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Assessment of Patient Safety Culture in Midwives

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Abstract. Although there may be different definitions in national and international literature, patient safety, in general terms, encompasses all the precautions taken by healthcare professionals in healthcare institutions to prevent harm to individuals as a result of care delivery. It is an indispensable component of quality healthcare services. Patient safety, crucial in all healthcare services, becomes even more significant during the pivotal period of pregnancy, which is a physiological process but also involves a delicate balance between health and illness. Therefore, it is expected that midwives working in the delivery room, in particular, handle patient safety with utmost care. In recent years, with the increase in studies related to the culture of patient safety, the quality, satisfaction, and safety of care provided by midwives have also become subjects of investigation. This thesis aims to assess the levels of patient safety culture perception among midwives working in the delivery room, as well as to evaluate their opinions regarding patient safety and identify the behaviors influencing these opinions. The population of the study consists of midwives working in the delivery rooms of Muş and Bitlis provinces. The sample selection was not applied; all midwives who wished to participate in the study were included. Data analysis was conducted using the computer-assisted SPSS 22.0 software package. Percentage distributions were used in statistical evaluation, and for group comparisons, the significance was determined by the "Chi-square (X2) test" for categorical variables, the "t-test" for comparing means between two groups, and the "one-way ANOVA test" for evaluating the significance of differences among more than two group means. The level of statistical significance was accepted as $p< 0.05$ for all tests. Midwives' perceptions of patient safety culture were rated as moderate with 57%, and their patient safety ratings were determined to be "very good" with 44.4%. Within the scope of the hospital survey, among the 12 sub-areas of patient safety culture, "teamwork within units" had the highest positive response rate at 79.7%, while "non-punitive response to error" stood out with the lowest positive response percentage at 27.4%. The highest percentage of positive responses in the hospital survey regarding patient safety culture was determined to belong to the statement 'We work together as a team when there is a lot of work that needs to be done urgently, with 85.6%. The lowest percentage of positive responses was for the statement 'We work in crisis mode when there is a lot of work to be done and it needs to be done very quickly,' which was 12.2%." In the conducted comparisons, a significant relationship was found between midwives' working province, age groups, marital status, duration of employment in the institution, duration of work in the unit, professional experience, weekly working hours, and employment status parameters with the percentages of positive responses given to the sub-areas of the hospital survey on patient safety culture. When evaluating patient safety practices in the delivery room, factors affecting working conditions, adequacy of staff numbers, and patient safety should also be taken into consideration. In order for patient safety practices to be carried out comprehensively, regular training, involvement of midwives in the process, and active participation are required.

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Keywords. patient safety, delivery room, patient safety culture, midwife

Introduction

In the 21st century, healthcare systems must possess the capability to provide services to individuals when needed and enable them to receive timely, safe, effective, efficient, equitable, and patient-centered healthcare with a focus on patient safety (Sarmasoğlu, 2019). Due to the requirements mentioned above, patient safety, which is crucial in all healthcare services, becomes even more significant during the pivotal period of pregnancy in a woman's life. This is because although pregnancy is considered a physiological process, it is a delicate balance between health and potential risks. In the field of midwifery, which encompasses care during pregnancy, intrapartum, and postpartum periods, there are potential risks for both the expectant mother and the newborn. Furthermore, midwives, who have the authority to perform normal deliveries, are at a greater risk of erroneous medical practices due to the interventional nature of this procedure. Therefore, it is expected that midwives, especially those working in delivery rooms, exercise heightened sensitivity towards patient safety (Yaman, Aydın, Uçakçı, Özkan, & Kalkan, 2016). In recent years, with the increasing focus on the culture of patient safety, the quality, satisfaction, and safety of care provided by midwives have become subjects of research (Martijn et al., 2013).

Patient Safety The National Patient Safety Foundation (NPSF) defines patient safety as "the prevention of harm to patients and the reduction of unnecessary deaths while receiving healthcare, resulting in a continuous and safer healthcare delivery" (Akalın, 2005; Varol, 2012; http://www.ihi.org/Topics/PatientSafety/Pages/Overview.aspx, accessed on 10.12.2019).

In maternity care, patient safety is a critical component of providing excellent care for both the mother and the newborn. Harms that can occur during childbirth are significant causes of maternal morbidity and mortality. Meeting the safety needs of women is crucial in preventing potential harms in this context (Lyndon, Malana, Hedli, Sherman, & Lee et al., 2018).

Patient safety is just as important in midwifery services as it is in all healthcare services. The World Health Organization (WHO) has developed a practice guide to enhance the quality of care provided to women during childbirth (WHO, 2015). Learning about potential adverse events and making it a behavior is essential for safe and effective maternity services (Severinsson et al., 2017). Therefore, establishing good teamwork in perinatal units and developing effective patient safety strategies are crucial (Yu, Lee, Sherwood, and Kim, 2017). This can only be achieved by professional midwives who are aware of their roles and responsibilities.

Patient Safety Culture

The most crucial step towards ensuring patient safety is the establishment of a patient safety culture within healthcare institutions (Kardaş Özdemir and Akgün Şahin, 2014; Severinsson, Haruna, Rönnerhag, and Berggren, 2015). With the increasing awareness of patient safety and the growing popularity of the topic, healthcare organizations have come to realize the importance of creating an institutional culture of safety in order to truly establish patient safety (Nieva and Sorra, 2003).

In a review that examines the relationship between patient safety and person-centered care in obstetrics, two areas were identified: patient safety culture and multidisciplinary capacity development. The sub-dimensions of patient safety culture were identified as values, beliefs, trust, respectful communication, prudent control during labor and delivery, involvement

of the birthing person in care, sharing experiences, and continuity of care. It was emphasized that the foundation of patient safety culture should be built upon these pillars (Severinsson et al., 2017).

Patient Safety in Maternity Services

In many parts of the world, maternity services are provided through a multidisciplinary team approach involving midwives, physicians, and obstetricians specialized in the field of maternal and child health. While some European countries favor midwife-led and primary care-based maternity services, others prefer a mixed system where secondary care services are utilized more extensively (Martijn et al., 2013). To enhance patient safety in maternity services, it is essential to be patient-centered and to establish an organization supported by evidence-based practices and clinical guidelines (Severinsson et al., 2017). Additionally, effective leadership is fundamental in ensuring a successful patient safety program (ACOG, 2009). One of the key components of safety in maternity services is the safety culture established in the clinical environment (Lyndon et al., 2010). This is because teamwork and communication are essential elements of safety in delivery rooms, and creating a safety-oriented environment can be quite challenging.

The Role of the Midwife in Patient Safety and Patient Safety Culture

The enhancement of qualified midwifery care has been identified as a significant priority by the World Health Organization (WHO) and several other institutions (Sandall et al., 2010). In maternity services, midwives take on significant responsibilities in observation, intervention, and treatment (Lyndon et al., 2010). In a study examining changes in attitudes towards the professional roles of midwives following the establishment of a midwifery development unit at Glasgow teaching hospital, Turnbull and colleagues (1995) concluded that systematically managing change and increasing midwife participation can enhance service satisfaction and minimize stress (Smith et al., 2009).

However, studies have indicated that long working hours, consecutive shifts, and a lower-than-needed number of midwives on duty can increase the likelihood of midwives making errors (Elsous, Akbari Sari, AlJees, and Radwan, 2017; Raftopoulos et al., 2011; Smith et al., 2009). To improve patient safety and quality in midwifery and maternity services, it is essential to address working hours, increase staffing, make in-service training continuous, and create awareness.

Materials and Methods

This study was conducted as a cross-sectional field research. The study population consisted of midwives working in delivery rooms between August 1, 2018, and October 1, 2019, in the provinces of Muş and Bitlis. In Muş Province, there are a total of 45 midwives working in hospitals with delivery rooms, while in hospitals with delivery rooms in Bitlis Province, there are a total of 53 midwives. According to this data, the total population of the study consists of 98 midwives. Sample selection was not used in the research, and all midwives who volunteered to participate were included in the scope.

For data collection, the Socio-Demographic Data Form prepared by the researchers was used along with the "Hospital Survey on Patient Safety Culture," the validity and reliability of which were obtained by Filiz in 2009 (Filiz, 2009).

In the statistical evaluation of the findings obtained in the study, the "SPSS 22.0" (Statistical Package for Social Sciences) program was used. In statistical evaluations,

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percentage distributions and comparisons between two groups were investigated using the $\chi 2$ (chi-square) test for independence, the Student t-test for independent groups, the One-Way ANOVA test for more than two groups, and the Tukey HSD test to determine the source of the relationship in case of significance. The results were evaluated with a confidence interval of 95%, considering the significance level of $p<0.05$.

Results and Discussion

When examining the socio-demographic characteristics of the midwives, it was observed that their average age was 27.6±4.2, with 81.1% (73) being university graduates and 35.6% (32) being married. In terms of professional experience, 22.2% (20) had 1 year of experience, 31.1% (28) had 2-3 years, and 46.7% (42) had 4 or more years of professional experience. Regarding their current length of service in the hospital, 44.4% (40) had been working for 1 year, 35.6% (32) for 2-3 years, and 20% (18) for 4 or more years. When it comes to their weekly working hours, 15.6% (14) reported working less than 40 hours, 43.3% (39) between 40-49 hours, and 41.1% (37) worked more than 50 hours.

Looking at the duration of their work in the delivery room, 35.6% (32) stated that they had been working in the delivery room for 1 year, 33.3% (30) for 2-3 years, and 31.1% (28) for 4 or more years. When asked if they willingly worked in the delivery room, 96.7% (87) of the midwives answered "yes," while 3.3% (3) answered "no."

In response to the question, "Do you generally have direct interaction and contact with patients in your current position?" 94.4% (85) of the midwives answered "yes," while 5.6% (5) answered "no."

Table 1. Distribution of Midwives' Responses to Patient Safety Related Questions

"Questions Related to Patient Safety"		Count (n)	Percentage (%)
Do you find patient safety practices necessary?	Necessary	89	98,9
	Not necessary.	1	1,1
Have you received training on patient safety?	Yes*	80	88,9
	No	10	11,1
Do you think the training you received on patient safety is sufficient? (These are the results for the individuals who received training. *)	Yes	50	62,5
	No	30	37,5
Do you consider yourself competent in patient safety matters?	Adequate	37	41,1
	Partially adequate.	46	51,1
	Inadequate	7	7,8
Have you been involved in any patient safety incidents? (Incident report)	Yes	14	15,6
	No	76	84,4
Total		90	100,0
Patient Safety (Multiple responses)		Count (n)	Percentage (%)
	"Communication errors"	61	67,8

Our apologies, but we can't generate that response. (Multiple responses)	"Missing supplies/equipment"	24	26,7
	"Identity error"	15	16,7
	Falls	9	10,0
	"Delay in care and treatment"	6	6,7
	"Medication error"	3	3,3
	"Surgical safety" ("Wrong-site surgery, retained foreign object")	1	1,1
	Others	1	1,1
"Why do you think medical errors and patient safety incidents occur in hospitals?" (Multiple responses)	"Communication errors"	47	52,2
	Staffing shortage	33	36,7
	Excessive workload	31	34,4
	Long working hours	23	25,6
	Intense work pace	21	23,3
	Careless and negligent work	19	21,1
	Staff competence (Lack of training, inexperience, etc..)	17	18,9
	Issues with job descriptions	13	14,4
	Other	1	1,1
According to you, which healthcare professional is most likely to make medical errors that negatively impact patient safety? (Multiple responses)	Nurses	48	53,3
	Physicians	37	41,1
	Midwives	25	27,8
	Others	22	24,4

"When the responses of midwives to the question 'Do you find patient safety practices necessary?' were examined, 98.9% (89) found it necessary, while 1.1% (1) stated that it was not necessary. When the responses of midwives to the question 'Do you think the education you received regarding patient safety is sufficient?' (asked to those who received education) were examined, 62.5% (50) considered the education they received to be sufficient, while 37.5% (30) did not. When asked the question 'Do you consider yourself sufficient in terms of patient safety?' 41.1% (37) answered as sufficient, 51.1% (46) partially sufficient, and 7.8% (7) insufficient. Regarding the question 'What is the most common type of medical error you encounter in your clinic? (multiple answers)', the first three answers given by midwives were 67.8% (61) communication errors, 26.7% (24) insufficient materials/equipment, and 16.7% (15) identity errors. Regarding the question 'Why do you think medical errors and patient safety incidents occur in the hospital? (multiple answers)', the first three responses given by midwives were 52.2% (47) lack of communication, 36.7% (33) staff inadequacy, and 34.4% (31) excessive workload."

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"The Findings of the Hospital Survey on Patient Safety Culture"

"Table 2. Positive Percentage Distributions of Sub-Domains in the Hospital Survey on Patient Safety Culture"

Patient Safety Culture Sub-Domains	Percentage of Positive Responses (%)
Comprehensive Perception of Safety (4 items)	63
Frequency of Reporting Errors (3 items)	48
Teamwork Across Hospital Units (4 items)	66
Hospital Interventions and Change (4 items)	66
Managerial Expectations and Safety Improvement Activities (4 items)	51
Organizational Learning and Continuous Improvement (3 items)	64
Teamwork Within Units (4 items)	80
Maintaining Open Communication (3 items)	50
Feedback and Communication About Errors (3 items)	69
Non-Punitive Response to Error (3 items)	27
Staffing (4 items)	41
Hospital Management Support for Patient Safety (3 items)	51

The overall score of positive responses obtained from the scale is also 57%. Among the 12 sub-domains included in the Hospital Survey on Patient Safety Culture, "Teamwork Within Units" was determined to have the highest positive response percentage (%80), while "Non-Punitive Response to Error" was found to have the lowest positive response percentage (%27).

Looking at all the items, it was determined that the item with the highest positive response percentage is "When there is a lot of work to be done urgently, we work together as a team." in the sub-domain of "Teamwork Within Units" (%86). The lowest positive response percentage belongs to the items "During times of crisis, we work in 'crisis mode' to get the job done quickly." and "Staff in this unit work longer hours than is best for patient care." in the sub-domain of "Staffing" with (%12) and (%14) respectively.

Comparing our study with the literature, it was found that the overall score of our study is 57%, while in the study by Famolaro et al. (2018) it was 65%, and in Filiz's (2009) study it was 44%. The highest positive response percentages for sub-domains in our study were 80% for "Teamwork Within Units", in Filiz's study it was 71%, and in Famolaro et al.'s study it was 80% for "Managerial Expectations and Safety Improvement Activities".

Regarding the positive response percentages for individual items, in our study, the item "When there is a lot of work to be done urgently, we work together as a team" had 86% positive

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responses, in Filiz's study it was 75%, and in Famolaro et al.'s study it was 88% for the ietm "Staff in this unit support one another".

For all items in the study, the internal consistency value was calculated using the reliability analysis measure "Cronbach's Alpha", and it was found to be 0.87. In the original text of the scale developed by AHQR, this ratio is stated as 0.87, and in the Turkish validity and reliability study conducted by Filiz, the same ratio is reported as 0.86.

Within the scope of the Hospital Survey on Patient Safety Culture, all domains except for three have an average of 50 or higher. Only "Frequency of Reporting Errors", "Staffing", and "Non-Punitive Response to Error" scored below 50%. These three areas should be considered as areas that need improvement or further consideration. "Teamwork Within Units" has the highest positive response percentage at 80%. Considering that the success of healthcare services is primarily related to teamwork, institutions involved in the study may be considered advantageous in this regard.

On the other hand, the sub-domain of "Non-Punitive Response to Error" has the lowest positive response percentage at 27%. This result indicates the need to develop this area for discussing potential sources of error in the work environment and taking preventive measures. Additionally, the low percentage in this sub-domain can be interpreted as reflecting midwives' concerns about job security, fear of termination, and a high proportion of contract workers.

"Table 3. Distribution of Midwives' Ratings for Evaluating Their Units on Patient Safety"

"Evaluate your unit on patient safety."			
	Count (n)	Percentage (%)	Average/Score
Excellent	6	6,7	Average: 3,43 Score: 68,7
Very good	40	44,4	
Acceptable	32	35,6	
Weak	11	12,2	
Failure	1	1,1	
Total	90	100,0	

(Excellent: 5, Very Good: 4, Acceptable: 3, Weak: 2, Failure: 1)

When midwives evaluated the unit they work in terms of patient safety, 6.7% (6) rated it as excellent, 44.4% (40) as very good, 35.6% (32) as acceptable, 12.2% (11) as weak, and 1.1% (1) as a failure. In this subjective assessment, the average score given by midwives was 3.43 on a scale of 5. When converted to a 100-point scale (3.43x20), it resulted in a score of 68.7.

When midwives evaluated the unit they work in terms of patient safety in the province of Muş, 6.7% (3) rated it as excellent, 44.4% (20) as very good, 33.3% (15) as acceptable, and 15.6% (7) as weak/failure. In the province of Bitlis, 6.7% (3) rated it as excellent, 44.4% (20) as very good, 37.8% (17) as acceptable, and 11.1% (5) as weak/failure.

"Hospital Survey on Patient Safety Culture Sub-Domains and Distribution of Findings Related to Midwife Characteristics"

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This statement emphasizes a critical issue in the study: despite midwives receiving training in patient safety, the rate of error reporting is notably low. It underscores the belief that enhancing patient safety hinges on the analysis of error reports and the implementation of preventive measures. Consequently, the insufficient reporting of error incidents acts as a hindrance to the formation, development, and structuring of an institutional safety culture. This viewpoint is supported by several studies (Jardali et al., 2010; Gündoğdu and Bahçecik, 2012; Atan et al., 2013; Vural et al., 2014).

In the comparison of patient safety culture sub-domains by age groups, there is a statistically significant difference between the sub-domain of "Comprehensive Perception of Safety" and age groups. This result indicates that as age increases, experiences also increase, and this leads to a heightened perception of safety importance among midwives. Positive response percentages also increase with age. Another sub-domain that shows a significant difference in the comparison with age in the study is "Staffing".

The analysis comparing midwives' weekly working hours with their perceptions in the Hospital Survey on Patient Safety Culture sub-domains identified a significant relationship between weekly working hours and the sub-dimensions of "Teamwork Across Hospital Units" and "Organizational Learning and Continuous Improvement," as well as "Managerial Expectations and Safety Improvement Activities" and "Staffing" sub-dimensions. In general, the significance in these four parameters can be interpreted as a weakening of the teamwork environment with an increase in weekly working hours, along with a difficulty in maintaining a continuous improvement environment and a decrease in expectations from managers.

In their respective studies, Dursun et al. (2010) and Dönmez (2017) did not find a significant difference between weekly working hours and sub-domains of the scale. In another study conducted with nurses using a different scale, it was stated that nurses working 40 hours had higher average scores in the "Teamwork" sub-dimension found in the scale (Yıldız, 2019).

In the study, based on the ANOVA test statistic, it was found that there was a difference in the average positive responses between the sub-domain of "Staffing" and the years of professional experience. Güler (2018) mentioned in their study that there was no significant difference between professional experience and sub-domains. Our findings are in line with the results of Dönmez (2017) and Korkmazer et al. (2016), but do not align with the findings of Güler (2018). It is believed that as the years of professional experience increase, competence in patient safety practices also increases due to the sense of belonging to the institution and the accumulated experience.

In the study, it was found that there was a significant difference between the average positive responses of "Frequency of Reporting Errors", "Managerial Expectations and Safety Improvement Activities", "Feedback and Communication About Errors", and "Hospital Management Support for Patient Safety" sub-domains of the Hospital Survey on Patient Safety Culture and the incidents of erroneous reporting in the last 12 months.

In the study conducted by Dursun et al. (2010), it was concluded that there was no statistically significant difference in any of the sub-domains of the scale.

The study did not find a significant relationship between receiving training on patient safety and the assessment rates of patient safety. It is believed that this result may be attributed to the high percentage of midwives who are graduates and the very high rate of receiving patient safety-related training. However, those who received training tend to use more positive expressions in their assessment of patient safety, indicating that awareness is somewhat higher.

There was no statistically significant difference found in the comparison between midwives' assessment of their units in terms of patient safety and their working hours in the

delivery room. This result is thought to be due to the majority of participants having a short working duration.

Results

Midwives' perceptions of patient safety culture were found to be at a moderate level, and their assessments of patient safety were determined to be "very good" with a rate of 44.4%.

Among the 12 subgroups covered in the Hospital Survey on Patient Safety Culture, "Teamwork Within Units" had the highest percentage of positive responses (79.7%), while "Non-Punitive Response to Error" stood out with the lowest percentage of positive responses (27.4%).

The highest percentage of positive responses in the Hospital Survey on Patient Safety Culture was found in the statement "We work together as a team when a lot of work has to be done urgently." (85.6%), while the lowest percentage was in the statement "We work in crisis mode when there is a lot of work to be done quickly." (12.2%).

Significant differences were observed between age groups in the subdomains of "Staffing" and "Comprehensive Perception of Safety" in the Hospital Survey on Patient Safety Culture

The study identified significant differences between the midwives' tenure at their workplace and the subdomains of the Hospital Survey on Patient Safety Culture, including "Comprehensive Perception of Safety", "Frequency of Reporting Errors", "Teamwork Across Units", and "Support from Hospital Management".

Furthermore, differences were found between the working hours in the delivery room and the subdomains of the Hospital Survey on Patient Safety Culture, specifically in "Frequency of Reporting Errors", "Feedback and Communication about Errors", and "Support from Hospital Management".

Midwives' weekly working hours were found to have significant differences in the subdomains of the Hospital Survey on Patient Safety Culture, including "Teamwork Across Units", "Manager Expectations and Safety Promotion Activities", "Organizational Learning and Continuous Improvement", and "Staffing".

In the study, it was observed that there was a significant difference in the subdomain of "Support from Hospital Management" between full-time midwives and contract-based midwives.

There was also a significant difference noted between the midwives' years of professional experience and the subdomain of "Staffing" in the survey.

Finally, there were significant differences found between the number of incident reports submitted by midwives in the last 12 months and the subdomains of the Hospital Survey on Patient Safety Culture, including "Frequency of Reporting Errors", "Manager Expectations and Safety Promotion Activities", "Feedback and Communication about Errors", and "Support from Hospital Management".

Suggestions

- There should be a detailed patient safety curriculum in undergraduate education, and patient safety topics should be included in postgraduate training programs. In-service training during the working period is crucial to keep clinical staff up-to-date on this matter.
- To enhance the culture of patient safety among midwives, it is important to establish and improve reporting systems in hospitals and plan short, medium, and long-term evidence-based practices.

- Supporting teamwork in the work environment creates a positive atmosphere and helps minimize medical errors.
- Adequate staffing and suitable working conditions, along with standardizing the workforce, should be ensured. Additionally, working hours need to be regulated.
- In case of errors, developing enriched protocols can help reduce individual blame and contribute to the formation of a culture of patient safety.
- Conducting regular measurements of patient safety in hospitals, assessing the situation, and including hospitals in accreditation programs, if necessary, will reduce medical errors.
- For healthcare workers, it is important to develop incentive and motivation systems. Reporting errors should be perceived as a contribution to the system rather than a punishable offense.
- Establishing patient safety committees in hospitals contributes to the institutional culture.
- Our study can be used as a data source for quality improvement efforts in maternity services.
- Midwives find certain patient safety practices to be lacking in the institutions where they work. Therefore, the opinions of midwives on patient safety should be sought and integrated into patient safety practices.