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Self-reported minor chemotherapy adverse effects in cancer patients: incidence and management

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ABSTRACT

INTRODUCTION: Cancer patients experience a variety of physical and psychological symptoms. Some of these are related to disease progression, while others are early or late adverse effects of cancer treatment. Severity of these symptoms result in impaired quality of life and can often result in treatment delays or warrant additional supportive interventions. Thus, symptom management in cancer patients remains an important focus area for achieving desired outcomes of cancer treatment and preserving quality of life which happens to be a critical function of nursing practice. The current study aimed at describing the incidence of minor symptoms that cancer patients experience along with understanding different strategies that patients' chose to manage minor adverse events vis-à-vis their efficacy.

METHODOLOGY: The prospective study was conducted among 881 cancer patients, who were selected by convenience sampling technique. Statistical analyses were performed using SPSS Version 23 (Statistical Package for the Social Sciences) software. Categorical data were expressed as numbers and percentages. Categorical data were analyzed by fisher exact test and chi square test. P value <0.05 was considered as statistically significant.

RESULTS: Off the total population, constipation being the most prevalent (22.48%) symptom reported among the cancer patients while the least reported symptom was appetite (12.73%). It has been seen that constipation (0.032), diarrhea (<0.001), insomnia (<0.001), nausea (<0.001) and appetite (<0.001) are the five common adverse effects experienced by the Cancer patients and shows statistically significant association with treatment methods. There was no statistical significance in relationship between vomiting resolution status and treatment method (<0.052).

CONCLUSION: These findings demonstrate that high symptom incidence rates and self-management used render an improvement in current nursing management. Therefore, development of symptoms management groups, encouraging the use of self-care diaries and enhancing the quality of psycho-oncology services provided are to be recommended.

KEY WORDS: *Adverse effects, cancer patients, chemotherapy, self-management.*

1. INTRODUCTION

Cancer is a leading cause of death worldwide, accounting for nearly 10 million deaths in 2020. The incidence of cancer rises with age and GLOBOCAN-2020 statistics indicates that the risk of developing cancer before the age of 75 years is 20.4% globally and 10.4% in India[1,2]. Although several recent advances in radiology and pathology have helped with earlier detection, and chemotherapy, radiotherapy and surgery have been able to deliver more effective and precise treatment, cancer remains amongst the most dreaded diseases, due to its association with death and diminished quality of life[2,3,4].

Amongst these therapeutic strategies, chemotherapy is known to cause cytotoxicity in cancer as well normal cells resulting is several adverse effects.

Also, chemotherapy is often administered in their maximum tolerated dose which results in increased incidence of dose limiting side effects. Among the side effects reported, the most common are fatigue, diarrhea, loss of appetite, nausea and vomiting, the severity of which varies from mild/moderate to severe. These symptoms could also result from disease progression itself and are often exacerbated by the patients' psychological condition as well as coping strategies[4,5,6].

Management of symptoms resulting from chemotherapy usually warrants supportive care but will often result in dose reduction in the chemotherapy regimen that the patient is undergoing. This potentially reduces efficacy of response and impacts survival at times[3,4,7]. If symptoms are mild or minor, they do not draw the attention of the healthcare provider and cancer directed treatment continues unchanged. For patients, however, this does cause a diminished quality of life and may even limit functionality[7,8,9]. Also, these minor symptoms when unaddressed have the potential to become worse and become a limiting factor for treatment[10,11,12].

Patients opt for several strategies, with or without the knowledge of their oncologists to mitigate these symptoms and understanding these patterns could help with the development of clear, concise, consistent, and individually relevant coping strategies that equip patients to manage these symptoms[10,11,12]. It is important for the treating team including doctors and nurses, to have this information and guide patients to manage and overcome minor symptoms more effectively[13,14,15,16].

Multiple studies have reported the effect of different coping strategies used by patients during chemotherapy and has been considered as an important oncology nursing focus. Reports of how patients cope with and manage minor symptoms also vary by regions and culture. Few Asian studies have looked at the burden of chemotherapy related side effect, their management strategies and have developed intervention programs. In India, considering the regional and cultural heterogeneity, it become prudent to understand incidence of minor symptoms and patient behavior thereof [15,16,17,18].

2. METHODOLOGY

We conducted a prospective study to assess the Self-reported minor chemotherapy adverse effects in cancer patients. We included all cancer patients who were taking treatment in HCG Hospitals. Total of 881 cancer patients,who were selected by convenience sampling technique. All cancer patients in between 18-80 years of age group with ECOG <3 had been included in the study. After getting approval from Institutional Ethical Committee a written consent was obtained from participants. Data was collected by using Memorial Symptom Assessment Scale. The collected data was computed and analyzed by appropriate statistical methods.

3. STATISTICAL METHODS

Statistical analyses were performed using SPSS Version 23 (Statistical Package for the Social Sciences) software. Categorical data were expressed as numbers and percentages. Categorical data were analyzed by fisher exact test and chi square test. P value <0.05 was considered as statistically significant.

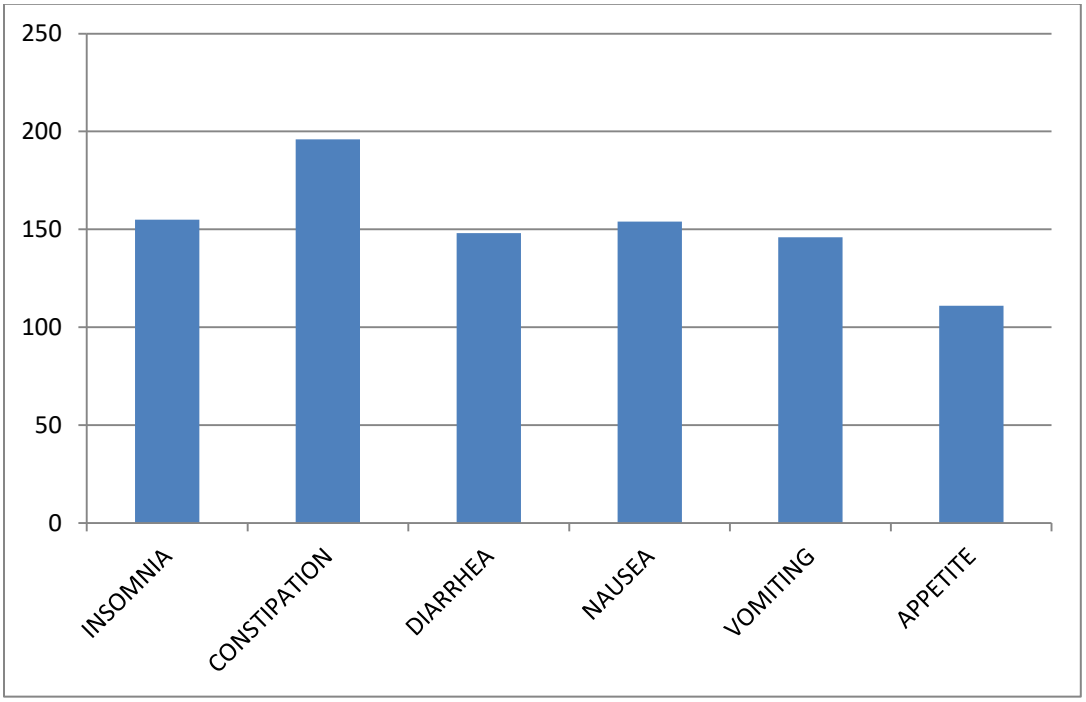
RESULTS

The most common cancer symptom among cancer patients was constipation (22.48%) while appetite (12.73%) was the least reported symptom. It has been seen that constipation (0.032), diarrhea (<0.001), insomnia (<0.001), nausea (<0.001) and appetite (<0.001) are the five common adverse effects experienced by the Cancer patients and shows statistically significant association with treatment methods. There was no statistical significance in relationship between vomiting resolution status and treatment method (<0.052).

Table 1 shows the prevalence of self-reported minor symptoms associated with chemotherapy. Out of 881 subjects, the most common symptom was constipation and least reported symptom was loss of appetite**.**

Table 1: Prevalence of symptoms

	N	%
INSOMNIA	155	17.78%
CONSTIPATION	196	22.48%
DIARRHEA	148	16.97%
NAUSEA	154	17.66%
VOMITING	146	16.74%
APPETITE	111	12.73%



SYMPTOM CHARACTERISTICS

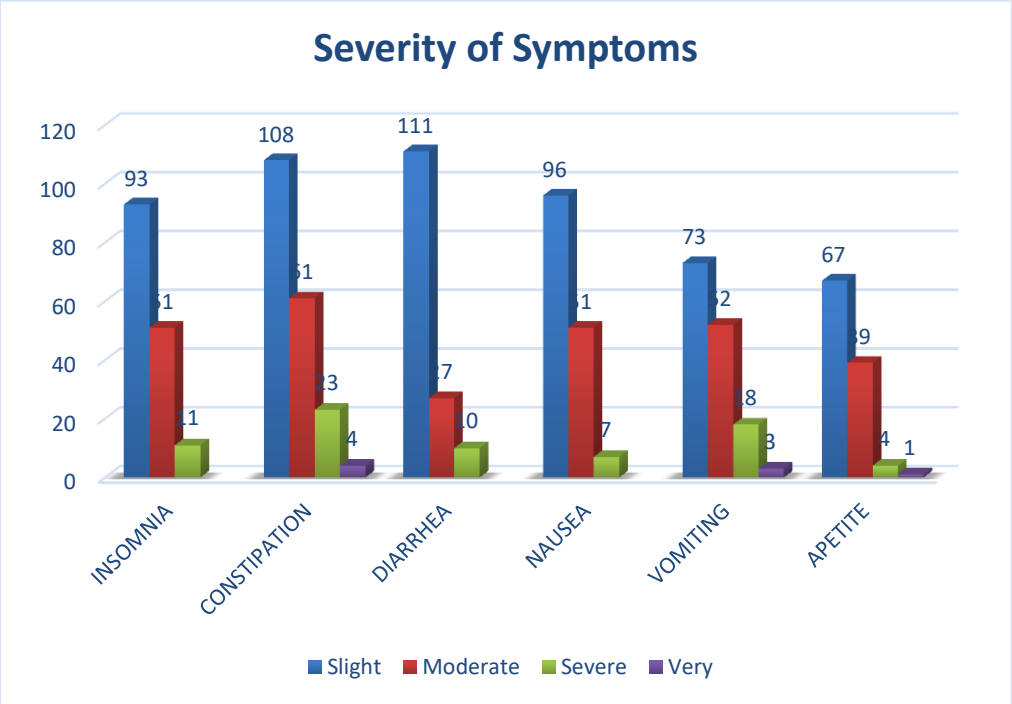
Figure 1 shows the prevalence of minor symptoms.

Patients reported varying adverse symptoms with constipation being the most prevalent (22.48%) symptom reported among the cancer patients while the least reported symptom was appetite (12.73%). Off the total patients, diarrhea was reported in 16.97% of patients, 17.78% had insomnia, 17.66% patients had nausea and 16.74% patient had vomiting.

It has been seen that constipation, diarrhea, insomnia, nausea, vomiting and appetite are the six common adverse effects experienced by the Cancer patients.

TABLE 2: SEVERITY OF SYMPTOMS

	SEVERITY			
	Mild	Moderate	Severe	Very Severe
INSOMNIA	93 (60%)	51 (32.9%)	11 (7.1%)	
CONSTIPATION	108 (55.1%)	61 (31.1%)	23 (11.7%)	4 (2%)
DIARRHEA	111 (75%)	27 (18.2%)	10 (6.8%)	
NAUSEA	96 (61.9%)	51 (32.9%)	7 (4.5%)	
VOMITING	73 (50%)	52 (35.6%)	18 (12.3%)	3 (2.1%)
APPETITE	67 (60.4%)	39 (35.1%)	4 (3.6%)	1 (0.9%)



Constipation was found to be the most severe symptom for this group of cancer patients. Over 108 (55.1%) had constipation, the majority had mild constipation on occasion, followed by moderate constipation 61(31.1%) and severe constipation 23 (11.7%), with only 4 having very severe constipation (2%).

In which 111 (75%) patients had mild diarrhea followed by 27 (18.2%) cases with moderate diarrhea, 10(6.8%) number of cases had severe diarrhea and a least number of 4 (2%) patients had very severe diarrhea frequently. 93(61%) had mild nausea followed by 51(32.9%) had moderate nausea whereas 7 (4.5%) had severe nausea. In case of insomnia majority had mild insomnia 93(60%) and moderate insomnia 51(32.9%) whereas least number of cases 11(7.1%) had severe insomnia.

Majority had mild vomiting 73(50%) followed by 52(35.6%) had moderate vomiting whereas least number of cases 18(12.3%) had severe vomiting.

Also, 67(60.4%) had mild appetite, 39(35.1%) had moderate appetite and 18(12.3%) had severe appetite whereas very few 1(0.9%) had very severe appetite.

Table 3: Resolution of symptoms and treatment methods

		CAM	Allopathy	Prescribed allopathy	P value
INSOMNIA	Resolved	48_a	1_b	20_c	<0.001*
		68.6%	2.9%	39.2%	
	Unresolved	22_a	33_b	31_c	
		31.4%	97.1%	60.8%	
CONSTPATION	Resolved	31_a	1_a	52_a	0.032*
		37.3%	11.1%	50.0%	
	Unresolved	52_a	8_a	52_a	
		62.7%	88.9%	50.0%	
DIARRHEA	Resolved	9_a	0_b	66_a	<0.001*
		64.3%	0.0%	68.8%	
	Unresolved	5_a	38_b	30_a	
		35.7%	100.0%	31.3%	
NAUSEA	Resolved	13_a	10_b	56_a	<0.001*
		65.0%	17.5%	71.8%	
	Unresolved	7_a	47_b	22_a	
		35.0%	82.5%	28.2%	
VOMITING	Resolved	6_a	0_b	55_a	0.052
		60.0%	0.0%	42.6%	
	Unresolved	4_a	7_b	74_a	
		40.0%	100.0%	57.4%	
APETITE	Resolved	37_a	2_b	21_a	<0.001*
		94.9%	4.3%	80.8%	
	Unresolved	2_a	44_b	5_a	
		5.1%	95.7%	19.2%	

P value <0.05 is statistically significant; fisher exact test/chi square test

Each subscript letter denotes a subgroup of treatment categories whose column proportions do not differ significantly from each other at the 0.05 level.

Out of 155 patients with insomnia, the majority of 70 (45.16%) patients had taken complimentary alternative medicine, followed by prescribed allopathy (32.90%) and self-allopathy (21.94%). Patients who had taken CAM (68.6%), resolved their insomnia better than both self-prescribed (2.9%) and physician prescribed allopathy (39.2%) and also it is statistically significant ($p < 0.001$). The proportion between CAM, Allopathy and prescribed allopathy were statistically significant from each other.

Among the 196 patients with constipation, 83 used complementary and alternative medicine (CAM), 9 had taken self-allopathy, and 104 used prescribed allopathy. It was discovered that the majority of patients took prescribed allopathy to relieve constipation, with 50% of patients experiencing relief from their symptom. The majority of patients who used self-allopathy (88.9%) medication did not get relief from their symptoms.

Only 14 of the 148 patients had used complementary alternative medicine, while 96 (64.86%) had taken prescribed allopathy and 38 (25.68%) had taken their own allopathy medication to treat diarrhea. Sixty-six (68.8%) cases that had been prescribed allopathy had their symptoms resolved. Thirty-eight (100%) patients did not have their diarrhea resolved using self-allopathy medicine. When compared to CAM and prescribed allopathy, the majority of patients had their symptoms resolved using prescribed allopathy. The relationship between resolution and medication type was statistically significant (p=0.032) with exception to vomiting.

The majority of the 154 Nausea patients followed the prescribed allopathy, and 71.8 percent of them were resolved. In comparison to self-prescribed allopathy, the majority of patients (65%) were resolved by CAM and prescribed allopathy (71.8%). The proportion of patients in i) CAM & allopathy ii) CAM and self - prescribed allopathy and iii) CAM and prescribed allopathy are statistically significant.

The majority of the patients had taken allopathy to relieve their vomiting (88.36%). Complimentary alternative medicine was used by 6.85 percent of patients, while self-treatment was used by 7.9 percent. 57.4 percent of patients who were prescribed allopathy did not recover from vomiting. Self-treatment did not work for any of the patients in the study. Sixty percent of patients who used complementary and alternative medicine recovered from vomiting.

There was no statistical significance in relationship between vomiting resolution status and treatment method. Most patients (41.44 %) underwent allopathy to resolve their appetite problem, but only a few patients (4.3%) were successful. Patients who followed prescribed allopathy had 80.8 percent of their appetite problems resolved, while patients who followed complementary alternative medicine had 94.9 percent of their appetite problems resolved. It was discovered that the resolution of the appetite problem was higher in patients who used CAM and prescribed allopathy and it was statistically significant ($p<0.001$)

4. DISCUSSION

To estimate the incidence of minor symptoms and understand how patients chose to manage it and which strategies has better outcomes, we analyzed minimum 3 follow up visits from each patient and surveyed them. The age of the samples was in between 18-80 years.

The finding of this study indicated that although these patients experienced a high number of symptoms, they are able to control and manage the symptoms accordingly. This is probably due to information given by nurses and doctors to patients about the side-effects of chemotherapy and effective management of these side-effects at each cycle of chemotherapy. The patients reported a mean of six symptoms, which were higher compared to previous studies by other researchers[19]. This could be due to the variety of cancers included in this study and type of treatment received by patients. This finding supports the need for oncology nurses to continue to focus on symptoms management as a way to improve the quality of life of cancer patients undergoing chemotherapy [12,13,19].

The National Cancer Institute (NCI) reported that anywhere from 20%–50% of patients with cancer experience pain related to their disease or treatment. Beyond that, 14%–96% of patients with cancer report feeling fatigued during their cancer treatments, and 19%–82% of patients report feeling fatigue posttreatment. Identifying symptom profiles and screening for potential side effects is the just first step toward improving quality of life for patients. Offering evidence-based interventions is key to successful outcomes, but that process can pose known and unknown challenges to the healthcare team, especially as new treatments are developed and approved.

The six most predominant symptoms when ranked according to characteristics were constipation, nausea, insomnia, vomiting, diarrhea and loss of appetite was the highest prevalent symptom found in this study, which was consistent with the review findings by other researchers (Kim et al., 2009), and was also found to be the most prevalent symptoms in other 18 studies[11,14].

Based on the outcome of the study, further improvement in the current patient management particularly in the delivery of oncology services is recommended. A Self-Care Diary as suggested by Nail et al. (1991) composed of all side effects of chemotherapy along with a list of self-care activities, may be useful to patients[20].

The above findings also constituted with the findings of **Renee et al** conducted a review on Symptom management during chemotherapy. This review explores assessment and management of common symptoms, in particular those identified as sources of distress by children, parents and professionals. Included are pain, mucositis, nausea and vomiting, weight changes and poor nutrition, fatigue, sleep and mood disturbances. Study results showed that attention is drawn to develop a holistic approach which considers relevant biological, psychological and sociocultural factors in assessment and management and the interrelationship of multiple symptoms[21].

In conclusion, this study has examined on the symptom prevalence and concurred that side effects among cancer patients were relatively high. Psycho-oncology support program are needed to enhance the services such as providing spiritual therapy, or mind therapy to assist patients to cope with the symptom distress and improve the quality of life at home. It is also important for the nurses to give individualized nursing care to every patient before starting the chemotherapy and during subsequent chemotherapy to ensure that their side effects are manageable.

REFERENCES

1. International Agency for research on cancer: World health Organization, The Global Cancer Observatory - All Rights Reserved - March, 2021. https://gco.iarc.fr/today/data/factsheets/populations/900-world-fact-sheets.pdf

2. Symptom management in Cancer: Pain, Depression and Fatigue. National Institute of health state of the sciences conference Statement. July. 2002.

3. Alison Pearce, Marion Haas, Rosalie Viney, Sallie-Anne et al. Incidence and severity of self-reported chemotherapy side effects in routine care: A prospective cohort study**.** PLoS One. 2017; 12(10): e0184360. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5634543/

4. American Cancer Society. After diagnosis*:* A guide for patients and families 2012 [cited 2016 May 03]; http://www.cancer.org/acs/groups/cid/documents/webcontent/002813-pdf.pdf.

5. Nor Aziyan Yahaya , Pathmawathi Subramanian, Anita Zarina Bustam, Nur Aishah Taib. Symptom experiences and coping strategies among multi- ethnic solid tumor patients undergoing chemotherapy in Malaysia. 2015;16(2):723-30.

6. Wu SP, Hsu YC. Wu SP, et al. Hu Li Za Zhi. 2016 Dec;63(6):30-40. doi: 10.6224/JN.63.6.30. Hu Li Za Zhi. 2016. PMID: 27900743 Chinese. [The Relationship Between Coping Behaviors and Symptom Distress in Elderly Patients with Cancer Undergoing Initial Chemotherapy]

7. Coates A., Abraham S., Kaye S.B., Sowerbutts T., Frewin C., Fox., Tattersall M.H. On the receiving end: patient perception of the side-effects of cancer chemotherapy. European Journal of Cancer and Clinical Oncology, 1983. 19(2): p. 203–208. [PubMed] [Google Scholar]

8. Sung-Hsin Kuo, Huang-Chun Lien, San-Lin You, Yen-Shen Lu, et al. Dose variation and regimen modification of adjuvant chemotherapy in daily practice affect survival of stage I-II and operable stage III Taiwanese breast cancer patients. 2008 Dec;17(6):646-53.

9. Pearce A, Haas M, Viney R, Pearson SA, Haywood P, Brown C, Ward R. Incidence and severity of self-reported chemotherapy side effects in routine care: A prospective cohort study. PLoS One. 2017 Oct 10;12(10): e0184360.

10. Kelliann Fee-Schroeder, Lisa Howell, Janine Kokal, Susan Bjornsen, et al. Empowering Individuals to Self-Manage Chemotherapy Side Effects. CJON 2013, 17(4), 369-371.

11. Chris P, et al. The crucial role of symptom management in cancer care. ONS Staff Writer/producer. 2017.The Crucial Role of Symptom Management in Cancer Care | ONS Voice
12. Miaskowski C, Cooper BA, Paul SM, et al. Subgroups of patients with cancer with different symptom experiences and quality-of-life outcomes: a cluster analysis. Oncol Nurs Forum. 2006; 33 (5): E79–E89.

13. Pud D, Ben Ami S, Cooper BA, et al. The symptom experience of oncology outpatients has a different impact on quality-of-life outcomes [published online ahead of print December 20, 2007]. J Pain Symptom Manage. 2008; 35 (2): 162–170.

14. Kim JE, Dodd MJ, Aouizerat BE, et al (2009). A Review of the prevalence and impact of multiple symptoms in oncology patients. J Pain Symptom Manage, 37, 715-36.

15. Barton DL, Atherton PJ, Bauer BA, et al. The use of Valeriana officinalis (Valerian) in improving sleep in patients who are undergoing treatment for cancer: a phase III randomized, placebo-controlled, double-blind study (NCCTG Trial, N01C5). J Support Oncol. 2011; 9 (1): 24–31.

16. Engvall G, Skolin I, Mattson E, et al (2011). Are nurses and physicians able to assess which strategies adolescents recently diagnosed with cancer use to cope with disease-and treatment-related distress? Support Care Cancer, 19, 605-11.

17. Trevino KM, Maciejewski PK, Fasciano K, Greer J, Partridge A, Kacel EL, Block S, Prigerson HG. Coping and psychological distress in young adults with advanced cancer. J Support Oncol. 2012 May-Jun;10(3):124-30. doi: 10.1016/j.suponc.2011.08.005. Epub 2012 Jan 29.

18. Engvall G, Skolin I, Mattson E, et al (2011). Are nurses and physicians able to assess which strategies adolescents recently diagnosed with cancer use to cope with disease-and treatment-related distress? Support Care Cancer, 19, 605-11. http://journal.waocp.org/article_30495_879d63670a1dd5df3b60356aa345827c.pdf

19. Yahaya, Nor Aziyan, Subramanian, Pathmawathi, Bustam, Anita Zarina, Taib, Nur Aishah. Symptom Experiences and Coping Strategies among Multi-ethnic Solid Tumor Patients Undergoing Chemotherapy in Malaysia. Asian Pacific Journal of Cancer Prevention.Volume 2015; 16 Issue 2 / Pages.723-730.

20. L M Nail 1, L S Jones, D Greene, D L Schipper, R Jensen. Use and perceived efficacy of self-care activities in patients receiving chemotherapy. 1991 Jul;18(5):883-7. https://voice.ons.org/news-and-views/the-crucial-role-of-symptom

21. Renee McCulloch June Hemsley Paula Kelly. Symptom management during chemotherapy. Paediatrics and Child Health. Volume 28, Issue 4, April 2018, Pages 189-195