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RESEARCH ARTICLE

COMPARISON OF THE EFFECTIVENESS OF LATERAL POSITION AND SUPINE POSITION ON PHYSIOLOGICAL PARAMETERS AND COMFORT AMONG PATIENTS WITH RESPIRATORY TRACT INFECTION

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Abstract

Background: Standard nursing care for critically ill patients includes lateral positioning. A therapeutic regimen of lateral positioning may reduce the adverse effects of prolonged bed rest and to improve oxygenation in patients with unilateral lung disease and decrease the length of stay in the intensive care unit. Physiological adaptations mainly due to the effect of gravity occurs during changes of position and can influence the symptoms of various diseases involving not only the circulatory system but also other systems like respiratory system and digestive system

Objectives: 1) To assess the effectiveness of lateral position on physiological parameters and comfort among clients with respiratory tract infection. 2) To assess the effectiveness of supine position on physiological parameters and comfort among clients with respiratory tract infection. 3) To compare the effectiveness of lateral position and supine position on physiological parameters and comfort among clients with respiratory tract infection.

Methods: The research approach adopted for the study was quantitative comparative experimental approach study, the research design used was Repeated Measure design. By using non probability purposive sampling 40 respiratory patients admitted in ICUs of Wanless Hospital. The content validity and reliability of the tool was done, which was suggested that the tool was reliable ($r=0.70$).

Result: The major findings revealed that, Effectiveness of lateral position followed by supine position to see the physiological parameter is done by observational checklist (heart rate, respiratory rate, spo₂, tidal volume) was significant but BP was not significant. Comfort by Likert scale was highly significant ($p<0.0001$). Statistical analysis is done by (paired and unpaired t test) Result showed that lateral position had significantly higher mean Pao₂ than the supine position ($p<0.0001$) Thus findings reveals that H₁ is accepted and null hypothesis is rejected.

Conclusion: Lateral position was found to be effective in respiratory tract infection patients which gave a significant change in physiological parameters and comfort compared to supine position.

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Introduction:-

Adulthood is believed to be one of the most interesting, enjoyable, and happiest period in one's life. As we all are human beings we cannot escape from diseases. Many kinds of diseases affect human being, starting from the time of birth. Any of the body system or systems may get affected by the disease mainly respiratory tract infections.

According to British Lung Foundation approximately 1 in 7 individuals are affected by some form of chronic lung disease, most commonly chronic obstructive pulmonary.¹ Prolonged bed rest is common in critically ill patients and therapeutic positioning is important to prevent further complications and to improve patient outcomes. Nurses use therapeutic positioning to prevent complications of immobility.²

According to WHO (World health organization) COPD (chronic Obstructive Pulmonary Disease) is a major cause of morbidity worldwide. It is projected that it will rank seventh in 2030 as a burden of disease.³ coronary disease, which includes asthma, chronic bronchitis, and emphysema.¹

Routine of positioning of critically ill patients is a standard of care. It has been reported to improve lung function, reduce hospital acquired pneumonia, and facilitate secretion removal.⁴

Standard nursing care for critically ill patients includes lateral positioning. A therapeutic regimen of lateral positioning may reduce the adverse effects of prolonged bed rest and to improve oxygenation in patients with unilateral lung disease and decrease the length of stay in the intensive care unit.⁵ patients comfort and satisfaction of two pneumatic compression devices (PCD). The result suggested that patients were more compliant with PCD that promotes clients comfort⁶.

Material and Methods:-

Quantitative experimental comparative study was adopted. Prior permission from the concerned authority was taken to conduct the research and obtained a written consent from the subjects. The confidentiality and anonymity of the subjects was maintained. The design adopted for this study was repeated measure design. The study was conducted in the Medical intensive care unit and pulmonary medical intensive care unit of Wanless Hospital Miraj. Diagnose was asthma, pneumonia, bronchitis, and bronchiolitis of respiratory tract infections. The sample size was 40 subjects of respiratory tract infection patients. The data collection tool was Observational checklist on physiological parameters(HR,RR,BP,SPO2,TIDAL VOLUME) and Likert scale for comfort.

- 1) **Day 1** - At morning 7am -7.15am the investigator had done the intervention to assess the effectiveness of **lateral position** for 15 min followed by checking the physiological parameters and comfort by Likert Scale
- 2) At least 10min was taken to check the physiological parameters and comfort by Likert Scale
- 3) Then at 7.30am – 7.45am the investigator had done the intervention to assess the effectiveness of **supine position** for 15 min followed by checking the physiological parameters and comfort by Likert Scale
- 4) **Day – 2** - At morning 7am -7.15am the investigator had done the intervention to assess the effectiveness of **supine position** for 15 min followed by checking the physiological parameters and comfort by Likert Scale.
- 5) At least 10min was taken to check the physiological parameters and comfort by Likert Scale
- 6) Then at 7.30am – 7.45 am the investigator had done the intervention to assess the effectiveness of **lateral position** for 15 min followed by checking the physiological parameters and comfort by Likert Scale

Findings And Discussion:-

The major finding of the study were discussed under the following sections:-

I. Findings related to Socio- demographic variables of respiratory tract infection patients.

II.a) Findings related to lateral position on physiological parameters and comfort among patients with respiratory tract infection patients.

b) Findings related to supine position on physiological parameters and comfort among patients with respiratory tract infection patients.

III. Findings related to assess the effectiveness of lateral position and supine position on physiological parameters and comfort among patients with respiratory tract infection patients.

Section 1:

Findings related to Socio- demographic variables of respiratory tract infection patients

Table 1:- Frequency and percentage (%) distribution of respiratory tract infection patients of Socio- Demographic variables (n=40).

Sr no	Socio- demographic variables	Frequency	Percentage (%)
1.	AGE 20-36 yrs 37-53 yrs 54-70 yrs 71-87 yrs	4 14 17 5	10% 35% 42.5% 12.5%
2	GENDER Male Female	22 1	55% 45%
3	HABITS Only Smokers Only Alcohol Smoker and Alcohol No habits of Smoking And Alcohol	12 02 05 02	54.5% 13.6% 22.7% 9.0%
4	EDUCATION Illiterate Primary Higher Secondary Graduate	3 4 14 19	7.5% 10% 35% 47.5%

According to table 1 Age wise it shows 4 (10%) at the age of 20-36yrs, 14(35%) at age of 37-53yrs, 17(42.5%) at age of 54-70yrs, 5(12.5%) at age of 71-87yrs.

According to gender out of 40 sample 22(55%) were male patients, and 18(45%) were female patients.

The majority of male subjects are having the habits, i.e. Smokers 12 (54.5%), Alcoholic 03 (13.6%), both 05 (22.7%), and no habits in both 2(9.0%).

Education wise it shows that illiterate 3(7.5%), primary education 4(10%), Higher secondary 14(35%), and Graduate 19(47.5%).

Table 2:- Findings related to lateral position on physiological parameters and comfort among patients with respiratory tract infection patients.

LATERAL POSITION	HR	RR	BP	SPO2	TIDAL VOLUME	COMFORT
	t=2.197 p=0.0342	t=3.850 p=0.0004	t=0.4191 p=0.6775	t=18.035 p=<0.0001	t=2.055 p=0.0468	t=2.795 p=0.0081

Table 3:- Findings related to supine position on physiological parameters and comfort among patients with respiratory tract infection patients.

SUPINE POSITION	HR	RR	BP	SPO2	TIDAL VOLUME	COMFORT
	t=0.7197 p=0.4761	t=1.181 p=0.2451	t=0.2595 p= 0.7967	t=1.471 p=0.1495	t=0.7642 p=0.4495	t=0.7648 p=0.4491

Table 4:- Findings related to the comparison of the effectiveness of lateral position and supine position on physiological parameters and comfort among patients with respiratory tract infection patients.

	HR	RR	BP	SPO2	TIDAL VOLUME	COMFORT
LATERAL POSITION AND SUPINE POSITION	t=2.317	t=2.803	t=1.000	t=3.633	t=8.420	t=6.817
	p=0.0307	p=0.0122	p=0.3287	p=0.0016	p=<0.0001	p=<0.0001

The result revealed that, out of 40 sample, majority of female samples were i.e18 (45%) and majority i.e 22(55%) were male.

Results on effectiveness of lateral position in patients on physiological parameters revealed that heart rate (t=2.197, p=0.0342), respiratory rate (t=3.850, p=0.0004), Tidal volume (t=2.055, p=0.0468) and comfort (t=2.795, p=0.0081) was significant, whereas Spo₂ (t=18.035, p<0.0001), was highly significant. But Blood pressure (both Systolic, Diastolic) (t=0.4191, p=0.6775) and (t=0.3054, p=0.7618) was not significant among patients with respiratory tract infection patients.

Findings related to supine position on physiological parameters and comfort among patients with respiratory tract infection patients.

Effectiveness of supine position in patients on physiological parameters of heart rate (t=0.7197, p=0.4761), respiratory rate (t=1.181, p=0.2451), Blood pressure (both) systolic, (t=0.2595, p=0.7967, Diastolic t=0.083, p=0.933) , Spo₂ (t=1.471, p=0.1495), Tidal volume (t=0.7642, p=0.4495) and comfort (0.764, p=0.4491) was not significant among patients with respiratory tract infection patients.

Findings related to comparison of the effectiveness of lateral position and supine position on physiological parameters and comfort among patients with respiratory tract infection patients.

1. Effectiveness of lateral position on heart rate (t=2.317, p=0.0307) is significant and supine position (t=0.2552, p=0.8016) is not significant..
2. Effectiveness of lateral position on respiratory rate, (t=2.803, p=0.0122) is significant and supine position (t=0.566, p=0.5786) is not significant
3. Effectiveness of lateral position on Blood pressure (t=0.9403, p=0.3577) is not significant , supine position (t=0.3688, p=0.7168) is not significant.
4. Effectiveness of lateral position on spo₂, (t=3.633, p=0.0016) is significant and supine position (t=1.325, p=0.2028) is not significant.
5. Effectiveness of lateral position on Tidal volume (t=8.420, p<0.0001) is highly significant and supine position (t=1.100, p=0.2869) is not significant.
6. Effectiveness of lateral position on comfort (t=6.817, p<0.0001) and is highly significant and supine position (t=1.158, p=0.2629) is not significant.

Conclusion:-

This chapter presents the conclusions drawn based on the present study. This study attempted to find out the effectiveness of lateral position and supine position on physiological parameters and comfort among patients with respiratory tract infection patients. Thus lateral position was more effectiveness than supine position as patients, recommended the best and comfortable position in lateral position for all respiratory tract infection patients. Based on the physiological parameter and comfort, hence lateral position is effective. Thus null hypothesis (Ho) is rejected and (H1) is accepted.

Recommendations:-

Based on the findings of the study, the following recommendations could be made.

1. The study can be replicated for a larger sample.
2. A comparative study may be conducted to find the effectiveness in semi fowler's position and lateral position on physiological parameters.

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Source Of Finding

Books, journal, internet

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