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Implementation of Semi Fowler Position to Reduce Shortness of breath on Congestive Heart Failure (CHF)

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Pasien dengan *congestive heart failure* (CHF) sering mengalami sesak napas akibat penumpukan cairan di paru-paru. Di Instalasi Gawat Darurat sesak napas menjadi keluhan utama yang memerlukan penanganan cepat dan tepat, posisi tubuh yang tidak tepat dapat memperburuk gejala. Posisi semi fowler merupakan intervensi sederhana yang dapat meningkatkan ekspansi paru dan menurunkan kerja jantung. Tujuan dalam penelitian ini untuk mengetahui efektivitas posisi semi fowler dalam mengurangi sesak napas pada pasien congestive heart failure (CHF) di Instalasi Gawat Darurat. Fokus penelitian sangat relevan dengan kondisi klinis darurat dan memberikan kontribusi pada praktik keperawatan di ruang IGD, khususnya dalam penanganan awal gejala sesak napas akibat CHF. Penelitian menggunakan desain studi kasus, yang sesuai untuk menggambarkan efek langsung dari intervensi keperawatan pada pasien individu dalam kondisi akut. Durasi intervensi (1x7 jam) dan pengukuran frekuensi napas merupakan langkah yang tepat untuk mengevaluasi perubahan klinis.Hasil menunjukkan adanya penurunan frekuensi napas dari 30x/menit menjadi 24x/menit setelah intervensi posisi semi fowler, yang menunjukkan adanya perbaikan kondisi pernapasan menyatakan bahwa pola napas teratasi sebagian, yang berarti intervensi memberi manfaat tetapi belum sepenuhnya menyelesaikan masalah sesak. Hasil ini sejalan dengan teori fisiologis bahwa posisi semi fowler dapat mengurangi tekanan diafragma dan memperluas ekspansi paru.

Implementation of Semi Fowler Position to Reduce Shortness of breath on Congestive Heart Failure (CHF)

Patient with congestive heart failure(CHF) often experience shortness of breath due to fluid buildup in the lungsIn the Emergency Department, shortness of breath is a primary complaint requiring prompt and appropriate treatment. Incorrect body positioning can exacerbate symptoms. The semi-Fowler's position is a simple intervention that can increase lung expansion and decrease heart workload. The purpose of this studyTo determine the effectiveness of the semi-Fowler position in reducing shortness of breath in congestive heart failure (CHF) patients in the Emergency Department. The focus of the study is highly relevant to emergency clinical conditions and contributes to nursing practice in the ER, particularly in the initial management of shortness of breath symptoms due to CHF. The study used a case study design, which is appropriate to describe the direct effects of nursing interventions on individual patients in acute conditions. The duration of the intervention (1x7 hours) and respiratory rate measurements are appropriate steps to evaluate clinical changes. The results showed a decrease in respiratory rate from 30x/minute to 24x/minute after the semi-Fowler position intervention, which indicates an improvement in respiratory conditions, indicating that the breathing pattern was partially resolved, meaning the intervention provided benefits but had not completely resolved the problem of shortness of breath. These results are in line with the physiological theory that the semi-Fowler position can reduce diaphragmatic pressure and increase lung expansion.

Introduction

Congestive Heart Failure (CHF) is a condition that describes the condition of the inability of the heart to pump blood adequately to meet the tissues' needs for oxygen and nutrients in the body's tissues. Heart failure occurs due to the inability of the heart muscle to pump blood throughout the body, resulting in a decrease in cardiac contractility. Conditions that underlie the causes of heart muscle dysfunction include coronary atherosclerosis, arterial hypertension, and degenerative or inflammatory diseases (Nurulhuda & Janah, 2024). The semi-fowler position (30–45°) is an effective nonpharmacological intervention to reduce cardiac workload and improve pulmonary ventilation in patients with Congestive Heart Failure (CHF). Physiologically, this position helps to lower central venous pressure, reduce pulmonary congestion, and improve oxygenation and breathing comfort. In the Emergency Facility (ER), the semi-fowler position can be applied immediately as part of the initial management in acute CHF patients who come in with symptoms of shortness of breath. The implementation of this position is fast, non-invasive, and supports the effectiveness of other therapies such as oxygenation and drug administration. The semi fowler position also helps facilitate monitoring and follow-up medical measures, making it an important component in the initial stabilization of CHF patients in the emergency room (Siswanto.H, Pangaribuan.R, 2021)..

According to *World Health Organization* (WHO, 2021) Cardiovascular disease is the leading cause of death globally. An estimated 17.9 million people died from cardiovascular disease in 2019. Of these, 85% were caused by heart attacks and strokes, of the 17 million premature deaths (under the age of 70) due to non-communicable diseases in 2019, 38% were caused by *congestive heart failure*. Basic Health Research Data (Riskesdas), 2018) indicates prevalence *congestive heart failure* 1.5% or around 1,017,290 people in Indonesia with more cases in men than women. Meanwhile, according to data from the Indonesian Ministry of Health (2018), the prevalence of heart disease in West Java Province is 1.6% or around 186,809 sufferers.

Treatment problems that often occur in CHF patients are chest pain and shortness of breath. Shortness of breath experienced by CHF patients is caused by abnormalities in the structure and function of the heart which results in damage to the function of the ventricles to meet the needs of nutrients and oxygen to the body's tissues. Disruption of oxygenation needs

is an important problem in patients *congestive heart failure* (Zhafirah & Palupi, 2019). Thus the patient *congestive heart failure* Pharmacological and non-pharmacological therapies can be given, one of which is the provision of a semi-fowler position (Sulastini et al., 2019).

One of the emergency measures that can be taken in patients who experience heart failure due to shortness of breath is to maintain a lying down bed by providing a semi-fowler sleeping position of 45 degrees, positioning with a semi-fowler position can help overcome difficulties in breathing, increase oxygen saturation by increasing lung ventilation through more optimal chest expansion (Wijayati et al., 2019). The semi fowler position is also known as the half-seated position or with the head higher between (30-45 degrees). This position is mainly used for patients with respiratory disorders. The purpose of the semi-fowler position is to allow maximum expansion of the chest especially in patients with dyspnea, this position is useful in encouraging lung expansion through the mechanism of gravity, pulling the diaphragm downwards, allowing for expansion and ventilation (Ummah, 2019).

Based on the data that has been obtained, it is shown that people with congestive heart failure (CHF) need more comprehensive attention and treatment. From the description above, the author is interested in taking this case to apply and discuss this case with the title "Application of the semi fowler position to reduce shortness of breath in *congestive heart failure* (CHF) at the Emergency Installation of Gunung Jati Hospital, Cirebon City".

Method

The design used is a case *study*, which is appropriate to raise clinical phenomena in depth in one individual. The selection of this design is in accordance with the purpose of the research to evaluate the implementation of the semi-fowler position in the context of nursing care. Case studies are carried out by collecting data according to the flow of the nursing process, namely studying, determining nursing diagnosis, preparing intervention plans, carrying out nursing actions and evaluations. The population in this case study is *congestive heart failure* (CHF) patients in the Emergency Department. The sampling technique used *the purposive sampling* technique with a total of 1 research sample of 1 congestive heart failure *(CHF)* patient with ineffective breathing pattern nursing problems aged 78 years with somnolen awareness in the Emergency Installation of Gunung Jati Hospital, Cirebon City. The research was conducted in

February 2025 for 1x7 hours at the Emergency Installation of Gunung Jati Hospital, Cirebon City. The data collection carried out by the researcher in managing this case study included interviews, observation sheets, and documentation studies. Data analysis is carried out from the time the researcher is at the research site, during data collection until the data is collected, then the researcher prepares a nursing care plan, implements and evaluates the nursing that has been given to the patient.

Research Results

After the assessment was carried out on February 14, 2025, patient data was obtained as follows. A 78-year-old man with reduced consciousness was escorted by his family to the Emergency Installation of Gunung Jati Hospital, Cirebon City on February 14, 2025 at 21.00 WIB with a medical diagnosis of congestive heart failure (CHF). The results of interviews with families found that patients while at home tended to sleep ± 1 week, shortness of breath and fever since 3 days. At the time of the family study, the family said shortness of breath, looked tired when breathing, the patient experienced chest pain when coughing, swelling in both legs. The family also said the patient had a history of heart disease since 2015 and kidney failure since 2023 but the patient refused dialysis for fear, and was an active smoker.

The results of the preliminary assessment *of the ABCDE* primary survey obtained *airway* conditions of the airway, there is an effort to breathe, no foreign objects in the airway, vesicular breath sound, shallow chest exhalation, shortness of breath , chest wall retraction, no abnormalities of the thoracic wall, irregular exhalation, breath frequency 30x/minute, SpO2 91%, *circulation* no bleeding, CRT >3 seconds, blood pressure 150/90 mmHg, pulse frequency 95 x/min weak palpation, warm acral, *disability* somnolent level of consciousness with GCS 8 E: 2 M: 4 V:2 muscle strength in the upper extremities 5 right and left in the lower extremities 4 right and left, positive biceps physiological reflex, positive babinsky pathological reflex, *There are* no injuries or injuries. The assessment of the secondary physical examination (*head to toe*) obtained that the scalp appeared clean, anemic conjunctival eyes, nose appeared septum in the middle, moist nasal mucosa, dry lip mucosa, poor condition of teeth and gums, oval face shape, pale skin, no enlargement of the thyroid gland, right and left symmetrical chest examination, no damage, pectoral palate of ictus cordis palpable in ICS 5, Sonorous chest

percussion, Vesicular chest auscultation, cardiac inspection of the visible heart of Ictus Cordis, palpation of palpation of palpation of palpable ictus cordis in ICS 5 linea midclavikularis sinistra, Heart percussion is dim, cardiac auscultation there is an additional sound of gallop, abdomen shape is flat, no abdominal distension, palpation there is no compressive pain in the abdomen, percussion of the sound of the tympanic abdomen, auscultation is audible intestinal noise 10x/min, pelvis no lump or pressure pain, genitalia attached to a catheter with an output of 50 cc in the urine bag, upper estremitas with 20 tpm NaCl infusion on the right arm, there is degree 2 edema in both lower extremities.

Based on these data, the diagnosis that appeared in patients included ineffective breathing patterns b.d obstruction of breathing effort, gas exchange disorders b.d ventilation imbalance – perfusion, decreased cardiac volume b.d changes in preaload and afterload, hypervolemia b.d disruption of regulatory mechanisms. The description of the nursing outcomes and intervention plans of the primary nursing diagnosis is as follows:

Breathing patterns are related to obstruction of breathing efforts with the purpose of action after 1x7 hours of nursing intervention, then the breathing pattern improves with the outcome criteria: dyspnea decreases, breathing frequency improves, and breathing pattern improves. Interventions carried out by breath pattern management observation breath pattern monitors (frequency, depth, breathing effort), additional breath sound monitors, position semi fowler or fowler, administer oxygen, if necessary

Education teaches effective coughing techniques, collaboration in the administration of bronchodilators, expectants, mucolytics, if necessary. Based on the outcomes and nursing intervention plans that have been prepared for the nursing diagnosis of ineffective breathing patterns, interventions implemented on ineffective breathing patterns include monitoring breathing patterns (frequency, depth, breathing effort), monitoring additional breath sounds, positioning semi-fowlers and administering oxygen.

Discussion

The application of semi fowler position given by the researcher for 1x7 hours was obtained as a result of patients and families cooperative to perform the semi fowler position, the family understands the technique and how to give the semi fowler position to be done when the client

experiences shortness of breath, so as to reduce shortness of breath, decrease in the frequency of respiration from before the semi fowler position was given 30x/minute and after the semi fowler position was given for 1x7 hours The frequency of respiration becomes 24 x/minute of change in respiration accompanied by simultaneous oxygen delivery.

In line with research according to (Kusuma & Surakarta, 2024), in his study entitled The Effect of the Semi Fowler Position on the Effectiveness of Breathing Patterns in *congestive heart failure (CHF) patients at the Emergency Installation of Simo Boyolali Hospital. Population of 1 patient with a medical diagnosis of congestive heart failure* (CHF) is 67 years old male. The nursing measures given were positioning the 45° semi fowler on the patient for 1x7 hours in the emergency room, the dyspnea outcome criteria decreased, the use of respiratory support muscles decreased, orthopnea decreased, and nasal lobe breathing decreased. The results of the nursing evaluation show that positioning a 45° semi fowler or a semi-seated position that can run for 1x7 hours according to the SOP, can help to reduce dyspnea and can increase oxygen saturation and decrease *respiratory rate* in CHF patients. This research was conducted for 1x 7 hours at the Emergency Installation of Simo Boyolali Hospital. According to Sihombing (2024), in his research entitled semi-fowler position to improve the effectiveness of breathing patterns in patients *congestive heart failure* (CHF). The population in this study is 2 male and female clients in the ICU room of Vita Insani Pematang Hospital. Nursing measures given to patients who experience ineffective breathing patterns by giving a semi-fowler position are carried out according to standard operating procedures (SOP) for both patients with an action time of 15-20 minutes. Evaluation showed a decrease in breathing frequency and tightness was no longer felt after being given a semi-fowler position. This research was conducted in April-May 2024 for 3 days at Vita Insani Pematangsiantar Hospital. According to Sakti et al., (2023.) with the title of research on the application of semi-fowler position regulation with ineffective breathing pattern problems in congestive heart failure patients at Panembahan Senopati Hospital Bantul. The population in this study was 2 people with the disease *congetive heart failure* (CHF). The nursing action given to the semi-fowler position was carried out according to the standard operating procedures (SOP) for both patients for 3 days. There were developments from both clients, including decreased shortness of breath, decreased shortness of breath during

rest, decreased nasal lobe breathing, oxygen saturation and improved breathing frequency This research was conducted at Panembahan Senopati Hospital Bantul.

Based on the results of the description above, the provision of a semi-fowler position with the problem of ineffective breathing patterns, the researcher concluded that the application of the semi-fowler position to reduce shortness of breath in nursing care in patients *congestive heart failure* (CHF) with ineffective breathing pattern nursing problems in the Emergency Installation room of Gunung Jati Hospital, Cirebon City, has an effect on reducing shortness of breath in patients who experience ineffective breathing pattern problems.

Conclusion

Based on the results of a case study of nursing care on clients with *congestive heart failure* (CHF) in the Emergency Installation room Gunung Jati Hospital, Cirebon City, researchers can conclude that the implementation of nursing is carried out for 1x7 hours according to the nursing intervention that has been determined and combined with the implementation of *evidencebased nursing* (EBN) is the provision of a semi-fowler position. The nursing evaluation obtained was that the ineffective breathing pattern was partially resolved characterized by reduced shortness of breath, the frequency of breathing improved after the provision of the semi-fowler position with a breathing frequency of 30x/min to 24 x/min in 1x7 hours.

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