

Effectiveness Of Video Assisted Self Management Program on Chemotherapy Related Side Effects in Terms of Knowledge, Self Efficacy and Severity of Side Effects Among the Cancer Patients Receiving Chemotherapy

¹ Seema Bisht, ² Sarita Ahwal

¹ M.Sc. Nursing Student College of Nursing, Institute of liver and biliary sciences, New Delhi, India

² Lecturer, Faculty, College of Nursing Institute of liver and biliary sciences, New Delhi, India Email –

¹seemabisht11111994@gmail.com, ²saritanadiya222@gmail.com

Abstract: Background; Chemotherapy is a standard modality of cancer treatment that uses chemical agents or drugs to destroy cancer cells in the cell cycle. Cancer is being recognized as chronic illness and Self-Management has been identified as integral to person – centred cancer care. **Objective-** To assess the effectiveness of 'Video Assisted Self-Management Program on Chemotherapy related Side Effects' in terms of Knowledge, Self Efficacy and Severity of Side Effects among the Cancer patient receiving Chemotherapy.

Methods- Quasi Experimental Non – Equivalent pretest – post-test Control group design was employed at Oncology Day Care of ILBS on sixty Cancer patients receiving chemotherapy. Patients who were undergoing at least one cycle of chemotherapy, aged between 18-65 years were included in the study and they were divided into Experimental and Comparison group, 30 in each. Outcome variables included knowledge, self-efficacy and severity of side effects which were assessed using structured knowledge questionnaire, symptom management self-efficacy scale and common toxicity criteria for adverse effects respectively. **Result-** In the experimental group the mean knowledge and self-efficacy scores significantly increased in post-test after Video Assisted Self-Management Program with a p value of < 0.001. significant changes were found in the severity of Mucositis with a p value of 0.03 and in Alopecia related distress with a p value of < 0.002 after the Video Assisted Self-Management Program in the Experimental group. Knowledge on the management of chemotherapy related side effects was found to have moderate positive relationship with the self-efficacy ($r=0.51$, $p=0.003$) **Conclusion-** The study concluded that the Video Assisted Self-Management Program was effective in increasing the Knowledge and self-efficacy among the cancer patients receiving chemotherapy. The Severity of Mucositis and Alopecia Related distress among the cancer patients was also decreased significantly in the Experimental group.

Key Words: Chemotherapy, Video Assisted Self Management Program, Knowledge, Self -Efficacy, Alopecia related Distress, Severity of Chemotherapy related side effects.

1. INTRODUCTION:

Cancer is a general term used to refer to a condition where the body's cells begin to grow and reproduce in an uncontrollable way. These cells can then invade and destroy healthy tissues, including organs. Cancer sometimes begins in one part of the body before spreading to other parts. (National Cancer Institute, 2021)

Chemotherapy is a standard modality of cancer treatment that uses chemical agents or drugs to destroy cancer cells in the cell cycle or use chemical or drugs to destroy cancer cells growth and spread. Chemotherapy is a vital treatment modality for many cancers, and evolving new anti-cancer drugs represents one of the largest pharmaceutical development areas. (Foitz A, Gaines G and Gullotee M, 2015) Cancer cells tend to grow fast, and chemotherapy kills fast-growing cells. But because these drugs travel throughout the body, they can affect normal, healthy cells that are fast-growing, too. Damage to healthy cells causes side effects. (American Cancer Society, 2020)

Self-care management program is the psycho-education program with the goal of enhancing patient self-care abilities to manage the side effects of chemotherapy. And thus improves the quality of life of adult cancer patients and family caregivers. The self-care symptom management program represents a promising intervention to promote self-care management program for cancer care. For minimizing the side effects several cheap readily applicable and effective self-care measures are available. Which when taught to patient will help them to effectively overcome the side effects of chemotherapy and live a healthy and positive life. (Harayani et al., 2016)

2. LITERATURE REVIEW:

A Descriptive study to Assess Various Side Effects Experienced by Cancer Patients during Chemotherapy at Oncology Ward, DMCH, and Ludhiana. A convenient sampling technique was used to collect data from 70 subjects admitted in Oncology ward. A 10-item questionnaire was developed to assess the incidence of various types of cancer and chemotherapy related side effects. The result findings revealed that the most of the cancer patients (94.28) were suffering from general weakness followed by oral mucositis (55.71) whereas less than half (25.71) were suffering from alopecia. A few (14.28) reported gastritis as side effect of chemotherapy followed by nausea / vomiting (12.85). The study concluded that Most of cancer patients reported general weakness and oral mucositis.

A Multicentre prospective, survey-based study conducted by Huynh & Trovato, 2014 to evaluate patients' knowledge of their chemotherapy's expected adverse effects and their ability to manage them. The study was conducted in a community hospital at University of Maryland Baltimore Participation in the study required the patient to complete a survey containing 14 questions with an estimated completion time of 20 minutes. Out of the 92 surveys distributed, 67 were returned for analysis. The majority of patients (91%) responded that they had a good understanding of the chemotherapy regimen they were receiving, but only 52.2% of patients were able to list the specific chemotherapy agents. Primary end points of the study evaluated patients' knowledge of their chemotherapy regimen and related adverse effects. The study concluded that the results of this study will help increase the awareness of the gaps that exist in patients' knowledge and management of chemotherapy-related adverse effects.

A quasi-experimental study to identify the effects of pre-chemotherapy education with audio visual methods on the self-efficacy of symptom management in patients with cancer who received chemotherapy. A total of 80 cancer patients were recruited with consecutive sampling. Patients in the intervention group received video pre-chemotherapy education, while patients in the control group received education with a booklet (usual care). Self-efficacy symptom management questionnaires tool was used. The analysis used the Wilcoxon and Mann Whitney tests. The result showed that the mean scores of pre- and post-test self-efficacy of symptom management increased in the intervention group to

1.77 ($p = 0.000$) and in the control group to 0.64 ($p = 0.001$). The comparative test between the two groups showed $p = 0.005$ ($p < 0.05$) with an effect size of 0.4 (66%). This study concluded that pre-chemotherapy education had medium effect on the self-efficacy of symptom management. Pre-chemotherapy education with audio visual methods can increase the self-efficacy of symptom management in patients with cancer.

3. OBJECTIVES PRIMARY OBJECTIVE:

1. To compare the knowledge and self- efficacy scores in Experimental Vs Comparison group before and after Video Assisted SMP among the cancer patients receiving chemotherapy.
2. To compare the severity of chemotherapy related side effects in Experimental Vs Comparison group before and after video assisted SMP among the cancer patients receiving chemotherapy.

SECONDARY OBJECTIVE:

1. To find the correlation between knowledge and self-efficacy scores among the cancer patients receiving chemotherapy under Experimental Group.
2. To determine the association of Severity of side effects with the knowledge and self-efficacy scores among the cancer patients receiving chemotherapy.
3. To determine the association of knowledge, self-efficacy with the sociodemographic and clinical variables among the cancer patients receiving chemotherapy.

4. METHODOLOGY:

Approach and Design: Quantitative Research design, Quasi Experimental Non – Equivalent pretest – post - test Control group design.

Study Variable: Cancer Patients receiving Chemotherapy.

Setting: Oncology Day Care Unit of Institute of Liver and Biliary Sciences, New Delhi.

Sample and sample size: Cancer patients undergoing chemotherapy attending the Oncology Day care at ILBS during the data collection period.

Inclusion criteria: Patients 18 years or older

- ii. Patients who were undergone at least one chemotherapy cycle.
- iii. Patients who were hemodynamically stable and who Can Communicate in English / Hindi.
- iv. Patients who are Mentally alert vi. Patients who are Android mobile users.

Exclusion criteria: Patients who had visual and hearing impairments.

Tools For Data Collection:

Tool-1 Demographic and Clinical variables

Tool-2 Structured Questionnaire for Assessing the Knowledge regarding the management of chemotherapy related side effects.

Tool-3 Structured Symptom Management Self Efficacy Scale.

Tool-4 Common Toxicity for Adverse Events (CTCAE)

Version-5.

Tool -5 NCCN Distress Thermometer Scale for Alopecia related distress.

5. METHODS OF DATA COLLECTION:

The main study was conducted in Oncology Day care, Institute of Liver and Biliary Sciences. Formal administrative approval was obtained from ILBS. Sample was selected on the basis of inclusion criteria of the study. Final data collection was done from 1/11/2021 to 5/12/2021. Total 60 patients were selected by using Purposive sampling technique. Allocation was done to assign the participants into experimental and comparison groups. Recruitment of the comparison group was done before enrolling the patients in the experimental group to avoid contamination that could have occurred as the setting of the study for both the groups was same. Informed consent was taken and patients' information sheet was provided regarding research study. Assessment was done by administering subject data sheet, Knowledge based Questionnaires, and Structured Symptom based Self Efficacy Scale and Common Toxicity for Adverse Events and Distress Thermometer in patients of both the groups.

Experimental Group:

In the Experimental group pre-test was done on the day of enrolment which includes the Assessment of Knowledge, Self Efficacy Scale and Severity of Chemotherapy related side effects. Once the pre-test was done Video Assisted Self

- Management Program was Administered to the cancer patients receiving chemotherapy which was prepared by the principal investigator. The post-test was done from the last chemotherapy cycle till the day of their next cycle and they were telephonically followed up to note the presence and severity of chemotherapy related side effects using a patient worksheet.

Comparison Group

In the comparison group the pre-test was done on the day of their enrolment and after the pre-test routine care was given to the cancer patients as per the hospital protocol. On the day of their next chemotherapy cycle the data related to Assessment of Knowledge, Self Efficacy Scale and Severity of Chemotherapy related side effects was collected.

6. RESULTS:

6.1 Description of Socio Demographic characteristics of Cancer patients receiving chemotherapy.

The Socio Demographic Variables of Cancer patients included in the study were Age, Gender, Educational status, marital status, Religion, Employment status, Type of Family, and Monthly Family Income. The variables were described using the frequency and percentage.

It was noted that almost half (53.3%) of the cancer patients under the Experimental group were females and In the Comparison group sixty percent cancer patients were females. With regards to Religion, more than half of the cancer patients in both the groups (experimental 66.7% Vs comparison group 90%) belong to Hindu religion. In terms of Education approximately half of them (43.3%) were having primary school education. the comparison group, an

equal percentage of cancer patients (36.7%) were having secondary and senior secondary education and 13.3 percent cancer patients were graduate. In the experimental group, half of the cancer patients (53.3%) were homemakers, an equal percentage (13.3%) were employed and retired while twenty percent of them were unemployed. In the Comparison group an equal percentage (36.7%) of them were homemakers and employed, ten percent were retired and 16.7% were unemployed. It was found that in the experimental group, one third of the cancer patients (33.3%) and nearly half (46.7%) of the cancer patients in the comparison group had monthly income between Rs 10,002-29,972. And in both the groups, more than half of the cancer patients (experimental 76.7% Vs comparison group 63.3%) were living in the joint families.

6.2 Frequency and percentage of the Experimental and Comparison Group by their selected Clinical Variables at baseline.

The Clinical Variables of cancer patients under the study in both Experimental and Comparison groups including Type of cancer, Length of time since Diagnosis, Last chemo cycle received, Stage of cancer, no of present chemocycle and Family History of cancer.

In terms of Type of Cancer majority of the cancer patients (86.7%) in Experimental group were having Cancer related to Gastrointestinal System whereas in the Comparison group an equal percentage (13.3%) of cancer patients were having cancer related to Oral and Gastrointestinal system. In experimental group, half (56.7%) of the cancer patients were having stage IV cancer and 23.3 percent of the cancer patients had stage II Cancer. In Comparison group half (50%) of the cancer patients were having stage IV Cancer and 26.7 percent cancer patients had stage III Cancer. In the Experimental group (43.3%) patients were diagnosed since less than 6 months and forty percent cancer patients were diagnosed since more than six months whereas In Comparison group, majority of the cancer patients (43.3%) were diagnosed since more than six months.

With regards to Present Chemotherapy cycle, Majority of the cancer patients (30%) were having chemotherapy cycle 2 and an equal percentage (16.7%) of cancer patients were having chemotherapy cycle 4, 5 and 6) in the Experimental group whereas in the Comparison group nearly half (43.3%) of the cancer patients had chemotherapy cycle 3 and almost

36.7 percent cancer patients had chemotherapy cycle 2.

Majority of the cancer patients (43.3%) had their last chemocycle within 7 days while nearly one third (36.7%) cancer patients had their last chemocycle between 7-14 days in the Experimental group. In the Comparison group nearly forty three percent cancer patients received their last chemo cycle between 7-14 days and forty percent cancer patients received their last chemocycle within 7 days.

None of the cancer patients Family Members/ Close Relatives/ Friends received chemotherapy in both the Experimental and comparison groups.

6.3 Comparison of knowledge and self - efficacy scores of experimental and comparison groups after Video Assisted Self - Management Program.

Table1. Unpaired t test of knowledge scores of cancer patients under Experimental and Comparison group.

$n_1+n_2=30+30$

KNOWLEDGE SCORES			(Mean ± SD)		
Groups	Pre-test	Post-test	MD	t	p value
Experimental Group (n_1)	6.50±1.6	17.4±1.4	10.9	23	0.001**
Comparison Group (n_2)	6.57±2.0	6.59 ± 1.8	0.02	0.17	0.202

** $p<0.001$; Highly Significant; $p\geq 0.05$; Not Significant; $df=29$

Table 2. Unpaired t test of Self Efficacy scores of patients under Experimental and Comparison group.

$n_1+n_2=30+30$

SELF EFFICACY SCORES(Mean $\pm$ SD)					
Groups	Pre-test	Post-test	MD	t	p value
Experimental Group (n_1)	5.80 $\pm$ 1.9	8.61 $\pm$ 0.8	2.81	8.63	0.001***
Comparison Group (n_2)	4.19 $\pm$ 1.3	4.26 $\pm$ 1.3	0.07	0.54	0.58

** $p < 0.001$; Highly Significant; $p \geq 0.05$; Not Significant; $df=29$

Figure1 The Line graph depicting the pre-test and post-test mean knowledge scores of Experimental and Comparison Group.

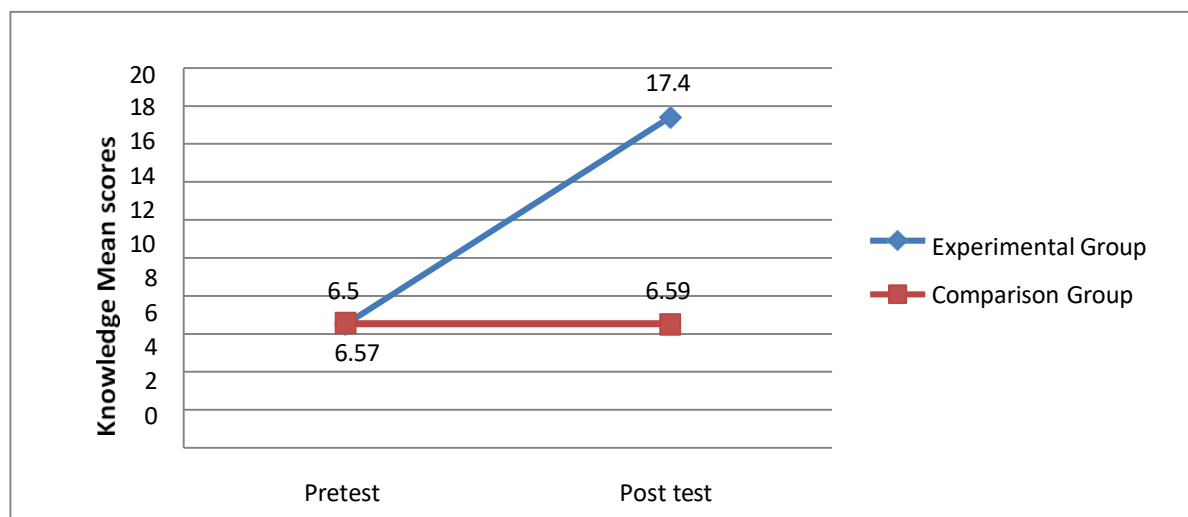


Figure 2. The Line graph depicting the pre-test and post- test mean self -efficacy scores of Experimental and Comparison Group.



6.4 Comparison of severity of chemotherapy related side effects among the experimental and comparison group. The chi square between the experimental and comparison groups In terms of severity of chemotherapy related side effects including fever ($p=0.55$), Vomiting ($p=1.0$), Nausea ($p=0.08$), Dry skin ($p=0.35$), Pain ($p=0.06$), Diarrhoea ($p=0.70$) and constipation ($p=1.0$) was not statistically significant as $p > 0.05$. Hence, there was no significant difference between the Experimental and Comparison group after video assisted SMP.

Figure 3 : Column chart showing comparison of post –test severity of chemotherapy related mucositis in experimental and comparison groups.

Figure 3 depicts the frequency percentage of severity of chemotherapy related mucositis after getting the Video Assisted Self-Management Program It was observed that 83.30% patients in the experimental group had no mucositis, 16.70% had mild mucositis and none had severe grade of mucositis.

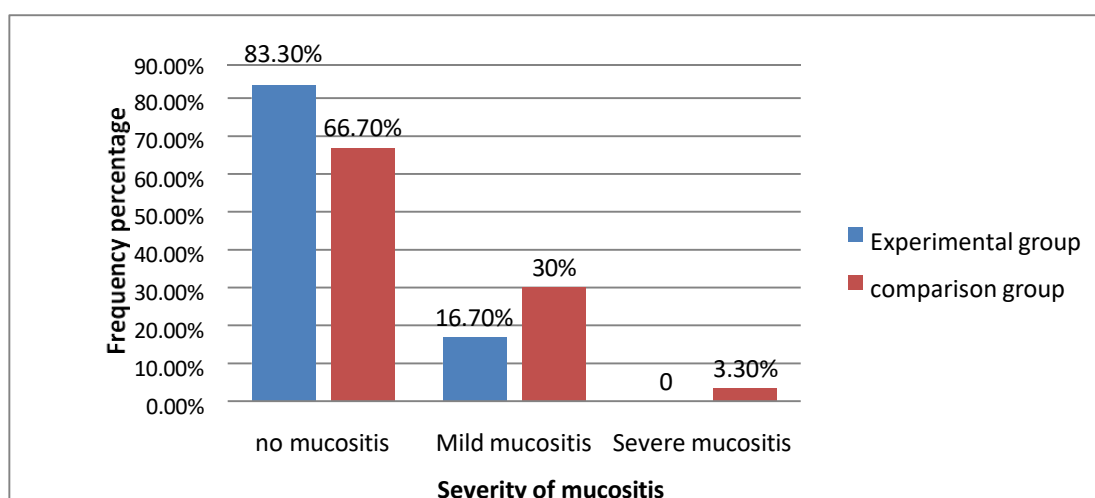


Table 3: Comparison of Alopecia related Distress among Experimental and comparison Groups after Video Assisted Self -Management Program.

$n_1+n_2=30+30$

Alopecia Related Distress Scores (Mean±SD)						
Groups	Pre-test	Post-test	MD	t	df	p value
Experimental Group (n_1)	7.20±1.6	1.93 ±1.1	5.27	23	29	0.002**
Comparison Group (n_2)	6.67±2.0	5.73±2.8	0.94	0.17	29	0.865

** $p < 0.001$; Highly Significant; $p \geq 0.05$; Not Significant

6.4 Relationship of Knowledge scores with the Self Efficacy scores

Table 4: Correlation of Knowledge and self-efficacy scores among the cancer patients receiving chemotherapy under Experimental Group.

$n_1=30$

Variables	Knowledge Scores r(p)	Self -Efficacy Score r(p)
Knowledge Scores	1	0.51(0.003)*
Self - Efficacy Scores	0.51 (0.003)*	1

** $p < 0.01$: Highly Significant

It is evident from the table 4 that there is a statistically significant relationship between Knowledge score and Self Efficacy scores ($r = 0.51$, $p = 0.003$) It is found that there is a Significant Moderate positive correlation exists between knowledge and self- efficacy scores of cancer patients receiving chemotherapy. As the knowledge scores increases self-efficacy scores also increases. Thus, the null hypothesis was rejected as there is moderate positive correlation found between knowledge and self- efficacy scores.

6.5 Association of knowledge and self- efficacy scores with the selected socio demographic and clinical variables.

Knowledge and self - efficacy scores of the experimental group was found to have no association with any of the selected demographic and clinical variables ($p > 0.05$)

6.6 Association of severity of chemotherapy related side effects with the self - efficacy and knowledge scores.

Severity of chemotherapy related side effects of the experimental group was found to have no association with the self - efficacy and knowledge scores ($p > 0.05$).

7. DISCUSSION :

In the present study, The Video Assisted Self -Management Program was effective in improving the knowledge scores of cancer patients receiving chemotherapy. In the experimental group the mean knowledge scores was 6.50 ± 1.6 in pretest which significantly increased to 17.4 ± 1.4 on post- test after Video Assisted Self -Management Program with a p value of < 0.001 . Whereas in the comparison group the mean knowledge scores was 6.57 ± 2.0 in pre-test and 6.59 ± 1.8 on post-test and the difference was not statistically significant ($p = 0.865$). A similar study conducted by Sivakumar & Chandrasekaran, 2021 on Knowledge, Self-efficacy and Performance Status among Cancer Patients shows that there was adequate knowledge (95%) on self-care measures after the intervention. The mean score was significant, i.e., 21.33, which had difference between post-knowledge score in experimental and control was statistically significant at a p value of < 0.001 .

8. CONCLUSION :

The effectiveness of VSAMP on knowledge and self -efficacy scores was evaluated in terms of mean scores where it was shown that in the experimental group the mean knowledge scores was 6.50 ± 1.6 in pre-test which significantly increased to 17.4 ± 1.4 on post- test after VSAMP on knowledge scores with a p value of < 0.001 . The self - efficacy scores under experimental group increased significantly from pre-test (5.80 ± 1.9) to post-test (8.61 ± 0.8) with a p value of < 0.001 .

The findings related to the severity of chemotherapy related side effects revealed that More than half (83.3%) patients had no mucositis 16.7 percent patient had mild mucositis and no one had severe grade of mucositis after the intervention while in the comparison group nearly sixty six percent cancer patients had no mucositis and three percent cancer patients had Severe grade mucositis. With respect to Alopecia related Distress the mean post-test score of Alopecia related distress (1.93) was less than the pre-test score of Alopecia related distress (7.20) of Experimental group.

There was a significant difference between the Experimental and Comparison group in terms of their Alopecia related distress score after getting the video assisted SMP. However, In terms of severity of chemotherapy related side effects including fever, Vomiting, Nausea, Dry skin, Pain, Diarrhea and constipation was not statistically significant as $p > 0.05$. there was a significant positive Relationship between Knowledge and Self efficacy scores of cancer patients receiving chemotherapy who received Video Assisted Self- Management Program. There was no association of knowledge, self-efficacy and severity of chemotherapy related side effects with the sociodemographic and clinical variables among the cancer patients who received Video Assisted Self -Management Program.

9. LIMITATIONS:

- The study was limited to small sample.
- Time period of data collection was limited.
- The duration of intervention was limited to five days.
- The study participants were followed up to one chemotherapy cycle.

10. RECOMMENDATIONS:

- A similar study can be done on larger sample.
- The current study findings recommend the following study to be conducted in different settings.
- Providing Video Assisted Self- Management Program in Oncology Day care should become a part of routine nursing interventions.
- Qualitative study on lived experiences of cancer patients receiving chemotherapy can also be studied.
- A study can also be conducted to compare the effects Video Assisted Self -Management Program on cancer patients with other interventions.
- A study can also be conducted to Study the factors affecting self-care efficacy for cancer patients.
- Methodology like Time series or RCT with multiple Follow up can be used for the similar study.
- The study can be conducted for cancers other than cancer related to Gastrointestinal System.
- A longitudinal study with multiple follow up can be conducted.

REFERENCES:

1. Abu El-Kass, S., Ragheb, M., Hamed, S., Turkman, A., & Zaki, A. (2021) Needs and Self- Care Efficacy for Cancer Patients Suffering from Side Effects of Chemotherapy. *Journal of Oncology*, 1-9; DOI: 10.1155/2021/8880366
2. American Cancer Society: Chemotherapy related side effects. Available from <https://www.cancer.org/treatment/treatments-and-side-effects>. Accessed May 1, 2020.
3. Dodd, M., (1982). Assessing patient self-care for side effects of cancer chemotherapy???Part 1 *Cancer Nursing*,5(6); DOI: 10.2196/10875
4. EviQ. Information for Patients: Managing the side effects of chemotherapy 20162020. Available from <https://www.eviq.org.au/getmedia/69366476-c064-4e6ca291-f69b60>. Accessed August 31,202
5. Kinnane, N., Stuart, E., Thompson, I., Evans, K., & schneider-kolsky, M ., (2008). Evaluation of The addition of video-based education for patients receiving standard pre-chemotherapy Education. *European Journal Of Cancer Care*, 17(4) 328-339; DOI: 10.1111/j.1365-2354.2007.00846
6. Sivakumar, V., & Susila, C., (2021). Effectiveness of Self-care Measures on Knowledge, Self-Efficacy and Performance Status among Cancer Patients. *Journal Of Caring Sciences*, 10(1), 1-8; DOI: 10.34172/jcs.2021.003
7. Wils, R., Jacob, A., Daniel, E., Chacko, R., & Reka, S. (2019). Distress and coping in cancer Patients experiencing chemotherapy-induced alopecia. *Indian Journal Of Continuing NursingEducation*, 20(1), 60; DOI Number: 10.4103/ijcn.ijcn_4_19