RESEARCH ARTICLE

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Assessing patient safety culture in obstetrics ward: A pilot study using a modified Manchester Patient Safety Framework in China

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Abstract

Aim: The primary objective of this study was to assess the patient safety culture in a general hospital in Shanghai, China, through a modified Manchester Patient Safety Framework (MaPSaF).

Design: This study has a qualitative interview design. Data were collected through group interviews and analyses performed through content analysis.

Methods: The MaPSaF was translated into Chinese and used to assess the patient safety culture in a large general hospital in Shanghai, China. Group interviews using the MaPSaF were conducted with 15 nurses in the obstetric ward. Participants rated their safety practice individually on each of the nine MaPSaF safety culture dimensions. The dimensions and scores were then collectively discussed and a practice-wide consensus score for each dimension was agreed. Discussions were recorded, transcribed and analysed to assess patient safety in the obstetric ward.

Results: It took about 2 hr to complete the discussion focusing on patients' safety employing the MaPSaF. Most participants recognized the process as acceptable and useful. The MaPSaF directed team discussion about patient safety issues and facilitated communication, prompting some practice changes. All participants responded positively to the discussion and perceived MaPSaF as a good safety culture assessment tool, with clear, comprehensive and understandable entries. The process demonstrated that the department of obstetrics in the hospital already had a positive patient safety culture, but certain areas were highlighted as still needing improvement. Based on participants' positive experience and perception of the MaPSaF, it can be concluded that there is potential benefit in its adaptation and use in obstetrics wards of Chinese hospitals. The MaPSaF has the potential to strengthen existing safety cultures and improve general safety through collaborative measures.

KEYWORDS
MaPSaF, obstetrics nursing, patient safety culture, pilot study

1 | INTRODUCTION

Patient safety is a primary concern in every hospital across the globe, especially during the COVID-19 pandemic, which has a profound impact on global healthcare systems and pregnant women (Chmielewska et al., 2021; Zhang et al., 2020). Some studies found a higher rate of adverse pregnancy outcomes in pregnant women during the COVID-19 pandemic, such as gestational hypertension (Justman et al., 2020), gestational diabetes (Justman et al., 2020), premature rupture of membranes (Du et al., 2021), stillbirth and preterm birth (Kc et al., 2020).

Healthcare experts believe that implementing a safety culture could statistically significantly transform the overall safety in the healthcare setting (Azyabi et al., 2021). The Manchester Patient Safety Framework (MaPSaF) Parker (2009) is a qualitative research tool for Safety culture and was developed by Professor Parker from The University of Manchester, United Kingdom (Ashcroft et al., 2005). The MaPSaF assesses the overall safety culture of a ward or department, identifies areas of improvement and suggests potential remedial measures (Parker, 2009). It was initially used in the UK's patient safety culture assessment of primary care organizations (Parker, 2009). The MaPSaF statistically significantly improved patient safety and is considered reliable by the UK Patient Safety Management Agency, which promoted its use for safety assessments in several hospitals in the UK (Tocco et al., 2022). The MaPSaF has also been implemented internationally in several hospitals (Litchfield et al., 2021), community pharmacies (Ashcroft et al., 2005) and care homes (Ashcroft et al., 2005; Marshall et al., 2017; Tocco et al., 2022).

The MaPSaF has a two-dimensional matrix evaluation structure, with five evolutionary stages of safety culture and nine evaluation dimensions of safety culture (Parker, 2009) in the version for use in primary care settings (Table 1).

The nine measurement dimensions of the MaPSaF are as follows:

1. Overall commitment to quality;
2. Priority given to patient safety;
3. Perceptions of the causes of patient safety incidents and their identification;
4. Investigating patient safety incidents;
5. Organizational learning following a patient safety incident;
6. Communication about safety issues;
7. Personnel management and safety issues;
8. Staff education and training about safety issues;
9. Team working around safety issues.

Patient safety has always been regarded as the most critical point in clinical work; doctors and nurses pay attention to patient safety. The level or prioritization is further enhanced with critically ill patients, especially in the obstetrics department.

Researches about safety culture have mainly adopted quantitative research methods (Li et al., 2021; Wang et al., 2019; Wang, Fan, et al., 2020; Zhong et al., 2019), with limited qualitative studies reported (Wang et al., 2017).

Limited information is available about the patient safety culture in obstetric wards in Chinese hospitals.

In this study, researchers conducted an in-depth analysis of nursing safety culture in a Chinese hospital's obstetric ward, using qualitative research methods to support the formulation of targeted prevention strategies.

2 | AIM

This study was designed to assess patient safety culture in a general hospital using a modified Manchester Patient Safety Framework, in Shanghai, China.

3 | DESIGN AND METHODS

3.1 | Study setting

The study was conducted in the obstetrics ward of a third-grade A hospital in Shanghai, China, in November 2021. On the obstetrics ward, there were 45 beds and approximately 2,000 births every year. This hospital is also designated as one of the regionally maternal referral centres for critically ill pregnant women. Consent of the hospital management department and the obstetric department was obtained.

3.2 | Design

This study had a qualitative group interview design methodology. Study participants' understanding, opinions and motivations about their workplace were analysed and evaluated through content analysis.

TABLE 1 Levels of organizational safety culture (Parker & Hudson)

Level of organizational safety culture	Characterization
Level 1: Pathological	Why do we need to waste our time on risk management and safety issues?
Level 2: Reactive	We take the risk seriously and do something every time we have an incident.
Level 3: Calculative	We have systems in place to manage all likely risks.
Level 4: Proactive	We are always on the alert, thinking of risks that might emerge.
Level 5: Generative	Risk management is integral to everything we do.

3.3 | Participants

Fifteen nurses participated in this study. Most nurses held a bachelor's degree in nursing (N = 9), while five held a college degree and one a master's degree. All nurses were female and consented to participate in this study voluntarily. Participant ages ranged from 23–50 years, with their years of nursing experience in current unit ranging from 1–32 years.

3.4 | Group discussion

The MaPSaF provided the structure for the group discussion. Permission for use and a complete version of MaPSaF was obtained from Professor Parker and translated it into Chinese. The scale was first translated into Chinese by two Chinese nursing scholars with good English skills, one of whom had a master's degree in nursing and the other was a nursing researcher with 2 years' overseas study experience. Two draft translations were prepared, and after discussion and modification, the most appropriate sentences were selected for the translated version. Another two scholars translated the Chinese version back into English, and, after amendments, the final Chinese version was identified and used to gather information from study participants.

3.5 | Data collection

The group discussion was conducted between 16:00 and approximately 18:00 in the meeting room of obstetrics ward and was specifically planned to be brief so as to not to affect the nursing activities of the ward. All participants reported that the whole process was convenient and feasible. Following the principle of voluntary participation and confidentiality, informed consent was obtained for recording the discussion. Participant anonymity was maintained for study analysis using alphabetical coding. During the discussion, researchers listened carefully, used appropriate language and maintained a non-judgmental attitude.

The principal researcher is the head nurse of the obstetric ward, who has been engaged in the front-line work of obstetric nursing for 10 years and holds a Master degree.

The discussion process included six steps;

Step 1: Researchers explained the purpose of the discussion;

Step 2: Researchers introduced the development and background and related theories;

Step 3: Participants conducted a personal evaluation according to MaPSaF;

Step 4: Participants were asked to work in pairs to discuss which stage of the nine dimensions should be; They should be encouraged to share their perceptions of the team and/or organizational patient safety culture level for each of the safety critical dimensions considered. They should discuss why they think they are at that level of safety culture and try to reach a consensus. They should record reasons for their choices and provide supporting information for their perceptions for later discussion;

Step 5: After Step 4 has been completed, an open discussion was proposed about each patient safety dimension, during which workshop participants discuss their perceptions with the rest of the team. Address each dimension in turn and reach a consensus about which stage of 9 dimensions of the MaPSaF;

Step 6: Participants developed an action plans to move their organization or team's cultural maturity to the right of the matrix and to improve safety in the department.

3.6 | Data analysis

The discussion recordings were transcribed verbatim in 24 hr. Taking a categorical analysis approach, the transcript was repeatedly read, coded and classified according to the MaPSaF nine dimensions. The research team members discussed the results and continuously compared the results with the original data. If necessary, the results were returned to the participants to check whether the meaning is clearly said.

4 | RESULTS

4.1 | Overall commitment to quality

The dimension of the overall commitment to quality was considered by all the participants (N = 15) to be at level 5. Patient safety is an essential component of medical and healthcare quality and an important index to measure medical and healthcare quality. The participants concluded that the hospital has protocols in place that promote safety. For example, one participant highlighted the safety manuals. "As a general hospital in Shanghai, China, the time has been spent on quality management of patient care, with many relevant rules and regulations, and instruments and equipment. The hospital has developed various manuals and processes, and quality management assessments, including annual training, quarterly and monthly evaluations, weekly hospital meetings and head nurses' meetings. Additionally, there is a monthly nursing quality control meeting of wards and departments" (N5).

"The hospital has an online system, where many management documents on nursing quality are available. With the development of society and economy, the number of pregnant women with advanced age, high-risk coexisted diseases and complications is increasing, and the requirements for obstetrical nurses are getting higher and higher" (N6).

4.2 | Priority given to patient safety

The dimension of the priority given to patient safety was considered by all the participants (N = 15) to be at level 5. "Patient safety

has always been considered as the most important thing in clinical work. Both doctors and nurses attach great importance to patient safety, especially when critically ill patients come" (N4). "On the management level, the head nurse ensure the safety of manpower by reasonably arranging the rotation of nurses with different qualifications. Nurses in various positions strictly perform their duties and attach great importance to high-risk people, high-risk periods and high-risk links" (N7).

4.3 | Perceptions of the causes of patient safety incidents and their identification

The dimension of the perceptions of the causes of patient safety incidents and their identification was considered by all the participants (N = 15) to be at level 3.

At present, in the hospital, nursing adverse events are encouraged to be reported on time. Once a nursing adverse event occurs, the nurse will deal with it immediately to reduce the harm to patients and then report it to the head nurse, who will report it step by step. However, the nursing adverse events reporting system is so complex that it severely discourages nurses from reporting. Nurses still have concerns about patient safety incidents, for example one nurse described: "If there is a work-related adverse event, we need to do PDCA analysis; the nursing management department will require analysis and rectification. The head nurse may also have opinions on me, so if I can handle it, I will try to handle it by myself" (N3).

There was a consensus that nurses bear too much responsibility for patient safety issues. Nurses are the executors and must take all the responsibility for errors, while other relevant personnel will not bear the responsibility. However, if a nurse discovers and prevents an adverse event, the initiator should not be held responsible, and the nurse concerned will not be rewarded.

For example, one participant highlighted that "If a doctor prescribes the wrong medicine, the nurse does not discover the mistake and carry it out. The nurse is responsible for the accident, but the doctor will not be held accountable for the wrong medicine, nor will the nurse who found the wrong advice be rewarded. Suppose the blood bank (pharmacy) sent the wrong blood (medicine) and we received the wrong blood (medicine). In that case, the responsibility is all on the nurse, and no one will investigate why the blood bank (pharmacy) provided the wrong blood (medicine)" (N2).

4.4 | Investigating patient safety incidents

The dimension of the investigating patient safety incidents was considered by all the participants (N = 15) to be at level 3. After adverse incidents occur, the head nurse of the ward is responsible for the investigation. The nursing management system of the hospital adopts a "Three No spared," policy whereby: "The nurse concerned shall not be spared until the reasons are found out, the nurse concerned shall not be spared until lessons are learned, and the department

concerned shall not be spared until preventive measures are formulated." After finding out the specific reasons for an incident, relevant measures will be taken against the parties concerned according to the seriousness of the incident. Meanwhile, it will be notified at the general meeting of the whole hospital to warn colleagues in other departments not to make the same mistake.

At present, the nursing department and head nurse will use management tools, such as the fishbone diagram and PDCA method (Redick, 1999). Plan-do-check-action cycle, a kind of quality management tool, to comprehensively analyse whether there are problems in the process or management level from five aspects, including staff, machine, material, method and environment and make corresponding plans one-by-one for the problems found and continue to track them.

"We often hear from the head nurse errors or adverse events occurring in other departments at the hospital nursing conference" (N10). "The problems are common, we can analyse and discuss together, find our ward safety risks" (N1). "Now, if there is an adverse nursing event, we are not particularly afraid because we have bought the nursing accident insurance; the hospital and the department will bear the consequences with me together, much better than before" (N10).

4.5 | Organizational learning following a patient safety incident

The dimension of the organizational Learning following a patient safety incident was considered by all the participants (N = 15) to be at level 4. The participants believed that even though the frequency of the whole hospital organization learning for patient safety was high, the effect was not noticeable. The main reasons given were that the content is irrelevant to actual clinical work, that it lacks pertinence and is too rigid. For example, one participant stated: "We have to attend the learning activity and nursing ward rounds of the whole hospital every month, but there are a lot of training contents in our hospital, many of which are not related to our speciality. When we are listening, we will only know a little about them and never use them when we return; it's a waste of time" (N8). Another participant commented that "pregnant patients with thalassemia and other anaemia patients are different; we cannot replenish iron through iron supplements; many obstetric nurses don't know what needs to be learned" (N2).

4.6 | Communication about safety issues

The dimension of the communication about safety issues was considered by all the participants (N = 15) to be at level 4. All the participants agreed that the communication channels for internal safety affairs of nursing staff were diversified and effective. "In our obstetrics department, nurse, write in a shift book. The patient's condition changes can be reflected in the nurse's record and supplemented

in the shift book" (N10). "We have five quality control teams, and team leaders will take the lead to urge everyone to pay attention to patient safety. For example, in key links such as blood transfusion and patient transferring, double-checking will also be carried out to ensure safety" (N7). "Our head nurse is young and has a lot in common with us. We will ask her directly if we do not understand" (N9).

In the event of occasional and external incidents, nurses will look for help from the head nurse when there is a communication barrier between them and colleagues, such as doctors, blood bank workers and other department staff. For example: "It felt like the head nurse was definitely behind our back" (N6). Another participant commented: "For example, sometimes we forget to do something, and the doctor would severely criticize us. However, if we tell the head nurse, the head nurse will help us to communicate, which will be much better" (N4).

4.7 | Personnel management and safety issues

The dimension of the personnel management and safety issues was considered by all the participants (N = 15) to be at level 2. There is a severe shortage of nurses and a heavy workload "We have 45 beds, theoretically, this should have 15–18 nurses, but in actual, there are ten nurses, including nurses with sick leave and maternity leave. Moreover, several nurses under two years of standardized training. The lack of supporting departments, such as security departments, which is of concern for nurses during intense doctor-patient disputes."

Obstetrics is a department with a high accompanying rate of about 80% during the past year in our hospital, but the inadequacy of birth or prenatal education makes the safety education of wards particularly important. Especially during the COVID-19 pandemic, compared with mothers or mothers-in-law, husbands with no parenting experience are usually more anxious and panicked when their wives give birth. They rarely know anything about newborns and postnatal care. Nurses can often explain and teach the patient's current processing measures, while the cooperation of patients and their families is still lower than expectations (N4).

"As soon as the newborn cries, the family will ring the bell to call the nurse. New parents are not sure whether the baby is hungry or uncomfortable but they will call the nurse for everything" (N6). We urge women to breastfeed their babies as soon as possible. Some women feel that breastfeeding will cause uterine contractions and pain, so they do not want to feed, and repeated persuasion has no effect (N6).

"There is no operation in the medical ward at night, and the middle-shift operation in surgery is almost over. Only in the department of obstetrics and gynaecology, which is in a continuous cycle at night physicians and nurses are very busy with the newborns" (N5), and "There may only be 40 patients in other departments, but obstetrics usually has 40 patients and 20 babies simultaneously. Mother-infant sharing increases the workload of nurses. If a baby needs to be transferred to another department due to unstable

vital signs or neonatal jaundice, a nurse needs to spend at least 30–45 minutes on communication with family members, paperwork and transfer; it's really a waste of time" (N8).

4.8 | Staff education and training about safety issues

The dimension of the staff education and training around safety issues was considered by all the participants (N = 15) to be at level 3.

"The new nurse standardized training rotation is every six months, but obstetrics speciality is very strong, which means we must spend at least three months training new nurses to learn how to judge the situation in many ways including recurring abdominal pain, vaginal bleeding (liquid), volume and shape, strip or the presence of placenta previa or early amniotic fluid pollution, etc. Upon successful training, they undergo rotation to another department" (N6).

The participants believed that the online teaching platform is convenient: "Since we started online education, the depth and breadth of our training have been further enhanced. The hospital can also use mobile devices (phones or tablets) to continue our education without commuting to the hospital during breaks, which is a big step forward" (N5).

4.9 | Team working around safety issues

The dimension of the team working around safety issues was considered by all the participants (N = 15) to be at level 4.

There are many risk moments in obstetric ward, such as sudden umbilical cord prolapse in patients with premature rupture of membranes, painless haemorrhage of placenta previa and eclampsia in pregnant women with hypertension.

The participants thought this was related to the overall situation of the COVID-19 pandemic, the department setting and the lack of nurses. Participants perceived that team members cooperated and communicated and discussion patient safety incidents. "We are a team, we help others when they need, and if I can't finish my shift, I can find other nurses to help me. It's all about the patient" (N8).

5 | DISCUSSION

5.1 | The role of MaPSaF in obstetric care management

Establishing an ideal safety culture by following the guidelines and evaluation matrix of MaPSaF for obstetric patients is essential in the current medical environment. All participants responded positively during the group discussion, and all thought that MaPSaF as an excellent safety culture assessment tool, with clear and understandable entries that could cover all aspects of patient safety, which

was similar to previous studies (Ashcroft et al., 2005; Litchfield et al., 2021; Wallis & Dovey, 2011). The communication about patient safety culture in daily work is conducted unofficially and privately. This discussion provided a platform for nursing staff to speak freely and offer suggestions for improving patient safety, which is very helpful for ensuring patient safety.

5.2 | Safety culture improvement suggestions

Based on the findings of this study, it is evident that the department of obstetrics in the hospital evaluated has a positive patient safety culture, however, some aspects need statistically significant improvement. Management of patient safety is an important part of building a safe culture in a hospital. therefore, hospital managers should emphasize patient safety and improve system management modes (El-Farargy, 2020; Freytag et al., 2017). For example, changing inspections into supervision, paying attention to the development of nursing personnel quality, urging staff to respect, support, help each other to complete tasks and strengthening the cohesion between departments. This is consistent with the studies which suggest that human resource allocation is the cornerstone ensuring patient safety (Rangachari & Woods, 2020; Wang, Lu, et al., 2020). The nursing group jointly echoed that they could help build safer healthcare systems by changing punitive cultures, treating errors as an opportunity to improve protocols and reducing the chance of adverse events. Nursing staff are encouraged to question the decisions of colleagues or supervisors and jointly explore better ways to ensure patient safety (Wang, Lu, et al., 2020). Hospital managers should investigate and understand staff training needs, innovate training methods, update training content, improve training quality and provide benefits to medical staff from training to promote the quality of hospital. Communication and cooperation among departments should be strengthened, and communication with patients and their families, to effectively reduce medical errors and adverse events.

6 | SUMMARY

This study used a qualitative research methodology to explore the current safety culture for obstetric patients at a hospital in China, and to determine potential improvement measures. This study represents the first time that the MaPSaF has been used as a qualitative research tool to evaluate the safety culture of obstetric patients in China. The results show that the MaPSaF is an excellent safety culture evaluation tool, which can be used to effectively explore the advantages and disadvantages of the current safety management and provide suggestions to guide the department towards a better safety culture. It can also play a role in guiding nursing staff to learn from each other. We were limited by samples and location in this study. It could be applied to other departments and more research are needed.

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