

Assess The Level of Dependence on Self Care Regarding Chemotherapy Induced Peripheral Neuropathy Among Patients Receiving Chemotherapy

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ABSTRACT :

A descriptive study was conducted to assess the level of dependence on self care regarding chemotherapy induced peripheral neuropathy among patients receiving chemotherapy in DR GVN Hospital, Trichy. The study aimed to assess the level of dependence on self care regarding chemotherapy among patients receiving chemotherapy and to find out association between the level of dependence on self care regarding chemotherapy induced peripheral neuropathy and with their selected demographic variables. Hypothesis was their will be a significant association between the level of dependence on self care regarding chemotherapy induced peripheral neuropathy and with their selected demographic variables. An assessment questionnaire developed by the researcher was used as the data collection tool. A sample of 84 patients who had chemotherapy induced peripheral neuropathy were selected through purposive sampling. Data collected were analyzed using descriptive and inferential statistics. The findings revealed that 48 (57.1%) were partially care dependent, 12 (14.2%) were great extent care dependent, 10(11.9%) were less care dependent, 8(9.5%) were almost independent, 6(7.1%) were complete care dependent and mean score and the standard deviation was 40.26(±13.79). There is a association between the level of dependence on self care regarding chemotherapy induced peripheral neuropathy and with their selected demographic variables like site of tumor and duration since diagnosis. Conclusions: Nurses must assess the level of dependence and provide appropriate care to the patient to enhance quality of life.

Keywords: Chemotherapy induced peripheral neuropathy; Dependence on self care; Chemotherapy; Quality of life.

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INTRODUCTION :

Cancer is a generic term for a large group of diseases that can affect any part of the body. Other terms used are malignant tumours and neoplasms. One defining feature of cancer is the rapid creation of abnormal cells that grow beyond their usual boundaries, and which can then invade adjoining parts of the body and spread to other organs; the latter process is referred to as metastasis. Widespread metastases are the primary cause of death from cancer.

Cancer is a leading cause of death worldwide, accounting for nearly 10 million deaths in 2022. Cancer arises from the transformation of normal cells into tumour cells in a multi-stage process that generally progresses from a pre-cancerous lesion to a malignant tumour. The incidence of cancer rises dramatically with age, most likely due to cumulative exposure to risk factors that increase with age. Chemotherapy-induced peripheral neuropathy (CIPN) is a common adverse effect of chemotherapy treatment and negatively affecting the daily functioning and quality of life.

Peripheral neuropathy (PN) is a condition caused by damage to the peripheral nervous system. It can cause symptoms like pain, weakness, tingling, numbness, or sensitivity, often in the hands or feet. Having peripheral neuropathy can seriously affect daily life and can lead to

safety concerns and injury. Pain and other symptoms can make it hard to get comfortable which can affect your sleep habits. Peripheral neuropathy can make it hard to get around and do things you used to do. It can cause severe pain and can affect things like the way you walk, write, button your shirt, or pick up coins. Peripheral neuropathy can last for weeks, months, or even years after cancer treatment is done.

Some of the most common causes of peripheral neuropathy are medicines used to treat cancer. When this happens, it is called chemotherapy-induced peripheral neuropathy (CIPN). The risk of CIPN depends on the type of chemotherapy and dose given, and increases with each cycle of chemotherapy. Certain cancer medicines are more likely to cause CIPN. Some of the more common ones include :Platinum drugs like cisplatin, carboplatin, and oxaliplatin ; Taxanes, including paclitaxel (Taxol), docetaxel (Taxotere), and cabazitaxel (Jevtana) ; Plant alkaloids, such as vinblastine (Velban), vincristine (Oncovin), vinorelbine (Navelbine), and etoposide (VP-16).

Cancer pain affects approximately 70% of those with advanced disease; over half experience moderate-to-severe pain and under-treatment is common. The prevalence rates of pure neuropathic pain, mixed pain, and pure nociceptive pain are approximately 19%, 20%,

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and 59%, respectively. The prevalence of NCP has been reported to be as high as 40% among cancer patients. NCP prevalence increased to over 40% in patients with moderate-to-severe pain, affecting the activities of daily life more severely than was the case for patients without neuropathic pain. Even patients with mild neuropathic pain experienced significant interference with the activities of daily life. Despite the high prevalence and severity of such pain, only 8% were taking adjuvant analgesics.

Patients with chemotherapy-induced peripheral neuropathy (CIPN) experience a high level of dependency on self-care, particularly as symptoms progress from mild tingling to significant motor dysfunction, resulting in substantial limitations in daily activities. Studies indicate that roughly 21% of patients with CIPN become dependent on others due to neurotoxicity, with nearly 49% reporting a negative impact on their overall quality of life. Chemotherapy-induced peripheral neuropathy (CIPN) is a common adverse effect of chemotherapy treatment and negatively affecting the daily functioning and quality of life.

Physical and Functional Impact of CIPN, Emotional and Psychological Impact, Coping Strategies and Self-management, and Support and Barriers to Health, four main categories were identified: The findings revealed distinct self-care deficits related to functional limitations, emotional distress, and coping challenges. Utilizing Orem's Nursing Theory of Self-Care Deficit, these deficits were mapped onto different levels of nursing intervention, ranging from compensatory support to educational and self-management strategies, emphasizing an action-oriented approach in patient care.

STATEMENT OF THE PROBLEM

A study to assess the level of dependency on self care regarding chemotherapy induced peripheral neuropathy among patients receiving chemotherapy at selected hospital.

OBJECTIVES :

- To assess the level of dependency on self care regarding chemotherapy induced peripheral neuropathy among patients receiving chemotherapy.
- To find out the association between level of dependency on self care regarding chemotherapy induced peripheral neuropathy and with their selected demographic variables among patients receiving chemotherapy.

HYPOTHESIS:

- There will be a significant association between level of dependency on self care regarding chemotherapy induced peripheral neuropathy and with their selected demographic variables among patients receiving chemotherapy.

OPERATIONAL DEFINITION :

• **Assess :**

To decide the quality or importance of something

It refers to assess the level of dependency on self care regarding chemotherapy induced peripheral neuropathy among patients receiving chemotherapy.

• **Level of dependency on self care :**

It measures an individual's inability to live independently, ranging from minimal assistance to total care.

It refers the degree to which an individual requires assistance from others to perform essential daily tasks (such as bathing, eating, or medication management) necessary for life and well-being

• **Chemotherapy Induced Peripheral Neuropathy:**

Side effect of cancer treatment where chemotherapy drugs damage peripheral nerves.

It refers to as symptoms worsen, patients often face substantial limitations in performing activities of daily living (ADLs), including walking, balancing, and fine motor tasks due to receiving cisplatin drugs.

• **Patients receiving chemotherapy :**

Patients undergoing a, usually systemic, treatment using powerful medications to destroy cancer cells or stop them from growing and dividing.

It refers to patients who admitted in hospital and receiving cisplatin for cancer treatment.

Assumptions :

Patients receiving chemotherapy will have changes in level of dependency on self care.

REVIEW :

Anabela Amarelo et.al (2025) conducted a qualitative meta-synthesis on living with chemotherapy-induced peripheral neuropathy to aggregate, interpret, and synthesize findings from qualitative studies on patients' experiences with chemotherapy-induced peripheral neuropathy (CIPN). A qualitative metasynthesis was conducted following the thematic synthesis approach of Thomas & Harden. A systematic literature search was performed in MEDLINE, CINAHL, Psychology and Behavioral Sciences Collection, and Scopus, including studies published up to December 2024. Two researchers independently conducted the screening and data extraction. They also independently evaluated the quality of the included studies. The data from these studies were then thematically analyzed and synthesized using Dorothea Orem's model. Eighteen studies were included. Four main categories were identified: (1) Physical and Functional Impact of CIPN, (2) Emotional and Psychological Impact, (3) Coping Strategies and Self-management, and (4) Support and Barriers to Health. The findings revealed distinct self-care deficits related to functional limitations, emotional distress, and coping challenges. Utilizing Orem's Nursing Theory of Self-Care Deficit, these deficits were mapped onto different levels of nursing intervention, ranging from compensatory support to educational and self-

management strategies, emphasizing an action-oriented approach in patient care. This metasynthesis highlights the complex and multidimensional effects of peripheral neuropathy on the lives of cancer patients. Applying Orem's model underscores the critical role of nurses in addressing healthcare system gaps, functional impairments, and long-term adaptation challenges to enhance supportive care for individuals suffering from CIPN.

Khue T. N. Duong et. al (2024) conducted a systemic review on Understanding Chemotherapy-Induced Peripheral Neuropathy and How It Affected Cancer Survivors. Chemotherapy-Induced Peripheral Neuropathy (CIPN) was first described in the 1960s, since then it has been acknowledged as a dose-related side effect of chemotherapy (Lehmann, 2020). Approximately 30% to 40% of patients were estimated to be affected by CIPN (Eldridge, 2020). While acute CIPN could be resolved after time, about 30% will be facing life-long consequences of CIPN (Colvin, 2019). The aim of this research is to optimize nursing care practices and enhance the holistic care provided to cancer survivors experiencing CIPN. Systematic literature review, qualitative method. Included ten qualitative method articles from 2017-2023, 210 participants, conducted in United Kingdom, United States of America, The Netherlands, Sweden, Denmark, Japan, and Hong Kong. CIPN symptoms significantly disrupt patients' physical, emotional, and social well-being, leading them to adopt coping strategies as they adjust to a "new normal," despite ongoing challenges in fully understanding their condition. These difficulties shape patients' communication about symptoms, while clinicians also face substantial challenges in managing CIPN, highlighting the need for deeper insight into clinical decision-making processes and the efficacy of current assessment and management systems. CIPN significantly affects cancer patients' physical, emotional, and social well-being, often leaving them feeling lost. Enhancing nurses' knowledge can improve patient care by promoting early symptom reporting and offering clearer guidance. Further research is needed to address gaps in CIPN assessment and management.

Daniëlle L van de Graaf et .al (2023) conducted a qualitative study among cancer survivors on Coping with and self-management of chronic painful chemotherapy-induced peripheral neuropathy. Patients with chronic painful chemotherapy-induced peripheral neuropathy (CIPN) may experience a negative impact of CIPN on daily life. They can use various coping (i.e., dealing with symptoms and resulting impairments in general) and self-management (i.e., practical actions to reduce symptoms) strategies to live with their limitations. Semi-structured interviews were conducted with twelve patients with chronic painful CIPN. We applied a hybrid deductive-inductive coding approach. Coping of patients often included active strategies like planning, seeking social support, and acceptance. Patients exhibit a great variety of coping and self-management strategies that they perceive as helpful to

deal with chronic painful CIPN. However, research has shown that certain strategies are not that helpful or even come with aversive effects. More research into the effectiveness and implementation of psychosocial interventions is needed since it may help patients adopting helping strategies. In addition, healthcare professionals need to refer patients with CIPN in a timely manner to physical therapists, occupational therapists, or rehabilitation teams to reduce or prevent (further) impairments.

Sohee Mun et .al (2022) conducted a crosssectional survey on the impact of peripheral neuropathy symptoms, self-care ability, and disturbances to daily life on quality of life among gynecological cancer patients undergoing chemotherapy. The participants included 144 patients. Convenience sampling was used to recruit patients who had received 4 or more cycles of chemotherapy using a paclitaxel-platinum regimen, and a self-reported questionnaire was used to collect data. Most of the participants had ovarian cancer (70.1%) or endometrial cancer (14.6%), and the most common number of treatment cycles was 6 to 10 (29.2%). The mean QoL (60.83 ± 19.89) was greater than the midpoint. The regression model analyzing the patients' QoL was statistically significant ($F=15.38$, $p<.001$) with an explanatory power of 56.7%. Self-care ability ($\beta=.39$, $p<.001$) disturbances to daily life ($\beta=-.38$, $p<.001$), the duration of peripheral neuropathy symptoms ($\beta=2.14$, $p=.034$), and regular exercise ($\beta=-2.12$, $p=.036$) were found to significantly affect QoL. Efforts to improve the self-care ability of gynecological cancer patients who have experienced peripheral neuropathy after receiving chemotherapy and mitigate disturbances to their daily life can improve their QoL.

Hsing Wei Hung (2021) conducted a study on Impact of Chemotherapy-Induced Peripheral Neuropathy on Quality of Life in Patients with Advanced Lung Cancer Receiving Platinum-Based Chemotherapy. Chemotherapy-induced peripheral neuropathy (CIPN) is a common adverse effect of neurotoxic anticancer drugs that may affect quality of life (QoL). Purpose: The purposes of this study were to: assess the levels of CIPN, anxiety, depression, CIPN-related QoL, and general QoL; and identify the factors related to CIPN-related QoL and general QoL in patients with advanced lung cancer (LC) receiving platinum-based chemotherapy. This cross-sectional study examined patients with advanced LC who received platinum-based chemotherapy from the thoracic oncology inpatient wards of a medical center in northern Taiwan. Structured questionnaires were used to measure patients' CIPN (European Organization for Research and Treatment of Cancer quality of life questionnaire-chemotherapy-induced peripheral neuropathy 20), anxiety (Hospital Anxiety and Depression Scale Depression Scale [HADS]), depression (HADS), CIPN-related QoL (Functional Assessment of Cancer Therapy /Gynecologic Oncology Group-Neurotoxicity subscale [FACT/GOG-Ntx]), and general QoL (Functional Assessment of Cancer Therapy-General Input [FACT-

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GJ). Of 93 patients with advanced LC, 53.8% reported CIPN–sensory impairment and 47.3% reported CIPN–motor impairment. The most common CIPN symptoms were difficulty getting or maintaining an erection (only for men > 65 years) and difficulty in climbing stairs or getting up out of a chair. Poor CIPN–related QoL (FACT/GOG–Ntx) was associated with more CIPN–sensory and more CIPN–motor impairment. Poor general QoL (FACT-G) was associated with a higher level of depression, a higher level of anxiety, and receipt of more chemotherapy cycles. More than half of LC patients report impairment related to CIPN, calling for holistic treatment to improve QoL.

RESEARCH METHODOLOGY

RESEARCH APPROACH : Quantitative approach

RESEARCH DESIGN : Descriptive design

SETTING OF THE STUDY : DR.G.V.N Hospital, Trichy

ACCESSIBLE POPULATION : Patient receiving chemotherapy

TARGET POPULATION : Patient receiving cisplatin

SAMPLING TECHNIQUE : Purposive sampling technique was used to select 84 patients

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA:

- Patients receiving cisplatin
- Patients available during data collection
- Patients had peripheral neuropathy due to chemotherapy

RESULTS :

Section A : Distribution of subjects according to their demographic variables :

S.NO	DEMOGRAPHIC VARIABLES	F	%
1.	Age in years		
	31 – 45 years	25	29.8
	46- 60 years	45	53.6
	61 – 75 years	14	16.6
2.	Sex		
	Male	47	56.0
	Female	37	44.0
3.	Religion		
	Hindu	51	60.7
	Christian	14	16.7
	Muslim	19	22.6
4.	Education		
	Illiterate	11	13.1
	Primary	14	16.7
	High school	21	25.0
	Higher secondary	27	32.1
	Collegiate	11	13.1
5.	Occupation		
	Unemployed	7	8.3
	Self employed	14	16.7
	Private employee	37	44.0
	Government employee	26	31.0
6.	Monthly income		

EXCLUSION CRITERIA :

- Patients not available during data collection
- Patients not willing to participate
- Patients having existing diabetic peripheral neuropathy

DEVELOPMENT OF TOOL:

Section A: Demographic variables: This part consists of 10 items for obtaining information about the sample's age, sex, religion, education, occupation, monthly income, marital status, dietary pattern, site of tumor, cycles of chemotherapy, comorbid conditions, duration since diagnosis and assistive device used.

Section B: self care dependence scale: There was 5 categories under self care dependence Analysis and interpretation of data was analysed by using descriptive and inferential statistics.

INTREPRETATION :

The statement were developed for respondents to respond on 5 point likert scale. Therefore there were 15 statements. The score of each statement was as follows; 1-completely care dependent (61-75), 2- great extent care dependent (46- 60), 3- partially care dependent (31- 45), 4-limited extent care dependent (16-30) and 5- almost independent (1-15). Low sum scores are patient is dependent on care and high sum scores are patient are independent in their self care.

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	Below rs 5000	4	4.8
	Rs 5001 – 10000	9	10.7
	Rs 10001 – 15000	28	33.3
	Above 15000	43	51.2
7.	Marital status		
	Married	70	83.3
	Unmarried	5	6.0
	Divorced	4	4.8
	Separated	5	6.0
8.	Dietary pattern		
	Vegetarian	18	21.4
	Non vegetarian	66	78.6
9.	Site of tumor		
	Cervix cancer	31	36.9
	Oral cancer	15	17.9
	Lung cancer	19	22.6
	Esophagus cancer	19	22.6
10.	Cycles of chemotherapy		
	4 cycles	10	11.9
	5 cycles	14	16.7
	6 cycles	60	71.4
11.	Comorbid conditions		
	Hypertension	28	33.3
	Kidney disorder	10	11.9
	Respiratory disorder	6	7.1
	None	40	47.6
12.	Duration since diagnosis		
	Less than 3 months	14	16.6
	4 -6 months	32	38.1
	7- 9 months	25	29.8
	More than 9 months	13	15.5
13.	Assistive device used		
	None	10	11.9
	Walker	69	82.1
	Wheel chair	5	5.9

Section B: (i) The findings revealed that 48 (57.1%) were partially care dependent, 12 (14.2%) were great extent care dependent, 10(11.9%) were less care dependent, 8(9.5%) were almost independent, 6(7.1%) were complete care dependent and mean score and the standard deviation was 40.26($\pm$ 13.79).

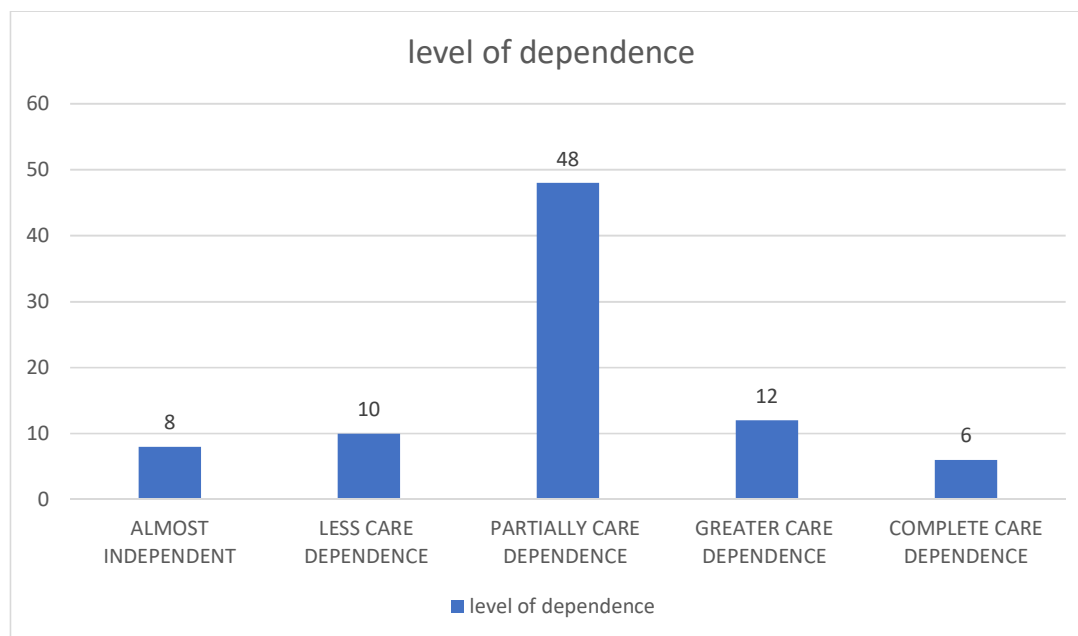


Fig 1.1 : level of dependence on self care among patients receiving chemotherapy

(ii) The findings showed that there is a association between the level of dependence on self care regarding chemotherapy induced peripheral neuropathy and with their selected demographic variables like site of tumor with p value is 2.82 significant at $p < 0.01$ and duration since diagnosis with p value is 9.05 significant at $p < 0.01$.

CONCLUSION :

The study reported that most of patients are partially care dependent on self care. Here nurses should assess self care and prioritize need of care of the patient, they should provide comprehensive health care to enhance quality of care in patients receiving chemotherapy and to prevent burnout, maintain mental health and improve patient energy, health and well being.

RECOMMENDATIONS :

- Study can be done with larger sample of subjects for the findings can be generalized
- Experimental study can be implemented with nursing interventions

REFERENCES :

1. van de Graaf DL, Mols F, Smeets T, Trompetter HR, van der Lee ML. Coping with and self-management of chronic painful chemotherapy-induced peripheral neuropathy: a qualitative study among cancer survivors. *J Cancer Surviv.* 2025 Feb;19(1):295-305. doi: 10.1007/s11764-023-01466-2. Epub 2023 Sep 23. PMID: 37740129; PMCID: PMC11813958.
2. Amarelo, A., da Mota, M.C.C., Amarelo, B.L.P., Ferreira, M.C., Fernandes, C.S., 2025. Effects of physical exercise on chemotherapy-induced peripheral neuropathy: a systematic review and

meta-analysis. *Pain Manag. Nurs.* 26 (2), 212–221. <https://doi.org/10.1016/j.pmn.2024.12.011>.

3. . Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global Cancer Statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin.* 2021;71(3):209-249. <https://doi.org/10.3322/caac.21660>
4. Statistics Korea. Cancer registration statistics [Internet]. Seoul: Author; 2022 [cited 2022 Jan 18]. Available from: http://kosis.kr/statHtml/statHtml.do?orgId=117&tblId=DT_117N_A00021&conn_path=I23.
5. Khue T. N. Duong (2024) Understanding Chemotherapy-Induced Peripheral Neuropathy and How It Affected Cancer Survivors. Novia University of Applied Sciences.
6. Burgess, J. F. (2021). Chemotherapy-Induced Peripheral Neuropathy: Epidemiology, Pathomechanisms and Treatment. *Oncology and therapy*, 385–450. doi:<https://doi.org/10.1007/s40487-021-00168-y>
7. Hung, H.-W., Liu, C.-Y., Chen, H.-F., Chang, C.-C., & Chen, S.-C. (2021). Impact of Chemotherapy-Induced Peripheral Neuropathy on Quality of Life in Patients with Advanced Lung Cancer Receiving Platinum-Based Chemotherapy. *International Journal of Environmental Research and Public Health*, 18(11), 5677. <https://doi.org/10.3390/ijerph18115677>