

Editorial

The Need for Implementation Science Research in Foeto-Maternal Medicine

Akaba G O, Akinajo O, Akpanika C, Olayemi O

Maternal and neonatal mortality in sub-Saharan Africa remains abysmally high^{1, 2}. The World Health Organization (WHO) reported that Sub-Saharan Africa accounted for around 70% of maternal deaths and 43% of global newborn deaths in 2020^{2,3}. These deaths continue to occur despite the availability of several evidence-based interventions with proven effectiveness in reducing maternal and neonatal mortality and morbidity⁴.

It is important to note that despite these evidence-based interventions, there is still research to practice gaps⁵ attributed to an estimated 17-year lag⁶ before these interventions could pave the way into routine clinical practice. Therefore, for these evidenced-based interventions to be fully integrated into day-to-day clinical practice, it is imperative to identify and address the gap between what we know works and what we do (practice), using implementation science methods to address this gap systematically⁵.

As defined by the National Institutes of Health, implementation science (IS) is the systematic study of processes and factors designed to promote the “adoption and integration of evidence-based practices, interventions, and policies into routine health care and public health settings”⁵. IS seeks to understand factors determining why an evidence-based intervention may or may not be adopted⁶. This could be within specific healthcare or public health settings where this information can be used to develop and test strategies to improve the speed, quantity, and quality of uptake⁶. Additionally, IS promotes a systematic approach to designing a strategy to facilitate the uptake of an evidence-based intervention⁷. The systematic approach includes

identifying behaviours contributing to the evidence–practice gap, identifying key determinants of current behaviour and the desired behaviour change using a theoretical framework and selecting components of the implementation strategy that target the key determinants⁷. This persisting trend in poor maternal and newborn health indices may not be unconnected to the non-adoption and full implementations of available evidenced-based practices for improved maternal and neonatal health in Sub-Saharan Africa and Nigeria.

Evidence-practice gaps currently exist in the field of foeto-maternal medicine in sub-Saharan Africa, with a dire need for implementation sciences to translate these research findings into policy and practice. An example of such a gap is the use of tranexamic acid to treat post-partum haemorrhage (PPH), especially in a low-resource setting where it is most needed. As evidenced by an internationally randomised controlled trial, tranexamic acid can reduce death from bleeding in women with PPH with no adverse effects⁸. Subsequently, the WHO recommended that tranexamic acid be part of the standard comprehensive PPH treatment package⁹. Unfortunately, this life-saving intervention is yet to receive wide implementation in most healthcare facilities in low-resource settings. However, a scoping review on the use of tranexamic acid to treat PPH in lower-middle-income countries revealed that no studies have yet explored tranexamic acid acceptability from the standpoint of providers, including the implications for health governance and information systems¹⁰.

Additionally, there was also a paucity of information on how to prepare the health system and services to incorporate tranexamic acid in

lower-level maternity care facilities in low-resource settings. The authors recommended that implementation research was critically needed to assist practitioners and decision-makers in establishing a tranexamic acid-inclusive PPH treatment package to reduce PPH-related death and disability.¹¹

Regarding perinatal health, another classic example is the WHO ACTION-I Trial (Antenatal Corticosteroids for Improving Outcomes in preterm Newborns) on the use of dexamethasone among high-risk women for early preterm birth in low-resource countries¹². The trial's findings revealed significantly lower risks of neonatal death alone and stillbirth or neonatal death than the use of a placebo without an increase in the incidence of possible maternal bacterial infection¹². However, again, this practice is yet to receive the needed wide implementation at the relevant health institutions and support from professional bodies and other stakeholders towards improved neonatal outcomes.

These evidence-to-practice gaps could be identified through IS methods to prevent the non-uptake of interventions by patients, providers, policymakers and the community by taking into cognisance the role of contextual factors as well as facilitators and barriers to the uptake of evidence-based health interventions. Additionally, IS uses

behavioural theory to guide the development of implementation strategies and employs rigorous evaluation designs to determine whether and, importantly, why strategies to reverse the gap are effective⁷.

It is noteworthy to mention that there are currently some already completed and ongoing implementation science research in foeto-maternal medicine in Nigeria like the Early Detection of Postpartum Haemorrhage and Treatment Using the World Health Organisation MOTIVE (E-MOTIVE) Trial, Intravenous versus oral iron for iron deficiency anaemia in pregnant Nigerian women (IVON) trial, Intravenous Versus Oral Iron-Postpartum IVON-PP Trial, Intravenous Versus Oral Iron-Implementation Study (IVON-IS) etc. These efforts are highly commendable. However, there is still a dire need for more coordinated efforts to bring implementation science to the fore in the field of foeto-maternal medicine towards eradicating preventable maternal and neonatal morbidity and mortality in sub-Saharan Africa.

All hands must therefore be on deck towards making implementation science a continuous conversation in foeto-maternal medicine towards attaining Sustainable Development Goal (SDG)³.

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