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KNOWLEDGE ABOUT RISK FACTORS IN BREAST CANCER PATIENTS IN PRAYAGRAJ DISTRICT OF UTTAR PRADESH

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ABSTRACT

The breastfeeding and Breast Cancer though closely inter linked, the knowledge about the beneficial effect of breastfeeding is not widely spoken amongst people and its uncommon among other risk factors which get more importance in comparison with breastfeeding. The objective of this study is to assess the knowledge and attitude of breast cancer patients regarding breastfeeding. The hospital based descriptive cum evaluatory study was conducted in Regional Cancer Centre located in Uttar Pradesh State of India with women aged 20-80 years. Respondents were breast cancer patients attending the OPD for treatment. A total of 220 samples were taken purposively from Prayagraj district in UP. In this analysis we assessed how women's knowledge and attitude about risk factors of breast cancer with respect to age, education, occupation and location .Knowledge and Attitude were assessed using multinomial logistic regression. Women who had completed higher-secondary school were about six-and-a-half times more likely to reach the *High* knowledge band than illiterate women (OR ≈ 6.6, p = 0.002). Each additional year of age reduced the chance of landing in the highest knowledge band by about 30 % (OR ≈ 0.71, p = 0.032). Any apparent rural–urban gap disappeared after adjusting for education, age and occupation. This analysis showed that education is the single strongest influence knowledge regarding breast cancer among women in the sample

INTRODUCTION

Since past few decades women have been experiencing a vast change in their behavior regarding various aspects of life. The change in lifestyles have influenced not only their mindset but also influenced negatively on their health. The benefits of exclusive breastfeeding up to 6 months not only limits to the time till it's given to the newborn but it has a long lasting effect on the growing baby and the mother. The breast milk gives the protective effect against respiratory tract infections, diarrhea and also saves from many chronic illnesses. (**Imdad ,et.al. ,2011)**

Breastfeeding being the most widely accepted natural phenomenon is now at a verge of being promoted and campaign dependent to motivate the modern day women to practice efficiently and effectively. The secondary data analysis of cross-sectional surveys to determine the prevalence of exclusive breastfeeding in developing country, like India, data from NFHS 3,4,5 was analyzed the likelihood of Exclusive breastfeeding practices with respect to employment status of a mother and it was concluded that lower prevalence of EBF was seen in employed mothers as compared to unemployed ones. (**Aggarwal, et. al., 2024**) Due to constant exposure through mass media there has been a considerable change in attitude towards breastfeeding practices which were not even a part of research during last century. Suboptimal breastfeeding results in 800 000 child deaths annually. There are multiple causes of suboptimal breastfeeding, including marketing of breast-milk substitutes. (**Piwoz , et.al.,2015**) But now flexibility to adapt to modern way of life has minimize the necessity of such important natural phenomenon which plays a significant part in women's life. Lesser duration of breastfeeding or no

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breastfeeding can be correlated with many chronic diseases, especially cancer. A retrospective study of clinical histories was conducted to review the lifestyle of breast cancer patients in Spain , it was inferred in this study that breastfeeding for more than six months not only benefits the infants but also protects the mother from breast cancer. Emilio **(González-Jiménez ,et.al.,2013)** Breast cancer was the 4th on the list amongst common cancers in India during 1990s ,it has now became the most common cause of cancer in Indian women (**Mehrotra, et.al., 2022) .**An incident data of 26 cancer registries in India demonstrated that lifestyle of rural area is protective against breast cancer (**Nagrani, et.al., 2014).** During early period women didn't have much option to feed their baby so they stuck to natural way of living. Since advancement of era, breast feeding is replaced by formula feeding since multinational companies were able to convince mothers that formula feeding has equal nutrients as that of mother's milk and it is recommended by many health professionals that formula feeding doesn't cause any harm to baby's health. This practice is quite popular in developed countries where mothers are usually working women and those who have to leave their new born baby in daycare due to hectic lifestyle. Since past 20 years formula feeding took major toll on the health of new born babies. However, there adverse impact on mothers' health is still under scrutiny.

RESEARCH METHODOLOGY

A descriptive cum evaluatory study was conducted involving breast cancer patients attending OPD of oncology department for the treatment of Breast Cancer in Regional Cancer Centre of Prayagraj , Uttar Pradesh. A structured data tool was developed to assess the detailed overview of attitude about breastfeeding and to assess the knowledge about risk factors in breast cancer patients using continuous assessment scales. About 220 breast cancer patients who complied with the inclusion criteria were considered for the study. Age of the breast cancer patients was from 20 to 70 years. The participants were selected using the convenience sampling. The nature and objective of study were clearly made understandable to the patients in a Hindi language which is a locally spoken language. There were 24 self structured knowledge based questions which assessed the knowledge about the risk factor in breast cancer patients. The scoring in knowledge was done by Yes, Undecided, No (3, 2, 1) respectively. Data entry and data analysis was done with SPSS software.

Inclusive criteria

All the women who were diagnosed with breast cancer attending the OPD of oncology department for follow up or treatment were included in the study.

Exclusive criteria

1. Male breast cancer patients
2. Patients who were critically ill.
3. Not willing to participate.

The demographic data collected were; Age, location, employment, education, occupation, religion, family type and size, Age at first child .The data was collected and responses were analyzed using SPSS tool to obtain a result.

RESULTS

Influence of Socioeconomic Factors on Breast Cancer Knowledge

In this analysis we assessed how women's knowledge toward breast-cancer-related issues relate to age, education, occupation and location. Raw survey from respondents' data was imported and inspected to identify the Knowledge-about-Risk-Factor (24 questions coded yes–undecided–no). We performed categorical modelling by dividing each score into tertiles; one third of the sample fell into Low, Medium and High bands. Predictors were recoded for clarity: education as an ordered factor from illiterate to graduate, occupation as employed versus unemployed, location as rural or urban and age retained in years. Multinomial logistic regression estimated the odds of belonging to the higher score bands compared with the lowest band while adjusting for all four predictors at once. Model fit statistics were checked and variance-inflation factors confirmed negligible co linearity. Cut-off values, odds ratios with 95 % confidence intervals and p-values are provided in the tables for reference.

Table 1. Tertile cut-off values used for scoring

Score	Knowledge
Low upper	39
Medium upper	44
High lower	45

In table 1: We provided the raw score boundaries that divided the full sample into equal thirds for modelling. For knowledge the cut-offs were 39 or less (*Low*), 40–44 (*Medium*) and 45 or more (*High*).These limits were derived directly from the data and ensure that each band contains one third of respondents. In the above first table we summarized the multinomial regression that linked women's knowledge scores with four background factors after all factors were considered together. The model compares two groups *Medium* and *High* knowledge - against the reference group - which is the lowest third of scores.

Table 2. Multinomial logistic regression – Knowledge score (tertiles)

Outcome	Predictor	OR	CI low	CI high	p_value
Age vs Low	Age (per year)	0.71	0.52	0.97	0.0315
High vs Low	Education level 5 (higher-secondary)	6.55	2.01	21.36	0.0018
	Education level 6 (graduate+)	22.86	4.16	125.77	0.0003
	Education level 7 (post-graduate)	7.17	1.07	47.83	0.0419
	Employment status code 7 (vs unemployed)	9.94	1.11	88.91	0.04
Medium vs Low	Age (per year)	0.84	0.66	1.08	0.1754

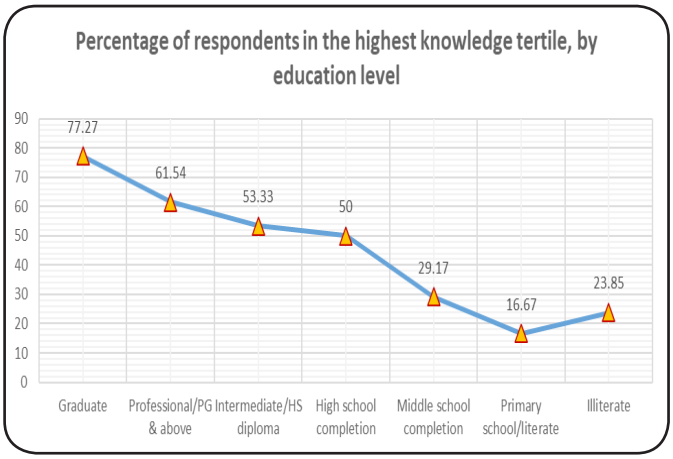

Fig. 1. Percentage of respondents in the highest knowledge tertile , by education level.

Education was a key factor. Women who had completed higher-secondary school were about six-and-a-half times more likely to reach the *High* knowledge band than illiterate women (OR ≈ 6.6, p = 0.002). Graduates showed an even stronger pattern: their odds of being in the *High* band were roughly twenty-three times those of the illiterate group (OR ≈ 22.9, p < 0.001). Post-graduates also did well - with an odds ratio of about seven (p = 0.042).

Age showed a slight downward trend. Each additional year of age reduced the chance of landing in the highest knowledge band by about 30 % (OR ≈ 0.71, p = 0.032). Age did not reach statistical importance for the middle band.

Occupation and location did not carry much weight once education and age were in the model. An isolated employment code produced a wide confidence interval and did not change the main story.

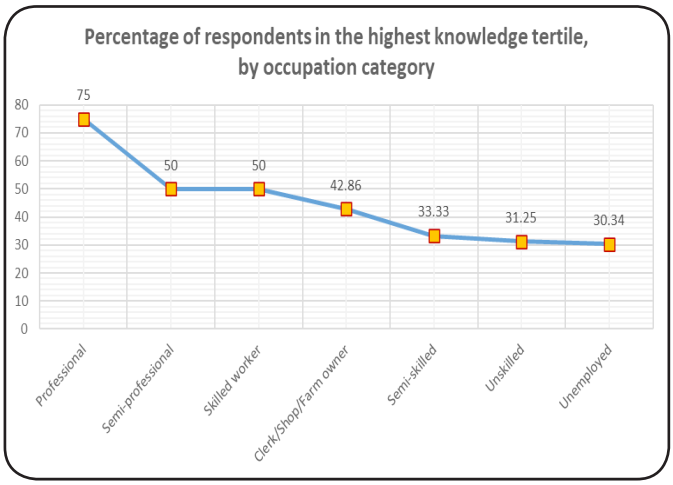

Fig.2. Percentage of Respondents in the highest knowledge tertile , by occupation category.

The analysis pointed to schooling as the prime driver of accurate knowledge about breast-cancer risk factors. Younger women had a moderate edge after education had been accounted for.

Influence of location - When the influence of location was analysed on the knowledge regarding risk factors, it was clear demarcation that urban women had a better understanding as compare to rural women.

Location	Frequency	Percentage
Rural	127	58
Urban	93	42

Table 3. Distribution of respondents on the basis of location

Risk Factor on which Knowledge is being assessed	RURAL			URBAN			
	Agree %	Undecided %	Disagree %	Agree %	Undecided %	Disagree %	p_value
Have you ever heard about BSE?	16.5	25.2	58.3	39.8	20.4	39.8	0.0005
Risk of developing breast cancer increases after menopause	7.9	16.5	75.6	22.6	17.2	60.2	0.0064
Who to consult if breast lump detected?	6.3	44.9	48.8	14	46.2	39.8	0.1158
Willingness to have mastectomy?	29.9	37	33.1	20.4	28	51.6	0.0212
usage of HRT increases risk of developing breast cancer?	2.4	24.4	73.2	2.2	41.9	55.9	0.022
Early menarche or the late menopause ncreases the risk	2.4	52	45.7	4.3	52.7	43	0.696
Nulliparous women are at higher risk of eveloping breast cancer	3.1	55.9	40.9	5.4	55.9	38.7	0.6985
the women can easily reduce her weight because she can utilize 500 calories average in a day while breastfeeding	0.8	55.1	44.1	3.2	53.8	43	0.409
breast cancer is hundred percent curable f detected early	4.7	40.9	54.3	3.2	49.5	47.3	0.4308

Table 4. Knowledge statements on the basis of location							
exclusive breast feeding is necessary up to 1st6 months.	18.9	33.9	47.2	36.6	23.7	39.8	0.0116
lactation releases oxytoxin and prolactin hormones which reduces cancer possibility	34.6	39.4	25.2	45.2	43	10.8	0.0548
Lack of exercise and obesity increases the chance of developing breast cancer.	4.7	57.5	37.8	8.6	61.3	30.1	0.3137
Exposure to radiation during early age is harmful for our health	22	46.5	31.5	38.7	40.9	20.4	0.0187
Carrying full term pregnancy provides certain protection against the development of Breast cancer	7.9	64.6	27.6	14	62.4	23.7	0.3214
Eating fruits helps to boosting our immunity	3.1	54.3	42.5	4.3	59.1	36.6	0.6399
Certain viruses are also cancer causing	26	44.9	29.1	44.1	43	12.9	0.003
Apart from environmental factors, genetic factors are also responsible for breast Cancer	3.9	52.8	43.3	16.1	52.7	31.2	0.0044
BSE is necessary after the age of 30 years.	8.7	50.4	40.9	26.9	46.2	26.9	0.0009
0-6 months of child should be exclusively breastfed.	12.6	44.9	42.5	35.5	38.7	25.8	0.0002
Eating green and yellow Vegetables lower the breast cancer risk.	39.4	48	12.6	55.9	35.5	8.6	0.0515
the optimal duration of breastfeeding an infant is 12 months	20.5	52.8	26.8	46.2	39.8	14	0.0002
Complete mixture of nutrients and antibiotics are available in breast-milk.	22	58.3	19.7	36.6	45.2	18.3	0.0546
Breastfeeding increases immunity by Which children are saved from different infectious diseases	28.3	51.2	20.5	45.2	45.2	9.7	0.0135

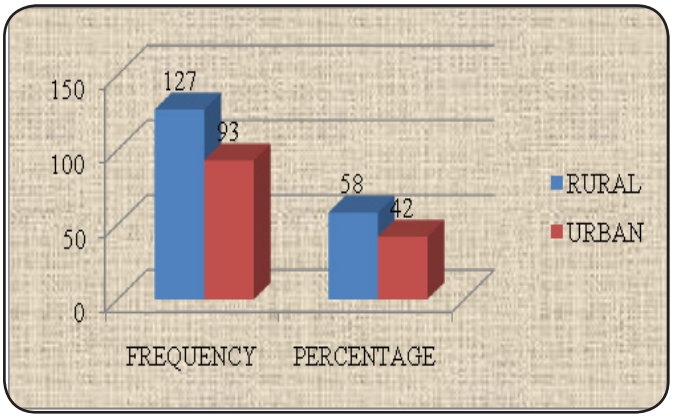

Fig. 3. Distribution of respondents on the basis of location.

Table 4: Knowledge statements on the basis of locationThe analysis of location revealed notable differences in knowledge of breast cancer risk factors between rural and urban women, with statistically significant variations observed for several factors. A significantly higher proportion of urban women (39.8%) had heard about Breast Self- Examination (BSE) compared to rural women (16.5%), with a p-value of 0.0005. Similarly, urban women(22.6%)were more aware that the risk of breast cancer increases after menopause than rural women(7.9%),with a significant p-value of 0.0064.While knowledge about whom to consult for a breast lump showed a higher percentage of agreement among urban women (14% vs. 6.3% in rural), the difference was not statistically significant (p = 0.1158). Awareness of the necessity of exclusive breastfeeding for the first six months was significantly higher among urban women (36.6%) compared to rural women (18.9%), with a p-value of 0.0116. Similarly, urban women demonstrated greater awareness about the harmful effects of early radiation exposure, with 38.7% agreeing versus 22% among rural women (p = 0.0187). Knowledge about the protective effects of carrying a full-term pregnancy did not differ significantly between groups, with p = 0.3214.

Key Summary Points:

1. **Education overrides every other factor.** Women who finished higher-secondary school were ≈ 6½ times more likely—and university graduates ≈ 23 times more likely—to score in the *highest* knowledge band than illiterate women; they were also up to 20 times more likely to land in the *most favourable* attitude group.
2. **Each extra year of age trims knowledge odds by about a third.** After schooling is considered - younger respondents show a small edge in knowledge (OR ≈ 0.71 per year); the same age effect on attitude is weaker and not statistically firm.
3. **Occupation adds little once schooling is known.** Professional employment gave a nine-fold knowledge boost in one subgroup but came with a wide confidence band and did not shift attitude scores meaningfully.

Location (rural vs. urban) is not very strong in multivariable models. Any apparent rural–urban gap disappeared after adjusting for education, age and occupation. Though on individual basis it plays a key role in determining the knowledge about risk factor.

DISCUSSION

The study assessed the knowledge of breast cancer patients regarding breastfeeding as the protective factor against the disease. The findings reveal that there was considerable lack of awareness in the patients regarding breastfeeding and its protective affect. Breastfeeding is considered as the protective factor against breast cancer by WHO and also by American Cancer Society.

In this study it was found that women who were university graduates scored highest in knowledge band than illiterate women. This was similar to the findings of the Zeller ,C.L which states that education modules can address myths regarding infant feeding and delineate barriers for acceptance and support of breastfeeding. (**Zeller, 2015).**

This study clearly shows that occupation doesn't influence much, once education is measured, and education can be considered as the single most driving force which reflects the behaviour of the breast cancer patients. This finding is supported by (**Widodo ,2019)** who reported that there was no relationship between maternal's occupation and maternal attitudes towards breastfeeding. The study conducted by (**Mah, 1992)**, to analyse Age as a factor in breast cancer knowledge, attitudes and screening behaviour which states that Knowledge of breast cancer risk factors was generally low and decreased with age .

Similarly in this study, the rural and urban gap was disappeared once education came into the context. However, if we consider analyzing the knowledge about risk factors just on the bases of rural and urban patients then urban women were more aware about the risk factors as compared to rural women. There was a notable geographic disparity in knowledge regarding numerous critical risk factors, with urban women consistently demonstrating higher awareness. These findings underscore the necessity for focused educational and outreach initiatives, particularly in rural regions, to address these knowledge deficiencies and foster equitable health awareness.

Conclusion: This analysis showed that education is the single strongest influence on the knowledge of the risk factors of breast cancer among women in the sample. Higher-secondary and university-level education very strongly increased the odds of informed understanding and beneficial/positive outlook. Age showed a modest link with knowledge. Occupation and location did not hold much independent weight once education was considered. This confirmed that scoring and cut-offs are essential. These findings indicated the importance of education-focused strategies in awareness campaigns when aiming to shift health beliefs and encourage early action.

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