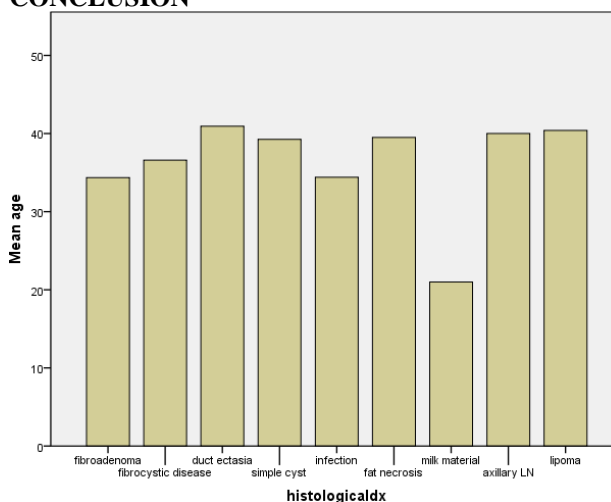
According to the age the youngest patient with BBD was 14 years old, and the oldest was 66 years old, and the highest incidence (23%) was found in (35-40) age group with mean age is 37 years old compared to a study with 80 patients, 85% of all patients of benign breast disease fall in the reproductive age group of 15-40 years. A majority (38.75%) of them belong to the age group of 20-30 years.<sup>[14]</sup> And the majority 87% were married, and 13% were unmarried compared to another study that showed married women were (76.3%), while unmarried were 27(23.7%).<sup>[15]</sup>

In this study, there was no correlation between BBD and educational level (p value <0.05) compared to a study that showed that a higher level of education was positively related to fibrocystic breast disease but not fibroadenoma,<sup>[8]</sup> 79% of them did not have OCP, and there was no correlation (p-value 0.05) to this study compared to a previous study confirms what has already been reported by previous clinical trials that showed a response of neutrality or modest improvement induced by hormonal contraceptives on benign breast disease.<sup>[16]</sup> And 81% with previous pregnancy and p-value < 0.05, 63% lactation with p value >0.05 compared to a study showed a p-value > 0.05 for both lactation and pregnancy.<sup>[17]</sup>

23% family history of breast malignancy the majority and it showed no correlation p value <0.05 compared to another study with that showed similar results, 4% smoking with no correlation and similar results in a study<sup>[8]</sup> and the highest incidence of BBD in this study was found to be duct ectasia with 36% compared to other

studies that regarded fibroadenoma as the commonest pathology.<sup>[15]</sup>

## CONCLUSION



**This graph shows the mean age for each category of BBD in accordance to the age group. And it concluded that most BBD occurred in 35-40 years old age group with duct ectasia regarded as the commonest in patients consulted breast clinic in Al-Kadhmain Medical City Hospital.**

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