



## Knowledge on Management of Chemotherapy Related Side-effects Among Cancer Patients

### Abstract:

**Introduction:** Cancer is the uncontrolled growth and spread of cells. It can affect almost any part of the body. The growths often invade surrounding tissue and can metastasize to distant sites. Cancer is a leading cause of disease worldwide.

**Objectives:** To identify knowledge on management of chemotherapy related side-effects among cancer patients.

**Methodology:** Methodology of the present study included a descriptive cross-sectional hospital based study. Seventy four cancer patients under chemotherapy treatment from Bhaktapur Cancer Hospital were selected using non-probability purposive sampling technique. A preset of questionnaire was used to identify knowledge on management of chemotherapy related side-effects among cancer patients.

**Results:** 54.9% of cancer patients knew that drinking too much liquid during the day removes the harmful agents from the body. 28.4% of the respondents ate high fiber foods with adequate fluid to manage constipation, 45.9% respondents performed oral care and gargle 3-4 times daily for management of stomatitis and mucositis, 67.6% of respondents took anti-emetic medication before meals for management of nausea and vomiting, 40.5% of respondents drank more fluid than usually with ORS for management of diarrhoea, 43.2% respondent put on scarf and cap/wig for management of hair loss, 45.9% took small and frequent diet for management of loss of appetites, majority of respondents 62.2% maintain personal hygiene and change clothes everyday for management of skin rashes, majority of respondents 73% took paracetamol and apply cold compress for management of fever, 44.6% respondents drank plenty of water with vitamin C for management of burning micturition.

**Conclusion:** In this study among 74 respondents 43(58.1%) of respondents had average knowledge, 29(39.2%) had poor knowledge, and 2(2.7%) had good knowledge on management of chemotherapy related side effects.

**Key Words:** Knowledge, Cancer, Chemotherapy, Management, Side effects, Cancer patients

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### Introduction

Cancer is the uncontrolled growth and spread of cells. It can affect almost any part of the body. The growths often invade

surrounding tissue and can metastasize to distant sites. Cancer is a leading cause of disease worldwide. In 2012, there were an estimated 14.1 million new cases of cancer in the world:

7.4 million (53%) in males and 6.7 million (47%) in females, giving a male: female ratio of 10:9.<sup>1</sup>

Cancer is one of the most flourishing diseases of all over the world. The cancer occurrence could be associated with various environmental, social, cultural, life-style, hormonal and genetic factors. In addition smoking, reduced physical activity and consumption of highly processed and calorie-rich food are the major causes of cancer. Breast, Colorectal, lung and prostate cancer are most frequently spreading diseases world widely as well as in Pakistan.<sup>2</sup>

About 5-10% of cancers occur due to genetics, the rest are due to environmental factors such as food habit, lifestyle and environment. The frequency of cancer appears to be increasing, especially in developing countries including Nepal, leading to a serious impact on quality of life and survival of patients. Cancer has become the leading cause of death worldwide in economically developed countries, and the second highest cause of death in developing countries. The study was done in BPKMCH a hospital based prospective observational study. Most commonly occurring cancer were lung 16%, ovary 15%, cervix 11%, breast, blood, and throat 9%.<sup>3</sup>

Firstly it was thought that chemotherapy drugs specifically kill the cancer cells only but now it is well known that it also damages to the normal cells resulting the chemotherapy dose dependent side effects such as Nausea, Hair loss, Fatigue, Constipation, Fever, Diarrhoea, Somatitis or Mucositis, Burning micturition, Infection, Skin rashes, Gum bleeding, Toothache, Cough, Jaundice, swelling, dizziness etc. and even death may also occur in severe cases. The main strategy of chemotherapy drugs based on the phenomenon that these drugs selectively target the tumor cells, largely by the means of genotoxicity partially caused by the production of reactive oxygen species, which does not specifically damages the cancer cells but also the normal cells.

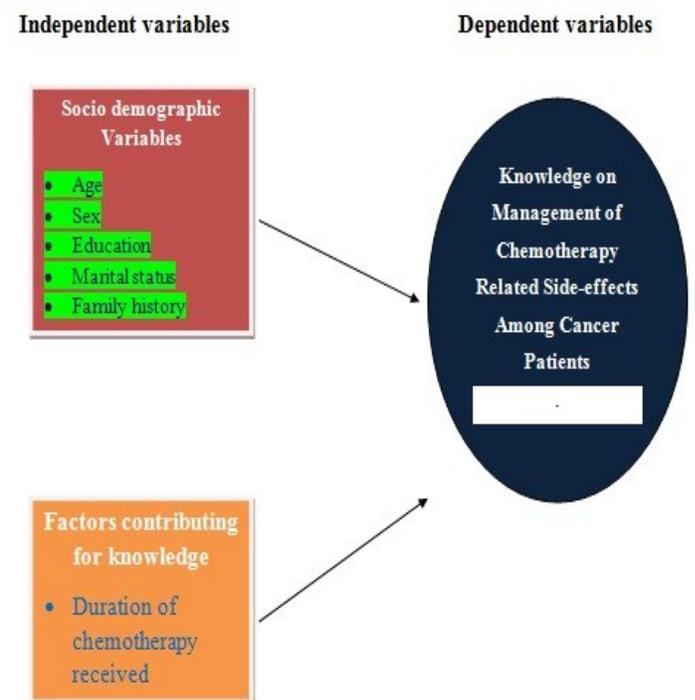
Total 132 cancer chemotherapy drugs are approved by the US Food and Drug Administration, of which 56 drugs have been reported to cause oxidative stress.<sup>2</sup>

Among the various side effects of chemotherapy; common side effects Nausea and vomiting (85.45%) were found to be commonest side effects, alopecia (81.81%) was the second most common. Similarly loss of appetite 72%, mucositis somatitis 65.45% was seen in the patients. Similarly constipation, skin rashes, fever, fatigue, diarrhea, burning micturition, gum bleeding and Various infections was found to be becoming 35%, 34.59% 30% 25%,20% 15%10%,and 11.81% respectively. Among the side effects diarrhea was found to be least i.e. only 5.45%.<sup>3</sup>

Based on the above studies present study was conducted to assess the knowledge on side effects of chemotherapy among cancer patients receiving chemotherapy & to identify knowledge on management of chemotherapy related side-effects among cancer patients.

## Conceptual Framework

Figure 1: Conceptual Framework



## Methodology

The descriptive cross-sectional study was conducted to assess knowledge on management of chemotherapy related side-effects among cancer patients at Bhaktapur Cancer Hospital. The study population was collected using a non-probability purposive sampling technique which consisted of 74 cancer patients who were under chemotherapy. Data was collected using a structured questionnaire and face to face interview schedule. Tool consists of 2 parts: Part A: questionnaire related to socio-demographic variables. Part B: Multiple Choice Questions (MCQs) related to knowledge regarding management of chemotherapy side-effects. A scoring system was used where 1 point was given for each correct response to knowledge and 0 for the incorrect response. The cutoff values to determine good, moderate, and poor levels was taken from previously published studies. The total attainable score was 17. These total score was converted into percentage and the result score was range as follows:

- >75% = good knowledge
- 50-74 = moderate knowledge or average knowledge
- <50 = poor knowledge

Observed values were measured by percentage. Data has been analyzed by checking, editing and coding using SPSS database version 16.0.

## Result

These total score was converted into percentage and the result score was range as follows:

**Table 1: Frequency and percentage distribution of knowledge on Side Effects of Chemotherapy.** n=74

Socio-demographic characteristics	Frequency	Percentage
Loss of Appetite	51	85.0
Nausea	39	65.0
Hair loss	39	65.0

**Table 1 contd...**

Socio-demographic characteristics	Frequency	Percentage
Fatigue	29	48.3
Constipation	29	48.3
Fever	22	36.7
Diarrhoea	17	28.3
Somatitis or mucositis	17	28.3
Burning micturition	11	18.3
Infection	8	13.6
Skin Rashes	7	11.7
Gum Bleeding	2	3.6
Toothache,	1	1.6
Cough	1	1.6
Jaundice	1	1.6
Swelling	1	1.6
Dizziness	1	1.6

Table 1 shows, Majority 51(85%) of respondents responded loss of Appetite as a side effect only 2(3.3%) responded for Gum bleeding and 5(8.3%) responded for Toothache, Cough, Jaundice, Swelling, dizziness.

**Table 2: Frequency and Percentage distribution of Knowledge scores on Management of Side Effects of Chemotherapy.** n=74

Questionnaires	Right Response		Wrong Response	
	f	%	f	%
Meaning of chemotherapy	73	98.6	1	1.45
Chemotherapy side effects at home you usually manage	25	33.8	49	66.2
Measure to manage when you feel fatigue	37	50	37	50
Measure to manage hair loss	32	43.2	42	56.8
Measure to manage nausea and vomiting	50	67.6	24	32.4
Measure to manage diarrhea	30	40.5	44	59.5
Measure to manage constipation	21	28.4	53	71.6
Measure to manage mucositis or somatitis	56	75.75	18	24.3
Measure to manage burning micturition.	33	44.6	51	55.4

Table 2 contd....

Questionnaires	Right Response		Wrong Response	
	f	%	f	%
Measure to minimize infection	34	54.9	40	54.1
Measure to manage loss of appetites	26	35.1	48	64.9
Measure to manage gum bleeding	34	45.9	40	54.1
Measure to manage skin rashes	46	62.2	28	37.8
Measure to manage fever	54	73	20	27
Meaning of pre medication for chemotherapy	11	14.9	63	85.1
Is pre-medication could be an effective measure in reducing side-effects of chemotherapy.	34	45.9	40	54.1

Table 2 shows that majority of the respondent 73(98.6%) knew meaning of chemotherapy, 25(33.8%) of respondents managed side effects at home, majority 54(73%) of the respondents responded correctly for the management of fever while least of respondents i.e., only 11(14.95%) had knowledge of pre-medication. It indicated that most of the patients had no knowledge about management of chemotherapy related side effects.

Figure 2: Bar diagram showing level of knowledge on Side - Effects of Chemotherapy

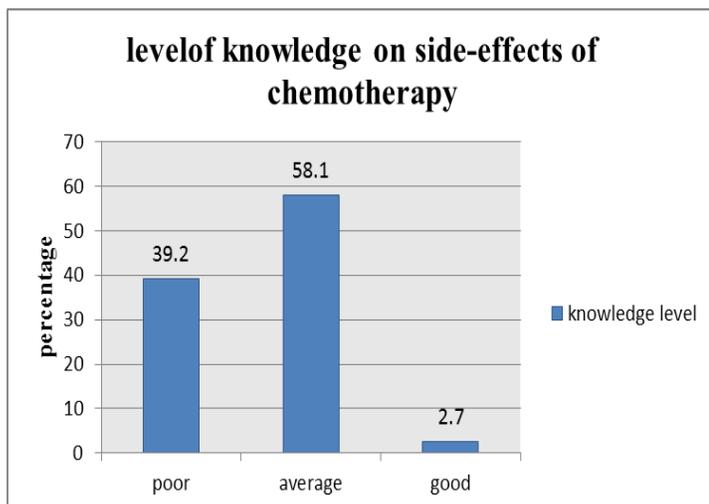


Figure 2 shows majority (58.1%) of respondents had average knowledge on chemotherapy related side-effects.

Figure 3: Pie diagram showing level of knowledge on management of Side Effects of Chemotherapy

### level of knowledge on management of side-effects of chemotherapy

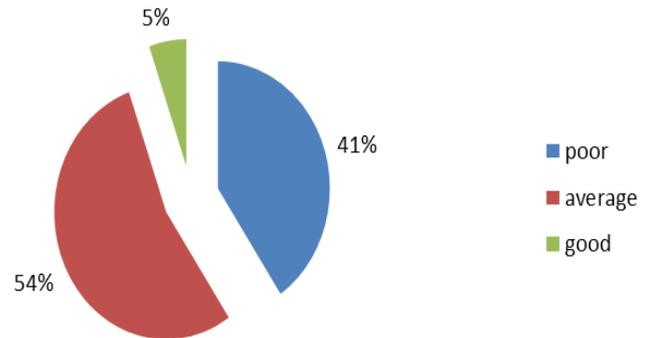


Figure 3 shows majority (54%) of respondents had average knowledge, on management of chemotherapy related side-effects.

### Discussion

In present study out of 74 respondents majority 85% of respondents knew that loss of Appetite is due to chemotherapy, more than half 65% of respondents knew nausea and hair loss is due to chemotherapy, similarly 48.3% of respondents knew fatigue and constipation is due to chemotherapy, 28.3% of respondents knew diarrhea and stomatitis is due to chemotherapy, 18.3% of respondents knew burning micturition is due to chemotherapy, 13.3% of respondents knew infection is due to chemotherapy, 11.7% of respondents knew skin rashes is due to chemotherapy, only 6.7% knew fever is due to chemotherapy, similarly only 3.3% knew Gum bleeding and 8.3% of respondents knew other symptoms such as toothache, cough, jaundice, swelling, dizziness is due to chemotherapy.

This finding is contrast with a study done in BPKHS on knowledge on side effects of chemotherapy where majority 85.45% of respondents knew Nausea and vomiting is due to chemotherapy, 81.81% of respondents knew Alopecia is due to chemotherapy, similarly 72% of respondents knew diarrhoea is due to chemotherapy, more than half 65.45% of respondents

knew mucositis is due chemotherapy, only 35% of respondents knew Constipation is due to chemotherapy, 34.59% of respondents knew skin rashes is due to chemotherapy, similarly 30% of respondents knew fever is due to chemotherapy, similarly (25%, 15%, 10% & 11.81%) of the respondents had knowledge on fatigue, burning micturition, gum bleeding and various infections (toothache, cough, Jaundice, swelling, dizziness) respectively.<sup>3</sup>

In present study majority 75.75% of respondents knew that Mouth wash with salt water and use of soft tooth brush can manage mucositis and stomatitis which are contrast by the findings of that revealed 57.5% of the respondents used soft tooth brush. More than half of respondents 54.9% knew that drinking too much liquid during the day removed the harmful agents from the body which is supported by the findings of that revealed 67.5% drank too much water.<sup>4</sup> In this study majority 67.6% of respondents took anti-emetic medication before meals for management of nausea and vomiting which is contrast to the findings of study where only 45.9% respondents took anti emetic for management of nausea and vomiting.<sup>5</sup> Similarly 40.5% of responded drank more fluid than usually with ORS for management of diarrhoea, which is supported by the findings of a study conducted by Guswiler & Kelly.<sup>6</sup> In present study 43.2% respondent put on scarf and cap/wig for management of hair loss which is contrast by the findings of a study where only 33% of respondents put wig for management of hair loss.<sup>6</sup> Also study reveals that 45.9% took small and frequent diet for management of loss of appetites, which contradicts to the finding of a study where only 25% respondents took small and frequent diet to manage loss of appetites.<sup>6</sup> Majority of respondents 62.2% maintained personal hygiene and change clothes everyday for management of skin rashes which is contrast the finding of a study where only 50% of respondents maintained personal hygiene to manage skin rashes.<sup>6</sup> Majority 73% of respondents

took paracetamol and applied cold compress for management of fever which is supported by the findings of a study where 80% of respondents took paracetamol to manage fever.<sup>6</sup> Also the study shows that 44.6% of respondents drank plenty of water with vitamin'C for management of burning micturition, which contradict the findings of a study where only 20% of respondents drank plenty of water for management of burning micturition.<sup>6</sup> Because people are more aware about cancer and due to advance technology and information system people gain more education about chemotherapy side effects and in past people could not express their side effects even they feel because of lack of knowledge and awareness too.

In present study among 74 cancer patients 43(58.1%) had average knowledge, 29(39.2%) had poor knowledge, and 2 (2.7%) had good knowledge on management of chemotherapy related side effects. In contrast to the study was a study conducted in Iran regarding knowledge of chemotherapy side effects and its management were only 33% of respondents had average knowledge, 37% of respondents had poor knowledge and 30% of respondents had good knowledge.<sup>10</sup> Similarly study conducted on Malaysian General Hospital out of 99 respondents 32% of respondents had average knowledge, 37% of respondents had poor knowledge and 35% of respondents had good knowledge.<sup>4</sup> In present study majority had average knowledge on management of side effects of chemotherapy.

## Conclusion

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In this study out of 74 respondents on knowledge on management of chemotherapy related side effects more than half of the respondents had average knowledge on management of side effects of chemotherapy.

## Recommendation

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- Health education session should be carried out on regular basis.

- Same study can be carried out in large sample size for generalization.
- A comparative study can be carried out in between different hospital.

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## Ethical Consideration

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Formal permission was taken from the concerned hospital. The purpose of the study was explained to the respondents. Verbal and written consents were taken from all respondents before data collection. The privacy and confidentiality of the subject was maintained throughout the study and thereafter.

## Funding

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Self

## References

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1. UK, Cancer Research. (2012, Feb 14). Worldwide Cancer Incidence Statistics. 34
2. Aslam MS, Naveed S, Ahmed A, Abbas Z, Gull I, Athar MA. Side Effects of Chemotherapy in Cancer Patients and Evaluation of Patients Opinion about Starvation Based Differential Chemotherapy. *Journal of Cancer Therapy*. 2014 Jul 7;2014.
3. Thapaliya K, Shrestha A, Prajapti A, Subedi R, Giri S. Study of pattern of adverse drug reaction due to cancer chemotherapy and their management in hospitalized patient in BP Koirala Memorial Cancer Hospital. *Journal of Chitwan Medical College*. 2015 Jan 28;4(4):24-8.
4. Haghpanah S, Amini M, Kherad M, Sadeghimehr R. Knowledge and practice of patients with breast cancer about complication of chemotherapy. *Journal of Research in Health Sciences*. 2006;6(2):28-32.
5. Bajracharya N, Karki P, Sapkota S, Bastakoti S, Yagol N, Khan GM, Shakya R, Rao BS. Prevalence pattern of cancer and handling of cytotoxic drugs. *Kathmandu University Journal of Science, Engineering and Technology*. 2006 Feb;2(1).
6. Guswiler, Kelly. A. Cancer Patients' Response to Chemotherapy Teaching on Side Effect Management. [homepage on the Internet]. 1991 [cited 2016 Jun Jun18] Available from: Grand Valley State University ScholarWorks@GVSU, Website: <http://scholarworks.gvsu.edu/cgi/viewcontent.cgi?article=1110&context=theses>
7. A Adenipekun. Knowledge and Experience of Cancer Patients Receiving Chemotherapy in a Teaching Hospital in Nigeria. Knowledge and Experience of Cancer Patients Receiving Chemotherapy in a Teaching Hospital in Nigeri. The internet journal of pain [serial on the Internet]. 2012 [cited 2016 May 9].;9(1) Available from: <http://ispub.com/IJPSP/9/1/14347>
8. Kavitha M.J. [homepage on the Internet]. 2014 [cited 2016 Jun 10]. Available from: [https://www.researchgate.net/publication/260432694\\_SIDE\\_EFFECTS\\_OF\\_CHEMOTHERAPY\\_AMONG\\_PATIENTS\\_RECEIVING\\_CHEMOTHERAPY](https://www.researchgate.net/publication/260432694_SIDE_EFFECTS_OF_CHEMOTHERAPY_AMONG_PATIENTS_RECEIVING_CHEMOTHERAPY)
9. Khandelwal S, Bairy KL, Vidyasagar MS, Chogtu B, Sharan K. Adverse drug reaction profile of cancer patients on chemotherapy in a tertiary care hospital. *Int J Pharm Bio Sci*. 2015;6(2):233-44.
10. Chan HK, Ismail S. Side effects of chemotherapy among cancer patients in a Malaysian General Hospital: experiences, perceptions and informational needs from clinical pharmacists. *Asian Pac J Cancer Prev*. 2014 Jul 22;15(13):5305-9.
11. DeSantis CE, Lin CC, Mariotto AB, Siegel RL, Stein KD, Kramer JL, Alteri R, Robbins AS, Jemal A. Cancer treatment and survivorship statistics, 2014. *CA: a cancer journal for clinicians*. 2014 Jul 1;64(4):252-71.
12. Trovato JA. Assessment of Patients' Knowledge and Management of Chemotherapy-Related Adverse Effects.
13. Mallik S, Palaian S, Ojha P, Mishra P. Pattern of adverse drug reactions due to cancer chemotherapy in a tertiary care teaching hospital in Nepal. *Pakistan journal of pharmaceutical sciences*. 2007 Jul;20(3):214-8.
14. Roe Helen, Lennan Elaine. Role of nurses in the assessment and management of chemotherapy-related side effects in cancer patients. Dovepress [serial on the Internet]. 2014 [cited 2016 Aug 15]. Available from: Grand Valley State University ScholarWorks@GVSU, Web site: <https://www.dovepress.com/role-of-nurses-in-the-assessment-and-management-of-chemotherapy-relate-peer-reviewed-fulltext-article-NRR>
15. Tian. J, Jia. N.I, Cheng. Z.c. Relationships between patient knowledge and the severity of side effects, daily nutrient intake, psychological status, and performance status in lung cancer patients. *Current Oncology A Canadian Cancer Research Journal* [serial on the Internet]. 2015 [cited 2016 Aug 26].;22(4) Available from: Grand Valley State University ScholarWorks@GVSU, Web site: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4530822/>
16. Turati. F, Edefonti.v, Bosetti. C. Family history of cancer and the risk of cancer: a network of case-control studies. *Annals of Oncology* [serial on the Internet]. 2013 [cited 2016 Jun 17].;24(10) Available from: Grand Valley State University ScholarWorks @ GVSU, Web site: <https://academic.oup.com/annonc/article/24/10/2651/177138/Family-history-of-cancer-and-the-risk-of-cancer-a>.