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PEER-BASED INTERVENTIONS TO IMPROVE SELF-EFFICACY IN PATIENTS WITH CHRONIC DISEASES

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ABSTRACT
Chronic diseases such as heart failure, diabetes, and hypertension require active patient involvement in self-management. Self-efficacy is a key factor that influences the success of self-management among individuals with chronic conditions. This article aims to synthesize current empirical evidence on the effectiveness of peer-based interventions in improving self-efficacy among patients with chronic diseases. This study employed a systematic review approach based on the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA). Literature was retrieved from PubMed, ScienceDirect, ProQuest, EBSCOhost, Wiley, and Google Scholar databases. The inclusion criteria were full-text articles in English, with designs such as randomized controlled trials, quasi-experiments, and pilot studies published between 2015 and 2025. Of the 635,062 8 articles identifie the inclusion criteria and were analyzed. The included articles were critically appraised using appropriate tools and independently reviewed for quality and relevance, with data systematically extracted and narratively synthesized due to methodological heterogeneity. All reviewed studies reported a significant increase in self-efficacy following peer-based interventions. These interventions were implemented in various formats, including group training, theory-based peer coaching (eg, Health Belief Model, Health Promotion Model), digital peer support, and nurse-facilitated peer programs. Some studies also demonstrate long-term effects and additional benefits such as improved quality of life, better stress management, and reduced stigma. Peer-based interventions are proven effective in enhancing self-efficacy among patients with chronic diseases and may serve as a complementary strategy in clinical practice and primary health care services.

Keywords: chronic disease; peer-based intervention; peer education; self-efficacy

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INTRODUCTION

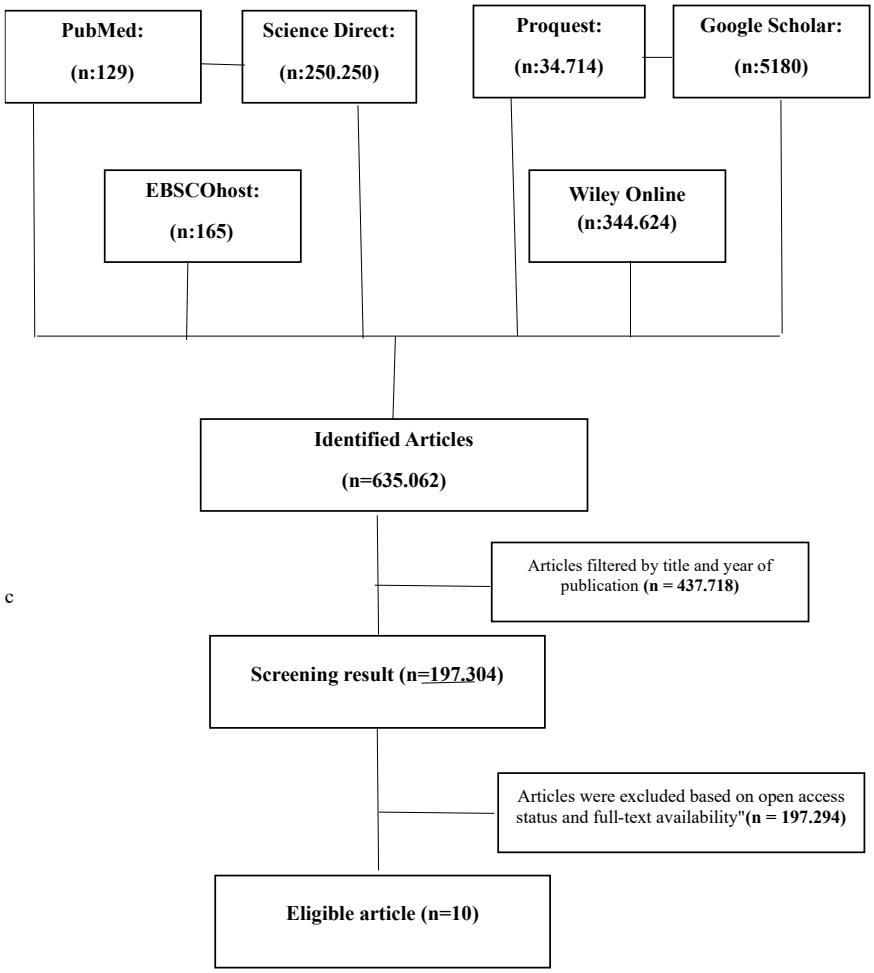
A wide range of chronic diseases such as coronary heart disease, diabetes mellitus, hypertension, scleroderma, chronic pain, and multiple sclerosis are major global contributors to disability, morbidity, and mortality. The primary challenge in managing chronic illnesses lies not only in the medical aspect but also in the patients' ability to manage their condition independently, or in other words, in individual health management. One of the key factors determining the success of such management is self-efficacy, which refers to an individual's belief in their ability to perform the necessary actions to achieve desired health outcomes (Bandura, 1997).Numerous studies have demonstrated the vital role of self-efficacy in improving patient adherence to therapy regimens, symptom management, relapse prevention, reduction of hospital readmission rates, and enhancement of overall quality of life (Varaei et al., 2016). Nursing interventions aimed at enhancing patient self-efficacy have been widely implemented using various methods. One such intervention is the peer-based approach, either in the form of peer education or peer support, which utilizes individuals or patients with similar experiences to provide education, emotional support, and motivation to others undergoing treatment.

A meta-analysis study on patients with type 2 diabetes revealed that peer support interventions significantly improved self-efficacy compared to control groups (Dandan et al., 2020). A cluster randomized controlled trial conducted in a nursing home also showed that peer-led pain management significantly increased pain self-efficacy, both post-intervention and at three-month follow-up (Marianne S. Matthias et al., 2020). The effectiveness of peer-based interventions was also demonstrated in studies involving elderly patients with chronic pain in nursing homes, showing significant improvements in pain self-efficacy and quality of life following participation in a peer-led pain management program (Tse et al., 2021).The integration of digital technology with peer education has also begun to be tested, such as the development of Ed-counseling, which combines mHealth (digital reminders and educational videos) with peer counseling for patients with hypertension and coronary heart disease in Pakistan. This intervention significantly improved medication adherence and patients' quality of life (Arshed et al., 2023). Hibbert et al. (2020) also showed that peer interventions in weight management for patients with mental health disorders increased confidence and conviction—both of which are key indicators of self-efficacy in managing metabolic diseases.

Despite promising evidence regarding peer-based interventions to enhance self-efficacy, integrating this approach into healthcare systems—especially in developing countries—continues to face methodological, implementation, and regulatory challenges. Therefore, this review aims to synthesize findings from recent experimental studies to strengthen the scientific evidence on the effectiveness of peer-based interventions in improving self-efficacy among patients with chronic diseases and to provide recommendations for clinical practice and future health policies.

METHOD

This study employed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach. The literature search was conducted using databases including PubMed, ScienceDirect, ProQuest, EBSCOhost, Google Scholar, and Wiley Online. The search utilized PICO-based keywords: (Peer-based intervention) OR (Peer education) AND (Self-efficacy) AND (Chronic disease).Inclusion criteria were full-text articles in English, with study designs including randomized controlled trials, quasi-experimental studies, mixed-methods research, or pilot studies, published between 2015 and 2025, and involving populations diagnosed with chronic illnesses. Exclusion criteria included qualitative studies, non-English publications, articles available only in abstract form, and studies published before 2015.A total of 635,062 articles were initially identified across eight electronic databases. Screening based on titles and publication years reduced the number to 197,304 articles. Further filtering for open access and full-text availability yielded 197,296 articles. From these, 10 articles were deemed complete and relevant. Ultimately, 8 articles met the inclusion criteria and were included in this review.The selected articles were further appraised using critical appraisal tools relevant to their study designs, such as the Joanna Briggs Institute (JBI) Critical Appraisal Checklists for experimental and quasi-experimental studies. Each article was independently assessed by two reviewers for methodological quality, risk of bias, and relevance to the research question. Disagreements between reviewers were resolved through discussion or with the involvement of a third reviewer.Data from the included studies were extracted systematically using a standardized extraction form, covering key elements such as study design, sample size, population characteristics, intervention types, outcome measures (particularly related to self-efficacy), and main findings. The extracted data were then synthesized narratively due to heterogeneity in intervention models and measurement tools.



RESULT

Table 1.
Literature Review

Journal Identity	Research methods	Research result
Tazangi, R.M., Bijani, M., Karimi, S., et al. (2022). *The Effect of Peer Group-Based Training Using the Health Belief Model*	RCT	Peer group training based on the Health Belief Model significantly improved self-efficacy in foot care and quality of life in patients with type 2 diabetes. The effects of this intervention were maintained up to 3 months after the training was given. The results showed significant differences between the intervention and control groups in self-efficacy and quality of life scores ($p < 0.05$).
Bijani, M., Niknam, M., Karimi, S., et al. (2022). *Peer education based on Pender's model on self-efficacy in MS patients.*	RCT	Peer education based on the Pender Health Promotion Model significantly increased self-efficacy in patients with multiple sclerosis. In addition, there was an increase in stress management skills and quality of life. Compared to the control group, the intervention group showed a significant increase in self-efficacy scores post-intervention ($p < 0.01$).
Varaei et al. (2016). *Randomized Controlled Trial of a Peer Based Intervention on Cardiac Self-Efficacy in Patients Undergoing Coronary Artery Bypass Graft Surgery: A 3-Year Follow-*	RCT	Intervention group patients showed significant improvement in cardiac self-efficacy: ◆ Postoperative day 5: $p < 0.001$ ◆ 3-year follow-up: $p < 0.038$

Journal Identity	Research methods	Research result
up.		◆ Peer education is effective as a long-term strategy in improving self-efficacy and reducing potential readmissions in CABG patients.
Andreae SJ, Andreae LJ, Richman JS, Cherrington AL, Safford MM. (2020). *Peer -Delivered Cognitive Behavioral Training to Improve Functioning in Patients With Diabetes: A Cluster -Randomized Trial*	RCT Cluster	There was an increase in physical function, a decrease in pain, an increase in psychological well-being, and an increase in self-efficacy in the intervention group after peer CBT training.
Heidari Beni, F. et al. (2017). *Peer education on self-efficacy in people with heart failure.*	Quasi-Experimental	Peer education increased self-efficacy in patients with heart failure both immediately after the intervention and one month later. This increase in self-efficacy was statistically significant compared to the control group ($p < 0.001$), indicating that peer-based education is effective as a method of increasing self-efficacy in chronic disease management.
Wan, X., Yan, W., Wang, X., Jiang, Y., Liu, Z., Li, L., & Liu, D. (2024). *Effects of a nurse-led peer support intervention on psychosocial outcomes of stroke survivors: A randomized controlled trial*. *International Journal of Nursing Studies*	RCT	A nurse-led peer support intervention significantly increased participation self-efficacy, perceived social support, and social participation; and decreased psychological distress and illness stigma up to three months post-treatment.
Stinson, J.N., Lalloo, C., Harris, L., et al. (2016). *The iPeer2Peer Program: A Pilot Randomized Controlled Trial in Adolescents with Juvenile Idiopathic Arthritis . Pediatric Rheumatology.*	RCT Pilot	*iPeer2Peer* (online peer mentoring) program improves self-efficacy, disease management skills, and coping strategies in adolescents with JIA.
Jahanshahi, F., Abbasi Abyaneh, N., & Ebrahimi Abyaneh, E. (2016). *Investigating the Effect of Peer Education on Self -Efficacy in Patients with Heart Failure in Selected Hospitals of Saveh County . IJMRHS* , 5(11).	Quasi experiment	Self-efficacy of heart failure patients increased significantly: the average score increased from 23.4 → 48.8 (-significant p value), the majority moved to the high category.

DISCUSSION

The synthesis of various studies identified in the table demonstrates that peer-based interventions are an effective approach to enhancing self-efficacy in patients with various chronic conditions. The concept of self-efficacy, as defined by Bandura (1997), reflects an individual's belief in their ability to carry out the necessary actions to achieve desired outcomes. In the context of chronic illnesses, self-efficacy serves as a key predictor of patient engagement in self-management, adherence to therapy, and long-term psychosocial adaptation.Of the seven reviewed studies, all reported a significant increase in self-efficacy scores following peer-based interventions. Research by Varaei et al. (2016) showed that two educational sessions delivered by CABG survivor patients had a long-term impact on cardiac self-efficacy, lasting up to three years after the intervention. This long-term effect highlights how social identification through peer experiences not only enhances patients' cognitive and affective capabilities in coping with illness but also fosters sustained behavioral modelling.Methodologically, the studies employed strong theoretical frameworks. Research by Tazangi et al. (2022) and Bijani et al. (2022) integrated the Health Belief Model and Pender's Health Promotion Model, emphasizing perceived vulnerability and perceived benefits as key determinants of health behavior. The implementation of peer education within these theoretical models proved to be more focused, personalized, and effective in internalizing behavioral change motivation among participants. In populations with multiple

sclerosis and diabetes, improvements in self-efficacy were accompanied by reduced stress and enhanced quality of life.

The findings from Andreae et al. (2020) broadened the context of peer interventions by incorporating Cognitive Behavioral Therapy (CBT) guided by peer coaches. The effectiveness of this intervention was evident not only in physical activity self-efficacy and pain management but also in psychological dimensions such as mental functioning and quality of life. The combination of cognitive approaches and the relational strength of peer support demonstrated a strong synergy, particularly in populations with limited access to professional services, such as those in rural areas.Beyond the individual level, a study by Wan et al. (2024) highlighted the importance of integrating nurse-led peer interventions. This approach effectively improved self-efficacy in social participation and emotional support among post-stroke patients while also reducing stigma and psychological distress. These findings underscore that the effectiveness of peer support can be further enhanced with professional involvement to ensure program quality and sustainability.Overall, these findings affirm that peer-based interventions are not merely supplementary alternatives in chronic disease management but have strong theoretical, empirical, and social foundations to be integrated into both primary and rehabilitative healthcare services.

CONCLUSION

Based on the synthesis of various international journals, peer-based interventions have consistently proven effective in enhancing self-efficacy among patients with a range of chronic conditions, including diabetes mellitus, heart failure, stroke, hypertension, and multiple sclerosis. These interventions are implemented in diverse formats, ranging from group training and telephone-based peer coaching to nurse- or healthcare professional-facilitated peer support

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