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Postpartum Education on Maternal Morbidity and Mortality Benchmark Study

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In partial fulfillment of

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Executive Summary

Maternal morbidity and mortality have steadily increased over the years, studies show postpartum education can play a key role in decreasing incident rates. The Department of State Health Services (2020) states over seven hundred women die from pregnancy-related complications each year, with four of five being preventable in Texas. In 2017, 295,000 maternal deaths were reported worldwide which were preventable or treatable (World Health Organization, 2019). The postpartum period holds the highest risk for negative maternal outcomes, making this period more dangerous to the mother's health. Fifty-two percent of maternal morbidity/mortality incidents occur after birth, commonly after discharge, however, most deaths are preventable no matter when they occur (Centers for Disease Control and Prevention, 2020). Postpartum education regarding these preventable causes is frequently overlooked and routinely provided on the last day of hospital stay, following childbirth. This teaching is usually provided with discharge instructions over ten to fifteen minutes, with many warning signs not identified before discharge. If evidence-based change is not implemented this patient population will not be given optimum care, just service, or opportunity to improve their quality of life. Taking into consideration the occurrences of mothers not knowing what warning signs to be cautious of and when to seek medical care, increases hospital readmission rates, thus causing an increase in costs with the unlikelihood of hospital reimbursement. Increased maternal morbidity/mortality rates also pose the risk of decreased hospital rankings based on negative patient outcomes and readmissions.

Rationale

Even when education is provided to mothers it is provided as a one size fits all method during the hospital discharge instructions after birth. In most cases, mothers are given discharge instructions, sometimes in abundance, and expected to read them to educate themselves. Mothers cannot be expected to read their discharge paperwork during an emergency, or before their reading level has been assessed. The lack of thorough postpartum education with patient understanding is often the reason warning signs are overlooked as normal and seeking care is delayed, or not pursued at all. Yet current patient education provided to postpartum patients may not sufficiently address the warning signs of severe maternal morbidity which often precedes mortality. In this time of elevated risk, a postpartum patient's ability to recognize warning signs that necessitate medical attention may be particularly important to protect maternal health (Reyes et al., 2022).

Giving discharge instructions and monitoring mothers the first twenty-four to forty-eight hours after delivery is not enough. It is important for nurses to know although childbirth is a joyous occasion it can be a very ominous and sad occasion as well. Nurses should keep this in mind when doing physical assessments, providing education, reviewing health histories, giving each patient their own identity, and not considering the delivery routine, vanilla, or as expected. During the current discharge teaching postpartum education is given, in addition to the discharge instructions for the newborn. This is during the time that mothers are grooming, packing to leave, dressing their newborn, or arranging transportation home. This only shows that mothers are preoccupied, possibly overwhelmed, and not giving their undivided attention to the teaching. Educating patients throughout the antepartum period benefits the mother's level of knowledge throughout the entire pregnancy-delivery-postpartum period, since a lot of the education

overlaps. Extending this education period allows time for the mother to ask questions, investigate, and follow up on teaching, questions, or concerns.

The goal of this benchmark is to enhance awareness of maternal mortality and improve patient outcomes through education on warning signs and needed interventions. When mothers are not aware of the possible negative outcomes they may encounter and are not prepared for, increases their risk of maternal mortality. Nurses must do their due diligence and be mindful of their core competencies of person-centered care and individualize quality teaching for each mother. The best way to do this in a quality manner is by providing teaching throughout the antepartum period.

Literature Synthesis

The current literature review on this topic began in August 2021, using multiple search engines. Six peer-reviewed articles were evaluated to determine if more patient education and evaluation to prevent or observe early warning signs during the postpartum period would change the effects/rates of maternal morbidity/mortality. These studies were thoroughly appraised through methods of rapid critical appraisal (RCA) and generalized appraisal overview (GAO) and organized into an evaluation table.

Literature collectively concluded early intervention with knowledge improves the quality of care, and if human and material resources were increasingly available, quality of care scores and outcomes would increase. Studies demonstrated how deficient knowledge of obstetric warning signs was related to women’s delay in seeking obstetric or emergency care, which led to higher morbidity and mortality rates. Studies also indicated warning signs were mentioned in

teaching either briefly at discharge or before delivery and the rate of retention of warning signs was low, therefore mothers delayed seeking care. These findings were based on the mother's educational level, knowledge regarding antenatal care, and discharge teaching (Bintabara et al., 2017; Dangura, 2020). Whereas other studies' experiments revealed postpartum education supports mothers' readiness for hospital discharge and maternal self-confidence in primiparous mothers. Education should be routinely practiced in hospitals and clinics during the antenatal period and will likely decrease the risk of postpartum hemorrhage and other undesired outcomes (Khodabandeh, 2017; Maswine & Buchannan, 2017; Sonmez & Mamuk, 2021; Saaka et al., 2017).

In 2020, the American College of Obstetricians and Gynecologists (ACOG) emphasized postpartum education should be an early ongoing process rather than a single encounter and tailored to a woman's individual needs. Some studies proved their knowledge-based intervention program improved admissions exams and postpartum monitoring of warning signs, thus increasing the quality of life (Maswine & Buchannan, 2017). While others proved mothers are not knowledgeable about postpartum care at home and should demonstrate self-confidence in self-care before their hospital discharge, to demonstrate postpartum knowledge and needed interventions (Dangura, 2020; Saake et al., 2017; Sonmez & Mamuk, 2021). Overall, all studies stated that there should be more postpartum education, with demonstrated understanding of emergencies, interventions, and early seeking of medical care to decrease maternal morbidity and mortality.

Stakeholders

Direct stakeholders include midwives, obstetric doctors, nursing supervisors, nurses, clinic staff, allied health professionals, maternal women, and support person(s). Healthcare staff must actively assess, educate, reassess, and evaluate the effectiveness of teaching, tailoring it to each mother. The mother's level of understanding, educational level, and willingness to be taught must be evaluated to conduct the plan successfully. The support person can help monitor systems and care between visits, or during an unexpected debilitating event. Stakeholders should utilize interprofessional communication between the clinic and hospital to maintain consistency to achieve desired outcomes. Indirect stakeholders include education, ethical, and survey committees of the study facilities; ACOG; and the Association of Women's Health, Obstetrics, and Neonatal Nurses (AWHONN) for plan implementation, ethics approval, and surveys in different socioeconomic backgrounds.

Permission for this change project will go through the chief nursing officer and clinical directors of the study facilities. In addition to the ethics and evidence-based change committee, with the consent of patients, or their medical representative. The evidenced-based change committee is proactively led by a master's degree nurse, who has an open-door policy for suggestions to improve the quality of care in the workplace environment and may be willing to assist in this change project.

Planned Implementation

This study will take place between the obstetrician clinic and the local hospital. Appropriate staff from both facilities will be trained in appropriate postpartum teaching and answers to possible questions, along with a checklist to ensure everyone is teaching the same material. Women from the clinic will be randomly selected from the clinic census of current

pregnancies of at least 16 weeks gestation. Mothers will be randomly placed into two equal groups of fifty, they will be identified by number and an associated sealed envelope matching their number will place them into a control or intervention group, unbeknown to the mothers. All participants will be given general information regarding the purpose of the study and will be asked for written informed consent to participate, with the understanding they can opt out of participation at any time. All participants will be given a pre-assessment survey to assess their current knowledge of postpartum warning signs, which will be placed back into an envelope related to their associated number and sealed to be evaluated by researchers.

The control group will attend regularly scheduled visits with traditional education regarding the scheduled visit. A survey will be conducted again before delivery, via a sealed envelope with the mothers' initial associated number. After delivery and traditional postpartum discharge instructions are given, mothers will take a post-survey to assess the change in their level of knowledge. The survey will be placed in an envelope with their associated number and sealed for evaluation. Mothers will then be given a pamphlet and number for a 24-hour helpline, like the intervention group. Mothers will be assessed again at the 6-week postpartum check-up via a sealed envelope with the mothers' associated number.

The intervention group will attend regularly scheduled visits with traditional education at the visit, in addition to a maternal danger sign packet with access to a 24-hour helpline. The packet will include pictures, QR scan codes for demonstrative videos, and highlights of educational material given throughout education encounters. Mothers will be given highlights of education at each visit and will be asked to meet monthly as a group for 15- 30 minutes of additional education, with time for questions, or for other mothers to share experiences that may

help another mother. Group sessions will show how to assess for warning signs, bleeding demonstration, how to assess blood pressure, and what kind of pain is not considered normal. After delivery, mothers will receive traditional postpartum education in addition to a recap of the most common danger signs to look for and when to seek urgent care. Mothers will be given a post-assessment survey before discharge that will be placed into an envelope with their number and sealed for evaluation. Mothers will be assessed again at the 6-week postpartum check-up in the same fashion.

Timetable

For mothers who elect to participate, sampling will begin during their antepartum visits between 16- and 24 weeks gestation. Education will continue throughout pregnancy at each antepartum visit, and postpartum for those in the intervention group. In addition to educational handouts, videos, or informative sessions, there will be monthly group sessions until delivery, 38-40 weeks gestation. Although the postpartum period is up to one year after birth, we will focus on the six weeks after birth for this project (Appendix A).

Planned Evaluation

Before the implementation period, but after consent and sampling, mothers will be given a brief demographic questionnaire. This questionnaire will ask the mother specifics regarding age, number of pregnancies, number of living children, highest educational level, vaginal delivery, cesarean delivery, previous pregnancy complications, current pregnancy complications such as diabetes or hypertension, and home support (spouse or family member). Mothers will still participate in their respective groups as stated in the implementation process. Mothers from

each group will take a survey measuring their knowledge of maternal warning signs. Warning signs consist of hypertension, unrelieved headache, shortness of breath, chest pain, heavy vaginal bleeding saturating one thick pad within an hour, vaginal blood clots the size of an egg or larger, lower extremity swelling and pain, fever, incision odor, erythema, or dehiscence, and pain not relieved with medication. If a mother can state at least four warning signs, she will be considered knowledgeable in education retention. If a mother can state three warning signs, she will be considered average in education retention. Anything less than three will confirm the need for further teaching and reassessment.

After mothers have identified warning signs, they will be asked to identify warning signs that require emergency medical help and how they would seek help. The following should be listed as a need for emergency medical help: shortness of breath, hypertension, unrelieved headache, chest pain, heavy vaginal bleeding or large clots, severe abdominal pain, incision odor, dehiscence, or warmth, and lower extremity swelling and pain. If a mother can state at least four warning signs, she will be considered knowledgeable about when to seek emergency care. If a mother can state three warning signs, she will be considered average in the knowledge of when to seek emergency care. Anything less than three will confirm the need for further teaching and reassessment. Mothers will be asked how they will seek/plan to be transported to the nearest facility of care.

At the postpartum visit survey mothers will be asked about their experience, if they experienced any of the warning signs/morbidities, made any visits to the emergency department, or unplanned provider visits. For mothers who expired during the postpartum period, their data

will still be included in the survey. Each item will be scored as a yes or no on the survey from the control and intervention groups.

Statistical analysis should include a comparison between both groups sorted based on variables. When comparing both groups an increased retention rate of postpartum education in the intervention group will show 50% greater retention than traditional methods (control group) and prove the change is effective. Decreased maternal morbidity/mortality rate of 60% during the postpartum period within either group is the overall goal, but the intervention group data results should be 30%-40% higher than the control group. Mothers' knowledge of warning signs pre- and post-intervention should increase by 50% at the six-week postpartum visit and survey in the intervention group.

Costs/Benefits

To enact the change, qualified health professionals in compliance with ACOG and AWOHNN guidelines will provide postpartum education training. Training is important for all stakeholders to ensure there is consistency in patient education throughout the pregnancy and birth experience. The initial costs will be for paid staff training, consisting of a five-to-eight-hour refresher course, and a yearly updated course. The average hourly wage for nurses from the clinic and hospital ranges from $20-$30/hour. For an average of fifteen nurses, the training salary will be $3,600 on the high end. Whereas ongoing costs will be associated with longer patient clinic visits to account for education, which may require the expense of an additional staff member to conclude visits with the required education at that appointed time. Over time the benefits of this expense are the additional trained staff to consistently deliver education without putting a strain on the current staff workload. However, the costs for the additional staff can be

the yearly salary of a clinic nurse, around $50,000. For training purposes, the education/training committee has a representative from AWOHNN and ACOG who provides training and education via Zoom quarterly in a previously developed agreement.

Although most of the cost is on salaries and educational training, what is the price of human life? Salaries can be budgeted, employee and staff training can be budgeted, and the amount of training it will take to be a successful clinic can be budgeted, but no amount of money could be budgeted for the value of a mother's life. Implementing this change will save a mother's life, a husband's heart, and a child's future.

Results

According to literature evidence, educating mothers over a two-to-three-day hospital stay is not enough for women to go home and resume self-care with appropriate knowledge of warning signs. By improving discharge education on post-birth complications, nurses can encourage and empower women with knowledge and confidence in early intervention and when to seek medical help. Postpartum education is a critical part of the postpartum period, and supporting literature confirms it is beneficial to integrate postpartum teaching before delivery to ensure the opportunity for the retention of vital information.

Recommendations

When a couple has decided to start a family or add to their growing family, it is a joyous occasion. For nine months, arrangements are made to make mom and baby comfortable to provide a smooth and easy transition. With the given statistics, the loss of one mother is too many. A child will never know their mother and a husband becomes a widow, and a single

parent, but why when over half of maternal mortality cases in Texas are preventable? Providing discharge instructions and monitoring the first twenty-four to forty-eight hours after delivery has proven its ineffectiveness. Stakeholders need to implement this change as stated, by getting approval from the ethics board and obtaining a sample group. As a future MSN, nursing will always be the core of providing healthcare, and if a nurse is to continue Florence Nightingale's oath and theory, there must be initiative and determination to get the patient back to a healthy and normal state, in this case, their pre-pregnancy state. Recommendations for my facility are to conduct a board meeting to set the budget and begin implementing this change. Nurses should be informed that a change may be taking place and listen to the statistical evidence with understanding in preparation for a change. Training through information and skills for nurses will ensure their knowledge and confidence in teaching, in return providing a great service to this patient population.

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Appendix A

Implementation Specific Timetable

Provide awareness to staff and stakeholders	Week 1
Get stakeholder support	Week 1
Training for nurses and direct obstetric staff	Week 2
Select mothers for experimental and control groups (16-24 weeks gestation)	Week 2-3
Perform an intake survey to determine the mother's level of knowledge (both groups)	Week 2-3
Begin providing education for experimental groups	Week 3-19 At scheduled antepartum appointments and once monthly in group sessions
Perform post-surveys after delivery to determine knowledge retained (both groups)	Week 18-20
Perform telephone surveys again 1-week after delivery to determine knowledge and self-confidence levels at home	Week 19-21
Perform a 6-week postpartum survey	Week 25-27
Measure clinical outcomes	Week 28-29