Life Science Informatics Publications

Research Journal of Life Sciences, Bioinformatics, Pharmaceutical and Chemical Sciences

Journal Home page http://www.rjlbpcs.com/

RJLBPCS

ISSN 2454-6348

Original Research Article **DOI: 10.26479/2019.0503.60**

A STUDY ON CERVICAL CANCER AWARENESS BASED ON SOCIODEMOGRAPHIC CHARACTARISTICS AMONG WOMEN FROM ERODE DISTRICT

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ABSTRACT: Although many advancements have been made in developing Cervical Cancer prevention and treatment strategies pertinent to low resource settings, significant gaps in knowledge and implementation remain. Of utmost importance is to identify the most effective and efficient methods for meeting the immediate screening and treatment needs of the currently "at risk" middle-aged women in India. This study is aimed to better understand, using a mixed methodology approach, why existing Cervical Cancer screening programs remain largely underutilized in our country. To address this issue, both qualitative and quantitative field-based study of healthcare was undertaken. The results of this section present new data about current levels of awareness and knowledge of Cervical Cancer and screening among a convenience sample of 500 Women in Erode District. Following voluntary informed consent, each study participant was assessed based on their response provided in the questionnaire before and after a health literacy session, to explore the potential impact of increased awareness and knowledge on screening attitude after Cervical Cancer health literacy session.This information is essential in understanding and addressing potential barriers to participation in existing Cervical Cancer screening programs. Further, such exploratory analyses may be much helpful in providing guidance for the direction and development of future Cervical Cancer research and prevention initiatives in our region.

Keywords: Cervical Cancer, Health care, Screening attitude, Health literacy session.

Article History: Received: December 23, 2019; Revised: January 02, 2020; Accepted: January 27, 2020.

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1.INTRODUCTION

1.1 Cervical Cancer

Cervical Cancer is a type of cancer emerging from Cervix and is the commonest cancer cause of death among women in developing countries[1]. Cervical cancer is caused by sexually acquired infection with certain types of Human Papilloma Virus (HPV)[2,3] and can be detected by various symptoms like excessive bleeding through vagina after sexual contact or through metastases [4]. Most Cervical cancers can be prevented by early diagnosis and treatment of precancerous lesions [5,6].Vaccination against HPVs, which are known to cause cervical cancer, is an effective preventive measure[7].The risk of developing Cervical intraepithelial lesions (CIN) and invasive cancer of the cervix increases 5 to 10- fold by impairment of the immune system, either due to immunosuppressive treatments [8] or human immunodeficiency (HIV) infection[9]. In addition, the relative risk of developing cervical cancer is increased by certain sexually transmitted infections [10], long-term use of oral contraceptives [11], high parity [12], and tobacco smoking [13]. The highest incidences of Cervical cancer are found in populations where screening rates are still low, in combination with a high background prevalence of HPV infection and who have quite tolerant attitudes towards sexual behavior. Shin-je Ghim *et al.*,[14] stated that out of the half million new cases of Cervical Cancer reported yearly, 20% occur in India. Mass Cancer screening programs to detect and treat Cervical Cancer and its precursor lesions are not available in India and most other developing countries because of the lack of resources[15].Suneeta Krishnan *et al.*,[16]investigated and reported that Cervical Cancer is the leading cause of cancer mortality in India, accounting for 17% of all cancer deaths among women aged 30 to 69 years. At current incidence rates, the annual burden of new cases in India is projected to increase to 225,000 by 2025, but there are few large scale, organized Cervical Cancer prevention programs in the country.Though the cancer incidence rate in India is less than that of the Western countries but due to the large population size, number of cases is more prevalent at any time [17]. Ebrahimi *et al.,* [18] studied that there is also an association between Cervical Cancer and oxidative stress. Oxidative stress is caused by a disturbed oxidant-antioxidant balance that often leads to an excessive generation of free radicals, particularly reactive oxygen species.

1.2 Challenges for prevention of Cervical Cancer

Cervical screening for women is necessary because there are no signs and symptoms of Cervical precancers[19]. The establishment of a prevention program is urgently required considering infection of the disease [20,21]. But most women in India do not have access to effective screening

programmes [22]. The primary reasons for this are lack of access to screening and health services, and lack of awareness of the risk factors of Cervical Cancer [23,24,25]. Hence the aim of this study is to provide an integrated action plan, for early detection of Cervical Cancer in high risk individuals, its prevention and control as well as health promotion in relation to the disease.

1.3 Baseline Survey on the Cervical Cancer Awareness and Knowledge and Screening Attitude

The objectives of this study is to quantitatively and qualitatively assess the levels of awareness, perceived susceptibility and attitude towards screening before and after a health literacy session among a sample of Women in Erode District of TamilNadu. To meet these objective three specific parameters were identified and they are as follows:

1. To quantitatively and qualitatively characterize existing levels of awareness and knowledge of Cervical Cancer and screening among a sample of women in Erode District of TamilNadu,
2. To describe relationships between awareness, knowledge, perceived susceptibility and screening attitude by comparing changes in attitude, relative to knowledge, before and after a health literacy session and
3. To identify potential sociodemographic differences between women who have a receptive attitude toward screening without information, those who are most likely to be receptive to screening after receiving information, and women who might be least likely to be persuaded by Cervical Cancer health literacy.

Assessment of attitude towards Screening and Awareness among a convenient sample of women in the Erode District through a questionnaire survey may present new data about current levels of awareness and knowledge of Cervical Cancer and screening. This possibly could be very useful in understanding and addressing the potential barriers (such as Sociodemographic differences and Psychosocial factors) influencing their participation in the existing Cervical Cancer screening programs. Further, such exploratory analysis may provide guidance for the direction and development of future Cervical Cancer research and prevention initiatives in Tamil Nadu.

2. MATERIALS AND METHODS

2.1 Ethical approval

Ethical approval for the study was obtained from the Institutional Ethical Committee, Erode Cancer Centre, prior to the commencement of the study and the ethical principles according to the declaration were considered during the course of the research.

2.2 Participants

500 women living in and around Erode District were subjected to study through a convenience sampling strategy. Data for the Cervical Cancer portion of the Erode District Tamil Nadu Health Behaviour Surveys were collected using a lengthy 60-question cross-sectional social survey prepared in both English and Tamil versions. All surveys were administered during one of five sessions held in the campus of Kongu Arts and Science College, Erode Cancer Centre and Field visits in and around Erode district. At each session, participants were asked to provide informed consent, respond to a two-part survey, andto participate in a Cervical Cancer health literacy session presented by a trained healthcare professional. The guidelines for informed consent were in accordance with human subjects research guidelines established by the appropriate governing institutions in India. Women were informed of their right to discontinue participation at any point duringthe survey or health literacysession.

2.3 Statistical Analysis

Analyses of data were performed using standard statistical software, SPSS. The statistical analyses were performed to describe sociodemographic characteristics and baseline levels of cancer, Cervical cancer, and screening awareness and knowledge among the women population taken for study.

3. RESULTS AND DISCUSSION

Following voluntary informed consent, each study participant was assessed based on their response provided in the questionnaire. The first section of the survey included both multiple choice and open-ended items addressing basic demographic questions (e.g. age, marital status, educational attainment, level of literacy in Tamil, employment status, family income, and if they had been previously screened for Cervical Cancer), and awareness of the terms Cancer, Cervical Cancer, and Cervical Cancer screening. Awareness of specific types of cancer and cancer diagnoses, cervical or otherwise, were elicited through open- ended questions. In this study, awareness was defined as having previously heard of the term in question, independent of further knowledge.

Beyond awareness, more specific questions designed to measure knowledge of multiple aspects of Cervical Cancer(e.g. anatomical origin of Cervical Cancer, the etiologic cause of Cervical Cancer or mode of transmission, the purpose for screening, and symptoms of Cervical Cancer) and screenings(e.g. the name of a screening method or description of the process, knowledge ofa provider of screening, an appropriate age for first screening, and the recommended time interval between screenings) were asked.

Baseline Cervical Cancer Awareness and Knowledge before Health Literacy Session

The results of this section present new data about current levels of awareness and knowledge of Cervical Cancer and screening among a convenience sample of 500 women in Erode District. This information is essential in understanding and addressing potential barriers to participation in existing Cervical Cancer screening programs.Further, such exploratory analyses provide guidance for the direction and development of future Cervical Cancer research and prevention initiatives in TamilNadu. Beyond awareness, more specific questions were designed to measure knowledge of multiple aspects of Cervical Cancer(e.g. anatomical origin of Cervical Cancer, the etiologic cause of Cervical Cancer or mode of transmission, the purpose for screening, and symptoms of Cervical Cancer) and screenings(e.g. the name of a screening method or description of the process, knowledge of a provider of screening, an appropriate age for first screening, and the recommended time interval between screenings) were asked. Through these qualitative and quantitative observations it was realized that many women were either unaware of Cervical Cancer or, in the case of those who were aware of Cervical Cancer, had very limited knowledge of Cervical Cancer and/or screening.The results of our study indicated that lack of awareness is one of the major barriers to women seeking cervical cancer screening services.

Some other barriers include:

- Fear of the procedure
- Women feel embarrassed about gynaecological examinations, especially older women
- Socio-cultural barriers (it is considered to be “a Woman’s disease” that is not discussed openly so women are not “free” to request the service even when they know about it)
- Myths and stigmas (e.g. according to health care workers, communities associate Pap smears with HIV testing, though recent surveys have failed to demonstrate this)
- Poor communication between health providers and women attending health services – services not accessible to women.

However, It appeared that despite initially being unaware of Cervical Cancer, during the survey process, most women were eager tolearn more about Cervical Cancer and their individual risk, as well as steps necessaryfor protecting themselves.

Cervical Cancer Awareness and Knowledge after Health Literacy Session

It was also noted through observation that after receiving information about Cervical Cancer in the health literacy session, most women had a positive attitudetoward participating in screening.Therefore, it was clear from our study that lackof awareness and/or knowledge were

significant barriers to Cervical Cancer screeningamong Tamil women; and further, that with increased awareness and knowledge ofcervicalcancer,the majority of women would be receptive to Cervical Cancerscreening.Some of the survey's key findings are presented below.

SOCIODEMOGRAPHIC CHARACTARISTICS OF THE RESPONDANTS

Table 1 (a) Age of the Respondents

S. No.	Age	No. of Respondents	%
1.	20- 34 years	323	64.6
2.	35 to 60 years	165	33.0
3.	Above 60 years	12	2.4
	Total	**500**	**100.0**

Table1 (b) Marital Status of the Respondents

S. No.	Marital Status	No. of Respondents	%
1.	Married	262	52.4
2.	Divorced	10	2.0
3.	Widow	56	11.2
4.	Unmarried	172	34.4
	Total	**500**	**100.0**

Table1 (c) Area of Residence ofthe Respondents

S. No.	Area of residence	No. of Respondents	%
1.	Rural	216	43.2
2.	Semi-urban	201	40.2
3.	Urban	83	16.6
	Total	**500**	**100.0**

Table 1 (d) Occupation Work Nature of Respondents

S. No.	Sort of work	No. of Respondents	%
1.	Home maker	96	19.2
2.	Moderate workers	367	73.4
3.	Heavy workers	37	7.4
	Total	**500**	**100.0**

Table 1 (e) Educational Qualification Of The Respondents

S. No.	Educational Status	No. of Respondents	%
1.	Less than Primary level	48	9.6
2.	Primary level	75	15.0
3.	Higher secondary	73	14.6
4.	College level	292	58.4
5.	No Formal Education / Refused	12	2.4
	Total	**500**	**100.0**

SOCIODEMOGRAPHIC CHARACTARISTICS OF THE RESPONDANTS

Fig 1(a)
Age of the Respondents

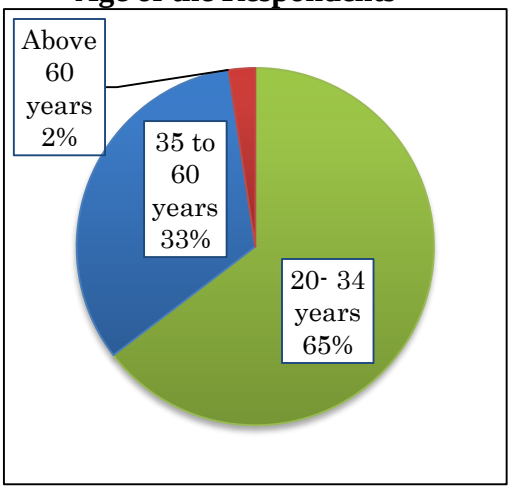

Fig1 (b)
Marital Status of the Respondents

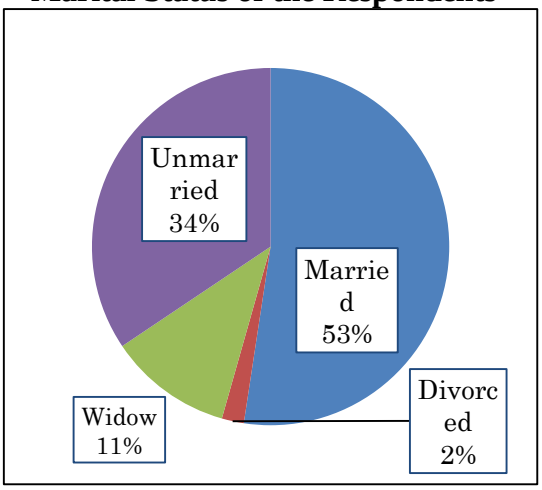

Fig 1 (c)
Area of Residence of Respondents

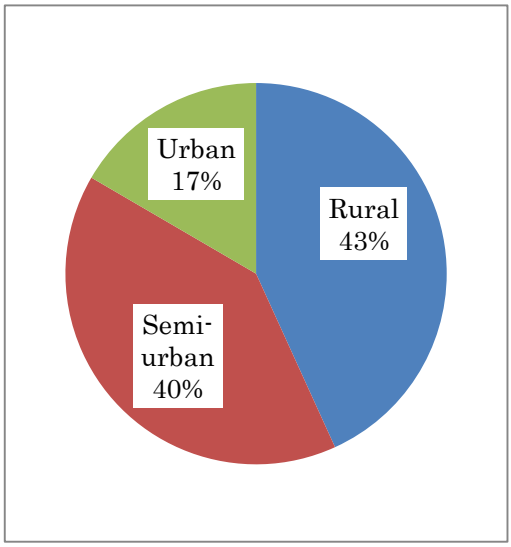

Fig 1 (d)
Occupation Work Nature of Respondents

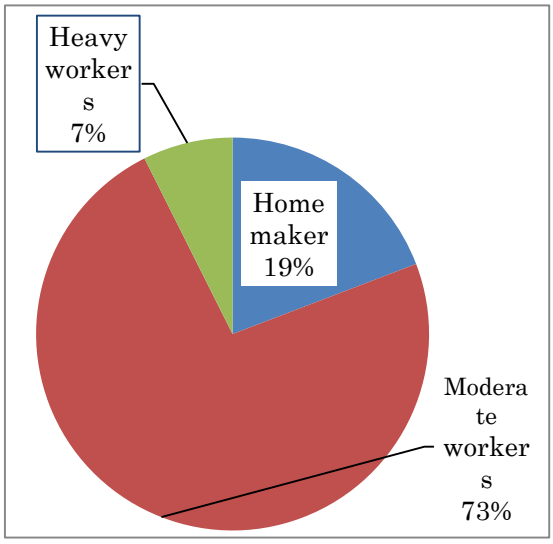

Fig 1 (e)
Educational Qualification of the Respondents

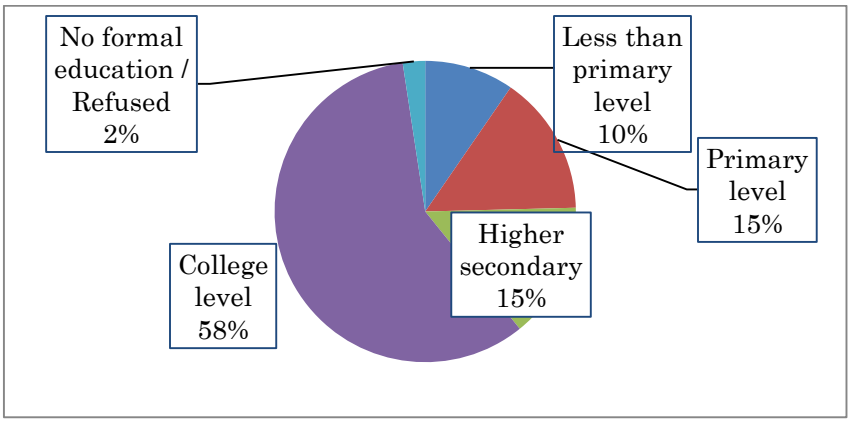

Table 1(a). Awareness level of the Respondents based on Age (Years)

Parameter	Category	Awareness Level Before Literary Session					Total	Awareness Level After Literary Session					Total
		Aware	Not Aware	Partially Aware	No Answer	Need to Aware		Aware	Not Aware	Partially Aware	No Answer	Need to Aware	
Age	**20-34 Years**	125 (38.9%)	69 (21.4%)	106 (32.9%)	3 (0.9%)	19 (5.9%)	322 (100.0%)	254 (78.9%)	29 (9.0%)	31 (9.6%)	2 (0.6%)	6 (1.9%)	322 (100.0%)
	35-60 Years	70 (42.2%)	50 (30.1%)	39 (23.5%)	2 (1.2%)	5 (3.0%	166 (100.0%)	114 (68.7%)	21 (12.6%)	28 (16.9%)	2 (1.2%)	1 (0.6%)	166 (100.0%)
	Above 60 Years	1 (8.3%)	9 (75.0%)	0 (0.0%)	2 (16.7%)	0 (0.0%)	12 (100.0%)	4 (33.3%)	3 (25.0%)	3 (25.0%)	2 (16.7%)	0 (0%)	12 (100.0%)
	Total	**196 (39.2%)**	**128 (25.6%)**	**145 (29.0%)**	**7 (1.4%)**	**24 (4.8%)**	**500 (100.0%)**	**372 (74.4%)**	**53 (10.6%)**	**62 (12.4%)**	**6 (1.2%)**	**7 (1.4%)**	**500 (100.0%)**

Table 1 (b). Awareness level of the Respondents based on Marital Status

Parameter	Category	Awareness Level Before Literary Session					Total	Awareness Level After Literary Session					Total
		Aware	Not Aware	Partially Aware	No Answer	Need to Aware		Aware	Not Aware	Partially Aware	No Answer	Need to Aware	
Marital Status	Married	87 (33.2%)	68 (26.0%)	88 (33.5%)	1 (0.4%)	18 (6.9%)	262	204 (77.9%)	16 (6.1%)	27 (10.3%)	1 (0.4%)	14 (5.3%)	262
	Divorced	6 (60.0%)	3 (30.0%)	1 (10.0%)	0 (0.0%)	0 (0.0%)	10	8 (80%)	1 (10.0%)	1 (10.0%)	0	0	10
	Widowed	14 (25.0%)	16 (28.5%)	20 (35.7%)	3 (5.4%)	3 (5.4%)	56	34 (60.7%)	08 (14.3%)	10 (17.9%)	3 (5.4%)	1 (1.7%)	56
	Un-married	63 (36.6%)	42 (24.5%)	58 (33.7%)	6 (3.5%)	3 (1.7%)	172	127 (73.8%)	16 (9.3%)	24 (14.0%)	4 (2.3%)	1 (0.6%)	172
	Total	**170 (34.0%)**	**129 (25.8%)**	**167 (33.4%)**	**10 (2.0%)**	**24 (4.8%)**	**500**	**373 (74.6%)**	**41 (8.2%)**	**62 (12.4%)**	**8 (1.6%)**	**16 (3.2%)**	**500**

Table 1(c). Awareness level of the Respondents based on Education level

Parameter	Category	Awareness Level Before Literary Session					Total	Awareness Level After Literary Session					Total
		Aware	Not Aware	Partially Aware	No Answer	Need to Aware		Aware	Not Aware	Partially Aware	No Answer	Need to Aware	
Education	Less than Primary level	21 (43.7%)	13 (27.1%)	11 (22.9%)	1 (2.1%)	2 (4.2%)	48	34 (70.8%)	7 (14.6%)	5 (10.42%)	1 (2.1%)	1 (2.1%)	48
	Primary level	27 (36.0%)	30 (40.0%)	16 (21.4%)	1 (1.3%)	1 (1.3%)	75	42 (56.0%)	14 (18.7%)	17 (22.7%)	1 (1.3%)	1 (1.3%)	75
	Higher secondary	34 (46.6%)	22 (30.1%)	13 (17.8%)	3 (4.1%)	1 (1.4%)	73	46 (63.0%)	11 (15.1%)	13 (17.8%)	3 (4.1%)	0 (0%)	73
	College level	106 (36.3%)	57 (19.5%)	106 (36.3%)	3 (1.0%)	20 (6.9%)	292	246 (84.2%)	6 (2.1%)	31 (10.6%)	1 (0.3%)	8 (2.8%)	292
	No Formal Education / Refused	2 (16.7%)	8 (66.6%)	0 (0.0%)	2 (16.7%)	0 (0.0%)	12	3 (25.0%)	3 (25.0%)	4 (33.3%)	2 (16.7%)	0 (0%)	12
	Total	**190 (38.0%)**	**130 (26.0%)**	**146 (29.2%)**	**10 (2.0%)**	**24 (4.8%)**	**500**	**371 (74.2%)**	**41 (8.2%)**	**70 (14.0%)**	**8 (1.6%)**	**0 (2.0%)**	**500**

Table 2(a). Response to Participation in Cervical Cancer ScreeningbasedonAge(Years) before and after Health Literacy Session

Parameter	Category	Response to Participation inCervical Cancer screening			Total	Response to Participation in Cervical Cancer Screening After Literary Session			Total
		Yes	No	Unsure Refused		Yes	No	Unsure Refused	
Age	20-34 Years	40 (12.4%)	101 (31.3%)	182 (56.3%)	323	245 (75.8%)	38 (11.8%)	40 (12.4%)	323
	35-60 Years	21 (12.7%)	0 (0.0%)	144 (87.3%)	165	127 (77.0%)	4 (2.4%)	34 (20.6%)	165
	Above 60 Years	0 (0.0%)	0 (0.0%)	12 (100.0%)	12	03 (25.0%)	0 (0.0%)	9 (75.0%)	12
	Total	**61**	**101**	**338**	**500**	**375**	**42**	**83**	**500**

Table 2(b). Response to Participation in Cervical Cancer Screening based on Marital status before and after Health Literacy Session

Parameter	Category	Participation in cervical cancer screening			Total	Response to Participation in Cervical Cancer Screening After Literary Session			Total
		Yes	No	Unsure Refused		Yes	No	Unsure Refused	
Marital Status	Married	0 (0.0%)	20 (7.6%)	242 (92.4%)	262	229 (87.4%)	16 (6.1%)	17 (6.5%)	262
	Divorced	5 (50.0%)	0 (0.0%)	5 (50.0%)	10	8 (80.0%)	0 (0.0%)	2 (20.0%)	10
	Widowed	11 (19.6%)	11 (19.6%)	34 (60.8%)	56	32 (57.1%)	08 (14.3%)	16 (28.6%)	56
	Un-married	25 (14.5%)	66 (38.4%)	81 (47.1%)	172	110 (64.0%)	30 (17.4%)	32 (18.6%)	172
	Total	**41**	**97**	**362**	**500**	**379**	**54**	**67**	**500**

Table 2(c). Response to Participation in Cervical Cancer Screening based on Education level before and after Health Literacy Session

Parameter	Category	Participation inCervical Cancer screening			Total	Response to Participation inCervical Cancer Screening After Literary Session			Total
		Yes	No	Unsure Refused		Yes	No	Unsure Refused	
Education	Less than Primary level	0 (0.0%)	48 (100.0%)	0 (0.0%)	**48**	31 (64.6%)	8 (16.7%)	9 (18.7%)	**48**
	Primary level	0 (0.0%)	75 (100.0%)	0 (0.0%)	**75**	53 (70.7%)	12 (16.0%)	10 (13.3%)	**75**
	Higher secondary	37 (50.7%)	0 (0.0%)	36 (49.3%)	**73**	55 (75.3%)	6 (8.2%)	12 (16.5%)	**73**
	College level	32 (11.0%)	71 (24.3%)	189 (64.7%)	**292**	238 (81.5%)	32 (11.0%)	22 (7.5%)	**292**
	No formal education/ Refused	0 (0.0%)	0 (0.0%)	12 (100.0%)	**12**	6 (50.0%)	3 (25.0%)	3 (25.0%)	**12**
	Total	**69**	**194**	**237**	**500**	**383**	**61**	**56**	**500**

Table 3 (a)Risk Perception of Cervical Cancer of the Respondents basedon Age (Years) before and after Health Literacy Session

Parameter	Category	Opinion Before Literary Session				Total	Opinion After Literary Session				Total
		Yes	No	Don't know	Refused		Yes	No	Don't know	Refused	
Age	20-34 Years	26 (8.0%)	198 (61.3%)	97 (30.0%)	2 (0.7%)	323	194 60.0%)	81 25.1%)	25 (7.8%)	23 (7.1%)	323
	35-60 Years	23 (13.9%)	90 (54.5%)	47 (28.5%)	5 (3.1%)	165	96 58.2%)	42 25.5%)	22 (13.3%)	5 (3.0%)	165
	Above 60 Years	0 (0.0%)	8 (66.7%)	4 (33.3%)	0 (0.0%)	12	5 41.7%)	3 (25%)	4 (33.3%)	0 (0.0%)	12
	Total	**49**	**296**	**148**	**7**	**500**	**295**	**126**	**51**	**28**	**500**

Table 3 (b). Risk Perception of Cervical Cancer of the Respondents basedon Marital Status before and after Health Literacy Session

Parameter	Category	Opinion Before Literary Session				Total	Opinion After Literary Session				Total
		Yes	No	Don't know	Refused		Yes	No	Don't know	Refused	
Marital Status	Married	35 (13.4%)	146 (55.7%)	76 (29.0%)	5 (1.9%)	262	112 (42.7%)	100 (38.2%)	45 (17.2%)	5 (1.9%)	262
	Divorced	1 (10.0%)	7 (70.0%)	2 (20.0%)	0 (0.0%)	10	4 (40%)	4 (40%)	2 (20%)	0 (0.0%)	10
	Widowed	5 (8.9%)	21 (37.5%)	29 (51.8%)	1 (1.8%)	56	23 (41.1%)	18 (32.1%)	14 (25%)	1 (1.8%)	56
	Un-married	8 (4.7%)	122 (70.9%)	41 (23.8%)	1 (0.6%)	172	104 (60.4%)	55 (32.0%)	12 (7.0%)	1 (0.6%)	172
	Total	**49**	**296**	**148**	**7**	**500**	**243**	**177**	**73**	**7**	**500**

Table 3 (c). Risk Perception of Cervical Cancer of the Respondents basedon Education level before and after Health Literacy Session

Parameter	Category	Opinion Before Literary Session				Total	Opinion After Literary Session				Total
		Yes	No	Don't know	Refused		Yes	No	Don't know	Refused	
Education	Less than primary	2 (4.2%)	25 (52.1%)	21 (43.8%)	0 (0.0%)	**48**	23 (47.9%)	15 (31.3%)	10 (20.8%)	0 (0.0%)	**48**
	Primary level	8 (10.7%)	41 (54.7%)	24 (32.0%)	2 (2.6%)	**75**	44 (58.7%)	20 (26.6%)	9 (12%)	2 (2.7%)	**75**
	Higher secondary	14 (19.2%)	32 (43.8%)	25 (34.2%)	2 (2.8%)	**73**	42 (57.5%)	17 (23.3%)	12 (16.5%)	2 (2.7%)	**73**
	College level	25 (8.5%)	188 (64.4%)	77 (26.4%)	2 (0.7%)	**292**	152 (52%)	99 (33.9%)	39 (13.4%)	2 (0.7%)	**292**
	No formal education /	0 (0.0%)	10 (83.4%)	1 (8.3%)	1 (8.3%)	**12**	6 (50%)	4 (33.4%)	1 (8.3%)	1 (8.3%)	**12**
	Total	**49**	**286**	**148**	**7**	**500**	**267**	**155**	**71**	**7**	**500**

Table 4 (a). Response to Free Cervical Cancer Screening based on Age (Years) before and after Health Literacy Session

Parameter	Category	Willing to free Cervical Cancer screening before Literary Session				Total	Willing to free Cervical Cancer screening after Literary Session				Total
		Don't know	Yes	No	Refused		Don't know	Yes	No	Refused	
Age	20-34 Years	39 (12.1%)	207 (64.1%)	66 (20.4%)	11 (3.4%)	323	11 (3.4%)	239 (74.0%)	47 (14.6%)	26 (8.0%)	323
	35-60 Years	24 (14.6%)	100 (60.6%)	37 (22.4%)	4 (2.4%)	165	2 (1.2%)	125 (75.8%)	25 (15.1%)	13 (7.9%)	165
	Above 60 Years	4 (33.3%)	3 (25.0%)	5 (41.7%)	0 (0.0%)	12	1 (8.3%)	10 (83.4%)	0 (0.0%)	1 (8.3%)	12
	Total	**67**	**310**	**108**	**15**	**500**	**14**	**374**	**72**	**40**	**500**

Table 4 (b). Response to Free Cervical Cancer Screening based on Marital Status before and after Health Literacy Session

Parameter	Category	Willing to free Cervical Cancer screening before Literary Session				Total	Willing to free Cervical Cancer screening after Literary Session				Total
		Don't know	Yes	No	Refused		Don't know	Yes	No	Refused	
Marital Status	Married	41 (15.6%)	163 (62.2%)	51 (19.5%)	7 (2.7%)	262	7 (2.7%)	201 (76.7%)	36 (13.7%)	18 (6.9%)	262
	Divorced	2 (20.0%)	7 (70.0%)	1 (10.0%)	0 (0.0%)	10	0 (0.0%)	7 (70.0%)	2 (20.0%)	1 (10.0%)	10
	Widowed	8 (14.3%)	32 (57.1%)	14 (25.0%)	2 (3.6%)	56	4 (7.1%)	45 (80.4%)	4 (7.1%)	3 (5.4%)	56
	Un-married	16 (9.3%)	108 (62.8%)	42 (24.4%)	6 (3.5%)	172	3 (1.7%)	121 (70.3%)	30 (17.4%)	18 (10.5%)	172
	Total	**67**	**310**	**108**	**15**	**500**	**14**	**374**	**72**	**40**	**500**

Table 4 (c). Response to Free Cervical Cancer Screening based on Education level before and after Health Literacy Session

Parameter	Category	Willing to free Cervical Cancer screening before Literary Session				Total	Willing to free Cervical Cancer screening after Literary Session				Total
		Don't know	Yes	No	Refused		Don't know	Yes	No	Refused	
Education	Less than Primary level	9 (18.8%)	30 (62.5%)	8 (16.7%)	1 (2.0%)	**48**	2 (4.2%)	34 (70.8%)	8 (16.7%)	4 (8.3%)	**48**
	Primary level	15 (20.0%)	34 (45.3%)	26 (34.7%)	0 (0.0%)	**75**	1 (1.3%)	55 (73.3%)	15 (20.1%)	4 (5.3%)	**75**
	Higher Secondary	9 (12.3%)	40 (54.8%)	21 (28.8%)	3 (4.1%)	**73**	1 (1.4%)	53 (72.6%)	13 (17.8%)	6 (8.2%)	**73**
	College level	31 (10.6%)	201 (68.8%)	49 (16.8%)	11 (3.8%)	**292**	9 (3.1%)	224 (76.7%)	34 (11.6%)	25 (8.6%)	**292**
	No Formal Education / Refused	3 (25.0%)	5 (41.7%)	4 (33.3%)	0 (0.0%)	**12**	1 (8.3%)	8 (66.7%)	2 (16.7%)	1 (8.3%)	**12**
	Total	**67**	**310**	**108**	**15**	**500**	**14**	**374**	**72**	**40**	**500**

In considering the development of a Cervical Cancer awareness campaign, participants feedback suggest that women do not necessarily need or desire in-depth levels of information about Cervical Cancer, but they do want to know about symptoms, methods for prevention, the lack of hereditary factors, and the availability and cost of treatment. It is noteworthy that these top concerns of participants echo constructs of the Health Belief Model, specifically, perceived susceptibility (hereditary risk factor), severity(symptoms), benefits (methods for prevention and availability of treatment), and barriers/costs (monetary cost of treatment). Additionally, perceived susceptibility to cervical cancer appeared to be significantly associated with a positive attitude toward screening after the health intervention.Based on anecdotal observations, it was noted that social, land, cultural constructs may also contribute to the ways in which healthcare is utilizedamong populations in our region. Specifically, due toissues of stigma and/or misunderstandings of the etiology of Cervical Cancer, some women may mistakenly assume that they are not at risk. To bridge the information gaps and address these barriers requires a comprehensive and sustained Health literacy programme with extensive community. The purpose of this extensive Health literacy programme should be to raise awareness about cancer of the cervix and the importance of

screening as a preventive measure, to publicise the availability of screening services in the public sector at clinic level, and to encourage women to attend health services for screening according to the screening policy.However, there are people in India who can afford to utilize privatehealthcare, thus avoiding many of the unpleasant experiences associated with government-funded facilities and suggesting that barriers to healthcare alone, do not account for low ratesof Cervical Cancer screening.

4. CONCLUSION

Cancer prevention, screening and early detection can provide some of the greatest public health benefits for Cervical Cancer control. Evidence suggests that 40% of cancers can be prevented, through risk factor reduction and a further 30% of cancers can be cured if detected early, through screening and early diagnosis and appropriate treatment. Hence, the major goals of global cancer control programmes are primary prevention and early detection.This study therefore is aimed to better understand, using a mixed methodology approach, why existing Cervical Cancer screening programs in Tamil Nadu remain largely underutilized. To address this question, a qualitative field-based study of healthcare was undertaken. Through these qualitative observations it was realized that many women were either unaware of Cervical Cancer or, in the case of those who were aware of Cervical Cancer, had very limited knowledge of Cervical Cancer and/or screening. However, It appeared that despite initially being unaware of Cervical Cancer, most women were eager to learn more about Cervical Cancer and their individual risk, as well as steps necessary for protecting themselves. It was also noted through observation that after receiving information about Cervical Cancer, most women had a positive attitude toward participating in screening. Therefore, based on these qualitative observations, a quantitative study was undertaken to further explore the hypotheses that lack of awareness and/or knowledge were significant barriers to Cervical Cancer screening among Tamil women; and further, that with increased awareness and knowledge of cervical cancer, the majority of women would be receptive to Cervical Cancer screening.

FUTURE PROSPECTS

Although many advancements have been made in developing Cervical Cancer prevention and treatment strategies appropriate for low resource settings, significant gaps in knowledge and implementation remain. Of utmost importance is to identify the most effective and efficient methods for meeting the immediate screening and treatment needs of the currently “at risk” middle-aged women in India. A qualitative assessment of the experiences and perspectives of women who have previously been screened for Cervical Cancer would be very beneficial in

developing culturally competent prevention programs. This type of research could possibly help to identify previously unrecognized barriers to screening or treatment, in addition to motivators for or deterrents from future re-screening over the long term research should explore the feasibility and effectiveness of integrating a women's reproductive preventive healthcare initiative within the existing infrastructure of social networks. In conjunction with the concept of delivering Cervical Cancer screening through existing social networks, future research should also explore, through economic analyses, the possibility and potential benefits of combining awareness of multiple preventive health issues into a comprehensive health promotion program. The top two cancers among women in India, Cervical and Breast, both have significantly improved prognosis through early detection. In overall, addressing multiple health issues in one program would likely maximize the use of available resources by the healthcare providers and policy makers to improve the delivery and quality of healthcare services.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

HUMAN AND ANIMAL RIGHTS

No Animals/Humans were used for studies that are base of this research.

CONSENT FOR PUBLICATION

Not applicable.

AVAILABILITY OF DATA AND MATERIALS

The authors confirm that the data supporting the findings of this research are available within the article.

FUNDING

None

ACKNOWLEDGEMENT

The Author wishes to express her sincere thanks to the support from University Grants Commission (UGC), Government of India and acknowledge their assistance of providing Grant to carry out this Project. The author would also like to thank the Management, Principal, Faculty Members and Students of Biochemistry Department of Kongu Arts and Science College and Dr. Vellavan, Erode Cancer Center for their continuous provision of facilities and constant support for the study.

CONFLICT OF INTEREST

The Author has no conflict of interest.

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