

Original Article



Evaluating the Relationship between Nursing Care Quality and Hospital Anxiety and Depression among Old Patients with Cardiovascular Disease

Farideh Bastani¹ , Pouya Farokhnezhad Afshar^{2*} , Oldouz Valipour¹ ¹Department of Geriatric Nursing and Community Health Nursing, School of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran²Department of Gerontology, School of Behavioral Sciences and Mental Health, Tehran Institute of Psychiatry, Iran University of Medical Sciences, Tehran, Iran**Article Info****Article History:**

Received: 29 Jul. 2021

Accepted: 7 Nov. 2021

e-Published: 18 Apr. 2022

Keywords:

Aged, Quality of health care, Anxiety, Depression

***Corresponding Author:**Pouya Farokhnezhad Afshar
Email: farokhnezhad.p@iums.ac.ir**Abstract****Introduction:** Cardiovascular disease (CVD) is a prevalent condition among older adults' hospitalizations leading to psychological complications. Nursing care is the longest intervention the patient receives. This study evaluated the relationship between nursing care quality and anxiety and depression among old patients with CVD.**Methods:** This is a descriptive cross-sectional correlational study that included 250 old patients with CVD admitted to an 'age-friendly hospital'. Using the convenience sampling method. The data collection tools included the Hospital Anxiety and Depression Scale (HADS) and the Quality Patient Care Scale (QUALPACS). Data were collected through conducting interviews and analyzed in SPSS ver.13 via statistical tests such as correlation coefficients, independent t-test, and ANOVA.**Results:** Overall, 229 (91.6%) of patients received the desired nursing care quality. The mean (SD) scores for anxiety were 1.52 (1.14) and depression 2.18 (1.51), indicating a less than average hospital anxiety and depression. There was an inverse correlation between anxiety and nursing care quality.**Conclusion:** A combination of high-quality nursing care and clinical governance criteria in an age-friendly hospital can reduce anxiety in old patients.**Introduction**

The aged population is one of the global phenomena in recent years.¹ It is estimated that by 2050 the elderly population will double to about two billion.² One of the most prevalent physical conditions in old age with high mortality and morbidity is cardiovascular disease (CVD), which is a reason for old patient's hospitalization. Old patients with CVD require visiting the hospital frequently, seeking medical care, and hospitalization, regularly. The prevalence of CVD is about 20-25% of the total population; however, more than half of the cases are related to elderly people.³ Like many health systems in the world, the Iran Ministry of Health and medical education is focused on decreasing the hospitalization, and increasing the physical and psychological health of patients with CVD⁴ which are some issues.

Clinical governance is a "framework for constantly improving the quality of services and care".⁵ Seven classical pillars of clinical governance include 'communication', 'patient experience and involvement', 'clinical effectiveness', 'strategic effectiveness', 'resource effectiveness', 'risk management', and 'learning effectiveness'.⁶ The goal of

clinical governance is to maximize the quality of care services.⁷ Nurses spend most of their time with patients and meet their needs. Nurses play key roles in improving quality care.⁸ The nursing care quality is the practice and performance of nurses according to care standards.⁹ In fact, nursing plays a key role in improving the quality and safety of care.¹⁰ Nursing care affects the quality of care and thus reduces psychological problems.¹¹

Low-quality care in addition to negative outcomes for old patients can have a burden on staff and facilities.¹² Nursing care quality includes skills, effective communication, and efficient administration systems.¹³ Nursing care quality is achieving the best outcomes and health processes.¹⁴ Maintaining a balance between the benefits and risks of care is the quality care core.¹⁵ Nursing care includes not only clinical implications but also mental health. Therefore, evaluating the mental health of patients, especially old patients is very important in healthcare services.^{16,17}

The mental health of patients with CVD is threatened in hospitals and complications such as anxiety and depression occur as consequences of hospitalization.¹⁸ In fact, anxiety

and depression are both common complications of heart disease and are caused or exacerbated by the medical environment.¹⁹ Hospitalization leads to stress and anxiety, which results in complications.²⁰ Anxiety and depression increase heart rate, blood pressure, hemodynamic instability, cortisol, and repair defects.^{21,22}

Health care systems should strive to improve the quality of care given the growing elderly population and the increase in CVD.²³ The main features of age-friendly hospitals include accessibility, appropriate health and medical services for older adults, trained personnel, and an age-friendly environment and geriatric wards.²⁴ Since age-friendly hospitals have recently started providing services in Iran, it is necessary to assess nursing care quality in these hospitals. Hospital Anxiety and depression are one of the criteria for assessing the quality of nursing care in the hospital. Therefore, this study evaluated the association between nursing care quality and anxiety and depression among old patients with CVD.

Methods and Materials

This is a descriptive cross-sectional correlational study was done in Coronary Care Units of Firoozabadi hospital in Tehran, Iran, which is an age-friendly hospital. Clinical governance is established in this hospital. The necessary permits were obtained from the relevant authorities and the Research Ethics Committee of Iran University of Medical Sciences approved the study protocol (IR.IUMS.REC.1397.1047). We obtained written consent from all participants. Moreover, the participants were free to leave the study at any stage, and they were assured that their information would remain confidential.

For data collection, the researcher visited the units at a suitable time and date announced by the nursing authorities. The participants answered the questionnaires at the time of discharge, which usually took twenty minutes. The purpose of the study was explained to the participants. The sample size was calculated with $\alpha = 0.05$, $\beta = 0.2$, and correlation coefficient = 0.03 for hospital anxiety and depression in the old patients with CVD. The sampling method was the convenience method. Two hundred and fifty old patients with CVD were included from various cardiac units (post coronary care unit, coronary care unit1, and coronary care unit2).

Data were collected through interviews with each participant. Participants were assured that their information would remain confidential and that they had the right to leave the study at any stage. Inclusion criteria were age over 60, no history of heart surgery, and no history of depression.

Data collection tools included a demographic questionnaire (age, gender, marital status, occupation, and education); the Quality Patient Care Scale (QUALPACS); the Hospital Anxiety and Depression Scale (HADS). Ten experts confirmed the content validity and face validity of the tools.

The QUALPACS, developed by Wandelt and Ager in 1974,²⁵ includes 65 items in three dimensions (physical: 24 items, psychosocial: 28 items, and communication: 13 items). The Likert scale is ranked zero to two with answers (rarely: zero, sometimes: 1, most often: 2). Scores ranged from zero to 130 and are categorized into three levels (unfavorable: 0-43, desirable: 44-87, and very desirable: 88-130). Cronbach's α was 0.91 in this study.

The HADS, designed by Zigmond and Snaith in 1983,²⁶ is a self-report tool to determine the anxiety and depression symptoms in patients. This tool is valid for assessing anxiety (seven items) and depression (seven items) and is run within approximately 10 minutes. The Likert scale is ranked zero to three. The minimum score is zero and the maximum is 42. The range of zero-seven is considered normal, eight-ten mild, and 11 to 21 severe. Persian version of this scale had Cronbach's α of 0.83. The HADS was validated by Montazeri et al.²⁷ Another study reported Cronbach's $\alpha = 0.85$ and 0.70 for anxiety and depression, respectively.²⁸

The data were analyzed by SPSS software ver.13. Descriptive data were described as frequency, mean, and standard deviation. Data were analyzed using independent *t* test, ANOVA, and Pearson correlation coefficients ($\alpha \leq 0.05$).

Results

The age mean (SD) of the participants was 73.21 (12.30). One hundred thirty (52%) participants were male and 120 (48%) were female. The marital status of the participants was as follows single 16 (6.4%), married 137 (54.8%), widow/widower 78 (31.2%), divorced 19 (7.6%). Twenty-seven (10.8%) participants were employed, 11 (4.4%) were unemployed, 128 (51.2%) were retired, and 84 (33.6%) were housekeepers. The education status was as follows illiterate 84 (33.6%), primary education 68 (27.2%), secondary education 51 (20.4%), high school 35 (14%), and university education 12 (4.8%). The duration of hospitalization was as follows: < 3 days (28.2%), 3 to 7 days (58.4%), and > 7 days (13.4%). One hundred ninety-seven (77.2%) participants had health insurance and 53 (20.8%) did not.

The mean (SD) and standard deviation of nursing care quality was 84.08(17.16) [(physical: 28.81 (10.09), psychosocial: 37.33 (7.21) and communication: 17.95 (3.32)]. Satisfaction with the nursing care quality was as follows 38% desirable, 53.6% very desirable, and 8.4% unfavorable. There was no difference between the scores of nursing care quality in demographic variables (Table 1).

The mean (SD) of anxiety was 1.52 (1.14) and depression was 2.18 (1.51). There was a significant difference in anxiety and depression scores in old women and old men (Table 2).

The results of Pearson's correlation coefficient showed that there is a significant negative correlation between hospital anxiety with psychosocial, physical, and

Table 1. Differences in nursing care quality in demographical variables

Variable	Mean (SD)	P value ^a
Age		0.42
60-74	86.34 (14.38)	
75-90	82.09 (20.10)	
>90	87.60 (15.71)	
Gender		0.91 ^b
Male	83.96(18.14)	
Female	84.21 (17.14)	
Marital status		0.44
Single	88.50 (17.13)	
Married	82.70(18.30)	
Widow/widower	85.85 (16.74)	
Divorced	83.05 (16.67)	
Employment status		0.54
Employed	80.25 (20.71)	
Unemployed	88.72 (17.45)	
Retired	84.57 (17.55)	
Housekeeper	83.96 (16.80)	
Health insurance		0.82 ^b
Yes	84.21 (17.59)	
No	83.58 (17.92)	
Education		0.44
Illiterate	84.94 (18.11)	
Primary education	84.07 (16.56)	
Secondary education	86.50 (15.29)	
High school	79.85 (20.04)	
College degree	80.10 (20.92)	

^aANOVA, ^bt test.

communication (Table 3).

Discussion

This study found that most patients reported the desired quality of nursing care quality. All patients had low levels of hospital anxiety and depression. The finding indicated that there was a reverse relationship between hospital anxiety and nursing care quality.

The findings of this study were consistent with other studies evaluating the nursing care quality in hospitals.^{18,29,30} However, our findings did not agree with the results of some studies,^{19,20} that showed the rising anxiety and depression in the old patients hospitalized in Coronary Care Unit. These differences might be due to the units in which they measured old patients' anxiety and depression in hospitals with no clinical governance. There are opportunities for improving the safety and quality of clinical practices through clinical governance within hospitals.³¹ Clinical governance is one of the most important policy developments in health systems. Clinical governance is related to the performance of all health care professionals to provide high-quality and cost-effective

services.³²

Hospital anxiety and depression can have a negative effect on health outcomes (e.g. hemodynamic instability) and length of stay in patients during hospitalization. The level of anxiety in patients with CVD is relatively high, so it is important to evaluate the mental health of the old patients with CVD due to its consequences.²⁸ Therefore, it is necessary to take action to reduce anxiety and depression in hospitals.

The results of this study also found that anxiety and depression were higher in old women patients than in old men ones. Mental disorders are a risk factor for CVD,³³ which has also been confirmed in the studies by

Table 2. Differences in anxiety and depression in demographic variables

Variable	Anxiety		Depression	
	Mean (SD)	P value ^a	Mean (SD)	P value ^a
Age		0.99		0.29
60-74	1.5 (1.22)		2.05 (1.8)	
75-90	1.52 (1.13)		2.50 (1.53)	
>90	1.57 (0.93)		2.18 (1.3)	
Gender		0.02 ^{b*}		0.02 ^{b*}
Male	1.36 (0.96)		1.98 (1.43)	
Female	1.69 (1.28)		2.40 (1.56)	
Marital status		0.09		0.44
Single	1.36 (0.96)		2.44 (2.43)	
Married	1.50 (0.37)		2.18 (1.47)	
Widow/widower	1.20 (0.10)		2.25 (1.39)	
Divorced	0.96 (0.11)		1.68 (1.24)	
Employment status		0.55		0.56
Employed	1.05 (0.2)		1.92 (1.35)	
Unemployed	0.93 (0.28)		2.18 (1.53)	
Retired	1.15 (0.1)		2.13 (1.49)	
Housekeeper	1.17 (0.12)		2.35 (1.59)	
Health insurance		0.16 ^b		0.61 ^b
Yes	1.46 (1.12)		2.16 (1.47)	
No	1.71 (1.18)		2.28 (1.64)	
Education		0.84		0.44
Illiterate	1.51 (1.1)		2.27 (1.37)	
Primary education	1.58 (1.24)		2.20 (1.56)	
Secondary education	1.50 (1.06)		2.11 (1.63)	
High school	1.54 (1.22)		2.31 (1.69)	
College degree	1.16 (0.93)		1.41 (0.90)	

^aANOVA, ^bt test; *statistically significant.**Table 3.** Correlation between the quality patient care dimensions and the hospital anxiety and depression

Variable	Physical	Psychosocial	Communication
Hospital anxiety	r = -0.32 P < 0.001*	r = -0.27 P < 0.001*	r = -0.2 P = 0.002*
Hospital depression	r = 0.11 P = 0.07	r = 0.07 P = 0.25	r = -0.04 P = 0.56

*Statistically significant.

Polikandrioti et al,¹⁸ Khan et al¹⁹ and Orujlu & Hemmati-Maslakpak.³⁰ Patients' anxiety and depression levels were low in this study and this may be due to clinical governance and age-friendly environment in hospitals.^{20,21}

Future studies should focus on qualitative approaches in the field of new health policies and the impact of that on the care quality and mental health of old patients.³⁴ The health professionals seriously consider clinical governance because it is necessary to move from routine actions to innovative approaches.³⁵ Azimbeik et al demonstrated that the workability of nurses was at an appropriate level in hospitals in Iran which could result in patients' experiences and satisfaction.³⁶

There are some limitations in the present study. First, this study evaluated only old patients with CVD in a medical center. It is recommended that a study be conducted on a larger sample size in several hospitals to increase the generalizability of the findings. Second, it is better to study in a continuous process to assess the relationship between anxiety and depression and the quality of care.^{37,38}

Conclusion

This study aimed to evaluate the relationship between nursing care quality and anxiety and depression among old patients with CVD. The results of this study confirm care quality effects on anxiety and depression. By facilitating the admission and hospitalization processes of the elderly patients in age-friendly hospitals, it is possible to reduce stress, anxiety, and depression among old patients. The scores of care quality in the hospital with clinical dominance were high, and the scores for anxiety and depression were low.

Policymakers and hospital managers can use these findings as a guide to improve nursing care quality and clinical governance alongside the age-friendly hospital.

Acknowledgments

The researchers thank all the elderly people and colleagues for their sincere collaboration and help.

Authors' Contributions

PFA, FB: Study design, data analysis, and interpretation, OV: Data collection and interpretation of data and drafting of the manuscript. All authors have read and approved the manuscript.

Conflict of Interests

The authors declare that they have no conflict of interest.

Data Accessibility

The datasets are available from the corresponding author on reasonable request.

Ethical Issues

This study was approved by the Ethics Committee of Iran University of Medical Sciences (Ref. code: IR.IUMS.REC.1397.1047). We obtained written informed consent from all participants.

Funding

Not applicable.

Research Highlights

What is the current knowledge?

- The prevalence of CVD is about 20-25% of the total population; however, more than half of the cases are related to elderly people.
- The goal of clinical governance is to maximize the quality of care services.
- The quality of nursing care means achieving the most desirable care and health processes.
- Anxiety can be affected in a short time and it can be assumed that depression can be reduced during long hospital stays.

What is new here?

- Most patients (91.6%) reported the desired quality of nursing care in this study.
- There was significant negative correlation between the patients' anxiety and quality nursing care.

References

1. Daliri N, Zakeri-Moghadam M. Aging and heart disease. *Iranian Journal of Cardiovascular Nursing*. 2016; 5(1): 64-7. [Persian]
2. World Health Organization (WHO). Ageing and Health [Fact Sheet]. Geneva: WHO; 2018. Available from: <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>.
3. Fakhrazadeh H, Sharifi F. Cardiovascular diseases in the elderly. *J Gorgan Univ Med Sci*. 2012; 14(3): 1-9. [Persian]
4. Curtin LL. Hot issues in health care: safety, quality, and professional discipline. *Semin Nurse Manag*. 2000; 8(4): 239-42.
5. Gray C. What is clinical governance? *BMJ*. 2005; 330(7506): S254. doi: 10.1136/bmj.330.7506.s254-b
6. Chandraran E, Arulkumar S. Clinical governance. *Obstet Gynaecol Reprod Med*. 2007; 17(7): 222-4. doi: 10.1016/j.ogrm.2007.05.003
7. Davoodi R, Soltanifar A, Rahmani S, Sabouri G, Asadi M, Zare Hoseini M, et al. Clinical governance: efficacy of establishment in Mashhad hospital. *Journal of Patient Safety & Quality Improvement*. 2014; 2(1): 48-52. doi: 10.22038/psj.2014.2094
8. Hall LW, Moore SM, Barnsteiner JH. Quality and nursing: moving from a concept to a core competency. *Urol Nurs*. 2008; 28(6): 417-25.
9. Topp SM, Sheikh K. Are we asking all the right questions about quality of care in low- and middle-income countries? *Int J Health Policy Manag*. 2018; 7(10): 971-2. doi: 10.15171/ijhpm.2018.48
10. Aiken LH, Sermeus W, Van den Heede K, Sloane DM, Busse R, McKee M, et al. Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *BMJ*. 2012; 344: e1717. doi: 10.1136/bmj.e1717
11. Edvardsson D, Watt E, Pearce F. Patient experiences of caring and person-centredness are associated with perceived nursing care quality. *J Adv Nurs*. 2017; 73(1): 217-27. doi: 10.1111/jan.13105
12. Goudge J, Gilson L, Russell S, Gumede T, Mills A. Affordability, availability and acceptability barriers to health care for the chronically ill: longitudinal case studies from South Africa. *BMC Health Serv Res*. 2009; 9: 75. doi: 10.1186/1472-6963-

9-75

13. Loan LA, Jennings BM, Brosch LR, DePaul D, Hildreth P. Indicators of nursing care quality. Findings from a pilot study. *Outcomes Manag.* 2003; 7(2): 51-8.
14. khaki s, Esmailpourzanjani S, Mashouf S. Nursing cares quality in nurses. *Scientific Journal of Nursing, Midwifery and Paramedical Faculty.* 2018; 3(4): 1-14. doi: 10.29252/sjnp.3.4.1
15. McSherry W, MSherry R, Watson R. *Care in nursing: principles, values and skills.* 1st ed. New York: Oxford University Press; 2012. p. 298.
16. Banaei A, Hashemi B, Bakhshandeh M, Mofid B. Evaluation of various common prostate IMRT techniques based on estimated tumor control and normal tissue complication probabilities in correlation with patients anatomical parameters derived from the CT scans. *Pol J Med Phys Eng.* 2019; 25(1): 35-41. doi: 10.2478/pjmpe-2019-0006
17. Karaca A, Durna Z. Patient satisfaction with the quality of nursing care. *Nurs Open.* 2019; 6(2): 535-45. doi: 10.1002/nop.2.237
18. Polikandrioti M, Koutelekos I, Vasilopoulos G, Gerogianni G, Gourni M, Zyga S, et al. Anxiety and depression in patients with permanent atrial fibrillation: prevalence and associated factors. *Cardiol Res Pract.* 2018; 2018: 7408129. doi: 10.1155/2018/7408129
19. Khan SA, Azhar S, Asad SM, Iqbal A, Kousar R, Ahmad M, et al. Assessment of anxiety and depression in hospitalized cardiac patients of Faisalabad Institute of Cardiology, Pakistan. *Trop J Pharm Res.* 2016; 15(11): 2483-8. doi: 10.4314/tjpr.v15i11.25
20. Ebadi A, Moradian ST, Feyzi F, Asiabi M. Comparison of hospital anxiety and depression among patients with coronary artery disease based on proposed treatment. *Iran J Crit Care Nurs.* 2011; 4(2): 97-102. [Persian]
21. Farokhnezhad Afshar P, Bastani F, Haghani H, Valipour O. Hospital anxiety and depression in the elderly with chronic heart failure. *Iran Journal of Nursing.* 2019; 32(120): 87-97. doi: 10.29252/ijn.32.120.87
22. Alavi M, Farokhnezhad-Afshar P, Daneshvar-Dehnavi S. The effect of Lavender essence on stress in intensive care unit (ICU) nurses. *Iranian Journal of Cardiovascular Nursing.* 2015; 4(1): 6-12. [Persian]
23. World Health Organization (WHO). *World Health Statistics 2016: Monitoring Health for the SDGs Sustainable Development Goals.* WHO; 2016.
24. Ahmadi A, Seyedin H, Fadaye-Vatan R. Towards age-friendly hospitals in developing countries: a case study in Iran. *Health Promot Perspect.* 2015; 5(1): 42-51. doi: 10.15171/hpp.2015.006
25. Charalambous A, Adamakidou T. Construction and validation of the quality of oncology nursing care scale (QONCS). *BMC Nurs.* 2014; 13(1): 48. doi: 10.1186/s12912-014-0048-4
26. Zigmund AS, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatr Scand.* 1983; 67(6): 361-70. doi: 10.1111/j.1600-0447.1983.tb09716.x
27. Montazeri A, Vahdaninia M, Ebrahimi M, Jarvandi S. The Hospital Anxiety and Depression Scale (HADS): translation and validation study of the Iranian version. *Health Qual Life Outcomes.* 2003; 1: 14. doi: 10.1186/1477-7525-1-14
28. Kaviani H, Seyfourian H, Sharifi V, Ebrahimkhani N. Reliability and validity of anxiety and depression hospital scales (HADS): Iranian patients with anxiety and depression disorders. *Tehran Univ Med Sci.* 2009; 67(5): 379-85. [Persian]
29. Kazitani BS, Furuya RK, Dantas RA, Dessotte CA. Preoperative anxiety and depression: differences among patients submitted to the first cardiac surgery. *Rev Rene.* 2018; 19: e3079. doi: 10.15253/2175-6783.2018193079
30. Orujlu S, Hemmati-Maslakpak M. Effect of nursing interventions on anxiety and vital signs in patients undergoing endoscopy: a randomized clinical trial study. *J Clin Nurs Midwifery.* 2014; 3(3): 36-43. [Persian]
31. Maddock A, Kralik D, Smith J. Clinical governance improvement initiatives in community nursing. *Clin Gov.* 2006; 11(3): 198-212. doi: 10.1108/14777270610683137
32. Carbon C. Continuing professional development and clinical governance: the role of scientific societies. *Clin Microbiol Infect.* 2005; 11 Suppl 1: 24-7. doi: 10.1111/j.1469-0691.2005.01086.x
33. Yohannes AM, Willgoss TG, Baldwin RC, Connolly MJ. Depression and anxiety in chronic heart failure and chronic obstructive pulmonary disease: prevalence, relevance, clinical implications and management principles. *Int J Geriatr Psychiatry.* 2010; 25(12): 1209-21. doi: 10.1002/gps.2463
34. Abolhasani F, Bastani F. Successful ageing in the dimensions of life satisfaction and perception of ageing in the Iranian elderly adults referring to the health center in the west of Tehran, Iran. *Iran Journal of Nursing.* 2019; 31(116): 61-74. doi: 10.29252/ijn.31.116.61
35. Avia I, Hariyati RT. Impact of hospital accreditation on quality of care: a literature review. *Enferm Clin.* 2019; 29 Suppl 2: 315-20. doi: 10.1016/j.enfcli.2019.06.003
36. Azimbeik Z, Jafarjalal E, Bastani F, Hoseiny AF. A survey of the workability level of nurses in the selected educational-medical centers of Tehran University of Medical Sciences. *Iran J Nurs Res.* 2017; 12(5): 9-13. doi: 10.21859/ijnr-12052
37. Leti Acciaro A, Montanari S, Venturelli M, Starnoni M, Adani R. Retrospective study in clinical governance and financing system impacts of the COVID-19 pandemic in the hand surgery and microsurgery HUB center. *Musculoskelet Surg.* 2021; 1-6. doi: 10.1007/s12306-021-00700-3
38. Mistry B. Clinical governance: a simple guide. *BDJ Student.* 2021; 28(2): 11. doi: 10.1038/s41406-021-0208-4