



Effectiveness Of Nurse Led Interventions On Clinical And Psychological Parameters Of Patients Suffering With Lung Cancer

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1. Background of the study: Patients diagnosed with lung cancer often face a multitude of challenges, including not only the physical burden of disease and its treatment, but also severe psychological distress such as anxiety, depression, and a reduced quality of life. Nurse-led interventions have emerged as a promising strategy in cancer care. Nurses, being at the forefront of patient interaction, play a pivotal role in health education, symptom management, emotional support, and continuity of care. Nurse-led care can significantly improve adherence to treatment, enhance symptom control, and reduce psychological distress among cancer patients. 2 Objectives: The objective of the study was To assess the level of clinical and psychological parameters of patients suffering with Lung Cancer in the experimental group and control group, to evaluate the effectiveness of Nurse Led Interventions on clinical and psychological parameters of patients suffering with Lung Cancer in experimental group, to compare the pre-test and post-test score on the level of clinical and psychological parameters of patients suffering with Lung Cancer in experimental group and control group, to determine the correlation between pre-test level of clinical and psychological parameters of patients suffering with Lung Cancer in experimental group and control group and to find out the association of pre-test level of clinical and psychological parameters with their selected socio-demographic variables of experimental group and control group. Methodology: An evaluative study was conducted among 20 Patients suffering with lung cancer of HCG Cancer Hospital Hubballi, Redon Cancer Hospital, Hubballi, Karnataka cancer research institution, Hubballi. Non-probability, purposive sampling technique was used to select the sample. The research design used for the study was Quasi-experimental, Non-equivalent Pre-test Post-test Control group design. Results: The study results revealed that, there is statistically significant difference in clinical parameter scores in the experimental group, but not in the control group. The psychological parameter scores improved significantly in the experimental group only. A significant correlation exists between clinical and psychological parameters in the experimental group. Some socio-demographic variables were significantly associated with the pre-test levels of clinical & psychological parameters.

Conclusion: The study concluded that the Information education communication approach was effective in terms of gain in knowledge scores of the subjects regarding nurse-led interventions led to a significant and sustained reduction in quality of life among lung cancer patients, with a more pronounced reduction observed in the experimental group compared to the control group.

Key words: Lung cancer, nurse-led interventions, Clinical parameter, Breathing difficulty, Fatigue, Pain, psychological parameters, Anxiety, Depression, Quality of life and Effectiveness

I. INTRODUCTION

Lung cancer remains one of the most prevalent and deadliest forms of cancer globally, accounting for significant morbidity and mortality. Patients diagnosed with lung cancer often face a multitude of challenges, including not only the physical burden of disease and its treatment, but also severe psychological distress such as anxiety, depression, and a reduced quality of life. Managing these multifaceted needs requires a comprehensive and patient-centered approach.

In Karnataka, there is 2,57,796 cancer cases and about 78,381 new cases added to this pool each year. Over 13,973 new cases are registered every year with more than 20% from neighbouring states of Andhra Pradesh, Tamilnadu and Kerala. In other words, one in six persons in either sex has the risk of developing cancer during their life time. Lung cancer statistics in Karnataka estimated incidence cases are 5,247 And Dharwad district estimated cancer cases are 2585.

Nurse-led interventions have emerged as a promising strategy in cancer care. Nurses, being at the forefront of patient interaction, play a pivotal role in health education, symptom management, emotional support, and continuity of care. Such interventions may include counseling, structured follow-ups, symptom monitoring, lifestyle modification guidance, and psychosocial support. Nurse-led care can significantly improve adherence to treatment, enhance symptom control, and reduce psychological distress among cancer patients.

Despite growing global evidence, the effectiveness of nurse-led interventions specifically in lung cancer care, especially in improving both clinical outcomes (such as symptom severity, treatment adherence, and physical well-being) and psychological parameters (including anxiety, depression, and overall mental health) requires further investigation, particularly in the Indian context. This study aims to bridge this gap by evaluating how structured, evidence-based nurse-led interventions can influence the overall well-being of patients suffering from lung cancer.¹

STATEMENT OF PROBLEM:

“A Study To Evaluate The Effectiveness Of Nurse Led Interventions On Clinical And Psychological Parameters Of Patients Suffering With Lung Cancer At Selected Oncology Centres, Dharwad District.”

OBJECTIVES OF THE STUDY:

1. To assess the level of clinical and psychological parameters of patients suffering with Lung Cancer in the experimental group and control group.
2. To evaluate the effectiveness of Nurse Led Interventions on clinical and psychological parameters of patients suffering with Lung Cancer in experimental group.
3. To compare the pre-test and post-test score on the level of clinical and psychological parameters of patients suffering with Lung Cancer in experimental group and control group.
4. To determine the correlation between pre-test level of clinical and psychological parameters of patients suffering with Lung Cancer in experimental group and control group.

5. To find out the association of pre-test level of clinical and psychological parameters with their selected socio-demographic variables of experimental group and control group.

HYPOTHESES:

H₁: There will be statistical difference in the mean post-test and pre test score regarding level of clinical parameters of patients suffering with lung cancer in the experimental group and the control group at 0.05 level significance.

H₂: There will be statistical difference in the mean post-test and pre-test score regarding level of psychological parameters of patients suffering with Lung Cancer in the experimental group and the control group at 0.05 level significance.

H₃: There will be a significant correlation between clinical and psychological parameters of patients suffering with Lung Cancer in the experimental group and the control group.

H₄: There will be a significant association of the pre-test level of clinical and psychological parameters of patients suffering with Lung Cancer with selected socio-demographic variables in experimental group and control group. demographic variables at 0.05 level of significance.

METHODOLOGY:

Research approach: In this study an evaluative approach was used.

Research design: In this study Quasi-experimental, Non-equivalent Pre-test Post-test Control group design was adopted

Variables:

Independent Variable : Effectiveness of Nurse Led Intervention

Dependent Variable : Management of clinical and psychological parameters of patients suffering with lung cancer

Attribute Variables : Age, gender, religion, marital status, educational status, occupation, family income, type of family, support system, duration of illness, history of family illness of lung cancer, habits, diet, habitant/area of residency and source of information

Setting:

1. HCG Cancer Hospital Hubballi
2. Redon Cancer Hospital, Hubballi
3. Karnataka cancer research institution, Hubballi.

Population: Patients suffering with lung cancer.

Samples: Patients suffering with lung cancer who are aged 20 years and above and who fulfils inclusion Criteria.

Sample Size: 20 (Experimental Group:10 & Control Group:10)

Sampling technique:

In the present study, the researcher selected samples through Non-Probability; Purposive Sampling Technique

Criteria for selection of samples:

The criteria for selection of samples in this study involve:

Inclusion Criteria: Patients suffering with lung cancer who are aged 20 years and above, are willing to participate in the study, are available at the time of data collection and can understand Kannada and English

Exclusion Criteria: Patients suffering with lung cancer who are critically ill or in end stage of life and having visual and hearing disability

DESCRIPTION OF THE TOOL:

The tool comprised of 3 sections.

1: For Socio-Demographic variables.

a) Structured Interview Schedule.

2: For Clinical Parameters.

a) Modified Nijmegen Questionnaire.

b) Modified European Organization for the Research and Treatment Of Cancer Quality of Life Questionnaire (EORTC QLQ-LC29).

c) Numerical pain intensity Scale.

3: For Psychological parameters.

a) Modified Self-Evaluate Anxiety Questionnaire.

b) Modified Zung Self Rating Depression Scale.

c) Modified European Organization for the Research and Treatment Of Cancer Quality of Life Questionnaire (EORTC QLQ-C30).

FINDINGS OF THE STUDY

- **Table No 2: Comparison of Breathing Difficulty Scores in Experimental and Control Groups Using Related-Samples Wilcoxon Signed Rank Test**

Related-Samples Wilcoxon Signed Rank Test							
Clinical parameter1:		Experimental group					
Breathing difficulty		N	Mean	Median	Std. Deviation	Range	P - Value
Pre-test	1 st week	10	43.60	44.00	4.248	14	0.005*
	4 th week	10	39.00	38.50	2.582	7	
Post-test	8 th week	10	29.30	20.57	2.900	7	0.005*
	12 th week	10	20.90	15.23	2.050	4	0.005*
	16 th week	10	14.50	14.00	3.800	10	0.005*

Clinical parameter1:		Control group					
Breathing difficulty		N	Mean	Median	Std. Deviation	Range	P - Value
Pre-test	1 st week	10	40.20	41.00	5.412	19	0.027*
	4 th week	10	38.90	39.50	4.581	17	
	8 th week	10	37.50	40.34	3.800	14	0.011*
	12 th week	10	32.20	22.99	3.250	8	0.007*
	16 th week	10	30.40	31.00	2.220	8	0.005*

- Table 3: Comparison of Fatigue Scores in Experimental and Control Groups Using Related-Samples Wilcoxon Signed Rank Test

Related-Samples Wilcoxon Signed Rank Test							
Clinical parameter2:		Experimental group					
Fatigue		N	Mean	Median	Std. Deviation	Range	P - Value
Pre-test	1 st week	10	70.70	50.56	7.100	15	0.005*
	4 th week	10	60.50	35.04	5.950	10	
	8 th week	10	48.90	28.84	4.900	10	0.005*
	12 th week	10	33.90	17.91	3.400	6	0.005*
	16 th week	10	28.80	25.50	4.980	12	0.005*
Clinical parameter2:		Control group					
Fatigue		N	Mean	Median	Std. Deviation	Range	P - Value
Pre-test	1 st week	10	66.00	85.63	6.800	30	0.012*
	4 th week	10	62.10	67.40	6.400	26	
	8 th week	10	58.10	57.43	5.900	10	0.008*
	12 th week	10	53.20	39.66	5.350	14	0.005*
	16 th week	10	51.10	51.00	4.810	18	0.005*

Table 4: Comparison of Pain Levels in Experimental and Control Groups Over Time Using Related-Samples Wilcoxon Signed Rank Test

Related-Samples Wilcoxon Signed Rank Test							
Clinical parameter3:		Experimental group					
Pain		N	Mean	Median	Std. Deviation	Range	P - Value
Pre-test	1 st week	10	7.10	7.50	1.663	5	0.014*
	4 th week	10	6.20	6.50	1.229	4	
	8 th week	10	3.90	4.00	0.567	2	0.007*
	12 th week	10	2.50	2.50	0.527	1	0.005*
	16 th week	10	1.70	2.00	0.940	3	0.004*

Clinical parameter3:		Control group					
Pain							
		N	Mean	Median	Std. Deviation	Range	P - Value
Pre-test	1 st week	10	6.80	7.00	1.751	5	0.157
	4 th week	10	6.60	7.00	1.506	4	
Post-test	8 th week	10	5.60	6.00	0.843	3	0.016*
	12 th week	10	5.20	5.00	0.632	8	0.017*
	16 th week	10	5.20	5.00	0.630	2	0.017*

Comparison of Psychological Parameters in Experimental and Control Groups Over Time Using Related-Samples Wilcoxon Signed Rank Test

- **Table No 5 Comparison of Anxiety level in Experimental and Control Groups Over Time Using Related-Samples Wilcoxon Signed Rank Test**

Related-Samples Wilcoxon Signed Rank Test							
Psychological parameter1: Anxiety		Experimental group					
		N	Mean	Median	Std. Deviation	Range	P - Value
Pre-test	1 st week	10	62.80	63.00	4.826	16	0.005*
	4 th week	10	51.00	51.00	1.633	5	
Post-test	8 th week	10	45.30	45.50	2.584	9	0.005*
	12 th week	10	41.20	40.50	3.259	10	0.005*
	16 th week	10	36.60	36.50	2.170	8	0.005*

Psychological parameter1: Anxiety		Control group					
		N	Mean	Median	Std. Deviation	Range	P - Value
Pre-test	1 st week	10	60.80	59.00	6.391	20	0.005*
	4 th week	10	55.70	56.00	3.093	10	
Post-test	8 th week	10	51.20	51.00	2.347	7	0.005*
	12 th week	10	50.20	50.00	1.932	6	0.005*
	16 th week	10	49.80	50.00	1.610	5	0.005*

- **Table No 6 Comparison of Depression Levels in Experimental and Control Groups Over Time Using Related-Samples Wilcoxon Signed Rank Test**

Related-Samples Wilcoxon Signed Rank Test							
Psychological parameter 2: Depression		Experimental group					
		N	Mean	Median	Std. Deviation	Range	P - Value
Pre-test	1 st week	10	68.40	69.00	4.088	13	0.005*
	4 th week	10	54.80	55.00	1.549	6	
Post-test	8 th week	10	43.30	43.00	1.059	3	0.005*

	12 th week	10	31.70	31.50	1.888	6	0.005*
	16 th week	10	25.80	25.00	2.040	7	0.005*
Psychological parameter		Control group					
2: Depression		N	Mean	Median	Std. Deviation	Range	P - Value
Pre-test	1 st week	10	67.60	67.50	3.748	12	0.008*
	4 th week	10	63.60	64.50	2.503	8	
Post-test	8 th week	10	55.70	55.00	2.057	6	0.005*
	12 th week	10	54.30	55.00	1.946	6	0.005*
	16 th week	10	52.60	53.00	1.890	6	0.005*

- Table No 7 Comparison of Quality of Life in Experimental and Control Groups Over Time Using Related-Samples Wilcoxon Signed Rank Test

Related-Samples Wilcoxon Signed Rank Test							
Psychological parameter3: Quality of Life		Experimental group					
		N	Mean	Median	Std. Deviation	Range	P - Value
Pre-test	1 st week	10	81.20	81.50	3.084	9	0.005*
	4 th week	10	65.10	65.00	2.132	6	
Post-test	8 th week	10	46.00	46.00	2.108	7	0.005*
	12 th week	10	32.50	33.50	2.415	8	0.005*
	16 th week	10	26.60	27.00	1.890	6	0.005*
Psychological parameter3: Quality of Life		Control group					
		N	Mean	Median	Std. Deviation	Range	P - Value
Pre-test	1 st week	10	78.20	77.50	4.566	16	0.005*
	4 th week	10	70.80	71.00	1.874	6	
Post-test	8 th week	10	67.80	68.00	1.549	5	0.005*
	12 th week	10	66.70	67.00	1.337	3	0.005*
	16 th week	10	63.00	63.00	2.300	7	0.005*

Table No 8: Mean, median, standard deviation & p-value of Psychological parameter 1- Anxiety.

Psychological parameter 1- Anxiety						
Group	N	Mean	Std. Deviation	Median	Range	p-value
1 st week						
Experimental group	10	62.80	4.826	63.00	16	0.247
Control group	10	60.80	6.391	59.00	20	

4 th week						
Experimental group	10	51.00	1.633	51.00	5	0.001*
Control group	10	55.70	3.093	56.00	10	
8 th week						
Experimental group	10	45.30	2.584	45.50	10	0.000*
Control group	10	51.20	2.347	51.00	7	
12 th week						
Experimental group	10	41.20	3.259	40.50	10	0.000*
Control group	10	50.20	1.932	50.00	6	
16 th week						
Experimental group	10	36.60	2.170	36.5	8	0.000*
Control group	10	49.80	1.610	50	5	

Table No. 8 reveals that,

This table findings suggest that nurse-led interventions led to a significant and sustained reduction in anxiety among lung cancer patients, with a more pronounced reduction observed in the experimental group compared to the control group.

Table No 9: Mean, median, standard deviation & p-value of Psychological parameter 2- Depression.

Psychological parameter 2- Depression						
Group	N	Mean	Std. Deviation	Median	Range	p-value
1 st week						
Experimental group	10	68.40	4.088	69.00	13	0.579
Control group	10	67.60	3.748	67.50	12	
4 th week						
Experimental group	10	54.80	1.549	55.00	6	0.000*
Control group	10	63.60	2.503	64.50	8	
8 th week						
Experimental group	10	43.30	1.059	43.00	3	0.000*
Control group	10	55.70	2.057	55.00	6	
12 th week						

Experimental group	10	31.70	1.888	31.50	6	0.000*
Control group	10	54.30	1.946	55.00	6	
16 th week						
Experimental group	10	25.80	2.040	25	7	0.000*
Control group	10	52.60	1.890	53	6	

Table No. 9 reveals that,

This table findings suggest that nurse-led interventions led to a significant and sustained reduction in depression among lung cancer patients, with a more pronounced reduction observed in the experimental group compared to the control group.

Table No 10: Mean, median, standard deviation & p-value of Psychological parameter 3- Quality of Life.

Psychological parameter 3- Quality of Life						
Group	N	Mean	Std. Deviation	Median	Range	p-value
1 st week						
Experimental group	10	81.20	3.084	81.50	9	0.063
Control group	10	78.20	4.566	77.50	16	
4 th week						
Experimental group	10	65.10	2.132	65.00	6	0.000*
Control group	10	70.80	1.874	71.00	6	
8 th week						
Experimental group	10	46.00	2.108	46.00	7	0.000*
Control group	10	67.80	1.549	68.00	5	
12 th week						
Experimental group	10	32.50	2.415	33.50	8	0.000*
Control group	10	66.70	1.337	67.00	3	
16 th week						
Experimental group	10	26.60	1.890	27	6	0.000*
Control group	10	63.00	2.300	63	7	

Table No. 10 reveals that,

This table findings suggest that nurse-led interventions led to a significant and sustained reduction in quality of life among lung cancer patients, with a more pronounced reduction observed in the experimental group compared to the control group.

RECOMMENDATIONS:

Keeping in view the findings of the present study, the following recommendations were made:

1. A similar study can be undertaken with a larger and more diverse sample.
2. A similar study can be conducted on different types of cancer patients.
3. A comparative study can be carried out between different intervention methods.
4. A descriptive study can be undertaken to explore patient experiences in depth.
5. A longitudinal study can be conducted to assess long-term effects of interventions.
6. A qualitative study can be done to understand patient perceptions and coping strategies.
7. An interventional study can be repeated in varied healthcare settings for generalization.
8. A study can be carried out to evaluate the cost-effectiveness of the psycho-clinical intervention.

CONCLUSION:

Based on finding of the study, the following conclusions were drawn.

1. H1 is accepted. There is statistically significant difference in clinical parameter scores in the experimental group, but not in the control group.
2. H2 is accepted. The psychological parameter scores improved significantly in the experimental group only.
3. H3 is accepted. A significant correlation exists between clinical and psychological parameters in the experimental group.
4. H4 is partially accepted. Some socio-demographic variables were significantly associated with the pre-test levels of clinical & psychological parameters.

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