

**EFFECTS OF NURSING EDUCATION AS AN INTERVENTION TO DECREASE PHYSICAL AND PSYCHOLOGICAL OUTCOMES AMONG HOSPITALIZED WOMEN WITH CERVICAL CANCER RECEIVING CHEMOTHERAPY AT TIKURANBESA SPECIALIZED HOSPITAL (BLACK LION SPECIALIZED HOSPITAL), ETHIOPIA, 2019/20.**

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Article Received on 17/09/2020

Article Revised on 07/10/2020

Article Accepted on 28/10/2020

## ABSTRACTS

**Background:** women with cervical cancer receiving chemotherapy experiences a variety of side effects which has influence on prognosis of illness, activity of daily living and the quality of life. There is a need of nursing care education for management and prevention of problem among women with cervical cancer. **Objectives:** The study aimed to evaluate the effectiveness of nursing education as interventions on physical and psychological outcomes women with cervical cancer receiving chemotherapy. **Methods:** A Randomized Controlled Trials design was used and participants were selected using simple random sampling technique based on criteria of selection. After the collection of baseline data, out of 426 eligible participants, 142 patients were randomized to experimental group (n=71) and to control group (n=71) respectively. Women with cervical cancer in the experimental group received planned nursing education as interventions delivered by a nurse interventionist, whereas the control group received routine care from the ward nurses. **Results:** Women with cervical Cancer who received nursing education had improved from both physical & psychological outcomes. In the physical outcomes, the mean scores of chemotherapy related to other symptoms ( $Z=5.84$ ), and fatigue ( $Z=4.48$ ) in the experimental group had much lower than in the control group of other symptoms ( $7.26 \pm 2.20$ ), and fatigue ( $8.54 \pm 3.47$ ) respectively. In the psychological outcomes, the mean scores of emotional wellbeing ( $Z=38.9$ ) had much higher in the experimental group than control group ( $28.73 \pm 3.83$ ); but anxiety ( $Z=8.47$ ) and depression ( $Z=7.53$ ) in the experimental group had lower than in the control group, anxiety ( $10.11 \pm 2.35$ ) and depression ( $9.01 \pm 2.25$ ) respectively. **Conclusion:** This study demonstrated that the nursing education as intervention was well accepted by women with cervical cancer and has significant effect towards the improvement of physical and psychological outcomes of cervical cancer women receiving chemotherapy.

**KEYWORDS:** Cervical Cancer, Nursing education, Interventions, Physical Outcome, Psychological Outcome, Chemotherapy.

## 1. INTRODUCTION

### 1.1. Background

Cervical cancer is a preventable disease yet remains the commonest cause of cancer death among women in poor countries, in a recent analysis based on the 2008 world wide estimates of cancer compiled by the International Agency for Research on Cancer, it was estimated that 529,512 women were diagnosed with cervical cancer,<sup>[1]</sup> Cervical Cancer (CC) is a leading cause of cancer morbidity and mortality in women globally. In 2012, 528, 000 new cases and 270,000 deaths were estimated to have occurred worldwide, with the majority of these cases and deaths (90%) occurring in low- and middle-income countries; particularly in Sub-Saharan Africa, it

is the first most common cancer in women followed by breast cancer; thus, living with cervical cancer are challenged by a lack of resources including quality and affordable health care and psychosocial services.<sup>[2]</sup> In Ethiopia, CC is the second most commonly diagnosed cancer and the leading cause of cancer death in women, with about 8000 newly diagnosed cases and 4700 deaths every year.<sup>[3]</sup> Other study also depicted that, in Ethiopia, the incidence of cervical cancer is high i.e. 35.9 per 100,000 women, low level of awareness, lack of effective screening programs, overshadowed by other health priorities (such as acquired immune deficiency syndrome, tuberculosis and malaria) and insufficient attention to women's health are the possible factors for the observed higher incidence rate of cervical cancers in

the country; furthermore, data on knowledge of Ethiopian women regarding cervical cancer is lacking.<sup>[4]</sup>

Cancer incidence has increased in most countries worldwide, owing to a growing and aging population and to an expansion of key risk factors, such as smoking, obesity, and unhealthy diet. The under treatment of cancer pain is a major public health problem. Numerous studies have documented this under treatment as well as its negative consequences. However, the number of randomized clinical trials (RCTs) that have tested the effectiveness of patient interventions to improve cancer pain management is extremely limited given the deleterious effects of unrelieved pain on oncology patients' functional status, mood, and quality of life. Only four RCTs have tested the effectiveness psych educational intervene.<sup>[5]</sup>

As a cancer care team member, the oncology nurse must be able to assess side effects, develop appropriate interventions, and provide effective management of any chemotherapy related symptoms. In addition the nurse must give information to the patient, educating him about these side effects and showing how best to manage them and how to recognize that he needs to seek medical intervention, for the attainment of desirable level of physical and psychological health.<sup>[6]</sup>

Chemotherapy often causes serious side effects in women receiving treatment for breast cancer. Fatigue, nausea and vomiting, sleep disturbances, changes in bowel function, and an altered sense of taste are common problems. These side effects can be overwhelming. If women are unable to develop effective self-care behaviors to manage these side effects, they may delay or terminate their treatment regimen prematurely.<sup>[7]</sup>

The most relevant cause of cervical cancer is a persistent infection with high risk genotypes of Human Papilloma Virus(HPV), other co-risk factors are smoking, a weakened immune system, multiparty, early sexual initiation and many sexual partners, as well as a family history of cervical cancer. Cervical cancer mostly develops slowly, and when detected early as precancerous lesion, it can be treated effectively.<sup>[8]</sup>

One of the major current challenges in the field of health care, including nursing practice and nursing science, is to develop and promote evidence-based practice. Nursing interventions are methods that are designed to help patients promote their health, to come to terms with their illness or with the proximity of death. Traditionally, in their day-to-day work and decision-making, nurses have largely drawn on their experiential knowledge as well as established nursing practices. One of the major obstacles to the development of evidence-based practice has been the lack of time and authority on the part of nurses to weigh and apply the research evidence available. Nursing education and management have been upgraded

and updated with a view to meeting present-day challenges.<sup>[9]</sup>

## 1.2. Statement of the problem

It is well known that the cancer diagnosis, its treatment, and the challenges of survivorship increase patients' levels of psychological symptoms to a degree that might affect their adaptation to their disease.<sup>[10]</sup> Almost 500,000 women are newly diagnosed with cervical cancer (CC) every year, the majority from developing countries.<sup>[11]</sup>

Cervical cancer is the second most widespread cancer worldwide with 471,000 annual cases and 233,000 deaths; moreover, a study depicted that cervical cancer is the third most common cancer in women after breast and colorectal cancers and is one of the leading causes of death among women in the world.<sup>[12]</sup>

Women aged 15 years and older at risk of developing cervical cancer, approximately 80,000 women are diagnosed with cervical cancer per year, and just more than 60,000 women die from the disease.<sup>[1]</sup> However, cervical, in Ethiopia incidence and mortality rates of cervical cancer are 26.4 and 18.4 / 100,000.<sup>[12]</sup> Cancer has become the second leading cause of death, behind cardiovascular disease, with more than 8.7 million attributable deaths worldwide in 2015, Low-income countries (LICs) contribute up to 60% of this death toll, this is an alarming prospect, especially for LICs, where the weak health systems are severely resource constrained and already overwhelmed by the large burden of communicable diseases.<sup>[13]</sup>

Breast, colorectal and cervical cancers were the most commonly seen cancer on patients attending the oncology unit of black lion hospital. Only one-fourth of the patients with cancer received rehabilitation service at least once, and revealed that almost one third (35%) of cancer patients experienced functional loss due to physical weakness, and required assistance with performance on Activity of Daily Living (ADL).<sup>[14]</sup>

Mortality and morbidity data reveal the growing and disproportionate impact of the epidemic in lower-resource settings. More than two thirds of all cancer deaths occur in low- and middle-income countries. NCDs also kill at a younger age in low- and middle-income countries, where 29% of NCD deaths occur among people under the age of 60, compared to 13% in high-income countries. The estimated percentage increase in cancer incidence by 2030, compared with 2008, will be greater in low- (82%) and lower-middle-income countries (70%) compared with the upper-middle- (58%) and high-income countries (40%).<sup>[15]</sup>

It is estimated that around 83 percent of new cases and 85 percent of all the deaths occur in developing countries. The highest incidence rates are observed in Sub-Saharan Africa, Latin America, the Caribbean, and

South and Southeast Asia. In Africa, only few countries have functional cancer registries. Record keeping is minimal or non-existent in many countries in the continent. Some of the figures in the literature are hospital-based, which represent only a small fraction of women dying from cervical cancer.<sup>[2]</sup>

A study indicated that women diagnosed with cervical cancer face tremendous physical and psychosocial challenges and women's have revealed that cancer receives less attention in Ethiopia<sup>[2]</sup> Although other studies have shown that women's with CC, their QoL was affected and couldn't understand the mechanisms of managing the disease (coping).<sup>[16]</sup> Limited studies in Ethiopia indicated that there is low awareness of and poor health-seeking behavior for cancer treatment due to misconceptions about the cause of the disease; moreover, poor provision of essential chemotherapy found that cervical cancer created an immense economic burden on patients and their families.<sup>[2]</sup>

Nowadays nurses have in their possession and can choose through a variety of resources in order to help patients to cope stress. The implementation of proper nursing care and the psychological support for stress is always necessary, regardless of its causes.<sup>[17]</sup> Nursing intervention has been shown to improve hope through promoting greater psychological wellbeing and decreasing psychological problems, such as depression and anxiety.<sup>[10]</sup>

Nurse-led educational interventions have the potential to reduce fatigue (physical, cognitive and psychological) outcome in patients with cancer receiving chemotherapy for the first time and the provision of individually tailored educational interventions to reduce the severity of symptoms and improve QOL.<sup>[18]</sup>

Therefore, the aim of this study was to determine whether a nurse-led educational intervention decreases the perception of physical and psychological outcome women with cervical cancer who were receiving chemotherapy.

### 1.3. Significant of the study

This randomized controlled trials study will generate information about the effects of Nursing Education as an Intervention to decrease Physical and Psychological Outcome among. Thus, the study will be helpful for the responsible bodies of policy makers to address health policy issues, stakeholders and Partners to develop national education intervention plan, and to implement intervention measures to reduce the chemotherapy symptoms both physical and psychological outcome. The findings of the study can support the health professionals to create intervention for women with cervical cancer. The study can also use as a base line for interested researchers to do further study in the cancer case.

## 2. Objective

To measure the effect of Nursing Education as an Intervention to decrease Physical and Psychological Outcomes among Hospitalized women with cervical Cancer receiving Chemotherapy at Black Lion Specialized Hospital, Ethiopia, 2019/20.

## LITERATURE REVIEW

Somatic and/or social stressors impact the functioning of mental and physiological systems, which are attuned to complex interactions among social, cultural, and interactional factors. In the European Study of the Epidemiology of Mental Disorders, 14% of the general European population reported a lifetime history of some type of mood disorder and 13.6% reported a lifetime history of anxiety. Somatic diseases such as cancer are known to be at risk of concomitant psychiatric symptoms such as depression and anxiety, as well as reduced quality of life (QoL). In the general cancer population, the prevalence of depression ranges from 8%–24% (depending on the type of instrument used, the type of cancer, and the treatment phase).<sup>[16]</sup>

In a recent analysis based on the 2008 world wide estimates of cancer compiled by the International Agency for Research on Cancer (IARC, Lyon, France; Globocan 2008; ref. 1), it was estimated that 529,512 women were diagnosed with cervical cancer corresponding to an annual Age Standardized Incidence Rate (ASIR) of 15.4/ 100,000. An estimated 274,967 women died of the disease, with an annual Age Standardized Mortality Rate (ASMR) of 7.8/100,000 (2). The majority of cases (n ¼ 453,032; 85.5%) and deaths (n ¼ 241,818; 85.5%) were found in developing countries. Globally, cervical cancer was the third most common cancer ranking after breast (1.3 million cases) and colorectal cancer (0.57 million cases) and the fourth most common cause of cancer death ranking below breast, lung, and colorectal cancer; the distribution of cervical cancer incidence and deaths in the different regions of the world.<sup>[1]</sup>

The mean ages of cases and controls were 47.7 (SD=10.8) and 35.5 (SD =10.5) years respectively. Older women (40-59 years), (OR= 4.7; 95%CI= 2.3-9.6), more than one husband (OR= 2.0; 95%CI=1.0-3.9), as well as more than one wife in lifetime, (OR= 3.0; 95% CI= 1.5-5.9), women who had more than 4 children, (OR =10.3, 95% CI= 3.6-29.0), and age greater than 25 years at first full term delivery, (OR= 8.8; 95% CI= 3.5-22.0) were statistically significant and the latter two were independently associated with invasive cervical cancer.<sup>[19]</sup>

A community based cross-sectional survey was conducted from April 4-16, 2010 in Gondar town, Northwest Ethiopia. A total of 633 women aged 15 years and above were interviewed using semi-structured questionnaire by 8 trained data collectors and 2

supervisors. SPSS Windows version 15.0 was employed for data entry and analysis.<sup>[20]</sup>

Studies suggest that interventions that reduce stress and increase psychosocial support (counseling, stress management, coping strategies) can help reduce fatigue and increase energy levels. Randomized clinical trials have shown that cognitive behavioral strategies such as progressive muscle relaxation or relaxation breathing may relieve CRF in those receiving radiation therapy or hematopoietic stem cell transplantation. There is also evidence that cognitive behavioral therapy for sleep may be effective in helping patients change sleep behaviors and reduce sleep disturbances.<sup>[21]</sup>

Cervical cancer mortality reduction for women attending organized screening vs. non-attenders ranged from 41% to 92% in seven studies. Reductions were similar in Western (92%) and Northern (87%) Europe and were higher in the three more recent studies (66e92%). For invited vs. non-invited women, this reduction ranged from 17% to 79% in five studies.<sup>[22]</sup> Six women complained their social support from families, friends, and relatives deteriorated.<sup>[2]</sup>

As it is evident the life expectancy and resilience are shown to have increased and death anxiety decreased at post- test for participants in experimental group as compared to the control group.<sup>[23]</sup>

Pain intensity scores decreased significantly from baseline (all P.0001) in the PRO-SELF group (ie, least pain, 28.4%; average pain, 32.5%; and worst pain, 27.0%) compared with the standard care group (ie, least increased by 14.6%, average increased by 1.9%, and worst decreased by 1.2%). The percentage of patients in the PRO-SELF group with the most appropriate type of analgesic prescription increased significantly from 28.3% to 37.0% (P// .008) compared with a change from 29.6% to 32.5% the standard care group.<sup>[5]</sup>

Randomized controlled trials focused on supportive psychosocial interventions that included listening, validation, stress management, problem solving, and education related to the diagnosis. Interventions in this category varied substantially including a one- time meeting with a psychologist for clients with gynecological cancer two communication skills training sessions with nurses for clients with gastric, colorectal, or breast cancer a coping and communication- enhancing intervention, supportive counseling or usual care intervention offered in six hour-long sessions with a therapist for patients with gynecological cancers, and an educational and stress management intervention lasting hours for patients with melanoma.<sup>[24]</sup>

Although each of the supportive interventions resulted in improved outcomes, each study used a different type of supportive care, was implemented by varied types of practitioners, relied on a spectrum of different outcome

measures, and included clients with several types and stages of cancer. it difficult to make any definitive conclusions about these randomized, controlled trials.<sup>[25]</sup>

### 3. MATERIAL AND METHOD

#### 3.1. Study area and period

The study was conducted at Tikur Anbessa Specialized Hospital (TASH), the largest teaching hospital under the administration of Addis Ababa University in Ethiopia. The hospital was established in 1972 and has more than 800 beds providing diagnostic and treatment service for about 370,000 to 400,000 patients per year. The oncology unit at TASH is the largest referral site for the country, providing service for over 60,000 patients annually. It is the sole oncology referral and radiotherapy center in the entire country.<sup>[26]</sup> a study was conducted.

#### 3.2. Study design

Intuition Based a true experimental study was carried out on cervical cancer patients undergoing chemotherapy treatment at TASH.

#### 3.3. Sample Size Determination

Sample size was set using open epi, open source calculator – SSCC. The estimated Sample Size for Experimental – Control Study was 142 i.e. 71 in experimental and 71 in controls, by Fleiss method with correction factor.<sup>[6]</sup>

#### 3.4. Inclusion and exclusion criteria

Women with cervical Cancer who were undergoing chemotherapy and willing to participate in the study were included, whereas the patients who had acute illness, psychiatric or neurological illness, and who underwent surgery or radiation therapy were excluded from the study.

#### 3.5. Sampling procedure

Patients were selected using simple random sampling technique, based on criteria's of selection. After the collection of baseline data, out of 426 eligible patients, 142 patients were randomized to experimental group (n=71) and to control group (n=71) respectively. Patients in experimental group received planned nursing interventions delivered by a nurse interventionist, whereas patients in control group received routine care from the ward nurses. The planned nursing interventions consisted of IV access care, oral care, back massage, Progressive Muscle Relaxation therapy, breathing exercises, flexibility exercises, infection control measures, nutritional care, counseling, spiritual care with pre - determined schedule; which were delivered with a pre - determined frequency throughout the course of hospital stay. The routine care consisted of IV access care, oral care, back massage and infection control measures; and it was also delivered throughout a course of hospital stay.

### Nurse Interventionist

Out of 50 from the Oncology department nurses, 6 nurses were randomly chosen as nurse interventionist, further they were adequately trained by the researcher. The preparation was carried out in the form of modular training, for a total 5 days for both theory and practical session with the help of self-prepared chemotherapy nursing module, which comprised of XII chapters in congruence with nursing interventions. After training, they were placed in oncology ward for one month on rotations to render planned nursing interventions to cancer patients undergoing chemotherapy in experimental group.

### 3.6. Inclusion and exclusion criteria

Women with cervical Cancer who were undergoing chemotherapy and willing to participate in the study were included, whereas the patients who had acute illness, psychiatric or neurological illness, and who underwent surgery or radiation therapy were excluded from the study.

### 3.7. Data collection tools

Pre tested semi structured interview schedule was used to gather data. The socio demographic data was elicited from patients and disease related information was obtained from hospital records. Further, the tool comprised of assessment of health status, physical outcome assessment and psychological outcome assessment. The physical outcome variables like chemotherapy symptoms, pain, fatigue, oral, nausea and vomiting and extravasation, and the psychological outcome variables like emotional wellbeing, anxiety, depression and patient concerns were included in the tool. The tool comprised of visual analog scale, The Brief Fatigue Symptom Inventory, WHO Oral Mucositis grading scale, The Morrow Assessment of Nausea and Emesis, The Extravasation grading scale, Emotional wellbeing scale, and Hospital Anxiety and Depression scale.

Assessment of health status before start of chemotherapy was carried out, followed by the planned nursing interventions was implemented by nurse interventionist based on patient needs, while post- test was carried out

after a period of interventions (i.e. on the day of discharge). All the data were gathered and recorded by the nurse interventionists. Based on obtained scores the severity of problems was categorized in to 'no, mild, moderate, severe and very severe'.

Patients in experimental group received planned nursing interventions delivered by a nurse interventionist, whereas patients in control group received routine care from the ward nurses. The planned nursing interventions consisted of IV access care, oral care, back massage, Progressive Muscle Relaxation therapy, breathing exercises, flexibility exercises, infection control measures, nutritional care, counseling, spiritual care with pre- determined schedule; which were delivered with a pre- determined frequency throughout the course of hospital stay. The routine care consisted of IV access care, oral care, back massage and infection control measures; and it was also delivered throughout a course of hospital stay.

### 3.8. Data analysis

The collected data was tabulated and analyzed using appropriate statistical methods wherever required like mean, SD, Z test, unpaired t test, Chi-square test and ANOVA test. The data analysis was performed using <http://www.openepi.com>. The statistical level of significance was calculated at  $p < 0.05$  level.

### 3.9. Ethical clearance

An ethical approval was obtained from TASH to conduct since the co - investigator has been permanently working in the Oncology department of the Hospital. The purpose of study was explained to the patients, and a written informed consent was sought before enrolling them.

## 4. RESULTS

A total of 142 women with cervical cancer participated in the study. The baseline data and clinical characteristics of cervical cancer were well balanced between experimental and control groups. The mean age for experimental and control groups was 41 and 42 years, respectively (see tab.1&2).

**Table 1: Socio - demographic data distribution of Women with cervical Cancer.**

Variables		Experimental- Group ( N=71)		Control-Group ( N=71)	
		Number	%	Number	%
Age	≤35	12	16.9	11	15.5
	36-45	14	19.7	8	11.3
	46-55	12	16.9	18	25.4
	56-65	14	19.7	19	26.8
	66-75	13	18.3	7	9.9
	≥76	6	8.4	8	11.3
Marital status	Single	20	28.2	24	33.8
	Married	23	32.4	15	21.1
	Sep/divorced/Window	28	39.4	32	45.0

Residence	Urban	54	76.1	44	62.0
	Rural	17	23.9	27	30.0
Educational level	Not educated (unable to read and write)	32	45.1	34	47.9
	Educated (primary-University)	39	54.9	37	52.1
Occupation	Unemployed	29	40.8	34	47.9
	Employed	42	59.2	37	52.1
Monthly income	≤1000 ETB	21	29.6	17	29.9
	1001-3500 ETB	12	16.9	21	29.6
	3501 - 6500 ETB	13	18.3	17	23.9
	≥6501 ETB	25	35.2	16	22.5
Religion	Orthodox	32	45.7	28	39.4
	Muslim	25	35.2	22	31.0
	Protestant	10	14.1	13	18.3
	Others	4	5.6	8	11.3

**Table 2: Signs and Symptoms of women with cervical Cancer Prior to Start of Chemotherapy.**

Variables		Experimental- Group (N=71)		Control-Group (N=71)	
		Number	%	Number	%
Physical Health	Vomiting/Nausea	11	18.3	12	21.1
	Pain	8	8.5	9	12.7
	Change of appetite	8	15.5	10	14.1
	Fatigue	5	9.9	6	8.5
	Weight loss	3	7.0	4	5.6
	Difficulty in sleeping	6	8.5	7	12.7
	Difficulty in swallowing	4	2.8	5	7.0
	Difficulty in mobility	6	8.5	7	9.9
	Vaginal discharge	12	16.7	6	11.3
	Fever	5	7.0	2	2.8
	Other symptoms	3	4.2	3	1.4
Psychological Outcomes	Emotional wellbeing	42	59.2	27	38.0
	Anxiety	5	7.0	11	15.5
	Depression	10	14.1	16	22.5
	Irritability	14	19.7	17	23.9

In the physical outcomes, the mean scores of chemotherapy related to other symptoms ( $Z=5.84$ ), and fatigue ( $Z=4.48$ ) in the experimental group had much lower than in the control group of other symptoms (7.26

$\pm 2.20$ ), and fatigue ( $8.54 \pm 3.47$ ) respectively and the difference between two groups was statistically significant, at  $p < 0.05$  level (See tab.3).

**Table 3: Comparison of Physical Outcome Mean Scores of Experimental and Control Group.**

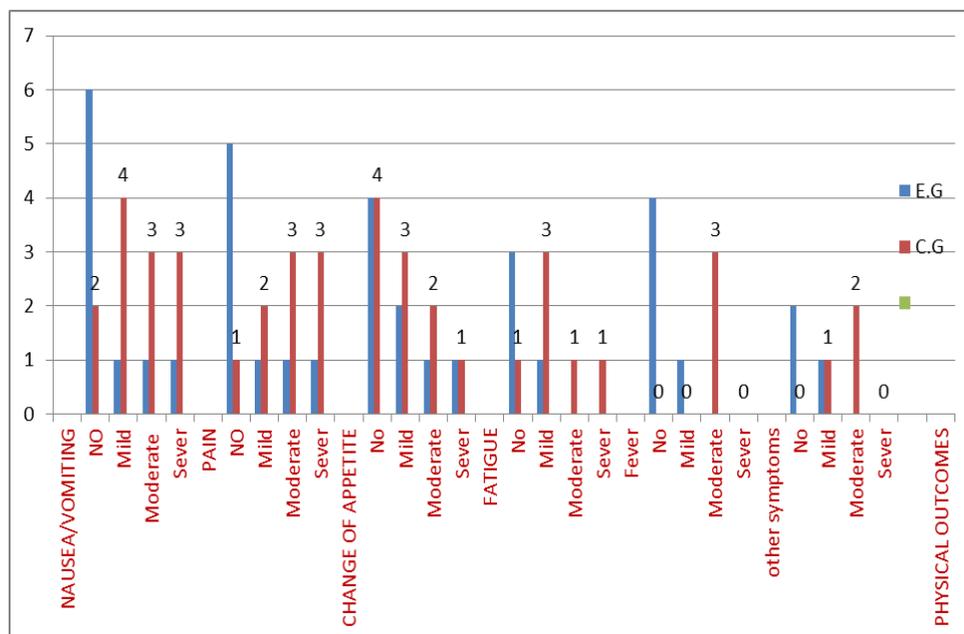
VARIABLES	Experimental Group N=71		Control Group N=71	Z -value
	Chemotherapy symptoms	Mean $\pm$ SD	Mean $\pm$ SD	
Physical outcomes	Vomiting/Nausea	0.47 $\pm$ 0.52	0.49 $\pm$ 0.57	0.62
	Pain	3.15 $\pm$ 1.16	4.13 $\pm$ 1.23	3.64
	Change of appetite	0.28 $\pm$ 0.48	0.27 $\pm$ 0.83	0.08
	Fatigue	4.97 $\pm$ 2.98	8.54 $\pm$ 3.47	4.89
	Fever	1.71 $\pm$ 1.67	1.65 $\pm$ 1.71	1.17
	Other symptoms	5.84 $\pm$ 1.98	7.26 $\pm$ 2.20	2.99

In the physical outcomes, the mean scores of chemotherapy related to other symptoms ( $Z=5.84$ ), and fatigue ( $Z=4.48$ ) in the experimental group had much lower than in the control group of other symptoms (7.26  $\pm 2.20$ ), and fatigue ( $8.54 \pm 3.47$ ) respectively and the difference between two groups was statistically

significant. It was evident that the planned nursing interventions effective in reducing the physical and psychological symptoms of women with cervical cancer receiving chemotherapy (See tab.4).

**Table 4: Comparison of Psychological Outcome Mean Scores of Experimental and Control Group (N=71).**

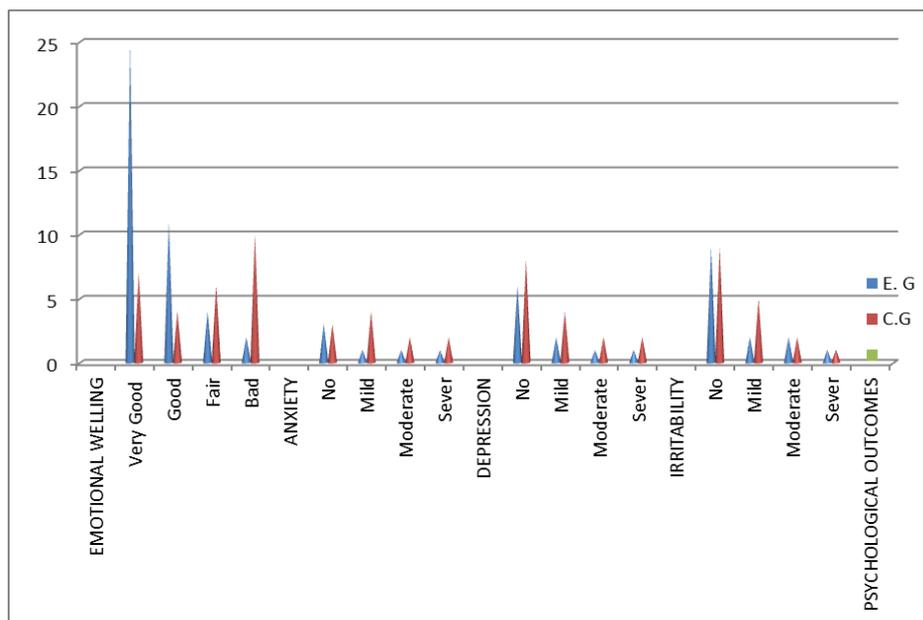
VARIABLES	Experimental Group N=71		Control Group N=71	Z- value
	Chemotherapy symptoms	Mean ± SD	Mean ± SD	
Psychological outcomes	Emotional wellbeing	38.9 ± 2.79	28.73 ± 3.83	4.25
	Anxiety	8.47 ± 2.23	10.11 ± 2.35	3.18
	Depression	7.53 ± 2.17	9.01 ± 2.25	2.94
	Patient concern	1.37 ± 1.03	1.63 ± 1.06	1.11



**Figure 1: Comparison of Physical Symptoms Severity in Experimental and Control Group.**

The fig.1. The severity of physical symptoms, this RCTs study indicated that severity was slighter in experimental group compared to control group. 24 (33.8%), 7(9.8%) had no pain in experimental group and in the control group respectively. This had shown that

the intervention was more positive effect in the experimental group by reducing pain than in the control group. Other variables had also plausible effect in the study (See fig.1).



**Figure 2: Comparison of Psychological Symptoms Severity in Experimental and Control Group.**

In above fig.2 depicted that the positive psychological outcomes had higher effect in the experimental group than in the control group; for instance; emotional wellbeing was much higher in the experimental group than in the control group. In the contradictory, negative psychological outcomes were much lower in the experimental group than in the control group (See fig 2).

## DISCUSSION

Women with CC patients suffer from a horde of strong physical and psychological symptoms nevertheless of stage of disease, which are accompanied by declines in physical and psychological wellbeing.

It is believed that, hopeful spirit is one of the most important factor and essential elements on women's with cervical cancer adaptation to life conditions, especially at the time of pain and deprivation.<sup>[23]</sup> Nurses, by recognizing the patient's needs and reactions, they should choose those interventions that it will be the most effective for the particular patient and the most important intervention for alleviating stress are: anxiety reduction, anger management, relaxation and sleep, proper diet, physical exercise, relaxation techniques and effective time management.<sup>[17]</sup>

In this study, physical outcomes, the experiences of pain women with cervical cancer were much slighter in the experimental group than in the control group. It is consistent to a critical review conducted in Germany.<sup>[16]</sup>

In the variables of Fatigue, change of appetite, nausea/vomiting and other physical symptoms were lesser in the experimental group than in the control group; these results were in line with a study of Nursing intervention studies on patients and family members: a systematic literature review.<sup>[13,11]</sup>

In fact, one study discovered almost half of women's with cervical cancer report the emotional effects of cancer as being more difficult to process than physical or practical effects and many outcomes such as sleep disturbances tend to even last among cancer patients for years after the end of treatment,<sup>[27]</sup> Psychologically, more than half of women with cervical cancer under study have also psychological symptoms like anxiety, depression and problem in emotional wellbeing.<sup>[2]</sup>

In this stud finding had shown that negative psychological outcomes were lower in the experimental group than in the control group; Anxiety, depression and being irritability were significant and lesser and a significant improvement of emotional wellbeing in the experimental group than in the control group. These findings were similar with other studies conducted on women with cervical cancer receiving chemotherapy who had received planned nursing interventions have shown much lower rate of psychological symptoms like anxiety, depression, and a significant improvement of emotional wellbeing.<sup>[27,28,23]</sup>

## CONCLUSION AND RECOMMENDATION

### 4.1. Conclusion

Cervical Cancer women suffer with variety of health problems, distress and have a lack of information, and a need for access to healthcare. Nurses play a vital role in the delivery of comprehensive care to people with cancer. It is essential that the structured training and education of nursing workforce provides nurses with a sound knowledge, understanding and competence for care of cervical cancer women, and their families as well. The results revealed that planned nursing interventions have significant impact on reduction of chemotherapy symptoms, pain, fatigue, anxiety and depression; and improves the emotional wellbeing of women with cervical cancer undergoing chemotherapy. Overall the nursing interventions have been effective in improving the physical and psychological outcomes of women with cervical cancer receiving chemotherapy.

### 4.2. Recommendation

As a service provider, nurses assess needs and problems of cervical cancer women, and helps or resolves problems, or to satisfy their needs with nursing interventions.

What this study adds: The result of our study adds to the evidence that the women with cervical cancer undergoing chemotherapy experience variety of symptoms. This study has also demonstrated that planned nursing interventions have potential for health care services to minimize severity of chemotherapy and disease related symptoms.

## ACKNOWLEDGEMENT

Firstly, we would like to express our gratitude to Tikur Anbesa specialized Hospital (TASH), the administrative office and the clinicians to permit our work. Secondly, we would to express sincere thanks to the oncology department's staffs for their positive attitude and cooperation to conduct this research. Lastly, we also extend our thanks to the participants for their consent to conduct the study.

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