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RESEARCH ARTICLE

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## ASSESSMENT OF THE RISK STATUS OF BREAST CANCER AND LIFE STYLE BEHAVIOR OF WOMEN ATTENDING GENERAL OPD IN SELECTED HOSPITAL OF KOLKATA, WEST BENGAL

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### ABSTRACT

**Introduction:** A Case control study was conducted to assess the risk status of breast cancer and lifestyle behavior of women in R. G Kar Medical College and Hospital, Kolkata. The objectives of the study were to assess the risk status of breast cancer and life style behaviours and determine the relationship between risk status of breast cancer and life style behaviours. **Methodology:** A case control study design was adopted for this women attending general OPD and Oncology OPD in R.G Kar Medical College and Hospital, Kolkata, and to determine the relationship between lifestyle behavior and risk status of breast cancer and to find out the association between lifestyle behavior of women and selected demographic variables. The conceptual framework was based on Baron and Kenny's moderator-mediator variables. Random sampling technique was adopted to select 100 participants for both study and control group among women attending general OPD and Oncology OPD of RG Kar Medical College and Hospital, Kolkata. A valid and reliable interview schedule was administered to assess the life style behavior of women to establish the risk status of breast cancer. Logistic regression was used to find out values of the odd ratios to determine the relationship of risk status of breast cancer and life style behavior. **Result:** The study results showed that there was a significant relationship between lifestyle behaviors of women in terms of physical activity, smoking habit, history of Diabetes Malleitus, history of hypertension, history of exposure of environmental hazards and obesity measured by BMI calculation and risk status of breast cancer as evidenced by the significant value of adjusted odd ratios satisfied with the value of p-(0.02,0.04,0.02,0.01,0.003, 0.03) at 0.05 level of significance. **Discussion:** The significant association was found between life style behavior and risk status of breast cancer. The study can be concluded by saying that women had not adequate knowledge about risk factors and life style behavior of breast cancer.

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## INTRODUCTION

Breast cancer remains a major public health problem. Breast Cancer in females is on the rise both globally as well as in developing country like in India. Globally it is the second most common cancer in both sex together and the most frequent one in females with an estimated 1.67 million new cancer cases diagnosed in 2012 (25% of all cancers). Different studies identified risk factors such as early menarche, late menopause, nulliparity, delayed age of childbirth etc. and increased duration of breast feeding was found to be protective for breast cancer [1, 2] Studies from India particularly from the eastern part are still limited considering its increasing incidence and overall burden. The present study attempted at analyzing the association of various demographic, reproductive and clinical factors and estimating their risk in relation to breast cancer. [3] Breast cancer is the most common diagnosed malignancy in women worldwide (22%) and in India (18.5%) it ranks second to cervical cancer. The burden of breast cancer is increasing in both developed and developing countries; the peak occurrence of breast cancer in developed countries is above the age of 50 whereas in India it is

above the age of 40. In India the age standardized incidence rate of breast cancer varies between 9 to 32 per 1,00,000 women. [4] In India with a huge population, diverse cultures, geographical variations, diets and habits, sources of information on cancer risk factors are considerably limited. The reasons of breast cancer among women are not fully understood, which are likely to be explained by reproductive and lifestyle factors such as Literacy, Diet, Age at menarche and menopause, Age at first delivery, Abortion, Family history of Breast Cancer.[5]

### Objectives of the study

- To assess the risk status of breast cancer of women
- To assess the lifestyle behavior related to risk of breast cancer.
- To determine the relationship between life style behavior and risk status of breast cancer.
- To find out the association between risk status and selected demographic variables.

## METHODOLOGY

**Research approach and Research Design:** In order to achieve the objectives of the study, quantitative research approach and a case control study design was adopted.

**Sample:** Sample of the study were the women attending general OPD and Oncology OPD in RG Kar Medical College & hospital of Kolkata, West Bengal who satisfied the pre-set inclusion and exclusion criteria.

### Tools of the study:

Sl.No	Variables	Tools	Techniques
1.	Demographic variables	Semi structured Interview schedule	Interviewing
2.	Risk status of breast cancer	Breast cancer risk Assessment by semi structured interview schedule by modified Gail model (1989)	Interviewing
3.	Lifestyle behaviour	Semi structured Interview schedule	Interviewing

**Procedure of data collection:** After getting permission from all the concerned authorities data collection procedure was done at General OPD & Oncology OPD of R.G Kar medical college and Hospital. A total of 100 patients were interviewed among which 50 patients were selected for study group and 50 patients were for control group by random sampling technique. Purpose of the study was explained to the participants. Informed written consent was taken from participants. Privacy was maintained throughout the procedure. A semi structured demographic proforma was used for collecting the demographic data and one interview schedule was used for collecting information related to risk status of breast cancer and assessment of the lifestyle behavior.

**Ethics committee approval:** The study was approved by the institutional ethics committee, ID & BG Hospital. The institutional ethics committee, NRS MCH. The Medical Superintendent Cum Vice Principal and Head of the Institution of NRS MCH. The institutional ethics committee, R G Kar MCH. The Medical Superintendent Cum Vice Principal and Head of the Institution of R G Kar MCH. A written consent was obtained from each and every participant under study. Confidentiality and anonymity were maintained throughout the study period.

## RESULTS AND DISCUSSION

Prior specific statistical analysis, data were examined for its normality. It was deemed normally distributed. Table 2 depicts that maximum number of women (22;44 %) and (19;38 %) belonged to the age group of 51-57 years both in study group as well as in control respectively. Data also reveals that maximum number of women from study group (27;54%) and control group (35; 70%) having educational level class I – IX. Data presented in table 2 also shows that maximum women in both study group (40; 80%) and control (46 ; 92%) were house wife, maximum women in both the groups (26 ;52%) and (28; 56 %) were having monthly family income more than 220000. respectively. Data presented in table 2 reveals that majority of women in the study group ( 32;64%) were having (2-4) number of family members and in the control group (26;52%) had (5-9) family members. Data also reveals that most of the women in both study group (41; 82%) and control group (45;90%) were married respectively. Table 3 reveals the assessment of risk status among women in both the study and control group. Majority of the women both in the study group (39; 78%) and in the control group (40;80%) having the average risk of breast cancer respectively. Table 4 reveals the assessment of the risk of life style behavior in relation to breast cancer risk status among women in both the study and control group. Maximum women in the study group ( 27; 54%) and in the

control group (31;62%) having the average risk of breast cancer respectively followed by high risk of life style behaviour identified 32% in study group and 30% respectively.

**Table 2.**

Demographic Variables	Case group		Control group	
	Frequency	Percentage(%)	Frequency	Percentage(%)
<b>Age in years</b>				
35-44	04	08	08	16
45-54	17	34	11	22
55-64	22	44	19	38
> 64	07	14	12	24
<b>Educational level</b>				
Class I- IX	27	54	35	70
Madhyamik	12	24	06	12
HS	06	12	08	16
Graduate & above	05	10	01	02
<b>Occupation</b>				
House wife	40	80	46	92
Service	08	16	02	04
Others	02	04	02	04
<b>Monthly family income ( Rs.)</b>				
< Rs. 15000	06	12	04	08
Rs 15001-20000	18	36	18	36
>Rs. 20000	26	52	28	56
<b>No. of family members</b>				
2-4	32	64	24	48
5-9	18	36	26	52
<b>Marital status</b>				
Married	41	82	45	90
Unmarried	04	08	nil	nil
Widow	05	10	05	10

ns = Study group, nc = Control group

**Table 3. Assessment of risk status of breast cancer of women**

Risk status	Score Range	Study group		Score Range	Control group	
		Frequency	Percentage(%)		Frequency	Percentage(%)
<b>High risk</b>						
(>mean + 1 SD)	>31	6	12	>26	5	10
<b>Average Risk</b>						
( Mean ± SD)	25-31	39	78	19-26	40	80
<b>Low Risk</b>						
(<mean- 1 SD)	<25	5	10	<19	5	10

Minimum score = 13

Maximum score = 39

**Table 4. Assessment of the lifestyle behavior of women related to risk of breast cancer**

Life style Behavioural risk	Study group			Control group		
	Score range	Fr.	Percentage(%)	Score range	Fr.	Percentage(%)
<b>High risk</b>						
(>Mean + 1 SD)	>24	16	32	>21	15	30
<b>Average Risk</b>						
( Mean ± SD)	18-24	27	54	15-21	31	62
<b>Low Risk</b>						
(<Mean- 1 SD)	<18	07	14	<15	04	08

From the table 5 it was observed that risk of breast cancer was 5.26 times high with 95% CI ( 0.07; 25.77) where history of smoking is present very often. In concern of the physical activity it was seen that women who worked exercise at least 30 hours/ week had less risk of breast cancer, Odd Ratio with 95% CI ( 0.41; 0.18, 0.91). History of

heavy alcohol intake having 2.52 times risk of breast cancer with 95% CI (0.72,8.82) , Less Intake of vegetables induce 1.62 times risk of breast cancer with 95% CI (0.74, 3.57). Low Intake of fruits was having 2.93 times risk of breast cancer with 95% CI (1.30, 6.65). women who was not practising breast self examination, had 1.18 times risk of breast cancer with 95% CI(0.53, 2.63), history of Diabetes Mellitus concerned 1.76 times risk of breast cancer with 95% CI ( 0.80, 3.89) than non diabetic, history of hypertension had 4.75 times risk of breast cancer with CI (2.01,11.24)than no hypertension. History of exposure to environmental hazards evidenced 4.64 times risk of breast cancer with CI (1.55, 13.84) , Obesity where BMI more than 30 had2.02 times risk of breast cancer with CI (0.87; 4.64). Multivariate logistic regression analysis reveals that there was a significant relationship found between life style behavior ( physical activity, history of smoking, history of DM, history of hypertension, history of exposure of environmental hazards and obesity) with risk status of breast cancer as evidenced by p- value (0.02,0.04, 0.02, 0.01, 0.03, and 0.03) at 0.05 level of significance.

**Table 5. Multivariate logistic regression showing adjusted risk (odds) of the lifestyle behaviour with risk status of breast cancer among women**

Lifestyle behaviour	Risk status of breast cancer							
	Study group		Control		p-value	OR	95% CI	
	Fr	(%)	Fr	(%)			Lower	Upper
<b>Physical activity</b>								
< 30 mins	18	36	29	58	0.02*	0.41	0.18	0.19
≥ 30 mins	32	64	21	42				
<b>History of smoking</b>								
Never	41	82	48	96				
Very often	09	18	02	04	0.04*	5.26	1.07	25.77
<b>History of alcohol</b>								
Never	39	78	46	92				
Seven drinks/ week	09	18	04	08	0.14	2.52	0.72	8.82
<b>Intake of vegetables</b>								
≥ 3 times / day	21	42	27	54				
< 3 times / day	29	58	23	46	0.23	1.62	0.74	3.57
<b>Intake of fruits</b>								
2 times/day	21	42	34	68				
Less than 2 times/day	29	58	16	32	0.08	2.93	1.30	6.65
<b>Breast self-examination</b>								
Once in a month	19	38	21	42				
Never	31	62	29	58	0.68	1.18	0.53	2.63
<b>History of Diabetes Mellitus</b>								
No	23	46	30	60				
Yes	27	54	20	40	0.02*	1.76	0.80	3.89
<b>History of Hypertension</b>								
No	12	24	30	60				
Yes	38	76	20	40	0.01*	4.75	2.01	11.24
<b>History of exposure to Environmental hazards</b>								
No	33	66	45	90				
Yes	17	34	05	10	0.03*	4.64	1.55	13.84
<b>BMI (Obesity)</b>								
< 30	28	56	42	84				
≥ 30	22	44	08	16	0.03*	4.12	1.61	10.55

\*significant at ≤ 0.05, BMI= Body Mass Index

**Development of hypothesis:** There is a significant relation between life style behaviour with risk status of breast cancer of women at 0.05 level of significance.

## CONCLUSION

Cancer imposes a huge burden on people around the world. This study investigated the risk of life style behavioural associated with breast cancer. The findings of this study showed that the risk status of breast cancer among women is average and had average life style behavior. There was significant relationship found between life style behavior in connection with physical activity, having history of smoking, history of Diabetes Mellitus, History of hypertension, history of exposure to environmental hazards, obesity measured by BMI calculation. This study predicts relation of life style behaviour and the risk of breast cancer. More emphasis to be suggested for modifying life style behaviour for prevention of breast cancer among women of West Bengal.

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