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Effectiveness of Deep Breathing Exercise to Reduce Anxiety among Chronic Renal Failure Patients Undergoing Hemodialysis –A Literature Review

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Abstract

The researcher aim to assess the Effectiveness of Deep Breathing Exercise to Reduce Anxiety among Chronic Renal Failure patients Undergoing Hemodialysis Multiple databases were searched focusing of the Effectiveness of Deep Breathing Exercise to Reduce Anxiety among Chronic Renal Failure patients. It was concluded that reduce anxiety of patients deep breathing exercise should be follow.

Keywords: *Effectiveness, Deep breathing exercise, Chronic Renal Failure, Hemodialysis*

1. Introduction

Chronic renal illness is expected to be the sixth biggest cause of years of life lost by 2040. If chronic kidney disease is not treated and the patient survives the disease's systemic implications, end-stage renal disease (ESRD) develops, leaving dialysis or kidney transplantation as the sole options for survival. Chronic renal failure is characterized by a persistent and permanent decline in renal function. Dialysis is a challenging process that follows a series of social and psychological challenges that may result in psychological problems. Patients on long-term hemodialysis (HD) experience significant lifestyle and attitude adjustments, as well as physical and mental stress.[1].

Stress is caused by an individual's incapacity to cope with emotional or physical threats. Stress perception is directly related to mental health. Inadequate coping in hemodialysis patients lowers quality of life and contributes to physical, mental, economic, social, and emotional problems.[2]

To study the same, the researcher reviewed many literature and it was obtained through various database includes CINHAL (Cumulative index TO Nursing & Allied Health Literature), MEDLINE (Medical Literature Analysis & Retrieval System Online), PubMed, Science Direct, Springer Link, Pro Quest & Google scholar.

2. Materials And Methods

The study is headed mainly on the Effectiveness of Deep Breathing Exercise to Reduce Anxiety among Chronic Renal Failure patients Undergoing Hemodialysis. The quasi experimental, time-series design was conducted by Novita Nipa, Hapsah, Abdul Majid study was aimed to determine the effect of deep breathing relaxation exercises on anxiety scores in hemodialysis patients. Conducted in 30 patients in the hemodialysis room. A deep breathing relaxation exercise was given to the intervention group twice a day (10 min/exercise) for two weeks. Anxiety was assessed by the Hamilton Anxiety Rating Scale (HARS), at baseline, after 1-week and 2-week intervention anxiety. An independent t-test was used to analyze the effect of deep breathing exercises on anxiety scores in the intervention group compared to the control group. Result showed that Intervention group showed a higher reduction of anxiety compared to the control group ($p < 0.001$). Following a 2-week intervention,

lower anxiety scores were shown in the intervention group (1.4 vs. 26.07) compared to the control group. Study concluded that Deep breathing relaxation exercises can minimize anxiety score levels of patients undergoing hemodialysis [3].

The cross-sectional and descriptive correlation design was conducted by Zakariya Al Naamani, Kevin Gormley , Helen Noble, Olinda Santin. This study is to determine the prevalence of fatigue, anxiety, depression and sleep quality among patients receiving haemodialysis during the coronavirus disease 2019 (COVID-19) pandemic, and to explore the contributing predictors. Data were collected using the Functional Assessment of Cancer Therapy-Fatigue (FACT-F), the Hospital Anxiety and Depression Scale (HADS) and the Pittsburgh Sleep Quality Index (PSQI). Logistic regression analyses were used to explore the predictors that were associated with fatigue, anxiety, depression and sleep quality.

Result showed that Of the 123 patients undergoing haemodialysis who participated, 53.7% (n = 66) reported fatigue, 43.9% (n = 54) reported anxiety, 33.3% (n = 41) reported depression and 56.9% (n = 70) reported poor sleep. Fatigue, anxiety and sleep quality ($P < .05$) were significantly associated with being female, and whether family members or relatives were suspected or confirmed with COVID-19. Logistic regression showed that being within the age group 31-40, having a secondary education level, anxiety; depression and sleep quality were the main predictors affecting the fatigue group. Study concluded that Fatigue, anxiety, depression and sleep quality are significant problems for patients receiving haemodialysis during the COVID-19 pandemic. Appropriate interventions to monitor and reduce fatigue, psychological problems and sleep quality amongst these patients are needed[4].

Randomized controlled trial was conducted by Lasara Kharbteng, Monaliza, Vivek Kumar, Sukhpal Kaur, and Sandhya Ghai. Study aims to assess the effect of a breathing training program on anxiety in patients with predialysis CKD. Sixty individuals were enrolled and randomized using lottery method. QOL was assessed or evaluated by Kidney Disease and QOL questionnaire. Breathing exercises were taught to the intervention group. Patients included in control group continued with the routine care. Assessment of QOL was done after 4 weeks in both the groups. Result showed that The mean scores of control group in the subscale effects of kidney disease, SF-12 Physical functioning (Physical Health Composite) and SF-12 Mental functioning (Mental Health Composite) were 84.79, 39.16 and 37.40, respectively, whereas in intervention group, the respective mean scores were 91.88, 43.92, and 44.16. The difference was statistically significant ($P = 0.04$, $P = 0.01$, and $P = 0.003$, respectively).study concluded that Breathing training program improves QOL in patients with predialysis CKD [5].

3. Results and Discussion

Semaan V,Noureddine S,et al(2018).Conducted study to examine the prevalence of anxiety and depression and associated factors among patients receiving hemodialysis at a major tertiary referral medical center in Lebanon that receives patients from all over the country. Ninety patients receiving hemodialysis were targeted using convenience sampling, with a final sample size of 83 patients. The patients were interviewed while undergoing their dialysis session using the Hospital Anxiety and Depression Scale, and asked demographic and clinical questions. Result showed that the majority of participants were married men over 60 years of age; 48% achieved high school education. Depression was prevalent in 40.8% and anxiety in 39.6%, with 20 patients (24.1%) having both conditions.

Although 24.1% self-reported anxiety symptoms, only 2.4% were taking anxiolytics. Illiterate patients had significantly higher depression scores than those with higher levels of education ($p = 0.021$). Patients who were living with their family had higher anxiety scores than those living alone ($p = 0.014$).Study concluded that Anxiety and depression are under diagnosed and undertreated in Lebanese dialysis patients [6]. Single-blind clinical trial was conducted by Aliakbari, F., Safei, F, Deriss, F , Salehitali, S.(2021). The current study aims to investigate the influence of breathing exercise on respiratory parameters in hemodialysis patients due to a lack of agreement on the efficacy of breathing exercise in the respiratory status of hemodialysis patients. Participants were randomly assigned to one of two groups in this single-blind clinical investigation (intervention and control). Under the supervision of a nurse, the intervention group practiced breathing interventions (deep and slow breathing) for eight sessions over the course of a month. Data was collected using two

questionnaires (demographic and respiratory parameter checklist). Result Showed that There was a significant change (P=0.000) between the pre- and post-scores of the respiratory score in the intervention and control groups. Study concluded that Because breathing intervention is beneficial in lowering dyspnea and improving respiratory parameters, nurses should consider using it as an appropriate therapy for these patients due to its simplicity and low cost[7].

A Randomized Controlled Trial was conducted by Mansooreh, aliasgharpour Effect of a Breathing Exercise on Respiratory Function and 6-Minute Walking Distance in Patients Under Hemodialysis: Pulmonary disorders and poor functional capacity are common complications in patients under hemodialysis. Although breathing exercise is frequently prescribed to improve respiratory function, its efficacy in this patient community is not well established. Methods: A randomized controlled trial approach was used. The sample consisted of 52 patients under hemodialysis from a university teaching hospital in Iran. The experimental group (n = 26) received the breathing exercise program and was encouraged to perform incentive spirometry for 2 months. The control group (n = 26) received only routine hospital care.

The respiratory function test and 6MW test were performed at baseline and at 2 months after the intervention (posttest). Result showed that the two groups were homogeneous in terms of respiratory function parameters, 6MW distance, and demographic characteristics at baseline. Forced expiratory volume in 1 second and forced vital capacity were significantly better in the experimental group compared with the control group at 2 months after intervention. No significant difference was found in 6MW distance between the groups at the 2-month posttest. Conclusions/Implications for Practice: The 2-month breathing exercise effectively improved pulmonary function parameters (forced vital capacity, forced expiratory volume in 1 second) in patients under hemodialysis but did not affect 6MW distance. Hemodialysis nurses should strengthen their clinical health education and apply breathing exercise programs to reduce the pulmonary complications experienced by patients under hemodialysis [8].

A randomized control design was conducted by adopted for the study of deep breathing exercise on the heart rate variability, blood pressure, anxiety & depression of patients under hemodialysis, Fatima D'silva , Vinay Nitte University, Paneer, Mangalore, Psychosocial risk factors significantly contribute to the morbidity and mortality of patients with cardiovascular disorders. The present study explored the anxiety and depression status of patients with hemodialysis and evaluated the effect of deep breathing exercise on these psychosocial variables as well as physiological variables like heart rate variability and blood pressure. Out of 65 clients eligible for the study, 45 were selected based on inclusion criteria. Patient were trained in Deep breathing exercise for 2-3 days, were instructed to practice the exercise twice a day for 10 min for a period of 2 weeks, further instructed to come for follow up to cardiac OPD after 2 weeks. The study findings revealed that majority of the hemodialysis patients were anxious 39 (86.66%), 23(57.5%) had mild depression and 3(7.5%) were with severe depression[9].

A quasi experimental study of Breathing exercise and respiratory parameters in chronic kidney disease patients with hemodialysis was conducted by Aliakbari, F., Safei, F.. Breathing exercise and respiratory parameters in chronic kidney disease patients with hemodialysis. Patients with chronic renal disease are at risk for dyspnea, which can have a negative impact on their quality of life. The current study aims to investigate the influence of breathing exercise on respiratory parameters in hemodialysis patients due to a lack of agreement on the efficacy of breathing exercise in the respiratory status of hemodialysis patients. Method: Participants were randomly assigned to one of two groups in this single-blind clinical investigation (intervention and control). Under the supervision of a nurse, the intervention group practiced breathing interventions for eight sessions over the course of a month. Data was collected using two questionnaires (demographic and respiratory parameter checklist). Result showed that There was a significant change (P=0.000) between the pre- and post-scores of the respiratory score in the intervention and control groups. Conclusion: Because breathing intervention is beneficial in lowering dyspnea and improving respiratory parameters, nurses should consider using it as an appropriate therapy for these patients due to its simplicity and low cost [10].

Deep Breathing Exercise and Its Outcome among Patient with hemodialysis was conducted by Tripathi , Rakesh Sharma, Deep breathing exercises, may help counteract Post-hemolydialysis decreased Anxiety postoperative complications are not clear. Method: A pilot study was conducted with quasi-experimental research design to assess the effectiveness of deep breathing exercise on post-dialysis complications. A total 40 study participants, 20 in experimental and 20 in control group based on inclusion and exclusion criteria. Result of the study shows that scores in respiration rate was significantly different in experimental group and the volume of the spirometry scores were higher in post-operative phase after DBE with IS. The oxygen saturation remains constant in experimental group while there was a reduction in control group significantly. Patient with Incentive Spirometry deep breathing exercise did not develop any respiratory complication post-operatively [11].

4. Conclusion

Several studies have found that deep breathing exercises aid chronic renal failure patients reduce anxiety; these breathing exercises are particularly simple to perform because these patients are unable to participate in out-of-home sporting activities owing to physical restrictions. These exercises do not require any equipment or space, and they can be performed while the patient is lying down. This study's findings can be used to create a strategy for reducing anxiety severity and boosting hemodynamic improvement in these patients.

Authors' contributions

All authors were involved in the interpretation of the data and contributed to manuscript preparation. All authors have read and approved the final version of the manuscript.

Conflict of Interest

None

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