Innovations to reduce maternal mortality and improve health and wellbeing of adolescent girls and their babies in Sierra Leone

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Sierra Leone has one of the highest maternal mortality rates globally (717 deaths per 100 000 livebirths in 2019),[1,2] with the greatest burden in adolescent girls. More than a third of women aged 20–24 years in Sierra Leone have given birth before age 18 years (more than 10% of girls before age 16 years). The lifetime risk of maternal death is one in 17, with some evidence suggesting that the risk is higher for pregnant adolescents.[3] Additionally, infants born to adolescent mothers are at increased risk of sickness and death.[1] More than two-thirds of maternal deaths are caused by haemorrhage, hypertension, and sepsis; about a third are due to unsafe abortions among adolescents.[2] Many deaths are preventable with simple, cost-effective interventions available in Sierra Leone, but, unfortunately, disparities exist in access, availability, and quality of care, and delays occur in delivery and escalation of care.[3]

Adolescent girls from disadvantaged communities are particularly vulnerable due to the pressures associated with poverty and scarce education and employment opportunities.[4] Child marriage and adolescent pregnancy (39% and 28% respectively) often prevent girls from realising their full potential in all aspects of their development.[5] Gender-based violence is prevalent, with more than half of girls experiencing physical violence.[6] In a country where young people constitute most of the population (62·5% are aged younger than 25 years),[7] improving the sexual and reproductive health and wellbeing of girls remains a priority, recognised by successive government policies. The establishment of the National Secretariat for The Reduction of Teenage Pregnancy in 2013 and the development of the first multi-agency, cross-ministry National Strategy (2013–15) was impeded by diversion of efforts and insufficient resources during the Ebola epidemic, during which rates of adolescent pregnancy also exponentially increased.[8] However, a revised, updated version of the National Strategy that included child marriage was relaunched in 2018.[9]

Much of the focus is rightly on primary prevention of adolescent pregnancy and child marriage, including basic education, life skills training, and quality sexual and reproductive health services. Nonetheless, adolescent girls are still getting pregnant and dying during pregnancy and child birth. Identifying interventions that also support adolescent girls once pregnant and assist with parenting is crucial to save girls' and babies' lives. Investment in their health and development will achieve a generation of adolescent mothers and babies who do not just survive but thrive. Sensitising communities about adolescent pregnancy, strengthening existing youth-friendly services, and working closely with stakeholders (government, community actors) are crucial to facilitating the support and reintegration of pregnant and parenting adolescent girls into family, community, and educational life. The recent *Lancet* Series on optimising child and adolescent health and development highlights the need to support a holistic agenda to improve the integration and implementation of evidence-based interventions across health, education, and social systems to protect, nurture, and support the health and developmental potential for every child and adolescent.[10]

A community-based household survey conducted by grassroots organisation Lifeline Nehemiah Projects found a maternal death rate of one in ten among those younger than 18 years in Eastern Freetown in 2015. A subsequent study identified contributing factors to high maternal adolescent mortality, such as stigma and abandonment

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by their families, insufficient family-based support, and delayed care-seeking.[11] One of the potential interventions identified was a mentoring scheme for the most vulnerable pregnant girls. In 2017, Lifeline Nehemiah Projects developed and piloted a holistic and locally designed community-based mentoring intervention, 2YoungLives, from pregnancy to 1-year post-birth for adolescent girls. Mentors, who are kind, compassionate, respected community members, encourage adolescents to take up antenatal care and hospital birth; re-establish family connections where safe and appropriate; promote health-seeking behaviour; provide practical advice about childbirth, parenting, and contraception; support mentees with small business start-ups; and encourage mentees to return to education or start vocational training with educational bursaries. 2YoungLives has been piloted across four districts for 4 years, and preliminary findings are promising: more than 250 girls were mentored, and no maternal deaths were reported among the mentees. Girls report close loving relationships with their mentors, and a sense of agency and wellbeing. All girls have run a small business to enable them to eat well during pregnancy and save money for child birth; many have returned to live with their parents or family members; some have returned to education, and others have learned vocational skills and gained employment. Potential mechanisms by which the mentoring scheme might work include relationship building, engagement and advocacy, educational, social, and economic empowerment, and respectful community involvement. However, a more robust and formal assessment is needed to understand the feasibility of 2YoungLives in other communities and how it can address determinants of adolescent maternal and infant mortality, and general health and wellbeing.

For more on **2YoungLives** see https://2younglives.org/

The 2YoungLives cluster trial and nested, mixed-methods process evaluation will formally assess the feasibility, acceptability, and implementation of the mentoring scheme. This trial is now part of a larger programme of work, CRIBS, that is funded by the UK's National Institute for Health and Care Research and led by the University of Sierra Leone and King's College London in collaboration with multiple partners. This multidisciplinary group aims to develop and implement several simple, scalable innovations to reduce maternal (including adolescent) mortality and build research capacity and expertise in Sierra Leone. Findings from CRIBS and, specifically, 2YoungLives will provide further holistic information for communities and local and national decision-makers. The results will also refine procedures to inform future scale-up work aiming to reduce mortality among adolescent girls and their babies, improving health, education, and socioeconomic welfare. Part of the uniqueness of 2YoungLives is the meaningful community engagement and involvement that ensures community buy-in, promoting sustainability. There has been national and international interest in 2YoungLives, and we believe this mentoring scheme can save lives and promote health and wellbeing of adolescent girls and babies, and be a model of good practice for adolescent pregnancy across Sierra Leone and elsewhere.

For more on **CRIBS** see https://cribs-i.org/

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