# Does Nursing Care Quality integrated with Clinical Governance relate to Hospital Anxiety and Depression among Elderly Patients with Coronary Heart Diseases?

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# Abstract

Background : A coronary heart disease (CHD) is one of the causes of frequent elderly hospitalizations that are associated with psychological complications such as "hospital anxiety and depression". Furthermore, there needs to be a paradigm shift beyond routine programs toward innovative approaches such as clinical governance (CG) to improve the quality of care. This study aimed to investigate the association between Nursing Care Quality integrated with CG to Hospital Anxiety and Depression among Elderly Patients.

Methods : In this descriptive correlational study, 250 elderly patients with CHD admitted to a large teaching hospital in Tehran, Iran as "Aging Friendly Hospital" selected by consecutive sampling method. The data collection instruments included the Quality Patient Care Scale (QUALPAC) and The Hospital Anxiety and Depression Scale (HADS). Data were collected by face to face interviews. Data were analyzed using descriptive and inferential statistics such as independent t-test, ANOVA and correlation coefficients in SPSS v.16 software .

Results : Overall, 91.6 % of the subjects perceived the quality of nursing care integrated with CG desirable. The mean score of HADS in the subscales of anxiety and depression were ($1.52 \pm 1.14$ and $2.18 \pm 1.51$) respectively which indicates hospital anxiety and depression were less than the average level. There was a negative significant correlation between the subjects' hospital anxiety and quality nursing care ($P < 0.01$).

Conclusion : The findings showed there is an association between perceived quality of nursing care and hospital anxiety among elderly patients. It is recommended that Managers of healthcare services should take into account CG seriously to paradigm shift beyond routinely care program toward innovative approaches of health policy.

# 1. Background

Aging is one of the phenomena of recent years in the field of global health and is an irreversible period that has its own biological, psychosocial and economic issues [1]. At present, the number of elderly people worldwide is estimated at around 600 million, which is expected to double by 2025 to reach a record of two billion by 2050 [2]. One of the most common physical problems that cause mortality and morbidities in old age is chronic heart diseases (CHD) which is a significant reason for elderly people's hospitalization and seeking medical care. Patients diagnosed with CHD require hospitalization, the visit hospital frequently and seeking medical care regularly. Healthcare services are virtually free for all Iranian patients diagnosed with CHD through the Ministry of Health. Iranian health care system as many health systems in the world focus on reducing the length of hospitalization, cost-effectiveness procedures, and overall physical and psychosocial wellbeing of patients being diagnosed with various types of diseases including CHD [3], which are challenging. These rising challenges influence the quality of nursing care, patients' health outcomes as hospital anxiety and depression.

Nurses are those who spend the most time with patients and to meet their needs and help them achieve the greatest possible degree of psychological well-being, they can establish a fruitful association with quality care [4]. Nurses play critical roles in acting as a patient advocate, regulating and improving quality care [5]. The quality of nursing care defined as practices and performances of nurses according to hospitals' care standards and job description requirements [6]. Indeed, nursing is important for quality and safety in-hospital care [7]. Nursing performance affects patients' outcomes and consequently the perceived quality of the care [8]. Considering the poor quality of care especially in geriatric settings may overburden staff and facilities [9], nursing quality care encompasses adequate skills, correct staff numbers, effective communication, and efficient administration systems [10].

The core of quality nursing care is the balance between benefits and health risks, as a continuous process of continuing safe, holistic, and patient-centered care [11]. Nursing care is concerned not only with the clinical outcomes but also with psychological issues. Therefore, in health care services, assessing the mental health of patients, particularly in elderly patients admitted to hospitals (particularly in Aging Friendly Hospitals) is considered important [11–13]. Hospitals are expected to participate in a range of quality improvement activities that influence patients' health outcomes and satisfaction. The patients with CHD develop complications that exacerbate patients' psychological wellbeing such as hospital anxiety and depression as one of the adverse consequences of hospitalization [14]. Indeed, anxiety and depression are some of the most common complications of heart disease, especially in elderly patients admitted to cardiac care, which is a life-threatening factor [15]. Because the hospital environment is a source of stress, it can increase the incidence of psychological reactions that may lead to unrest and can be manifested as a negative consequence during hospitalization [16].

This study aimed to investigate the perceived quality of nursing care and hospital anxiety and depression in the elderly patients with CHD at Firoozabadi teaching hospital as an "Aging Friendly Hospital" and the association between the two variables. To tackle rapid changes in healthcare, and the growing needs of an aging population, healthcare systems need to find new ways to improve the quality of the care provided [17]. The impact of this innovative approach is, therefore, only realizable if elderly patients' hospital anxiety and depression improve [9]. Thus, this study aimed to determine hospital anxiety and depression in elderly patients with CHD at Firoozabadi Medical Center and understand the implications of the recent CG and validation of the teaching hospital management in terms of "Elderly Friendly Hospital" and effective health policy.

## 2. Methods

A cross-sectional (descriptive correlational) design was conducted. The hospital-based study was carried out in cardiac units located in a large teaching Firoozabadi hospital, in the region of Rey city, Tehran, Iran. It is worth mentioning that Firoozabadi hospital is an "Aging Friendly Hospital" with establishing CG and accreditation there with many specialty cardiac care units. The researcher arranged with the nursing administration a suitable time and date to visit units for the data collection. Each potential subject was given a consent form to sign if he or she agreed to participate in the study. The data collection took place

at the discharge time of the patients to fill in the questionnaires, which usually took 20 min. The objectives and study details were presented to the participants through a research information sheet.

## 2.1. Sample size

In this study, the sample size was 250 patients who were elderly patients with CHD admitted to the different cardiac wards (CCU1, CCU2, Post CCU), to determine the sample size at 95% confidence level and 80% test power and assuming the coefficient of determination of hospital anxiety and depression in the elderly with heart failure to be at least 3% were recruited by the researchers through consecutive sampling method. Eligibility criteria include: age above sixty years, elderly with coronary heart disease (CHD).

In the study, the sampling process was conducted from early March to the end of June 2018 and lasted for approximately 4 months. To each subject, data collected in-person interviews by the researcher for a period of about 15 to 20 minutes.

## 2.2. Measurements

Regarding data collection instruments, the tools used in this study included demographic data including age, sex, marital status, occupation, education, insurance status, history of hospitalization, comorbidity, smoking, family history of heart disease. It was completed by interview and using the elderly file at the beginning of the study. The other tools consist of the Abbreviated Mental Test (AMT) for cognitive assessment. Patient's perception of the quality of nursing care received during hospitalization was measured through the Quality Patient Care Scale (QUALPAC) and The Hospital Anxiety and Depression Scale (HADS). The total score of the AMT scale is 10 and a score of equal to or greater than 7 in this test meant no cognitive impairment in the subjects. The validity and reliability of this questionnaire have been assessed and confirmed in Iran. The internal consistency of this scale evaluated with a Cronbach's alpha of 0.76 [18].

The QUALPAC consisted of three physical, psychosocial and communication dimensions with 65 questions ranging from physical (24 questions), psychosocial (28 questions) and communication (13 questions) to three-point Likert type scale with rated answers (rarely 0 points, sometimes 1 point, most often 2 points). The scores of the QUALPAC ranges from zero to 130 which was classified into three categories: unfavorable (0–43), desirable (44–87) and very desirable (87–130). In this study, internal consistency regarding the QUALPAC, by the Cronbach's alpha coefficient was α = 0.91 which is acceptable.

In terms of measuring the subjects' hospital anxiety and depression, the Hospital Anxiety and Depression Questionnaire (HADS) is a 14-item self-report tool designed to determine the severity of depression and anxiety symptoms in patients. It was designed by Zigmond & Snaith in 1983 and run for approximately 10 minutes [19], the instrument has a seven-item depression subscale and a seven-item anxiety subscale, a valid instrument for assessing anxiety and depression. Each item of HADS is scored on zero to three

(0–3). The total score on (HADS) ranges from zero to 21 and the scores in the range of 0 to 7 are considered normal or normal, 8 to 10 mild, and 11 to 21 severe. This scale has been recommended with acceptable validity and reliability to use in all hospitalized patients with Cronbach's alpha of 0.83 in an Iranian study in 2004. The questionnaire was evaluated and validated by Montazeri et al at the Breast Cancer Research Center in Iran (P = 0.78) [20]. This scale was also evaluated in the study of Kaviani in 2009 for face and content validity. The Cronbach's alpha was 70% on the depression subscale and Cronbach's alpha of 0.85 on the anxiety subscale [21].

## 2.3. Data analysis

After collecting the data, data were analyzed using SPSS software version 16 for descriptive statistics such as adjusting frequency distribution tables, calculating numerical indices and inferential statistics including independent t-test, analysis of variance and correlation coefficients at the significant level of $P \leq 0.05$.

## 3. Results

The mean age of the elderly was 73.21 ± 12.30. The participants were 52% male and 48% female. 78.8% of the participants had health insurance. The length of hospital stay was as follows: Less than three days (28.2%), between three to seven days (85.4%), more than seven days (11.4%). Other demographic characteristics are shown in Table 1.

Table 1
Demographic characteristics of the subjects

|  |  | n | % |
|---|---|---|---|
| Age | 60−74 | 162 | 64.8 |
|  | 75−90 | 55 | 22 |
|  | >90 | 33 | 13.2 |
| Marital status | Single | 16 | 6.4 |
|  | Married | 137 | 54.8 |
|  | Widow/Widower | 78 | 31.2 |
|  | Divorced | 19 | 7.6 |
| Employment status | Employed | 27 | 10.8 |
|  | Unemployed | 11 | 4.4 |
|  | Retired | 128 | 51.2 |
|  | Housekeeping | 84 | 33.6 |
| Education | Illiterate | 84 | 33.6 |
|  | Primary education | 68 | 27.2 |
|  | Secondary education | 51 | 20.4 |
|  | High school | 35 | 14 |
|  | College degree | 12 | 4.8 |

The data obtained from the Quality Patient Care Scale (QUALPAC) showed that the mean score of quality care was 84.08 ± 17.16 (physical: 28.81 ± 10.09, communication: 17.95 ± 3.32, psychosocial: 37.33 ± 7.21). The findings showed 38% of patients reported desirable quality of nursing care and 53.6% reported very desirable. Only 8.4% reported unfavorable quality of nursing care. The quality of nursing care was not significantly different in any of the demographic characteristics of the elderly (Table 2).

Table 2
Differences in the quality of nursing care based on demographic characteristics

| | | n | Mean ± SD | |
|---|---|---|---|---|
| Age | 60−74 | 162 | 86.34 ± 14.38 | F = 0.975 P = 0.42 |
| | 75−90 | 55 | 82.09 ± 20.10 | |
| | > 90 | 33 | 87.60 ± 15.71 | |
| Sex | Male | 130 | 83.96 ± 18.14 | df = 248 t = 0.11 P = 0.91 |
| | Female | 120 | 84.21 ± 17.14 | |
| Marital status | Single | 16 | 88.50 ± 17.13 | F = 0.899 P = 0.44 |
| | Married | 137 | 82.70 ± 18.30 | |
| | Widow/Widower | 78 | 85.85 ± 16.74 | |
| | Divorced | 19 | 83.05 ± 16.67 | |
| Employment status | Employed | 27 | 80.25 ± 20.71 | F = 0.709 P = 0.54 |
| | Unemployed | 11 | 88.72 ± 17.45 | |
| | Retired | 128 | 84.57 ± 17.55 | |
| | Housekeeping | 84 | 83.96 ± 16.80 | |
| Health insurance | Yes | 197 | 84.21 ± 17.59 | df = 248 t = 0.232 P = 0.82 |
| | No | 53 | 83.58 ± 17.92 | |
| Education | Illiterate | 84 | 84.94 ± 18.11 | F = 0.941 P = 0.44 |
| | Primary education | 68 | 84.07 ± 16.56 | |
| | Secondary education | 51 | 86.50 ± 15.29 | |
| | High school | 35 | 79.85 ± 20.04 | |
| | College degree | 12 | 80.10 ± 20.92 | |

The data obtained from the Hospital Anxiety and Depression Scale showed that the mean score of anxiety in the elderly was 1.52 ± 1.14. The mean score of the depression subscale was 2.18 ± 1.51. Findings on the numerical indices of anxiety and depression in elderly patients with CHD in terms of demographic characteristics showed that there is a significant association between hospital anxiety and depression with the variable of gender. In other words, the hospital anxiety and depression in female elderly patients were significantly higher than the male elderly patients (P = 0.02) (Tables 3).

Table 3
Differences in hospital anxiety and depression based on demographic characteristics

| | | n | Hospital anxiety | | Hospital depression | |
|---|---|---|---|---|---|---|
| | | | Mean ± SD | | Mean ± SD | |
| Age | 60−74 | 162 | 1.5 ± 1.22 | F = 0.028 P = 0.99 | 2.05 ± 1.8 | F = 1.241 P = 0.29 |
| | 75−90 | 55 | 1.52 ± 1.13 | | 2.50 ± 1.53 | |
| | > 90 | 33 | 1.57 ± 0.93 | | 2.18 ± 1.3 | |
| Sex | Male | 130 | 1.36 ± 0.96 | df = 219 t = 2.27 P = 0.02 | 1.98 ± 1.43 | df = 219 t = 2.23 P = 0.02 |
| | Female | 120 | 1.69 ± 1.28 | | 2.40 ± 1.56 | |
| Marital status | Single | 16 | 1.36 ± 0.96 | F = 2.111 P = 0.09 | 2.44 ± 2.43 | F = 0.899 P = 0.44 |
| | Married | 137 | 1.50 ± 0.37 | | 2.18 ± 1.47 | |
| | Widow/Widower | 78 | 1.20 ± 0.10 | | 2.25 ± 1.39 | |
| | Divorced | 19 | 0.96 ± 0.11 | | 1.68 ± 1.24 | |
| Employment status | Employed | 27 | 1.05 ± 0.2 | F = 0.694 P = 0.55 | 1.92 ± 1.35 | F = 0.674 P = 0.56 |
| | Unemployed | 11 | 0.93 ± 0.28 | | 2.18 ± 1.53 | |
| | Retired | 128 | 1.15 ± 0.1 | | 2.13 ± 1.49 | |
| | Housekeeping | 84 | 1.17 ± 0.12 | | 2.35 ± 1.59 | |
| Health insurance | Yes | 197 | 1.46 ± 1.12 | df = 248 t = 1.42 P = 0.16 | 2.16 ± 1.47 | df = 248 t = 0.51 P = 0.61 |
| | No | 53 | 1.71 ± 1.18 | | 2.28 ± 1.64 | |
| Education | Illiterate | 84 | 1.51 ± 1.1 | F = 0.35 P = 0.84 | 2.27 ± 1.37 | F = 0.937 P = 0.44 |
| | Primary education | 68 | 1.58 ± 1.24 | | 2.20 ± 1.56 | |

| | | | | | |
|---|---|---|---|---|---|
| Secondary education | 51 | 1.50 ± 1.06 | | 2.11 ± 1.63 | |
| High school | 35 | 1.54 ± 1.22 | | 2.31 ± 1.69 | |
| College degree | 12 | 1.16 ± 0.93 | | 1.41 ± 0.90 | |

Findings showed that the correlation between the quality of nursing care and its dimensions with hospital anxiety is a significant negative correlation between physical, psychosocial and communication dimensions with hospital anxiety ($P < 0.01$). In other words, with increasing perceived quality care and its dimensions, hospital anxiety and depression decrease (Table 4).

Table 4
Correlation between dimensions of QUALPAC and HADS

| | Physical | Psychosocial | Communication |
|---|---|---|---|
| Hospital anxiety | -0.32* | -0.27* | -0.19* |
| Hospital depression | n.s | n.s | n.s |
| *P < 0.01 | | | |

# 4. Discussion

The findings of the current study on the hospital anxiety and depression showed that all of the subjects were at a low level of the psychological condition at Firoozabadi Hospital (scoring less than 8 on each of the subscales). In total, 91.6% of the subjects perceived the quality of nursing care integrated with CG desirable. The results showed that there is a significant negative correlation between hospital anxiety and quality of nursing care integrated with CG by elderly patients with CHD.

The results are consistent with the findings of other studies [Kazitani et al. [22], Polikandrioti et al. [14] and Orujlu et al. [23]], which mainly assessed the quality of nursing care in the teaching hospitals from the patients 'perception. However, the current study finding is not in agreement with the results of studies of Shujaat et al. [15] and Moradian et al. [16] that showed increased hospital anxiety and depression in the patients hospitalized in cardiac wards. These differences between the results of the mentioned previous studies might be because of the settings in which they measured patients' anxiety and depression in university hospitals with no CG process initiated. There are significant opportunities for improving the quality and safety of clinical practices through clinical governance within health organizations and teaching hospitals [24]. It appears that clinical governance represents one of the most significant policy developments in recent years. The concept of CG concerns the corporate responsibility of all healthcare professionals to deliver high-quality standards, a better quality of life in a cost-effective manner [25].

Furthermore, it is important to note that anxiety and depression during hospitalization can negatively affect performance, quality of life, length of stay, and even health outcomes in cardiac patients. In general, the frequency of anxiety in cardiac patients is relatively high, investigating mental health disorders in elderly patients with CHD is significant [21].

The results of the present study also showed that hospital anxiety and depression were significantly higher in female elderly patients than male elderly patients. As mental health disorders have been demonstrated to be risk factors for CHD [26], the finding is consistent with the results of Polikandrioti et al. [14] study of Shujaat et al. [15] and Orujlu et al. [23] in patients with coronary artery disease. In this study, hospital anxiety and depression were at a low level in the subjects. This finding could be due to the educational and academic status of the hospital with the initiation of the CG and accreditation process to improve the quality of services and care for patients (20 and 21). In general, the prevalence of anxiety and depression is higher in women than in men (Baxter). In the UK, women are almost twice as likely as men to be diagnosed with anxiety disorders. In England, 6.8% of all women were diagnosed with general anxiety disorder compared to 4.9% of all men [27].

Hospital depression was not correlated with the quality of nursing care. This may be because the occurrence of depression is related to the length of hospital stay and it was different in this study.

However, to create "Elderly Friendly Hospitals" and to realize the concept of "Healthy, Active and Successful Aging" [28], future studies focus on qualitative approaches in the field of new health policies are needed to understand the impact of CG and accreditation on the quality of care and mental health from the elderly patients' perception. It is recommended that Managers of healthcare services should take into account CG seriously to paradigm shift beyond routinely care program toward innovative approaches of health policy. Moreover, hospital accreditation and CG have a positive impact on improving the quality of services provided in the hospitals through improved quality of management, improved health professional workability [29]. In the study of Azim Beik et al, 2017 in Iran, the workability of the considerable percentage of nurses in teaching hospitals of Tehran was at an appropriate level that could result in patients' satisfaction and favorable psychological well-being [30].

Focusing on holistic nursing care in clinical services, it is noteworthy to note that some limitations should be taken into account when interpreting this study's results (e.g. No comparison with other units and hospitals). The study was conducted on the elderly patients with CHD at Firoozabadi Medical Center and the samples are not necessarily representative of all patients. To reach a conclusion that encompasses the whole patients' viewpoints, it is advisable to conduct this study on a larger scale and in multiple teaching hospitals. Although this study was conducted on seniors who achieved a minimum score of 7 on the AMT test for cognitive functioning, which could be a strength of the study, the hospital anxiety and depression in seniors with cognitive impairment might have other results. Moreover, the present study was a cross-sectional (descriptive correlational) design, to fully and accurately understand the association between the variable of hospital anxiety and depression and quality care integrated with CG,

it is recommended to conduct a predictive correlational design as well as trend studies over time in different stages from the time of admission until discharge from the hospital.

# 5. Conclusion

The result of this study is unique in the Iranian nursing context that to our knowledge, our study is the first to measure the quality of the nursing care provided to elderly patients diagnosed with CHD in Iran. The goals of the study were to investigate Nursing Care Quality integrated with Accreditation and Clinical Governance in a large teaching hospital (Firoozabadi Medical Center) in Tehran, Iran, and to assess Hospital Anxiety and Depression (HAD) among elderly Patients and to measure the relationship between the two main variables. Regarding the implications of the findings, this study described the perception of elderly patients with CHD in terms of the quality of nursing care and hospital anxiety and depression in a teaching hospital with CG. The results add a new line to the literature and hospital managers' and nursing administration's knowledge about the impact of CG on the quality care and hospital atmosphere about patients' anxiety and depression. The findings could be used as a guideline for policymakers and hospital administrators, helping them to maintain an improved quality of nursing care and the organizational structure of the hospital which will have a positive impact on the patients' psychological dimension. In conclusion, according to the participants in this research, the scores from perceived quality care in the teaching hospital with CG are above the average and the scores of the hospital anxiety and depression are less than the average.

# Abbreviations

| | |
|---|---|
| CHD | Coronary Heart Disease |
| CG | Clinical Governance |
| HADS | Hospital Anxiety and Depression Scale |
| QUALPAC | Quality Patient Care Scale |
| CCU | Coronary Care Unit |

# Declarations

Ethics approval and consent to participate

This study was approved by the Ethics Committee of Iran University of Medical Sciences (Ethical code: IR.IUMS.REC.1397.1047 dated February 2018).

After describing the study objectives, we obtained written consent from all participants.

## Consent for publication

The authors agree to publish an article in the BMC Health Services Research.

## Availability of data and material

Not applicable

## Competing interests

The authors declare that they have no Competing interests that are directly relevant to the content of this article.

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## Authors' contributions

All authors have read and approved the manuscript.

- FB: Study conception and design, Analysis and interpretation of data, Drafting of manuscript.
- PFA: Study conception and design, Analysis and interpretation of data, Drafting of manuscript, Critical revision.
- OV: Acquisition of data, Analysis and interpretation of data, Drafting of manuscript.

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