

## Effectiveness of a simplified protocol in Mali: An observational study

This is a summary of the following paper: Kangas S, Marron B, Tausanovitch Z *et al* (2022) *Effectiveness of acute malnutrition treatment at health center and community levels with a simplified, combined protocol in Mali: An observational study. Nutrients*, 14, 22.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9699530/pdf/nutrients-14-04923.pdf>

The evidence base that simplified treatment protocols for severe wasting can be more cost-effective, as well as non-inferior, to standard treatment pathways has been growing in recent years. Several protocols have been trialled, such as the simplified dosage of ready-to-use therapeutic food (RUTF), tapered dosage regimens as a child progresses along a treatment pathway and the simplification of admission protocols. This observational cohort study, piloted in 35 health areas in rural Mali, describes the response to simplified, combined treatment among 27,800 children aged 6–59 months with acute malnutrition. The inclusion criteria were a mid-upper arm circumference (MUAC) of <125 mm and/or oedema, in line with other studies. The treatment protocol was based on the Combined Protocol for Acute Malnutrition Study (ComPAS)<sup>1</sup>, whereby children with a MUAC of <115 mm and/or oedema were prescribed two sachets of RUTF and children with a MUAC of 115 mm ≤ or a MUAC of <125 mm were prescribed one sachet. Antibiotics were delivered at admission and deworming, malaria, diarrhoea and acute

respiratory infections were treated in line with national protocols, as needed. A discharge ration of seven RUTF sachets was given to children upon recovery.

Recovery was defined as a MUAC of ≥125 mm and no oedema over two consecutive visits. Most children (80%) were treated at a health centre, and 20% were treated at community health sites. This low proportion of community admissions was attributed to the recent scale-up of the community health worker component.

In total, 92% of the study population recovered, with a mean length of stay of 40 days and a mean RUTF consumption of 62 sachets per child treated. Among the more severely malnourished children (a MUAC of <115 mm and/or oedema), 87% recovered with a mean length of stay of 55 days and a mean RUTF consumption of 96 sachets. Recovery did not differ significantly between health facility (92%) or community-level treatment (94%), highlighting the quality of community health worker-led treatment in this Sahelian context. All programmatic indicators exceed the SPHERE<sup>2</sup> standards.

This is the first paper to report the use of this simplified, combined protocol outside of health facilities, and the results are encouraging. The protocol proved easy to implement by non-formally trained care providers.

It is important to note that mean MUAC was slightly higher for children admitted to community-level care (116.5 mm) compared to those treated in the health centre (115.2 mm), which may have biased the results in favour of community care – children with better anthropometric status are more likely to recover sooner. However, this difference was small, so any confounding is likely to be minimal. This may indicate that caregivers seek treatment sooner when it is closer to the home, which is a positive finding in itself – previous studies indicate that treating children earlier in the disease pathway is correlated with better outcomes. The training of community health workers to provide treatment was shown to reduce the distance to treatment for 21% of the catchment population, yet 20% still had to travel over 15 km for treatment. Accessibility therefore remains both a concern and a target for intervention.

In conclusion, this study shows that the simplified, combined protocol resulted in a high recovery rate and low RUTF consumption per child, and can be effectively delivered through community health workers.

<sup>1</sup> <https://trialsjournal.biomedcentral.com/articles/10.1186/s13063-018-2643-2>

<sup>2</sup> <https://spherestandards.org/handbook-2018/>

## Relaxation interventions for maternal and neonatal outcomes: A systematic review

This is a summary of the following paper: Abera M, Hanlon C, Daniel B *et al* (2022) *Effect of relaxation interventions in pregnant women on maternal and neonatal outcomes: A systematic review and meta-analysis [preprint]*.

<https://www.medrxiv.org/content/10.1101/2022.11.17.22282468v1>

Maternal stress and disturbances to mental wellbeing are common occurrences during the perinatal period, with 15% to 25% of women experiencing high levels of anxiety or depressive symptoms during pregnancy. Maternal stress is associated with adverse pregnancy and birth outcomes yet, despite various interventions targeting different aetiologies, there has been no comprehensive review to synthesise evidence on the effectiveness of relaxation interventions<sup>1</sup> on maternal and neonatal outcomes.

This systematic review considered five databases, following the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines. Case reports, cross-sectional studies and editorial and/or opinion pieces were excluded. Eligible studies were randomised controlled trials or quasi-experimental studies on healthy pregnant women without additional pregnancy complications, which reported on the outcomes of interest specified in the search

strategy – stress (self-reported, physiological and/or biochemical) or mental health/anxiety symptoms – and/or pregnancy outcomes. Unpublished work and grey literature were excluded, but a manual search was also completed to find additional studies from the reference lists of those identified.

A meta-analysis was conducted to obtain pooled estimates of effect (mean difference and standard deviation) for maternal depressive symptoms, maternal stress symptoms and birth weight. Where meta-analysis was not possible, where there was a small sample size for certain outcomes, a narrative synthesis was performed and reported.

Of the 19 studies that were included for systematic review, three were from India, with the remainder being from upper-middle-income or high-income countries. This made it difficult to extrapolate these findings to lower-income contexts, especially Africa, as no studies featured

that continent. Most studies were deemed to have a low risk of selection bias, although it was unclear to what degree reporting bias affected these outcomes.

In general, relaxation interventions were found to be effective in reducing perceived stress and depressive symptoms during pregnancy. Mindfulness-based childbirth and parenting (a form of cognitive behavioural therapy), music therapy, progressive muscle relaxation, meditation, yoga and hypnosis were effective in reducing, to varying degrees, maternal depressive, stress and anxiety symptoms during pregnancy. There are several plausible biological mechanisms by which these interventions can promote maternal homeostasis and subsequent infant growth and development, but disentangling the direct and indirect effects of each is challenging.

The authors note that findings on obstetric and birth outcomes were inconclusive, but the initial evidence is promising. The meta-analysis may have been underpowered due to small sample sizes in trials, highlighting the need for further evidence generation to form more robust conclusions. Relaxation interventions are low-intensity, highly scalable in resource-poor settings and broadly without risk, indicating that this approach merits further research.

<sup>1</sup> In this study, relaxation interventions were defined as any form of relaxation intervention, whether mind-based (tapes or music) or physical-based (massage, stretch or exercise), which were applied with the aim of promoting relaxation and reducing stress.