

## TITLE:

The status of emergency obstetric and newborn care in post-conflict eastern DRC: a facility-level cross-sectional study(Abstract\_要旨)

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(論文内容の要旨)

**Background:** Pregnancy-related mortality remains persistently higher in post-conflict areas. Part of the blame lies with continued disruption to vital care provision, especially emergency obstetric and newborn care (EmONC). In such settings, assessment of EmONC is essential for informed interventions needed to improve maternal and neonatal survival. In the North Kivu Province, the epicentre of armed conflict in eastern Democratic Republic of the Congo (DRC) between 2006-2013, the post-conflict status of EmONC is unknown. We assessed the availability, use, and quality of EmONC in 3 health zones (HZs) of the North Kivu Province.

Methods: A cross-sectional survey of all 42 public facilities designated to provide EmONC in 3 HZs (Goma, Karisimbi, and Rutshuru), purposively selected based on their relative proximity to previous conflicts and their respective locations encompassing the entire economic landscape of the province, was conducted in 2017. Interviews, reviews of maternity ward records, and observations were used to assess the accessibility, use, and the quality of EmONC against WHO standards, using the EmONC Needs Assessment (NA) toolkit that is organised in modules of questionnaires developed and refined by the Averting Maternal Death and Disability (AMDD) programme at Columbia University Mailman School of Public Health. Data were analyzed by Stata 15, guided by the Handbook on Monitoring Emergency Obstetric Care by UN partners and the AMDD programme to assess the performance of signal functions and calculate indicators of availability, use, and quality of EmONC services in these health zones.

**Results:**The 3 HZs fell short of WHO standards. Only three referral facilities (two faith-based facilities in Goma and the Médecins Sans Frontières (MSF)-run referral hospital of Rutshuru) met the criteria for comprehensive EmONC, i.e., 1.5 EmONC facilities per 500,000 population. None of the health centres qualified as basic EmONC, nor could offer obstetric and neonatal care services 24 hours, 7 days a week (24/7). Assisted vaginal delivery was the least performed signal function, followed by parenteral administration of anticonvulsants, mostly due to policy restrictions and lack of demand. Moreover, none of the HZs could achieve a direct-obstetric case facility rate of at most 1% and, the met need for EmONC was as low as 6.5% and 5.4% in Goma and Rutshuru, respectively. However, the proportion of births by caesarean section in EmONC facilities met the minimum standard in both HZs. Overall, the intrapartum and very early neonatal death rate was 1.5%.

Conclusion: This study gives for the first time a quantitative assessment of the post-conflict status of EmONC in the North-Kivu Province in eastern DRC. It raises the prospect of evidence-based policies and programming, as well as coordinated EmONC interventions, which should encourage local and external stakeholders to improve maternal and neonatal health in the province as part of the post-conflict recovery efforts. Despite the fact that most process/performance indicators didn't meet the WHO standards, EmONC services were provided to a degree that appeared to be more advantageous for urban populations and more comprehensive in public referral facilities, especially where the NFPO or humanitarian partners were involved. Particular attention to basic EmONC is required, focusing on strengthening human resources, equipment, supply chains, and referral capacity, on the one hand, and on tackling residual insecurities that might hinder 24/7 staff availability, on the other hand. Also, given that the number of designated basic EmNOC facilities was higher than the minimum recommended by WHO, health authorities should focus on upgrading a few HCs based on geographic location to meet basic EmONC standards instead of trying to upgrade all the designated facilities.

## (論文審査の結果の要旨)

本研究は、紛争の影響を最も受けやすい緊急産科/新生児ケア (EmONC) の状態を調べるために、コンゴ民主共和国東部の 2006-13 年の紛争の中心地北キブ県の 34 ヘルスゾーン (HZ) 中、激戦地域の都市部、中間部、地方部に属する 3HZ の全 42 公的医療施設 (一次 24、二次 13、三次 5) を対象に、2017 年に実施された横断研究である。コロンビア大学が開発した EmONC Needs Assessment 調査票を用いて、必要データを面接と各施設の文書記録から収集し、各施設の基礎的及び包括的 EmONC の提供状態を、WHO 標準指標と照らして評価した。

三次施設中包括的 EmONC を提供できていたのは3施設で、一次施設中には、基礎的 EmONC、一週間24時間のサービスを提供できていた施設は存在しなかった。指標機能の提供率は、補助膣分娩、抗痙攣薬の経皮投与が最も低かった。全体として、3HZの EmONC の質と提供はWHO の基準に満たず、需要充足率は非常に低く、直接産科症例致死率は最大受容限度を超えていたが、2HZでは帝王切開率は受容限度内で、3HZ全体として、早期新生児死亡率は、1.5%にとどまっていた。

以上本研究は、当該紛争後地域における EmONC の現状を現地フィールド調査に基づいて定量的に詳細に明らかにしたもので、紛争後地域における今後の EmONC の評価のあり方と改善の方向を示した点で、国際保健学的意義が高い。

したがって、本論文は博士(医学)の学位論文として価値あるものと認める。

なお、本学位授与申請者は、令和4年 2月 3日実施の論文内容とそれに関連した試問を受け、合格と認められたものである。

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