



Intervention Reduce anxiety in CHF patients (Congestive Heart Failure): Systematic Literature Review

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ARTICLE INFO

Article history:

Received 21 January 2023

Accepted 1 April 2023

Published 10 June 2023

Keyword:

Anxiety
congestive heart failure (CHF)
systematic literature reviews

ABSTRACT

Background: Psychological problems in CHF patients result from a combination of behavioural influences and interaction with physiologic responses that, if not managed appropriately clinical symptoms may worsen and the risk of hospitalization may increase. People with congestive heart failure (CHF) often experience physical pain and anxiety. Anxiety is associated with an increased risk of death in people with CHF. **Objective:** This study aims to determine interventions that can be used to reduce patient anxiety. This review was carried out because previously no one had reviewed interventions to reduce stress in CHF patients. **Method:** Use systematic literature retrieval methods by tracking library resources through journal databases the Pubmed, ProQuest, Science Direct, Scopus and Google Scholar in 2013-2022. Inclusion criteria in this review are: English journals, journals and journals researching CHF patients who experience anxiety; the research design is a quasi-experimental, randomized controlled trial, actual experimental and intervention study. **Result:** Based on the study, obtained seven journals for review and several interventions could reduce anxiety in patients with CHF, namely back massage intervention, schema therapy, tai chi cardiac rehabilitation program, breathing training, walking with controlled breathing, back massage therapy, and cognitive behavioural therapy. **Conclusion:** This review concludes that all interventions are significant for anxiety in CHF Patients

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Kata kunci:

Kecemasan
Congestive Heart Failure (CHF)
systematic literature review

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DOI: 10.30604/jika.v8i2.1786

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ABSTRAK

Latar Belakang: Masalah psikologis pada pasien CHF merupakan akibat kombinasi dari pengaruh perilaku dan interaksi dengan respon fisiologis, yang jika tidak ditangani dengan baik akan berkontribusi pada perburukan gejala klinis dan memiliki risiko rawat inap yang lebih tinggi. Pasien yang menderita gagal jantung kongestif (CHF) sering merasakan penderitaan fisik dan kecemasan. Kecemasan dikaitkan dengan peningkatan risiko kematian pada pasien dengan CHF. **Tujuan:** Penelitian ini bertujuan untuk mengetahui intervensi yang dapat digunakan untuk mengurangi kecemasan pada pasien. **Review** ini dilakukan karena sebelumnya belum ada yang melakukan review tentang intervensi untuk menurunkan kecemasan pada pasien CHF. **Metode:** Pencarian literatur yang sistematis digunakan sebagai metode dengan penelusuran sumber pustaka melalui databased jurnal Pubmed, ProQuest, Science Direct, Scopus dan Google Scholar tahun 2013-2022. **Kriteria inklusi** dalam review ini adalah jurnal berbahasa Inggris, jurnal dan jurnal yang meneliti pasien CHF yang mengalami kecemasan, desain penelitian yaitu quasi eksperimental, randomized controlled trial, true experimental dan intervention study. **Hasil:** Berdasarkan telaah didapatkan 7 jurnal untuk di review dan beberapa intervensi yang dapat mengurangi kecemasan pada pasien

dengan CHF yaitu back massage intervention, schema therapy, tai chi cardiac rehabilitation program, breathing training, walking with controlled breathing, back massage therapy, cognitive behavioral therapy. Kesimpulan: Kesimpulan dari tinjauan ini adalah bahwa semua intervensi untuk kecemasan pada pasien CHF bermakna.

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INTRODUCTION

Congestive heart failure (CHF) is the heart cannot pump blood to body tissues to meet oxygen and nutrient needs (Risprawati, 2019). The most common causes of CHF are high blood pressure and coronary artery disease (Jamali, 2016).

Heart failure (CHF) is one of the most common chronic diseases and a leading cause of death worldwide with high hospitalization rates (Ramenzali, 2016). Nearly 50% of CHF patients experience stress symptoms. Patients with CHF experience uncertainty anxiety and depression (Chen, 2013). In Indonesia, the disease failed heart disease is still a problem because of the high rate of hospitalization and recurrence. The mortality rate is 6% - 12% and the recurrence rate is 29% (Siswanto et al., 2010).

Negative emotions (such as anxiety and depression) are more common in people with heart failure than in healthy people (Ramenzali, 2016). Women express Anxiety and depression levels were higher than men (Chen, 2013). Depression is common in patients with CHF 13.1% of it for anxiety disorders 28.79% a clinically significant concern and 55.5% increase in anxiety symptoms (Srimookda, 2021). A proportion of patients with CHF are concurrent anxiety or depression 22% (Lyu, 2022).

Congestive heart failure (CHF) is a non-communicable disease that can cause death. World Health Organization (WHO) in 2015 reported that-communicable diseases caused 70% of deaths in the world and around 45% of Of these 39.5 million deaths 17.7 million were due to cardiovascular diseases (RI Ministry of Health 2019). According to the World Health Organization (WHO) in 2016 in 2015 there were 23 million or around 54% of deaths caused by Heart failure (CHF). Mortality from congestive heart failure (CHF) is approx 50% within five years (Risprawati, 2019). Every year, there are one to two million deaths in patients with heart failure (Pagidipati & Gaziano, 2013).

The Asian continent occupies the highest place due to heart disease deaths, comprising 712.1 thousand people. Meanwhile, in Southeast Asia, namely the Philippines, With 376.9 thousand people it is the number one cause of death due to heart disease. Indonesia is Southeast Asia's second most populous country with 371.0 thousand (*World Health Organization*, 2016). The prevalence of *Congestive Heart Failure* (CHF) in Indonesia, according to Risesdas (2016), is 0.3% total population in Indonesia (Risprawati, 2019). The prevalence of heart disease in Indonesia is also relatively high. The results of the Ministry of Health's basic health research in 2018 reported according to doctors' diagnoses the incidence of heart disease in Indonesia is 15% out of the total population. The three states with the highest rates of heart disease are North Kalimantan 2.2% Yogyakarta 2% and Gorontalo 2% (Ministry of Health RI, 2019).

The impact of *congestive heart failure* can affect the physical and psychological aspects of *Congestive Heart*

Failure (CHF) patients. Predisposing factors include patients worrying about their physical condition getting worse or weaker and fear that their heart disease will not improve immediately because the heart is a vital organ. These factors lead to psychological problems for sufferers of heart disease stress, anxiety, helplessness, anxiety, depression, etc. Among these psychological problems, anxiety and depression are the most common among heart patients. CHF, accompanied by depression, anxiety, and stress, is associated with increased heart failure-related hospitalizations and deaths. Patients with CHF may experience high levels of anxiety and depression that they see their death as the real solution to their condition (Aburuz, 2018).

Several interventions can reduce anxiety in patients with CHF, namely *back massage* (Chen, 2013), *breathing training* (Srimookda, 2021), back massage (Rahmani, 2018), and mutual Al-Qur'an therapy (Saleh, 2018). Several studies pointed out _ that the prevalence of CHF patients who experience anxiety is quite a lot. Because of that, the study aims to analyze interventions that can reduce anxiety in CHF patients.

METHODS

The systematic review follows the reporting method of PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis). Study this using a systematic approach and selection process through four stages: identification, screening, eligibility and outcome, which are accepted. Search literature by accessing includes national and international online databases Proquest, PubMed, Scopus, Science Direct and Google Scholar.

Inclusion criteria in this review are: English journals, journals and journals researching CHF patients who experience anxiety; the research design is a quasi-experimental, randomized controlled trial, actual experimental and intervention study. Then use criteria exclusion with look time publication with the range year 2013 - 2022. All relevant articles were screened and analyzed for inclusion or exclusion based on their quality and relevance to the review topic questions and the aims of the systematic review. Managing search articles Researchers use Mendeley Desktop bibliographic software to organize articles in search results. The form for evaluating articles uses the *Joanna Briggs Institute* (JBI) *Critical Appraisal Checklist* to select the journal's quality. In the final stage, an assessment is carried out by deleting the journal that has title and writer, in which the exact text needs to be completed and verifying the results study as anticipation bias.

RESULTS

Search Literature

The result from _ search literature with *systematic literature reviews* obtained 797,842 journals with say key "anxiety" OR " anxiety disorder " OR " angst " OR " anxieties " OR " hypervigilance " OR " nervousness " OR "anxiousness" AND "congestive heart failure" OR "cardiac failure" OR " myocardial failure " OR " left-sided heart failure " OR "right-sided heart failure " OR " heart decompensation ". Then use,

criteria exclusion with look time publication year 2013 - 2022 and suitability study got 3,450 literature. After duplication of articles was issued and screening of titles and abstracts was carried out 26 The literature proceeded to the next step i.e. the full-text and eligibility screening was performed based on investigator-defined inclusion and exclusion criteria. The author earns seven research pieces of literature with complete text corresponding with the criteria, which will be reviewed for quality and integrated into the final literature review report (Chart 1).

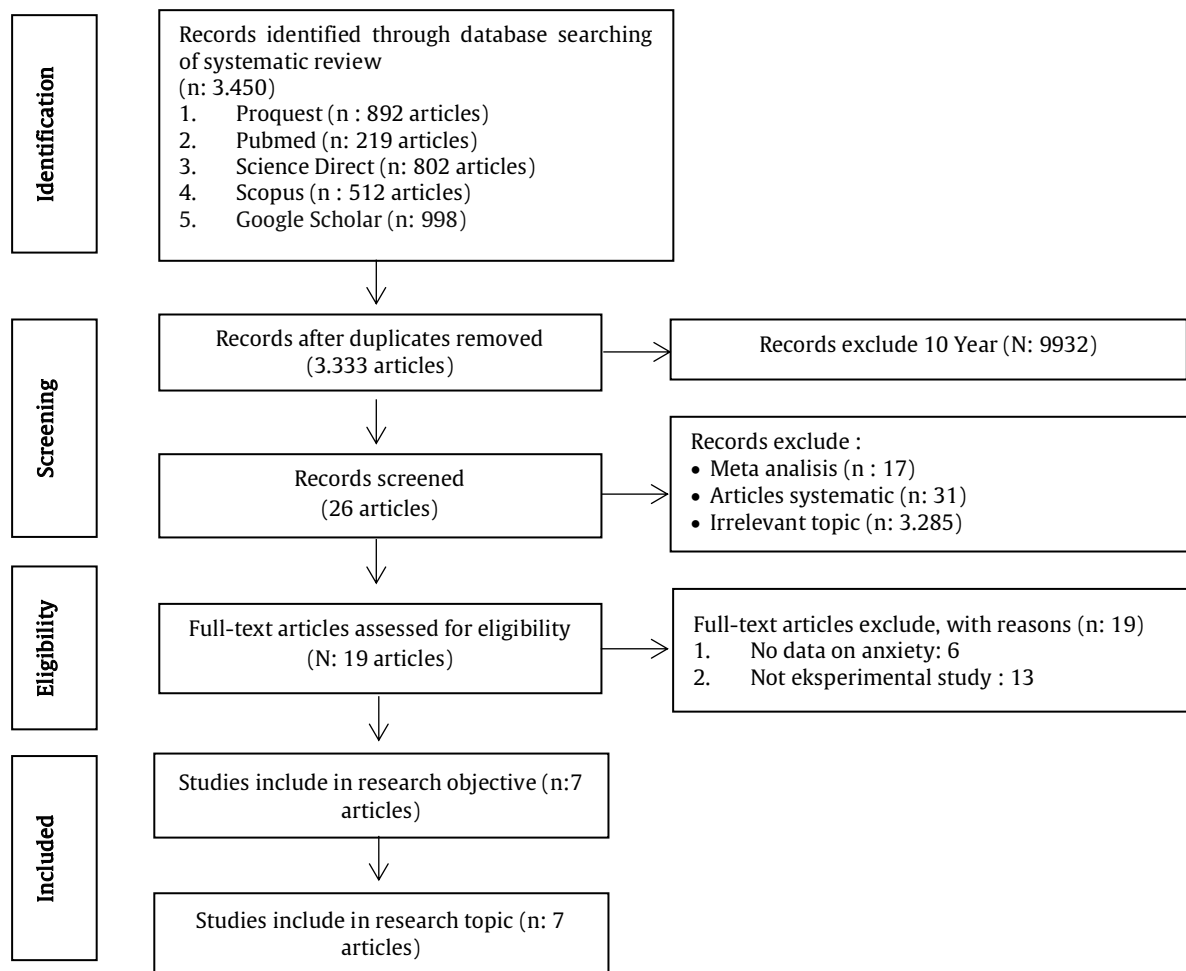


Chart 1
Prisma Diagram

Article Review

After specifying the data for each article found by the researcher the researcher's name research title research field research design research sample type of intervention and summary of search results are prepared in Table 1.

From the table, review results include an average of 10 minutes of intervention (Chen, 2013) to 60 minutes (Rahbar, 2017 and Lyu, 2022) within 4 hours (Srimokda, 2021) to 44 weeks (Lyu, 2022) with 2 to 3 sessions in 1 week. Samples range from 25 patients (Rahbar, 2017) to 96 patients (Nipa, 2021). The review results obtained that the most reviews came from Taiwan and Iran, namely 2 journals each, besides that came from China, Thailand and Indonesia. The types of

reviews are quasi-experimental and randomized controlled trials. Intervention is given to patients who experience anxiety. Anxiety score measurement uses the Generalized anxiety disorder (GAD-7) scale (Lyu, 2022), Depression Anxiety and Stress Scale - 21 Questionnaire (DASS-21) (Hudiyawati, 2019), State Anxiety Inventory (SAI) (Ramezanli, 2016 and Chen, 2013), Anxiety Visual Analog Scale (AVAS) (Srimookda, 2021), Existential Anxiety Inventory (EAI) (Rahbar, 2017), and Hospital Anxiety and Depression Scale (HADS) (Teng, 2018).

For anxiety in the review given the intervention of the tai chi cardiac rehabilitation program, cognitive behavioural therapy, back massage, schema therapy, breathing training and walking with controlled breathing. Depression is given

the intervention Tai Chi Cardiac Rehabilitation Program and cognitive behavioural therapy. Stress is given cognitive behavioural therapy intervention. The comfort is given through back massage intervention. The physiological response is given back massage intervention. Cognitive emotion regulation is given through schema therapy intervention. Quality of life given walking with controlled breathing intervention.

From the results of the review, there was no mention of the anxiety category in the patients who would be given the intervention, only measuring the anxiety scores in patients before and after being given the intervention according to the measurement instruments used in each study to see a comparison of anxiety scores.

DISCUSSION

Patients with CHF feel anxious about different causes, such as fear of surgery Fear of unmanageable pain and death and uncertainty about proper treatment. Anxiety is associated with an increased risk of death in patients with CHF. Given the prevalence of anxiety disorders in patients with CHF only a small percentage of patients receive psychiatric care and do not receive adequate psychological support (Watkins et al., 2013).

Results Study References from 7 journals show that on results study Hudiyawati et al. regarding the effects of Cognitive behavioural therapy for patients with anxiety depression and heart failure including a program of cognitive behavioural therapy (CBT) for anxiety depression and anxiety reduction by teaching heart attack patients problem-focused coping skills. suspensisse (Hudiyawati 2019). The group begins with an exploration and discussion of the patient's problems (Connor 2018). A similar study of the effects of cognitive therapy on patients with heart failure found that the experimental group had a decrease in the number of respondents who experienced severe anxiety after cognitive therapy by 14 (63.6%) respondents and 8 (36.4%) who experienced mild anxiety (Aziza, 2021).

This is consistent with the study of Somaye et al. On the effects of massage therapy on anxiety in CHF patients. Massage therapy is a technique that involves manually moving the muscles and underlying tissues by Application of mechanical strength to the tissue. Therefore this treatment can be used to relax muscles and reduce pain and stress (Anderson 2007; Ramejanli 2016). A similar study of the effect of back massage on anxiety scores in patients with heart failure showed that anxiety scores were significantly reduced in heart attack patients before and after the back massage intervention with a value of $p = 0.001$ ($p < 0.05$) (Nugraha, 2018).

According to research regarding the effects of back massage intervention on relaxation and physiological responses to anxiety in patients with CHF (Wei-Ling Chen et al). From the research results, it was found that fig _ the patient described the perception of the back massage as follows: "relaxing", "comfortable", "happy", "cheerful", and "calm" after back massage (Bauer, 2010; Chen, 2013). Fifteen (15) participants (22.1%) explained to them that their understanding is very convenient. Participants reported that back massage combined with knee patting and pressure reduced anxiety and stress and increased relaxation. The male participants showed a greater decrease in female participants being more worried ($F(1, 50) = 7.27, p = 0.01$) (Chen, 2013).

According to the research of Shaojun Liu et al. About the influence of the tai chi cardiac rehabilitation program for anxiety and depression in CHF patients. Tai Chi is a form of exercise therapy in traditional Chinese medicine that has positive effects on the prevention and treatment of cardiovascular diseases (Wang 2016; Liu 2022). Long-term tai chi practice can reduce anxiety and depression in congestive heart failure (CHF), patients because aerobic exercise significantly improves symptoms of anxiety and depression (Lyu, 2022).

This research is consistent with studies on the practice of tai chi to reduce stress. After most tai chi exercises (59.4%) Respondents were not concerned (typically). A Wilcoxon signed-rank test analysis was performed $p = 0.000 \leq 0.05$. This means that Tai Chi gymnastics affect reducing anxiety (Khamida 2018). Aerobic exercise has clear benefits in reducing anxiety and depression in patients and reducing cardiovascular mortality with CHF (Harvey, 2018; L yu, 2022).

Results of Study I Brahim Rahbar Karbasdehi et al. On the effectiveness of integrative schema therapy in the recovery of cognitive regulation of emotions and anxiety in patients with CHF. Schema therapy focuses on the deepest levels of cognition using cognitive-emotional and interpersonal behavioural strategies to target early maladaptive schemas and help patients cope with anxiety. Research shows floor therapy is effective for people with congestive heart failure ($p < 0.001$) (Rahbar, 2017).

According to Nipa Srimookda et al., effects of respiratory training and respiratory anxiety in heart failure patients. Breathing exercises in patients with heart failure are performed in the Fowlers a position where the head of the bed is raised 60 degrees or more. Breathing intervention (BT) is an intervention that combines physical and psychological management to reduce-breathing distress. (Katz. 2018). Breathing exercises aimed at reducing nerve stimulation through controlled breathing include lip breathing and diaphragmatic breathing and mindful breathing (Srimookda, 2021).

This research is in line with research on the Effect of Deep Breathing Relaxation on Stress As a result it was found that deep breathing relaxation had a significant effect before and after. with a p-value of 0.000 and comparisons between groups also showed a significant value with a p-value of 0.002. the results of research on deep breathing relaxation exercises can reduce anxiety (Alfikrie, 2020).

The study of Hsiu-Chin Teng et al. regarding breath-controlled walking on anxiety quality of life for patients with congestive heart failure. The *Walking with control Breathing* (WwB) interventions include warming up, primary, and cooling. At the end of the study the participants the *Walking with controlled Breathing* (WwB). That intervention supports research that has found exercise to reduce overall stress levels and reduced anxiety levels in nearly half of heart disease patients (Teng, 2018). Some of the interventions described above affect reducing anxiety in CHF patients.

LIMITATIONS OF THE STUDY

This article only uses search sources from five databases and all literature sources obtained in this search are only articles in English.

CONCLUSIONS AND SUGGESTIONS

Based on the analysis through systematic literature reviews that have been done can be concluded that all interventions have a great effect on anxiety in *Congestive Heart Failure* (CHF) patients. Intervention that reduces anxiety in people with CHF. is *back massage intervention* (Chen, 2013), *schema therapy (radar, 2017)*, *t ai chi cardiac rehabilitation program* (Lyu, 2022), *breathing training* (Shimoda, 2021), *walking with controlled breathing* (Teng, 2018), *back massage therapy* (Ramezanli, 2016), *cognitive behavioural therapy*(Hudiyawati, 2019).

The recommended interventions from this review are breathing training in Fowler's position and back massage therapy because they can be carried out quickly and are easy to do. The advantages of Breathing Training (BT) are easily understood even by patients who have only finished elementary school. Second, although it requires trained health workers, BT does not have the costs or the special equipment required; so all health institutions can initiate and implement this technology.

ETHICAL CONSIDERATIONS

Funding Statement

This research is not sponsored or funded by any institution or organization.

Difference of Opinion Statement

Let there be no prejudice

ACKNOWLEDGEMENTS

Finally, I would like to thank Masters of Nursing Universitas Muhammadiyah Yogyakarta, my supervisor, my parents and those who were involved and supported and assisted in writing this systematic literature review.

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Table 1. Literature Findings

No	Author (Year)/ Country	title	Study Design	Number Of Samples	Intervention for Anxiety Patients CHF	Outcomes
1	Wei-Ling Chen et al. (2013) Kaohsiung, Taiwan	Effect of Back Massage Intervention on Anxiety, Comfort, and Physiologic Responses in Patients with Congestive Heart Failure	The study used a quasi-experimental design with one group pretest and posttest.	Sixty-four participants	Back Massage Intervention Back massage (from the sacral area to the cervical area) was delivered consecutively for 10 minutes each day for three days. Back massage interventions include pressing and stroking (effleurage), kneading (petrissage), rubbing with short strokes, tapping (percussion), and rubbing with long strokes (friction). A back massage was arranged one hour before or two hours after a meal.	Back massage significantly reduced anxiety in the study population. Back massage significantly reduced anxiety in the study population (p<0.001)
2	Ibrahim Rahbar Karbasdehi, et al (2017) Guilan, Iran	The Effectiveness of Schema Therapy Integrated with Rehabilitation on Cognitive Emotion Regulation and Existential Anxiety in Patients with Congestive Heart Failure	The study was an actual experiment with a pretest/posttest design and a control group.	25 patients with CHF	Schema therapy The intervention lasts five weeks, with two sessions per week. Treatment was provided in a group format for ten sessions, two days a week, each 60 min. The experimental group received the treatment according to the modules of the intervention program including lectures on critical topics, various group activities, audio-visual presentations, home assignments and so on, while the control group did not receive any treatment.	Schema therapy can improve cognitive and emotional symptoms in patients with CHF. The results of the analysis showed that integrated group scheme therapy with rehabilitation increased Cognitive Emotion Regulation (CER) and reduced signs and symptoms of anxiety in CHF patients (p<0.001)
3	Shaojun Lyu, et al (2022) Beijing, China	Effects of tai chi cardiac rehabilitation program on anxiety and depression in patients with coronary heart disease: A randomized controlled clinical trial	This study was a multicenter, randomized controlled trial.	A total of 56 patients	Tai chi cardiac rehabilitation program TCPRP Time 60min/time. Frequency 3 times/week, 44 weeks	TCP developed in China may effectively relieve anxiety and depression in patients with CHF. TCP developed in China can effectively relieve anxiety and depression in patients with CHF.
4	Nipa Srimookda et al. (2021) Thailand	The effects of breathing training on dyspnea and anxiety among patients with acute heart failure at the emergency department	Two-group pre-post intervention study and control study	Data were collected from 96 patients	Breathing training Breathing training consists of pursed-lip and mindfulness breathing. HF patients in the intervention group were placed in Fowler's position, with the head of the bed elevated at 60 degrees or higher. Because the average time patients with AHF were treated at the ED was four h before being transferred to the in-patient units, BT intervention took place during the first 30 min of ED arrival until the 4th ^{hour} of ED visit for patients in the experimental group.	UC (Usual Care) and BT (Breathing Training) with UC can reduce dyspnea and anxiety in patients admitted with CHF. Decreased anxiety scores of 4.91 (SD1.219) and 1.33 (SD 1.502) in the experimental and control groups, respectively (t = 0.066, p <0.001).
5	Hsiu-Chin Teng , et al (2018) Taipei,	Walking with controlled breathing improves exercise tolerance, anxiety, and quality of life in	This randomized controlled trial	90 heart failure patients	Walking with controlled breathing The WwB intervention consisted of a warm-up, main course, and cool-	Walking with breathing also improved the patient's anxiety and quality of life. There were significant

	Taiwan,	heart failure patients: A randomized controlled trial.			down, performed twice daily in the morning and afternoon for 12 consecutive weeks. To begin the intervention, a warm-up was performed for five minutes before walking and included stretching the head and neck, turning the shoulders forward and backwards, shaking hands, and lifting each foot.	differences between groups on Week 12 in anxiety ($p = 0.03$) and quality of life ($p = 0.02$) but not depression ($p = 0.06$).
6	Somayah Ramezanli, et al (2016) Jahrom, Iran	Measuring the Effects of Massage Therapy on Anxiety of Heart Failure Patients	The study used a quasi-experimental design with one group pretest and posttest.	Fifty participants	Back Massage Therapy The massage therapy was started three days after admission to the hospital to avoid disturbing their medical regimen plan. The intensity and time of massage therapy ranged from one session of 3–45 minutes to 15 sessions over four weeks (Jane, Wilkie, & Gallucci, 2008). This article considers the time of massage therapy as 10 minutes. The back massage lasted 10 minutes each day for three days consecutively. Back massage interventions include pressing and stroking (effleurage), kneading (petrissage), rubbing with short strokes, tapping (percussion), and rubbing with long strokes (friction).	Back massage could release anxiety in patients with CHF. The mean overall baseline anxiety score was 43.52 (10.32) in the intervention group and decreased to 33.22 (5.19) three days after the massage therapy ($p = 0.01$).
7	Hudiyawati, D Prakoso, A (2019) Surakarta, Indonesia	Effectiveness of cognitive behavioural therapy to reduce depression, anxiety and stress among hospitalized patients with congestive heart failure in Central Java.	This was a quasi-experimental, pretest-posttest control study	Thirty eligible respondents	Cognitive behavioural therapy The Cognitive Behavioral Therapy (CBT) group was individual training consisting of five sessions of CBT, 20-30 minutes during each session over three days. The session commenced with exploring and discussing problems faced by patients. Content includes formulating problems as the focus of therapy goals (session 1), activity planning (session 2), structured problem solving (session 3), strategies to improve motivation (session 4), evaluate new strategies (session 5).	CBT was effective in reducing psychological symptoms among CHF patients. The average scores for depression, anxiety and stress show significant differences in the group after the intervention ($p < 0.05$).