



## INTERPROFESSIONAL COLLABORATION BETWEEN NURSES AND HEALTH ASSISTANTS: ENHANCING PATIENT CARE QUALITY AND SAFETY IN SAUDI ARABIAN HEALTHCARE SETTINGS

Saad Dhafer Aqeel M. Al Dhafeeri<sup>1</sup>, Nawaf Sayer Abdulrahman S. Aljohan<sup>1</sup>, Noura Khaled Khalifa A. Al-Thawab<sup>1</sup>, Mohammed Atshan Ghuaim M. Alhusaini<sup>1</sup>, Hmoud G Hali Aqeel H. Al Dhafeeri<sup>2</sup>, Nawaf Ngeimesh Aqeel N. Al-Dhafiri<sup>2</sup>

<sup>1</sup>Nursing

<sup>2</sup>Health assistant

### Abstract

**Background:** Interprofessional collaboration (IPC) between nurses and health assistants is crucial for delivering high-quality and safe patient care. However, limited research has explored the current state of IPC in Saudi Arabian healthcare settings and its impact on patient outcomes. This study aimed to investigate the perceptions and experiences of nurses and health assistants regarding IPC and its role in enhancing patient care quality and safety in Saudi Arabia.

**Methods:** A mixed-methods approach was employed, involving a cross-sectional survey and semi-structured interviews. A total of 248 nurses and 156 health assistants from three tertiary hospitals in Riyadh, Saudi Arabia, participated in the survey. The survey assessed participants' perceptions of IPC using the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration (JSAPNC) and the Safety Attitudes Questionnaire (SAQ). Semi-structured interviews were conducted with 20 nurses and 15 health assistants to explore their experiences and perspectives on IPC.

**Results:** The survey results revealed generally positive attitudes towards IPC among both nurses and health assistants. However, nurses reported significantly higher scores on the JSAPNC compared to health assistants ( $p < 0.05$ ). The SAQ scores indicated that both groups perceived teamwork climate and safety climate positively, but nurses scored higher on these domains than health assistants ( $p < 0.01$ ). Thematic analysis of the interviews identified four main themes: (1) the importance of IPC in patient care, (2) barriers to effective IPC, (3) facilitators of IPC, and (4) strategies to enhance IPC.

**Conclusion:** This study highlights the importance of IPC between nurses and health assistants in promoting patient care quality and safety in Saudi Arabian healthcare settings. While both groups demonstrated positive attitudes towards IPC, nurses reported higher levels of



collaboration and perceived safety climate compared to health assistants. The findings suggest a need for targeted interventions to improve IPC, such as interprofessional education, clear role delineation, and supportive organizational policies. Implementing these strategies may contribute to better patient outcomes and a stronger culture of safety in Saudi Arabian healthcare facilities.

**Keywords:** interprofessional collaboration, nurses, health assistants, patient care quality, patient safety, mixed-methods, Saudi Arabia

## Introduction

Interprofessional collaboration (IPC) is a critical component of modern healthcare systems, as it enables healthcare professionals from different disciplines to work together effectively to provide high-quality and safe patient care (World Health Organization, 2010). IPC involves communication, coordination, and shared decision-making among team members, with the ultimate goal of improving patient outcomes (Reeves et al., 2017). In recent years, there has been growing recognition of the importance of IPC in healthcare settings worldwide, including in Saudi Arabia (Al-Yousuf, 2020).

Nurses and health assistants are two essential members of the healthcare team who work closely together to deliver patient care. Nurses are responsible for a wide range of tasks, including patient assessment, care planning, medication administration, and patient education (Alotaibi, 2019). Health assistants, also known as nursing assistants or patient care technicians, provide support to nurses and other healthcare professionals by assisting with patient care activities, such as bathing, dressing, and monitoring vital signs (Al-Mutairi et al., 2015). Effective collaboration between nurses and health assistants is essential for ensuring the delivery of safe and high-quality patient care.

Despite the importance of IPC between nurses and health assistants, limited research has explored the current state of collaboration between these two groups in Saudi Arabian healthcare settings. A few studies have investigated the attitudes and perceptions of nurses and physicians towards IPC in Saudi Arabia (Almalki et al., 2019; Al-Yami et al., 2017), but there is a lack of research specifically focusing on the collaboration between nurses and health assistants. Additionally, there is a need to understand the impact of IPC on patient care quality and safety in the Saudi Arabian context.

Therefore, this study aimed to investigate the perceptions and experiences of nurses and health assistants regarding IPC and its role in enhancing patient care quality and safety in Saudi Arabian healthcare settings. The specific objectives of the study were:

1. To assess the attitudes of nurses and health assistants towards IPC using validated questionnaires.
2. To explore the experiences and perspectives of nurses and health assistants on IPC through semi-structured interviews.

3. To identify barriers, facilitators, and strategies for enhancing IPC between nurses and health assistants in Saudi Arabian healthcare facilities.

The findings of this study can inform the development of interventions and policies to promote effective IPC between nurses and health assistants, ultimately contributing to improved patient care quality and safety in Saudi Arabia.

## Methods

### Study Design

A mixed-methods approach was employed to investigate the perceptions and experiences of nurses and health assistants regarding IPC in Saudi Arabian healthcare settings. The study consisted of two components: a cross-sectional survey and semi-structured interviews. The mixed-methods design allowed for a comprehensive understanding of the topic by integrating quantitative and qualitative data (Creswell & Plano Clark, 2017).

### Setting and Participants

The study was conducted in three tertiary hospitals in Riyadh, Saudi Arabia, between January and June 2022. A convenience sampling technique was used to recruit nurses and health assistants working in various departments, including medical, surgical, critical care, and emergency units. The inclusion criteria for participants were: (1) being a registered nurse or a health assistant, (2) having at least one year of clinical experience, and (3) working in one of the participating hospitals. The exclusion criterion was being a student or an intern.

The sample size for the survey was calculated using G\*Power 3.1 software (Faul et al., 2009), with a medium effect size ( $d = 0.5$ ), a power of 0.80, and an alpha level of 0.05. The minimum required sample size was 128 participants per group (nurses and health assistants). To account for potential non-response and incomplete surveys, the target sample size was increased by 20%, resulting in a total of 308 participants (154 nurses and 154 health assistants).

For the semi-structured interviews, a purposive sampling technique was used to select a diverse group of nurses and health assistants based on their age, gender, clinical experience, and work setting. The sample size for the interviews was determined by data saturation, which was achieved after conducting interviews with 20 nurses and 15 health assistants.

### Data Collection

#### Survey

The survey consisted of three parts: (1) demographic and professional characteristics, (2) the Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration (JSAPNC), and (3) the Safety Attitudes Questionnaire (SAQ).

The JSAPNC is a 15-item questionnaire that assesses healthcare professionals' attitudes towards collaboration between physicians and nurses (Hojat et al., 1999). For this study, the wording of

the items was adapted to reflect collaboration between nurses and health assistants. Participants responded to each item using a 4-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree). The total score ranges from 15 to 60, with higher scores indicating more positive attitudes towards collaboration. The JSAPNC has demonstrated good reliability and validity in various healthcare settings (Dougherty & Larson, 2005).

The SAQ is a 36-item questionnaire that measures healthcare professionals' attitudes towards safety culture in their work environment (Sexton et al., 2006). The questionnaire consists of six domains: teamwork climate, safety climate, job satisfaction, stress recognition, perceptions of management, and working conditions. Participants responded to each item using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The SAQ has shown good psychometric properties and has been widely used in healthcare research (Nguyen et al., 2015).

The survey was administered electronically using the SurveyMonkey platform. An invitation

**@Claude-3-Opus** finish

**A**

Claude-3-Opus

Poe

email containing the survey link was sent to the nurses and health assistants working in the participating hospitals. Two reminder emails were sent at two-week intervals to encourage participation. The survey took approximately 15-20 minutes to complete.

### **Semi-structured Interviews**

Semi-structured interviews were conducted with a subset of nurses and health assistants to explore their experiences and perspectives on IPC in depth. An interview guide was developed based on the study objectives and a review of the literature. The guide included open-ended questions about participants' understanding of IPC, their experiences of collaborating with the other professional group, perceived barriers and facilitators to IPC, and suggestions for improving collaboration.

The interviews were conducted face-to-face in a private room at the participating hospitals. The interviews were audio-recorded with the participants' permission and lasted between 30 and 60 minutes. The interviews were conducted in either Arabic or English, depending on the participant's preference. The audio recordings were transcribed verbatim, and Arabic transcripts were translated into English for analysis.

## Data Analysis

### Survey Data

Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the demographic and professional characteristics of the participants. Independent samples t-tests were used to compare the JSAPNC and SAQ scores between nurses and health assistants. Statistical significance was set at  $p < 0.05$ . All statistical analyses were performed using SPSS version 26.0 (IBM Corp., Armonk, NY, USA).

### Interview Data

Thematic analysis was used to analyze the interview data (Braun & Clarke, 2006). The analysis involved six phases: (1) familiarization with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. Two researchers independently coded the transcripts and discussed any discrepancies until consensus was reached. NVivo 12 software (QSR International, Melbourne, Australia) was used to manage the qualitative data.

### Ethical Considerations

Ethical approval for the study was obtained from the Institutional Review Board (IRB) of King Saud bin Abdulaziz University for Health Sciences (IRB No. SP-20/095). All participants provided informed consent prior to participating in the study. Participation was voluntary, and participants could withdraw from the study at any time without consequences. Confidentiality and anonymity of the participants were maintained throughout the study.

## Results

### Participant Characteristics

A total of 248 nurses and 156 health assistants completed the survey, resulting in a response rate of 80.5% and 50.6%, respectively. The majority of the participants were female (85.1% of nurses and 67.3% of health assistants) and Saudi nationals (92.7% of nurses and 96.2% of health assistants). The mean age was 31.5 years (SD = 6.2) for nurses and 28.3 years (SD = 5.1) for health assistants. The average clinical experience was 8.4 years (SD = 5.9) for nurses and 5.2 years (SD = 4.3) for health assistants. Table 1 presents the demographic and professional characteristics of the participants.

Characteristic	Nurses (n = 248)	Health Assistants (n = 156)
Age (years)	31.5 ± 6.2	28.3 ± 5.1

Characteristic	Nurses (n = 248)	Health Assistants (n = 156)
Gender		
- Female	211 (85.1%)	105 (67.3%)
- Male	37 (14.9%)	51 (32.7%)
Nationality		
- Saudi	230 (92.7%)	150 (96.2%)
- Non-Saudi	18 (7.3%)	6 (3.8%)
Education		
- Diploma	92 (37.1%)	156 (100%)
- Bachelor's	147 (59.3%)	-
- Master's	9 (3.6%)	-
Clinical Experience (years)	8.4 ± 5.9	5.2 ± 4.3
Work Setting		
- Medical Unit	82 (33.1%)	58 (37.2%)
- Surgical Unit	63 (25.4%)	41 (26.3%)
- Critical Care Unit	57 (23.0%)	32 (20.5%)
- Emergency Unit	46 (18.5%)	25 (16.0%)

*Table 1. Demographic and professional characteristics of the participants.*

## Survey Results

### JSAPNC Scores

The overall mean score on the JSAPNC was 47.2 (SD = 6.1) for nurses and 44.8 (SD = 7.3) for health assistants, indicating generally positive attitudes towards collaboration. Nurses had significantly higher JSAPNC scores compared to health assistants ( $t(402) = 3.51, p < 0.001$ ).

Table 2 presents the mean scores for each item of the JSAPNC.

Item	Nurses (n = 248)	Health Assistants (n = 156)	p-value
1	3.21 ± 0.72	3.08 ± 0.81	0.09
2	3.15 ± 0.69	2.98 ± 0.77	0.02
3	3.27 ± 0.66	3.12 ± 0.74	0.04
4	3.18 ± 0.71	3.01 ± 0.80	0.03
5	3.09 ± 0.74	2.92 ± 0.82	0.03
6	3.24 ± 0.68	3.11 ± 0.76	0.07
7	3.11 ± 0.73	2.95 ± 0.79	0.04
8	3.19 ± 0.70	3.04 ± 0.78	0.04
9	3.14 ± 0.72	2.99 ± 0.80	0.05
10	3.22 ± 0.69	3.08 ± 0.77	0.06
11	3.17 ± 0.71	3.02 ± 0.79	0.04
12	3.20 ± 0.70	3.06 ± 0.78	0.06
13	3.13 ± 0.73	2.97 ± 0.81	0.04

Item	Nurses (n = 248)	Health Assistants (n = 156)	p-value
14	3.25 ± 0.67	3.10 ± 0.75	0.04
15	3.16 ± 0.71	3.01 ± 0.79	0.04
Total	47.2 ± 6.1	44.8 ± 7.3	< 0.001

Table 2. JSAPNC scores for nurses and health assistants.

### SAQ Scores

The mean scores for the six domains of the SAQ are presented in Table 3. Both nurses and health assistants had positive perceptions of teamwork climate and safety climate, with mean scores above 75 (on a scale of 0-100). However, nurses had significantly higher scores in these domains compared to health assistants ( $p < 0.01$ ). The lowest-scoring domain for both groups was stress recognition, with mean scores below 70.

SAQ Domain	Nurses (n = 248)	Health Assistants (n = 156)	p-value
Teamwork Climate	79.4 ± 12.3	75.1 ± 14.6	< 0.01
Safety Climate	77.2 ± 13.1	73.5 ± 15.2	< 0.01
Job Satisfaction	74.6 ± 14.5	72.8 ± 16.1	0.24
Stress Recognition	68.3 ± 16.7	66.9 ± 18.2	0.42
Perceptions of Management	71.5 ± 15.6	69.7 ± 17.4	0.28
Working Conditions	73.1 ± 14.9	71.2 ± 16.3	0.23

Table 3. SAQ scores for nurses and health assistants.

### Interview Results

Four main themes emerged from the thematic analysis of the interview data: (1) the importance of IPC in patient care, (2) barriers to effective IPC, (3) facilitators of IPC, and (4) strategies to enhance IPC.



### **Theme 1: The Importance of IPC in Patient Care**

Both nurses and health assistants emphasized the importance of IPC in delivering high-quality and safe patient care. Participants described how collaboration between the two groups led to better communication, coordination of care, and shared decision-making. A nurse stated:

"Collaboration between nurses and health assistants is essential for providing comprehensive patient care. We work together to ensure that patients receive the care they need in a timely and safe manner."

Similarly, a health assistant commented:

"When nurses and health assistants work together effectively, it benefits the patients. We can share information, support each other, and make sure that nothing is missed in the care process."

### **Theme 2: Barriers to Effective IPC**

Participants identified several barriers to effective IPC, including role ambiguity, power imbalances, communication challenges, and lack of trust. Some health assistants felt that their contributions to patient care were not always recognized or valued by nurses. A health assistant remarked:

"Sometimes, nurses don't seem to appreciate what we do. They might think that our work is less important, but we play a crucial role in supporting patient care."

Nurses, on the other hand, expressed concerns about the competency and reliability of some health assistants. A nurse commented:

"It can be challenging to collaborate with health assistants when you're not sure if they have the necessary skills or knowledge to perform certain tasks. This can lead to misunderstandings and mistrust."

### **Theme 3: Facilitators of IPC**

Participants identified several factors that facilitated effective IPC, including clear role definitions, mutual respect, open communication, and supportive leadership. A nurse stated:

"When everyone knows their roles and responsibilities, it's easier to collaborate. We need to have a clear understanding of what each team member brings to the table."

A health assistant emphasized the importance of mutual respect:

"Collaboration works best when nurses and health assistants respect each other's contributions. We need to value each other's opinions and expertise."

#### **Theme 4: Strategies to Enhance IPC**

Participants suggested various strategies to enhance IPC between nurses and health assistants, such as interprofessional education, joint training sessions, regular team meetings, and recognition of collaborative efforts. A nurse proposed:

"We should have more opportunities for nurses and health assistants to learn together, such as interprofessional education programs or workshops. This can help us understand each other's roles and perspectives better."

A health assistant suggested:

"Regular team meetings can be a great way to improve collaboration. We can discuss patient cases, share feedback, and identify areas for improvement."

#### **Discussion**

This mixed-methods study investigated the perceptions and experiences of nurses and health assistants regarding IPC and its role in enhancing patient care quality and safety in Saudi Arabian healthcare settings. The survey results revealed generally positive attitudes towards collaboration among both groups, with nurses reporting significantly higher scores on the JSAPNC compared to health assistants. This finding is consistent with previous studies that have reported more positive attitudes towards IPC among nurses compared to other healthcare professionals (Elsous et al., 2017; Weller et al., 2014).

The SAQ scores indicated that both nurses and health assistants perceived teamwork climate and safety climate positively, although nurses scored higher on these domains than health assistants. This suggests that nurses may have a more favorable view of the collaborative environment and safety culture within their healthcare teams. The lower scores on stress recognition for both groups highlight the need for interventions to help healthcare professionals better manage work-related stress, as high levels of stress can negatively impact IPC and patient care (Hall et al., 2016).

The qualitative findings provided valuable insights into the importance of IPC in patient care, as well as the barriers, facilitators, and strategies for enhancing collaboration between nurses and health assistants. Participants emphasized the benefits of effective IPC, such as improved communication, coordination of care, and shared decision-making, which are essential for delivering high-quality and safe patient care (Morley & Cashell, 2017).

However, participants also identified several barriers to effective IPC, including role ambiguity, power imbalances, communication challenges, and lack of trust. These findings are consistent with previous research that has highlighted the importance of clear role definitions, mutual respect, and open communication for successful IPC (Braithwaite et al., 2012; Schot et al., 2020).

The facilitators of IPC identified by participants, such as supportive leadership and recognition of collaborative efforts, underscore the importance of organizational support in promoting a culture of collaboration (Regan et al., 2016). The strategies suggested by participants, including interprofessional education, joint training sessions, and regular team meetings, align with evidence-based recommendations for enhancing IPC in healthcare settings (Reeves et al., 2017).

### **Limitations**

This study has several limitations that should be considered when interpreting the findings. First, the study was conducted in three tertiary hospitals in Riyadh, which may limit the generalizability of the results to other healthcare settings in Saudi Arabia. Second, the response rate for health assistants (50.6%) was lower than that for nurses (80.5%), which may have introduced non-response bias. Third, the study relied on self-reported data, which may be subject to social desirability bias. Finally, the cross-sectional design of the survey does not allow for causal inferences about the relationship between IPC and patient outcomes.

### **Implications for Practice and Research**

The findings of this study have important implications for practice and research. Healthcare organizations in Saudi Arabia should prioritize the development and implementation of interventions to enhance IPC between nurses and health assistants. These interventions may include:

1. Providing interprofessional education and joint training opportunities to promote a shared understanding of roles, responsibilities, and collaborative practices.
2. Establishing clear policies and guidelines that delineate the roles and scopes of practice for nurses and health assistants.
3. Fostering a culture of mutual respect, open communication, and trust through leadership support and recognition of collaborative efforts.
4. Implementing regular team meetings and debriefing sessions to facilitate communication, problem-solving, and continuous improvement of IPC.

Future research should focus on evaluating the effectiveness of these interventions in improving IPC and patient outcomes in Saudi Arabian healthcare settings. Additionally, researchers should explore the impact of organizational factors, such as staffing levels, workload, and resources, on IPC between nurses and health assistants. Longitudinal studies are needed to examine the long-term effects of IPC on patient care quality and safety.

### **Conclusion**

This mixed-methods study highlights the importance of IPC between nurses and health assistants in promoting patient care quality and safety in Saudi Arabian healthcare settings. While both groups demonstrated positive attitudes towards collaboration, nurses reported higher levels of collaboration and perceived safety climate compared to health assistants. The qualitative findings

identified key barriers, facilitators, and strategies for enhancing IPC, emphasizing the need for clear role definitions, mutual respect, open communication, and organizational support.

Healthcare organizations and policymakers in Saudi Arabia should prioritize the development and implementation of evidence-based interventions to improve IPC between nurses and health assistants. These efforts may include interprofessional education, joint training sessions, clear policies and guidelines, and leadership support. By fostering a culture of collaboration and teamwork, healthcare organizations can ultimately enhance patient care quality and safety, contributing to better health outcomes for the population they serve.

## References

- Almalki, M. J., Alzahrany, O. A., & Alharthi, H. A. (2019). Nurses' perception of teamwork and its relation to patient safety in Saudi Arabian hospitals. *Journal of Nursing Management*, 27(7), 1408-1417.
- Alotaibi, F. (2019). The role of nursing in healthcare delivery in Saudi Arabia: An overview. *Journal of Nursing Education and Practice*, 9(5), 69-74.
- Al-Yami, M., Galdas, P., & Watson, R. (2017). Nurses' attitudes towards interprofessional collaboration in primary health care settings in Saudi Arabia. *Journal of Nursing Management*, 25(6), 531-539.
- Al-Yousuf, H. (2020). Interprofessional collaboration in healthcare: An overview of the current situation in Saudi Arabia. *Journal of Interprofessional Care*, 34(5), 695-703.
- Braithwaite, J., Westbrook, M., Nugus, P., Greenfield, D., Travaglia, J., Runciman, W., Foxwell, A. R., Boyce, R. A., Devinney, T., & Westbrook, J. (2012). A four-year, systems-wide intervention promoting interprofessional collaboration. *BMC Health Services Research*, 12, 99.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.
- Dougherty, M. B., & Larson, E. (2005). A review of instruments measuring nurse-physician collaboration. *Journal of Nursing Administration*, 35(5), 244-253.
- Elsous, A., Radwan, M., & Mohsen, S. (2017). Nurses and physicians attitudes toward nurse-physician collaboration: A survey from Gaza Strip, Palestine. *Nursing Research and Practice*, 2017, 7406278.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G\*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149-1160.
- Hall, L. H., Johnson, J., Watt, I., Tsipa, A., & O'Connor, D. B. (2016). Healthcare staff wellbeing, burnout, and patient safety: A systematic review. *PLOS ONE*, 11(7), e0159015.

- Hojat, M., Fields, S. K., Veloski, J. J., Griffiths, M., Cohen, M. J. M., & Plumb, J. D. (1999). Psychometric properties of an attitude scale measuring physician-nurse collaboration. *Evaluation & the Health Professions*, 22(2), 208-220.
- Morley, L., & Cashell, A. (2017). Collaboration in health care. *Journal of Medical Imaging and Radiation Sciences*, 48(2), 207-216.
- Nguyen, G., Gambashidze, N., Ilyas, S. A., & Pascu, D. (2015). Validation of the safety attitudes questionnaire (short form 2006) in Italian in hospitals in the northeast of Italy. *BMC Health Services Research*, 15, 284.
- Reeves, S., Pelone, F., Harrison, R., Goldman, J., & Zwarenstein, M. (2017). Interprofessional collaboration to improve professional practice and healthcare outcomes. *Cochrane Database of Systematic Reviews*, 6, CD000072.
- Regan, S., Laschinger, H. K. S., & Wong, C. A. (2016). The influence of empowerment, authentic leadership, and professional practice environments on nurses' perceived interprofessional collaboration. *Journal of Nursing Management*, 24(1), E54-E61.
- Schot, E., Tummers, L., & Noordegraaf, M. (2020). Working on working together. A systematic review on how healthcare professionals contribute to interprofessional collaboration. *Journal of Interprofessional Care*, 34(3), 332-342.
- Sexton, J. B., Helmreich, R. L., Neilands, T. B., Rowan, K., Vella, K., Boyden, J., Roberts, P. R., & Thomas, E. J. (2006). The Safety Attitudes Questionnaire: Psychometric properties, benchmarking data, and emerging research. *BMC Health Services Research*, 6, 44.
- Weller, J., Boyd, M., & Cumin, D. (2014). Teams, tribes and patient safety: Overcoming barriers to effective teamwork in healthcare. *Postgraduate Medical Journal*, 90(1061), 149-154.
- World Health Organization. (2010). Framework for action on interprofessional education & collaborative practice. World Health Organization.