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Association between Psychological Capital and Self-Management Ability in Women with Atrial Fibrillation after Radiofrequency Ablation: Based on Positive Psychology Theory

Yunmei Ding; Jiayun Gu; Hongxuan Xu; Yan Zhang; Lili Wei; Fan Li*; Yan Cui*

Department of Medical Consultation Center, Affiliated Hospital of Qingdao University, Qingdao, China.

***Corresponding Author: Yan Cui & Fan Li**

Department of Medical Consultation Center, Affiliated Hospital of Qingdao University, Qingdao, China.

Tel: +86-532-82913225;

Email: cuiyan0532@126.com & lifan911017@163.com

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Abstract...

Background: Patients with Atrial Fibrillation (AF) treated with Radiofrequency Ablation (RFCA) are still at risk of recurrence and hospitalization, which exacerbates patients' psychological distress, particularly in women patients. Good postoperative self-management can both promote early recovery from AF and reduce long-term recurrence, both of which are important for long-term health status and quality of life. Positive psychological capital improves patients' health behaviors, however, the effect of psychological capital on health behaviors has not been studied in women with AF.

Methods: This cross-sectional study was carried out in the selected hospital from July 2021 to January 2022. The General Information Questionnaire, the Psychological Capital Scale, and the Self-Management Competence Scale for Patients with Atrial Fibrillation were used.

Results: Psychological capital (r = 0.679, P < 0.01) and its dimensions: optimism (r = 0.273, P < 0.01), resilience (r= 0.541, P < 0.01), hope (r = 0.698, P < 0.01), and efficacy (r = 0.292, P < 0.01) were all positively correlated with the patients' level of self-management ability.

Conclusions: The postoperative psychological capital is poor among women AF patients, and their self-management ability is intermediate. Patients' postoperative psychological capital can predict their level of self-management ability. As a result, active psychological interventions should be provided to women following RFCA in order to improve their psychological capital and thus their ability to self-manage.

Keywords: Women; Atrial fibrillation; Radiofrequency ablation; Psychological capital; Self-management ability; Correlation.

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Introduction

Atrial fibrillation (AF) is the most common clinical arrhythmia, affecting nearly 10 million people in China, the country with the highest AF prevalence in the world [1]. AF has a high morbidity, mortality, disability, and readmission rate, which not only causes significant symptom burden but also impairs patients' psychological well-being [2,3]. According to studies, women with AF have worse symptoms, a lower quality of life, and a higher risk of stroke and death than men with AF [4]. Although Radiofrequency Ablation (RFCA) has shown promising results in reducing AF symptoms, there is still a risk of AF recurrence after surgery [5], and studies have shown that effective self-management can reduce disease burden and postoperative complications in patients with chronic disease [6]. Good self-management skills, and thus the ability to manage disease-related symptoms, physical and psychosocial changes, are required for effective self-management [7]. Furthermore, the recurrence of postoperative AF causes severe psychological distress (anxiety, depression, etc.), which leads to the recurrence of AF, creating a vicious circle [8]. Postoperative anxiety and depression are more severe in women patients [9] and have a negative impact on patients' self-management [10]. Positive psychology has been shown in studies to have a positive predictive effect on patients' self-management [11].

Positive psychology, pioneered at the end of the twentieth century by Martin Seligman [12], advocates focusing on people's positive psychological qualities to guide them toward happiness and health by tapping into their latent, inherent, and constructive inner strengths. Positive psychology has broken the previous paradigm in which negative psychology was the primary research focus, and it plays an important role in improving health behaviors to improve quality of life [13]. Positive psychology has been shown in numerous studies [14,15] to play an important role in improving disease prognosis and promoting mental health. In recent years, psychological capital, an important concept in positive psychology theory [16], has received increased attention in psychology and organizational behavior. It refers to the positive psychological states that people have as they grow and develop, which include the four components of efficacy (or confidence), hope, optimism, and resilience [17]. According to research, psychological capital can mobilize positive psychological resources to respond positively when people face challenges, promoting individual health-promoting abilities [18,19].

There have been no studies that look at the relationship between psychological capital and self-management ability in AF patients. Given the severity of the condition, it is necessary to investigate the impact of positive psychology on self-management in women with AF. The goal of this study was to investigate the current status of psychological capital and self-management ability in women patients with AF after RFCA, as well as to analyze the impact of patients' psychological capital on self-management ability, with the goal of analyzing female AF patients' self-management ability from a positive psychology perspective and providing a foundation for future studies on gender differences in AF patients.

Methods

Study population

Women patients with atrial fibrillation aged 28 to 90 years were recruited and had regular follow-ups after their first radiofrequency ablation procedure. Inclusion criteria:(i) age ≥18 years; (ii) meeting the diagnostic criteria of atrial fibrillation [20]; (iii) performing RFCA for the first time and completing the operation successfully; Exclusion criteria: (i) combined with serious complications; (ii) combined with other malignant tumors, serious organic lesions; (iii) suffering from psychiatric disorders, unable to communicate properly or fill out questionnaires. All participants provided informed consent and took part voluntarily.

Measures

General information questionnaire: The general information questionnaire including demographic data such as patients' age, education, marital status, personal monthly income and disease-related data such as AF duration and European Heart Rhythm Association (EHRA) symptom class [21].

Self-management competence scale for patients with atrial fibrillation: Wenxiu et al [22] created this scale, which has 22 items, including management of the five dimensions of compliance behavior, bad hobbies, emotions and socialization, anticoagulant medications, and disease prevention and monitoring. The Likert 5-point scale yielded scores ranging from "not done" to "always done", with total scores ranging from 22 to 110. The higher the score, the better the patient's self-management ability. The Cronbach's alpha coefficient of this scale was 0.811, and the Cronbach's alpha coefficient of this scale in this study was 0.913.

The positive psychological capital scale: Zhang et al [23] developed this scale, which has 26 items and four dimensions of efficacy, resilience, optimism, and hope. The scale scores from "not at all=1" to "fully=7" with a total score of 26 to 182, with a score of less than 111 indicating poor psychological capital, 111 to 133 indicating moderate psychological capital, and more than 133 indicating strong psychological capital. Cronbach's alpha coefficient was 0.910, indicating that the scale was reliable.

Statistical analysis

For normally distributed variables, ($x \pm s$) is used; for non-normal variables, M (P25, P75) is used; and for qualitative information, frequencies and percentages (%) are used. The t-test was used to compare groups, and Spearman correlation was used to analyze correlations, both with a two-sided test and a test level of α=0.05.

Results

The characteristics of study population

Among the 227 women with AF in this study, ages ranged from 28 to 90 (67.04 ± 9.78) years; 204 (91.07%) were married, 23 (10.13%) were unmarried/divorced/widowed; education level: 30 (13.22%) were primary, 64 (28.19%) were secondary, 101 (44.49%) were college, and 32 (14.10%) were university;

personal monthly income: <3000 *yuan* 60 cases (26.43%), 3000 *yuan*~6000 *yuan* 119 cases (52.42%), >6000 *yuan* 48 cases (21.15%); Other more detailed demographic characteristics and distribution are shown in Table 1.

Table 1: Demographic characteristics and distribution.

Variables	Cases *(n, %)*	Variables	Cases (n, %)
Age		Farmers	56 (24.67%)
18~	5 (2.20%)	Others	73 (32.16%)
45~	79 (34.80%)	Monthly income	
65~	119 (52.42%)	3000*yuan*	60 (26.43%)
80~90	24 (10.57%)	3000~6000*yuan*	119 (52.42%)
Education		6000*yuan*	48 (21.15%)
Primary	30 (13.22%)	Rest heart rate (bpm)	
Secondary	64 (28.19%)	60	37 (16.30%)
College	101 (44.49%)	60~90	137 (60.35%)
University	32 (14.10%)	90	53 (23.35%)
Living style		EHRA symptom class	
Alone	36 (15.86%)	I	27 (11.89%)
With others	191 (84.14%)	II	83 (36.56%)
Marriage status		III	76 (33.48%)
Married	204 (89.87%)	IV	41 (18.06%)
Unmarried/divorced/ widowed	23 (10.32%)	Duration	
Occasion types		<3months	77 (33.92%)
Workers	77 (33.92%)	3months~1 year	45 (19.82%)
Cadres	21 (9.25%)	>1year	105 (46.26%)

Self-management ability and psychological capital results

The normality of self-management ability and psychological capital variables was tested. Patients with atrial fibrillation had a total self-management behavior score of (75.37 ± 8.88), which included (23.50 ± 5.38) for compliance behavior management, (12.51 ± 1.65) for bad hobbies management, (16.44 ± 2.57) for emotions and socialization management, (10.28 ± 3.29) for anticoagulant medications management, and (12.65 ± 3.07) for disease prevention and monitoring management.

The total psychological capital score of patients with atrial fibrillation was (106.19 ± 20.13), with the resilience dimension (28.76 ± 8.04), the efficacy dimension (28.67 ± 10.05), the hope dimension (25.24 ± 6.60), and the optimism dimension (23.52 ± 6.54) contributing.

Correlations between self-management ability and psychological capital scores

In women patients with AF, self-management ability scores were significantly and positively correlated with psychological capital scores ($r = 0.680$, $P < 0.01$), where self-management ability was also positively correlated with each dimension of psychological capital, with statistically significant differences. Table 2 shows the results of an analysis of the relationship between self-management ability and psychological capital and its dimensions.

Table 2: $^{\alpha}$correlation between self-management ability with psychological capital.

Variables	Scores	*r*	*P-value*
Psychological capital	106.19 ± 20.13	0.68	<0.001
Resilience	28.76 ± 8.04	0.611	<0.001
Efficacy	28.67 ± 10.05	0.369	<0.001
Hope	25.24 ± 6.60	0.713	<0.001
Optimism	23.52 ± 6.54	0.289	<0.001

Note: $^{\alpha}$: Spearman correlation.

Discussion

Women with AF have poor psychological capital

The total psychological capital score of atrial fibrillation patients after RFCA in this study was (106.19 ± 20.13), which was less than 111 points. It is clear that women with AF following RFCA have low psychological capital and a pessimistic outlook, which must be addressed. The reason for this analysis could be that recurrence of postoperative AF interferes with patients' normal lives and social activities [24], resulting in negative emotions such as pessimism and depression as a result of disappointment with the treatment outcome [25]. Negative emotions have been shown in studies to be risk factors for the recurrence of atrial fibrillation and to be extremely detrimental to patients' postoperative recovery [26]. As a result, medical and nursing staff should pay attention to women patients' emotional changes following RFCA, relieve their negative emotions as soon as possible, encourage female patients to actively cope with atrial fibrillation, and maintain an optimistic attitude. At the same time, their family members should be encouraged to provide adequate support and companionship to the patients and to tolerate their negative postoperative emotions. As a result, patients' positive postoperative psychological capital can be increased, and patients' early recovery after surgery can be promoted.

Female patients with AF have an intermediate level of self-management after RFCA

Currently, studies of self-management ability in patients with atrial fibrillation are limited to patients who are taking medications [27], and no studies have reported on patients' comprehensive self-management ability. The total score of patients' self-management ability in this study was (75.337 ± 8.88), and the score rate (actual score mean/total score) was 67.8%, indicating that the self-management ability of women patients with AF after radiofrequency ablation is at an intermediate level, with much room for improvement. The scores for anticoagulant medications management and disease prevention and monitoring management dimensions were low among them, indicating that the patients' postoperative anticoagulant medications management was poor and that it was difficult to effectively prevent and monitor atrial fibrillation. The reason for this is that the majority of the subjects in this study are elderly people, who frequently have multiple diseases and take more types of medications, and the adverse effects of anticoagulants (bleeding, hematuria, black stool, etc.) make patients feel panic and anxiety, which harms their quality of life [28], and they have more concerns during the process of taking medications and easily stop taking them or reduce the dosage by themselves [29], so the level of anticoagulant medications management is poor in this group. Furthermore, atrial fibrillation is characterized by abrupt onset and cessation as well as unpredictability

[30], and patients are filled with uncertainty about atrial fibrillation and thus cannot effectively cope with the onset and remission of AF [31]. This implies that health care professionals should provide female patients with AF and their families with good knowledge and guidance about the disease, explain the possible adverse reactions and risk factors leading to bleeding after surgery, instruct them on the methods of postoperative heart rate self-measurement and the triggers to avoid AF recurrence, and strengthen patients' control of AF after surgery to improve their self-management ability.

Psychological capital is a key predictor of women patients' self-management

The total score of psychological capital and the scores of each dimension after RFCA in patients with AF were found to be positively correlated with the total score of self-management ability in women with AF in this study. Efficacy was positively correlated with patients' ability to self-manage among the four dimensions of psychological capital, which is consistent with previous findings [32] and suggests that female patients with higher levels of self-management confidence believe they can manage AF well and are thus more actively involved in disease self-management; on the other hand, patients with low self-management confidence are unable to actively cope with disease management after RFCA. Similar to Jenny et al.'s study [33], resilience was found to be positively correlated with patients' self-management ability in this study, indicating that patients who actively transformed and recovered from the same adversity of experiencing the trauma of RFCA and the painful experience of AF symptoms had greater self-management ability; conversely, AF patients who were unable to effectively self-recover after experiencing the trauma and painful experience had difficulty engaging in the study. Furthermore, hope was found to be positively related to patients' ability to self-manage, implying that the higher the level of patients' self-estimated goals prior to beginning postoperative self-management, the more conducive they are to generating the will to promote health and thus continuously improve self-management, which is consistent with previous research [34].

This study also found that optimism was positively correlated with self-management ability, most likely because the more positive AF patients' attitudes toward the disease and life after RFCA, the more likely they are to use positive coping methods to manage the disease, resulting in stronger self-management ability [35]. In conclusion, when caring for women with AF following RFCA, healthcare professionals should focus on positive psychological capital and help patients develop positive psychological qualities, which can be guided by positive psychology theory, and improve patients' self-efficacy or confidence, resilience, hope, and optimism through group psychological guidance [36], PERMA model intervention [37], and role model education [38], etc. To address patients' postoperative psychological issues while cultivating their positive and healthy psychological qualities, thereby promoting patients' self-management ability and early disease recovery.

Although this is the first study to look at the effect of postoperative psychological resilience on self-management ability in women AF patients, it has several limitations. First, because we used a cross-sectional study, we were unable to draw valid causal conclusions; second, this study included AF patients from only one hospital, resulting in a small sample size, and the results may not be generalizable to all AF patients in China. Finally, a self-report questionnaire was used to assess the postoperative self-management ability of AF patients in the absence of an objective evaluation index, and thus the influence of recall or social expectation bias may exist. This suggests that future studies on psychological resilience and self-management ability of female AF patients should include more objective evaluation indicators and boldly conduct multicenter longitudinal studies to determine the trajectory of changes in the influence of psychological resilience on AF patients' self-management ability.

Conclusion

The current study found that women AF patients have an intermediate level of self-management ability after radiofrequency ablation, and that their psychological capital can predict their level of self-management ability. As a result, the self-management ability of female patients should be assessed promptly after surgery, and targeted measures should be taken to improve the poor psychological capital of patients after surgery, particularly by cultivating positive qualities such as optimism, hope, self-confidence, and resilience to improve the positive psychological capital of patients and thus their self-management ability.

Declarations

Availability of data and materials: The data used in this analysis are relatively confidential and are available with the consent of the corresponding author and participants.

Competing interests: All of the authors of this article have disclosed potential conflicts of interest; none of the authors have declared any conflicts of interest.

Author's contributions: CY and LF had complete access to all of the data in the study and accept responsibility for the data's integrity and the accuracy of the data analysis. Concept and design research: CY, LF, DYM, GJY, ZY, WLL. Data acquisition, analysis, or interpretation: DYM, GJY, XHX, ZY, WLL, LF, and CY. DYM, GJY, XHX, ZY, and WLL wrote the manuscript. All authors contributed to the critical revision of the manuscript for important intellectual content. DYM, GJY, ZY statistical analysis CY and LF received funding. CY, LF provide administrative, technical, and material assistance.

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References

1. Du X, Guo L, Xia S, Du J, Anderson C, et al. Atrial fibrillation prevalence, awareness and management in a nationwide survey of adults in China. Heart (British Cardiac Society). 2021; 107: 535-541.

2. Bencivenga L, Komici K, Nocella P, Grieco FV, Spezzano A, et al. Atrial fibrillation in the elderly: a risk factor beyond stroke. Ageing Research Reviews. 2020; 61: 101092.

3. Demenko T, Chumakova G. Anxiety-depressive disorders and quality of life in patients with atrial fibrillation. European heart journal. 2020; 41: ehaa946. 0384.

4. Ko D, Rahman F, Martins MA, Hylek EM, Ellinor PT, et al. Atrial fibrillation in women: treatment. Nature reviews Cardiology. 2017; 14: 113-124.

5. Ukita K, Egami Y, Kawamura A, Nakamura H, Matsuhiro Y, et al. Clinical impact of very early recurrence of atrial fibrillation after radiofrequency catheter ablation. Journal of Cardiology. 2021; 78: 571-576.

6. Kang E, Kim S, Rhee YE, Lee J, Yun YH. Self-management strategies and comorbidities in chronic disease patients: associations with quality of life and depression. Psychology, health & medicine. 2021; 26: 1031-1043.

7. Musekamp G, Bengel J, Sch uler M, Faller H. Improved self-management skills predict improvements in quality of life and depression in patients with chronic disorders. Patient education and counseling. 2016; 99: 1355-1361.

8. Serpytis R, Navickaite A, Serpytiene E, Barysiene J, Marinskis G, et al. Impact of atrial fibrillation on cognitive function, psychological distress, quality of life, and impulsiveness. The American journal of medicine. 2018; 131: 703. e1-. e5.

9. Gleason KT, Dennison Himmelfarb CR, Ford DE, Lehmann H, Samuel L, et al. Association of sex, age and education level with patient reported outcomes in atrial fibrillation. BMC cardiovascular disorders. 2019; 19: 1-12.

10. Giorgi G, Perminienė M, Montani F, Fiz-Perez J, Mucci N, et al. Detrimental effects of workplace bullying: Impediment of self-management competence via psychological distress. Frontiers in psychology. 2016; 7: 60.

11. Görges F, Oehler C, von Hirschhausen E, Hegerl U, Rummel-Kluge C. GET. HAPPY-Acceptance of an internet-based self-management positive psychology intervention for adult primary care patients with mild and moderate depression or dysthymia: A pilot study. Internet interventions. 2018; 12: 26-35.

12. Seligman ME, Csikszentmihalyi M. Positive psychology: An introduction. Flow and the foundations of positive psychology: Springer; 2014; 279-298.

13. Ng W. Extending traditional psychological disciplines to positive psychology: A view from subjective well-being. Journal of Happiness Studies. 2017; 18: 1553-1571.

14. Müller R, Gertz KJ, Molton IR, Terrill AL, Bombardier CH, et al. Effects of a tailored positive psychology intervention on well-being and pain in individuals with chronic pain and a physical disability. The Clinical journal of pain. 2016; 32: 32-44.

15. Proyer RT, Gander F, Wellenzohn S, Ruch W. Positive psychology interventions in people aged 50–79 years: Long-term effects of placebo-controlled online interventions on well-being and depression. Aging & mental health. 2014; 18: 997-1005.

16. Luthans F, Luthans KW, Luthans BC. Positive psychological capital: Beyond human and social capital. 2004.

17. Cui CY, Wang Y, Zhang Y, Chen S, Jiang N, et al. The development and validation of the psychological capital questionnaire for patients with Cancer the psychological capital questionnaire. BMC cancer. 2021; 21: 1-8.

18. Bao Y, Li L, Guan Y, Wang W, Liu Y, Wang P, et al. Prevalence and associated positive psychological variables of anxiety and depression among patients with central nervous system tumors in China: a cross-sectional study. Psycho-Oncology. 2017; 26: 262-269.

19. MacDonald C, Theurer JA, Fung K, Yoo J, Doyle PC. Resilience: an essential element in head and neck cancer survivorship and quality of life. Supportive Care in Cancer. 2021; 29: 3725-3733.

20. Hindricks G, Potpara T, Dagres N, Arbelo E, Bax JJ, et al. 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS): The Task Force for the diagnosis and management of atrial fibrillation of the European Society of Cardiology (ESC) Developed with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC. European heart journal. 2021; 42: 373-498.

21. Ferre-Vallverdu M, Ligero C, Vidal-Perez R, Martinez-Rubio A, Vinolas X, et al. Improvement in Atrial Fibrillation-Related Symptoms After Cardioversion: Role of NYHA Functional Class and Maintenance of Sinus Rhythm. Clinical Interventions in Aging. 2021; 16: 739.

22. Xiu W. Development, reliability and validity of the Selfmanagement Ability Scale for Atrial Fibrillation patients [Master]: Nanjing University; 2020.

23. Kuo Z, Sai Z, Yinghong D. POSITIVE PSYCHOLOGICAL CAPITAL: MEASUREMENT AND RELATIONSHIP WITH MENTAL HEALTH. Studies of Psychology and Behavior. 2010; 58-64.

24. Azizi Z, Verma A, Alipour P, Khaykin Y, Leong-Sit P, et al. Quality of life post AF ablation and relationship to outcome and AF burden. Journal of the American College of Cardiology. 2018; 71: A379-A.

25. McCabe PJ, Barnason SA, Houfek J. Illness beliefs in patients with recurrent symptomatic atrial fibrillation. Pacing and Clinical Electrophysiology. 2011; 34: 810-820.

26. Lampert R, Jamner L, Burg M, Dziura J, Brandt C, Liu H, et al. Triggering of symptomatic atrial fibrillation by negative emotion. Journal of the American College of Cardiology. 2014; 64: 1533-1534.

27. Gallagher C, Rowett D, Nyfort-Hansen K, Simmons S, Brooks AG, et al. Patient-centered educational resources for atrial fibrillation. JACC: Clinical Electrophysiology. 2019; 5: 1101-1114.

28. Aljeaidi MS, Haaksma ML, Tan EC. Polypharmacy and trajectories of health-related quality of life in older adults: an Australian cohort study. Quality of Life Research. 2022; 1-9.

29. Zhang N, Patel J, Chen Z, Zhou Y, Crawford S, McManus DD, et al. Geriatric Conditions Are Associated With Decreased Anticoagulation Use in Long-Term Care Residents With Atrial Fibrillation. Journal of the American Heart Association. 2021; 10: e021293.

30. Borgeat K, Pack M, Harris J, Laver A, Seo J, Belachsen O, et al. Prevalence of sudden cardiac death in dogs with atrial fibrillation. Journal of Veterinary Internal Medicine. 2021; 35: 2588-2595.

31. McCabe PJ, Barnason SA. Illness perceptions, coping strategies, and symptoms contribute to psychological distress in patients with recurrent symptomatic atrial fibrillation. Journal of Cardiovascular Nursing. 2012; 27: 431-444.

32. Lim KE, Kim SR, Sung YH, Oh S-Y, Kim MS, Chung SJ. Factors influencing self-management in Parkinson's disease: a cross-sectional study. Geriatric Nursing. 2020; 41: 254-260.

33. Jia J, Jenkins AJ, Quintiliani LM, Truong V, Lasser KE. Resilience and diabetes self-management among African-American men receiving primary care at an urban safety-net hospital: A cross-sectional survey. Ethnicity & Health. 2022; 27: 1178-1187.

34. Zhang D, Zhang N, Chang H, Shi Y, Tao Z, et al. Mediating Role of Hope Between Social Support and Self-Management Among Chinese Liver Transplant Recipients: A Multi-Center Cross-Sectional Study. Clinical nursing research. 2022:10547738221078897.

35. Peng X, Guo X, Li H, Wang D, Liu C, Du Y. A Qualitative Exploration of Self-Management Behaviors and Influencing Factors in Patients With Type 2 Diabetes. Frontiers in endocrinology. 2022:175.

36. Zhang Z, Li Y, Sun S, Tang Z. Intervention Effect of Group Counseling Based on Positive Psychology on Psychological Crisis of College Student. Computational Intelligence and Neuroscience. 2022; 2022.

37. Luo L, Li Y, Zhou Z, Yang S, Qin Y, et al. Study on the Effect of Positive Psychological Intervention Based on PERMA Model on Perioperative Patients with AIDS Complicated with Breast Cancer. Computational and Mathematical Methods in Medicine. 2022; 2022.

38. Jack K, Hamshire C, Chambers A. The influence of role models in undergraduate nurse education. Journal of clinical nursing. 2017; 26: 4707-4715.