IV. RESULTS AND DISCUSSION

The health of women is referred to the division of medicine that concentrates on managing and detecting the diseases and instances that influence a woman's psychosocial and corporeal quality. The health of woman and young adults is of significant worry since in many communities they are discriminated due to the prevalence of socio-cultural aspects. They have unique issues of health and some of them which influences both females and males can influence the females in a different manner. The disease of carcinoma has the highest incidence rate in younger women. The problem can be decreased by detecting in early stages and management of patients who develop cancer.

This chapter comprises of the analysis of data on the study on **"Analysis of the Risk factors and Interventions to Promote Better Quality of Life among Women with Cervical Cancer at Selected Hospitals, Chhattisgarh''** The results are presented under two aspects:

A. Findings of the Survey.
B. Results of the Interventions Programme to promote better quality of life among women with cervical cancer.

A. FINDINGS OF THE SURVEY

A survey was done to identify and explore the possible aspects of cancer of cervix among women who were admitted in selected hospitals. The survey was focusing to explore the risk factors of cancer of cervix hence the women develop knowledge to identify it as an early preventive strategy. The findings of the survey are discussed under the topics of

1. Demographic Profile of Women.

2. Health History.

3. Identification of Risk Factors of Cervical Cancer

1. Demographic Profile of Women

The below Table II briefly describes the percentage distribution of women of cervical cancer concurring to the Demographic profile like age, status of marriage, income,

educational status, religion, habitat, employment status, occupation, husband occupation, type of diet, family type, information source, number of children, and financial support system.

TABLE II

DEMOGRAPHIC PROFILE OF WOMEN

Demographic Profile		Percentage (n =110)
Age in years	21-30	15
	31-40	28
	41-50	45
	51-60	12
Marital status	Single	0
	Married	89
	Divorced	2
	Widow	9
Educational status	Illiterate	31
	Primary	28
	High school	17
	Higher secondary	7
	Graduate and above	17
Religion	Hindu	84
	Christian	2
	Muslim	14
Habitat	Urban	32
	Rural	68
Employment	Yes	48
	No	52
Occupation	Coolie	23
	Government	11
	Private	64
	Professional	2
Husband occupation	Coolie	13
	Government	28
	Private	49
	Business	10

Demographic Profile		Percentage (n =110)
Monthly Income	Less than 5000	45
	5000-10000	42
	10000-15000	5
	15000-20000	2
	More than 20000	6
Family monthly Income	5000-10000	11
	10000-15000	13
	15000-20000	13
	20000-25000	22
	More than 25000	41
Type of Family	Single	2
	Nuclear Family	24
	Joint family	44
	Extended family	30
Number of Children	One	2
	Two	44
	Three	31
	Four	13
	Five	9
	Six	1
Type of Diet	Vegetarian	17
	Consuming Mixed diet	83
Financial Supportive System	Local community	42
	Government	24
	NGOs	34
Source of Information	Patient	78
	Family members	22

a. Age in Years

In relation to the age, it clearly depicts that majority of women who were affected by cancer (45 percent) were in between 41-50 years of age, 28 percent were aged between 31 - 40, 15% between 21-30 years of age, and only 12 percent were aged 50 years and above. According to the Cancer Net Education Board, (2019) cancer of cervix is most frequently detected between the ages of 35 and 44. About 60 percent of patients were in a crucial part of their life among the ages of 35 and 65 years (NCCP, 2018). (Figure 20).

b. Marital Status

While looking into the marital status of the women, majority of them (89 percent) were married. The findings were in association with the study done by Rajpal et al., (2018) where the cancer prevalence was highest among females in the reproductive age groups. Also, in the study done by Parija (2017) most of the women who had cancer of cervix were married. (Figure 21).

c. Level of Education

With regards to the level of education most of the women (31 percent) were noted to be illiterate and about 28 percent reached up to primary level of education and seventeen percent of them went up to high school and 17 percent became graduates. This was in par with the study done by Sreedevi et al., (2015) who found out that the incidence was greater among the group of women of economically backward group, illiterates and who had more children. (Figure 22).

d. Religion

In relation to religion 84 percent of women belong to Hindu religion, 14 percent of them were Muslims and only two percent belonged to Christian community.

e. Habitat

Regarding the residence of the patients, majority 68 percent of them were living in rural area of Chhattisgarh and remaining 32 percent of them were living in urban area. It was reported that in rural areas, there was an increased occurrence of cervical cancer associated with significant risk aspects like age at marriage, high number of pregnancies, young age at

first childbirth, family planning measures and infections of the sexual organs. (Gupta et al., 2012).

f. Employment Status

With respect to the employment status of the women, majority of them (52 percent) were unemployed and 48 percent were employed. (Figure 23). Among the occupational status of the women 64 percent were employed in private sector organizations and about 23 percent were employed as daily wages employees (coolie), 11 percent of them employed with Government sector and only two percent of them were professionals. With respect to the husbands' occupation most of them (49 percent) were employed in private sector organizations and about 28 percent were government employees while 13 percent of them were daily wages employees (coolie). (Figure 24).

g. Monthly Income

With regards to the monthly income of the women it was noted that nearly half of them (45 percent) were earning less than Rs 5000 and about 42 percent in the range of Rs 5,000 - Rs 10,000 and only about 7 percent in the range of Rs 10,000 to Rs 20,000. This was in line with the study done by Averbuch and Witkoski (2009) where they found that the low revenue group women did not have approach to do the screening tests. Concurring to World health organization (WHO, 2018) the infections by which cancer is caused are, hepatitis and Human Papilloma Virus (HPV), which accounts to 25 percent of cancer instances in the economically backward nations.

According to the family monthly income earned as a whole the majority (41 percent) were earning above Rs 25,000 and about 22 percent in the range of Rs 20,000- Rs 25,000 and about 26 percent in the range of Rs 10,000-Rs 20,000 while only about 11% in the range of Rs 5,000-Rs 10,000. (Figure 25). Income and occupational status are important parameters and has significant role in cancer treatment. The women who are economically backward are at an increased level of risk of developing cervical cancer as these women are now aware of the disease. Mohanan and Shetty, (2013).

h. Type of Family

It was also found that 44 percent of the women were living in a joint family and about 30% of them in an extended family while about twenty four percent of them lived in a nuclear family.

i. Number of children

On report of the number of children, almost 44 percent of the women had two children and about 31 percent of them had three children and 13 percent had four children. According to

j. Type of Diet

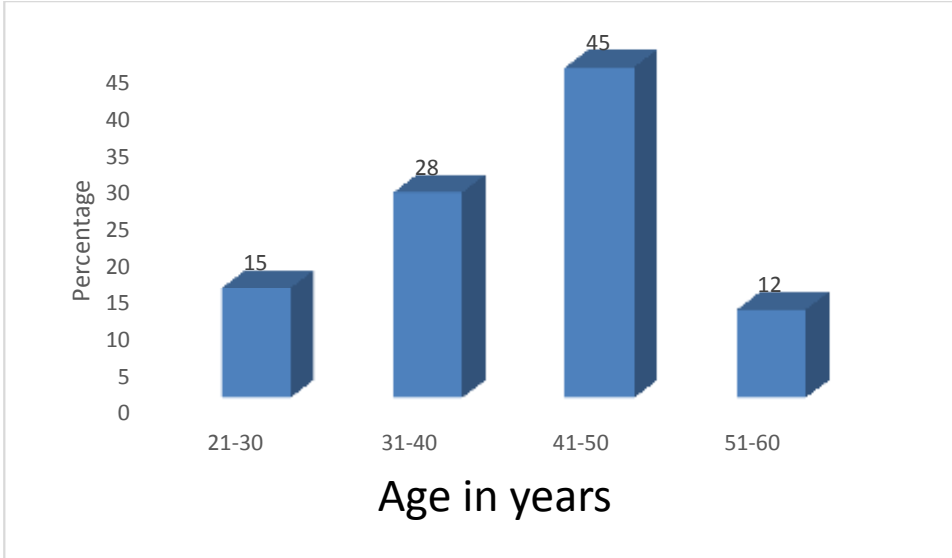
It was noted from the above table that almost all of them i.e. 83 percent were consuming mixed diet while only seventeen percent were pure vegetarians. (Figure 26).

k. Financial Supportive System

Upon noticing the kind of support system, the women were able to utilize, it was found that most of them (42 percent) were utilizing the financial support from the local community and about 34 percent were getting the financial support from NGOs and about 24 percent were able to get financial support from government organizations.

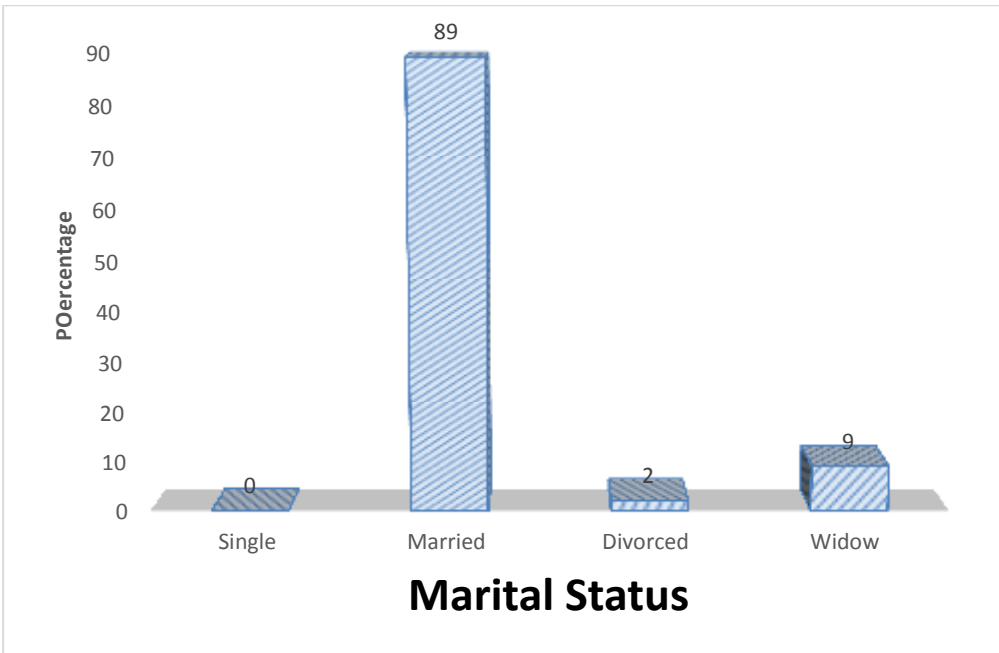
l. Source of Information

The major source of the information received for about 78 percent was from the women themselves and about 22 percent was gathered from the family members. (Figure 27).



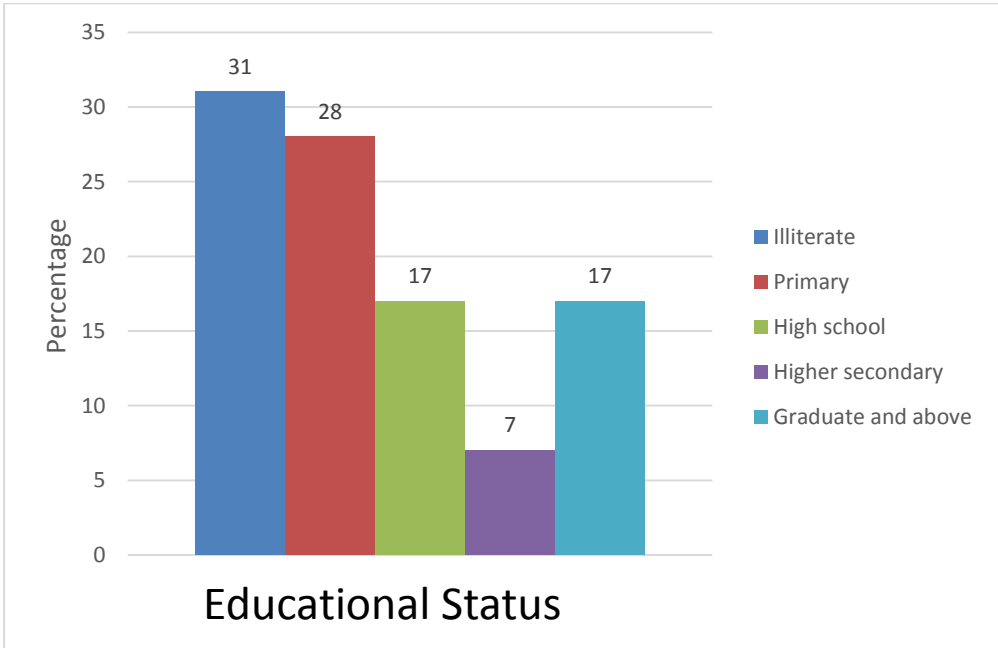
AGE OF WOMEN

FIGURE 20



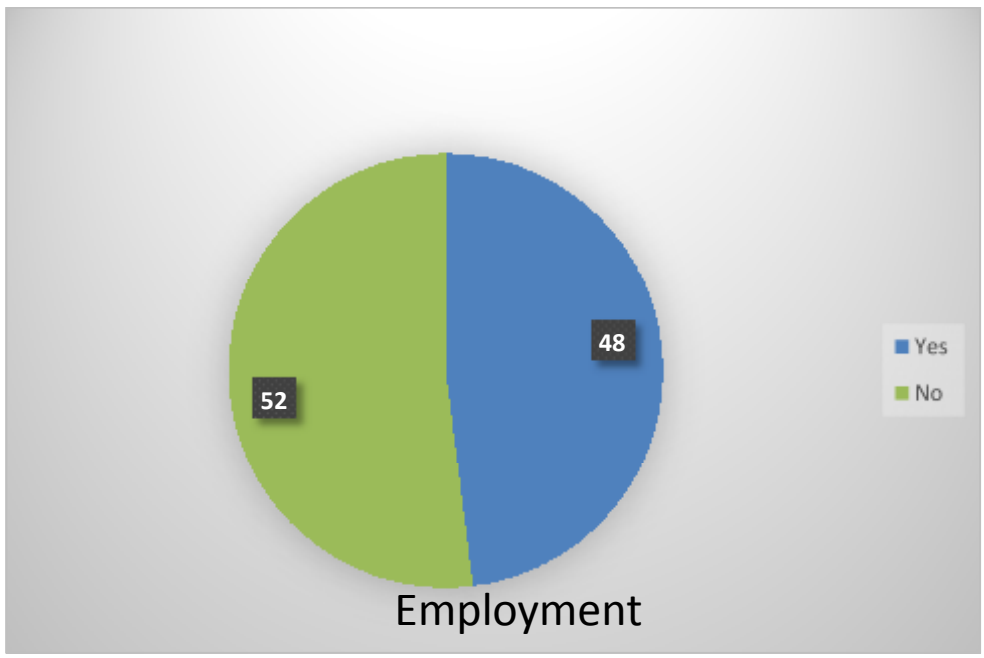
MARITAL STATUS OF WOMEN

FIGURE 21



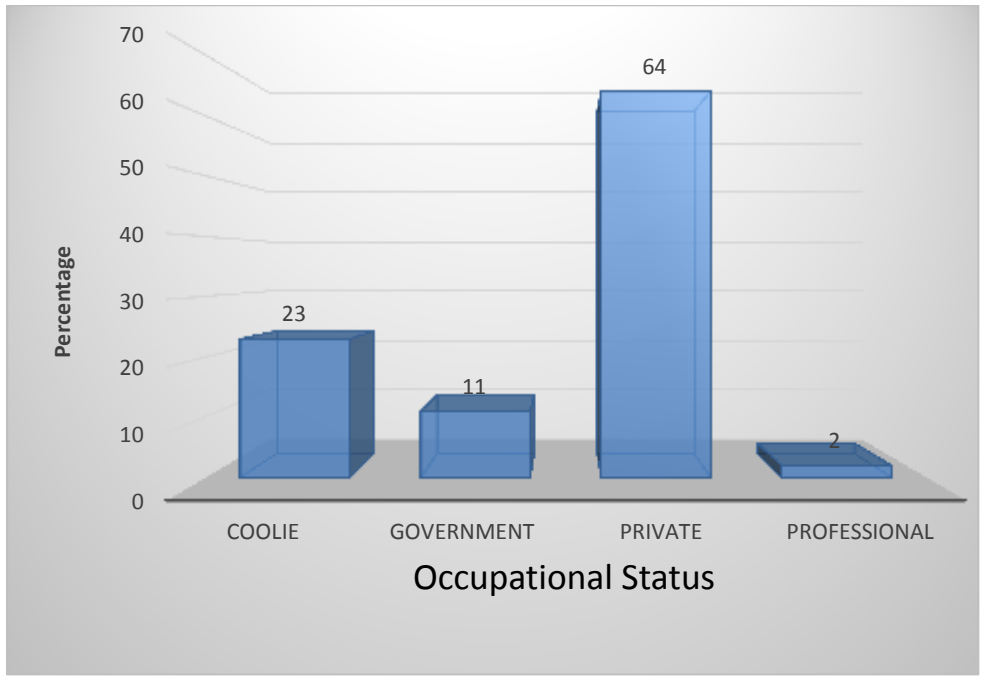
EDUCATIONAL STATUS OF WOMEN

FIGURE 22



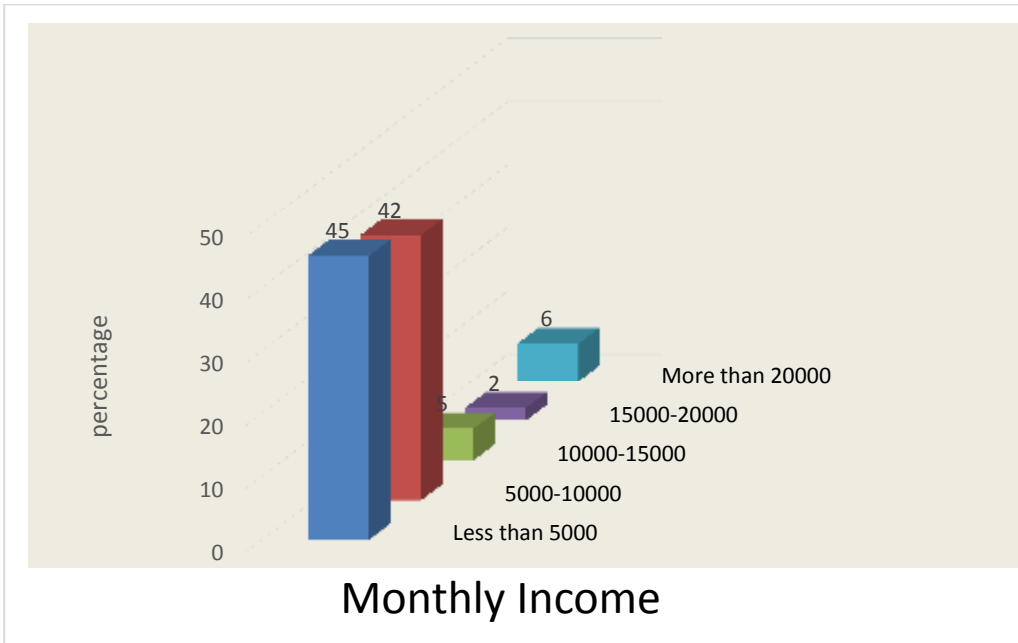
EMPLOYMENT STATUS OF WOMEN

FIGURE 23



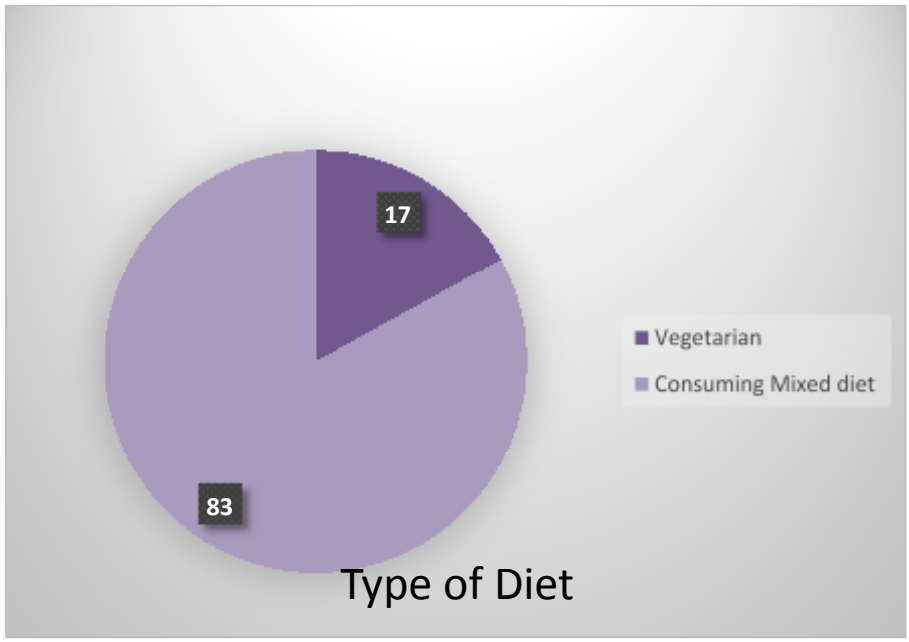
OCCUPATIONAL STATUS OF WOMEN

FIGURE 24



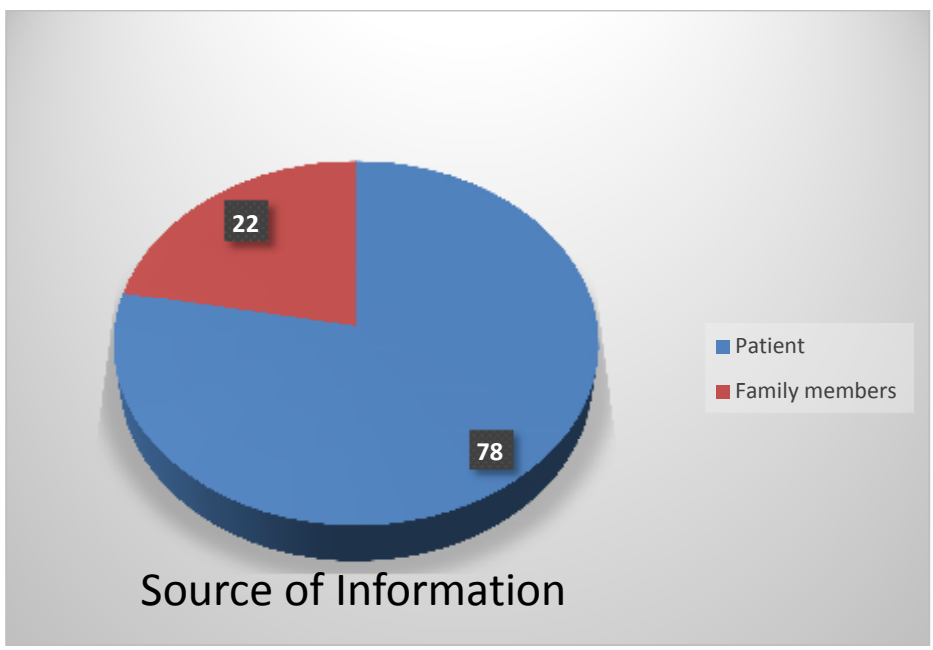
MONTHLY INCOME OF THE WOMEN

FIGURE 25



TYPE OF DIET

FIGURE 26



SOURCE OF INFORMATION

FIGURE 27

2. Health History

In view of the normal history of the disease, assessment of the cervix remains to be the main stay for cervical cancer control. The prevention and management of disease in the initial phase will enable to provide a better result when compared to detection at a later progressive stage. Knowing about the disease details, type of cancer stage and mode of treatment will enhance the better treatment. Health history of women with cervical cancer consists of

a. Disease Details

b. Health Adherence.

a. Disease Details

The following Table III showed the percentage distribution of Disease details. It includes the type of cancer, the type of treatment undergone and stages of cancer.

TABLE III

DISEASE DETAILS OF WOMEN

Disease details		Percentage (n =110)
Type of cancer	Squamous cell carcinomas	60
	Adenocarcinomas	27
	Adenosquamous carcinomas	13
Type of Treatment	Surgery, chemotherapy and radiation	51
	Chemotherapy and radiation	49
Stage of cancer	Stage II	39
	Stage III	61

i. Types of cancer

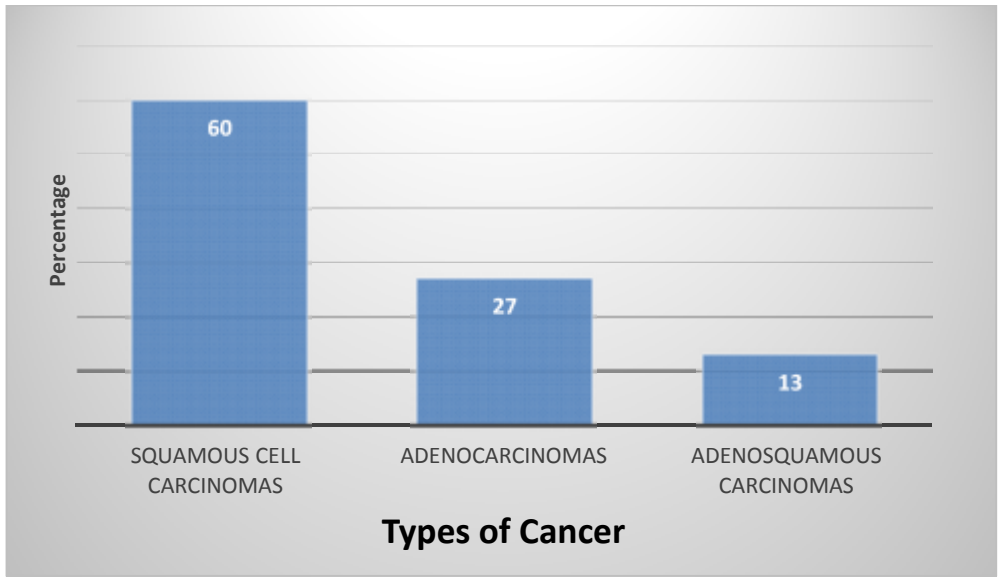
With regards to the type of cancer that the women suffered with, most of them (60 percent) were affected by squamous cell carcinomas and about 27 percent were affected by adenocarcinomas and 13 percent of them were having adenosquamous carcinomas. This is in relation with the study done by Bobdey et al., (2016) where it was found that the most spread cancer was squamous cell carcinoma and adenocarcinomas. (Figure 28).

ii. Type of Treatment

While looking into the type of treatments received by the women just more than half of them (51 percent) were treated by surgery, chemotherapy and radiation methods of treatment while about 49 percent of them were treated by chemotherapy and radiation. It is well supported by WHO (2018) where it is stated that one or more methods such as radiotherapy, chemotherapy and surgery is needed to treat any type of cancer.

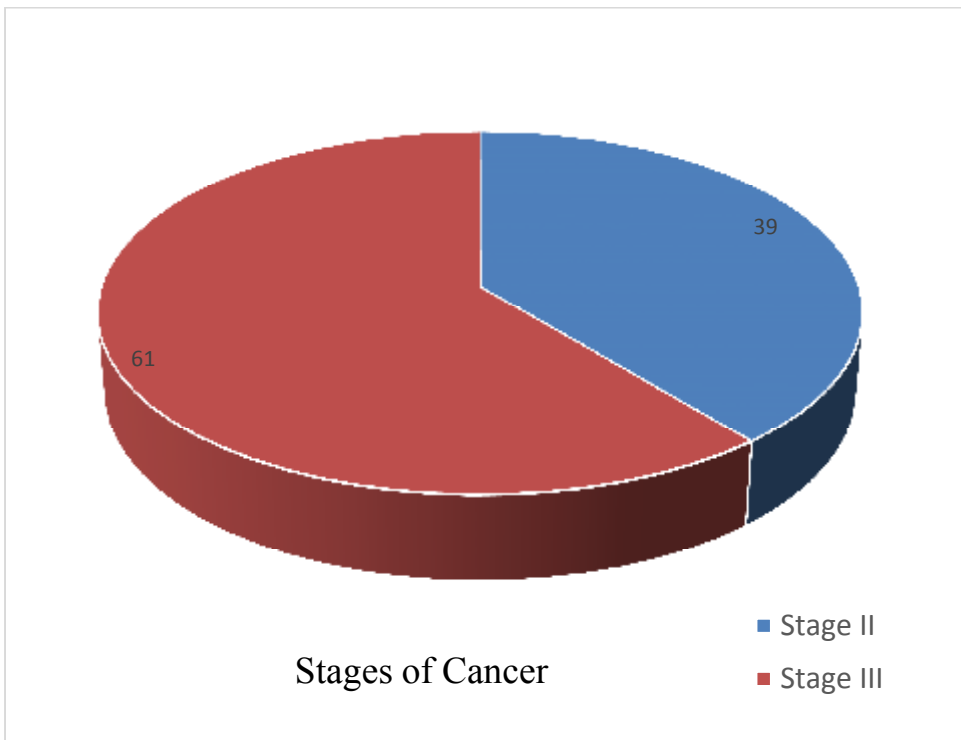
iii. Stages of cancer

As World Health Organization (2018) mentioned the burden of cancer can be decreased by 30-50 percent through early detection. The cure percentage is high if the cancers are detected in the initial stages and are managed thoroughly. In regard to the staging type of the cancer, higher percentage of the women (61 percent) were in the Stage III category and 39 percent were found to be in the Stage II category. One among many aspects that can have an impact on the survival rate is staging. The percentage of 5-year survival rate is high if diagnosed in an early phase and only half of them are detected in the initial stages. (Cancer Net Board, 2018). In this study, it is shown that majority of them were seeking medical care in the later stages. (Figure 29).



TYPES OF CANCER OF WOMEN

FIGURE 28



STAGES OF CANCER

FIGURE 29

b. Health Adherence.

The following Table IV illustrates the percentage distribution of women in correspondence to their duration of illness and number of hospital admissions.

TABLE IV

DETAILS OF HEALTH ADHERENCE OF WOMEN

Health adherence		**Stage II**	**Stage III**
		Percentage (n=110)	
Duration of illness	Newly diagnosed	37	60
	0-1 year	19	22
	2 -3 year	21	15
	4-5 year	23	3
Number of Hospital admissions	First time	37	60
	2- 3rd time	56	22
	4 -5th time	7	18

i. Duration of Illness

Upon noticing the women duration of illness in stage III, it was found that most of them (60 percent) were newly diagnosed and about 18 percent fell into the 2-5 years range and about 22 percent of them were recently diagnosed, 0-1 year. In stage II, 37 percent of them were newly diagnosed and 19 percent of them diagnosed within one year. Nearly quarter percentages (24 percent) of them were diagnosed between 2-5 years.

ii. Number of Hospital Admissions

With regards to the number of admissions by the women of stage III it was noted that more than half of them (60 percent) were admitted for the first time and about 22 percent of the them were admitted between 2- 3rd time and only about 18 percent were admitted between 4- 5th time. In stage II patients 37 percent of them were admitted for the first time and mostly half of them (56 percent) repeated their admission between 2-3rd time whereas only seven percent of them got readmitted between 4-5th time.

3. Identification of Risk Factors

Cancer of cervix is the commonly found one in women of reproductive age. In spite of the availability of different assessment methods for avoidance majority of women stay unscreened. The main obstacles that are found against assessment are lack of knowledge of the causative aspects, unknown of symptoms and avoidance, humiliation and false belief about the gynecological diseases. (Bansal et al., 2015). Identification of risk factors would improve the knowledge of women and help to prevent the cancer since it is a preventable cancer. This section includes,

a. Personal risk factors.
b. Family welfare and sexual risk factors of women.

a. Personal Risk Factors.

The following Table V depicts the personal factors of risk in women with cervical cancer such as age at marriage, family Income, dietary pattern, consumption of balanced diet, personal habits, marital status, number of marriage and husband marital status involved in the cancer patients.

TABLE V

PERSONAL RISK FACTORS OF WOMEN

Personal Risk Factors		Percentage (n=110)
Age at marriage	14-18	50
	19-23	38
	24-28	12
Family monthly Income	5000-10000	11
	10000-15000	13
	15000-20000	13
	20000-25000	22
	More than 25000	41
Dietary Pattern Number of Times of Food Consumption	Three times	65
	Two times	35
Consumption of Balanced Diet	Yes	46
	No	54
Personal Habits	No specific habits	57
	Tobacco chewing	37
	Betel chewing	6
Marital History	Single	2
	Married	87
	Divorced	2
	Widow	9
Number of Marriages	First marriage	95
	Second marriage	5
Husband Marital Status	First marriage	68
	Second marriage	32

i. Age at Marriage

Women who were younger than 17 years while getting married and had their first matured child were nearly two times more likely to be diseased by cervical cancer later in life than women who delivered at 25 or above years. It is noted that half (50 percent) of the women were married at the age group between 14-18 and 38 percent were married between 19-23 age group and only 12 percent were falling into the 24-28 age group category. Study highlighted 50 percent of them were at higher risk of cancer of cervix. (Figure 30).

ii. Family monthly Income

Adherence to cervical cancer assessment practices were significantly related with financial status. Socio-economic status had higher rates of impacts in cervical cancer and death from the disease. According to the family monthly income earned as a whole the majority (41 percent) were earning above Rs 25,000 and about twenty two percent in the range of Rs 20,000- Rs 25,000 and about twenty six percent in the range of Rs 10,000- Rs 20,000 while only about 11 percent between Rs 5000- Rs 10000. (Figure 31).

iii. Dietary Pattern

With regards to the dietary pattern followed by the women, most of them (65 percent) were taking food three times a day and about 35 percent of them were having food only two times a day.

The part of aspects of nutrition had an impact on cancer patients and had been taken in to great account during the current time to prevent and control the cancer. Increased consumption of higher nutritional consumption of vegetables that are green in color, or dark green and yellow fruits, are related with a 50 percent reduction in cervical cancer. Almost half (54 percent) of the patients were unable to consume a balanced diet while about 46 percent of the patients were able to consume a balanced diet. In a similar report by (Ghosh et al., 2008) it was concluded, consumption of balanced diet improved the survival. Not consuming a balanced diet was considered as a major causative aspect. (Figure 32).

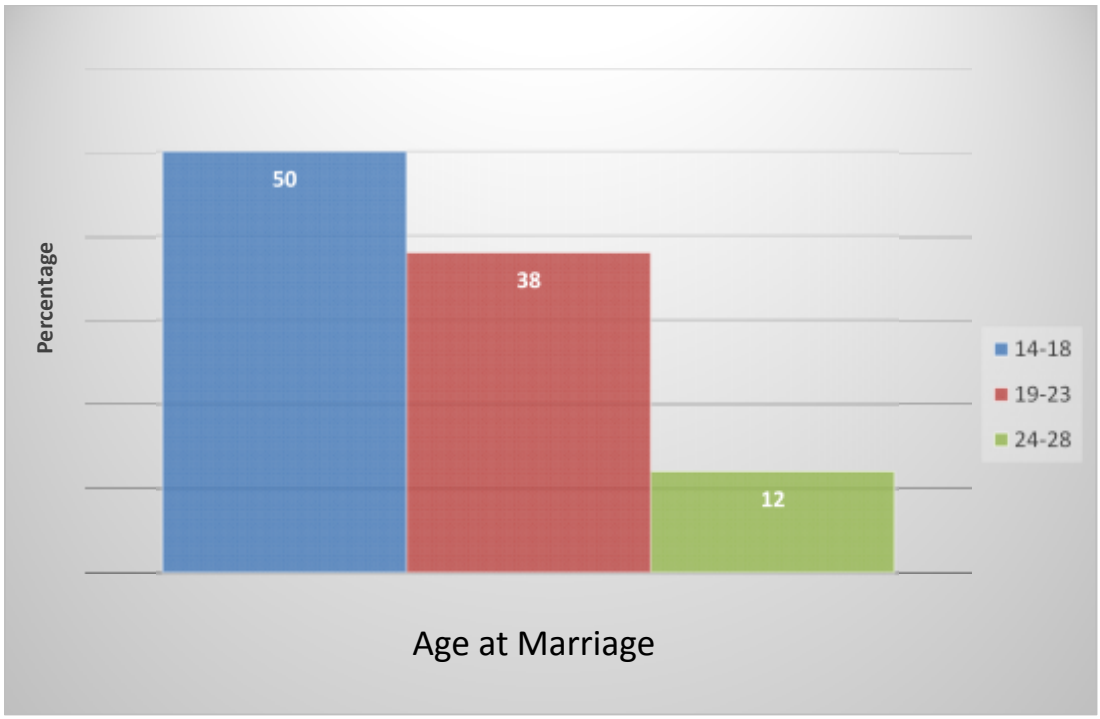
iv. Personal Habits

While noticing the specific personal habits of the women patients, it was found that a vast percentage of the patients (57 percent) did not have any habits in specific to complain, while about 3 percent and 6 percent were chewing tobacco and betel respectively. Chewing tobacco which contains 28 types of causative chemicals of cancer; the main cancer-causing chemicals in chewing tobacco is a particular group of nitrosamines.
(https://www.medicinenet.com).

v. Marital History

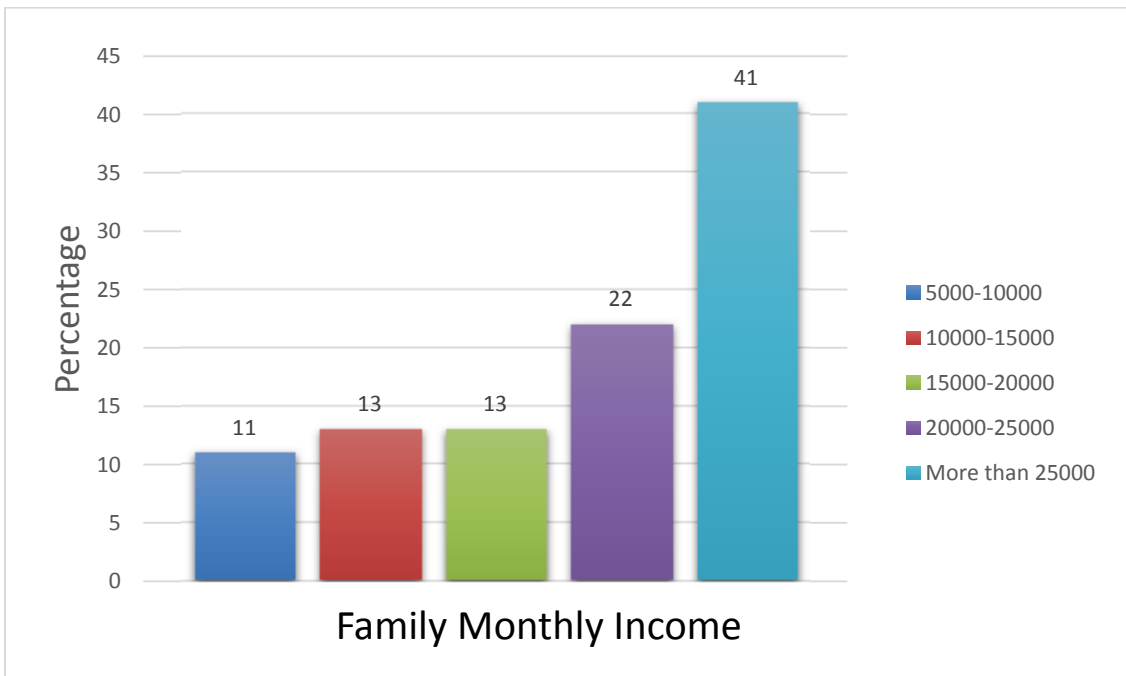
Cervical cancer is prevalent among married women. While looking into the marital status of the women, majority (87 percent) of them were married, 10 percent were widows and two percent of them were single and divorced respectively. The findings were in association with the study done by Rajpal et al., (2018) where the cancer prevalence was highest among females in the reproductive age groups. Also, in the study done by Parija (2017) majority of women who had cancer were married.

Having sex with various companions rises the opportunity of carrying the HPV virus. This rise of level of the causative agent is usually related to HPV infection which leads to cancer of cervix. While reviewing the history of number of marriages, almost all of them (95 percent) were married for the first time and only about 5 percent were married for the second time. Regarding the husband marital status 68 percent of them had first marriage and the remaining 32 percent of them married twice. Liu et al., (2015) highlighted that risen level of causative agent for cancer of the cervix is noted in people with more than one sexual companion.

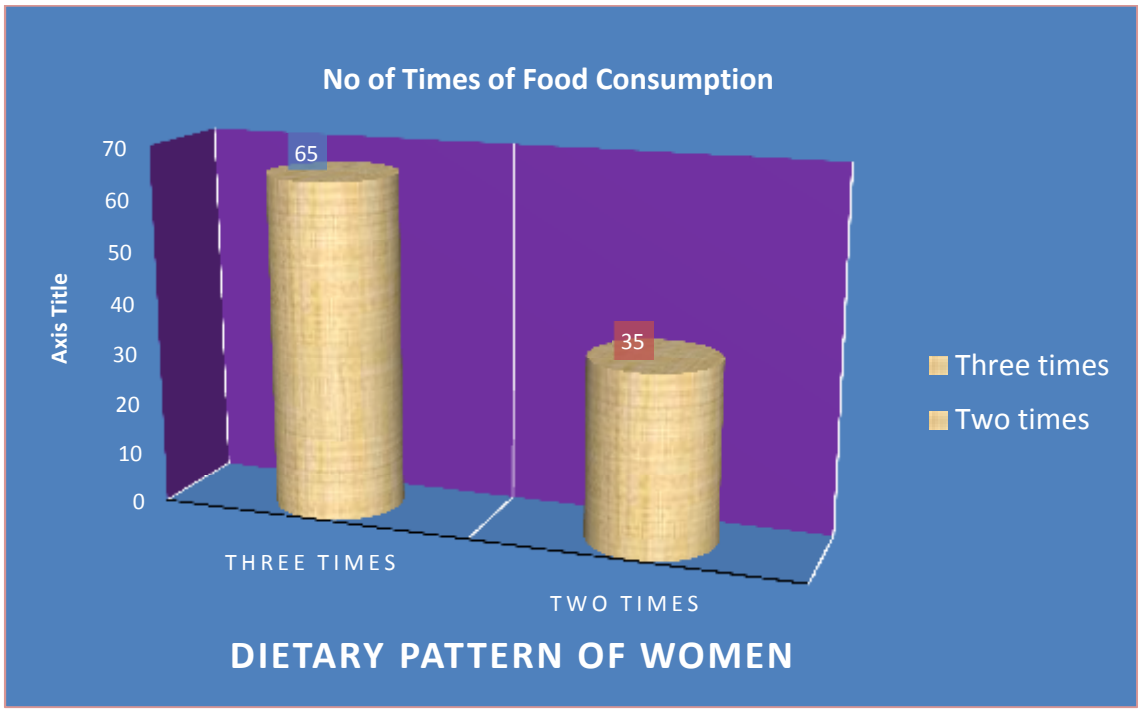


AGE AT MARRIAGE OF WOMEN

FIGURE 30



FAMILY MONTHLY INCOME OF WOMEN
FIGURE 31



DIETARY PATTERNS OF WOMEN

FIGURE 32

TABLE VI

FAMILY WELFARE AND SEXUAL RISK FACTORS OF WOMEN

Family Welfare and Sexual Risk Factors		Percentage (n=110)
Age at first Delivery	15-19	47
	20-24	38
	25-29	15
Number of Delivery	One	3
	Two	42
	Three	32
	Four	13
	Five	9
	Six	1
Type of Delivery	Normal	85
	Caesarian	15
History of Abortions	Yes	37
	No	63
Type of Abortions	Spontaneous	88
	Induced	5
	Medical termination of pregnancy	7
Pre-marital sexual relationship	Yes	Nil
	No	100
History of family planning measures	Yes	24
	No	76
If yes, type of method	Oral contraceptives	77
	Copper T	23
Family history of cancer	Yes	28
	No	72
Details of family history of cancer	Maternal	65
	Paternal	35
History of Immunodeficiency Disorders.	Yes	26
	No	74
History of sexually transmitted diseases	Yes	45
	No	55
Women Underwent PAP smear test	Yes	4
	No	96

b. Family Welfare and Sexual Risk Factors of Women

i. Delivery History

In relation to age at first delivery, the majority (47 percent) of the women were in between the age group of 15-19 years during their first delivery, 38 percent were in between the age group of 20-24 and 15 percent of them were in between the age group of 25-29. A study done by Mwaka (2016) it was identified as having first sexual intercourse at a very young age is one of the risk factors causing cervical cancer. This is further well supported by the study done by Louie et al., in 2009 where it was found that first sexual intercourse at an early age has an increased chance of developing invasive cervical carcinoma.

Women who have more full-term pregnancies have an increased risk of developing cervical cancer. Hormonal changes during pregnancy are possibly making women more susceptible to HPV infection or cancer growth. The data about the number of deliveries the women had revealed that, most of the women had two or more deliveries. In a similar analysis done by (Gonzalez et al., 2006) it was expressed as higher the number of deliveries higher the risk of cancer in women.

Every cycle of pregnancy adds injury to the female genital tract including cervix and this make the cervix more prone to metaplastic changes. Deliveries are categorized under various types and in common most of the deliveries would be of normal except for in some cases where a manual or mechanical interpretation would be needed. Here in this study, 85 percent of the women had a normal delivery and 15 percent had caesarian section delivery. Mohanan and Shetty, (2013) quoted in the study on Parity as a causative agent for cervical cancer which states that there is substantial association between the number of normal deliveries with cervical cancer. (Figure 33).

ii. History of Abortion

In this study the majority of the women (63 percent) did not have a history of abortion and about 37 percent had a history of abortion. It was noted that most (88 percent) of abortions were of spontaneous in nature and about five percent were induced, while about seven percent were due to medical termination.

In this study, it was noted that none of the women had been involved in a pre-marital sex situation.

iii. History of Family Planning Measures

Oral contraceptive use may promote or initiate tumors of the cervix. Presently, the usage of family planning measures is related with a high causative aspect of cancer of cervix. (Vanakankovit and Taneepanichskul, 2008). With regards to the history of family planning methods adapted by the women, majority (76 percent) of them were not following any kind of family planning measures. About 24 percent were using family planning measures. Among the women who had been following family planning measures vast percentage (77 percent) have been using oral contraceptives and about 23 percent of them had been adapting Copper T method.

iv. Family History of Cancer

There are chances that there can be a specific trait in the families where it is inherited with a faulty gene. Mostly there would not have been a chance of hereditary reason to carry a faulty gene. The chance of having at least a person with cancer is prevailing. In this study also it was noted that most of the women (72 percent) did not have a familial history of cancer and in the instances where there was a familial history, majority (65 percent) was of maternal type and thirty five percent was of paternal. (Figure 34).

v. History of Immunodeficiency Disorders

Immunodeficiency disorders weaken the immune system of the body and this makes easier for someone to catch a virus or a bacterial infection. The immunity level of the women in this study was noted to be high with only 26 percent having a history of immune deficiency disorder while the vast majority (74 percent) of the women did not have any history of immune deficiency disorders.

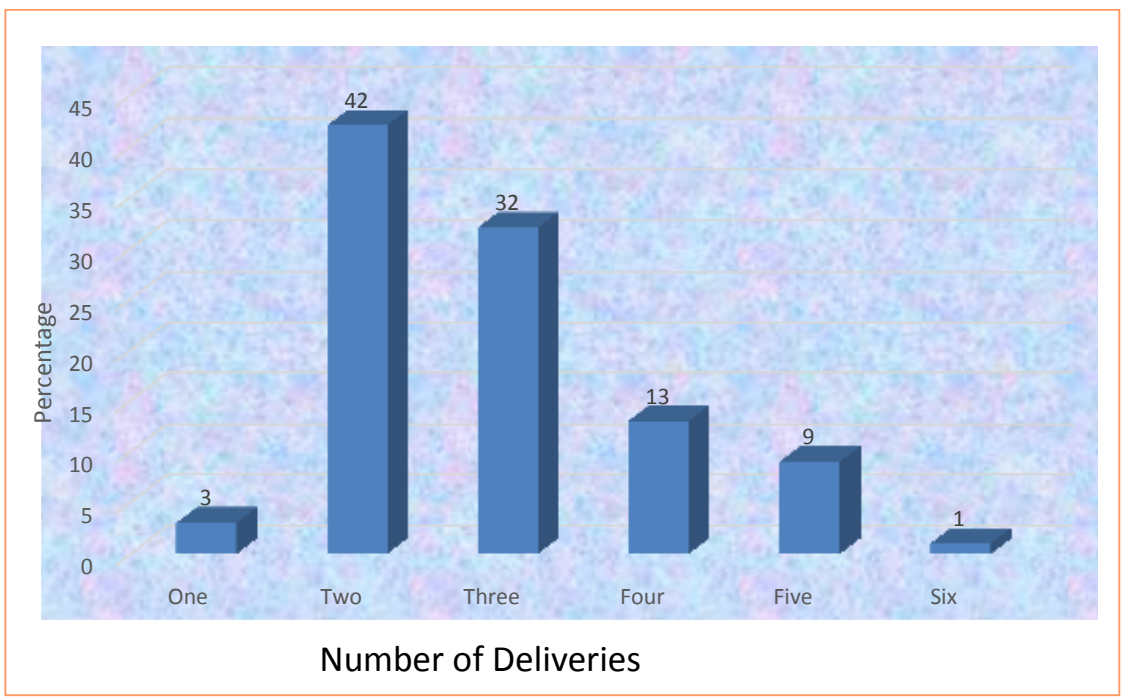
vi. History of Sexually Transmitted Diseases

The main causative for cancer of cervix is disease caused by the Human Papilloma Virus. This is normally transmitted through sexual intercourse leading to cancer lacerations. A

minimum amount of the lesion remains causing cancer. (Wardak, 2016). In this study it was marked that 45 percent of them had a history of Sexually Transmitted Diseases and treated, remaining 55 percent of them had no exposure to such type of infections.

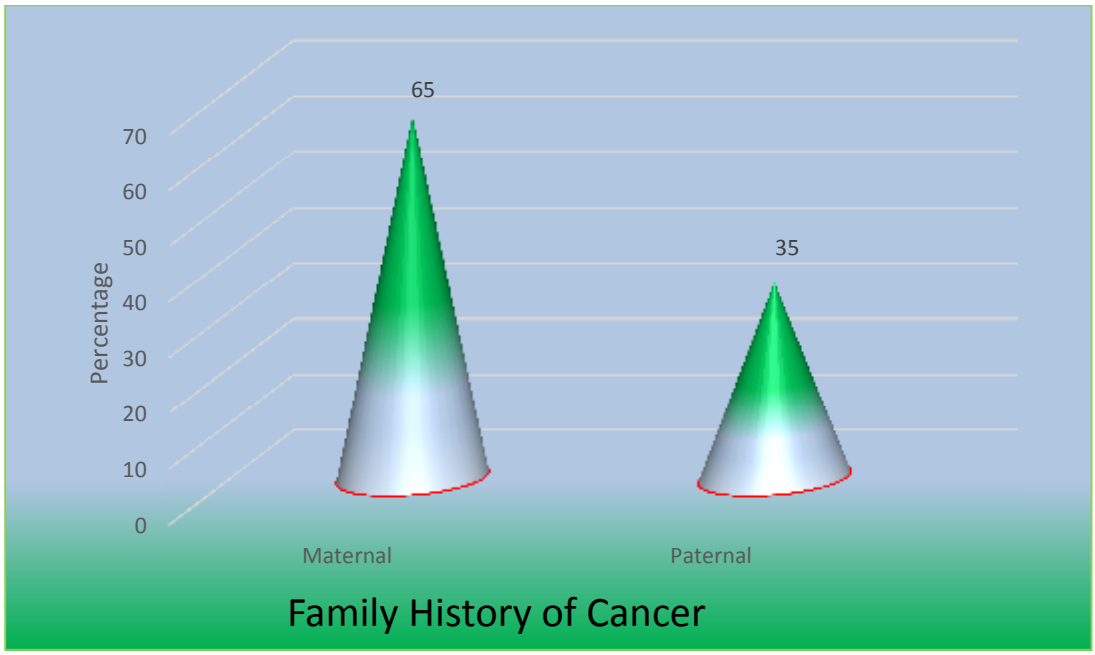
vii. Women Underwent PAP Smear Test

HPV infection prevalence is 87.8 to 96.67 percent among women who is affected with cervical cancer and 9.9 to 36.8 percent among with normal women. (Sreedevi et al., 2015). Pap smear is a very easy, noninvasive, simple, useful, safe, and very economical tool to detect pre invasive cervical lesions. It is evident and proven that every woman between 30–35 years must undergo cervical screening and this must be continued even in the postmenopausal period. (Shaki et al., 2018). In regards with Pap smear almost all the women (96 percent) were not investigated for PAP smear test prior before diagnosis of cancer, only four percent of them tested once before. It is considered as a most important risk factor of cervical cancer. (Figure 35).



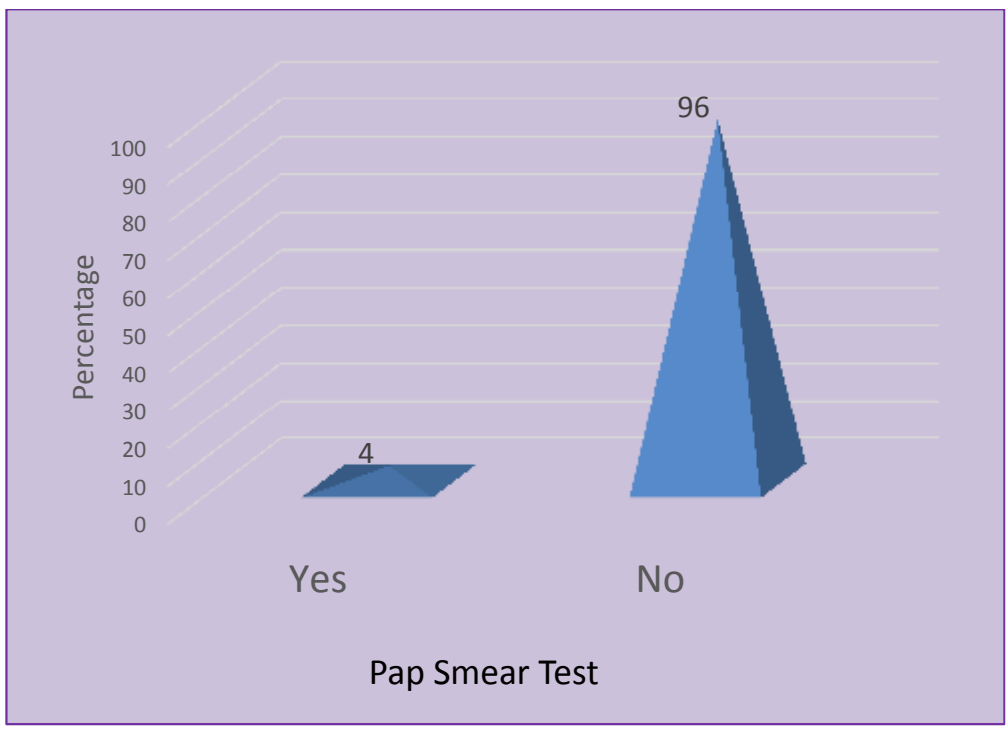
NUMBER OF DELIVERIES OF WOMEN

FIGURE 33



FAMILY HISTORY OF CANCER OF WOMEN

FIGURE 34



WOMEN UNDERWENT PAP SMEAR TEST

FIGURE 35

B. Results of the Interventions Programme to Promote Better Quality of Life Among Women with Cervical Cancer.

Interventions were chosen and implemented to women with cervical cancer to promote better Quality of Life. Here we discuss about the various results that were obtained before and after implementation of the interventions. Results were analysed statistically based on the following objectives,

1. Assess the Quality of Life of women with cervical cancer before and after interventions in experimental group.
2. Assess the Quality of Life of women with cervical cancer before and after in control group.
3. Evaluate the Quality of Life of women with cervical cancer after interventions between control and experimental groups.

1. Assess the Quality of Life of women with Cervical Cancer before and after Interventions in Experimental Group.

The Quality of Life was assessed immediately after admission. Interventions were given from day 1 until 8^{th} week. At the end of the 8^{th} week post-test assessment was conducted and the results were discussed in two types of scales namely,

a. EORTC 30-item Quality of Life scale (QLQ-C30).

b. EORTC 24-item Quality of Life scale (QLQ-CX24).

TABLE VII

COMPARISON OF QUALITY OF LIFE OF WOMEN WITH CERVICAL CANCER BEFORE AND AFTER INTERVENTIONS IN EXPERIMENTAL GROUP - EORTC QLQ-C30

Parameters	Before Interventions		After Interventions		't' value	P value	Inference
	Mean	SD	Mean	SD			
Functional Scale							
Physical functioning	10.30	11.61	76.12	15.38	-25.33	0.001	S
Role functioning	15.76	12.18	84.85	14.79	-26.74	0.001	S
Emotional functioning	16.96	14.16	74.55	10.69	-24.07	0.001	S
Cognitive functioning	21.21	13.40	69.39	24.59	-12.76	0.001	S
Social functioning	11.82	11.86	63.94	14.96	-20.24	0.001	S
Symptom scales							
Fatigue	95.76	7.25	22.42	14.26	33.99	0.001	S
Nausea and vomiting	82.12	15.67	36.97	15.94	14.98	0.001	S
Pain	95.45	8.76	23.33	13.46	33.31	0.001	S
Single items							
Dyspnoea	89.09	15.78	22.42	24.89	16.77	0.001	S
Insomnia	84.24	16.80	25.45	20.25	16.57	0.001	S
Appetite loss	91.52	14.65	29.70	25.40	15.64	0.001	S
Constipation	81.82	16.75	29.70	25.40	12.71	0.001	S
Diarrhoea	73.94	26.98	26.67	24.34	9.65	0.001	S
Financial difficulties	91.52	14.65	53.33	31.16	8.22	0.001	S
Global health status	10.30	11.61	78.91	15.96	-25.78	0.001	S

*** Significant at 0.05 level NS - Not significant. S - Significant.**

1.a. EORTC 30-item Quality of Life scale (QLQ-C30).

The above Table VII showed the data before and after interventions in the experimental group which was measured by using EORTC 30-item Quality of Life Scale (QLQ- C30). Paired 't' test was used to analyse the life quality of women with cervical cancer before and after interventions in Experimental group.

The components of EORTC 30-item Quality of Life scale (QLQ-C30) were Functioning Scale, Symptom Scales, Single item Scale, Multi-Item Scales and Global Health Status.

i. Functional Scale

The finding showed the mean, and 't' value or the following parameters before and after interventions in the experimental group of functional scale with the categories such as physical functioning (10.30-76.12, -25.33). The mean physical functioning is seven times higher when compared to the physical functioning before treatment.

Role functioning (25.76-84.85, -26.74). There is a significant increase when compared to the role functioning before treatment and after treatment.

Emotional functioning (16.96-74.55, -10.69). The emotional functioning is improved approximately three times when compared to the condition before treatment.

Cognitive functioning (21.21-69.39, -12.76). There is noted to be a significant increase when compared to the functioning before treatment. Social functioning (11.82, -63.94, -20.24). This showed a very good level of increase in the social functioning after treatment.

Kaur et al (2018) conducted a study and noted that interventional package for patients with cancer of cervix proved to be an applicable method in reducing the depression, anxiety, and fatigue.

ii. Symptom scales

Symptom scales data with the categories is noted as fatigue (95.76-22.42-33.99). The fatigue level is reduced to nearly about one-fourth when compared with the level of fatigue before treatment.

Nausea and vomiting (82.12- 36.97, 14.98). The nausea and vomiting had reduced significantly after treatment.

Pain scale data is as follows, (95.45- 23.33, and 33.31). There was a drastic level of improvement of pain after the treatment. Result of the study is supported by Adamsen et al., (2016) that multidimensional exercise interventions may be beneficial for cancer patients in reducing fatigue and pain.

iii. Single Items

Single items data with the categories dyspnea (89.09- 22.42, and 16.77). The dyspnea level had decreased to about one third level as it was before treatment. Insomnia (84.24, -25.45, and 16.57). It should also be noted that the insomnia level had reduced after the treatment. The women who were able to sleep only 3-4 hours before the interventions, were able to sleep 5-6 after the interventions.

Appetite loss (91.52- 29.70 and 15.64). The appetite level had improved at least two folds when compared to the level it was before starting the treatment. Constipation (81.82, -29.70 and 12.71). It was also noted that the problem of constipation had reduced to half the level it was before starting the treatment.

Diarrhea (73.94- 26.67 and 9.65). It was again seen that the diarrhea condition had also improved markedly upon treatment. Financial difficulties (91.52-53.33 and 8.22). There was an improvement in handling the financial issues due to improved health status after the treatment had been started.

iv. Global Health Status

The global health status showed the mean of 10.30, -78.91, with 't' value -25.78 respectively. Thus, there is significant level of improvement in the health status when noted globally.

Quality of life scores (QLQ- C30) were assessed in experimental group in functioning scale, symptom scale, single item scale and global health status and the results showed there was a significant difference in mean scores at 0.05 percent level. **Thus, the Hypothesis $H_0$1 -**

"There is no significant difference in EORTC score of Quality of Life among experimental group before and after interventions" was rejected.

TABLE VIII

COMPARISON OF QUALITY OF LIFE OF WOMEN WITH CERVICAL CANCER BEFORE AND AFTER INTERVENTIONS IN EXPERIMENTAL GROUP - EORTC CX24

Parameters	Before Interventions		After Interventions		't ' value	P value	Inference
	Mean	SD	Mean	SD			
Multi-item scales							
Symptom experience	81.38	8.24	18.46	13.08	30.18	0.001	S
Body image	66.46	15.93	15.76	14.92	17.23	0.001	S
Sexual/vaginal functioning	15.36	18.10	20.00	21.53	1.48	0.460	NS
Single item scales							
Lymphedema	51.52	21.10	12.12	16.18	10.99	0.001	S
Peripheral neuropathy	76.36	17.77	21.82	25.03	13.18	0.001	S
Menopausal symptoms	65.45	32.05	26.67	20.69	7.54	0.001	S
Sexual worry	28.48	31.70	7.27	18.91	4.26	0.001	S
Sexual activity	28.48	31.70	7.27	18.91	4.26	0.001	S
Sexual enjoyment	3.60	15.20	10.10	19.00	2.00	0.468	NS

***Significant at 0.05 level NS - Not significant. S - Significant.**

1.b. EORTC 24-item Quality of Life scale (QLQ-CX24).

The above Table VIII showed that data of cancer of women which was measured by using EORTC 24-item scale QLQ- CX24. Paired 't' test was used to analyse the Quality of Life of women with cervical cancer before and after interventions in Experimental group.

The components of EORTC 24-item scale (QLQ-CX24) were, Multi-Item Scales and Single item Scale.

i. Multi-item Scales

The finding showed the mean, and 't' value for the following parameters before and after interventions in the experimental group of multi-item scale with categories symptom experience (81.38 -18.46 and 30.18). The data revealed that the symptoms experienced by the women before treatment had reduced considerably.

Body image (66.46-15.76 and 17.23). The psychological worry of body image had decreased significantly after the treatment.

Regarding Sexual and vaginal functioning (15.36- 20.00 and 1.48). There was not a significant increase in the sexual and vaginal functioning due to the disease progress nature and the patient's less interest. It was supported by the study conducted by Bashir et al., (2017) Menopausal symptoms and sexual worry showed worst worsening of QoL among all domains after chemo and radiation therapy.

ii. Single Item Scales

The single item scales data of mean, and 't' value a with categories of lymphedema (51.52- 12.12 and 10.99); and peripheral neuropathy (76.36- 21.82 and 13.18). There was significant amount of decrease in lymphedema and peripheral neuropathy after the treatment. Menopausal symptoms (65.45- 26.67 and 7.54). The menopausal symptoms issue had reduced remarkably after the treatment started.

In Sexual worry (28.48-7.27 and 4.26). Sexual activity (28.48-7.27 and 4.26) and in sexual enjoyment (13.89-7.75 and 1.05) respectively. Due to disease progress and cultural ethics factor prevailing in the Indian society, the women were very reluctant to express or show interest in handling the issues such as sexual worry, activity, and enjoyment respectively. Thus, there is no significance between before and after the interventions in sexual enjoyment.

Quality of life scores (QLQ- CX24) were assessed in experimental group and the results showed there was a remarkable difference in mean scores at 0.05 percent level. Thus, the Hypothesis **$H_0$1 - "There is no significant difference in EORTC score of Quality of Life among experimental group before and after interventions" was rejected.** Significance was not found in sexual /vaginal functioning and sexual enjoyment.

2. Assess the Quality of Life of Women with Cervical Cancer Before and After in Control Group.

The Quality of Life was assessed immediately after admission. From the day 1 until 8th week the women had undergone only the hospital treatment. Post test-assessment was conducted and the results are discussed in two types of scales namely,

a. EORTC 30-item Quality of Life scale (QLQ-C30).

b. EORTC 24-item Quality of Life scale (QLQ-CX24).

TABLE IX

COMPARISON OF QUALITY OF LIFE OF WOMEN WITH CERVICAL CANCER BEFORE AND AFTER IN CONTROL GROUP - EORTC QLQ-C30

Parameters	Before Interventions		After Interventions		t value	P value	Inference
	Mean	SD	Mean	SD			
Functional Scale							
Physical functioning	5.45	9.44	57.33	12.54	-24.51	0.001	S
Role functioning	15.45	15.33	65.76	20.89	-14.40	0.001	S
Emotional functioning	14.09	3.89	27.42	14.40	-6.63	0.001	S
Cognitive functioning	24.55	8.40	37.58	15.12	-5.59	0.001	S
Social functioning	6.97	8.30	27.58	15.46	-8.71	0.001	S
Symptom Scales							
Fatigue	99.39	2.55	53.33	9.89	33.44	0.001	S
Nausea and vomiting	63.33	12.99	65.15	23.19	-0.51	0.610	NS
Pain	92.42	9.52	53.03	14.38	16.94	0.001	S
Single items							
Dyspnea	98.79	6.30	41.82	21.49	18.87	0.001	S
Insomnia	92.12	14.29	58.18	17.23	11.24	0.001	S
Appetite loss	90.30	15.28	45.45	21.62	12.56	0.001	S
Constipation	60.61	14.47	31.52	22.61	8.04	0.001	S
Diarrhea	64.24	25.54	50.30	16.82	3.38	0.001	S
Financial difficulties	98.79	6.30	66.06	25.25	9.33	0.001	S
Global health status	16.67	14.16	65.76	20.89	-14.42	0.001	S

*** Significant at 0.05 level NS – Not Significant. S – Significant.**

2.a. EORTC 30-item Quality of Life scale (QLQ-C30).

The above Table IX showed the data of the cancer women pre- and post- test in control group which was measured by using EORTC 30-item, Quality of Life scale (QLQ-C30). Paired 't' test was used to assess the life quality of women with cervical cancer before and after interventions in control group.

The components of EORTC 30-item Quality of Life scale (QLQ-C30) were Functioning Scale, Symptom Scales, Single item Scale, Multi-Item Scales and Global Health Status.

i. Functional Scale

The finding showed the mean and 't' value for the following parameters pre- and post-test in control group of functional scale with the categories of physical functioning (5.45-57.33, -24.51); role functioning (15.45- 65.76, -14.40); emotional functioning (14.09-27.42, -6.63; cognitive functioning (24.55-37.58, -5.59); social functioning (6.97-27.58, -8.71).

The post test mean score of functioning scale is improved when compared to the scores before. The improvement was due to routine hospital managements such as surgery, radiation and chemotherapy.

ii. Symptom Scales

Symptom scale data of mean and 't' value with the categories of fatigue (99.39- 53.33, 33.44); nausea and vomiting (63.33-65.15, - 0.51); pain (92.42- 53.03, 16.94).

Fatigue and pain level had reduced minimally after the routine hospital treatment. The women were complaining of fatigue not only because of cancer (CRF) but also due to radiation therapy. The results show the mean score of nausea and vomiting is increased due to side effects of chemotherapy. There is no significance found statistically in nausea and vomiting.

iii. Single Items

Single items data of mean and 't' value with the categories is noted as follows, dyspnea (98.79- 41.82, 18.87); Insomnia (92.12-58.18, 11.24); appetite loss (90.30-45.45, 12.56); Constipation (60.61-31.52, 8.04); diarrhea (64.24-50.30, 3.38); financial difficulties (98.79-66.06, 9.33).

The gradual decrease of mean score of single items noted and the long period of time was taken to minimize the symptoms such as sleeplessness, loss of hunger, and financial difficulties.

The major cause of insomnia was noted due to anxiety of the disease condition and hospitalization.

iv. Global Health Status

The global health status data was read as 16.67-65.76, -14.42 it showed the improvement after the routine treatment.

Quality of Life scores (QLQ- C30) were assessed in control group in functioning scale, single item scale and global health status and the results revealed that there was a notable difference in mean scores at 0.05 percent level. Thus, the **Hypothesis $H_0$2 - "There is no significant difference in EORTC score of Quality of Life among control group before and after interventions" is rejected.**

TABLE X

COMPARISON OF QUALITY OF LIFE OF WOMEN WITH CERVICAL CANCER BEFORE AND AFTER IN CONTROL GROUP - EORTC CX24

Parameters	Before interventions		After interventions		't ' value	P value	Inference
	Mean	SD	Mean	SD			
Multi-item scales							
Symptom experience	82.75	7.86	49.31	14.91	14.72	0.001	S
Body image	38.18	32.06	27.07	23.88	2.06	0.041	S
Sexual/vaginal functioning	10.10	19.00	7.10	15.20	0.90	0.361	NS
Single item scales							
Lymphedema	82.42	19.09	46.67	26.91	8.04	0.001	S
Peripheral neuropathy	73.94	15.30	45.45	25.14	7.18	0.001	S
Menopausal symptoms	69.09	12.59	67.88	30.06	0.28	0.781	NS
Sexual worry	11.52	16.00	8.48	14.65	1.04	0.301	NS
Sexual activity	11.52	16.00	8.48	14.65	1.04	0.301	NS
Sexual enjoyment	3.60	15.20	10.10	19.00	2.00	0.468	NS

***Significant at 0.05 level NS-Not Significant. S-Significant.**

2.b. EORTC 24-item Quality of Life scale (QLQ-CX24).

The above Table X showed that data of cancer of women pre- and post- test in the control group which was measured by using EORTC 24-item Quality of life scale QLQ-CX24. Paired 't' test was used to analyse the life quality of women with cervical cancer before and after interventions in control group.

The components of EORTC 24-item (QLQ-CX24) were, Multi-Item Scales and Single Item Scale.

i. Multi-Item Scales

The finding showed the data of mean and 't' value of the cancer women for the following parameters of pre- and post- test in the control group of multi-item scale with categories of symptom experience (82.75 -49.31, 14.72); body image (38.18 -27.07, 2.06); sexual and vaginal functioning (10.10 -7.10, 0.90).

Even though there was a gradual decrease in mean scores of sexual functioning, statistically there was no significance found between before and after the treatment in control group. It showed that vaginal and sexual functioning had not improved with routine treatment and most of the women were not ready to reveal about that information.

ii. Single Item Scales

The single item scales of mean and 't' data are noted as of lymphedema (82.42-46.67, 8.04); peripheral neuropathy (73.94- 45.45, 7.18) menopausal symptoms (69.09- 67.88, 0.28); sexual worry (11.52- 8.48, 1.04); sexual activity (11.52-8.48, 1.04); sexual enjoyment (3.60-10.10, 2.00) respectively.

Most of the women were not ready to disclose about sexual functioning. The women with higher age revealed that they were not at all interested in sexual life once they diagnosed with cervical cancer. Women with younger age had more fear about the disease condition and asked many doubts about it.

There was no major variation found in sexual functioning before and after the routine hospital interventions.

Quality of Life scores (QLQ- CX24) were assessed in control group. Majority of the item in the scale scores was not significant statistically before and after the assessment. **Thus, the Hypothesis $H_0$2 - "There is no significant difference in EORTC score of Quality of**

Life among control group before and after interventions" is accepted. Significance was found only in Symptom experience, body image, Lymphedema and Peripheral neuropathy.

3. Evaluate the Quality of Life of Women with Cervical Cancer after Interventions Between Control and Experimental groups.

The life quality was assessed after interventions among the control and experimental groups. Post-test assessment was conducted and the results were discussed in two types of scales namely,

a. EORTC 30-item Quality of Life scale (QLQ-C30).
b. EORTC 24-item Quality of Life scale (QLQ-CX24).

TABLE XI

COMPARISON OF QUALITY OF LIFE OF WOMEN WITH CERVICAL CANCER AFTER INTERVENTIONS BETWEEN CONTROL AND EXPERIMENTAL GROUPS – EORTC QLQ-C30

Parameters	Control		Experimental		't' value	P value	Inference
	Mean	SD	Mean	SD			
Functional Scale							
Physical functioning	57.33	12.54	76.12	15.38	-7.70	0.001	S
Role functioning	65.76	20.89	84.85	14.79	-6.28	0.001	S
Emotional functioning	27.42	14.40	74.55	10.69	-19.87	0.001	S
Cognitive functioning	37.58	15.12	69.39	24.59	-8.65	0.001	S
Social functioning	27.58	15.46	63.94	14.96	-11.54	0.001	S
Symptom scales							
Fatigue	53.33	9.89	22.42	14.26	12.84	0.001	S
Nausea and vomiting	65.15	23.19	36.97	15.94	7.85	0.001	S
Pain	53.03	14.38	23.33	13.46	10.76	0.001	S
Single items							
Dyspnea	41.82	21.49	22.42	24.89	4.93	0.001	S
Insomnia	58.18	17.23	25.45	20.25	9.05	0.001	S
Appetite loss	45.45	21.62	29.70	25.40	3.33	0.001	S
Constipation	31.52	22.61	29.70	25.40	0.37	0.711	NS
Diarrhoea	50.30	16.82	26.67	24.34	5.39	0.001	S
Financial difficulties	66.06	25.25	53.33	31.16	2.31	0.201	NS
Global health status	65.76	20.89	78.91	15.96	-3.66	0.001	S

***Significant at 0.05 level NS-Not Significant. S-Significant.**

3.a. EORTC 30-item Quality of Life scale (QLQ-C30).

The above Table XI showed the post test data of the cancer women between control and experimental groups which were measured by using EORTC 30-item, Quality of life scale (QLQ-C30). 't' test was utilized to evaluate life quality of women with cervical cancer between the control and experimental groups after interventions.

The components of EORTC 30-item Quality of Life scale (QLQ-C30) were Functioning Scale, Symptom Scales, Single item Scale, Multi-Item Scales and Global Health Status.

i. Functional Scale

The finding showed the mean and 't' value for the following parameters in control and experimental group of functional scale with the categories physical functioning (57.33-76.12, -7.70); role functioning (65.76- 84.85, and -6.28); emotional functioning (27.42 -74.55, and -19.87); cognitive functioning (37.58 -69.39, and -8.65); social functioning (27.58- 63.94, and -11.54).

Overall, the functioning level of the patient showed a stupendous improvement, in particular to mention emotionally, cognitive wise and socially there was a steep improvement in the functioning. Not least to mention the physical and role functioning had shown a remarkable improvement after the interventions along with routine hospital treatment.

With regard to the functioning wise the Quality of Life has got a new lease of life after the interventions. It was clearly noted that the patients in the experimental group were exposed to specific interventions received an upliftment in their Quality of Life when compared to the women in the control group. (Figure 36).

ii. Symptom Scales

Symptom scales data of mean and 't' value with the categories fatigue (53.33- 22.42, 12.84); nausea and vomiting (65.15- 36.97, and 7.85); and pain (53.03-23.33, and 10.76).

Symptom wise it was noted very clearly that the women in the experimental group were less fatigued, and the frequency of nausea and vomiting had reduced to an appreciable level, and in particular to mention the pain level had been reduced remarkably. (Figure 37).

iii. Single Items

Single item scales data with categories of dyspnea (41.82 -22.42, and 4.93); Insomnia (58.18- 25.45, and 9.05); appetite loss (45.45- 29.70, and 3.33); constipation (31.52-29.70, and 0.37); diarrhea (50.30- 26.67, and 5.39); financial difficulties (66.06- 53.33, and 2.31).

It is revealed that the women in the experimental group had a decreased level of breathing difficulties, improved level of sleep pattern, good appetite and considerable level of improvement in the diarrheal condition compared with control group with less duration of period.

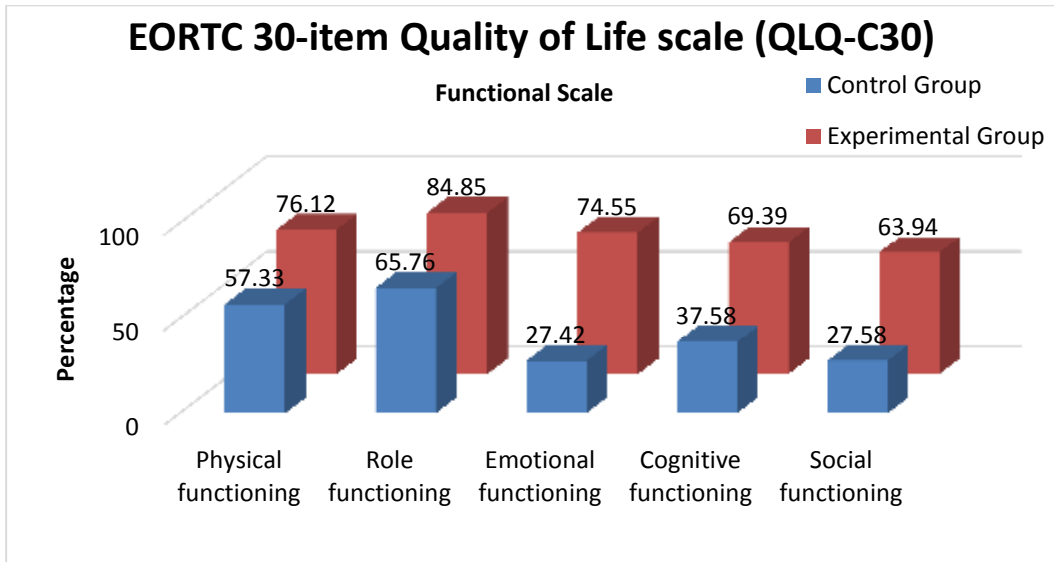
The constipation condition of the women did not have a significant difference, and also financially there was not much of difference as the disease was progressive and it had cost bearing effect on the patient's expenditure. (Figure 38).

iv. Global Health Status

The global health status scale of mean and t' value is (65.76-78.91, and – 3.66). Globally, the health condition of the women in the experimental group was good and improved when compared to the women in the control group. It proved that the Quality of Life of the women after receiving interventions had significantly improved and the cancer women were able to lead a healthy life, of course with very little difficulties. Hence it would help to improve the life span. It is being supported by Lutgendorf (2002) who performed a study to assess the effect of interventions in for early stage and in advanced patients of cancer and revealed improvement seen in physical well-being, reduction in anxiety, depression and confusion.

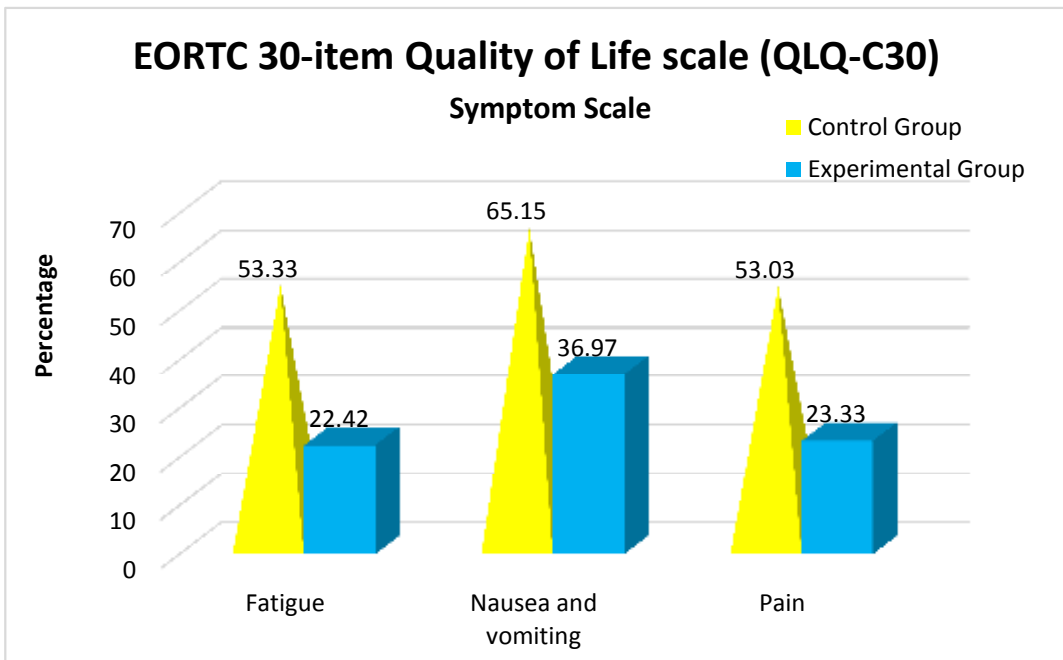
Quality of life scores [QLQ- C30] were assessed between experimental and control group in functioning scale, symptom scale, single item scale and global health status and the results revealed that there was a notable difference in mean scores at 0.05 percent level. Thus, the **Hypothesis $H_0$3 - "There is no significant difference in EORTC score of Quality of Life between control group and experimental group after interventions" is rejected.**

Statistical significance is not found in single item scales of constipation and financial difficulties.



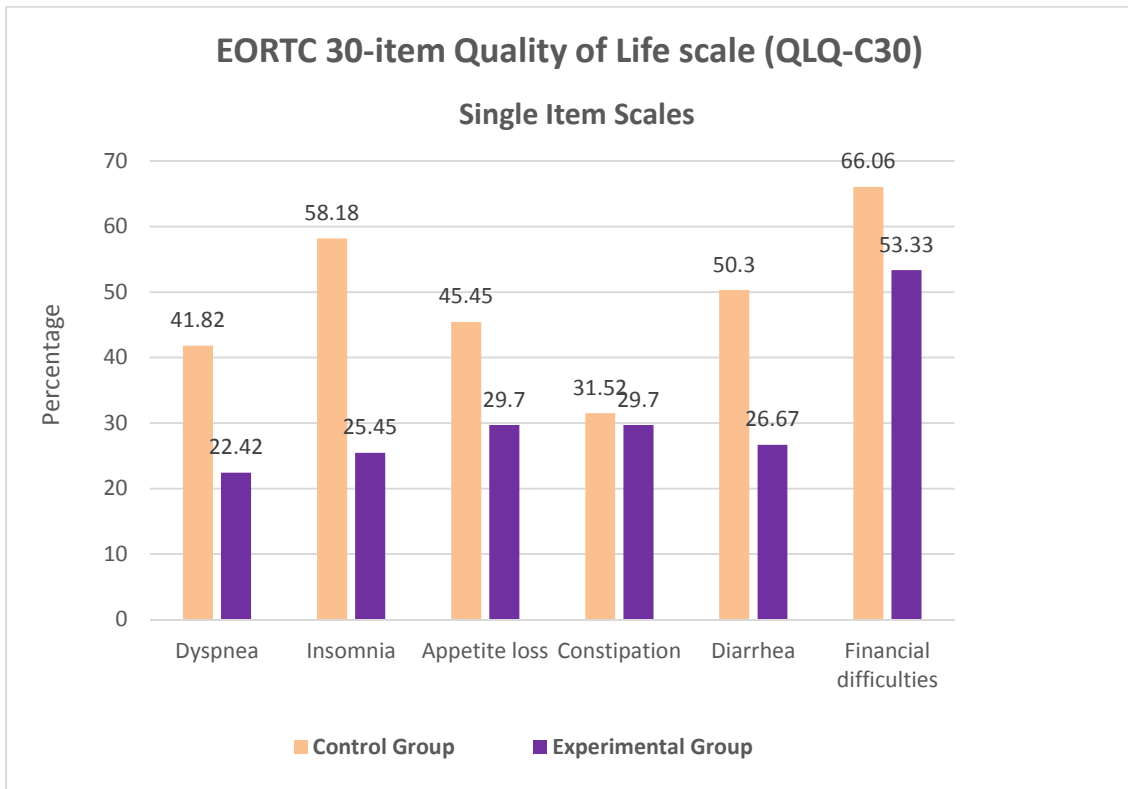
COMPARISON OF CONTROL GROUP AND EXPERIMENTAL GROUP POST TEST FUNCTIONAL SCALE SCORES

FIGURE 36



COMPARISON OF CONTROL GROUP AND EXPERIMENTAL GROUP POST TEST SYMPTOM SCALE SCORES

FIGURE 37



COMPARISON OF CONTROL GROUP AND EXPERIMENTAL GROUP POST TEST SINGLE ITEMS SCALE SCORES

FIGURE 38

TABLE XII

COMPARISON OF QUALITY OF LIFE OF WOMEN WITH CERVICAL CANCER AFTER INTERVENTIONS BETWEEN CONTROL AND EXPERIMENTAL GROUPS -EORTC CX24

Parameters	Control Group		Experimental Group		't' value	P value	Inference
	Mean	SD	Mean	SD			
Multi-item scales							
Symptom experience	49.31	14.91	18.46	13.08	12.21	0.001	S
Body image	27.07	23.88	15.76	14.92	2.85	0.011	S
Sexual/vaginal functioning	7.10	15.20	20.00	21.53	1.98	0.461	NS
Single item scales							
Lymphedema	46.67	26.91	12.12	16.18	7.99	0.001	S
Peripheral neuropathy	45.45	25.14	21.82	25.03	4.64	0.001	S
Menopausal symptoms	67.88	30.06	26.67	20.69	7.73	0.001	S
Sexual worry	8.48	14.65	7.27	18.91	0.35	0.731	NS
Sexual activity	8.48	14.65	7.27	18.91	0.35	0.731	NS
Sexual enjoyment	10.10	19.00	7.75	22.91	1.04	0.301	NS

*** Significant at 0.05 level NS-Not Significant. S-Significant.**

3.b. EORTC 24-item Quality of Life scale (QLQ-CX24).

The above Table XII showed that the post test data of cancer of women between control and experimental group which is measured by using EORTC 24-item scale QLQ-CX24. 't' test was used to analyse the life quality of women with cervical cancer between experimental and control group after interventions.

The components of EORTC 24-item Scale (QLQ-CX24) were, Multi-Item Scales and Single item Scale.

i. Multi-Item Scales

The findings showed the mean and 't' value for the following parameters in control and experimental group of multi-item scales with categories symptom experience (49.31-

18.46, and 12.21); body image (27.07- 15.76, and 2.85); sexual and vaginal functioning (7.10-20.00, and 1.48).

With regards to the symptoms experienced, there is decreased number of symptoms in the experimental group women, which clearly indicated that the symptoms had improved very much after the treatment. The body image of the cancer women had a minimal effect but the vaginal activities related to sexual and vaginal functioning had no difference between experimental and control due to the disease progress which was quite natural. (Figure 39).

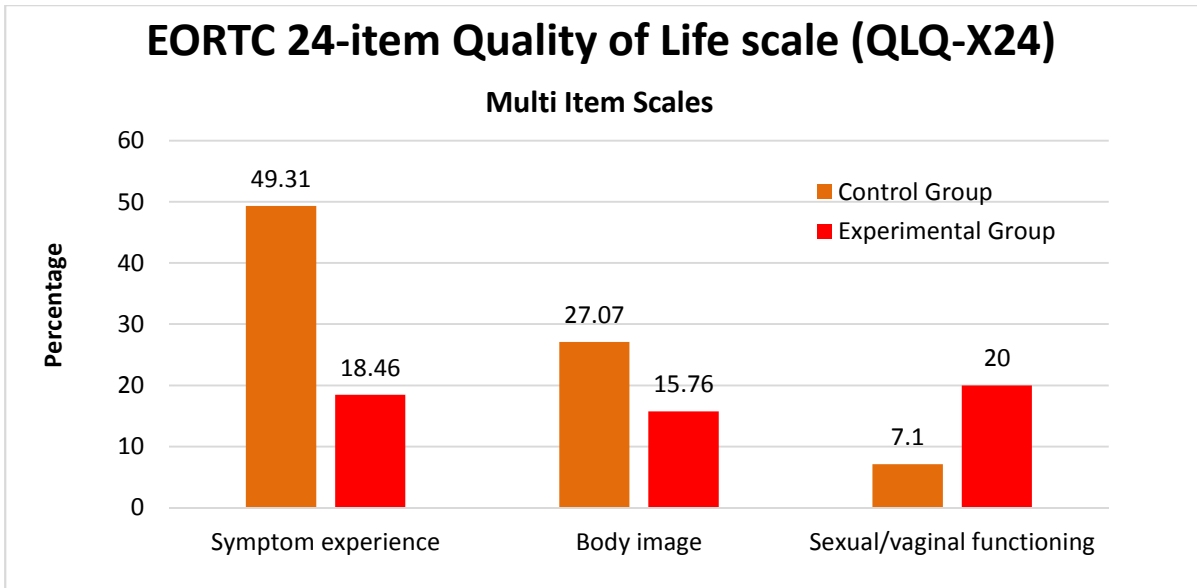
ii. Single Item Scales

Single item scales data of mean and 't' with categories, lymphedema (46.67- 12.12, 7.99); peripheral neuropathy (45.45- 21.82, and 4.64); menopausal symptoms (67.88- 26.67, and 7.73); sexual worry (8.48- 7.27, and 0.35); sexual activity (8.48-7.27, and 0.35); and sexual enjoyment (10.10- 7.75, and 1.04) respectively.

The women in the experimental group had shown an excellent improvement with perspective to the lymphedema, peripheral neuropathy and menopausal symptoms. Noticeably, there was decline in the sexual worry, activity and enjoyment categories in both groups. It is quite understandable that the women had very less or in no mood to discuss about those issues. Bashir et al, 2017 quoted that sexual activity became absent before and after the treatment of cancer. Low sexual willingness, fear, and cultural background possibly explain this phenomenon. Worse sexual functioning after treatment had been reported by many women. (Figure 40).

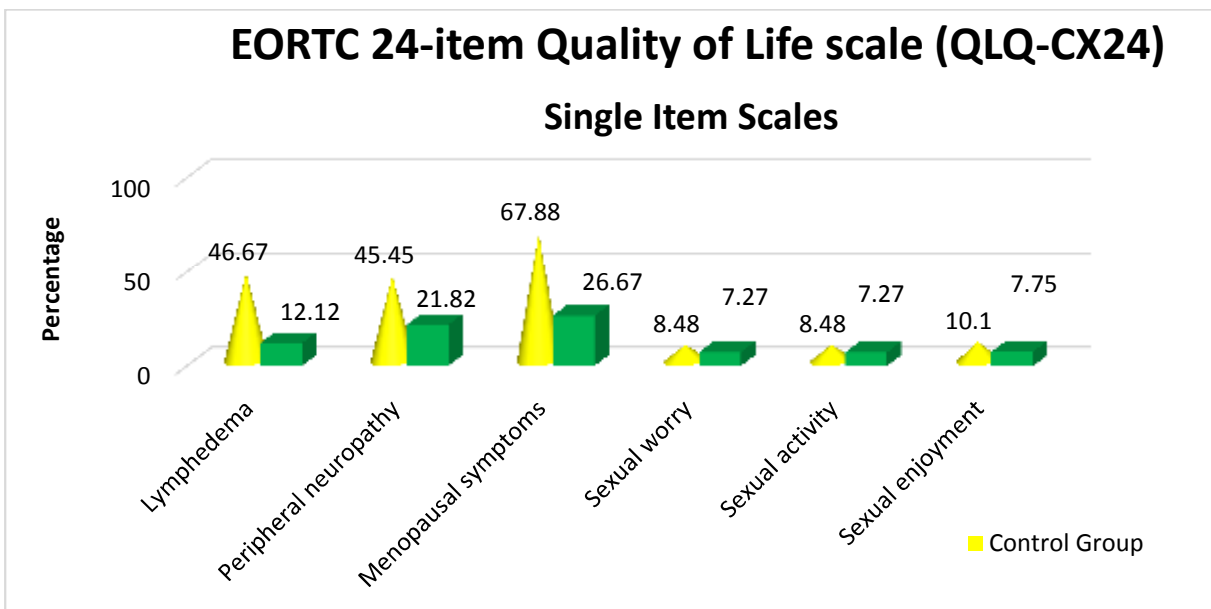
The scores (QLQ- CX24) were evaluated between experimental and control group and the results showed there was a significant difference in mean scores at 0.05 percent level in single item and multi item scale. Thus, the **Hypothesis $H_0$3 - "There is no significant difference in EORTC score of Quality of Life between control group and experimental group after interventions" is rejected.**

Significance was not found in sexual /vaginal functioning, sexual activity, sexual functioning and sexual enjoyment.



COMPARISON OF CONTROL GROUP AND EXPERIMENTAL GROUP POST TEST MULTI-ITEM SCALE SCORES

FIGURE 39



COMPARISON OF CONTROL GROUP AND EXPERIMENTAL GROUP POST TEST SINGLE ITEM SCALE SCORES

FIGURE 40