Attitudes of doctors and nurses toward patient safety within emergency departments of a Saudi Arabian hospital: A qualitative study

Running Title: Patient Safety Climate Attitudes

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Abstract

Introduction: The attitudes of doctors and nurses toward patient safety is a significant factor in hospital safety climates and medical error rates. Yet, there are very few studies of patient safety attitudes in Saudi hospitals and none conducted in hospital emergency departments.

Aims: The current study aims to investigate the discrepancy between the patient safety attitudes of doctors and nurses in a Saudi hospital emergency department.

Materials and Method: The study employed a qualitative research designvia semi-structured interviews with Saudi and non-Saudi doctors and nurses working in a Saudi hospital emergency department to determine their attitudes and experiences about the patient safety climate.

Results: The findings showed doctors and nurse held some similar safety attitudes, however, nurses reported issues with doctors with respect to their teamwork, communication, and patient safety attitudes. Moreover, several barriers to the patient safety climate were identified such as limits to resources, teamwork, communication, and incident reporting.

Conclusion: The findings provide one of the few research contributions to knowledge on the differential patient safety attitudes of Saudi and non-Saudi doctors and nurses and suggest the application of such knowledge would enhance positive patient outcomes in emergency departments.

INTRODUCTION

The attitudes of doctors and nurses toward patient safety is a significant factor in hospital safety climates and medical error rates [1]. Safety climate can be defined as perceptions about how safety is managed within an organisation in terms of measurable components like management behaviours, safety systems and employee's safety attitudes [2]. Indeed, more positive safety attitudes among nurses and doctors have been found to be associated with lower medical error rates [3]. Given the high rate of patient medical errors and related cost [4], knowledge about how to improve patient safety climate attitudes in hospital settings has the potential to improve clinical outcomes and contribute to organisational efficiencies.

Qualitative research on patient safety climate attitudes has been conducted in a range of countries and hospital departments showing nurses generally rate patient safety climate attitudes lower than doctors, especially on teamwork climate, working conditions and the quality of management support [5-7]. Research in the context of Saudi Arabian hospitals has also shown a similar discrepancy between safety climate attitudes of nurses and doctors in different hospitals and hospital departments [8-9]. As surmised by Thomas and colleagues [10], these findings are likely to be associated with differences in status/authority between nurses and physicians, differential responsibilities and training, gender issues, and nursing and physician cultures.

The current study aims to investigate the discrepancy between the patient safety climate attitudes of doctors and nurses in more depth by employing a qualitative research design. Qualitative research provides the advantage of being able to probe the internal states, beliefs and attitudes of participants [11]. At the same time, the research in this study addresses a gap

in the literature as there have been very few studies of patient safety climate attitudes in Saudi hospitals and none conducted in hospital emergency departments. Thus, the current study seeks to explore the patient safety climate attitudes of doctors and nurses employed in the emergency department of a Saudi hospital.

MATERIALS AND METHOD

Study Design:

The study employed a qualitative research design by collecting data via semi-structured interviews with Saudi and non-Saudi doctors and nurses working in a Saudi hospital emergency department to determine their attitudes and experiences about the patient safety climate. The data from interviews was subjected to thematic assessment via Interpretive Phenomenological Analysis (IPA) [12-13] to identify the significant meanings behind participant's patient safety climate attitudes.

Participants:

The participants in this study were purposively sampled to include doctors and nurses who worked in the emergency department of a Saudi hospital. Participants were sampled until the data generated from interviews reached saturation point [14]. The final sample of participants included 5 Saudi doctors, 5 non-Saudi doctors, 3 Saudi nurses, and 7 non-Saudi nurses. To protect their identity, each participant was assigned a code: SD1 to SD5 (Saudi doctors); NSD1 to NSD5 (non-Saudi doctors); SN1 to SN3 (Saudi nurses), and NSN1 to NSN7 (non-Saudi nurses).

Setting:

The study was conducted in the emergency department of a ministry of health (MOH) hospital in Riyadh, Saudi Arabia. This hospital receives more emergency cases than any other hospital in the kingdom. Currently, it has 1,400 bed capacity with more than 8,000 employees [15]. The emergency department receives approximately 160,000-180,000 patients annually [15].

Data Collection:

Data collection entailed semi-structured interviews with doctors and nurses on their experience of safety attitudes and climate in the emergency department. As recommended by Spradley [16], the interview questions followed four general types that are consistent with the framework of IPA: descriptive (e.g., What are the important facilitators and barriers to patient safety in your department?), structural (e.g., In your perspective what are the important elements of a successful emergency department safety climate?), contrast (e.g., How do problems in factors like teamwork, management support and job setting translate into patient safety issues?) and evaluative (e.g., What is your evaluation of the safety attitudes in your department?). The duration of interviews was between 15 and 30 minutes and interviews were recorded, transcribed and transferred to the data analysis package NVivo 11 for qualitative analysis and thematic coding [17].

Data Analysis

Data analysis commenced with the process of immersion [18] which entailed listening to the recording of each interview after its conclusion in order to review the content and record any observations in field notes [13]. The next step was focused coding of participant responses to each interview question to note patterns and common themes that appear in the data. Using this approach, codes were assigned to represent and categorize the main patterns of meanings

in the interviews [17,19]. By this process, the codes were further defined, described and linked together into groups to produce a list of main themes and subthemes of meaning associated with patient safety attitudes.

A range of steps were taken to establish the credibility, dependability confirmability, and transferability of the data [20]. To establish the credibility of the findings, descriptive field notes were taken during interviews to document observations and add context to the audio data. Confirmability of findings entailed the use of analytic memos to ensure objectivity in any interpretations made in the course of data analysis [21]. The transferability of research findings was met by purposive sampling of participants based on their capacity to provide relevant knowledge on emergency department safety climate attitudes. The criteria of ensuring dependability was met by having an outside researcher conduct an inquiry audit on the research study.

Ethical Consideration:

The investigation was aligned with important principles associated with research with humans including the principles of respect for justice, autonomy, beneficence or do good, and nonmaleficence or do no harm [22]. The study was approved by Australian Capital Territory Health Research Ethics; Australian National University Human Ethics Committee and the General Directorate for Researches and Studies, Ministry of Health, Kingdom of Saudi Arabia. The research followed the principle of informed consent by notifying participants of the purpose of the study and sharing information about the study with participants via a consent form. Interviews were conducted in private to respect the privacy of participants and the thoughts and feedback of the participants was respected during interviews.

RESULTS

Five main themes were derived from the coding of the interview data on patient safety climate attitudes to include Safety evaluations, Safety barriers, Safety facilitation, Safety issues and Safety needs. Moreover, each theme was comprised of a series of subthemes to represent specific safety climate attitudes. As such, this section provides an in-depth presentation of the findings with respect to each main theme and sub-themes by reference to the respondent's own words.

Safety Evaluation Theme:

Whereas four out of five of the Saudi doctors had a favourable evaluation of the safety climate, all the non-Saudi doctors reported a less than positive evaluation of the safety climate with two participants providing a rating of four and five out of ten, respectively. Similarly, most Saudi and non-Saudi nurses reported a less than positive rating of the safety climate in the emergency department. The findings also showed some nurses had unfavourable ratings of doctor's safety climate attitudes: *"For nurses, they are good. They are following ... they are doing their best to improve patient safety and they are trying to do their best. For doctors it depends some physician, they are doing their best, but others, no. They don't care."* (SN2)

Barriers to Safety Theme:

Participants reported their perceptions of a range of barriers to the patient safety climate which reflected three subthemes: accountability and blame, medical errors and language. The most frequently mentioned barrier to safety was language which reflects the multi-cultural nature of Saudi society. In fact, 15 of the 20 participants reported the language barrier can be a

problem when communicating to patients. As shared by a non-Saudi nurse stated: *"The patient, they are saying something, we cannot understand. We're not fluent in Arabic, and sometimes the patient is saying some important information that we need to know in order to give them the proper care"* (NSN6). In contrast, participants did not view religion, national differences or gender to be significant barriers to patient safety in the emergency department: *"There are no differences, as long as you're working in the hospital the patient safety should come first"* (NSN4).

In terms of the Safety barriers subtheme of Medical Errors, participants reported issues with infection control and prescribing medications. For example, one Saudi doctor shared: *"There are some scattered problems like infection control and this could affect patient safety"* (SD2). A small number of participants also reported two other important barriers to safety climate in the subthemes of accountability and blame. Indicating that a lack of accountability can impact negatively on patient safety climate, one Saudi nurse shared: *"The most important barrier for me is the accountability. If you have incident, and you report it one and two and three times, there is no accountability to make people more compliant with the patient safety"* (SN2). Three participants also highlighted that attributing blame for incidents can act as a barrier to patient safety climate. As put by one non-Saudi nurse: *"I think the most important factor in order for us to have safety for our patients is having a non-blame environment, because if, for example, when the staff commit a mistake, we found out there is an error of medication or she did something wrong, and then we will punish this staff. The next time around, the other staff will not report it anymore."* (NSN1)

Safety Facilitation Theme:

Staff teamwork was the most frequently mentioned safety climate facilitation subtheme. Participants generally held positive attitudes towards the teamwork of the fellow staff and this was similar between Saudi and non-Saudi doctors and nurses. Importantly, participants also reported the link between teamwork and optimal patient outcomes*: "We have a good teamwork here, and the management also, we have more support from the management, and translating into patient safety"* (NSN4). Nevertheless, there was mention by non-Saudi nurses of problematic teamwork that is associated with the attitudes of doctors: *"Most of the time we have good team. But there are some times that the doctors have maybe some problems with the attitudes. So, they could be rude sometimes or shout out to you. So, if you have any concern, you couldn't ask them"* (NSN7).

In contrast to the generally positive perceptions of staff teamwork, participants reported mixed views about management support to facilitating the patient safety climate. Whereas participants reported modest and improved support, there was the view especially among nurses that more could be done to support frontline staff to develop the patient safety climate. As one Saudi doctor stated: *"Management support, it is very important to support your staff as this will improve the quality and patient safety"* SD2.

Like the perceptions of management, attitudes towards the safety facilitation subtheme of communication were equivocal. Most nurses had less than positive attitudes about their communication with doctors. At the same time, doctor's communication with patients was also said to be lacking by one non-Saudi nurse who made the link to its effects on patient safety by stating: *"there are still some doctors who will not explain the diagnostic procedure that they are*

undergoing with the patient. That's the time now there is a break with the safety of the patient" (NSN1).

A final subtheme to be derived from the data was the how participants employ protocols and incident reporting to facilitate patient safety. Although participants indicated that there are protocols to follow for reporting patient safety incidents, such as the Occurrence Variance Report (OVR), there was a general view among doctors and nurses that staff are under-reporting. This was seen to be due to the perception that there was little or no follow up to incident reporting or the report being perceived as a complaint: *"Actually, at the beginning, we were reporting, but with no feedback, so, for me I stopped reporting"* (SD4).

Safety Issues Theme:

The most frequently reported safety issue was problems with facilities, resources and equipment. One non-Saudi nurse elaborated on the negative impact of unavailable resources in terms of the challenge it presents to patient safety: *"This started when they cut off the supply from Ministry of Health. So, if we are lacking resources, the staff will not do things right. For example, if the cleaning material is not available, they will not clean anymore. If the alcohol swab is not available, they will not clean anymore, because they know it's limited. They want it to be resourceful enough to make ends meet in order for the supply to be available for 24 hours."* (NSN1)

A further subtheme of safety issues identified in the data was uncompliant staff which may have negative implications for patients and staff alike. A Saudi doctor spoke to the issue of uncompliant staff by stating: *"sometimes our staff compromise themselves to high risk patient. They knew that this patient has a high risk of respiratory infection symptoms and they need to*

wear special mask such as N95 mask, but they are not using this" (SD5). In terms of doctor compliance to provide patient safety, one Saudi nurse observed: *"For doctors it depends. Some physicians, they are doing their best, but others, no. They don't care"* (SN2). A further patient safety issue subtheme was the problem of overcrowding and work overload reflecting poor staff-patient ratios. As one Saudi doctor shared: *"The overload, overcrowded, multiple admitted patients, this affects patient safety directly"* (SD5). Moreover, this safety issue was further elaborated by a non-Saudi nurse who stated: *"considering the fact of the number of patients coming and the workload that the staff is receiving, the staff could be prone to errors, and I couldn't say it's that safe"* (NSN7).

Safety Needs Theme:

The most frequently mentioned safety need for more patient safety was training. Indeed, 17 of the 20 participants reported the importance of staff training to facilitate the patient safety climate as: *"this will help us because it will decrease our incidents against our patients, incidents against our staff and will give us some alternative or critical thinking for us on how we will solve problems"* (SN3).

This need was seen to be especially important when it comes to new staff as highlighted by one Saudi nurse: *"[patient safety] is not clearly discussed with our staff during their orientation program, or during the interview, usually we are focusing only on their experience, and their qualifications"* (SN1).

Some participants also reported other safety needs under the subthemes of guidelines and protocols. For example, one nurse stated: *"For me, the important and safe practices in the area,*

or in our work, is we learn based on the protocol, policies and procedures of the hospital" (NSN3).

DISCUSSION

The findings from qualitative analysis showed doctors and nurse held some similar safety climate attitudes, however, nurses reported issues with doctors with respect to their teamwork, communication, and attitudes toward the patient. As found in other research [10], nurses reported that their input is not well received, they are underestimated by doctors, and disagreements between physicians and nurses are not well reconciled. At the same time, the doctors often didn't elaborate their answers to questions on patient safety climate; preferring to share platitudes and take a non-committal stance on many safety attitudes.

Doctors may report more positive safety attitudes because they are less engaged with the issue and spend less time on direct patient care. This finding is perhaps not surprising given a survey of medical school programme directors in the US revealed that only 16% provided formal lectures about safety, despite an acknowledgement of the need for such material [23]. By implication, doctors may be less engaged in safety climate issues because safety concerns are peripheral to their training. As noted by 17 of the 20 participants, it is important to conduct and participate in ongoing staff safety training to facilitate the patient safety climate in a general sense. At the same time, the literature [24] further suggests that safety training should be further incorporated into medical schools for doctors as part of their professional development and to improve their attitudes towards patient safety.

The findings also showed non-Saudi doctors and nurses generally reported more negative evaluations of the safety climate than Saudi doctors and nurses. This finding is consistent with previous research in Saudi Arabia [8-9,25]. As agued by Almutairi and colleagues [25], cultural differences in safety attitudes are likely to reflect differences in values, traditions, beliefs, behaviours, religion, and language. In terms of values, Saudi Arabia is comparatively high on power distance [26] which reflects higher respect for authority and less likelihood of questioning the decisions of leaders. From this perspective, Saudi doctors and nurses may have been less likely to report negative evaluations of the patient safety climate of their hospital out of respect for authority [9].

The finding of under-reporting medical errors is consistent with other research [27-28]. In a systematic review [28], healthcare personnel, especially doctors, were found to under-report errors for fear of individual and legal blame. Similarly, participants reported more under-reporting by doctors than nurses and identified several barriers to error reporting that have the potential to impact negatively on patient safety. These included attributions of blame, management viewing error reporting as complaints, a lack of accountability (especially among doctors), and inadequate follow-up on incident reporting. Whereas accurate incident reporting is an important objective in a positive hospital safety climate, the findings suggest several processes may undermine this objective and ultimately compromise patient safety.

Limitations

The use of semi-structure interviews may have increased the likelihood of response inhibition in participants [29] for fear of negative repercussions by open and honest responding.Moreover, the small sample size limits the generalizability of the findings.

Conclusion

The findings of this study provide one of the few research contributions to knowledge on the differential patient safety climate attitudes of Saudi and non-Saudi doctors and nurses in hospital emergency departments and the factors that may impede or facilitate patient safety climate attitudes, such as limits to resources, teamwork, communication, and incident reporting. The findings suggest the application of such knowledge would be desirable given the importance of a safety climate attitudes to enhancing positive patient outcomes in emergency departments.

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Abbreviations: ED, emergency department;

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Availability of data and materials: The datasets used and/or analysed during the current study are not publicly available as individual participant confidentiality could be jeopardized and as indicated by the approval from the participating bodies. Aggregate summaries of the data are however available from the corresponding author upon reasonable request and with permission of the participating hospitals. All authors had full access to all the data (including statistical reports and tables) in the study and can take responsibility for the integrity of the data and the accuracy of the data analysis.

Ethics approval and consent to participate: The study was approved by Australian Capital Territory Health Research Ethics Committee (ETHLR.16.247); Australian National University Human Ethics Committee (Protocol 2017/514) and the General Directorate for Researches and Studies, Ministry of Health, Kingdom of Saudi Arabia. The participants received oral and written information about the study, including details about confidentiality in handling the data. The participants were informed about the voluntary nature of their participation, including the fact

that they could terminate their participation at any time. Written informed consent was obtained from each participant prior participation.

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