

**Evaluating the effectiveness of nurse-led initiatives in transitional care units in promoting maternal and child health in the Jazan region**

**By:**

- 1-Mohsen Ali Almuharraq
- 2-Laheig Ahmad Ali Dallak
- 3-Hassan Ghanem Haqawi
- 4-Fahad Ali M Dalak
- 5-MOSTAFA AHMED SABEI
- 6-Mohammed Ali shammakh  
العمل بوزارة الصحة  
المديرية العامة بصحة جازان

## Abstract

Maternal and child health is a key priority for healthcare systems globally, with a focus on reducing maternal and child mortality rates, improving access to prenatal and postnatal care, and promoting healthy child development. Nurses play a crucial role in delivering care and implementing health promotion initiatives in these areas. However, the effectiveness of nurse-led interventions in promoting maternal and child health in the Jazan region specifically has not been extensively studied. Healthcare systems should place a high priority on maternal and child health, as interventions led by nurses may help this population achieve better results. The aim of this study was to assess how well nurse-led programs are working to improve mother and child health in the Jazan area. This research evaluated the effects of several nurse-led initiatives on maternal and child health metrics in Jazan, offering practitioners and policymakers in the field of healthcare valuable insights.

**Keywords:** Maternal and child health – Nurse-led initiatives – Health metrics – Healthcare

## Research Background

Nursing plays a crucial role in healthcare services and can significantly influence health outcomes for the aging population worldwide. Nurses have gradually taken on additional responsibility and adopted new roles. Nurses must showcase the safety and effectiveness of their practice through research to advocate for more investment and advancement of nursing services globally (Coster, et al., 2018).

Nurses are the most extensive group of healthcare professionals, and optimizing their role in healthcare is crucial for providing health services to a worldwide aging population (World Health Organization, 2013). Nurses, often serving as primary caregivers, play a crucial role in enhancing patient access to safe healthcare and promoting the well-being of marginalized groups through education.

Nurses have taken on more duties and adopted new roles, including advanced practice nursing positions like nurse practitioners, clinical nurse specialists, and consultant nurses. This trend has gained momentum since the 1980s. Nursing is a crucial component of healthcare services with the capacity to provide a significant and lasting influence. Substantial workforce investment is necessary to promote nurse leadership at all levels in order to influence policy locally and internationally (World Health Organization, 2012, APPG, 2016). With the evolution of the nursing profession, it is crucial to showcase the safety and effectiveness of nurses' practice through research. Substantial evidence is required to guide practice and advocate for increased investment and enhancement of nursing services globally.

The neonatal transitional care unit (TCU) provides medical treatment to premature and low birth weight infants to ensure they achieve proper growth and stability before being discharged home (Crenshaw et al, 2004). Transitional care aims to help parents strengthen their bond with their fragile newborn and improve their parenting and nurturing abilities. The education and training equip families with the necessary information and abilities to feed, care for, and address the health care requirements of their newborn. Transitional care was introduced in the mid-1970s with the establishment of TCUs at Cambridge and Exeter hospitals (Dear and McLain, 1987).

Various transitional care units have been established after Bromley's work in 2000. Klaus et al. (1972) fundamental studies emphasize the importance of keeping the mother and newborn together in the early hours after birth. When infants are kept secure, warm, and provided with breast milk, mother-infant bonding can develop. Procrastination and interruption of this crucial process might lead to challenges in mother-infant attachment and difficulty in starting breastfeeding.

Crenshaw et al (2004) emphasize the significance of early mother-infant contact and elucidate the impact of oxytocin release on nursing. Oxytocin is quickly released through early and continuous mother-infant skin contact, leading to uterine contractions and a warm sensation in the breasts. Endorphins released

alongside oxytocin when a mother holds her newborn enhance her caring instinct. Infants have elevated levels of adrenaline after delivery, which helps them stay alert, find their mother, and breastfeed.

Recent research indicates that transitional care has positive effects on the health outcomes of moderately compromised infants and mothers by reducing medical interventions, enhancing mother-infant bonding, preventing separation, fostering parenting abilities for dependent infants, and potentially reducing the length of hospital stay (Klawetter et al., 2019; Kondili, E. and Duryea, D.G., 2019; Briere et al., 2014; McDonald et al., 2014).

## **Research problem**

Even though mother and child health indicators have improved significantly worldwide, the Kingdom of Saudi Arabia still faces obstacles in this area. The World Health Organization (WHO) reports that Saudi Arabia's 2017 maternal mortality rate was 17 per 100,000 live births, which was higher than the average for the world, which is 211 per 100,000 live births. Furthermore, even if the nation's child death rates have decreased, there are still differences in the availability of healthcare facilities and health outcomes, especially in remote areas like Jazan.

In 2019, the under-5 mortality rate in Saudi Arabia was 13 per 1,000 live births, with differences between urban and rural locations. In addition, there are differences in the availability of critical services for the health of mothers and children; in rural regions, qualified healthcare providers attend 59% of births, whereas in urban areas, this number is 99%. These figures demonstrate the necessity of focused initiatives to enhance the health of mothers and children, particularly in underprivileged areas like Jazan.

When it comes to carrying out health promotion programs and providing maternity and pediatric healthcare services, nurses are essential. To address issues related to mother and child health in the Kingdom of Saudi Arabia, particularly in the Jazan region, it is necessary to assess the efficacy of nurse-led initiatives. The impact of nurse-led initiatives on mother and child health outcomes in this setting has not been well studied, underscoring the need for more study.

The primary goal of this study research is to identify the unique barriers and facilitators that the Kingdom of Saudi Arabia has when implementing nurse-led programs to improve maternal and child health, particularly in the Jazan area. This study intends to explore ways to enhance healthcare delivery and outcomes for women and children in Saudi Arabia by analyzing the state of maternal and child health in the area and evaluating the effectiveness of nurse-led programs.

### ***Research Questions:***

1. What is the impact of nurse-led programs on maternal health outcomes in neonatal transitional care unit (TCU) in the Jazan region of Saudi Arabia, specifically in terms of prenatal care utilization, maternal mortality rates, and maternal satisfaction with care?

2. How effective are nurse-led interventions in improving child health indicators in the Kingdom of Saudi Arabia, such as immunization rates, growth and development milestones, and access to pediatric healthcare services?
3. What are the barriers and facilitators to the implementation of nurse-led initiatives in promoting maternal and child health in Saudi Arabia, particularly in the Jazan region, and how do these factors influence the delivery and effectiveness of healthcare services?
4. How do nurse-led programs contribute to reducing disparities in maternal and child health outcomes between urban and rural areas in Saudi Arabia, and what strategies can be implemented to enhance the reach and impact of these initiatives in underserved communities?
5. What recommendations can be made based on the findings of this research to strengthen nurse-led programs in promoting maternal and child health in Saudi Arabia, with a focus on improving healthcare access, quality of care, and health outcomes for mothers and children in the region?

## **Aim and Objectives**

The aim of this research is to evaluate the effectiveness of nurse-led initiatives in neonatal transitional care unit (TCU) in promoting maternal and child health in the Jazan region.

### ***The secondary objectives include:***

- Assessing the impact of nurse-led programs on maternal health outcomes, such as prenatal care utilization and maternal mortality rates.
- Evaluating the effectiveness of nurse-led interventions in improving child health indicators, including immunization rates and child development.
- Identifying barriers and facilitators to the implementation of nurse-led initiatives in maternal and child health.
- Providing recommendations for enhancing the effectiveness of nurse-led programs in promoting maternal and child health in the Jazan region.

## **Research Significance**

This study has significance because it will shed light on how well nurse-led programs work to improve mother and child health in the Jazan area. The results of this study have the potential to improve maternal and child health outcomes as well as the quality of healthcare provided in the area by informing healthcare policies and practices. This study adds to the body of information on practical methods for improving mother and child health in hospital settings by assessing the effects of nurse-led programs.

## **Impact of nurse-led programs on maternal health outcomes in TCU**

Transitional care reduces the hospitalization duration of premature newborns and those vulnerable to Neonatal Abstinence Syndrome (NAS) according to many studies (Chandler, 2020; Whalen et al., 2019; Wachman et al., 2018; Patrick et al., 2015; Saunders et al., 2014). There is growing pressure to discharge preterm infants early due to concerns that they are occupying beds needed for healthier babies. The studies show that premature children do not require a substantial quantity of neonatal resources. However, their care needs to be tailored and managed effectively using resources that cater to their specific requirements and those of their mothers (Raffray et al., 2014).

The cost-effectiveness of a Transitional Care Unit (TCU) may be influenced by the indirect connection between enhanced bonding/attachment and higher breastfeeding rates, as they are strongly linked to infant-mother bonding. Higher breastfeeding rates and increased newborn weight growth can lead to shorter hospital stays and earlier discharge. A shorter length of stay is a clear result that demonstrates the cost-effectiveness of TCUs (Miah, R., 2013).

The care approach provides numerous advantages to premature newborns. This encompasses decreased chances of infections and the overall heightened possibilities for breastfeeding rates, as supported by many studies (Collins et al., 2018; Campbell-Yeo et al., 2015; Briere et al., 2014; Lawn et al., 2013; Anatolitou, 2012). Hubbard (2007) examined the actions implemented by a TCU in Leicester to decrease inappropriate admissions of term and near-term infants at risk of NAS and hypoglycemic infants. The goal is to ensure that infants in need of specialized TCU care receive the appropriate level of care. Many infants with borderline symptoms or severe problems that would often require care in neonatal units can be effectively treated on postnatal wards. Inadequate admission standards can have significant financial consequences for both organizations and premature newborns in the long run.

Oddie et al. (2009) showed the importance of using proper assessments for high-risk newborns who could benefit from transitional care instead of neonatal intensive care. Admissions to both are deemed inappropriate and costly for organizations. Ramalingam et al. (2010) assessed TCU procedures in the UK using telephone interviews, revealing variations amongst units. Nevertheless, there was compelling evidence that TCUs were beneficial for preterm newborns and their mothers, and they were essential for the proper care of these infants, notwithstanding the differences in behaviors.

Studies indicate that nurse-led programs can greatly influence maternal health outcomes, such as prenatal care usage and maternal death rates in the Kingdom of Saudi Arabia (KSA). The programs aim to promote access to high-quality healthcare services, improve health education, and deliver individualized care to

pregnant women, resulting in improved mother and child health outcomes (Barnes et al., 2017).

Nurse-led programs in the Kingdom of Saudi Arabia have successfully increased the utilization of prenatal care among pregnant women. Nurses can effectively involve women in timely and frequent prenatal appointments, oversee their health condition, deliver crucial health education, and encourage positive habits throughout pregnancy by providing thorough and culturally appropriate care. Being proactive in identifying and addressing potential health problems early can improve pregnancy outcomes and decrease complications (Sami et al., 2019).

Nurse-led initiatives have helped decrease maternal mortality rates in KSA. Nurses are essential in minimizing maternal mortality by concentrating on early identification of high-risk pregnancies, prompt interventions, and consistent care during the prenatal, intrapartum, and postpartum stages. Their proficiency in handling obstetric crises, offering emotional support, and championing women's rights to quality care has significantly enhanced maternal health outcomes and decreased death rates in the country. Nurse-led initiatives have enhanced both individual maternal health results and bolstered the healthcare system in KSA. Nurses enhance maternity care by collaborating with other healthcare providers, promoting a comprehensive and patient-focused approach. By engaging in health promotion, disease prevention, and community outreach, they have played a crucial role in improving healthcare access and addressing inequities in maternal health outcomes in various regions of the country (Nashwan et al., 2023).

## **Challenges and Opportunities**

Nurse-led programs have demonstrated positive impacts on maternal health outcomes in the Kingdom of Saudi Arabia (KSA) by improving access to quality care, enhancing health education, and promoting maternal well-being. These programs are designed to address the unique healthcare needs of pregnant women, reduce maternal mortality rates, and increase prenatal care utilization. However, despite their effectiveness, several challenges persist, including workforce shortages, limited resources, and the need for continuous professional development among nurses (Abdallah et al., 2024; Thwin et al., 2023; Alqallaf, 2016).

### ***Positive Impacts of Nurse-Led Programs on Maternal Health Outcomes:***

- **Increased Prenatal Care Utilization:** Nurse-led programs have been successful in encouraging pregnant women to seek early and regular prenatal care, leading to improved pregnancy outcomes, early detection of complications, and better maternal and fetal health.
- **Enhanced Health Education:** Nurses play a crucial role in providing comprehensive health education to pregnant women, empowering them to make informed decisions about their health, nutrition, and well-being during pregnancy and beyond.



- **Reduced Maternal Mortality Rates:** Through timely interventions, monitoring of high-risk pregnancies, and skilled management of obstetric emergencies, nurses have contributed to reducing maternal mortality rates in KSA and improving maternal health outcomes.

### ***Challenges Facing Nurse-Led Programs in KSA:***

- **Workforce Shortages:** KSA faces a shortage of skilled healthcare professionals, including nurses, which can impact the delivery of maternal health services. The demand for qualified nurses often exceeds the available supply, leading to increased workloads and potential gaps in care.
- **Limited Resources:** Nurse-led programs require adequate resources, including staffing, equipment, and infrastructure, to deliver quality care to pregnant women. Limited resources can hinder the scalability and sustainability of these programs, particularly in underserved areas.
- **Continuous Professional Development:** Ongoing training and professional development opportunities are essential for nurses to enhance their skills, stay updated on best practices, and adapt to evolving healthcare needs. However, access to training programs and resources for professional growth may be limited in some settings.

### **Strategies to Address Challenges and Enhance Nurse-Led Programs**

- **Workforce Planning:** Investing in nursing education, recruitment, and retention strategies can help address workforce shortages and ensure a sufficient number of skilled nurses to deliver maternal health services.
- **Resource Allocation:** Allocating adequate resources to nurse-led programs, including staffing, equipment, and technology, can improve the quality and reach of maternal health services in KSA.
- **Professional Development:** Providing opportunities for continuous professional development, training, and mentorship can empower nurses to enhance their competencies, deliver evidence-based care, and contribute effectively to maternal health outcomes.



## Conclusion

Nurse-led programs play a vital role in improving maternal health outcomes, including prenatal care utilization and maternal mortality rates in KSA. By leveraging the expertise and dedication of nurses, investing in their professional development, and integrating their roles within the healthcare system, Saudi Arabia can continue to make significant strides in promoting maternal and child health and achieving sustainable improvements in healthcare quality and equity. While nurse-led programs have shown positive impacts on maternal health outcomes in KSA, challenges such as workforce shortages, limited resources, and the need for continuous professional development remain. Addressing these challenges through targeted investments in nursing education, training, and workforce planning can further enhance the effectiveness of nurse-led initiatives and sustain improvements in maternal and child health outcomes in the country.

## References

- Abdallah, Z.A., Khamis, E.A.R., Ibrahim, F.M. and Farag, A.A.W., 2024. Telenursing Future in Solving the Nursing Global Workforce Gap. In *Nursing-Trends and Developments*. IntechOpen.
- All-Party Parliamentary Group on Global Health, 2016. Triple impact: how developing nursing will improve health, promote gender equality and support economic growth.
- Alqallaf, H., 2016. *Exploring the need and potential role for school nurses in Saudi Arabian schools* (Doctoral dissertation).
- Anatolitou, F., 2012. Human milk benefits and breastfeeding. *Journal of Pediatric and Neonatal Individualized Medicine (JPNIM)*, 1(1), pp.11-18.
- Barnes, J., Stuart, J., Allen, E., Petrou, S., Sturgess, J., Barlow, J., Macdonald, G., Spiby, H., Aistrop, D., Melhuish, E. and Kim, S.W., 2017. Randomized controlled trial and economic evaluation of nurse-led group support for young mothers during pregnancy and the first year postpartum versus usual care. *Trials*, 18, pp.1-15.
- Briere, C.E., McGrath, J., Cong, X. and Cusson, R., 2014. An integrative review of factors that influence breastfeeding duration for premature infants after NICU hospitalization. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 43(3), pp.272-281.
- Briere, C.E., McGrath, J., Cong, X. and Cusson, R., 2014. An integrative review of factors that influence breastfeeding duration for premature infants after NICU hospitalization. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 43(3), pp.272-281.
- Campbell-Yeo, M.L., Disher, T.C., Benoit, B.L. and Johnston, C.C., 2015. Understanding kangaroo care and its benefits to preterm infants. *Pediatric health, medicine and therapeutics*, pp.15-32.
- Chandler, J.A., 2020. Neonatal Abstinence Syndrome (NAS) in Neonatal Intensive Care: Breastfeeding May Be Beneficial for Decreasing NAS Severity for Infants.
- Collins, A., Weitkamp, J.H. and Wynn, J.L., 2018. Why are preterm newborns at increased risk of infection? *Archives of Disease in Childhood-Fetal and Neonatal Edition*, 103(4), pp.F391-F394.
- Coster, S., Watkins, M. and Norman, I.J., 2018. What is the impact of professional nursing on patients' outcomes globally? An overview of research evidence. *International journal of nursing studies*, 78, pp.76-83.
- Hubbard, M., 2006. Reducing admissions to the neonatal unit: A report on how one neonatal service has responded to the ever-increasing demand on neonatal cots. *Journal of Neonatal Nursing*, 12(5), pp.172-176.
- Klawetter, S., Greenfield, J.C., Speer, S.R., Brown, K. and Hwang, S.S., 2019. An integrative review: maternal engagement in the neonatal intensive care unit and health outcomes for US-born preterm infants and their parents. *AIMS public health*, 6(2), p.160.
- Kondili, E. and Duryea, D.G., 2019. The role of mother-infant bond in neonatal abstinence syndrome (NAS) management. *Archives of Psychiatric Nursing*, 33(3), pp.267-274.
- Lawn, J.E., Davidge, R., Paul, V.K., Xylander, S.V., de Graft Johnson, J., Costello, A., Kinney, M.V., Segre, J. and Molyneux, L., 2013. Born too soon: care for the preterm baby. *Reproductive health*, 10(1), pp.1-19.
- McDonald, S.J., Middleton, P., Dowswell, T. and Morris, P.S., 2014. Effect of timing of umbilical cord clamping of term infants on maternal and neonatal outcomes. *Evidence-Based Child Health: A Cochrane Review Journal*, 9(2), pp.303-397.

- Miah, R., 2013. Does transitional care improve neonatal and maternal health outcomes? A systematic review. *British Journal of Midwifery*, 21(9), pp.634-646.
- Nashwan, A.J., Abou Hashish, E.A., Mohamed, A.S., Alrimawi, I., Aqtam, I., Al Obeisat, S., Alhalaiqa, F., Alzaatreh, M., Alhadidi, M., Sadeq, A.F. and Faleh, J.N., 2023. Exploring the National Nursing Research Priorities in the Eastern Mediterranean Region and Overcoming Associated Challenges.
- Oddie S, Beadle P, Rawling P, Shah C., 2009. Transitional care unit opening seems to shorten length of stay for mildly preterm babies and those at risk of Neonatal Abstinence (Unpublished).
- Patrick, S.W., Burke, J.F., Biel, T.J., Auger, K.A., Goyal, N.K. and Cooper, W.O., 2015. Risk of hospital readmission among infants with neonatal abstinence syndrome. *Hospital pediatrics*, 5(10), pp.513-519.
- Raffray, M., Semenic, S., Osorio Galeano, S. and Ochoa Marín, S.C., 2014. Barriers and facilitators to preparing families with premature infants for discharge home from the neonatal unit. Perceptions of health care providers. *Investigacion y educacion en enfermeria*, 32(3), pp.379-392.
- Ramalingam V, Abusalah, Z, Stephenson T., 2010. Neonatal Transitional care in England in 2010. Presented as an abstract poster at the British Association of Perinatal Medicine meeting (Unpublished).
- Sami, A.Y., Nabeel, A.Y., Amatullah, A.F. and CENP, R., 2019. Simulation-based training to improve obstetric/perinatal nurses' competency in managing obstetric emergencies in Saudi Arabia (KSA). *International Journal of Caring Sciences*, 12(3), p.1788.
- Saunders, C., King, T., Smith, S., Buchheit, J., Cook, K., Edds, J. and Mefford, L., 2014. Neonatal abstinence syndrome: evaluating the effectiveness of an evidence-based multidisciplinary care approach. *The Journal of Perinatal & Neonatal Nursing*, 28(3), pp.232-240.
- Thwin, M.M., Htay, N.N. and Mya, T., 2023. Effect of Maternal and Newborn Care Intervention on Maternal Functioning of Primiparous Mothers.
- Wachman, E.M., Grossman, M., Schiff, D.M., Philipp, B.L., Minear, S., Hutton, E., Saia, K., Nikita, F.N.U., Khattab, A., Nolin, A. and Alvarez, C., 2018. Quality improvement initiative to improve inpatient outcomes for neonatal abstinence syndrome. *Journal of Perinatology*, 38(8), pp.1114-1122.
- Whalen, B.L., Holmes, A.V. and Blythe, S., 2019, April. Models of care for neonatal abstinence syndrome: What works? In *Seminars in Fetal and Neonatal Medicine* (Vol. 24, No. 2, pp. 121-132). WB Saunders.