

The Role of Social Capital on Utilization of Maternal and Child Health Services in Low- and Middle- Income Countries: Mixed-Methods Review

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Abstract

Background: Social capital is defined as social relations that may provide individuals and groups with access to resources and supports in community networks. It has become an important issue to be studied in the field of public health. This study aimed to review pieces of literature about the role of social capital on the utilization of maternal and child health services in low- and middle- income countries.

Methods: Mixed-methods research review and synthesis, using three databases (PubMed, Scopus, and Science Direct), was performed. Besides, Google Scholar and Google search engines were used. Both quantitative and qualitative studies conducted in low- and middle- income countries, published in English, in grey and commercial literature were considered.

Results: A total of 1,545 studies were identified, of which, 328 records were removed due to duplication. Then, 13 records were selected after reading titles, abstracts, and full texts. Of these eligible studies, six studies were included for quantitative synthesis, and seven of them for qualitative synthesis. Moreover, six quantitative studies and seven qualitative studies were included. Of the six reviewed quantitative studies, five of them addressed the relationship between social capital and health facility delivery. Likewise, women who lived in communities with higher membership in groups that help form intergroup bridging ties had higher odds of antenatal care use. Synthesized qualitative findings revealed that women received some form of emotional, informational, and instrumental support from their network members. Receiving health information from trusted people and socio-cultural factors influenced the use of maternal health services.

Conclusions: Social capital has a great contribution to the utilization of maternal and child health services. Countries aiming to reduce maternal mortality should identify context-specific approaches to benefit from its social capital. On the other hand, measurement tools for social capital require due attention as there is no uniformity across studies and most of them were conducted using a cross-sectional design. Hence, further longitudinal and interventional studies should be employed to pin down the direction of causality.

Systematic review registration: PROSPERO CRD42021226923

Background

Maternal and child mortality is declining in the last two decades but remains relatively high in the low- and middle- income countries (LMICs). About 86% of global maternal deaths occurred in two regions, sub-Saharan Africa (SSA) alone accounted for 66%, and nearly 20% in southern Asia [1–3]. Although global neonatal mortality rate was decreased by 51%, from 36 deaths per 1000 live births in 1990 to 18 deaths per 1000 live births in 2017, still, 2.5 million children died in the first month of life [4]. Sustainable Developmental Goals (SDGs) have target of less than 70 maternal deaths per 100 000 live births and to reduce to about 1.2 million neonatal deaths by 2030. The ambition of these SDGs targets can be achieved by improving maternal and child health services uptake, especially in the high-burden regions of south Asia and SSA [4].

Use of maternal and child health services (MCH) are essential for the early detection of mothers and infants at high risk of morbidity and mortality. Although there have been improvements in MCH services coverage, overall MCH indicators remained low with disparities between the lowest and highest wealth quintiles [5, 6]. The studies in developing countries stated that high maternal and child mortality was highly related to low level of antenatal care (ANC) visits, facility based delivery, immunization, decision making capacity of women and social capital scores [7–14]. Social capital (SC) can play a role in improving health services uptake and it has been positively related to physical and mental health of members in the social networks [15, 16].

Social capital has multiple definitions and concepts in the field of economics, sociology, political science, public health and other disciplines [17]. Recently, it has become an important issue in field of public health [18]. Social capital is defined as social relations that may provide individuals and groups with access to resources and supports in their community networks. It may include different forms such as exchange of favors, maintenance of group norms, trust towards individuals or groups, and supports offered to members of social groups [19]. A number of social capital theories were grounded so far and growing from individual and family property to features of communities and nations [20–22]. The theory of SC can be explained in structural and cognitive forms. In the structural form, it focuses on the externally observable aspects of social organizations and refers to the intensity of an individual's participation in community networks measured in objective terms [23]. The cognitive form involves subjective aspects such as norms, values, attitudes and perceptions of an individual's social relationship and can be measured subjectively. Structural and cognitive forms of SC are not mutually exclusive and characterized in terms of social relations as what people 'do' and what people 'feel', respectively [15, 24, 25].

Some public health researchers focused on the distinction of social capital into 'bonding', 'bridging', and 'linking' which are highly related to structural SC [24, 26, 27]. *Bonding capital* comprises relations within homogeneous groups, in terms of establishing strong intra-group ties that connect family members, neighbors, and close friends. *Bridging capital* refers to weak ties between individuals or groups that possess little social participation. For example, people from different ethnic and occupational backgrounds may attain relatively weak social connections. *Linking capital* exists among those individuals and groups involved in hierarchical or unequal relations due to differences in power, status, and resources [24, 28].

A study conducted in five LMICs showed that neighborhood social capital has better contribution in LMICs than high-income countries, potentially due to differences in neighborhood environments, health systems, and availability of public resources. In addition, China had the highest level of trust in neighbors; South Africa and Ghana had very high level of community participation and Ghana showed the highest score of perceived safety in the residential neighborhood [29]. Likewise, women in Ethiopia had high levels of group membership, high participation in citizenship activities and high levels of cognitive social capital [30]. Women who involved in social networks including '*Debo*' and '*Equb*' could access information. These networks also provide economic and social support to the members and beyond [31]. Social capital influences use of maternal and child health services through social networks between communities or community members and representatives of formal institutions such as health care providers, teachers and government officers [32].

Moreover, involvement of religious leaders, health extension workers, women developmental army leaders, and selected community members could enhance use of maternal and child health services. Women who received health information from people they trust are more likely to access and use health services [33]. Social trust has positive association with better health and safety of a community. Neighborhoods with higher levels of social trust experience lower rates of health and health related problems, and have fewer signs of physical disorder, making residents of these neighborhoods feel safer [34–37].

Despite studies in India [24, 38], Tanzania [39] and Cameroon[40] countries indicated the role of SC in improving uptake of maternal and child health services, some other studies have identified its negative consequences as exclusion of outsiders, excess claims on group members, restrictions on individual freedoms, and downward leveling norms [41, 42]. To date, there is no study that systematically synthesizes the available literature focusing on social capital's role to improve maternal and child health services use in LMICs. Therefore, this review aimed to synthesize the available literature about the role of social capital on the utilization of maternal and child health services including antenatal care (ANC), institutional delivery and postnatal care (PNC) in LMICs. The findings of the study will inform policy and decision makers to improve maternal and child health services use in LMICs.

Methods

This systematic review was conducted according to the Joanna Briggs Institute (JBI) manual for mixed evidence synthesis [43]. The protocol was registered with the PROSPERO database (registration number: CRD42021226923). PICO: population (women and children), intervention (social capital), context (Low- and middle-income countries), and outcome (utilization of maternal and child health services).

Inclusion criteria

In this systematic review, the inclusion criteria were:

- Types of studies: both quantitative and qualitative study designs
- Publication status: both published and unpublished/grey literature
- Language: articles and reports written in English
- Outcome reported: studies that reported on the role of social capital on maternal health services including ANC, institutional delivery and PNC use. The phenomenon of interest for the qualitative component included experiences/views/perceptions of women on the role of social capital on maternal health services use.
- Setting: studies that were conducted in one or more LMICs based on the World Bank criteria

Search and search strategy

We used Pubmed, Scopus and Science Direct data bases to search articles. In addition, Google Scholar and Google search engines were used for grey literature. To search literature in databases, several searching techniques were used, for example, the presence of medical subject headings (MeSH), text words and key words in the title or abstract. When we search in Google Scholar and Google search engines, the first 100 hits were included. Moreover, we tried to access literature in websites of international organizations such as world health organization and World Bank.

Our search strategy combined terms related to the four domains: Firstly, the term related to 'social capital' like 'social support' OR 'social trust', 'social network' OR 'community network', OR social cohesion were searched. The second term, 'maternal and child health services', comprised 'antenatal care' OR health facility delivery OR postnatal care. The third term, 'utilization' contained utilization OR access OR use OR uptake. Then, countries in 'LMICs' regions were embraced in the search strategy. All synonym keywords and subject headings were combined with the "OR" Boolean operator. Finally, the four domains including social capital, maternal health services, utilization and LMICs were combined with the Boolean operator "AND". According to the World Bank classification[44], articles were chosen for review if they were conducted in LMICs, measured social capital or related terms as an exposure and one or more of the maternal and child health services as an outcome of interest. (Appendix 1)

Study selection

The literature search was conducted by EWM. On completion, titles and abstracts of the papers identified were reviewed. All retrieved records were downloaded into EndNote, stored and categorized by database of origin. Potential duplicates were removed. Reviewers (EWM and DAZ) independently applied the inclusion criteria to all titles. All papers that appeared to meet the inclusion criteria or where there was uncertainty were taken through to the next stage of full text review. Any disagreements on article exclusion or inclusion were resolved by consensus.

Data extraction and management

Data were extracted from articles or reports using an excel sheet. The main information collected from each study contain last name of author(s), year of publication, study methods (study setting, study participants, study design, the year of data collection, sample size and data analysis), key findings and limitation acknowledged by the author(s) of the study.

Data Synthesis

We performed textual narrative synthesis due to lack of uniformity on the definition and measurement of social capital and dependent variables. The characteristics, key significant findings, and limitation of the individual studies were presented in tables. The qualitative findings were synthesized using meta-aggregation. The pooled findings were first grouped into categories defined by their similarity of meaning and then combined into one or more synthesized finding(s) that captured their meaning.

Methodological quality assessment

Quantitative and qualitative components of mixed methods studies selected for retrieval were assessed by two independent reviewers (EWM and DAZ) for methodological validity prior to inclusion in the review using standardized critical appraisal instrument.

Authors of papers were contacted to request additional data for clarification, where required. Any disagreements that arise between the reviewers will be resolved through discussion. The results of critical appraisal were reported in narrative form and in a table.

Results

Characteristics of the studies

A total of 1,545 studies were identified by searching databases and other search engines to synthesize evidence about the role of social capital on utilization of maternal health services in LMICs, of which, 328 records were removed due to duplication. Then, 13 records were selected after reading titles, abstracts and full texts. Of these eligible studies, six studies [24, 38–40, 45, 46] were included for quantitative synthesis and seven [33, 47–50] of them for qualitative synthesis. This systematic review followed the four-phase flow diagram, Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement [51]. (Fig. 1)

Of the six quantitative cross-sectional studies, five [24, 38, 40, 45, 46] were rated as moderate quality and one [39] was rated high quality. Four out of six studies undertook systematic random sampling in selecting their study participants. The samples taken for the study were representative and outcomes were measured using reliable methods. All of the six studies assessed their outcome using objective measures through proxy questions; controlled confounding factors using multivariate and multivariable regression analysis and did not describe those participants who withdraw or refused to participate in the study.

Of the seven qualitative studies, six [33, 48–50, 52, 53] were assessed as high quality, and one [47] was assessed as moderate quality. All seven of these studies lacked description of the congruency between the philosophical perspectives and research methodology used. Failure to describe how the researchers' perspectives may have influenced the analysis and interpretation of findings was identified as the main weakness in these qualitative studies, potentially undermining credibility. (Appendix 2)

In this review, studies showed that the concept of social capital had multiple dimensions. Some studies assessed both structural and cognitive social capital. Other studies also examined bonding and bridging dimensions. Related to measurement tools for SC, studies used different types of measurement tools. The variations among tools in its content indicated that instruments for measuring social capital are at the developmental stage.

Statistical analysis

According to the nature of variables and objectives to be measured, several researchers employed various analysis techniques for both quantitative and qualitative studies. Exploratory factor analysis (EFA) was used to develop and validate a tool for measuring SC and investigate the influence of socio-contextual variables [24, 54–58]. In addition, confirmative factor analysis (CFA) indicated the reliability and validity of social capital scales [55, 59]. Furthermore, regression analyses including multiple hierarchical linear regression [60], multilevel models [24, 38, 61], multivariate regression [62, 63], multiple linear regression and logistic regressions [45, 64, 65] were used to examine the relationship between social capital and the outcome variables.

Role of social capital on utilization of maternal and child health services

Of six reviewed quantitative studies, five of them addressed the relationship between social capital and health facility delivery or professional delivery care. The studies in India examined the association of women's participation in community networks known as self-help group/SHG/ and utilization of maternal health services. One of the studies showed that women from villages with a SHG were more likely to give birth in a health facility [45]. In contrast, other study reported that SHG was not statistically significant; however, the presence of SHGs in the community was appreciated for delivering health care messages within and beyond the group [66]. (Table 1)

Three of the six studies focused on the association between social capital and the utilization of antenatal care. Women who lived in communities with higher membership in groups that help form intergroup bridging ties had higher odds of antenatal care use, whereas women who lived in communities with higher intragroup bonding ties and collective efficacy had lower odds of antenatal care use [24]. Besides, male partners' involvement in maternal health care during pregnancy has benefits on maternal health care services access and utilization. The odds of having at least one ANC was higher in women whose male partners' involvement scores were higher [46]. In general, utilization of maternal and child health services which includes antenatal services, institutional delivery and postnatal services were positively associated with number of contacts with health workers during pregnancy [66] and social capital [40].

Qualitative studies conducted in Ethiopia [33], India [47, 48], Ghana [49] and Kenya [50] revealed that all women received some form of emotional, informational and instrumental support from their network members during pregnancy and child birth [49]. Besides, receiving health information from trusted people and socio-cultural factors influenced use of maternal and child health services [33, 50]. Mothers-in-law play a crucial role in the utilization of ANC in Nepal. Most of them are illiterate, had not used ANC previously and often discouraged their daughters-in-law from attending ANC services. In most cases, mothers-in-law seemed not to be in favor of ANC and played a negative role. *"My mother-in-law doesn't help me. It might be due to her past experiences. She used to do all the work by herself during her time of pregnancy. So she wants me to do the same. I have lots of work here at home, so I don't go for ANC check-ups"* (Non-user Woman 4) [52]. (Table 3)

Discussion

This study aimed to synthesize the available literature about the role of social capital on the utilization of maternal and child health services in LMICs. Women's social capital had great contribution on the utilization of maternal health service including ANC, health facility delivery and PNC. Women from

villages with a SHG were more likely to give birth in a health facility [45]. Similarly, the qualitative component of this review revealed that it is socially normative for in-laws, particularly mother in laws, mothers and grandmothers to advice women and provides suggestions on how to experience safe pregnancy and delivery. Pregnant women received some form of emotional, informational and instrumental support from their network members [49].

On the other hand, socio-cultural factors might hinder utilization of maternal health services. In some communities, women have to stay indoors for a month to 40 days; some members of the community cannot go to the hospital for health care services for whatever problem without first going to herbalists; only opting for a facility delivery if complications arise during the birthing process and TBA play a critical role in the decision-making pathway for choice of place of delivery [50]. In line with these findings, a previous systematic review reported that influence of traditional beliefs and sociocultural norms was high during childbirth. Women interpreted their expectations through the lens of family birth stories and social norms [68].

There is no single universally accepted measurement tool for social capital that indicates the tools are in the early stages of development. However, it can be measured at both individual and community levels [30] using quantitative tools [69]. Most reviewed studies assessed both structural and cognitive SC. Structural SC measured using multiple components including individuals' or groups' participation in neighborhood, public civic activities, networks, organizations, associations and institutions, support from individuals and groups, frequency and breadth of community participation [55–57, 60–65, 70–72]. In the case of cognitive SC, it considered trust, values, norms, attitudes toward social interaction, perceptions about participation, beliefs, civic responsibility, altruism, system connection, solidarity, social harmony, social cohesion, strength of civic associations, sharing, collective action and cooperation, information and communication, family role in community, family relationships, sense of fairness or belonging and reciprocity within a community [55–58, 60–65, 70–75]. These findings are consistent with other similar systematic reviews [76–79].

Strengths and limitations of the review

The current review has its own strengths and limitations. One of the strength is inclusion of both quantitative and qualitative studies. A wide range of evidence in systematic review offer policy makers to have more comprehensive overview into factors that cannot be captured through quantitative studies [80, 81]. In addition, we employed a number of search strategies to access relevant studies from databases and hand searching of relevant websites. Regarding the limitations, there is no accepted definition and uniform measurement tool for social capital across the studies which results a challenge to synthesize studies. Also, some studies have no information about the validity and reliability of social capital measurement tool. Moreover, studies with statistically significant findings are more likely to be published. Due to this reason, some studies are missed that results publication bias.

Implication for public policy makers and researchers

The evidence in this review showed that SC has an impact on utilization of maternal and child health services. So, it will be helpful for policy makers to design strategies on strengthening SC of the community that enhances uptake of ANC, health facility delivery and PNC. However, the pathways for SC and which socio-cultural contexts affect it were not as such investigated. Moreover, the measurement of SC is still in its infancy stage. Hence, further research is required to fill these gaps.

Conclusions

Social capital has great contribution on utilization of maternal and child health services including ANC, health facility delivery and PNC even though socio-cultural factors influence it. Measurement tools for SC have no uniformity across studies and most of them were conducted using a cross-sectional design. Hence, further longitudinal and interventional studies should be employed to pin down direction of causality.

Abbreviations

ANC: Antenatal care; FGDs: Focus group discussions; IDI: In-depth interviews; JBI: Joanna Briggs institute; LMICs: Low- and middle- income countries; MCH: Maternal and child health services; PNC: Postnatal care; PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses; SC: Social capital; SDGs: Sustainable developmental goals; SHG: Self-help group; TBA: Traditional birth attendant

Declarations

Consent for publication

Not applicable.

Availability of data and materials

Not applicable (systematic review using data published in primary studies).

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

EWM conducted the searches of the literature, screened titles, abstracts and full text of articles, extracted and interpreted data and wrote the first draft of the manuscript. DAZ conducted secondary screening of titles, abstracts and full text of articles, checked data extracted by EWM, and assisted with writing of the manuscript. GDA, YA and GAT assisted with writing the manuscript. All authors read and approved the final manuscript.

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Tables

Table 1
Quantitative studies included in a systematic review of social capital and maternal health services in LMICS

First author/publication year	Aim(s) and study Design	Country and year of study	Study participants and sample size	Data collection method(s)	Data analysis	Outcome measurement	Estimate for social capital	Limitation of the study identified by the author
Singh et al., 2014[38]	Aim: to examine factors associated with maternal healthcare utilization in nine high focus states Design: Secondary analysis of cross sectional study	India, 2007-08	125,721 ever-married women aged 15–49	A set of structured questionnaires namely, household, ever married woman, unmarried woman, village questionnaires and health facility survey	Multilevel analyses	≥ 4 ANC visits Skill birth attendant PNC within 2 days after delivery	<ul style="list-style-type: none"> Individual/household level Social group: Scheduled Tribes; AOR = 0.83 (0.80–0.87) Scheduled Castes; AOR = 0.90 (0.87–0.92) <ul style="list-style-type: none"> Individual/household level Social group: Scheduled Tribes; AOR = 0.83 (0.80–0.86) Scheduled Castes; AOR = 0.91 (0.89–0.94) <ul style="list-style-type: none"> Individual/household level Social group: Scheduled Tribes; AOR = 0.91 (0.88–0.95) 	<ul style="list-style-type: none"> Recall bias since information was collected retrospectively; women may not accurately recall the number of timing of prenatal care location, and attendant birth, or P during interview Not all predictors of maternal healthcare services were included Limitation considering measures of quality of healthcare services such as waiting time, staff attitudes, and behavior
Story et al., 2014[24]	Aim: to examine the association between social capital and the utilization of antenatal care, professional delivery care, and childhood immunizations Design: Cross sectional study	India, 2005	10,739 women who recently gave birth and 7,403 children between one and five years of age in 2,293 communities and 22 state-groups	Household interviews were conducted with ever-married women aged 15–45	Multilevel logistic regression Exploratory factor analysis	≥ 4 ANC visits Professional delivery care	<ul style="list-style-type: none"> Individual/household level: Social networks (AOR = 1.10) Community level: Intergroup bridging ties (AOR = 1.22) Intragroup bonding tie (AOR = 0.83) Collective efficacy (AOR = 0.90) <ul style="list-style-type: none"> Community level: Intragroup bonding tie (AOR = 1.13) Social networks (AOR = 1.16) Social cohesion (AOR = 0.90) Collective efficacy (AOR = 1.09) 	<ul style="list-style-type: none"> The study was not designed to infer a causal association due to the retrospective cross-sectional nature of data. No way to differentiate between rural and female participants in the social capital questions Measurement of each component of social capital was limited by the questions that were included in the survey

First author/publication year	Aim(s) and study Design	Country and year of study	Study participants and sample size	Data collection method(s)	Data analysis	Outcome measurement	Estimate for social capital	Limitation of the study identified the author
Semali et al., 2015[39]	Aim: to determine the role of social capital in facilitating health facility delivery Design: Community based cross sectional study	Tanzania, 2015	744 mothers with children aged less than five years	Validated World Bank's social capital assessment tool was used [67]. Questionnaire administered in face-to face interviews.	Multilevel analysis and Principal Component Analysis (PCA)	Health facility delivery	Social capital quintiles: Lowest; AOR = 2.9 (1.4–6.1) Moderate, AOR = 5.5 (2.3–13.3) High; AOR = 4.7 (1.9–11.6) Highest; AOR = 5.6 (2.4–13.4)	Mothers who survived the birth process and hence introduce bias which might have overestimated the rate of facility deliveries
Saha et al., 2013[45]	Aim: to analyze the impact of self-help groups on maternal health service uptake at national level Design: secondary analysis of cross sectional study	India, 2013	643,944 ever married women (15–49 years)	Data was collected through self-reported information from respondents	Forward stepwise logistic regression model	Institutional delivery	Presence of self-help group (SHG): AOR = 1.19 (1.13–1.24)	<ul style="list-style-type: none"> • Information on women's actual participation in SHG activities not included • Analysis done at the aggregate country level. This masks variations in the spread and intensity of SHG activity • The availability of credit and duration of association did not address • An explicit definition of SHGs was not stated • The design and nature of the study not able to draw conclusions about causality
Mohammed et al., 2019[46]	Aim: to examine the association between male partners' involvement in maternal health care on utilization of maternal health care services Design: community-based cross-sectional study	Ethiopia, 2014	210 male/female couples with a baby less than 6 months old	Two structured questionnaires were used to collect the data from men and women	Multivariate logistic regression models	At least one ANC visit Delivery in health facility	Over all male partners' involvement(MPI) scale score: AOR = 1.61 (1.05–2.45) Over all male partners' involvement(MPI) scale score: AOR = 1.22 (1.01–1.48)	Self-reporting might introduce social desirability bias

First author/publication year Kavish et al., 2015[40]	Aim(s) and study design Examine the importance of social networks and social capital in maternal health care use Design: cross-sectional study	Country and year of study Ghana, 2009	Study participants and sample size 100 women between 15-45 years old and gave birth at any time in the five years prior	Data collection method(s) Interviews were conducted	Data analysis Poisson regression and inductive content analysis	Outcome measurement Number of maternal health care visits	Estimate for social capital Adjusted for education Incidence rate ratios(IRR) = 1.13(1.02–1.26)	Limitation of the study Identified the author population due to convenient sampling technique
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Table 2
Qualitative studies included in the review of the role of social capital on maternal and child health services use in LMICs

First author/publication year	Aim(s) and study Design	Country and year of study	Study participants and sample size	Data collection method(s) and analysis	Social capital measures	Description of social capital findings	Limitation(s) of the study identified by the author(s)	Quality score
Cofie et al., 2018[49]	Aim: to examine the social network dynamics of all members of women's social networks during pregnancy and childbirth Design: Phenomenology	Ghana, 2015	<ul style="list-style-type: none"> • Mothers (n = 40) • Husbands (n = 20), and • 4 focus group interviews with mothers-in-law 	<ul style="list-style-type: none"> • In-depth interviews (IDIs) • Focus group discussions (FGDs) • Data were analyzed using narrative summaries and thematic coding 	<ul style="list-style-type: none"> Social support and network: Network proximity Frequency of contact Nature of relationships 	social networks contribute in important ways to women's use of facility-based pregnancy and delivery care	<ul style="list-style-type: none"> Translation errors recall bias Response bias social desirability bias 	High
Mochache et al., 2020[50]	Aim: to explore how individual and community-wide factors influenced uptake and utilization of maternal health services Design: Phenomenology	Kenya, 2015	<ul style="list-style-type: none"> • Female (pregnant and postpartum) as well as male adult community members • 5 FGDs (N = 47) • 15 IDIs (N = 15) 	<ul style="list-style-type: none"> • FGDs stratified by age and gender; 3 among men and 2 among women, • IDIs • A thematic content analytic approach was used 	Socio-cultural norms, religious norms and gender stereotypes	Religious and socio-cultural norms as well as gender stereotypes influenced utilization of maternal health services, including facility-based delivery	<ul style="list-style-type: none"> No limitation information was provided 	High
Papp et al., 2013[47]	Aim: to identify the processes and psycho-social pathways through which social accountability can contribute to improvement of maternal health Design: case study	India, 2013	<ul style="list-style-type: none"> • Interviews with 4 health providers, • 3 policy-makers and government officials, • 4 media representatives, • 2 representatives from partner, • 2 national, 4 state and district Central Statistical Agency staff, • 1 Accredited social health activist 	Interviews and focus groups	Critical consciousness, social capital and 'receptive social spaces' to outline a social-psychological account of the pathways between Social accountability and service effectiveness	Three processes that underpin social accountability: (1) generating demand, (2) leveraging intermediaries and (3) sensitizing leaders and health providers to the needs of women.	Focused on the processes and psycho-social pathways underpinning the public hearings	Medium
Raman et al., 2014[48]	Aim: to explore the wide-ranging sources of support that the maternal-infant dyad need or expect throughout the perinatal period Design: qualitative interviews and ethnographic approach.	India, 2008-10	<ul style="list-style-type: none"> • 36 mothers from different socio-cultural and socio-economic backgrounds who had given birth within the past two years in a tertiary hospital • 13 participants in group one (low education), • 11 in group two (medium education) and • 12 in group 3 (high education). 	<ul style="list-style-type: none"> • IDIs • Thematic analysis of transcribed interviews • Ethnographic field notes was carried out 	<ul style="list-style-type: none"> • Female networks • Extended family support • Own mother emotional support and advice 	<ul style="list-style-type: none"> 4 themes emerged: • Importance of women's own mothers • My place • Female support network • Role of husband • The ambivalent role of the family 	<ul style="list-style-type: none"> No limitation information was provided 	High

First author/publication year	Aim(s) and study Design	Country and year of study	Study participants and sample size	Data collection method(s) and analysis	Social capital measures	Description of social capital findings	Limitation(s) of the study identified by the author(s)	Quality score
Mamo et al., 2019[33]	Aim: to explore the actual roles, responsibilities, and contribution of different community individuals or groups in promoting ANC, childbirth and early postnatal cares. Design: case study	Ethiopia, 2016	HEWs, religious leaders, Women Developmental Army leaders, Male Developmental Army leaders and married male and female community members	12 FGDs and 24 semi-structured IDIs	Social support Provision of continuous support Work as a community-health care system linkages	Offering social support (practical help with routine activities, resources and material goods, emotional support and assurance, nutritional support, and accompaniment)	<ul style="list-style-type: none"> • Unable to explore information from zonal health officers • Specific distance from a woman's residence to a health facility were not explicitly accounted in this study • Social desirability bias 	High
Simkhada et al., 2010[52]	Aim: to explore the mother-in-law's role in (a) her daughter-in-law's ANC uptake; and (b) the decision-making process about using ANC services in Nepal.	Nepal, 2006	<ul style="list-style-type: none"> • 30 purposively selected antenatal or postnatal mothers (half users, half non-users of ANC), • 10 husbands and • 10 mothers-in-law in two different (urban and rural) communities 	IDIs	Communication and relationships between mothers-in-law and daughters-in-law	<ul style="list-style-type: none"> • Use of ANC is strongly influenced by mothers-in-law's roles and attitudes • Mothers-in-law appeared to have less influence on ANC uptake if they did not live in the same household as their daughters-in-law 	<ul style="list-style-type: none"> • It was not feasible to include literate mothers-in-law 	High
Sapkota et al., 2012[53]	Aim: to explore husbands experiences of supporting their wives during childbirth	Nepal, 2009	• 12 fathers who had supported their wives during childbirth	IDIs	Husbands helped to be present at the birth. They had helped to boost their wife's confidence and reduce her anxieties about the delivery.	• Despite the unpleasant emotions, a majority of the husbands felt that they were able to support their wives to some extent.	• Husbands in this study are from an urban setting, where people's educational qualifications and their access to maternity health services are high	

Table 3
Synthesis of qualitative findings on the role of social capital and use of maternal and child health services

Findings	Category	Synthesized findings
Across network support patterns, most women indicated that network members were caring/ showed empathy in their interactions with them	Emotional support	Social supports enabled women to use facility-based ANC and delivery care.
Network members visited daily during her pregnancy		Different kinds of social network supports from conception to the early childhood period direct women's place of childbirth
Mothers could be relied upon to empathize with their daughter's situation		
Most women received advice to use facility-based pregnancy and delivery care	Informational support	
It is socially normative for in-laws, particularly Mother in laws[MIL], mothers and grandmothers to advice women and provides suggestions on how to experience safe pregnancy and delivery		
Network members lived in close proximity, and generally had good relationships, with the women. Woman interacted with her husband and in-laws daily because they lived in the same house		
When her husband is not there.. you [MIL] would then talk to any family member available at that time, for that person to look for a motorbike, fuel it and take her to hospital	Instrumental support	
Network members able to help her access and utilize facility delivery		
Some network members tended to first seek the involvement of a traditional birth attendant (TBA) during women's labor and did not make timely arrangements to transport women to a facility		
Some women had numerous sources of support, their own mothers, female relatives and friends.		
WDA leaders are good in passing different knowledge to mothers and members of the community during community meetings, women's association meetings, antenatal outreach sessions, and coffee ceremony		
HEWs, WDA and religious leaders are also participating on community mobilization activities including use of full ANC services, health facility delivery and PNC		
Assistance with community fund raising, facilitating ambulance services or traditional ambulances to get women to the health center for delivery, providing training for model family/WDA	Provision of continuous support	Receiving health information from trusted people enhanced use of maternal health services.
Integrating activities between community leaders, including WDA leaders, religious leaders and HEWs, are all considered to be bridges and enhance strong relationship and communication between HEWs, primary health care units and community members	A link between communities and health system	
There are some members of the community who cannot go to the hospital for health care services for whatever problem without first going to herbalists	Influence of socio-cultural norms	
Ill health is as a result of evil spirits and traditional systems of health care were best-placed to deal with them		
Only opting for a facility delivery if complications arise during the birthing process		
In my community, a woman has to stay indoors [for a month to 40 days]	Role of significant matriarchal figure	
Maternal figures would typically provide TBA services and play a critical role in the decision-making pathway for choice of place of delivery		
Islam might forbid women from being seen by other men except their husbands, this was not in line with realities in the health system		
Women would avoid seeking health services like delivering in a health facility if no female provider was available		
The role of a woman in this community was mainly to give birth and have many children	Role of gender stereotypes	
Gender-related power imbalances were also reported		

Figures

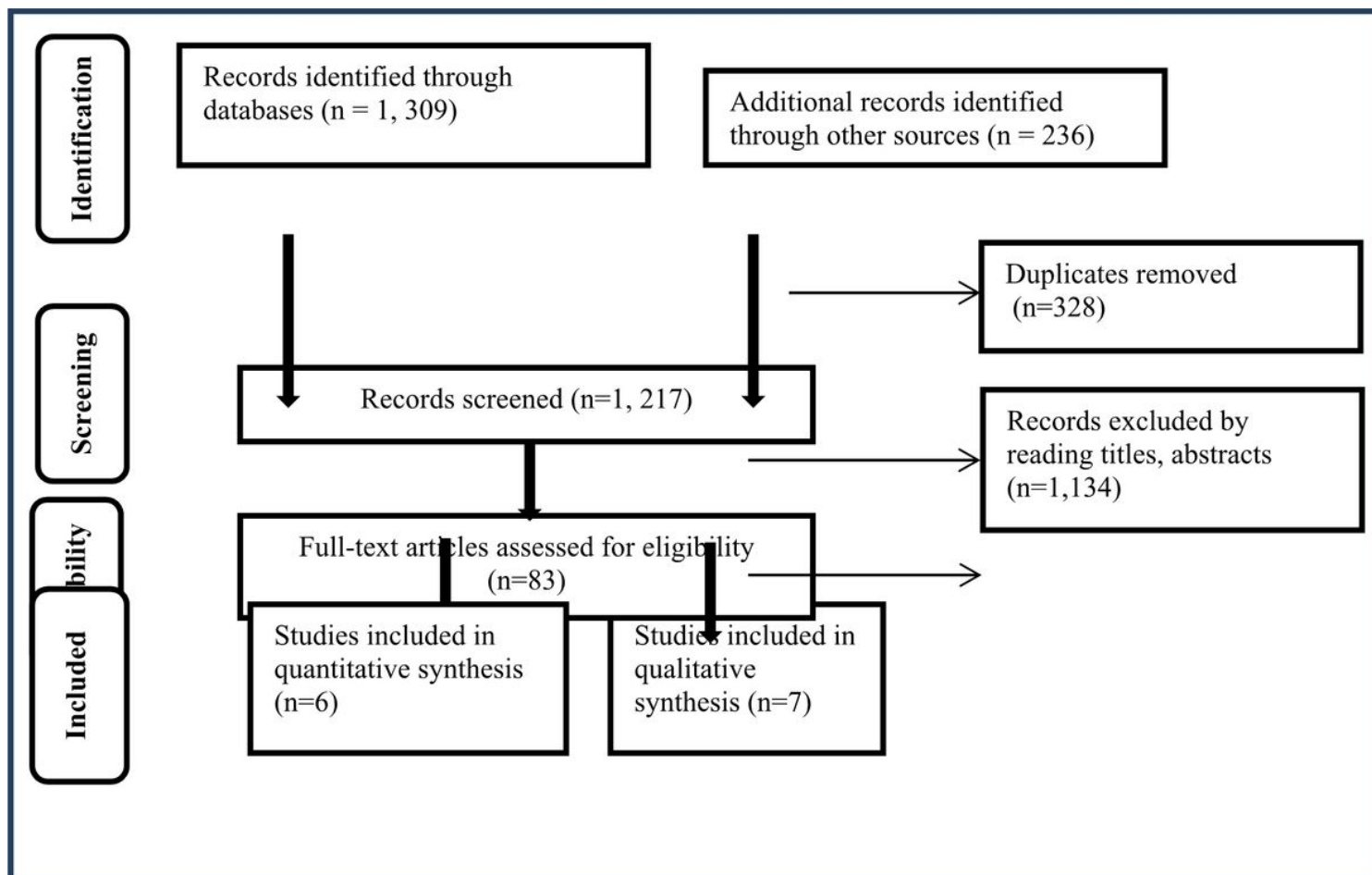


Figure 1

PRISMA flow chart diagram summarizing selection of studies included in the systematic review

Supplementary Files

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