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Determinants of Maternal Near-Miss among Women in Public Hospital Maternity Wards in Northern Ethiopia: A Facility Based Case-Control Study

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Abstract : Background: Maternal near miss (MNM) can be used as a proxy indicator of maternal mortality ratio. There is a huge gap in life time risk between Sub-Saharan Africa and developed countries. In Ethiopia, a significant number of women die each year from complications during pregnancy, childbirth and the post-partum period. Besides, a few studies have been performed on MNM, and little is known regarding determinant factors. This study aims to identify determinants of MNM among women in Tigray region, Northern Ethiopia. Methods: a case-control study in hospital found in Tigray region, Ethiopia was conducted from January 30 - March 30, 2016. The sample included 103 cases and 205 controls recruited from women seeking obstetric care at six public hospitals. Clients having a life-threatening obstetric complication including haemorrhage, hypertensive diseases of pregnancy, dystocia, infections, and anemia or clinical signs of severe anemia in women without haemorrhage were taken as cases and those with normal obstetric outcomes were considered as controls. Cases were selected based on proportional to size allocation while systematic sampling was employed for controls. Data were analyzed using SPSS version 20.0. Binary and multiple variable logistic regression (odds ratio) analyses were calculated with 95% CI. Results: The largest proportion of cases and controls was among the ages of20–29 years, accounting for37.9 %(39) of cases and 31.7 %(65) of controls. Roughly 90% of cases and controls were married. About two-thirds of controls and 45.6 %(47) of cases had gestational age between 37-41 weeks. History of chronic medical conditions was reported in 55.3 %(57) of cases and 33.2%(68) of controls. Women with no formal education [AOR=3.2;95%CI:1.24, 8.12],being less than 16 years old at first pregnancy [AOR=2.5; 95%CI:1.12,5.63],induced labor[AOR=3; 95%CI:1.44, 6.17], history of Cesarean section (C-section) [AOR=4.6; 95%CI: 1.98, 7.61] or chronic medical disorder[AOR=3.5;95%CI:1.78, 6.93], and women who traveled more than 60 minutes before reaching their final place of care[AOR=2.8;95% CI: 1.19,6.35] all had higher odds of experiencing MNM. Conclusions: The Government of Ethiopia should continue its effort to address the lack of road and health facility access as well as education, which will help reduce MNM. Work should also be continued to educate women and providers about common predictors of MNM like the history of C-section, chronic illness, and teenage pregnancy. These efforts should be carried out at the facility, community, and individual levels. The targeted follow-up to women with a history of chronic disease and C-section could also be a practical way to reduce MNM.

Keywords : maternal near miss, severe obstetric hemorrhage, hypertensive disorder, c-section, Tigray, Ethiopia
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