

## Neonatal and Infant Neurological Examination: Value and Applicability in Recent Medical Setting in Vietnam

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Dear Editor,

We recently read with interest an article by Zakaria et al. (1). In the article, the authors demonstrated three clinical neonatal and neurological assessments with detailed descriptions followed by illustrated videos.

Hydrocephalus remains one of the most common childhood neurological disorders globally. The prevalence of congenital hydrocephalus is reported at 123 per 100,000 births in low- and middle-income countries (LMICs) compared to 79 per 100,000 births in high-income countries (2). Vietnam is an LMIC in Southeast Asia with a population of approximately 98 million. The overall prevalence of congenital hydrocephalus among newborns in Vietnam remains unclear because of the limited sources of medical statistics and unsynchronised reporting systems. Nevertheless, hydrocephalus detected early via neonatal head examinations helps address expedient management and consequently reduces morbidity and the comprehensive neonatal mortality rate (NMR).

According to the United Nations International Children's Emergency Fund (UNICEF) Data Warehouse, the NMR in Vietnam is 10.53 per 1,000 live births for 2021 (3). However, this rate is unequally distributed in different regions of Vietnam. Destitute

mountainous regions witness the topmost mortality proportion at 24.8 per 1,000 live births, almost three times higher than the rate in the most affluent area at 8.6 per 1,000 live births and nearly double the overall country's infant mortality rate in 2015 (4). Residents in low socioeconomic status areas normally inhabit areas far from primary medical care and have less access to newborn healthcare. Furthermore, a significant shortage of paediatric employees in terms of quantity and quality occurs, especially at the commune and district levels. There are also gaps in the regulations for neonatal supplies, equipment and medications at various healthcare levels (5). Therefore, convenient and simplified examinations to detect newborn neurological disorders or developmental delays early are necessary for neonatal screening and disorder management.

In addition, Vietnam experienced a preterm delivery prevalence of seven per 1,000 live births in 2017 and preterm birth complications accounted for 40.5% of newborn fatalities in 2015. Preterm births are a proven burden of several medical, psychological and economic consequences (6, 7). One of the main reasons for premature births is inadequate access to reproductive healthcare services, particularly in underprivileged communities, where several pregnant women neither choose to give birth

in an institution nor receive prenatal care. Prenatal ultrasonography in the early period of pregnancy and maternal menstrual history are often unavailable. Consequently, the new Ballard maturation score is applicable to Vietnam's reproductive healthcare setting and other LMICs.

Generally, the most recent data in neonatal healthcare in Vietnam have basically met the national 2030 Sustainable Development Goals (SDGs). However, extra effort to maintain an average annual rate of reduction and achieve global SDGs is in demand (8). One of the essential elements to reach the targets is tutoring neonatal healthcare providers, especially in areas where human and equipment resources for newborn healthcare are still limited. Consequently, we should consider specific training on these neonatal and infant neurological examination skills for clinicians in Vietnam to help them improve decision making in neonatal care.

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