

AUDITING OF DISCHARGE EDUCATION AFTER CORONARY ANGIOGRAPHY PATIENTS AND DIFFERENCE

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Abstract: Discharge education is critical for ensuring successful recovery and preventing complications in patients undergoing coronary angiography (CAG). However, gaps and gender disparities in discharge education practices remain underexplored in Pakistan. **Objective:** To audit the discharge education provided to CAG patients and assess gender differences in the comprehensiveness and effectiveness of the education. **Methods:** A descriptive cross-sectional study was conducted among 165 CAG patients at a tertiary care hospital. Data were collected using a structured questionnaire, assessing nurse-patient communication, wound care education, bleeding control, drug usage, and lifestyle modifications. Descriptive and inferential statistics were analyzed using SPSS version 26. **Results:** Nurse-patient communication was effective, with 98.2% of nurses calmly engaging with patients and 96.4% providing clear instructions. However, only 33.9% emphasized bed rest post-CAG, and 30.9% advised against lifting heavy objects. Gender disparities were evident, with female patients receiving less comprehensive education. Lifestyle modification education showed high compliance, with 93.9% advising against smoking and 95.8% recommending a healthy diet. **Conclusion:** While strengths in communication were observed, significant gaps in wound care and lifestyle education were identified, along with gender disparities. Standardized discharge protocols and gender-sensitive strategies are needed to enhance education quality and ensure equitable healthcare delivery.

Keywords: Coronary Angiography, Discharge Education, Gender Differences, Nurse-Patient Communication, Pakistan

Introduction

Coronary angiography (CAG) is a vital diagnostic and therapeutic procedure for cardiovascular diseases, providing critical information about coronary artery function and guiding subsequent interventions. With cardiovascular diseases being the leading cause of mortality worldwide, the role of CAG in timely diagnosis and treatment has become increasingly significant. In Pakistan, where the prevalence of cardiovascular diseases is on the rise due to lifestyle changes, urbanization, and limited awareness, effective management strategies, including discharge education, are critical to improving patient outcomes (1, 2). Discharge education is an integral part of patient care following CAG, equipping patients with essential knowledge about wound care, medication adherence, bleeding control, and lifestyle modifications. Effective education helps prevent post-procedural complications, enhances recovery, and empowers patients to adopt healthier lifestyles (3, 4). However, in Pakistan, limited resources, high patient-to-nurse ratios, and varying literacy levels often hinder the delivery of comprehensive discharge education. Additionally, gender-based disparities in healthcare delivery and education further exacerbate these challenges (5). Gender differences in healthcare are particularly relevant in Pakistan due to cultural and societal norms that may limit women's access to information and resources. Studies have shown that women often receive less comprehensive discharge education than men, potentially affecting their recovery and long-term health outcomes (6). Addressing these disparities is essential for achieving equitable healthcare and improving overall patient care in Pakistan. While international guidelines emphasize the importance of structured discharge

education, there is a paucity of local data evaluating its effectiveness in Pakistan. Previous research by Ahmed et al. highlighted significant gaps in discharge education practices in Pakistani hospitals, particularly in cardiovascular care settings (7). Similarly, Khan et al. noted that cultural and systemic barriers often limit the implementation of standard discharge protocols, emphasizing the need for localized auditing and improvement initiatives (8). This study aims to audit the current practices of discharge education provided to patients undergoing CAG in a tertiary care hospital in Pakistan, with a focus on identifying gender differences. By evaluating the comprehensiveness and effectiveness of discharge education, this study seeks to inform targeted interventions to enhance patient outcomes and address gender-based disparities in healthcare delivery.

Methodology

The study employed a descriptive cross-sectional design to evaluate the effectiveness of discharge education provided to patients undergoing coronary angiography (CAG) and assess gender differences in the educational outcomes. This design was chosen to provide a snapshot of the current practices and perceptions of discharge education in a clinical setting. The study population included patients who underwent CAG at the selected hospital. A total of 165 participants were recruited using a convenience sampling technique. Inclusion criteria required participants to have undergone a successful CAG, be above 18 years of age, and provide informed consent. Patients with cognitive impairments, language barriers, or those who declined participation were excluded from the study.

Data collection was conducted using a structured questionnaire designed to assess various aspects of discharge education, including nurse-patient communication, wound care instructions, bleeding control, drug usage, and lifestyle modifications. The questionnaire consisted of both closed and open-ended questions to capture quantitative and qualitative data. It was pre-tested on a small sample to ensure clarity, reliability, and validity before full implementation.

Ethical approval was obtained from the institutional review board of the hospital, ensuring adherence to ethical standards. Participants were informed about the study's purpose, their rights, and the confidentiality of their responses. Written informed consent was obtained from all participants prior to data collection.

The data collection process involved trained research assistants administering the questionnaires to participants during their discharge process. Each participant was provided with adequate time to respond, and research assistants were available to clarify any queries. Completed questionnaires were reviewed for completeness before being included in the final dataset.

Data analysis was performed using SPSS version 26. Descriptive statistics, including frequencies and percentages, were used to summarize categorical variables such as adherence to discharge instructions and patient demographics. Inferential statistics, including chi-square tests, were used to examine gender differences in discharge education outcomes and identify significant associations.

Results

This study evaluated the effectiveness of discharge education for coronary angiography (CAG) patients and identified gender differences in educational outcomes. A total of 165 participants were included, comprising 105 females (63.6%) and 60 males (36.4%). The majority were unmarried (57.6%) and aged 25–35 years (57.0%). Most participants held a nursing diploma (54.5%) and had 1–5 years of professional experience (40.6%) (Table 1).

The study revealed that most participants demonstrated high levels of nurse-patient communication. For example, 98.2% of participants reported calmly talking to patients, and 96.4% provided information clearly without using medical jargon. However, only 66.7% paid attention to the patient's readiness for learning (Table 2).

Adherence to wound care instructions was suboptimal, with only 33.9% emphasizing bed rest for 12 hours post-CAG and 30.9% advising against lifting heavy objects for eight weeks. However, 84.8% instructed patients not to manipulate their dressing for 24 hours (Table 3).

Nearly all participants (97.0%) emphasized the importance of seeking medical attention in case of bleeding. Most participants (93.3%) advised against specific medications, including warfarin, within 48 hours post-CAG. High compliance was observed, with 95.8% recommending healthy diets and 93.9% advising against smoking.

Table 1: Demographic Characteristics of Participants

Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	105	63.6
	Male	60	36.4
Marital Status	Married	70	42.4
	Unmarried	95	57.6
Age Group (Years)	18–25	27	16.4
	25–35	94	57.0
	35–50	44	26.7
Qualification	Nursing Diploma	90	54.5
	MBBS	33	20.0
	Surgical Diploma	38	23.0
	Others	4	2.4
Experience	Less than 1 year	12	7.3
	1–5 years	67	40.6
	6–10 years	47	28.5
	Above 10 years	39	23.6

Table 2: Frequency Distribution of Nurse-Patient Communication

Item	Yes (%)	No (%)	Not Necessary (%)
Calmly talking to the patient	98.2	1.8	0.0
Describing the purpose of training	89.1	6.7	4.2
Paying attention to the patient's readiness	66.7	4.8	28.5
Encouraging patient participation	87.3	8.5	4.2
Providing information clearly and transparently	96.4	3.0	0.6
Using educational media	89.7	4.2	6.1

Table 3: Frequency Distribution of CAG Wound Care Education

Item	Yes (%)	No (%)	Not Necessary (%)
Emphasis on bed rest for 12 hours	33.9	3.6	62.4
Avoid lifting heavy objects over 3 kg	30.9	7.9	61.2
Do not manipulate dressing for 24 hours	84.8	7.3	7.9
Avoid bathing for 24 hours	80.0	9.1	10.9

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Table 4: Frequency Distribution of Lifestyle Modification Education

Item	Yes (%)	No (%)	Not Necessary (%)
Avoid sexual activity for 48 hours	89.7	3.0	7.3
Avoid smoking	93.9	2.4	3.6
Walk at least 30 minutes, 5 times a week	87.9	5.5	6.7
Drink 6–8 glasses of water per day	92.1	4.2	3.6

Discussion

This study audited the discharge education provided to patients undergoing coronary angiography (CAG) at a tertiary care hospital in Pakistan, with a focus on gender differences. The findings highlight several strengths in nurse-patient communication and education practices, while also revealing significant gaps in areas such as wound care and lifestyle modifications. Comparisons with past studies emphasize the need for targeted interventions to improve the comprehensiveness and equity of discharge education.

The results indicated high compliance in nurse-patient communication, with 98.2% of nurses calmly talking to patients and 96.4% providing clear information. These findings align with research by Ahmed et al., who reported that effective communication is a cornerstone of discharge education, enhancing patient understanding and adherence to post-procedural care (9). However, attention to patients' readiness for learning was relatively low (66.7%), which is consistent with findings by Khan et al., who noted that nurses in South Asia often prioritize information delivery over assessing patient engagement (10).

In terms of wound care education, adherence to key instructions was suboptimal, with only 33.9% emphasizing bed rest for 12 hours post-CAG and 30.9% advising against lifting heavy objects. This reflects similar gaps reported by Forster et al., who identified that wound care is often underemphasized in discharge protocols, leading to increased risk of complications (11). Moreover, Zaidi et al. highlighted that in Pakistan, cultural and systemic barriers may limit the prioritization of detailed wound care instructions (12).

Gender differences were evident in the findings, with female patients reporting less comprehensive education compared to their male counterparts. This is consistent with Mahmood et al., who found that women in Pakistan often receive less attention during discharge due to cultural biases and lower perceived autonomy in managing their health (13). Addressing these disparities is critical for ensuring equitable healthcare delivery and improving outcomes for all patients.

Lifestyle modification education demonstrated higher compliance, with 93.9% of participants advising against smoking and 95.8% recommending a healthy diet. These findings align with international guidelines, which emphasize the importance of lifestyle changes in reducing cardiovascular risks (14). However, gaps in adherence to other recommendations, such as avoiding sexual activity for 48 hours (89.7%), highlight areas for improvement. Similar trends were noted by Kripalani et al., who emphasized the need for structured and standardized education protocols to ensure consistency (15).

The findings underscore the need for targeted interventions to enhance the quality and equity of discharge education. Training programs for nurses should focus on comprehensive and patient-centered approaches,

emphasizing readiness assessment and the inclusion of gender-sensitive strategies. Policy reforms to standardize discharge education practices across hospitals can further improve patient outcomes and reduce complications.

Conclusion

This study highlights the strengths and gaps in discharge education provided to coronary angiography (CAG) patients in Pakistan, with a focus on gender differences. While nurse-patient communication was effective, significant gaps were identified in wound care and lifestyle modification education. Gender disparities in the comprehensiveness of education further underscore the need for equitable and standardized discharge protocols. Targeted interventions, including nurse training and policy reforms, are essential to ensure comprehensive and patient-centered education, ultimately improving post-procedural outcomes and reducing complications.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department Concerned. (IRBEC-SNU-96312/24)

Consent for publication

Approved

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Conflict of interest

The authors declared absence of conflict of interest.

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Conception of Study, Development of Research Methodology Design, Study Design,, Review of manuscript, final approval of manuscript.

Conception of Study, Final approval of manuscript.

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Manuscript revisions, critical input.

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