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Effect of checklist based box system interventions on improving institutional delivery among reproductive age women in northwest ethiopia: generalized structural equation modeling

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Background: Previous studies have shown that there is low utilization of institutional delivery in Ethiopia, as well as various factors contributing to this low utilization. Notably, there is paucity around interventions to improve institutional delivery. Hence, this study examines the effectiveness of checklist-based box system intervention on improving institutional delivery and to investigate the association through which the intervention is linked to institutional delivery.

Method: The study used data from a larger trial, on the effectiveness of checklist-based box system intervention on improving maternal health service utilization. In the intervention arm, mothers received regular community-level pregnancy screening and referral, service utilization monitoring boxes, drop-out tracing mechanisms, regular communication between health centers and health posts, and person-centered health education for mothers. This study used the existing government-led maternal health program as a control arm. A total of 1062 mothers who gave birth one-year before the survey were included in the final analysis. A difference-in-difference estimator was used to test the effectiveness of the intervention. Generalized structural equation modeling was used to examine the direct and/ indirect associations between the intervention and institutional delivery.

Result: Among participants, 403 (79.5%) mothers from intervention and 323 (58.2%) mothers from control clusters gave birth at health facilities. The result of the study revealed a 19% increase in institutional delivery in the intervention arm (19, 95%CI: 11.4-27.3%). In this study the pathway from checklist-based box system intervention to institutional delivery was mainly direct - (AOR= 3.32, 95%CI: 2.36-4.66), however, 33% of the effect was partially mediated by attendance of antenatal care four visits (AOR= 1.39, 95%CI: 1.02-1.92). The influence of significant others (AOR=0.25, 95%CI: 0.15-0.43) and age (AOR=0.03, 95%CI: 0.01-0.09) had an inverse relation with institutional delivery.

Conclusion: The implementation of a checklist-based box system significantly increased institutional delivery utilization, both directly and indirectly by improving antenatal care four attendance. A larger-scale implementation of the intervention was recommended, taking the continuum of care approach into account.

Biography

Netsanet Belete Andargie has been working in the Department of Population and Family Health, Jimma University, Jimma, Ethiopia.