## ORIGINAL RESEARCH

# Nurses' perceptions regarding using the SBAR tool for handoff communication in a tertiary cancer center in Qatar

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## ABSTRACT

**Background:** Communication failure has been reported in the literature as the primary source of medical errors and patient harm. Among various methods of handoff communication, Situation, Background, Assessment, and Recommendation (SBAR) is a reliable and efficient framework that nurses worldwide use. The investigators sought to assess the perceptions of nurses with regard to using the SBAR tool for hand-off communication at a cancer hospital in Qatar.
**Methods:** A cross-sectional descriptive study was carried out to assess perceptions regarding the use of SBAR among 117 staff nurses working in inpatient units of National Center for Cancer Care and Research (NCCCR). A handover evaluation tool was used, enabling nurses to self-report their perceptions.
**Results:** The majority of staff nurses opined that SBAR followed a logical sequence, with a reduction in communication errors after its use. Also, 53.9% of the nurses reported that they would always recommend the SBAR framework in other areas. The majority (87.3%) of the nurses had good perceptions regarding the use of the SBAR framework, and none of them had poor perceptions regarding the same. The mean duration of handovers reduced after their use of SBAR. There was no association between perceptions and demographic variables.
**Conclusions:** SBAR is safe and efficient, and it can be recommended for all healthcare settings. The SBAR communication technique provides an organized logical sequence and improved communication that has been proved to ensure patient safety.

**Key Words:** Hand-Off, Communication, Nurses, Nursing, Situation, Background, Assessment, and Recommendation (SBAR), Standardized tool

## 1. INTRODUCTION

Highly effective communication, collaboration, and group dynamics have been recognized worldwide as fundamental determinants of patient safety. Such communication occurs with the transfer of critical information between healthcare providers regarding their patients' conditions.[1] Effective communication is challenging; moreover, workplace miscommunication is expected to happen due to various barriers and failures. In 2007, The Institute of Medicine reported that miscommunication was preventable and that 98,000 annual patient deaths resulting from medical errors could be avoided.[2, 3]

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The handoff process is an essential aspect of nurses' daily clinical practice. Standardized handoff communication in healthcare is definded as "a process in which information about patient, client or resident care is communicated from one health care provider to another in a consistent manner."[4] Routinely, nursing endorsements or handoffs occur three or more times a day, according to shift changes and as necessary. Moreover, nurses are legally liable and accountable for reporting essential information during handoffs.[5]

The World Health Organization (WHO) and the UK National Health Service (NHS) recommend SBAR (Situation, Background, Assessment, and Recommendation), a standardized method for communicating important information, contributing to the effective escalation of management and the improvement of patient safety.[6]

## 2. LITERATURE REVIEW

Nurses play a pivotal role in evaluating the clarity of the handoff communication process. Moreover, nurses' perception of the process improved for nurse-to-nurse accountability.[7]

A wide literature search was conducted, and the evidence contributed to the development of the following handoff communication categories:

- The need for effective handoff communication,
- Strategy for effective handoff communication,
- SBAR handoff communication,
- Nurses' perceptions regarding the use of SBAR.

### 2.1 The need for effective handoff communication

Handoffs are essential to making effective clinical decisions and providing safe, continuous, and holistic care. An observational study was done to evaluate the completeness of the intensive care unit nursing shift-to-shift handoff using a semi-structured observation sheet that was based on 10 key principles for handoff to overtly observe 20 bedside nursing handovers. Overall, the content handed over was consistent with the fundamental principles of handoffs. However, some key principles were addressed minimally in the clinical handoffs or were omitted from them. Designing a specific handoff tool for intensive care settings will ensure compliance with all the fundamental principles of handoffs.[8]

A mixed-method study of shift-to-shift nursing handoffs was conducted using post-handoff questionnaires and the auditing of clinical records. Considerable variability was found across the units included. Inward and outbound nurses had different expectations for adequate handoffs. In addition, they considered other functions of handoffs beyond communicating clinical information, for instance, social interactions and in-service education.[9, 10]

On the other hand, nurse unit managers of 80 clinical units in 18 hospitals were interviewed in 2008 regarding topics, functions, and durations of handoffs in their units. The clinical units were categorized according to type, with a gradually increase in task uncertainty. Units with higher levels of uncertainty spent more time endorsing patients. The study concluded that task uncertainty and its relationship to handoff functions and topics should be taken into consideration during the design of handoff procedure.[11]

### 2.2 Strategy for effective handoff communication

The PACT (Patient assessment, Assertive communication, Continuum of care, Teamwork with trust) Project was piloted in 2008 at a private hospital in Victoria. It was aimed at improving communication between hospital members of staff during handovers. Two handoff tools were designed to standardize and facilitate shift-to-shift and nurse-to-physician endorsement. Both tools employed all SBAR components. A series of workshops were conducted on assertive communication strategies and the focused clinical assessment of the deteriorating patient. Surveys were circulated to nurses and physicians prior to and after implementation to obtain the nurses' thoughts on improvements in structure, content, and communication skills. Initially, 85% of the nurses said that their communication skills needed enhancement. Post-implementation, 68% of nurses said that their handoffs were enriched, and 80% of them expressed more confidence while communicating with physicians. Previously, evidence had supported the use of standardized communication tools for handoffs, together with specialized training in assertive communication and clinical assessment.[12]

During handoffs, communication inaccuracies can cause serious harm and jeopardize patient care. Consequently, two approaches were used to assess nursing shift-to-shift endorsements (taped or written) to identify specific factors that limited or facilitated handoffs. Twenty nurses were interviewed using a semi-structured survey to identify the current endorsement process, barriers, facilitators, and recommendations for improvement. The results revealed that incomplete and inconsistent information, the devotion of limited amounts of time to asking questions, equipment failure, lack of time, and interruptions affected handoffs. By contrast, relevant content, the clarity of notes, face-to-face interaction, and the use of a structured form (checklist) facilitated handoffs.[13]

Likewise, healthcare providers' loss of situation awareness (SA) during handoffs poses a major risk to patient safety in perinatal care units. SA simply refers to "knowing what is going on around." Thus, adequate and effective handoffs may support the implementation of situation assessments.[14]

## 2.3 SBAR handoff communication

Michael Leonard first adopted SBAR from the U.S. Nuclear Navy safety communication tools and developed it for use in healthcare settings. The SBAR communication mnemonic was meant to specify four central components of handoff communication: situation, background, assessment, and recommendation. The SBAR model has been suggested as a tool for facilitating effective communication between healthcare professionals.[15, 16] SBAR provides healthcare providers with a framework for communicating patients' conditions and has been proved to facilitate the gathering, organization, and exchange of information and to be an effective strategy for improving teamwork.[17]

In 2011, an exploratory study was conducted in an intermediate unit to explore the intra-professional communication process during nurse shift changes and to identify improvement strategies that would facilitate the optimal communication process. Sixteen structured observations of the communication process, four semi-structured interviews, and another 16 anonymous surveys were performed. The lack of a common structure, the repetition and forgetting of information, numerous interruptions during the process, and noise hindered effective communication. Nearly 68% of nurses said that part of the information transmitted was lengthy and unrelated, and all of them perceived a need for the revision of the existing handover process.[18]

Medical-surgical nurses were trained on SBAR in four units of a tertiary hospital in the USA. An observation audit was used to record the nurses' tasks, tools, and locations. The results showed no decrease in the mean time taken to make shift reports after the use of SBAR. Nurses spent more time on report-related tasks. There was considerably more discussion and less documentation with SBAR. The study concluded that the introduction of the SBAR tool facilitated the production of comprehensive, consistent, and patient-focused reports.[19]

Another prospective quasi-experimental study was undertaken in the Netherlands to evaluate nurses' training in the use of both the Modified Early Warning Score (MEWS) and SBAR tools to recognize deteriorating patients early. The study included a group of 47 trained and 48 untrained nurses from three medical and three surgical units. The nurses were presented with a case of a deteriorating patient, subsequent assessment, and interventions regarding the patient's case. The findings showed that 77% of the trained nurses and 58% of the untrained nurses assessed the patient immediately. When the patient was subsequent assessed, there were no differences in the measurements of vital parameters except for the respiratory rate, which was measured twice as frequently

(by 53% of the trained nurses and 25% of the untrained nurses, $p = .025$). Sixty-seven percent of the trained nurses and 43% of the untrained nurses conducted follow-ups with the physician. The study concluded that trained nurses could identify deteriorating patients to a greater extent and react more appropriately.[20] Similarly, a study revealed that the implementation of an electronic SBAR note correlated with complete documentation and the increased frequency of documenting communication between nurses and physicians.[21]

Moreover, an audit of anesthetists' verbal endorsements to recovery room nurses in the OR was conducted following SBAR. There were significant improvements in the medical background handover (by 31%) and allergy status handover (by 14%), and there was a 4% decline in the verbal endorsement of instructions for inpatient care. Nurses' satisfaction with handoffs was enhanced by 12%. The study concluded that a structured process of endorsement led to the improved delivery of immediate care. Further focused education on the importance of handoffs for the maintenance of continuity of care is recommended, especially in inpatient units.[22]

## 2.4 Nurses' perceptions regarding the use of SBAR

A study was conducted in South Africa to determine the effectiveness of adopting the SBAR communication tool in an acute clinical setting. An audit of the telephone records revealed a 41% increase in SBAR use by registrars when calling consultants for help. Post-training, the majority of nurses stated that SBAR had facilitated their communication during handoffs.[23]

Another study sought to evaluate healthcare professionals' perceptions of communication within and between different disciplines, safety attitudes, and psychological empowerment pre- and post-SBAR-tool implementation. The study also had the goal of determining whether there was any change in the number of incident reports in relation to communication issues. The researchers split the participants into two groups using an assessment and post-assessment approach. In the intervention group, they found significant enhancements in "between-group communication accuracy" ($p = .039$) and "safety climate" ($p = .011$), and the proportion of incident reports due to communication errors decreased significantly ($p < .0001$) from 31% to 11%.[24]

Moreover, a study was undertaken to evaluate the effectiveness of the SBAR tool when used for various urgent and non-urgent situations within a rehabilitation unit. Findings revealed that using the SBAR tool was helpful in both personal and team communications, which ultimately affected perceived changes in safety culture within the rehabilitation setting.[25]

## 3. Methods

### 3.1 Aim

The aim of the study is to assess the perceptions of nurses regarding the use of the SBAR tool for handoff communication at a tertiary cancer center in Qatar. The objectives of this study are:

- To evaluate the nurses' perceptions regarding the effectiveness of the SBAR framework as a handover communication tool.
- To determine the association between selected demographic variables and nurses' perceptions regarding the use of the SBAR communication tool.

### 3.2 Design, setting, and sample

A cross-sectional, descriptive design was implemented for this study. The study was conducted at the NCCCR, a member of the Hamad Medical Corporation (HMC), which is the largest healthcare organization in Qatar. The NCCCR is a 74-bed, JCI-accredited specialty hospital dedicated to the delivery of optimal treatment and care to patients with cancer and blood disorders. The hospital consists of both ambulatory and inpatient medical settings.

The population of the study comprised all staff nurses working at NCCCR, that is, all of the nurses working in the medical wards and the Palliative Care Unit who were willing to participate in the study.

### 3.3 Data collection

Data were collected using a handover evaluation tool. This tool consisted of three sections, including the sociodemographic data of the staff nurses, the assessment of the handoff structure, and the Handover Evaluation Scale (HES). The Handover Evaluation Scale is a standardized tool that O'Connell et al. evaluated in 2008. The 14-item scale is "a self-report, valid and reliable measure of the handover process. It provides a useful tool for monitoring and evaluating handover processes in health organisations, and it is recommended for use and further development."[26, 27]

The nurses were asked to self-report their perceptions. Subjects whose perception scores were below 33.33% were considered to have poor perceptions. Scores of 33.33% to 66.67% were considered to represent moderate perceptions. The association between selected demographic variables and the perception score was assessed using the chi-squared test at the 0.05 significance level. Out of 125 nurses in the units considered, 102 staff nurses completed the forms.

### 3.4 Ethical considerations

All subjects provided written informed consent for the aggregate and anonymous reporting of the data that arose from their clinical assessments. The Ethics Committee of Hamad Medical Corporation (Ref. 15243/15) approved the study in full accordance with international standards for the ethical use of human subjects in research.

### 3.5 Data analysis

All the statistics were performed using Statistical Package for the Social Sciences (SPSS v.21); descriptive statistics were used to describe the findings of every research item. Moreover, to understand the association between the demographic variables and the participants' perceptions regarding the use of the SBAR tool, the chi-squared test was used.

## 4. Results

### 4.1 Demographics

Almost 87.3% of the study participants were females, and 12.7% were males. Regarding their ages, 23.5% of the participants were $\leq$ 30 years of age, while the majority (29.4%) were 36-40 years old. The average age of the study population was $36.2 \pm 5.7$ years, and their ages ranged from 28 years to 52 years. Also, 64.7% of the staff nurses had > 10 total years of experience with a mean of $14 \pm 5.4$ years and a range of 4.5-30 years of experience. In comparison, 61.8% of the staff nurses had more than five years of work experience at NCCCR with a mean of $7.6 \pm 3.2$ years and a range of 2–13 total years of experience. Around 50% of the study population had a diploma or bachelor's degree in nursing, and only 2% had an MSc in nursing (see Table 1).

### 4.2 Structure of handoff communication

Forty-seven percent of the staff nurses spent 5–10 minutes on handover before they used the SBAR framework for communication. Moreover, 54.9% of the staff nurses spent fewer than five minutes on handovers after using SBAR for communication. The mean duration of handovers after the use of SBAR was $8.2 \pm 4.8$ min and was less than the $12.1 \pm 6.8$ min that were spent on handovers before the use of SBAR for communication. In addition, 52.9% of the nurses used SBAR for 2 months, and 47.1% of nurses used SBAR for 12 months. The majority (95.1%) of the staff nurses agreed that SBAR followed a logical sequence. Moreover, 61.8% of the nurses always used SBAR for handovers. Furthermore, 56.9% of the staff nurses agreed that there was a reduction in communication errors after the use of SBAR, while 91.2% of the staff nurses expressed satisfaction with using the SBAR framework. More than 88% of the staff nurses recommended the SBAR tool for use by other units (see Table 2).

**Table 1.** Characteristics of participants' demographics

| Demographics | Frequency (N = 102) | Percentage (%) | Mean | SD |
|---|---|---|---|---|
| **Age Distribution** | | | | |
| ≤30 | 24 | 23.5 | | |
| 31-35 | 25 | 24.5 | | |
| 36-40 | 30 | 29.4 | 36.2 | 5.7 |
| 41-45 | 17 | 16.7 | | |
| 46-50 | 5 | 4.9 | | |
| >50 | 1 | 1.0 | | |
| **Experience in Nursing (Year)** | | | | |
| ≤10 | 36 | 35.3 | | |
| 11-15 | 31 | 30.4 | 14.0 | 5.4 |
| >15 | 35 | 34.3 | | |
| **Experience in NCCCR (Year)** | | | | |
| ≤5 | 39 | 38.2 | | |
| 5-10 | 38 | 37.3 | 7.6 | 3.2 |
| >10 | 25 | 24.5 | | |
| **Education Level** | | | | |
| Diploma in Nursing | 50 | 49.0 | | |
| BSc Nursing | 50 | 49.0 | | |
| MSc Nursing | 2 | 2.0 | | |
| **Gender** | | | | |
| Male | 13 | 12.7 | | |
| Female | 89 | 87.3 | | |

### 4.3 Perceptions regarding the use of SBAR

Among the participants, 81.4% reported that the quality of information was good when they used the SBAR framework for communication. Moreover, 84.3% indicated that they experienced good interaction and support while using SBAR. While 46.1% reported that SBAR was highly efficient, 53.9% reported that it was of average efficiency. The majority (87.3%) had good perceptions regarding the use of the SBAR framework, whereas none of the participants had poor perceptions regarding the use of the SBAR framework. The average perception score was $76.0 \pm 7.6$, with a median perception score of 77.55 and a perception score range of 40.8 to 90.8 (see Table 3).

### 4.4 Associations between demographic variables and perceptions regarding the use of SBAR

There was no statistically significant difference between the overall perception scores observed among participants with differences in age group, gender, the total number of years of experience in nursing, and the amount of expertise in NCCCR (see Table 4).

## 5. DISCUSSION

Based on the data analysis, the findings demonstrated that the SBAR communication technique provided an organized,

logical sequence and improved communication that had been proved to ensure patient safety. The quality of information associated with the use of SBAR was reported to be good. Of the members of staff, 91.2% expressed satisfaction with the use of SBAR. Also, 53.9% of the nurses stated that they would always recommend the SBAR framework in other areas. There was no association between perception and variables such as age, gender, educational status, and experience.

According to the JCI, a standardized communication tool or checklist is required to ensure that essential information is shared during handoffs. In this study, 63.7% of the nurses agreed that the SBAR framework provided sufficient information about patients. The nurses also agreed that the SBAR framework gave them the opportunity to debrief with colleagues about their difficult shifts (64.7%) and to discuss workload issues (46.1%).[5]

Cornell et al. discussed the need to utilize a tool that concentrated on patients' needs while prioritizing the information shared between caregivers.[19] Nurses desire a structured way to deliver reports with the assurance that any essential information will be conveyed in a timely, effective manner.[29–31] A structure-based handoff communication process not only helps in the delivery of information about the patient but also keeps the healthcare provider focused on the content

being exchanged.[30–32] Nurses communicated that it was necessary to exchange essential information to ensure patient safety and quality of care. In addition, the development of a handoff tool was shown to enhance communication between nurses and patients.[29,33] This study also revealed that the SBAR communication tool was an efficient tool and that it followed a logical sequence.

**Table 2.** Nurses' Perception toward SBAR

| Perception | Frequency (N = 102) | Percentage (%) | Mean | SD |
|---|---|---|---|---|
| **Time spent for handover after using SBAR** | | | | |
| ≤5 | 56 | 54.9 | | |
| 5-10 | 27 | 26.5 | | |
| >10 | 19 | 18.6 | | |
| **Period of use of SBAR by Nurses (Months)** | | | | |
| 2 | 54 | 52.9 | | |
| 12 | 48 | 47.1 | | |
| **Agreement towards logical sequence of SBAR** | | | | |
| Yes | 97 | 95.1 | | |
| No | 5 | 4.9 | | |
| **Duration of handover before and after using SBAR** | Min (min) | Max (min) | | |
| Before SBAR | 5 | 30 | 12.1 | 6.8 |
| After SBAR | 2 | 30 | 8.2 | 4.8 |
| **Frequency of using SBAR** | | | | |
| Always | 63 | 61.8 | | |
| Most of the time | 35 | 34.3 | | |
| Sometimes | 4 | 3.9 | | |
| Rarely | 0 | 0 | | |
| Never | 0 | 0 | | |
| **Agreement towards reduction in communication errors after using SBAR** | | | | |
| Strongly agree | 26 | 25.5 | | |
| Agree | 58 | 56.9 | | |
| Neither agree nor disagree | 11 | 10.8 | | |
| Disagree | 7 | 6.9 | | |
| Strongly disagree | 0 | 0 | | |
| **Satisfaction in using SBAR framework** | | | | |
| Excellent | 12 | 11.8 | | |
| Very Good | 47 | 46.1 | | |
| Good | 34 | 33.3 | | |
| Average | 8 | 7.8 | | |
| Poor | 1 | 1.0 | | |
| **Attitude towards recommending SBAR framework in other units** | | | | |
| Always | 55 | 53.9 | | |
| Most of the time | 35 | 34.3 | | |
| Sometimes | 11 | 10.8 | | |
| Rarely | 1 | 1.0 | | |
| Never | 0 | 0 | | |
| **Total perception towards use of SBAR tool** | | | | |
| Poor | 0 | 0 | | |
| Average | 13 | 12.7 | | |
| Good | 89 | 87.3 | | |

It was interesting to note that, though around half (55%) of the nurses indicated that they completed handover communication using SBAR within 5 min, 26% of them indicated that they took 5-10 min, and 19% of them felt that filling the SBAR form consumed more than 10 min. This study was somewhat consistent with the findings of Achrekar et al.: The

majority (68%) of the nurses stated that they had completed documentation in 5-10 min, 21% of the nurses stated that the SBAR form was very time consuming, while 42% and 37% opined "somewhat" and "not at all", respectively.[34]

Research introduced many components for consideration with regard to standardized handoff communication. The main approach to effective handoff reporting was creating a standardized process. The consistency of the guidelines and the tools used created an environment that promoted im-

proved patient outcomes.[35] The main features of using standardized handoff communication processes were the reduced omission of information and the consistency of care.[36] In this study, 56.9% of the staff nurses agreed that there was a decrease in communication errors after using SBAR, and 82.4% of them expressed the opinion that the information passed through SBAR was easy to follow. Another study, by Maria et al., also showed that, after the implementation of the SBAR communication tool, the proportion of incident reports due to communication errors decreased significantly.[24]

**Table 3.** Factor wise perception score in using SBAR framework (N = 102)

| Perception | Quality of information | | Interactions & Support | | Efficiency | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Poor | 0 | 0 | 1 | 1.0 | 0 | 0 |
| Average | 19 | 18.6 | 15 | 14.7 | 55 | 53.9 |
| Good | 83 | 81.4 | 86 | 84.3 | 47 | 46.1 |

**Table 4.** Association between nurses' characteristics and their perception about using SBAR Tool

| Nurses' Characteristics | $\chi^2$ | df | *p*-value |
|---|---|---|---|
| Age | 1.265 | 3 | .737 |
| Gender | 0.275 | 1 | .600 |
| Education | 0.047 | 2 | .977 |
| Total years of experience in Nursing | 0.506 | 2 | .776 |
| Years of experience in NCCCR | 3.316 | 2 | .191 |

As Whitson et al. emphasized,[16] nurses who utilized the SBAR tool felt more confident about answering questions and could present patients' information in a more concise manner.[37] In this study, 91.2% of the staff nurses expressed satisfaction with using the SBAR tool.

### 5.1 Limitations
The study results were based solely on the perceptions of 102 staff nurses working in NCCCR's inpatient units. A content analysis of the SBAR format was not undertaken. This study did not evaluate the effectiveness of the SBAR tool where patient outcomes were concerned; future research could address this.

### 5.2 Implication of study results
The SBAR tool was found to be an efficient method of handoff communication in the NCCCR wards in which it was

implemented. Hence it could be deployed in all NCCCR wards. Since the answers to the survey questions were based on perception, it is strongly recommended that objective data, such as event reports on the handoff communication process that would measure patient safety, be included.

## 6. CONCLUSION
Effective communication has been recognized as a significant factor in maintaining patient safety, promoting a professional attitude, and facilitating collaboration between healthcare providers. The evidence from this study confirms that SBAR is a simple and effective intervention for improving communication and patient safety. In general, nurses have positive perceptions regarding the use of SBAR during handovers. However, further studies will be necessary to monitor their compliance with the standardized handover tools.

## CONFLICTS OF INTEREST DISCLOSURE
There is no conflict of interest that has been declared by the authors.

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