

# Caring Behaviors and Job Involvement among Cardiac Nurses: A Descriptive Study

## Abstract

**Background:** Cardiovascular diseases present significant challenges to healthcare systems, highlighting the need for nurses capable of providing high-quality care. Caring behaviors and job involvement are key factors that significantly influence the quality of care delivered in cardiac units. This study aimed to identify the determinants of these factors among nurses working in cardiac units. **Materials and Methods:** This descriptive-correlational study was conducted in 2023 to determine the predictors of caring behavior and job involvement among 220 cardiac unit nurses in Iran (Isfahan). Data were collected using random sampling and demographic questionnaires, Kanungo's Job Involvement questionnaires, and Wolf's Caring Behaviors Inventory. The collected data were analyzed using SPSS V.26, including descriptive statistics, independent *t*-test, and ANOVA. **Results:** The findings revealed that the mean (SD) age of participants was 32.43 (6.83) years, with 27.7% male and 72.3% female nurses. The nurses reported an above-average caring behaviors score of 82.53 (9.97) and a moderate job involvement level of 24.1 (6.38). Caring behaviors was significantly correlated with marital status, work experience, ward and hospital of employment, and professional interest ( $p < 0.05$ ). Job involvement was also significantly associated with gender, education level, marital status, employment status, work experience, hospital of employment, and professional interest ( $p < 0.05$ ). **Conclusions:** Providing high-quality care in cardiac units requires consideration of factors beyond nurses' education, permanent job position, or age. In the Iranian cultural context, married nurses with more work experience, a greater interest in their profession, and a positive relationship with their work environment demonstrated higher job involvement and better caring behaviors toward cardiac patients.

**Keywords:** Behaviors, caring, engagement, nurses, work

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## Introduction

Cardiovascular diseases are a leading cause of mortality worldwide, accounting for one-third of global deaths (17.9 million) in 2019.<sup>[1]</sup> In Iran, they are the primary cause of death, responsible for 39.3% of all fatalities.<sup>[2]</sup> In addition to physical care, cardiac patients require psychological, emotional, and social support, underscoring the critical role of nurses in delivering comprehensive, high-quality care.<sup>[2,3]</sup> The American Heart Association and the World Health Organization recognize nurses' significant contribution to reducing cardiovascular disease mortality by 25% by 2025.<sup>[4]</sup> Nurses have demonstrated significant effectiveness in reducing risk factors and hospitalizations and in timely identifying and managing critical conditions, such as arrhythmias.<sup>[4,5]</sup>

Caring behavior, which holds particular significance in cardiac units, is considered a primary responsibility of nurses.<sup>[6]</sup> This multidimensional concept, regarded as the foundation of nursing in clinical settings, encompasses actions undertaken by nurses to provide physical, emotional, spiritual, social, and psychological care. These actions aim to enhance patients' sense of security and reduce the duration of illness.<sup>[7]</sup> Nurses' caring behaviors influence patient satisfaction and comfort, facilitating improved performance in healthcare organizations.<sup>[8]</sup> However, a study conducted in Iran indicates that patients do not feel fully satisfied with the fulfillment of their needs.<sup>[9]</sup> Therefore, identifying factors that can enhance caring behaviors is essential.

Another critical issue that organizations need to address in workplace settings,

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particularly in cardiac units, is job involvement. Job involvement is defined as a positive and fulfilling mental state related to work, characterized by attributes such as energy, mental resilience, dedication, and a willingness to exert effort when facing challenges.<sup>[10-12]</sup> High levels of job involvement are observed when individuals have greater autonomy in decision-making and responsibility in their professional roles.<sup>[11]</sup>

Nurses with high levels of job involvement perceive their work responsibilities as a significant part of their lives, acting more independently and confidently. They perform their duties with strong commitment and contribute substantially to the success of the organization.<sup>[12]</sup> In contrast, nurses with low job involvement are more likely to engage in undesirable workplace activities, negatively impacting overall performance.<sup>[13]</sup> Nursing staff, who constitute a large proportion of the workforce in healthcare professions, play a pivotal role in patient care. However, a study conducted by Saeid *et al.*<sup>[11]</sup> indicated that the level of job involvement among Iranian nurses is low. Therefore, it seems essential to examine the factors that influence the improvement and enhancement of nurses' job involvement, considering environmental variables.

Given the critical and sensitive condition of cardiac patients, nurses in this field require a high level of job involvement and caring behavior. This underscores the importance of identifying and examining factors that can enhance these two aspects. Although global studies have investigated nurses' caring behaviors, research on job involvement, particularly in cardiac nursing, remains limited, with few studies conducted in Iran. Therefore, considering the vital role of nurses in caring for cardiac patients, this study aims to "identify predictors of caring behavior and job involvement among cardiac unit nurses." The findings of this research could help recognize factors that improve the quality of care and enhance nurses' job involvement, ultimately contributing to better care for cardiac patients.

## Materials and Methods

This descriptive correlational-analytical study was conducted in 2024 to identify predictors of caring behavior and job involvement among nurses working in cardiac units of hospitals affiliated with Isfahan University of Medical Sciences. The sampling process was carried out from February to April 2024.

A total of 220 nurses from the cardiac units of four major teaching hospitals affiliated with Isfahan University of Medical Sciences, including Al-Zahra, Khorshid, Chamran, and Feyz, were selected randomly using Cochran's formula. Inclusion criteria were willingness and informed consent to participate in the study; at least 1 year of clinical experience; no recent exposure to critical life events such as the death of a close relative, divorce, or diagnosis of a severe illness

within the past 6 months (based on self-report); no known psychological disorders (based on self-report); and no use of psychotropic or narcotic drugs (based on self-report). The exclusion criterion was the failure to complete the questionnaires fully.

Using random sampling, a list of eligible nurses from the four hospitals was prepared, and 220 participants were selected using a random number table. The researchers visited the hospitals during morning, evening, and night shifts; introduced themselves; and provided detailed explanations about the study. Written informed consent was then obtained from the nurses. Subsequently, the questionnaires related to demographic information, caring behavior, and job involvement were distributed among the participants.

Data collection was carried out using three questionnaires: 1) Demographic Information Questionnaire, with Age, Gender, Marital status, Educational level, Employment status, Work experience, Healthcare center, Income Ward, and Interest in nursing profession; 2) Wolf's Caring Behaviors Inventory (CBI-16); and 3) Kanungo's Job Involvement Questionnaire (JIQ). The face and content validity of the Demographic Information Questionnaire were confirmed by ten faculty members. The Nurse Caring Behaviors Inventory was developed by Wolf in 2017 and consists of 16 items scored on a 6-point Likert scale, with a total possible score ranging from 16 to 96. The face and content validity and reliability of this instrument have been confirmed in Iran, with the Cronbach's alpha reported as greater than 0.7 in a study by Ghafouri *et al.*<sup>[14]</sup> The Job Involvement Questionnaire was developed by Kanungo in 1982 and comprises 10 items scored on a 5-point Likert scale, with two items scored in reverse. Scores ranging from 10 to 20 indicate low job involvement, scores between 20 and 30 suggest moderate involvement, and scores above 30 reflect high job involvement. Its face and content validity and reliability have also been confirmed in Iran, with the Cronbach's alpha reported as 0.91.<sup>[15]</sup>

Statistical data were analyzed using SPSS software version 26. Descriptive statistics, including mean and standard deviation, were used to describe the demographic characteristics of the participants as well as the mean scores of caring behaviors and job involvement. To examine the relationships between caring behaviors and job involvement, and demographic characteristics, independent *t*-test and ANOVA were applied, with a significance level set at  $p < 0.05$ .

This article is part of the master's thesis of the first author in medical-surgical nursing. This study was conducted after obtaining the necessary approvals and receiving an ethical code (IR.MUI.NUREMA.REC.1402.045) from the Ethics Committee of Isfahan University of Medical Sciences. Written informed consent was obtained from the nurses following a comprehensive explanation of the study's objectives and

methods. Participants were assured that their participation was entirely voluntary, all their information would be kept confidential, and the study results would be shared with them.

**Ethical considerations**

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**Results**

The findings of the study revealed that the mean (SD) age of the participants was 32.43 (6.83) years. Of the sample, 61 were male and 159 were female. 137 were married, and 83 were single. The mean (SD) for caring behavior was 82.53 (9.97), and the mean (SD) for job involvement was 24.11 (6.38). Results indicated that marital status, work experience, department, hospital, and interest in the profession were significantly correlated with caring behavior. However, age, gender, education, employment status, and income did not have a significant impact on caring behavior. Table 1 presents the correlation between demographic characteristics and caring behavior in the study sample. Additionally, gender, education, marital status, employment status, work experience, hospital, and interest in the profession were significantly correlated with job involvement, while age, income, and department did not have a significant impact on job involvement. Table 2 presents the correlation between demographic characteristics and job involvement in the study units.

**Discussion**

Our findings indicated that educational level was not significantly associated with caring behavior. This finding aligns with the studies of Hosseinzadeh *et al.* (2017), Moshtaghi Khosani *et al.* (2021), and Babapour *et al.* (2020), which also found no significant correlation between educational level and caring behavior.<sup>[16-18]</sup> However, Ahmed *et al.*<sup>[19]</sup> (2022) reported a significant relationship, suggesting that nurses with master's degrees exhibited higher levels of caring behavior. Although education can enhance nurses' knowledge and skills, it does not necessarily influence their ability to provide care. This may be because caring behavior is also dependent on inherent and intrinsic qualities that are more influenced by personal values such as empathy and compassion.<sup>[20,21]</sup>

Babapour *et al.* (2020) reported a significant correlation between marital status and caring behavior,<sup>[16]</sup> which aligns

**Table 1: Relationship between caring behaviors and demographic information**

Variable	Caring behaviors		
	Categories	Mean (SD)	p
Age	20-29	82.30 (9.76)	F=1.620 0.050*
	30-39	83.25 (10.95)	
	40-49	87.82 (7.74)	
	>50	81.89 (5.34)	
Gender	Male	81.45 (10.75)	t=1.805 0.073**
	Female	84.26 (9.59)	
Marital status	Married	34.97 (6.09)	t=2.180 0.111**
	Single	33.70 (5.45)	
Education level	Bachelor	34.24 (5.66)	t=0.834 0.091**
	Master	36.38 (6.76)	
Employment status	Permanent	85.40 (9.02)	t=1.580 0.207*
	Contractual	82.66 (10.45)	
	Temporary	82.76 (9.77)	
Work experience	<5	82.40 (10.84)	F=4.409 0.001*
	5-10	86.50 (8.97)	
	10-15	78.49 (8.93)	
	15-20	86.93 (7.39)	
	20-26	87.89 (7.84)	
Healthcare center	>26	86.33 (7.81)	F=3.647 0.010*
	Alzahra	82.88 (8.90)	
	Feiz	85.25 (9.48)	
	Khorshid chamran	89.10 (7.88)	
Income	82.62 (10.24)	F=1.550 0.203*	
	<10		86.50 (7.54)
	10-15		82.92 (10.18)
Ward	15-20	87.50 (9.81)	F=5.890 0.003*
	>20	87.89 (8.75)	
	Internal medicine	85.79 (8.76)	
Interest in nursing profession now	Surgery	85.23 (9.17)	F=13.230 0.003*
	CCU, ICU, emergency	8.92 (10.69)	
	High	90.18 (5.56)	
	Moderate	81.03 (9.52)	
	Low	84.70 (11.03)	

\*One-way ANOVA, \*\*Independent t-test

with our findings. In the present study, married nurses exhibited higher levels of caring behavior. Married nurses may benefit from greater emotional and social support, which can reduce their stress and allow them to focus more on their patients, thereby demonstrating higher levels of caring behavior.<sup>[22]</sup> Additionally, marriage often involves nurturing and caring for another individual, which can translate into a more caring approach in the professional work environment. The experience of caring for a spouse and possibly children can reinforce caring behavior in the workplace.<sup>[23,24]</sup>

Moshtaghi Khozani *et al.* (2021) found no significant correlation between gender and caring behavior,<sup>[17]</sup> which aligns with the present study. However, studies by Hosseinzadeh *et al.*<sup>[18]</sup> (2017) in Ardabil and Ahmed *et al.*<sup>[19]</sup> (2022) in the United Arab Emirates indicated a

**Table 2: Relationship between job involvement and demographic information**

Variable	Job involvement		
	Categories	Mean (SD)	<i>p</i>
Age	20-29	24.30 (6.27)	<i>t</i> =0.010
	30-39	24.51 (6.85)	0.992*
	40-49	22.30 (5.03)	
	>50	24.89 (7.14)	
Gender	Male	24.11 (7.40)	<i>t</i> =2.051
	Female	24.12 (5.97)	0.042**
Marital status	Married	84.69 (9.44)	<i>t</i> =2.180
	Single	81.61 (10.57)	0.030*
Education level	Bachelor	83.74 (10.06)	<i>t</i> =1.260
	Master	82.00 (9.33)	0.206**
Employment status	Permanent	22.49 (6.21)	<i>F</i> =8.990
	Contractual	25.75 (6.24)	0.001*
	Temporary	21.30 (5.37)	
Work experience	<5	5.37 (6.29)	<i>F</i> =2.397
	5-10	25.42 (6.37)	0.039*
	10-15	21.33 (5.80)	
	15-20	24.00 (5.49)	
	20-26	26.11 (7.37)	
	>26	27.33 (6.77)	
Healthcare center	Alzahra	28.67 (6.60)	<i>F</i> =6.307
	Feiz	26.78 (8.55)	0.001*
	Khorshid	24.50 (6.09)	
	chamran	2.08 (5.91)	
Income	<10	27.31 (6.69)	<i>F</i> =1.590
	10-15	23.76 (6.20)	0.193*
	15-20	24.67 (6.71)	
	>20	24.89 (8.41)	
Ward	Internal medicine	25.56 (6.73)	<i>F</i> =2.870
	Surgery	23.87 (5.43)	0.059*
	CCU, ICU, emergency	23.13 (6.43)	
Interest in nursing profession now	High	27.94 (6.65)	<i>F</i> =30.102
	Moderate	25.25 (5.67)	0.001*
	Low	19.10 (4.66)	

\*One-way ANOVA, \*\*Independent *t*-test

significant correlation between gender and caring behavior, with women exhibiting higher levels of caring behavior. Conversely, Babapour *et al.* (2020) in Iran showed that men exhibited higher levels of caring behavior.<sup>[16]</sup> The current study, conducted in cardiac departments, differs from the previous contemplations. Given the inconsistent findings, further research with larger sample sizes is needed in Iran to explore this issue. Consistent with the present study, the studies by both Moshtaghi Khozani *et al.* (2021) and Babapour *et al.* (2020) revealed no significant correlation between employment status and caring behavior.<sup>[16,17]</sup> It can be argued that professional and work values, intrinsic motivations, and a supportive work environment contribute to a relatively stable level of caring behavior among nurses, regardless of their employment status.<sup>[25]</sup>

Similar to the current study, the research by Kibret *et al.* (2021), Shalaby *et al.* (2018), and Ahmed *et al.* (2021) demonstrated a significant correlation between caring behavior and interest in the profession, with nurses who have strong interest in their profession exhibiting higher levels of caring behavior.<sup>[19,26,27]</sup>

The present study revealed that female nurses had higher levels of job involvement. This finding contradicts the results of studies by Saeed *et al.* (2013) and Ghaderi *et al.* (2013), which showed that male nurses had higher levels of job involvement.<sup>[11,28]</sup> These discrepancies may be attributed to differences in sample sizes, study locations, and the passage of time since these studies were conducted. Ghaderi *et al.*'s study was conducted in 2012 with 180 nurses from various departments in Jiroft hospitals, while Saeed *et al.*'s study involved 436 nurses in Kerman and Tehran in 2013.<sup>[11,28]</sup> Additionally, the current study was conducted in specialized cardiac departments, which could be another factor contributing to these differences. Furthermore, women may have a stronger sense of belonging and commitment to their professional roles, prioritizing their careers more than men, which aligns with traditional gender roles.<sup>[29]</sup> Other factors, such as societal expectations, intrinsic motivations, and different psychological characteristics between women and men, may also influence levels of job involvement. For these reasons, women may likely exhibit higher levels of job involvement compared to men.

The studies by Ahmed FSA *et al.* (2022) and Bahrami *et al.* (2019), consistent with the present research, indicated that nurses with bachelor's degrees had higher levels of job involvement.<sup>[30,31]</sup> However, the study by Saeed *et al.*<sup>[11]</sup> found no significant correlation between education level and job involvement, contradicting the current findings. One possible explanation for this discrepancy is the lack of suitable job positions for nurses with master's degrees in Iranian clinical settings, which may influence job involvement.<sup>[32]</sup>

The study by Shamsi *et al.* in Iran, as well as the research conducted by Cortis and Cassar in Malta, aligned with the present study, indicating a correlation between marital status and job involvement, with married nurses exhibiting higher levels of job involvement.<sup>[28,33]</sup> Shamsi *et al.* in Iran utilized Kanungo's Job Involvement Questionnaire, whereas Cortis *et al.* employed Lodahl and Kejner's Job Involvement Questionnaire. Conversely, the studies by Bahrami *et al.*, Abdolmohsen *et al.*, and Saeed *et al.* contradict the findings of this research, showing no association between marital status and job involvement.<sup>[11,31,34]</sup> In Abdolmohsen *et al.*'s study, the Bader Job Involvement Questionnaire was used, while the present research utilized Kanungo's Job Involvement Questionnaire. Additionally, Abdolmohsen *et al.*'s study was conducted in Egypt, where cultural and social differences may explain the discrepancies with the findings of the current study.

The study by Bahrami *et al.* revealed a significant correlation between employment type and job involvement, with contract nurses exhibiting higher levels of job involvement.<sup>[30]</sup> Similarly, in the present study, contract nurses demonstrated higher levels of job involvement. Both this study and Bahrami's found that nonpermanent nurses had higher levels of job involvement. This may be because nonpermanent nurses strive to exhibit higher levels of job involvement to persuade the organization to hire them permanently.<sup>[34]</sup> Additionally, permanent nurses may perceive that their job performance, regardless of whether it is good or poor, has little impact on their job status as they have job security and the organization cannot easily change their position.<sup>[35]</sup>

Abdolmohsen *et al.* in Egypt and Shamsi *et al.* in Iran, consistent with the present research, indicated a significant correlation between years of experience in cardiac departments and job involvement.<sup>[27,33]</sup> However, Bahrami *et al.* and Saeed *et al.* in Iran and Ahmed FSA *et al.* in Egypt found no significant relationship between years of experience and job involvement.<sup>[10,29,30]</sup> One possible explanation for these inconsistencies is that with increasing experience, nurses may become more accustomed to the pressures and challenges of the nursing profession, and by accepting these difficulties, their job involvement may increase.<sup>[36]</sup> Additionally, work experience has a significant impact on the job involvement of nurses in cardiac departments. This impact is due to several factors, including the development of skills, increased self-confidence, and organizational commitment resulting from working in cardiac departments. With increasing experience, nurses typically develop a deeper understanding of their roles and responsibilities, which contributes to increased job involvement.<sup>[37,38]</sup>

The current study demonstrated a significant correlation between the hospital employment and job involvement, with nurses working at Alzahra Hospital exhibiting higher levels of job involvement. The study by Saeed *et al.*,<sup>[10]</sup> consistent with the present research, also found a significant relationship between the hospital of employment and job involvement. This variation in job involvement among nurses working in different hospitals can be attributed to differing work environments, job satisfaction, relationships with colleagues, and overall rules and regulations governing each hospital.<sup>[39]</sup>

The present study revealed a significant positive correlation between interest in the profession and job involvement, with nurses who have strong interest in their profession exhibiting higher levels of job involvement. Previous studies have shown a positive relationship between job satisfaction, interest in the profession, and job involvement among nurses.<sup>[39-43]</sup>

The restriction of the study sample to four hospitals highlights the need for cautious interpretation of the findings as they may not be fully applicable to the broader population of cardiology nurses. Hence, additional empirical studies are essential to validate the generalizability of these outcomes.

## Conclusion

Based on the findings of this study and the critical importance of caring for cardiac patients, it appears that in the Iranian cultural context, married nurses with extensive experience, greater interest in their profession, and a positive perception of their work environment are more likely to exhibit higher levels of caring behaviors and job involvement. Furthermore, the practice of not employing contract or temporary nurses in cardiac departments, which is sometimes the policy of teaching hospitals, may not be the optimal approach for providing better care. These nurses can demonstrate higher levels of job involvement and caring behaviors. Additionally, education alone cannot be considered a guaranteed factor in improving caring behaviors or job involvement, and other influential factors should also be taken into account. Therefore, to improve the quality of care and enhance job involvement among nurses in cardiac departments, the selection of nurses should be based on a combination of various characteristics and conditions.

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## Conflicts of interest

Nothing to declare.

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