

# Effects of video-based nutrition and health education on nutrition, health, and uptake of health services by women during pregnancy and the first six months postpartum in the Dirashe district of Southern Ethiopia



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## CURRICULUM VITAE

Wanzahun Godana Boynito attended his Bachelor degree and Masters degree in Public Health at the Faculty of Health Sciences, Department of Public Health, Haramaya University, Ethiopia. He joined the Doctoral Schools Training programme of Ghent University in 2018. Since October 2009 he works at Arba Minch University, College of Medicine and Health Sciences, School of Public Health. He was promoted to Assistant Professor of Public Health at Arba Minch University, School of Public Health in January 2017.

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## Background

Undernutrition and micronutrient deficiencies are major public health issues in low- and middle-income countries. When women experience undernutrition during pregnancy and lactation, it has lifelong effects on both them and their newborns. This leads to maternal anemia and poor birth outcomes, including small-for-gestational-age births, low birth weight, and impaired physical growth after birth.

## Research aim

To generate empirical evidence on the effects of video-based health education on nutrition, health and uptake of health services, and assess the impacts on birth outcomes, anemia, breastfeeding and infants growth in rural Ethiopia.

## Methods

In a two-arm cluster randomized controlled trial, 596 pregnant women in their first trimester ( $12 \pm 2$  weeks of gestation) were recruited and followed up until delivery, and in pair with their infant up-to six months postpartum. The two arms, intervention and control, were compared for the three outcomes including anemia status, birth outcomes and nutritional and health status of mothers and their infants at six-months postpartum. Breast feeding practices and infant growth were also compared between the two arms. Covariates include socio-demographic and economic data, obstetrics, dietary practices, household food security, bacterial vaginosis and parasitic infections (intestinal worms/protozoa and schistosomes) and health status data (i.e. reported morbidity).

## Key results

The intervention significantly improved birth weight (mean  $\pm$  SD) ( $3193.4 \pm 580.9$  g compared  $3003.0 \pm 553.0$  g in the control arm. At birth, 12.8% of children were born  $<2500$  g. Near delivery, 1.8% of women in the video health arm had anemia (Hb  $<11.0$  g/dL) compared to 6.5% in the control arm. The intervention had no significant effect on the birth length ( $50.8 \pm 4.0$  cm compared to  $50.0 \pm 4.0$  cm in the control arm) and maternal Hb near delivery.

The intervention significantly improved reported exclusive breastfeeding rates at 4 and 5 months postpartum. Deuterium dose to mother technique results showed that the proportion of women practicing exclusive breastfeeding (EBF) was 50-67% less than reported at 3 months for both arms and at 5 months in the intervention arm. The intervention did not significantly affect measured EBF at 3 and 5 months postpartum but did improve human milk intake at 3 months .

At six months, video improved mean length-for-age, weight-for age and weight-for-length z score of infants. At six months, 11.1% of infants in the control arm were stunted compared to 5.6% in the video arm. Similarly, 5.2% of infants were underweight in video arm and 9.4% in control arm and 5.4% and 11.3% of infants were wasted in video and control arms respectively. The video intervention significantly improved growth trajectories but not reduced stunting, underweight and wasting.

From systematic review and qualitative assessment we found that video intervention was acceptable and feasible method of health education in social behavior change communication (SBCC).

## Conclusions

Video-based education improved birth weight, growth trajectories, and increased reports of EBF and breast milk intake. For sustained impact on behavior, nutrition, and health indicators, SBCC targeting this population should be implemented over an extended period. Furthermore, accompanying training and other supportive activities are essential to assist households that receive video messages in practicing according to the provided recommendations.

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