Community Based Newborn Care: *A Systematic Review and Meta-analysis of Evidence*: UNICEF-PHFI Series on Newborn and Child Health, India

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Background: The neonatal mortality rate (NMR) in India has remained virtually unchanged in the last 5 years. To achieve the Millennium Development Goal (MDG) 4 on child mortality (two thirds reduction from 1990 to 2015), it is essential to reduce NMR. A systematic review of the evidence on community-based intervention packages to reduce NMR is essential for advocacy and action to reach MDG-4.

Objective: To assess the effect of community based neonatal care by community health workers (CHWs) on NMR in resource-limited settings.

Design: Systematic review and meta-analysis of controlled trials.

Data sources: Electronic databases and hand search of reviews, and abstracts and proceedings of conferences.

Results: A total of 13 controlled trials involving about 192000 births were included in this systematic review. Community based neonatal care by CHWs was associated with reduced neonatal mortality in resource-limited settings [RR=0.73 (0.65 to 0.83); *P*<0.0001]. The identified studies were a heterogeneous mix with respect to the extent and quality of community based neonatal care provided and the characteristics of the CHWs delivering the intervention. There was no consistent effect of training duration of the health workers, type of intervention (home visitation versus community participatory action and learning), number of home visits done by CHWs, and provision of only preventive versus both preventive and therapeutic care. Limited data suggests that the ideal time for the first postnatal visit is the first two days of life. The interventions are highly effective when baseline NMR is above 50/1000 live births [RR=0.64(0.54 to 0.77)]. The interventions show a significant decrease in efficacy as the NMR drops below 50/1000 live births [RR=0.85 (0.73 to 0.99)], however is still substantial. NMR gains from home visitation approach are going to materialize only in the presence of high program coverage of 50% or more.

Conclusion: A significant decrease in NMR is possible by providing community based neonatal care in areas with high NMR by community health workers with a modest training duration and ensuring high program coverage with home visitation on the first two days of life.

Keywords: *Action, Advocacy, Newborn, Child health, Community, Systematic reviews.*

India contributes to about 20% of global births with 27 million live births each year [1]. With about 2 million under-five annual deaths, India also accounts for a quarter of the global child mortality [1]. The infant mortality rate (IMR) has declined from 139/1000 live births in 1972 to 50/1000 live births in 2009 [2]. There are wide inter and intra state variations in infant and child mortality; and between rural and urban India. For example, rural IMR is 55/1000 live births as opposed to an

urban IMR of 34 per 1000 live births [2]. A significant proportion of child deaths (over 50% of under-five mortality and 66% of infant mortality) occur in the neonatal period [2]. According to 2008 estimates, out of the annual 1,829,826 under five deaths, 1,003,767 (54.8%) occurred in the neonatal period. Early neonatal mortality (25/1000 live births) accounts for 2/3 of neonatal mortality [2]. Preterm birth (32.4%), neonatal infections (26.7), and complications of birth asphyxia/trauma (18.9%) account for most neonatal deaths [3].

With the advent of *Janani Suraksha Yojana* (cash incentive scheme for institutional delivery), certain important parameters of maternal health have shown impressive gains; institutional delivery has increased to 72.9%, safe delivery by skilled birth attendants has increased to 76%, and mothers who had 3 or more antenatal check-ups has also increased to 68.7% [4]. However, 46% of mothers stay for less than or equal to 1 day at the health facility after childbirth [4]. Majority of neonatal deaths are occurring at home, within the first few days of life, against a backdrop of rural poverty, unskilled neonatal care, and probable suboptimal/absent referral system. Only 22.2% neonatal deaths occur in a health facility [3].

The Millennium Development Goal (MDG)-4 on child mortality for India aims for a two-thirds reduction in IMR from the 1990 level of 84/1000 live births to 28/1000 live births by 2015. The National Rural Health Mission (NRHM) in India has set itself the goal of reducing IMR to 30/1000 live births by 2012. However, at the present rate of decline in IMR, the likelihood of achieving these targets appears unlikely, given that two-thirds of infant deaths are contributed by neonatal deaths, wherein the mortality decline has been woefully small. Since utilization of health facilities for neonatal health is low, there is a need to review the potential complementary role for community based newborn care in accelerating the decline in neonatal deaths to achieve the MDG-4 goals. Recent reviews have evaluated the efficacy and cost-effectiveness of individual interventions in reducing neonatal mortality, and packages of interventions have been proposed for wide-scale implementation [5]. However, there are only a few systematic reviews on community health inter-ventions for newborn survival [6]. This systematic review was undertaken to assess the effect of community based neonatal care interventions on neonatal mortality in resource-limited settings, and explore its relevance for India.

METHODS

Inclusion Criteria for Trials

Type of trials: Trials (randomized or quasi-randomized) evaluating interventions including community based neonatal care by community health workers, with individual or cluster allocation, were eligible for inclusion. Trials evaluating specific community based interventions e.g. micronutrient supplementation, vaccination, cord cleansing with a specific disinfectant, kangaroo mother care, breast feeding counseling, antimalarial treatment etc were excluded.

Participants: Neonates (first 28 days of life, or the first month of life where not specified in days) born in resource limited settings.

Interventions: Interventions during pregnancy could include any one or more of the following: (*i*) Promotion of antenatal care; (*ii*) Health education and/or counseling regarding desirable practices during pregnancy; or (*iii*) Promotion of delivery in a hospital or at home by a skilled birth attendant; or (*iv*) Education about safe and/or clean delivery practices.

Interventions during childbirth could include implementation of safe delivery practices in case of domiciliary deliveries and care of the newborn immediately after birth, including keeping the baby warm, neonatal resuscitation (if required), and early initiation of breastfeeding.

Interventions during neonatal period could include any of the following: (*i*) Promotion of optimal neonatal care practices such as exclusive breastfeeding, keeping the baby warm and hygienic cord care; (*ii*) Education to improve care-giver recognition of life-threatening neonatal problems and health care seeking behaviors for them; (*iii*) Identification of signs of severe neonatal illness by community health workers and referral to a health facility; or (*iv*) Home-based management of neonatal morbidities.

The term 'community health worker' included any village or community based health worker or volunteer, or an auxiliary health professional working in the community.

Primary outcomes measure: Neonatal mortality rate.

Search Methods for Identification of Trials

We searched computerized bibliographic medical databases, including Medline, Cochrane Controlled Trials Register in the Cochrane Library, EMBASE, HealthSTAR (Health Services Technology, Administration, and Research), CINAHL, WHO Afrolibrary and clinical trials websites till March 5, 2011. For PubMed the following search strategy was used: (newborn OR neonat* OR perinatal OR baby OR babies) AND ("community" OR home OR domiciliary OR traditional OR village) AND (mortality OR death OR survival OR birth outcome OR pregnancy outcome).

A lateral search using the reference lists of identified articles and 'related articles' link in PubMed was done. Hand searching of reviews and related articles along with conference proceedings/ abstracts was also undertaken. Experts in the field were contacted for ongoing/recently concluded trials and additional data wherever required. The research questions and search methodology has been further elucidated in an earlier publication [7].

Data Analysis

Since the studies were expected to be a combination of individual and cluster randomized controlled trials, the data entry was done using the inverse variance method in Stata® software version 9.2 (StataCorp LP, College Station, USA). The presence of bias in the extracted data was evaluated by visualization of the funnel plot and also with the "metabias" command. The summary effect size was calculated using the "metan" command. The effect size of the intervention (summary RR) was calculated by comparing NMR at the end of each intervention as the baseline and/or change data were not available for all included trials. We utilized both random effects and fixed effects model estimates; however, a random effects model was preferred as substantial heterogeneity was present ($I^2 > 50\%$).

The following pre-specified subgroup analyses were performed for all-cause neonatal mortality: (*i*) preventive interventions *vs*. preventive and curative interventions (*e.g.* antibiotics for neonatal sepsis) to examine the potential effect of adding curative treatment; (*ii*) high (>50 deaths per 1000 live births) versus low (≤50 deaths per 1000 live births) baseline neonatal mortality to examine the possibility of a greater benefit in populations with higher baseline mortality.

Subgroup analyses can be done only for categorical variables (hence the need to convert baseline neonatal mortality to a categorical variable as done above) and that too one variable at a time. Multivariate meta-regression was performed to study the simultaneous effect of both categorical and continuous variables: (*i*) asphyxia/sepsis treatment; (*ii*) baseline NMR; and (*iii*) program coverage as *explanatory* variables; and 'relative risk of neonatal mortality' as the *outcome* variable.

RESULTS

We identified 273 potentially eligible study reports, 202 of which were excluded after reading the abstract. Of the remaining 71, 48 study reports were excluded after reading the full text for reasons detailed in ***Fig* 1**. Two trials were further excluded because they did not report the outcome of interest. The remaining 21 study reports (reporting 13 studies) were included in this review [8-28].

Trial characteristics

There were 13 controlled trials [8-28] including 9 cluster randomized trials, 1 quasi randomized trial and 3 non randomized trials. The controlled trials were primarily from south-southeast Asia (11 trials) and 1 each from Gambia and Greece. The controlled trials involved populations ranging from 45000 to 1300000 with a baseline NMR from 24.8-57.7 per 1000 live births. The trial characteristics of the included studies are further detailed in ***Web Table* I**.

***Intervention package* (*Web Tables* II-III)**

The interventions in controlled trials were primarily of 2 types. Majority of studies involved home visitation by community health workers with or without community mobilization (9 studies) [8-

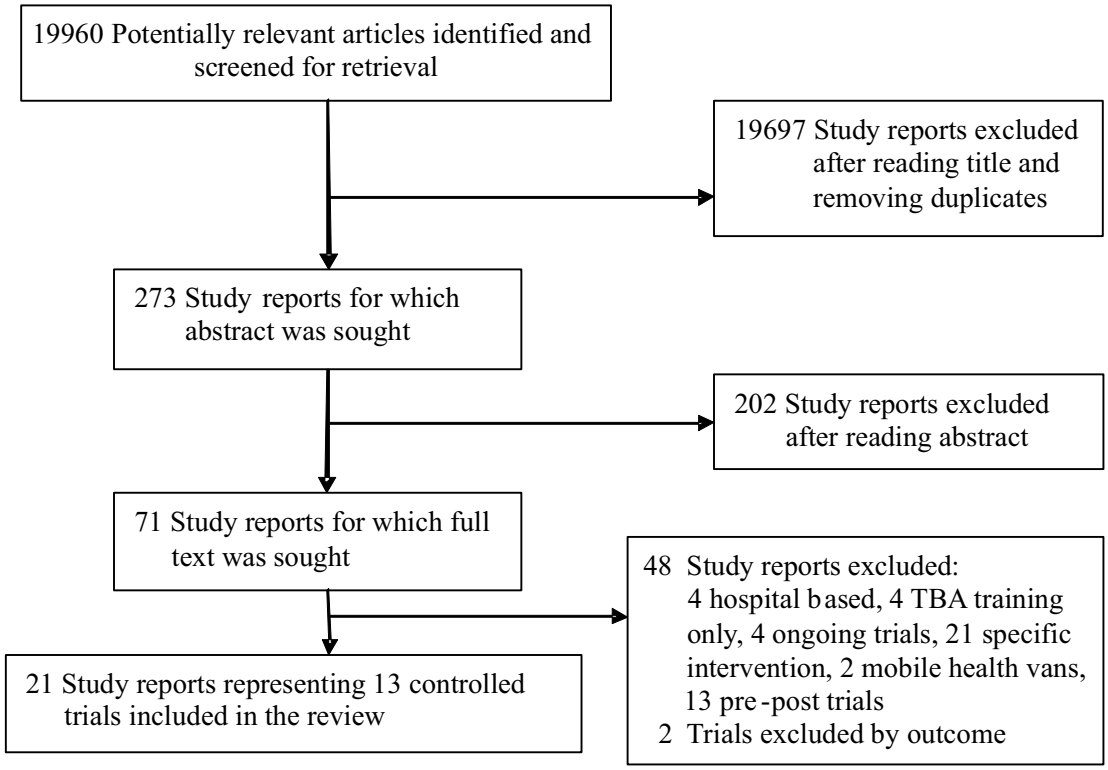

FIG. 1 *Trial flow.*

22,26,28]. Three studies involved participatory learning and action cycle by the use of women groups [24-26] and in one study, the intervention was delivered through trained birth attendants [27]. In almost all trials the community health worker (CHW) was drawn from the local community. Majority of studies provided limited data on the level of education, remuneration and supervision of CHWs. The training of CHWs varied between 3 days to 36 days and was a combination of both theoretical as well as practical aspects (***Web Table* III**). Community mobilization was done in most of the controlled trials but the studies differed in the quantum and quality of mobilization. The duration of intervention varied between 14 to 84 months. The interventions were heterogeneous with respect to content and delivery; and involved some combination of education about birth and newborn care preparedness, referrals of high-risk pregnancies, provision of antenatal care, iron/folate supplementation, nutritional counseling, clean delivery practices, presence of skilled birth attendants, CHW/TBA training, postnatal visits, promotion of breastfeeding, neonatal case management, newborn resuscitation, prevention and management of hypothermia, and referral of sick newborn (***Table* I**). The number of postnatal home visits varied between 1 to 5 in all trials (except Bang 2005 which involved ~10 visits) [14-22]. Strategies differed in personnel and content. Bhutta 2008 [10] included referral, as did Darmstadt 2010 [12] and Baqui 2008 [13] which also included curative care. Strategies were implemented by different cadres of workers. In Kumar 2008 [11], the strategy involved community health workers remunerated by the program and local volunteers; in Baqui 2008 [13], the strategy involved NGO community health workers and mobilisers; and Bhutta 2008 [10] involved government Lady Health Workers, TBAs, and community volunteers.

Quantitative data synthesis

A funnel plot suggested possible publication bias; however statistical tests did not confirm this (Begg-Mazumdar: Kendall's tau = -0.179487; *P*=0.37 and Egger: bias =-1.366229 (95% CI-3.980767-

TABLE I COMPONENTS OF COMMUNITY BASED INTERVENTIONS IN INCLUDED STUDIES

Study	Community mobilization	Home visitation	Home based neonatal care and treatment
Azad 2010	Y		
Bang 1999	Y	Y	Y
Baqui 2008	Y	Y	
Baqui 2009	Y	Y	Y
Bhutta 2008	Y	Y	Y
Darmstadt 2010	Y	Y	
Bhutta 2010	Y	Y	Y
Greenwood 1990	Y		
Jokhio 2005	Y		
Kafatos 1991	Y		
Kumar 2008	Y	Y	
Manandhar 2004	Y		
Tripathy 2010	Y		

1.248308), *P*=0.27). Due to the presence of significant heterogeneity, 'Random effects' model has been used throughout this review for reporting of effect estimates. The risk of bias in included studies is depicted in ***Web Table* IV**. Out of 13 controlled trials included in the review, 9 had adequate sequence generation (randomization). Allocation concealment was not an issue in these trials as these were all cluster randomized trials in which all clusters are randomized at once. Blinding of the participants was impossible due to the nature of the intervention; however, 4 trials included blinding of personnel assessing the effect of intervention. Incomplete outcome data was present in 2 trials and was deemed "unclear' in 5 more studies. The studies were usually free of selective reporting with 2 having an 'unclear' status. There was significant hetero-geneity among the pooled studies (I^2=72.8%). However the estimates from these controlled community intervention trials pooled together revealed a significant decrease in neonatal mortality [RR 0.73 (0.65-0.83); *P*<0.0001] (***Fig.* 2**). In view of the heterogeneity amongst studies, the effect of baseline NMR and program coverage on neonatal mortality were analyzed.

Effect of baseline NMR: To assess the effect of baseline NMR, subgroup analysis was performed stratifying studies with baseline NMR less than or greater than 50. In trials with a baseline NMR less than 50/1000 live births, relative risk of neonatal mortality was 0.85 (0.73-0.99); while in trials with a baseline NMR of more than 50/1000 live births, RR was 0.65 (0.54-0.77) (***Fig.*3**).

Effect of program coverage: Program coverage could be an explanatory variable explaining the heterogeneity between trials (***Web Table* V**). The trial with the lowest program coverage [13] reported the least effect on NMR, while that with the highest program coverage [14-22] reported the most reduction in NMR. Program coverage was observed to be

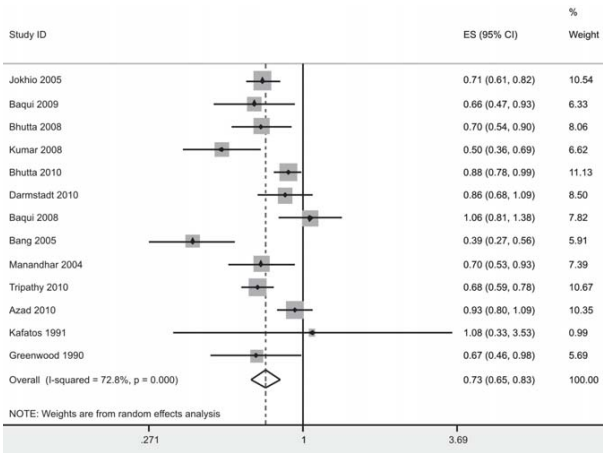

FIG.2 *Effect estimate for all trials.*

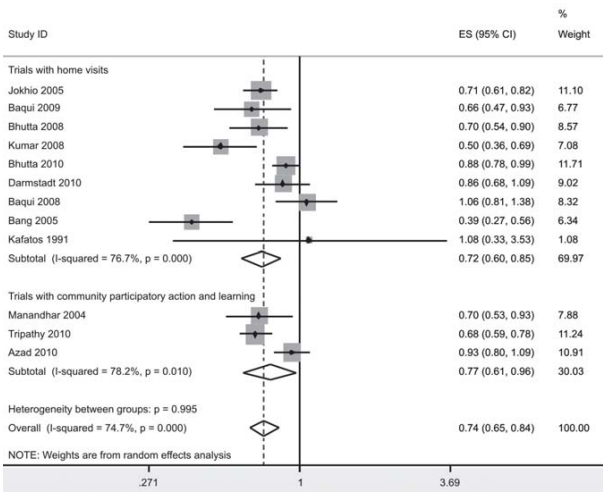

FIG. 3 *Subgroup analysis according to the type of intervention.*

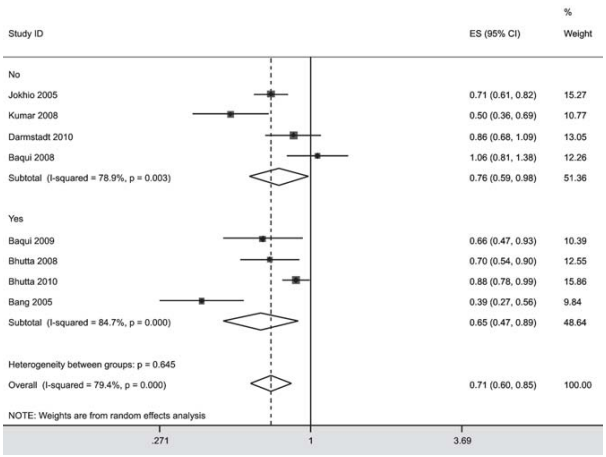

FIG.4 *Subgroup analysis by provision of asphyxia/sepsis treatment in trials with home visits.*

an independent determinant of neonatal mortality even when adjusted for type of intervention and baseline NMR (*vide infra*).

Type of intervention: Subgroup analysis by the type of intervention i.e. home visits with/without community mobilization (RR 0.71 (0.60-0.84)), *vs* community participatory action and learning (RR 0.77 (0.61-0.96)) indicate that both intervention strategies resulted in similar relative risk for reduction of neonatal mortality (***Fig.* 4**). Differences in baseline NMR, population coverage, ratio of health worker to beneficiary and duration of the intervention could be potential explanatory variables that could mask the lack of difference between the two types of intervention strategy. However, no differences in effect estimate of NMR were noted between the two types of interventional strategies after controlling for baseline NMR by metaregression (***Table* II**). The population covered ranged from 45,000-1,300,000; the ratio of health worker to population ranged from almost 1: 500 up to 1:4000; and the duration of intervention ranged between 14-84 months. There was no consistent effect of these variables to neonatal mortality rate; except that in trials involving only community participation the reduction in neonatal mortality was greater when the ratio of health worker to population improved.

Effect of number of home visits: ***Web Table* VI** provides a comparison of the number of home visits and NMR in trials involving home visitation. While the trial by Bang, *et al.* with the most number of home visits [14-22] documented the largest reduction in NMR, the trial by Baqui, *et al*. with the least number of visits reported the least effect on NMR. However in the remaining trials wherein the number of home visits were intermediate to these two trials, the effect on NMR was inconsistent with the number of home visits.

Effect of asphyxia/sepsis management: Analysis of trials of home visitation with and without asphyxia/ sepsis management indicate that the addition of asphyxia/sepsis management in the intervention package resulted in a lower relative risk for neonatal mortality (RR 0.65 (0.47-0.89)) compared to those which did not include them ((RR 0.76 (0.59-0.98)) (***Fig.*5**). On metaregression, controlling for type of intervention (home visitation without and with management of asphyxia and/or sepsis), baseline NMR, and program coverage; it was observed that

TABLE II EFFECT OF ASPHYXIA AND SEPSIS TREATMENT, BASELINE NMR AND PROGRAMME COVERAGE ON NEONATAL MORTALITY (LOG RELATIVE RISK)

Variables	exp(b)	Std. Error	*t*	*P*>|*t*|	95% CI
Asphyxia/sepsis treatment	0.91	0.112	-0.79	0.489	0.61-1.34
Baseline NMR	0.98	0.006	-2.98	0.058	0.96-1.00
Programme coverage	0.99	0.002	-5.25	0.013	0.98-0.99

Meta-regression *Number of studies* = *7*
Fit of model without heterogeneity (tau2=0): Q (3 df) = *.175762*
Prob > Q = *0.981*
Proportion of variation due to heterogeneity I-squared = *0.000*
REML estimate of between-study variance: tau2 = *0.0000*

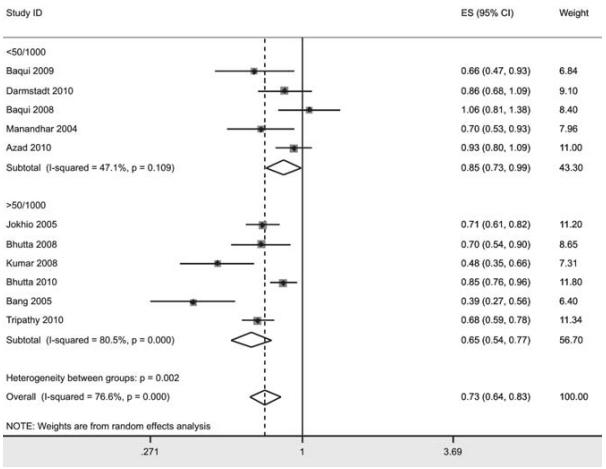

FIG.5 *Subgroup analysis according to Baseline NMR.*

program coverage had a significant impact on mortality reduction (*P*=0.013), baseline NMR had some impact (*P*=0.058) and interventions including asphyxia/sepsis management had no independent influence on mortality risk reduction (***Table* II**).

Effect of timing of first postnatal visit: The effect of timing of postnatal home visitation was provided by a single trial [9]. Among infants who survived the first day of life, neonatal mortality was 67% lower in those who received a visit on day one than in those who received no visit (adjusted hazard ratio 0.33, 95% CI 0.23-0.46). For those infants who survived the first two days of life, receiving the first home visit on the second day was associated with a 64% lower neonatal mortality than in those who did not receive a visit (adjusted hazard ratio 0.36, 0.23-0.55). First home visit on any day after the second day of life was associated with a non-significant reduction in neonatal mortality.

DISCUSSION

This review involving 13 controlled trials indicates that community based neonatal care interventions by community health workers is associated with reduced neonatal mortality in resource-limited settings, when conducted along with community mobilization activities. Baseline NMR and program coverage appear to influence the effect size of mortality reduction that could be achieved with these interventions – high baseline NMR and program coverage being associated with greater reduction in neonatal mortality. While it appears logical that trials with more number of home visits should result in greater mortality reduction, this association was not consistently observed across all trials. Some studies suggest that home visits during the first 2 days of life are likely to yield the largest dividends. While addition of asphyxia and/or sepsis management does result in greater mortality reduction, the effect appears to have been confounded by high baseline NMR and program coverage.

The effect of community neonatal interventions appears to decline as baseline NMR decreases and as NMR gets to below 50, community interventions possibly need to be supported by facility based interventions to impact further mortality decline. Program coverage appears to significantly influence the observed effect size. Since Baqui 2008 [13] involved community mobilization and home visitation implemented at scale using existing government infrastructure through an integrated nutrition and health program in eight states of India; it suggests that this approach would be successful only if there is high coverage. The effect

TABLE III EFFECT OF TYPE OF INTERVENTION (HOME VISITS *VS* WOMEN GROUPS) ON NEONATAL MORTALITY (CONTROLLED FOR BASELINE NMR) (LOG RELATIVE RISK)

Variables	exp(b)	Std. Error	*t*	*P*>|*t*|	95% CI
Baseline NMR	0.99	0.008	-1.72	0.123	0.97-1.00
Type of Intervention					
Home visits/Women Groups	0.99	0.171	-0.01	0.99	0.67-1.48

Meta-regression *Number of studies* = *11*
Fit of model without heterogeneity (tau2=0): Q (8 df) = *32.656*
Prob > Q = *0.000*
Proportion of variation due to heterogeneity I-squared = *0.755*
REML estimate of between-study variance: tau2 = *0.0440*

is also dependent on the ratio of health worker to population. Azad's trial which had 1 community worker per 1414 population [23] documented less reduction in NMR compared to trials with a better ratio [24,25]. This suggests that population coverage and the proportion of newly pregnant women enrolled in groups might need threshold levels to have an effect on birth outcomes (perhaps of the order of one group per 450-750 population, and between 30% and 50% of newly pregnant women attending groups, respectively) [23]. The enrolment of newly pregnant women is likely to be a key determinant of the effectiveness of interventions involving women's groups. It is important to understand that as the NMR decreases in an area, the cause specific mortality due to sepsis decreases, asphyxia probably remains unchanged, and proportion of mortality due to preterm birth (as well as absolute number) increases. Whether addition of sepsis treatment with oral or injectable antibiotics can decreases the cause specific mortality further is not clear. Besides, there are legal and ethical issues of allowing these health workers to treat newborns with antibiotics which must be resolved before this component of the home based intervention can be taken to scale. The issue of whether mortality due to asphyxia can be decreased by providing training and equipment to a community health worker has produced equivocal results [14-22, 29]. Since CHWs are likely to encounter asphyxia sporadically; continued training for maintenance of skills to manage asphyxia may be a challenging task.

Overall completeness and applicability of evidence

The studies were conducted in participants and settings directly relevant to the review. A total of 13 controlled trials involving about 192000 births were included in this systematic review; the identified studies thus sufficiently addressed the main question of the review. Most of the reviewed studies did not report the complete description and characteristics of intervention as well as the training, supervision, remuneration and motivation of CHWs. This information would be of great importance in understanding if and how these factors affect the performance of CHWs in operational settings. The heterogeneity and paucity of studies prevented assessment of each component of the intervention package (health education, community mobilization, home visits, curative care etc) and its corresponding effect on neonatal mortality. The review did not include assessment of effect of community based neonatal care on early or late neonatal mortality and cause specific neonatal mortality rates. With a sudden increase in number of institutional deliveries due to *Janani Surakha Yojana*, it would be worthwhile to assess the need to modify the community based neonatal care interventions to maximize the gains in neonatal survival.

Quality of the evidence

Assessment of risk of bias in included studies suggests adequate sequence generation in majority of studies. Allocation concealment is usually not an issue in cluster randomized intervention trials as all the clusters are randomized at once. Given the type of intervention, trials cannot possibly involve blinding of the participants. Similarly, with mortality as the primary outcome, blinding of outcome assessors is desirable but its absence cannot downgrade the strength of evidence. The risk of bias in the included trials is largely from an inability to address incomplete outcome data. The included studies are largely free of selective reporting.

Potential biases in the review process

The main conclusion regarding neonatal mortality remained stable over the spectrum of pre-specified subgroup analyses. Analysis of 13 trials did not indicate evidence of publication bias. Cluster and individually randomized trials were appropriately combined by using generic inverse variance method of data entry, thus allowing the pooling of effects of cluster randomized trials and other controlled trials. Diligent efforts were made to include all relevant trials. The issue of significant heterogeneity among the trials was addressed by doing subgroup analysis and metaregression using pre-specified variables. However, due to the small number of trials for meta-regression analysis, the statistical power was limited.

CONCLUSIONS

Community newborn care through home visitation with/without community mobilization and

community participatory action and learning interventions decrease NMR, but their impact appears to be highest when baseline NMR are high and program coverage is high (>50%). When community participatory action and learning approach is the key intervention, population covered and the proportion of newly pregnant women enrolled in community groups appears to require threshold levels to have an effect on birth outcomes. Social mobilization should probably be an integral component of any community neonatal health intervention as it is likely to have a more sustaining effect on outcomes. The addition of asphyxia treatment and antibiotics for management of sepsis as components of the intervention package may not necessarily result in large augmentation in neonatal mortality decline, besides it would also require legal and ethical issues of treatment by CHW to be resolved. It also appears that when taken to scale, impact of community based newborn care interventions is lower than when implemented at smaller scale. The decrease in effectiveness is possibly due to difficulties in ensuring adequate coverage, supervision and quality of care when interventions are scaled up. In India, community based newborn care is recognized as an important strategy for child health. Frontline health workers, ASHAs (accredited social health activists) and AWWs (*anganwadi* workers) are being trained and mandated to visit newborns at their households to provide newborn care under the Integrated Management of Newborn and Childhood Illnesses (IMNCI) strategy and ASHA training programs. The evidence presented here further validates the investments made by India on community based newborn care and provide additional insights and evidence to strengthen the implementation, and make a decisive impact on neonatal mortality. Firstly, the fact that high program coverage is essential to make a significant impact on neonatal mortality makes a strong case for monitoring the coverage and identifying ways to reach out to larger numbers of newborns. Secondly, the fact that the first home visitation has the most significant impact on neonatal mortality when conducted within first two days of birth highlights the importance of reaching the newborns early. This would be especially challenging among home deliveries, which still constitute more than a quarter of all births. Thirdly, the fact that community participatory action and learning through community based facilitators also have a significant and sustained impact on neonatal mortality indicates possibilities of engaging strong cohesive women's groups in settings where such groups exist.

Knowledge gaps

However, there are still gaps with regards to issues related to scale up of community newborn health interventions and the magnitude of their impact on neonatal survival. The areas include optimal training, supervision, remuneration and accountability of community health workers; optimal size of population to be covered by the CHW, timing and number of home visits that are achievable within the system constraints and integrating maternal and newborn survival interventions in unified package for CHW.

Lastly, the fact that in most scaled up interventions, the impact was lower than in small scale studies highlight the need for ensuring the elements that tend to get neglected when scaling up: quality of training, presence of supportive supervision and motivation of the frontline workers. With an adequate emphasis on the above factors, Community based Newborn Care has a potential to make India inch closer to achieving MDG-4.

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