

# Level of awareness of chemotherapy and its side-effects among cancer patients admitted for chemotherapy at Teaching Hospital Batticaloa, Sri Lanka

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DOI: 10.29322/IJSRP.10.04.2020.p10070

<http://dx.doi.org/10.29322/IJSRP.10.04.2020.p10070>

**Abstract-** Cancer is a serious epidemiological problem and is the second leading cause of death worldwide. Most of the cancers are treated with chemotherapy as it is one of the widely used treatment. But ability of cancer patients to control the side-effects associated with chemotherapy is limited due to lack of knowledge and awareness of the disease and its treatment. A hospital based descriptive cross-sectional study was conducted to assess the level of awareness of chemotherapy and its side-effects among 160 including both male and female cancer patients, above 20 years of age who were under chemotherapy in Oncology unit at Teaching Hospital, Batticaloa from March 2017 to February 2018. The entire population was selected for this study. Data were collected through a structured interviewer administered questionnaire. Data analysis was done by using SPSS v19 statistical software for descriptive statistics test to look into the research problems. Among the study population, 21.2% of patients had received oral chemotherapy while 78.8% of patients had received intravenous (IV) chemotherapy. Most of them had a poor and very poor overall knowledge level regarding chemotherapy and its side-effects (oral= 61.8%, IV= 57.1%). The most known side effect was fatigue (73.4%). In conclusion, The overall knowledge regarding chemotherapy and its side-effects among cancer patients receiving oral and intravenous chemotherapy was unsatisfactory. So better educational programs to improve the knowledge and awareness of chemotherapy and its side-effects among cancer patients at THB is a contemporary need.

**Index Terms-** Cancer patients, chemotherapy, Side-effects, Teaching Hospital, Batticaloa

## I. INTRODUCTION

Cancer is one of the most common disease occurring worldwide as well as in Sri Lanka. According to the World Health Organization (WHO) the incidence of cancer is about 8.8 million deaths in year 2015 and it can be risen up to 12 million in 2030. And about 70% of deaths have been reported in low and middle income countries. The incidence of cancer in Sri Lanka was 82.6 per 100,000 population and 11286 deaths were occurred in year 2010[1, 2].

Cancer is defined as “a large group of diseases characterized by the growth of abnormal cells beyond their usual boundaries that can then invade adjoining parts of the body and/ or spread other organs” and causing fatal conditions that has led to death[1]. Even though various types of treatments are available for cancer including surgery, chemotherapy, radiotherapy, hormone therapy, treatment with biologic modifiers and targeted therapy; most of cancers are treated with chemotherapy as it is one of the widely used treatment [3]. But all these treatments are associated with side-effects [4]. The side-effects associated with cancer chemotherapy depend on type of drug, dosage, frequency, duration of administration and whether they used in combination [5]. It can be divided as short-term and long-term side-effects. The short-term effects include emesis, diarrhea, premature menopause, infertility, nausea, weight loss, stomatitis, etc. while the long-term effects include alopecia, secondary malignancy, myelo suppression, neuropathy, anemia and fatigue [6]. Although chemotherapy introduced in 1940's, patients have lack of knowledge about chemotherapy and its side-effects, causing burden for quality of life. Therefore the knowledge regarding chemotherapy is very much essential among cancer patients as well as in normal population [7].

There were many studies have been carried out around the world to assess the awareness regarding chemotherapy and its side-effects. But in Sri Lanka the publications were very rare and there is no any publication in Batticaloa District. Therefore, this research study has been conducted to assess the level of awareness of chemotherapy and its side-effects among cancer patients admitted for chemotherapy at Teaching Hospital, Batticaloa (THB).

## II. METHODS AND MATERIALS

A hospital based Descriptive Cross Sectional study was conducted to assess the level of awareness of chemotherapy and its side-effects among 160 cancer patients (above 20 years of age) including both male and female who were under chemotherapy in Oncology unit at Teaching Hospital, Batticaloa from March 2017 to February 2018. The entire population of patients admitted for chemotherapy was included in this study. Data were collected from those willing to participate in the study; respondents who were not receiving chemotherapy, less than 20 years old, who refused to participate in this study, who were not in good conscious level and the respondents who were not present at the time of study were excluded from the study. The respondents were thoroughly explained about the study and written consent was obtained before the data collection. Anonymity was ensured and emotional support was given throughout the study. Data were collected by investigators through a structured interviewer administered questionnaire. The accurateness of the provided information was checked with their Bead Head Tickets and clinical records. Collected data were transferred into SPSS v19 statistical software to analyze data based on the research problems and objectives. The descriptive statistical test was used to describe socio-demographic factors, to identify the level of knowledge about chemotherapy and its side-effects among cancer patients admitted for chemotherapy at THB. The marks were given out of 100 separately for the questions to analyze the knowledge on chemotherapy and knowledge on side-effects of chemotherapy. Knowledge about chemotherapy, in patients receiving oral chemotherapy contained 7 questions, in patients receiving Intra Venous (IV) chemotherapy contained 7 questions. Knowledge regarding side-effects of chemotherapy contained 5 questions. The overall knowledge regarding chemotherapy was obtained by the average of marks gained for the knowledge on chemotherapy and knowledge on side-effects of chemotherapy. The allocated marks were represented in the following table (Table 1) [8, 9].

**Table 1: Scoring System**

The Level of knowledge	Allocated marks range
Very poor	0-19.9
Poor	20-39.9
Satisfactory	40-59.9
Good	60-79.9
Excellent	80-100

Ethical clearance was obtained from the Ethics Review Committee, Faculty of Health-Care Sciences, Eastern University, Sri Lanka and the permission was obtained from both Director and the consultant oncologists of THB.

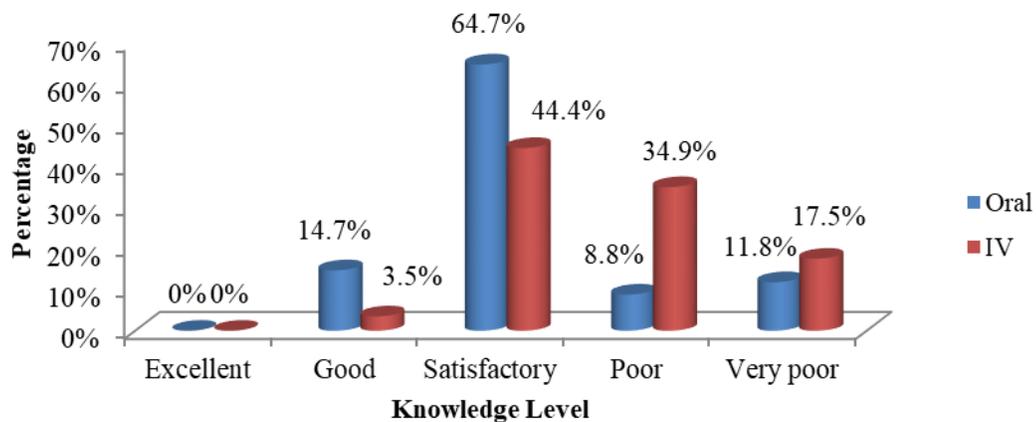
## III. RESULTS AND FINDINGS

**Table 2: Distribution of socio-demographic characteristics**

Variable (n= 160)	No	Percentage (%)
<b>Age</b>		
20-30	16	10
31- 40	21	13.1
41-50	40	25
51- 60	47	29.4
61- 70	31	19.4
>70	5	3.1
<b>Marital status</b>		
Married	149	93.1
Living together	1	0.6
Separate	2	1.3
Unmarried	7	4.4
<b>Ethnicity</b>		
Tamil	68	42.5
Sinhala	13	8.1
Muslim	79	49.4
<b>Religion</b>		
Hindu	58	36.3
Christian	10	6.3
Buddhist	13	8.1
Islam	79	49.4

<b>Education level</b>		
Primary (Grade1-5)	65	40.6
Junior secondary (Grade6-9)	32	20.0
Senior secondary (Grade10-13)	47	29.4
Tertiary/Collegiate	16	10
<b>Occupation</b>		
Self-employment	40	25
Government	13	8.1
Retired	4	2.5
Non-government	5	3.1
Unemployment	98	61.3

This study was conducted among 160 cancer patients at THB. Among them, 69.4% of respondents were female and 30.6% of them were male. Majority of the respondents (29.4%) fall in the age range of 51-60 years and 93.1% of patients were married. In addition to that, 49.4% of patients were Muslims and they were the plurality while 42.5% of patients were Tamil. According to the religion 49.4% of patients were Islamic while 36.3% of patients were Hindu. From the participants, 61.3 % of patients were unemployed (Table 2).



**Figure 1: Knowledge about Chemotherapy among the participants**

Among 160 participants, 85% of patients knew that there are treatments available for cancer. But names of the chemotherapy medications were known by least amount (5.6%) of patients. Only 22.5% of participants reported the duration of chemotherapy that they had received. In the study sample, 21.3% of patients were receiving oral chemotherapy and 78.8% were receiving IV chemotherapy at the time of the study. From the participants under oral chemotherapy, all of them knew the accurate frequency of the medications that they were receiving. Among the respondents under IV chemotherapy, 49.2% of patients knew that how often the repetition of chemotherapy cycle occurs.

The majority of the patients under oral chemotherapy had an adequate level of knowledge (good and satisfactory knowledge were 14.7% and 64.7%). Patients receiving IV chemotherapy, more than half of them had inadequate level of knowledge (52.4%, include patients with both poor and very poor knowledge). But none of the above had excellent knowledge (Fig 1)

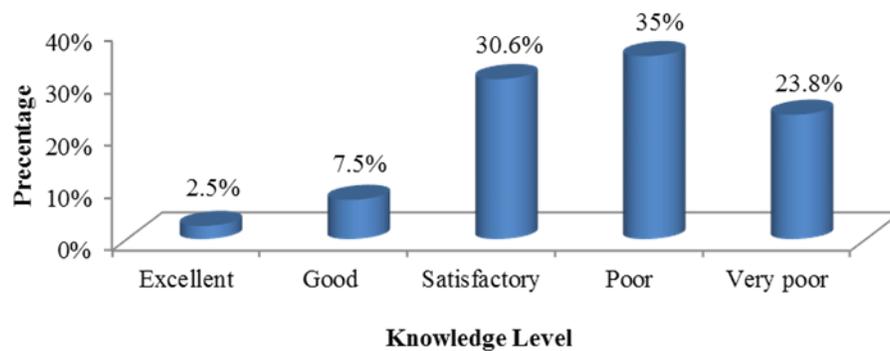
**Table 3: Knowledge regarding the side-effects of chemotherapy**

Variables	No	Percentage (%)
<b>Side-effects of chemotherapy</b>		
Yes	143	89.4
No	17	10.6
<b>*Description of side-effects among side-effects known patients (n=143)</b>		
Pain	84	58.7
Hair loss	85	59.4
Fatigue	105	73.4
Nausea /Vomiting	93	65
Diarrhea	25	17.5
Memory impairment	24	16.8

Constipation	15	10.5
Mouth sore	33	23.1
Dry mouth	27	18.9
Bone marrow suppression	9	6.3
Loss of appetite	63	44.1
Fever	21	14.7
<b>Premedication to manage side-effects</b>		
Yes	54	33.8
No	106	66.2

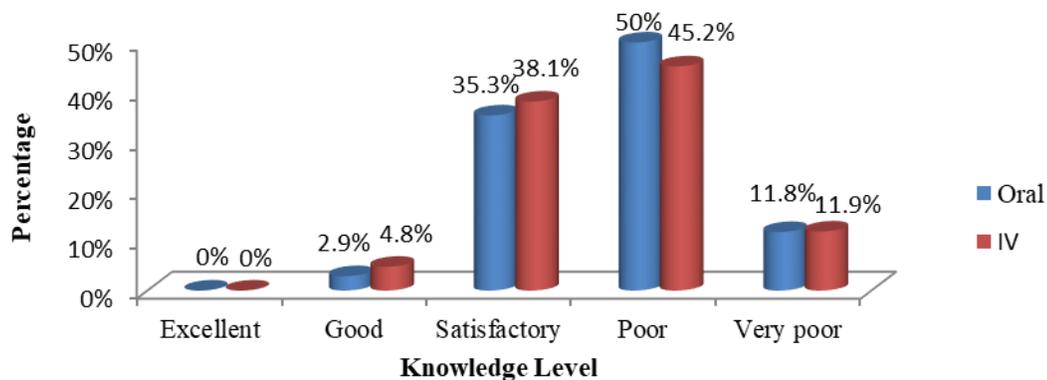
\*- These respondents have been obtained as multiple choice.

Out of 160 patients, 89.4% of patients had told that there are side-effects associated with chemotherapy. Out of them the most known side-effect was fatigue (73.4%). More than half of them were reported nausea/vomiting (65%), hair loss (59.4%) and pain (58.7%). Similarly, 33.8% of patients knew that premedication is giving before chemotherapy to manage side-effects (Table 3).



**Figure 2: General knowledge regarding side-effects of chemotherapy based on scoring system**

In the study sample, 23.8% and 35% of respondents had very poor and poor knowledge level regarding side-effects of chemotherapy. 2.5% of them had excellent knowledge level respectively. More than half of the study sample (59.4%, include patients with both poor and very poor level of knowledge) had inadequate level of knowledge regarding side-effects of chemotherapy (Fig 2).



**Figure 3: The overall knowledge regarding chemotherapy and its side-effects among patients receiving oral and IV chemotherapy**

Overall knowledge of chemotherapy and its side-effects among the patients under oral chemotherapy (out of 34 patients), 61.8% of them (include patients with poor and very poor knowledge) had inadequate level of knowledge while others (38.2%, include patients with good and satisfactory knowledge) had an adequate level of knowledge. When considering the overall knowledge of chemotherapy and its side-effects among respondents under IV chemotherapy (out of 126 patients) 42.9% of them (include patients with good and satisfactory knowledge) had a satisfactory level of knowledge while majority of them (57.1%, include patients with poor and very poor knowledge) had unsatisfactory level of knowledge regarding chemotherapy and its side-effects (Fig 3).

#### IV. DISCUSSION

The incidence of cancer rising day by day globally as well as in Sri Lanka [1, 2]. Chemotherapy is one of the most effective and widely used (48%) treatment available for cancer [2, 4].

This study results showed that most of the patients (85%) knew that there are treatments available for cancer. Although all of these patients were on chemotherapy, 15% of patients didn't know that there are treatments available for cancer. And only 5.6% of patients knew the names of chemotherapy medications that they were receiving. Similar results had shown in two other studies done in Nigeria and Maryland [10, 11].

The findings of present study revealed that the level of knowledge regarding chemotherapy is adequate in patients receiving oral chemotherapy while it is inadequate in the patients receiving IV chemotherapy. Results of other studies done in Maryland, Nigeria and Sri Lanka had shown that participants had good knowledge on chemotherapy while it is limited in a study done in China [10, 11, 12, and 13].

Regarding the knowledge on side-effects of chemotherapy, previous studies reported that most of the patients knew only about hair loss [8, 14]. This study found fatigue as the most known side-effect and in addition to that more than half of the study sample had known pain, nausea/vomiting and hair loss. In present study, 10.6% of patients had said that there are no associated side-effects of chemotherapy. A study done in Malta revealed that out of 44 respondents 8 (18.2%) patients didn't know about possible side-effects of chemotherapy [15].

The results of this study indicated that only 33.8% of patients knew that pre medication is given before chemotherapy to manage side-effects. Opposed to this, a study indicated that understanding about pre medication was very higher (97%) among patients under chemotherapy [11].

The findings of this study revealed that more than half of the study sample had an unsatisfactory (poor and very poor knowledge level) level of knowledge regarding side-effects of chemotherapy (59.4%). Similar results had shown in a study done in Iran while opposite results had shown in other two studies done in Namibia and Sri Lanka [8, 14]. A study done among patients receiving oral chemotherapy revealed that their level of knowledge regarding side-effects of chemotherapy was inadequate [16].

#### V. CONCLUSION

In conclusion the overall knowledge regarding chemotherapy and its side-effects was poor (oral= 61.8%, IV= 57.1%) among the study population. The maximum knowledge of chemotherapy was seen among the patients receiving oral chemotherapy and the most known side-effect was fatigue. But none of the participants in the study sample had excellent overall knowledge level regarding chemotherapy and its side-effects. Through generalizing of this findings, help to improve the knowledge about chemotherapy and its side-effects among cancer patients who are receiving chemotherapy at THB. Furthermore, it will help them for early detection and management of side-effects of chemotherapy.

#### ACKNOWLEDGMENT

The author would like to express the sincere thanks and gratitude to our supervisor Rev. Sr. Dr. Josepha Joseph, Senior Lecturer, Department of Supplementary Health Sciences, Faculty of Health-care sciences, Eastern University, all participants, parents and friends for the supports to conduct this study

#### REFERENCES

- [1] World Health Organization: Cancer (2015).
- [2] Ministry of Healthcare and Nutrition Sri Lanka, National Cancer Control Programme Sri Lanka. Cancer Incidence Data , Sri Lanka Cancer 2010. 1–76, (2010).
- [3] NCCN. NCCN clinical practice guidelines in oncology. [http://www.nccn.org/professionals/physician\\_gls/f\\_guidelines.asp](http://www.nccn.org/professionals/physician_gls/f_guidelines.asp) (2012). Accessed 12 January 2018
- [4] Chabner, B.A., Roberts, T.G.: Chemotherapy and the War on Cancer. Nat Rev Cancer, 5, 65-72 (2005).
- [5] Devita, V.T., Hellman, S., Rosenberg, .: Cancer:Principles and practice of oncology. 7<sup>th</sup>ed. India:Lippincott Williams & Wikins publishers, 49-50 (2005).
- [6] Partridge, A.H., Burstein, H.J., Winer, E.P. :Side Effects of Chemotherapy and Combined Chemohormonal Therapy in Women With Early-Stage Breast Cancer.J Natl Cancer Inst Monogr, 30,135–42 (2001).
- [7] Samir, N., Fattah, H.A.E., Azmy, A.M.: Self-Instructional Booklet- Its Effect on Knowledge of Women with Uterine Cancer Undergoing Chemotherapy. Academic J Cancer Res, 7(4), 239–46(2014).
- [8] Haghpanah, S., Amini, M., Kherad, M., Sadeghimehr, R.: Knowledge and Practice of Patients with Breast Cancer about Complication of Chemotherapy. J Res Health Sci, 6(1), 28–32 (2006).
- [9] Lin, L.P., Zakaria, N.S.: Breast Cancer and Chemotherapy Knowledge among Undergraduates of Health Sciences : Which Traits Predict Good Knowledge ?. Malays J Med Sci, 20(1), 60-68 (2013).
- [10] Adenipekun, A., Omoyeni, N., Soyannwo, O.: Knowledge and Experience of Cancer Patients Receiving Chemotherapy in a Teaching Hospital in Nigeria.IJPSP, 9(1),3–7(2012).
- [11] Huynh, T.K., Trovato, J.A.: Assessment of Patients' Knowledge and Management of Chemotherapy-Related Adverse Effects. J Hematol Oncol Pham, 4(4),122-27, (2014).

- [12] Chen, X., Lin, R., Li, H.: Knowledge , Attitudes , and Practices Related to Preoperative Chemoradiotherapy in Rectal Cancer Patients. *Gastroenterol Res Pract*, 1-6 (2016).
- [13] De Silva, S.K.L.A., De Silva, P.M.K.R., Lakshan, M.T.D., Patheipan, A.: Awareness among cancer patients about their disease , management and prognosis,10–15 (2006).
- [14] Justina, A., Kristofina, A.: Health information about chemotherapy side-effects for patients with leukemia at an oncology ward : Do nurses still lead at the frontline?. *CNS*, 5(3), 19–25(2017).
- [15] Pirotta, I., Serracino, A., Azzopardi, L.M., Anastasi, A.: Patient knowledge of colorectal cancer therapy side effects, 58, 24-26 (2011).
- [16] Arber, A., Odelius, A., Williams, P., Lemanska, A., Faithfull, S.: Do patients on oral chemotherapy have sufficient knowledge for optimal adherence?. *Eur J Cancer Care*, 1–20 (2015).

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