



EXPERIENCES FROM THE FIELD

THE EFFECTIVENESS OF MATERNITY WAITING HOMES

Researchers have long been interested in maternity waiting homes, but few have studied their effectiveness. This study evaluated how their use cut the perinatal mortality rate in half at the Wolisso hospital in Ethiopia. These important results confirm their value and support policies for their implementation.

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MATERNAL WAITING HOMES

Maternal Waiting Homes (MWHs) are residential structures located near health facilities where women with at-risk pregnancies can stay when their due date is approaching so their health can be monitored and they can be transferred quickly to the health facility should complications arise.

The idea to set up such a structure is not new. MWHs have been used in Canada, Northern Europe, and the United States in remote areas without obstetric services since the early 20th century. The first ones in Africa were built in Nigeria in the 1950s, followed by those in Uganda and Cuba where within 20 years they helped bring the hospital birthrate to 99% and caused perinatal mortality to drop. The goal of the MWH is to reduce the distance between pregnant women and health facilities that can manage obstetric emergencies and thereby reduce perinatal and maternal mortality. Currently, they are mostly used in rural areas of countries with limited resources such as that of Wolisso, Ethiopia, the case studied here.

THE WOLISSO STUDY

MWHs are widespread in countries with limited resources, yet there is little evidence of their effectiveness, and we can only rely on observational studies. A retrospective cohort study in Ethiopia showed that maternal mortality and stillbirths were significantly lower for mothers admitted to the hospital through the MWH. A cross-sectional study in Tanzania shows a significant tie between the use of the MWH and the low socioeconomic status of the women it receives, with better results in terms of neonatal and perinatal mortality.

The study at hand was launched precisely to evaluate if the MWH helps reduce perinatal mortality at the Wolisso hospital in Ethiopia where the Italian NGO Doctors with Africa Cuamm has been operating since 2000.

A case-control study compared the perinatal mortality between women admitted to the MWH located inside the St. Luke Hospital in Wolisso and women admitted directly to the hospital. The "cases" were women with at least one child born dead or deceased before discharge between 1/1/2014 and 31/12/2017. The

first two mothers with a positive delivery¹ after each case were selected as control subjects to minimize the differences in the health care received by each case and the related control subjects.

For each woman, exposure to the MWH was assessed, and medical and other records were collected: (1) maternal and pregnancy-related conditions, (2) birth-related conditions, and (3) neonatal characteristics.

The study included 3,525 women: 1,175 cases, and 2,350 control subjects. Fifty-one cases (4.3%) and 143 control subjects (4.4%) had been admitted to the MWH. Of the cases, 843 cases were women whose child was stillborn and 332 were women with children born alive who died within seven days of age.

Regarding maternal characteristics or conditions related to a previous pregnancy, the women in the MWH mostly: came from rural areas (88% vs 68%); belonged to older age groups; were "large multiparous" (20.6% vs 9.8% had had five or more children); had had Cesarean sections in the past (6.2% vs 32.0); had a positive medical history for previous pregnancies with maternal or fetal complications (0.3% vs 3.6%); had had at least one prenatal visit (46.1% vs 23.9%); and had had a twin pregnancy (14.4% vs 5.2%) and a breech presentation (9.3% vs 3.7%).

More women in the MWH had preeclampsia (6.7% vs 3.1%), polyhydramnios (3.6% vs 1.3%), and prenatal bleeding (6.2% vs 3.2%). On the other hand, there were no significant differences when it came to malpresentations, the presence of hypertension, chronic diseases, infectious diseases (including HIV/AIDS), oligohydramnios, and post-term childbirth.

Considering the overall regression, adjusted for all confounding factors, the risk of perinatal mortality for mothers admitted to the MWH was 54% lower than those not admitted (OR=0.46, 95% CI: 0.30-0.70; p<0.000).

EFFICACY AGAINST PERINATAL MORTALITY

In the case of the St. Luke Hospital in Wolisso, the results of the study show the effectiveness of the MWH in cutting perinatal

mortality in half, a result that accords with the results of the two previous studies conducted in Ethiopia or in similar contexts, conducted on smaller populations or without adjusting for the many confounding factors. It also supports the MWH implementation policy in Ethiopia, especially when the MWH is close to a hospital.

These results offer important springboards for further thought. In a 2015 reassessment, the WHO designated it a priority to produce results showing whether MWHs should be proposed to certain female targets as opposed to others based on factors like vulnerability, distance, and obstetric risk. The results of our study justify criteria already applied to indicate MWH access, though they have yet to be defined at the structural or regional/national health-policy levels. These results could be a good starting point for defining clear, shared criteria for admission to an MWH based on scientific evidence.

They have also confirmed how key prenatal visits are for identifying risk factors early. In fact, having had at least one prenatal

visit is itself a protective factor for perinatal mortality. Indications already given by the literature in this regard have been ambiguous. Sometimes the advantage was only clear after a number of visits. Our study also found that prenatal visits are useful for diagnosing risk factors early so women can be directed to use the MWH and accessibility barriers can be mitigated.

New studies will better describe how MWHs can reduce mortality. To date, the literature shows how MWHs can facilitate the planning and performing of Cesarean sections under risk conditions. Our data also support this evidence. The MWH is an important tool for intervening early with a planned Cesarean section whenever vaginal delivery could pose a risk to the survival of the unborn child. In general, we can confirm that transferring women with at-risk pregnancies to an MWH allows them to be monitored during the final phase of their pregnancy and, through early intervention, be supported in the birth process in the most ideal, safe way for mother and baby.

NOTES AND BIBLIOGRAPHIC REFERENCES

1 A “birth with a positive outcome” means a birth in which all the newborns are alive up to 7 days after delivery, or have been discharged alive from the hospital

Dalla Zuanna T. et al., The effectiveness of maternity waiting homes in reducing perinatal mortality: a case-control study in Ethiopia in *BMJ Global Health*, April 2021, <https://gh.bmj.com/content/6/4/e004140>