Original Article DOI: 10.22114/ajem.v0i0.242

The Quality of the Maternity Triage Process: a Qualitative Study

Farzaneh Rashidi-Fakari[1], Masoumeh Simbar[2*], Saeed Safari[3], Shahrzad Zadeh-Modares[4], Hamid Alavi-Majd[5]

1. Student Research Committee, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
2. Midwifery and Reproductive Health Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
3. Department of Emergency Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
4. Department of Gynecology & Obstetric, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
5. Department of Biostatics, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

***Corresponding author:** Masoumeh Simbar; **Email:** msimbar@gmial.com

Published online: 2019-10-03

Abstract

Introduction: There is no consensus on what the bases and criteria are for the dynamic process of maternity triage. Properly performing the maternity triage process requires reliable data to ensure the correct implementation of this process and the identification of existing deficiencies, and find strategies to modify, improve and enhance the quality of this process.

Objective: The present study was conducted to explain the quality of the maternity triage process.

Methods: The present qualitative study performed a directed content analysis on 19 maternity triage service providers and key informants selected through purposive sampling. The data were collected through semi-structured interviews in 2018 and analyzed using directed content analysis based on the Donabedian's model. The accuracy and rigor of the qualitative data were then investigated and confirmed.

Results: The participants identified the most important factors affecting the quality of the services provided in maternity triage as two categories of measures and care, and interactions and communication. The category of measures and care included two subcategories of examinations and obtaining a medical history.

Conclusion: The present study comprehensively identified different dimensions of the quality of maternity triage services at different levels. The participants identified the quality of the maternity triage process as a multi-dimensional and important concept. Different dimensions of the maternity triage process are recommended that be addressed when designing and implementing maternity triage guidelines and instructions so as to maintain the quality of this process and satisfy their needs.

Key words: Emergency Service, Hospital; Obstetrics; Qualitative Research; Triage

Cite this article as: Rashidi-Fakari F, Simbar M, Safari S, Zadeh-Modares S, Alavi-Majd H. The Quality of the Maternity Triage Process: a Qualitative Study. Adv J Emerg Med. 2020;4(1):e6.

INTRODUCTION

Correct and fast triage is the key to a successful performance in emergency cases. Selecting improper levels of triage due to misinterpretations or neglecting the triage variables and criteria leads to triage errors (1). Moreover, medical errors in obstetrics are associated with different psychophysical and economic problems for the mother and the infant such as birth injuries, increased frequency of cesarean section and reduced frequency of vaginal delivery as well as neonatal mortality and numerous neonatal complications (2). Why and how errors are committed in the system should be investigated, and the challenges and potential weaknesses of the system that lay the foundations for errors should be identified (3).

Although patients with obstetric problems and pregnancy-related conditions are at special risks, emergency teams may fail to diagnose some of the most dangerous complications during pregnancy, including preeclampsia (4).

There is no consensus on what the bases and criteria are for the dynamic process of maternity triage (5). The results of a review article by Rashidi et al. (2019) showed a lack of consensus on a standard and unique instrument or system in maternity triage (6).

A triage system is efficient if it helps quickly and accurately decide on each patient. Simplicity and reliability are the most significant features of a standard triage system (5). Standard triage decreases mortality and increases the quality of care services, satisfaction and the efficiency of emergency departments (7). In addition, quality is evaluated in healthcare organizations using the three-dimensional Donabedian's model. The quality is evaluated in terms of three dimensions, i.e. the structure, the process and the outcomes.

The structure affects the processes, which in turn yield desirable or undesirable outcomes. Improving the services in each of these components is achievable; identifying the process is, however, essential for measuring access to the results and investigating the outcomes of service delivery (8, 9). Given the importance of improving the quality of services in the health system, clarifying the dimensions and characteristics of the concept of quality in the maternity triage process helps with the determination of the criteria and standardization of the measurement instrument of the quality of maternity triage. The present study was therefore conducted to explain the quality of the maternity triage process.

METHODS

Study design

The present study is part of a more comprehensive study with a directed content analysis approach to qualitative research. The study setting included a hospital affiliated to Shahid Beheshti University of Medical Sciences (SBMU), Tehran, Iran. The data were collected using in-depth semi-structured interviews. Maximum variation was observed while performing purposive sampling. Ethics Committee of SBMU approved the study protocol (code: IR. SBMU. PHNM.1396.1005).

Participants

Eligible providers of maternity triage services included those who were willing to participate in the study, and were employed or studying in specialized fields of reproductive health, midwifery, obstetrics and gynecology and emergency medicine in selected hospitals of Tehran, Iran, with at least 6 months of work experience in midwifery units. Maximum variation was observed in terms of age, occupation, level of education, field of study and work experience. To increase diversity in sampling, interviews were performed with different groups of key informants, including the authorities of the Department of Maternal Health and the emergency department and midwifery and obstetric units. Nineteen triage officers and key informants were ultimately included in the present study.

Data collection

After accurately designing the study procedure, obtaining permission and performing the required coordination for the presence of the researcher in the research setting and before officially beginning in-depth semi-structure individual interviews, the participants were verbally briefed on the study objectives during an elementary introduction. Informed consent was then obtained from the participants for performing and recording the interviews. They were also provided with the necessary explanations about the voluntary nature of participation and their right to withdraw from the study at their own discretion as well as the confidentiality of their information. During two preliminary interviews, the desired questions were asked from the triage service providers. The interviews began with a general question about maternity triage such as "How do you think the maternity triage process should be?"

All the individual interviews were digitally recorded, and the participants were asked to state the remaining issues, if any, at the end of an interview. The potential need for further interviews was cited after appreciating their participation. Immediately after completing the interview, the researcher listened to the interview several times and completely transcribed it. The non-verbal features of the interview and its process were also noted down and added to the interview transcript. The interviews lasted 18-55 minutes. Six secondary interviews and a third interview were conducted to validate the data and fill the possible gaps. The interviews were typed and coded the same day.

The four indices of credibility, dependability, confirmability and transferability (Lincoln and Guba) according to Polit and Beck were used to increase the validity and reliability of the data (10-12).

Data analysis

The data began to be analyzed using directed content analysis (13) as they were being collected. After performing the interviews and listening to them several times, their text was transcribed and then entered into MAXQDA10. The Donabedian's model was first used to predetermine the main axis of the "process". After performing several accurate readings, the researcher analyzed the transcripts of the interviews with the 19 participants as an open-source coding system for the production of primary classes. The transcripts were therefore divided into semantic units, and different codes were then compared based on their similarities and differences, and classified into categories (14, 15).

RESULTS

The present study participants comprised 19 maternity triage service providers and key informants, with an age of 29-52 years, a mean age of 40.15 years, with different jobs, i.e. maternity triage officer, emergency medicine specialist, obstetrician and gynecologist, obstetrics and gynecology fellow, authority of the department of

maternal health and death, head of emergency department, triage nurse, the client and their accompaniment, with different work records averaged 13.68 years and from different hospitals across Tehran.

The present findings suggested the participants identified two categories of measures and care, including 27 codes, and interactions and communication, including 8 codes, as the most important factors affecting the quality of the services provided in maternity triage. The category of measures and care included two subcategories of examinations, including 9 codes, and obtaining a medical history, including 18 codes.

Measures and care

All the participants identified the two subcategories of examinations and obtaining a medical history as the main criteria for evaluating the delivery of maternity triage services.

Examinations

According to the participants, the most important examinations in maternity triage included paying attention to the level of consciousness, vital signs, fetal heartbeat, fetal movements, uterine contractions, specialized counselling, stability, vaginal and abdominal examinations, paying attention to ABC and controlling the risk factors. A participant said, *"Fetal heartbeat should surely be the first thing to be checked followed by maternal vital signs and then A, B, C. The mother's airway and blood circulation and such, and then breathing should be considered.*"(MSc in Midwifery, instructor, three years of work experience)

Obtaining a medical history

According to the participants, a medical history should be obtained in maternity triage accurately and in detail, and attention should be paid to spotting, vaginal bleeding, decreased fetal movements, placental abruption, edema, pain, hypertension, miscarriage, blurred vision, severe headache, amniorrhexis, gestational age, history of pregnancy, mental status, pallor, position and presentation of the fetus and how the client was transferred as important points in describing maternity triage. A participant said, "*When she gets in, we first ask for a medical history; we ask what has occurred and calculate here gestational age, or, for instance, ask about the symptoms, bleeding, watery discharge and spotting. We examine her V.S."* (BSc in Midwifery, midwife, 13.5 years of work experience).

Interactions and Communication

According to the participants, important and effective factors in the quality of the delivery process of maternity triage services, to which attention should be paid, include the accuracy and speed of action in triage, the lack of bias in asking questions from the client, attention to privacy, coordination between different units, the tendency to teamwork in triage and communication with the client.

The importance of accuracy and speed of action in triage

Some of the participants cited the importance of accuracy and speed of action in maternity triage and occupational and ethical commitment, conscientiousness and clinical skills in triage. A participant said *"The triage officer must be skillful and compassionate in her work in terms of* conscientiousness; *I mean they have skills, but their conscience is not good enough to pay attention to the required speed and accuracy; Although they might be very good at their office, they fail to perform well when they go to gynecology emergency departments of public hospitals"* (Ph.D. in Reproductive Health, head of the Department of Maternal Health and Death, 17 years of work experience).

Lack of bias in asking questions from the client

Some the participants cited the lack of bias in asking questions from the client in maternity triage. Unprofessional questions and judgment by the triage officer negatively affect the client and cause their inconvenience and dissatisfaction. The triage officer should therefore pay attention to this point when establishing relationships with clients and obtaining their medical history. A participant said, "*I have heard many times from my clients about the unprofessional questions and judgment by the triage midwife; for instance, a woman with a fourchette laceration presenting for triage was attacked by the personnel, or a pregnant mother I referred to the hospital for delivery had hepatitis B and her husband had died during her pregnancy. When she says to the admitting midwife she has hepatitis B and her husband is not in the hospital, unfortunately, she begins asking irrelevant questions such as how she got hepatitis and whether her husband had left her. When I visited the mother, she was very upset. I asked about the reason, and I was ashamed of my colleague's unprofessional behavior*" (BSc in Midwifery, Midwife, 10 years of working experience).

Attention to privacy in triage

Some of the participants emphasized privacy in maternity triage. Observing clients' privacy and rights is essential in clinical examinations or when obtaining a medical history and current medical conditions or during interactions and communication with them. A participant said, *"Let's observe the private atmosphere so that the*

patient ensures we don't divulge her secrets. We do not restate these anywhere. She tells us these things, for example, I had a patient who told me about her epilepsy, but she said even her husband did not know (about the disease). She said, 'This woman is my mother-in-law, but she doesn't know'. It happens, you know that everything is sensitive" (BSc in Midwifery, midwife, 25 years of work experience)

Coordination among different hospital units

The majority of the participants cited the coordination among different hospital units in the interactions and communication in maternity triage. A participant said, *"There is a lack of coordination, a lack of coordination in the hospital. There is no coordination most of the time, ranging from a simple servant to a certified nurse-midwife. In fact, the high workload, shortage of workforce or lack of training leads to delayed patient admittance and prolonged waiting, which causes the disruption of the triage process"* (MSc in midwifery, instructor, three years of work experience)

Tendency to teamwork in triage

The majority of the participants identified the tendency to teamwork as essential for interactions and communication in maternity triage. Maternity triage is a broad field that requires high levels accuracy and skill and sometimes teamwork, cooperation and support of triage officers by other colleagues. A participant said, *"Now, I remember some factors in triage whether maternity triage or triage in general, including team work, then specifying the tasks, determining the steps and correctly and properly taking action"* (MSc in midwifery, instructor, five years of work experience).

How to communicate with the client

All the participants emphasized the quality of communicating with the client in interactions and communication in maternity triage. The behavior and treatment by triage officers, which was emphasized by all the beneficiaries, was an effective factor in providing quality process and satisfying the clients and their accompaniments, who expect the hospital staff to have a good and gentle behavior toward them, and taking account of their psychophysical condition, sympathize with the clients, listen to them and kindly respond to their questions. In addition, how relationships are established in maternity triage plays an effective role in obtaining an accurate medical history and recognizing, diagnosing and establishing the process of service delivery. A participant said, *"They never explained my condition to me. I'm not satisfied with them at all. The more I asked, the less they explained. I think, at least, they should have given me a brief explanation to stop my worrying"* (Interview with a client, 28 years old, high school diploma).

Discussion

The present findings can help with the understanding of the quality of the maternity triage process. Although qualitative research does not aim at generalizing the findings, the present study continued the data collection until data saturation was achieved and no new data were extracted any more. As the main study variable, the quality of the maternity triage process included two categories of measures and care, and interactions and communication. The category of measures and care included two subcategories of examinations and obtaining a medical history. The findings suggested the majority of the participants identified measures and care as a major factor in the quality of the maternity triage process. Standardizing and matching the procedures and criteria in measures and care in both examinations and obtaining a medical history are effective in the quality of the process of maternity triage service delivery. Some of the participants highlighted the importance of paying attention to the level of consciousness, vital signs, fetal heartbeat, uterine contractions, ABC, client stabilization, control of the risk factors and vaginal and abdominal examinations in maternity triage examinations. Initially-incorrect assessments, especially during triage, have been reported to increase errors and cause congestion and adverse events (16). Based on client complaints, assessments are performed for prioritization through investigating different tests and parameters (16). Routinely investigating physiological data can also be helpful (17). Establishing relationships is essential for triage nurses to evaluate the clinical status. Triage nurses assess symptoms or problems of clients. The assessment includes subcategories such as general condition, the time factor, threats, pain, parameter, physical examination and an overview, the outcome of which shows the prioritization (18). The majority of the participants mentioned the importance and sensitivity of a detailed and precise obtaining of a medical history in maternity triage. Care and treatment planning requires careful observations and collection and organization of data in patient assessment (19). The quality of the medical history obtained and clinical examinations and assessments affect judgment and decision-making and ultimately the outcomes and incidence of diseases (17). The findings suggested the majority of the participants identified interactions

and communication as a major factor in the quality of the maternity triage process. Interactions and communication between caregivers and clients are actually used as a criterion for effective and dynamic care (20). Some of the participants mentioned the importance of accuracy and speed of action in maternity triage. Accuracy and speed of action are crucial for triage and critical conditions. Reports suggest carelessness and errors in triage negatively affect clients and the subsequent stages of care. Accuracy is important in different dimensions, including the client's triage, reporting, client protection and interactions and communication (21). Moreover, speed of action is essential for triage. Inadequate speed of action occasionally causes adverse consequences and death. Speed of action was therefore reported as highly significant in certain emergency measures in (21). Furthermore, establishing appropriate relationships with clients, the triage process and high-quality care were reported as public expectations (22).

Limitations

The limitations of the present study included taking a conservative position by some of the participants and their failure to explicitly present their opinions when responding to the questions posed.

Conclusions

The present study comprehensively identified different dimensions of the quality of maternity triage services at different levels. The participants identified the quality of the maternity triage process as a multi-dimensional and important concept. Different dimensions of the maternity triage process are recommended that be addressed when designing and implementing maternity triage guidelines and instructions so as to maintain the quality of this process and satisfy their needs.

Acknowledgements

The authors appreciate the cooperation and assistance of the officials of Taleghani, Mahdyieh, Emam Hossein, Loqman and Shohadaye Tajrish Educational Hospital, and we are greatly thankful for participate.

Authors' contribution

All the authors met the standards of authorship based on the recommendations of the International Committee of Medical Journal Editors.

Conflict of interest

The authors have no conflicts of interest relevant to this article.

Funding

This study was supported by a grant from the Research Council of Shahid Beheshti University of Medical Sciences.

References

1. Lehmann R, Brounts L, Lesperance K, Eckert M, Casey L, Beekley A, et al. A simplified set of trauma triage criteria to safely reduce overtriage: a prospective study. Arch Surg. 2009;144(9):853-8.
2. Cheraghi A, Riazi H, Emamhadi MA, Jambarsang S. A Study on Organizational Factors Affecting Midwifery Errors from the Viewpoint of Midwives in Educational Hospitals and Health Centers of Tehran, 2014. Iran J Forensic Med. 2016;22(2):139-46.
3. Reason J. Human error: models and management. BMJ. 2000;320(7237):768-70.
4. Veit-Rubin N, Brossard P, Gayet-Ageron A, Montandon CY, Simon J, Irion O, et al. Validation of an emergency triage scale for obstetrics and gynaecology: a prospective study. BJOG. 2017;124(12):1867-73.
5. Gerber Zimmerman P, McNair R. Triage essence and process. Triage nursing secrets Missouri: Mosby Inc. 2006.
6. Rashidi Fakari F, Simbar M, ZadehModares S, AlaviMajd H. Obstetric triage scales; a narrative review. Arch Acad Emerg Med. 2019;7(1):e13.
7. Wuerz RC, Travers D, Gilboy N, Eitel DR, Rosenau A, Yazhari R. Implementation and refinement of the emergency severity index. Acad Emerg Med. 2001;8(2):170-6.
8. Donabedian A. An introduction to quality assurance in health care: Oxford University Press; 2002.
9. Cohen CC, Shang J. Evaluation of conceptual frameworks applicable to the study of isolation precautions effectiveness. J Adv Nurs. 2015;71(10):2279-92.
10. Polit D, Beck C. Essentials of nursing research: Appraising evidence for nursing research. Baltimore: Lippincott Williams and Wilkins; 2013.

11. Guba EG, Lincoln YS. Competing paradigms in qualitative research. Handbook of Qualitative Research. 1994;2(163-194):105.
12. Lincoln YS, Guba EG. Naturalistic inquiry: Sage; 1985.
13. Elo S, Kyngäs H. The qualitative content analysis process. J Adv Nurs. 2008;62(1):107-15.
14. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. Nurse Educ Today. 2004;24(2):105-12.
15. Chen HM, Hsieh YH. Key trends of the total reward system in the 21st century. Compens Benefits Rev. 2006;38(6):64-70.
16. Zaboli R, Malmoon Z, Soltani-Zarandi MR, Hassani M. Factors affecting sentinel events in hospital emergency department: a qualitative study. Int J Health Care Qual Assur. 2018;31(6):575-86.
17. Gerdtz MF, Bucknall TK. Triage nurses' clinical decision making. An observational study of urgency assessment. J Adv Nurs. 2001;35(4):550-61.
18. Andersson AK, Omberg M, Svedlund M. Triage in the emergency department–a qualitative study of the factors which nurses consider when making decisions. Nurs Crit Care. 2006;11(3):136-45.
19. Noon AJ. The cognitive processes underpinning clinical decision in triage assessment: a theoretical conundrum? Int Emerg Nurs. 2014;22(1):40-6.
20. Araújo IMdA, Silva RMd, Bonfim IM, Fernandes AFC. Nursing communication in nursing care to mastectomized women: a grounded theory study. Rev Lat Am Enfermagem. 2010;18(1):54-60.
21. Mahmoudi H, Mohmmadi E, Ebadi A. The Meaning of Emergency Care in the Iranian Nursing Profession. Crit Care Nurs J. 2017;10(1):e10073.
22. Watt D, Wertzler W, Brannan G. Patient expectations of emergency department care:phase I–a focus group study. CJEM. 2005;7(1):12-6.