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How and why do women's groups (WGs) improve the quality of maternal and child health (MCH) care? A systematic review of the literature

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ABSTRACT

Background This systematic review was undertaken to assist the implementation of the WOmen's action for Mums and Bubs (WOMB) project which explores Aboriginal and Torres Strait Islander community women's group (WG) action to improve maternal and child health (MCH) outcomes. There is now considerable international evidence that WGs improve MCH outcomes, and we were interested in understanding how and why this occurs. The following questions guided the review: (1) What are the characteristics, contextual influences and group processes associated with the MCH outcomes of WGs? (2) What are the theoretical and conceptual approaches to WGs? (3) What are the implications likely to inform Aboriginal and Torres Strait Islander WGs?

Methods We systematically searched electronic databases (MEDLINE (Ovid); CINAHL (Ebsco); Informit health suite, Scopus, Emcare (Ovid) and the Cochrane Library and Informit), online search registers and grey literature using the terms mother, child, group, participatory and community and their variations during all time periods to January 2021. The inclusion criteria were: (1) Population: studies involving community WGs in any country. (2) Intervention: a program/intervention involving any aspect of community WGs planning, acting, learning and reviewing MCH improvements. (3) Outcome: studies with WGs reported a component of: (i) MCH outcomes; or (ii) improvements in the quality of MCH care or (iii) improvements in socioemotional well-being of mothers and/or children. (4) Context: the primary focus of initiatives must be in community-based or primary health care settings. (5) Process: includes some description of the process of WGs or any factors influencing the process. (6) Language: English. (7) Study design: all types of quantitative and qualitative study designs involving primary research and data collection.

Data were extracted under 14 headings and a narrative synthesis identified group characteristics and analysed the conceptual approach to community participation, the use of theory and group processes. An Australian typology of community participation, concepts from Aboriginal and Torres Strait Islander group work and an adapted framework of Cohen and Uphoff were used to synthesise results. Risk of bias was assessed using Joanna Briggs Institute Critical Appraisal Tools.

Results Thirty-five (35) documents were included with studies conducted in 19 countries. Fifteen WGs used participatory learning and action cycles and the remainder used cultural learning, community development or group health education. Group activities, structure and who facilitated groups was usually identified. Intergroup relationships and decision-making were less often described as were important concepts from an Aboriginal or Torres Strait Islander perspective (the primacy of culture, relationships and respect). All but two documents used an explicit theoretical approach. Using the typology of community participation, WGs were identified as predominantly developmental (22), instrumental (10), empowerment (2) and one was unclear.

Strengths and limitations of this study

- ► Our systematic review was methodologically robust, adhering to the Preferred Reporting Items for Systematic Reviews and Meta-analyses protocol and with a prepublished protocol and registration on PROSPERO.
- ► Multiple authors, both Aboriginal and Torres Strait Islander and non-Indigenous, were involved in each step of the review, increasing the rigour of our analysis.
- ► International review including documents from both high-income and low-income countries.
- ► Limitations include difficulty with defining search terms that would ensure incorporation of all studies that used women's groups for maternal and child health improvement and the diversity of material retrieved in terms of amount of detail.
- ► Furthermore, there are concerns about the methodological soundness of some of the included documents and studies, and appropriate quality assessment particularly where multiple methods are used.

Discussion A framework to categorise links between contextual factors operating at micro, meso and macro levels, group processes and MCH improvements is required. Currently, despite a wealth of information about WGs, it was difficult to determine the methods through which they achieved their outcomes. This review adds to existing systematic reviews about the functioning of WGs in MCH improvement in that it covers WGs in both high-income and low-income settings, identifies the theory underpinning the WGs and classifies the conceptual approach to participation. It also introduces an Australian Indigenous perspective into analysis of WGs used to improve MCH.

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INTRODUCTION

In the last 30 years, community participation interventions with women's groups (WGs) using participatory learning and action (PLA) cycles as an intervention to improve maternal and child health (MCH) have flourished, especially in low-income countries.[1 2] Other types of WGs designed to lead to MCH improvement have also proliferated. In this paper, we use WGs to refer to all groups, whether or not they use PLA approaches.

WGs are generally understood in the international MCH literature as community-based organised groups of women who are using PLA cycles, health promotion techniques, peer support, two-way learning or community development, to mobilise individual and/or community action for health or social outcomes.[3] They are used to involve local women in identifying needs and priorities for MCH improvement as well as increasing reach of primary healthcare (PHC), and providing new information or services.

The word intervention carries a dual meaning. As a research team, the understanding of WGs as an intervention is in accordance with the WHO definition of a health intervention:

> A health intervention is an act performed for, with or on behalf of a person or population whose purpose is to assess, improve, maintain, promote or modify health, functioning or health conditions.[4]

On the other hand, the use of the word intervention in the Aboriginal and Torres Strait Islander health context carries negative implications of a sociopolitical act of government enacted on Aboriginal and Torres Strait Islander peoples and raises conflicting understandings and emotions for many. The term carries emotionally weighted meanings of an ongoing hegemonic deficit narrative of 'problematising' Aboriginal and Torres Strait Islander peoples. This creates a pall of stigmatisation of communities as places of darkness and violence, and diminishes the inclusion of perspectives of community self-determination and their agency in addressing problematic issues and seeking solutions to community identified issues.[5] As an Indigenous and non-Indigenous research team and authors, we stress the importance of reflecting on the deeper meaning of the word intervention when used in Aboriginal and Torres Strait Islander health. In Aboriginal and Torres Strait Islander health, the term initiative is preferred over intervention.

A systematic review and meta-analysis of the outcomes of groups conducted in Nepal, Malawi, Bangladesh and India found improved MCH where there is adequate population coverage and an adequate proportion of pregnant women participate.[3] The Strong Women, Strong Babies, Strong Culture programme in Australian Aboriginal communities is embedded in Aboriginal culture and uses a community development approach with WGs to bring about improvements to MCH.[6]

While the results of the WGs in rural, low-income countries in improving MCH indicators appear clear, the group processes through which they exert their influence are less clear. If WGs are to be applied more generally, then analysis is important to identify facilitation styles, leadership, cultural influences and relationships that might best bring about positive outcomes.[7 8] In Australia, in groups involving Aboriginal and Torres Strait Islander women, the wisdom and practical knowledge of Elders is foundational as well as knowledge of the cultural context, community history and the nature of relationships.[9]

The challenges in conducting primary research about WGs are accepted. There are numerous variables that may affect functioning including whether groups are newly constructed or existing, the nature and extent of community participation, the type of facilitation and the alignment with the country's health system. In addition, the extent to which contextual factors such as community norms and culture affect the operation of the WGs is important. Further research might consider these variables more systematically in order to uncover aspects that might be associated with MCH improvements.[1 8]

In Australia, the setting for this review, Aboriginal and Torres Strait Islander peoples has been working for decades to address the health disparities they experience.[10] The establishment of Aboriginal and Torres Strait Islander community controlled, culturally responsive and comprehensive primary healthcare services in over 150 locations in Australia has been a life-changing achievement for the Aboriginal and Torres Strait Islander community.[11] The research project, WOmen's action for Mums and Bubs (WoMB), was designed to explore the involvement of community women in identifying and implementing strategies to improve MCH outcomes in Aboriginal and Torres Strait Islander communities. A non-randomised step wedge implementation trial was designed using WGs as an initiative.[12] Ideally, WGs are community driven and self-determining; consistent with the principles of Aboriginal and Torres Strait Islander women making decisions about the issues they experience with MCH care and the type of healthcare they want; healthcare that respects culture and relationships.[13]

In order to inform the WoMB study, we conducted a systematic review to synthesise and critically analyse the currently available evidence on the characteristics, approaches to community participation, use of theory and group processes associated with the MCH outcomes

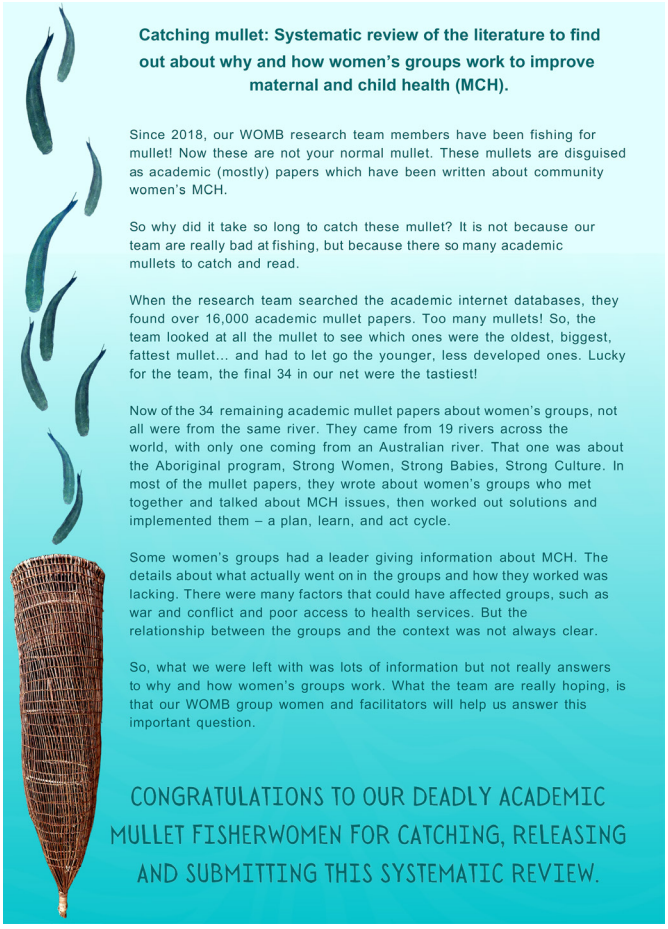

Figure 1 Catching mullet: community explanation of this systematic review.

of WGs. To meet this aim, the following questions guided the review:

1. What are the characteristics, contextual influences and group processes that are associated with the MCH outcomes of WGs?
2. What are the theoretical and conceptual approaches to WGs?
3. What are the implications likely to inform Aboriginal and Torres Strait Islander WGs?

METHODOLOGY

The review was conducted between July 2018 and January 2021 by a multidisciplinary team including Aboriginal and Torres Strait Islander and non-Indigenous researchers and practitioners involved in the WoMB project. A published protocol described methods and followed the definition of 'systematic review' in the Preferred Reporting Items for Systematic Reviews and Meta-analyses for Protocols (PRISMA-P) guidelines.[14 15]

Patient and public involvement

Members of WoMB groups were involved in the reporting and dissemination plans of the systematic review. Catching Mullet (figure 1) provides a community explanation of this systematic review.

Inclusion criteria

The inclusion criteria are outlined in table 1. For this review, community-based WGs are included if they involve any aspect of planning, acting, learning or reviewing MCH improvements. Peer-reviewed and grey literature from all time periods was included. Non-peer reviewed literature was also searched given most WG programmes are in low-resource settings or implemented outside of academic institutions (eg, by non-government organisations, NGOs).

Information sources

A systematic search was conducted in: MEDLINE (Ovid); CINAHL (Ebsco); Informit health suite, Scopus, Emcare (Ovid) and the Cochrane Library to 19 August 2019. An updated search of these databases was conducted in January 2021 excluding Informit as the search function had changed.

The selection of groups to be included in grey literature searching was based on the researchers' professional

Table 1 Inclusion criteria

Criteria by PICO headings	Inclusion
Population	Studies involving community WGs in any country.
Intervention	A programme/intervention involving any aspect of community WGs planning, acting, learning and reviewing MCH improvements.
Outcome	Studies with WGs reported a component of: (i) MCH outcomes; or (ii) improvements in the quality of MCH care or (iii) improvements in socioemotional well-being of mothers and/or children.
Context	The primary focus of initiatives must be in community-based or primary healthcare settings.
Process	Includes some description of the process of WGs or any factors influencing the process.
Time period	All time periods.
Language	English.
Study design	All types of quantitative and qualitative study designs involving primary research and data collection.

MCH, maternal and child health; WGs, women's groups.

Table 2 Search terms

Mothers and children's groups				
Mother	**Child**	**Group**	**Participatory**	**Community**
mother* mom* mum* women woman maternal	child* infant* baby babies bub antenatal prenatal birth* play* neonat* newborn pregnan* postnatal	group* circle* class* club* committee* meeting* program* facilitat*	participat* involve* empower* engag*	network* stakeholder* peer* 'self-help'

experience in the field and knowledge of key organisations within this space. Two reviewers (RP and JT) contacted authors research groups in Australia and internationally; and WGs by email to obtain grey literature that covered processes or mode of working of community-based WGs. Hand-searching, the reviewing of hard copy papers from journals or departments that were not available on databases at the time, was conducted. No new content was included in the final review from these inquiries.

Search terms

Search terms outlined in table 2 relate to population, and context. Full-search strategies are available in online supplemental table 1. Outcomes (health and other) were incorporated in data extraction. All populations were included.

Other data sources

Grey literature sources were identified in October 2019 using native site search interfaces on key organisational websites (eg, WHO, USAID, HealthInfoNet and others) and Google searches restricted to the key organisations' domains (table 3). Individual authors (RP, JT, SL, RE, MP, LY, KCar, KCan and MR-M) scanned for relevant documents, with the first 100 results being checked for each search. If results were still relevant at 100, authors continued reviewing until documents were no longer relevant.

Study selection

One author (JT) conducted a first screen of title and abstract of all documents. Another author (RP) reviewed 100 in every 1000 documents. Discrepancies were reviewed by a third reviewer (RE or SL). All unique documents obtained through our search of databases, websites, reports, and other sources were imported into Colandr for screening.[17]

All documents that met the inclusion criteria from title and abstract review or those that could not be excluded had the full text retrieved. Full texts were independently reviewed by two team members (SL and RE). Any discrepancies for inclusion were resolved by arbitration by a third team member (MP). Reference lists of included documents were also reviewed for relevant inclusions.

Table 3 Grey literature

Organisation	Source	Search string
WHO https://apps.who.int/iris/discover?	WHO IRIS	(women OR mothers) AND (group OR groups) AND participatory
Australian Indigenous HealthInfoNet site: https://healthinfonet.ecu.edu.au/	HealthInfoNet: Publications	women AND participatory AND groups limited to mothers and babies category
WHO site: who.int **United National Development Program (UNDP)** site: undp.org **United Nations Children's Fund (UNICEF)** site: unicef.org **Oxfam** site: oxfam.org **Australian Department of Foreign Affairs and Trade (DFAT)** site: dfat.gov.au **GIZ (Deutsche Gesellschaft fur Internationale Zusammenarbeit GmbH)** site: giz.de **International Women's Development Agency (IWDA)** site: iwda.org.au **Save the Children International** site: savethechildren.org **Save the Children UK** site: savethechildren.org.uk **Save the Children Australia** site: savethechildren.org.au **United States Agency for International Development (USAID)** site: usaid.gov **World Bank** site: worldbank.org	Google Scholar: site search	('womens groups' OR 'women's groups' OR 'women's group' OR 'mothers group' OR 'mothers groups' OR 'women's participatory groups') AND participatory AND (infant OR child)

Data extraction

Full-text documents were downloaded from Colandr and two reviewers (KCar and JT) extracted information onto a data collection sheet, for each document, covering country, location, cultural lens of researchers, study design, theoretical base, conceptual approach to participation, group length of operation, reason and initiator, membership, decision-making, intragroup relationships and cultural, community, political and institutional contextual factors, study quality and MCH and socioemotional well-being outcomes. Approximately 20% of each reviewer's data extraction were checked by a third reviewer (RP) for consistency.

Data were summarised and transferred into two tables (JT, RE and KCar). Online supplemental table 2 included group characteristics, conceptual approach to community participation and theoretical underpinning. Online supplemental table 3 included material about group process including contextual factors influencing group process. Any discrepancies were resolved through consensus-based discussion or a fourth reviewer (SL).

Quality assessment of studies

The Joanna Briggs Institute Critical Appraisal Tools (JBI Tools) for assessing quantitative and qualitative studies were used to assess the quality of included documents, including risk of bias.[18] Documents using multimethods were assessed against relevant approaches. Three authors (KCar, RP and JT) undertook an initial quality review using the JBI tools. One author (SL) then reviewed any discrepancies and categorised/scored the documents based on the tool checklists: low quality (below 5), moderate (6–7) and high (8+). No documents were excluded on quality grounds (online supplemental table 4).

Data synthesis

Qualitative comparative analysis and narrative synthesis was conducted from the extraction tables under three headings; group characteristics, conceptual approach to participation and use of theory and group processes, by a team of researchers (JT, RE, KCar, LY, KCan, MP and JF). Well-recognised frameworks for examining the conceptual approach to participation were examined.[19 20] However, we used an Australian community participation typology derived from research with rural communities, NGOs and health professionals working to plan, identify needs and implement action to improve health.[21] This review was conducted to inform a trial involving an initiative with WGs within Aboriginal and Torres Strait Islander communities—thus our group of investigators felt that the communitarian and collectivist focus was important.

A further review by Aboriginal and Torres Strait Islander team members (KCan, LY, NT, CF-B, QT, YCJ and LG) considered concepts for WGs in Aboriginal and Torres Strait Islander WGs, which includes the primacy of culture, relationships and respect.[13]

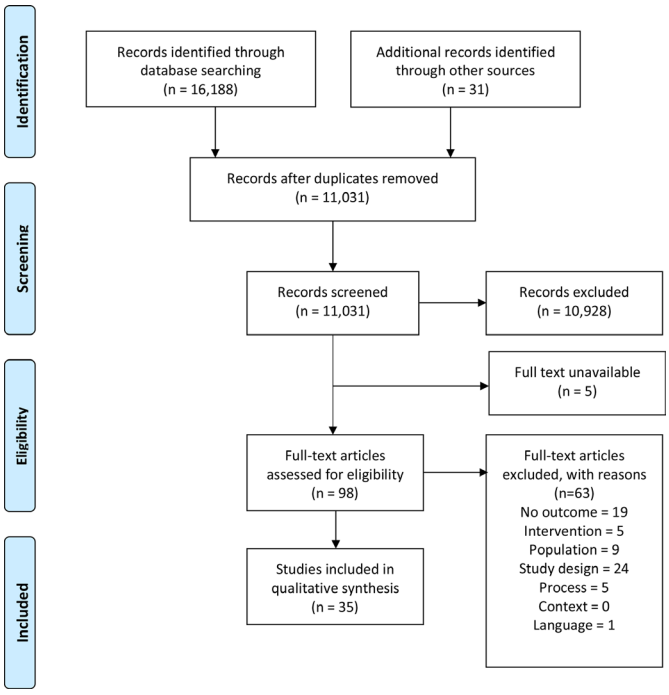

Figure 2 PRISMA flowchart of document inclusion.[70] PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-analyses.

RESULTS

The database and grey literature searched between August 2019 and January 2021 identified 11 031 unique documents. After initial screening by title, and abstract, 98 papers were included for full-text screening, 35 met the inclusion criteria and have been included in this review (figure 2). Details of the 63 full texts that were excluded are available in online supplemental table 5.

The scope of the studies

The 35 included documents are described in online supplemental tables 2 and 3. The documents were published between 1985 and 2020 about WGs in 19 countries. Twenty-five were conducted in low-income and low-middle-income countries using the 2019 World Bank Indicators.[22] Ten were conducted in middle-income and high-income countries including one in Australia with Aboriginal women.[6] In the middle-income and high-income countries, almost all groups were conducted in economically poor communities, some with limited access to MCH services. The primary stated goal for WG activity, reported in all documents, was to improve MCH or women's socioemotional outcomes, increase information about MCH for women or assist in accessing care.

Study designs included 13 qualitative studies (evaluations and descriptive studies), 10 mixed-method evaluations, four quasi-experimental designs, six randomised controlled trials and two quantitative cross-sectional studies. The quality of the studies varied, with nine studies classified as high, 16 as moderate and 10 as low quality (online supplemental table 4).

What are the characteristics, mechanisms and contextual influences associated with the outcomes and effectiveness of WGs?

Group characteristics

The majority of WGs reported on were initiated by NGOs including international aid agencies,[23–33] research-focussed NGOs[2 31 34–41] or research teams.[42–46] In eight studies the country's government [6 47–53] was responsible for initiating WGs. Information was unavailable for two documents.[54 55] Twenty-two studies reported WGs that were new or remobilised[2 6 23–25 27–34 36 39 40 44 45 50 52 54 55] and the remainder used existing groups.[35 38 41 46 48 49 51 53] All groups included MCH education, two-way learning, awareness raising or information sharing components. Identifying community needs, issues and solutions was a stated activity in 23 groups. A broad range of other activities were covered by WGs.

Group processes

The reporting framework used for the presentation of results is that of Cohen and Uphoff[56] as it includes well-recognised group process concepts; group membership, group structure, leadership/facilitation, group inter-relationships, cultural/contextual factors affecting process, and decision-making.

Group membership

All groups were comprised local community women. Four documents reported that although primarily aimed at women, some groups also included some men,[45 51] either as expectant fathers[44] or the entire household.[52] In four groups,[43–46] membership was discussed with village elders some of whom made referrals.

Group structure and leadership/facilitation

The 15 WGs that used a PLA cycle or other methods of identification of local issues, potential solutions and actions were led by local trained facilitators.[2 26 31 33–37 39–43 46 54] The four documents reporting on a community development approach involving autonomous programming and independent decision-making were also usually led by local trained facilitators.[27 44 45 49] Those WGs primarily providing health promotion/education delivered in a group setting were usually led by a health professional.[23 24 28 38 47 48 51–53 55] These groups appeared to involve a didactic educative programme on aspects of MCH. Sometimes education was provided in a group context for reasons of efficiency rather than to benefit from group processes. Three documents used a collective problem solving approach, with peer support and new learning and shared leadership.[29 30 32] Two documents reported on sharing cultural learning with women and health professionals usually without a set programme. Facilitation in these groups involved local women knowledgeable about some aspects of culture.[6 28]

Decision-making

Thirteen documents reported that decision-making was enacted by WG members[2 25 27 31 33 34 36 38 41 45 49 51 53] or through the combined efforts of WG members, group facilitators, research teams and the wider community.[26 28–30 39 42 46 54] In one document, decision-making was at a level removed from the WG that is, sitting with a research team.[24] For a proportion of documents, it was unclear where decision-making rested.[6 23 32 37 43 47 48 50 52 55]

Community/cultural contextual factors affecting group processes

Twenty-six documents provided a rich description of community and cultural factors in the background to the study. In 19 documents, contextual factors were linked to group processes although usually this was a passing reference rather than an analysis. Linked factors included gender imbalance affecting women's decision-making and leadership,[26 36 45 46 49] the need to take account of different castes, tribes and languages in group makeup,[37 39 40 43 46] and the presence of deep-rooted cultural and spiritual beliefs that might limit MCH.[2 32 35 44 46 54 55] In considering cultural factors affecting WGs, there was some nuanced discussion. Morrison *et al*[2] reported on the cultural phenomenon of 'ke garne', a feeling that one has no personal control over one's life circumstances, that might have impacted on women's ability to believe that they could make improvements.[2] A study conducted in Orange County Florida[29] reported that the WGs struggled with envisioning change and discussions often did not move beyond the immediate needs of the participants. There were reports of the presence of valuable cultural factors that enhance MCH.[6 25] Lowell *et al*[6] reported on the positive influence Aboriginal cultural knowledge about birthing can have in adding to mainstream health knowledge and practice.

Seventeen documents described aspects of the sociopolitical context in Nepal, Sri Lanka, Myanmar and India that may have affected WGs. Eight mentioned war or political instability which restricted movement, access to health services and created food insecurity and promoted the emergence of female or child-headed households.[31 36 39 41 47–49 53] A study conducted in Myanmar[47] described political instability, climate change and armed conflict in Kayah State that affected group functioning.

Reflexivity

There was rarely a mention of the impact of the researchers' location, position or culture on their interpretation of aspects of the WGs' functioning. This applied equally to researchers located within or outside the country. The exception was Morrison *et al* who acknowledged several aspects of Nepal's culture that might have impacted on group processes and the non-Nepali's facilitation role.[54]

The use of theory and the conceptual approach to WG participation

Use of theory

All documents, apart from two[52 53] provided an explicit theoretical approach to WGs. There were a wide range of theories used with 29 using theory about community participation/mobilisation, capacity-building,

Table 4 Conceptual approaches to community participation in WGs in health improvement

Contributions approach	► To gain resources, time, labour or expertise from the women or community ► The women have no say in the direction of the project
Instrumental approach	► Pre-established goals and outcomes ► Driven by a leader (usually a health professional) ► Uses a set programme
Empowerment approach	► Women have a choice to change aspects of their lives ► Encourages women's control of these aspects ► Encourages women to take steps towards change
Developmental approach	► An interactive, evolutionary process in a WG ► Flexible regarding choice of goals and objectives according to women's priorities ► Women have a role in decision-making and taking action

WGs, women's groups.

development or empowerment. Nine used the theories/concepts of Alinsky,[27] Freire[29 39 46] and Putnam,[27] or theories of healthcare production and demand,[37] autodiagnosis,[26] gender equity,[51] Bandura's social learning and social cognitive theory[54] and two-way learning.[6] A further four documents used theory of agency,[35] the UK Deptford model,[50] health belief model[25] or a social work practice framework including feminist practice.[30]

Conceptual approach to WG participation

A typology of the conceptual approach to community participation (table 4) was used to identify conceptual approaches used in the WGs and align these, if possible, with aspects of group process.[21] In most documents, there was evidence of more than one approach, but we classified the group by consensus according to the predominant one (RP, KCar and JT). Twenty-two used predominantly a developmental approach, reflecting an interactive evolutionary process in the groups.[2 6 25 27 30–37 39–46 49 54] Ten documents reported on groups using a predominantly instrumental approach with predetermined goals and outcomes and a set structure.[23 24 28 38 47 48 51–53 55] Two used a predominantly empowerment approach with a focus on enabling women to make decisions,[46 50] with one unable to be classified based on the available information.[26]

There was alignment between the overall conceptual approach to community participation and group structure. All of the groups using PLA cycles, except one where we could not classify the conceptual approach, used a developmental approach. In addition to the groups using PLA, those four studies using community development enabling the women to develop autonomous programming and independent decision-making, were also all developmental.[27 44 45 49] The studies reporting using a collective problem-solving approach, with peer support and new learning were also developmental. Two of these used a developmental,[30 32] and one an empowerment approach.[29] Two documents reported on sharing cultural learning with women and health professionals and used a developmental approach.[6 28] The 10 groups reported in studies that used didactic health promotion in a group setting were all classified as having an instrumental approach.[23 24 28 38 47 48 51–53 55]

The results likely to inform Aboriginal and Torres Strait Islander WGs

The following concepts, from an Aboriginal and Torres Strait Islander lens, were used to examine the studies: the primacy of culture, relationships and respect.[13] Within-group relationships were one aspect of reporting that had some relevance to Aboriginal and Torres Strait Islander WGs. Just over half of the documents reported on group members supporting each other. From an Aboriginal and Torres Strait Islander perspective, within-groups relationships would be considered fundamental and likely influence all aspects of WGs developed for MCH purposes. In two documents,[6 25] sharing cultural activities and knowledge was described. One of these was reporting the value of Australian Aboriginal knowledge[6] and practice in MCH and another promoting women's use of Ecuadorian Quichua traditional foods to improve nutrition.[25]

DISCUSSION

What are the characteristics, contextual influences and mechanisms that are associated with the outcomes and effectiveness of WGs?

The strength of this review is that a wealth of information was compiled from the studies describing the characteristics of WGs, their establishment and the operation of community, cultural, institutional and political contextual factors. The information comes from diverse contexts in different countries, with differently structured groups and alignment to state/country health systems. What was common was an overall aim to progress MCH and/or social well-being through WGs.

To understand how the WGs achieved their health or well-being outcomes from the data available was challenging. This is not a new finding, and is consistent with Byass's commentary about the complexity of achieving a link between specific real-life inputs such as WGs and health improvements, and the focus on outcomes rather than the processes that might achieve them.[57] Abimbola suggests that achieving a broad understanding of community participation processes should be a 'holy grail' and he contributes an in-depth study about the group facilitator's role in WGs.[58] More of this type of analysis would be useful in establishing the key factors relevant to successful WGs.

The use of WGs to assist women to develop knowledge, plan and make decisions about MCH improvements requires that the groups involve active participation. There is extensive recent commentary on the importance of participation in aspects of health improvement and providing care of high value to participants

including MCH.[13 58–65] While health policy-makers adhere to this maxim, the difficulty lies in how 'participatory' components of health system activities should become. Furthermore, the processes to effectively implement this participation should draw on available evidence. The usual role of didactic health information giving must be adjusted if participants are to be actively involved.[50]

In the 22 documents classified as developmental, there are references to WG members making decisions necessitating interaction. However, facilitators in these groups would have had to overcome perceptions that receiving health information is a one-way didactic process. In the 10 instrumental WGs, the extent of interaction and decision-making was difficult to determine; for example, whether women's suggestions could influence the topics to be addressed.

A step towards achieving a better understanding of how WGs might improve MCH could be the development of a theoretical frame or set of variables that could be used to examine a WG across a life course or timeline. If variables, such as we used in analysing studies about WGs structure and processes, were consistently applied when evaluating WGs, then a conceptual model of the interaction between different aspects of groups could be developed. Morrison *et al* began this process as they summarised their findings regarding processes through which WGs led to equitable behaviour change including learning and developing knowledge, social support gained through group participation and the process of taking action.[54]

The reporting of contextual factors affecting group structure and process remains difficult. Again, a framework to consider community, cultural, institutional and political factors at the micro, meso and macro levels would prove helpful. In these studies, macro (national or state) political factors such as political upheaval and security issues were well documented and the impact clear.[36 41 54] Grouping variables at the meso (community) and micro (WG) levels such as traditional attitudes towards birthing (meso) and membership of WGs being advised by male elders (micro) might clarify the link to group functioning.

Regarding the importance of culture, there were documents in which the integration of culture into WGs was strong. For example, traditional Quichua values about participating for the common good and the nutritional value of consuming certain greens (meso level factors) influenced the way WGs were organised in one study.[25]

Systematic reviews show that WGs have been applied with the goal of improved MCH and well-being in countries with all income levels.[63] From these reviews, it is the improvements that have occurred in low-income and low-middle income settings that appear to justify the scaling up and extension of WGs where facilitators can be drawn from a cadre of local workers/volunteers.[3 8 41 57 66] In high-income settings, the situation is different regarding the role of volunteers in usually strong health systems.

To effectively scale up WGs in countries of all income levels, better understanding of the role of facilitation,[58] cultural influences[13 67] and the group's structural arrangements[6] is key. Without this understanding, transferring an initiative to other countries and cultures might amount to transposing programmes from very different contexts and cultures with minimal adaptation.[68]

Understanding the sustainability of a community participation initiative beyond a project initiative is also important. Sondaal *et al* sought to investigate the sustainability of the WGs in Makwanpur established by the NGO Mother and Infant Research Activities, once the research was completed.[69] These authors found that over 80% of the groups continued, especially if they were considered important at the local level and new information was being provided.

What are the theoretical and conceptual approaches to WGs?

In a systematic review of rural community participation in PHC, Preston *et al* found limited use of theory (there was not a 'theory' data extraction category) to support initiatives and some conceptual confusion in approaches to community participation.[62] In this review, 10 years later, the predominant conceptual approach to community participation was identifiable, except in one document. Almost all documents referenced a theoretical basis, although there was a wide range of theories and different levels of description. Usually theory about community participation/engagement or capacity building was used and there was evidence of developing theoretical frameworks about WGs, such as Morrison's *et al*'s study described above.[54] The value in theory-driven initiatives, is that theory might provide a foundation for consistent evidence gathering about process and outcomes, which in turn might inform the effectiveness of future initiatives.

WG's outcomes have been measured through randomised controlled trials, mixed-method studies and descriptive qualitative research. Mannell and Davis suggest that qualitative methods are necessary to fully understand interventions and their effects.[64] Currently, innovative qualitative methods are being included as part of randomised controlled trials in intervention evaluation, realist evaluation and pragmatic trials in order to answer some of the questions about the processes involved in effecting health improvements.

In the future, it is important that there is more theoretical work that accounts for some of the messiness and uncertainty of community participation initiatives. Implementing community participation necessarily engages researchers in understanding complexity as an empirical reality and requires flexibility in approach.[65] Theorising women's participation and action through group work, accommodating this messiness, might assist effective implementation.

Implications for Aboriginal and Torres Strait Islander WGs

As mentioned, this review was performed to inform an ongoing project implementing WGs to strengthen MCH with Aboriginal and Torres Strait Islander women in 10 locations in remote and rural Australia.[12] Yet only one

study reporting on the use of WGs in this setting was included in this review. Theory generation applicable to Australian Aboriginal and Torres Strait Islander WGs was difficult given that the studies reported on did not use the concepts of the primacy of culture, relationships, and respect in the same way.

Aboriginal and Torres Strait Islander authors reflected on this, concluding that the dearth of documents reporting on WGs in the Australian Indigenous context belies the long history of Aboriginal and Torres Strait Islander women's leadership in our everyday worlds and survival as a peoples, especially in the sphere of family well-being. Although much activity is occurring, little of this is reported in the academic literature, suggesting a need to get better at sharing our story using this medium! Nevertheless, the WoMB project will be informed through this systematic review, and we anticipate that the stories of facilitators and WGs will be told, and the theory will be elicited from the experiences of our women, facilitators and each of us. Using an Indigenist approach, our team proposes to use our new empirical data from Aboriginal and Torres Strait Islander women to generate more much needed theory and voice in a subsequent publication.

We also reiterate that researchers reflect on research language and use of terminology that is generally accepted in the research health field but may have negative meanings for Indigenous community partners and may impact on participatory processes. This means reflecting on the use of accepted health and research language that carry different meanings for people who have generational lived experience of government 'punitive intervention' policies and practices enacted on them. We suggest including strengths-based language and approaches when working with Aboriginal and Torres Strait Islander health reform processes.

Limitations and strengths

There were several factors about the methodology of this systematic review that may impact on the findings. These include the difficulty with defining search terms that would ensure incorporation of all studies that used WGs for MCH improvement; the diversity of material retrieved in terms of amount of detail, concerns about the methodological soundness of the included documents and studies and appropriate quality assessment particularly where multiple methods are used.

It was not always clear at the initial search whether or not a WG was participatory. In the first screen of documents, a judgement was made to include those where there was mention of a WG's involvement in any of the aspects of planning, identifying needs, decision-making or taking action. The level of participation described varied from women independently making decisions and running groups to women participants giving feedback about how they would use the information given in the groups. In including documents that met the criteria of women's involvement, we may have included reports of WGs that were not participatory.

The included documents varied significantly in the level of detail provided about the group, whether they were part of a programme or 'one-off' group, whether there were changes in the groups over time and whether they proceeded as planned.

The varying purposes of the studies reported may have accounted for the diverse methodological quality. Because of the need to capture as much information as possible about the functioning of WGs, a decision not to exclude studies of limited methodological quality was taken. Some of the early literature, for example Nishiuchi,[53] provided rich information but had limited description of methodology.

There were nine multimethod evaluations included in the studies and the quality assessment tools used did not include an adequate assessment for mixed-method studies.[18] We completed a quality assessment for each of the components (quantitative and qualitative) and produced an overall composite score. This quality assessment did not consider the convergence or integration of data essential in mixed methodologies.

Despite this, our systematic review was methodologically robust, adhering to the PRISMA protocol and with a prepublished protocol and registration on PROSPERO.[15 16] Multiple authors, both Aboriginal and Torres Strait Islander and non-Indigenous were involved in each step of the review, increasing the rigour of our analysis.

CONCLUSION

Our systematic review adds to existing systematic reviews about the functioning of WGs in MCH improvement in that it covers WGs in both high-income and low-income settings, identifies the theory underpinning the WGs and classifies the conceptual approach to participation. It also introduces an Australian Indigenous perspective into analysis of WGs used to improve MCH.

This systematic review found that inconsistencies in the reporting of contextual and process issues made it difficult to determine the processes through which WGs achieved their health or well-being outcomes. We propose a framework adapted from that of Cohen and Uphoff[56] of key concepts about group process that may assist in standardising the expectations for reporting. We also propose that contextual factors, including culture, affecting the WGs be discussed at the macro, meso and micro levels in order to assist establishment of links to group functioning. This might assist in addressing the methodological limitations identified in this review.

Only one study identified in this review involved Aboriginal and Torres Strait Islander women.[6] This does not reflect a lack of activity of WGs in communities, rather a lack of reporting this activity through the peer-reviewed literature. As we learn from our current implementation of WGs to improve MCH with Aboriginal and Torres Strait Islander women, theory generation by the women in these groups may be advanced.

Participation is a complex phenomenon; and most studies did not define the processes of participation. The exciting potential of participatory and codesign initiatives is reflected in widespread policy uptake, yet our nuanced and contextually informed understanding of how, in a practical sense, these groups are best introduced and supported still lags behind.

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Supplementary Table 1: Search Terms in Detail

Concept	Keywords (Scopus, Medline, CINAHL, Emcare, Cochrane Library)	CINAHL Headings (CINAHL)	Emtree headings (Emcare)	MeSH (Medline, Cochrane Library)	Keywords (Informit)
Mothers and children	((mother* or mum* or mom* or women* or woman*) adj2 (group* or class* or circle* or club* or committee or facilitat* or meeting* or program*)) AND (antenatal or bub* or baby or babies or prenatal or maternal or playgroup* or play or birth* or child* or infant* or neonat* or newborn* or pregnan* or postnatal) OR((antenatal or bub* or baby or babies or prenatal or maternal or playgroup* or play or birth* or child* or infant* or neonat* or newborn* or pregnan* or postnatal) adj2 (group* or class* or circle* or club* or committee or facilitat* or meeting* or program*)) AND (mother* or mum* or mom* or women* or woman*)	((MH "Women") or (MH "maternal welfare") or (MH "Mothers+") or (MH "Reproductive Health") or (MH "Women's Health")) AND ((MH "Child") or (MH "Child welfare") or (MH "Child, Preschool") or (MH "Infant") or (MH "Child Health") or (MH "Child Health Services")) OR((MH "Maternal-Child Health") or (MH "Maternal-Child Welfare"))	((mother/ or adolescent mother/ or expectant mother/ or mother child relation/ or reproductive health/ or women's health/ or maternal welfare/ or maternal care/) AND (child health/ or child welfare/ or infant welfare/ or newborn care/ or child/ or exp infant/ or preschool child/ or toddler/)) OR Maternal child health care	(child, preschool/ or exp infant/ or child health/ or infant health/ or infant welfare/) AND (mothers/ or women/ or pregnant women/ or reproductive health/ or exp women's health/ or maternal health/ or exp Maternal Health Services/ or maternal welfare/)	(antenatal or bub or bubs or baby or babies or prenatal or maternal or playgroup* or play or birth* or child* or infant* or neonat* or newborn* or pregnan* or postnatal) AND (mother* or mum or mums or mom or moms or women* or woman*) AND (group* or class* or circle* or club* or committee or facilitat* or meeting* or program*)
Participatory women's groups	(stakeholder* or community or network* or peer* or "self-help") AND (participat* or empower* or engag* or involv*)	(MH "Support Groups") or (MH "Group Processes") or (MH "Peer Group") or (MH "Community Networks") or (MH "Community Health Services") or (MH "Community Role") or (MH "Consumer Participation") or (MH "Stakeholder Participation")		community health services/ or community networks/ or community participation/ or Stakeholder Participation/ or exp Peer Group/ or Self-Help Groups/ or Group processes/ or group structure/	(stakeholder* or community or network* or peer* or "self help") and (participat* or empower* or engag* or involv*)

Supplementary Table 2: Group characteristics

No	Author/year Country/ location	Theoretical conceptual underpinning Conceptual approach to community participation (CP).	Initiator of the WG, Reasons for group emerging.	Location where group held. Health service/other Length of time operating	Study design	Outcomes (1) MCH outcomes or (2) in socioemotional wellbeing of mothers and/or children (3) Limitations
1	Lowell, Kildea, Liddle et al (2015)[6] Australia, Remote communities in the Northern Territory (NT)	**Conceptual underpinning** Conceptual base is the importance of incorporating Aboriginal culture in Aboriginal health improvement, two-way learning and community development. **Approach to CP** Developmental and Empowerment	**Initiator** NT Top End Health. To acknowledge the value of cultural knowledge of senior women and recognition of women's skills in tackling their own issues. **Reasons** To begin to reduce Aboriginal disadvantage in maternal and perinatal morbidity and mortality,	**Location** Community based **Length** Commenced in 1993. Evaluation in 1994-5, 2008 and 2015	Qualitative Collaborative participatory evaluation (76 semi structured interviews with program staff (including SW workers), community members and organisations)	**MCH quality care outcomes** Moving towards respect for Aboriginal knowledge in health care and recognition of Aboriginal staff's capacity to improve health outcomes. W**ellbeing outcomes** Benefits included opportunities for employment, recognition of the skills of Aboriginal people in tackling their own issues, and Aboriginal women taught traditional knowledge to their non-Aboriginal partners. **Limitations** Noted the importance of Aboriginal cultural knowledge and practice in birthing was not always shared, and it was difficult to sustain this in some settings when location of control was not with the SWSBSC workers. Two-way learning needed to be stressed. Inadequate funding of the program.
2	Earle-Crane, M. (2000)[24] Canada, Newfoundland, St Johns region	**Conceptual underpinning** Peer support. Effect of disadvantage on pregnancy outcomes **Approach to CP** Instrumental Empowerment	**Initiator** Operationalised through Health Canada Brighter Futures Coalition of St Johns and Daybreak parent Child Centre (possibly NGO). **Reason** Evidence of poorer pregnancy outcomes of childbearing in poverty. Healthy Baby Clubs (HBC) were to target high risk populations and enable positive pregnancy outcomes more effectively than traditional prenatal programs.	**Location** Community-based community centres L**ength** Program operating in Canada since 1994. Report written in 2000.	Qualitative grounded theory (interviews with 20 women attending HBCs)	**Wellbeing outcomes** Sense of comfort, informational and emotional support. Empowerment through new knowledge. Increased self-confidence and giving recognition to unmet needs. Positive outcome on psychological, emotional and social functioning. (Participant perceptions) **Limitations** Author pointed to importance of nursing staff and others understanding the situation of the women so that they can foster the empowerment process.

3	USAID & Burma Shae Thot (2018)[48] Burma, villages and towns in Dry Zone, Yongon and Kayah State	**Conceptual underpinning** Integrated (economic, social, health) community development. Each sector program informed by theory of change. **Approach to CP** Instrumental Developmental Empowerment	**Initiator** USAID/Burma 7-year $70 mil project to provide humanitarian assistance and community development to communities of Central Burma in three areas MCH, WASH and livelihoods and food security. **Reasons** Part of the humanitarian recovery after 2008 cyclone to decrease maternal, newborn and child mortality.	**Location** Community-based **Length** Commenced 2011 (7-year program) evaluated 2018	Mixed methods evaluation Quantitative component was quasi experimental. (4,680 household surveys, 233 village surveys, 23 focus groups, 54 key informant interviews)	**MCH outcomes** Shae Thot program villages showed improvement in prenatal and postnatal, care, nutrition, with increased number of deliveries using clean delivery kits and improved knowledge compared to comparison villages. **MCH service development outcomes** Program established new mobile health services. **Wellbeing outcomes** Village leaders' perceptions of increase in women's leadership. Improvement in knowledge in clean water access and sanitation. **Limitations** The Shae Thot program's 'integrated development approached effective but difficult to separate changes in outcomes driven by Shae Thot's activities from broader trends in Burma's reforms. Shae Thot's achievements did not have equal impact on all communities or members, with some Shae Thot villages reporting low rates of buy-in and participation in community development activities.
4	Saville, N. (on behalf of Mother and Infant Research Activities (MIRA) Kathmandu & Centre for International Health and Development University College London (UCL) (2011)[35] Nepal, Dhanusha, Southern Central region	**Conceptual underpinning** Community mobilisation through participatory action cycles **Approach to CP** Developmental	**Initiator** MIRA a Nepalese non-governmental research organisation established trials in Makwanpur in 2002-3. This trial was conducted in Dhanusha and aimed to improve infant and young child feeding (IYCF). **Reasons** Serious maternal, newborn mortality and poor nutrition.	**Location** Community based non-health services involving government Female Community Health Workers (FCHW) **Length** Mother's groups ran for 2 years.	Quantitative Cluster randomised controlled trial. (over 60,000 births and deaths monitored, 35,000 detailed surveillance questionnaires, 3,300 end point and follow up surveys mother and child pairs)	**MCH outcomes** Cross sectional nutritional study comparing women's group areas with non-women's group areas found there was reduced colostrum discarding, reduced pre-lacteal feeding, more women breast feeding (BF) and fewer feeding another mother's milk or goats milk as first food. Increase in initiation of BF within 1 hour. Women's group areas compared with non-women's group areas showed improvements in complementary feeding – less water, reduced age of initiating tastes of complementary foods and increase in proportion receiving 4 or more food groups.
5	Ministry of Health (Sri Lanka) and UNICEF Sri Lanka (2015)[49]	**Conceptual underpinning** Integrated multi-sector community development framework	**Initiator** MOH Sri Lanka with UNICEF Australian Aid support **Reasons**.	**Location** UNICEF facilitated community-based Mothers Support Groups (MSGs) through the	Mixed methods Evaluation (39 Focus groups with MSGs, 2 Focus	**MCH outcomes** Increased appointments for pregnant women before 8 weeks and proportion of baby health checks before one week. Knowledge of warning signs in pregnancy improved. Proportion of women receiving proper pre-natal care and use of clean delivery kits rose. Child nutrition improved.

	Sri Lanka, Northern and eastern provinces	**Approach to CP** Instrumental	Plateauing of improvements in birth weights and difficulty in reducing the incidence of underweight children and babies **Initiator** MOH Sri Lanka with UNICEF Australian Aid support **Reasons**. Plateauing of improvements in birth weights and difficulty in reducing the incidence of underweight children and babies	government health sector. **Length** Unknown length of time operating. Evaluation conducted in 2014.	groups with MOH office teams, 1 interview with UNICEF program officer, informal feedback from 94 community members)	**MCH service development** Health Clinics were established. **Limitations** The work of the MSG was unknown to some community members.
6	Roy, S. S., Mahapatra, R., Rath, S., Bajpai, A., Singh, V., Rath, S., . . . Prost, A. (2013)[43] India Rural Eastern India Jharkhand and Odisha	**Conceptual underpinning** Concept of community mobilisation to help preventable deaths in the poorest communities. **Approach to CP** Developmental Instrumental	**Initiator** Rese arch group at UCL in association with NGO Ekjut who has helped women's groups to improve maternal and neonatal health in tribal areas of Indian states of Jharkhand and Odisha. **Reason** Poor neonatal and maternal health in the poor tribal areas in India.	**Location** Community based. Eljut NGO women's groups L**ength** Original groups (zone 1) continued to meet to discuss post-neonatal issues. New groups in the original control clusters (zone 2) met to discuss neonatal health. 2005-2011	Quantitative Prospective cohort study plus qualitative interviews (41,191 live births monitored and 41,191 interviews conducted Nov 2004-July 2011)	**MCH outcomes** Data on 41 191 births were analysed. In zone 1, the mean neonatal mortality rate was sustained after the intervention. (34.2 per 1000 live births between 2008 and 2011, 41.3 per 1000 live births between 2005 and 2008). In zone 2: the cluster-mean neonatal mortality rate decreased from 61.8 to 40.5 per 1000 live births between two periods: 2006–2008 and 2009–2011). The intervention resulted in: better hygiene during delivery particularly hand washing and clean cord care, improved thermal care of the neonate with the largest mortality reduction occurring in winter and an increase in exclusive breastfeeding. **Limitations**. It was not possible to disentangle the effect of the women's group intervention on care seeking from the effect of better access to health services. The presence of women's groups alone was not sufficient to increase care-seeking behaviours substantially in the absence of good health service provision. Improvements in home care practices might be strongly driven by the women's group intervention.
7	Gill, K. (1999) [50] Pakistan Urban slum Hyderabad	**Conceptual underpinning** Acceptance that change must come from within with active community participation. Community	**Initiator** Ministry of Health formed partnership supported by other agencies. **Reasons** Problems in the slums with poverty, service access, poor	**Location** Women's groups community based with the urban slum project and have connections with the relevant urban health post.	Mixed methods narrative evaluation (No methodology section)	**MCH outcomes** Showing strong health-related results and quantitative measures available. **MCH service development outcomes** Established innovative health initiative to complement government services. **Wellbeing outcomes**

		development approach, flexible programs, Capacity building, **Approach to CP** Developmental	MCH, lack of infrastructure. Hope was to have overall slum community development.	**Length** Since 1994 Family Welfare urban slum projects morphed into this partnership between NGOs, Ministry, World Bank and numerous other agencies.		Exceptional level of community and NGO participation. Achieved project aims of improving women's status, reaching key target groups. **Limitations** Participatory activities need timely support and resources to succeed. A challenge is defining the role of NGOs and community groups in relation to Government.
8	Ndirangu, G., Gichangi, A., Kanyuuru, L., Otai, J., Mulindi, R., Lynam, P., . . . Archer, L. (2015)[25] Kenya Nairobi urban slums (informal settlements)	**Conceptual underpinning** Mobilizing communities around a health concern was thought to increase awareness of important issues and promote participation and ownership of interventions. **Approach to CP** Instrumental	**Initiator** Jhpeigo an NGO associated with John Hopkins University. **Reasons** To improve participants knowledge about postpartum haemorrhage (PPH), positive behaviour around childbirth, and family planning. Participants lived in poor crowded urban slums with low availability and utilization of formal health services.	**Location** Study conducted at Young Mothers' Clubs (YMCs) in health care facilities. **Length** Since 2005 Jhpeigo NGO has been working with John Hopkins to improve health seeking behaviours	Quantitative quasi experimental (193 pre and post structured interviews completed)	**MCH promotion outcomes** Pre and post quiz on education materials provided to women who attended the YMCs showed that largest improvements in knowledge were about what to include in a birth plan. There was less substantial change in knowledge of danger signs and actions to take in the event of bleeding after delivery.
9	Gram, L., Skordis-Worrall, J., Manandhar, D. S., Strachan, D., Morrison, J., Saville, N., . . . Heys, M. (2018)[36] Nepal Makwanpur	**Conceptual underpinning** A concept of agency as "what the person is free to do and achieve in pursuit of whatever goals or values he or she regards as important". Also, Participatory Learning Action (PLA) **Approach to CP** Original trial Developmental Empowerment	**Initiator** The original trial initiated by MIRA a Nepalese non-governmental research organisation and the UCL. **Reasons** Original trial was to test the participatory women's group approach for improving MCH survival. This trial was to test the long-term impact of a perinatal Participatory Learning Action (PLA) women's group intervention on women's household agency approximately 11.5 years after	**Location** Unclear where groups were located. **Length** Original study conducted on groups running 2001-2003. Follow up study conducted in 2014.	Quantitative quasi experimental (Follow up structured interviews with 4,030 mothers)	**Wellbeing outcomes** This study, assessing impact of original intervention on long term changes in agency at the household level, found no association in the follow-up group between exposure to the original Participatory Learning and Action (PLA) intervention with women's agency in the household approximately 11.5 years later. Some specifications found evidence for reduced agency. Household agency may be a prerequisite for actualising the benefits of PLA groups rather than a consequence. **Limitations** Future work should collect qualitative and quantitative process and implementation data over time to better understand the mechanisms through which women's groups and similar participatory and community-based interventions improve health outcomes.

			individuals original exposure to the intervention.			
10	Roche, M. L., Ambato, L., Sarsoza, J., & Kuhnlein, H. V. (2017[26] Equador Andean Highlands Indigenous Tungurahua Quichua	**Conceptual underpinning** A Positive Deviance/Hearth approach for participatory community nutrition intervention. Health Belief Model. **Approach to CP** Developmental exploring cultural ideas about foods and feeding	**Initiator** World Vision Equador in 2008 **Reasons** In Equador stunting and malnutrition amongst Indigenous people in Andean highlands was serious problem. The objective of the study was to assess the nutritional, social, and cultural potential of mothers' cooking clubs that promoted Quichua culture and traditional foods.	**Location** Meetings were in the Guide mother's home. **Length** The project ran in 2008	Mixed methods study (Interviews and Focus groups with 54 mothers and 16 elders, questionnaires completed by 160 participant and 98 nonparticipant mothers)	**MCH nutrition outcomes**. Dietary diversity scores for the list of promoted feeds were greater for the children 2-5 years of age who had participated in the intervention compared with children from comparison communities. The difference remained significant when controlling for covariates of age socio economic status and maternal education. Intervention mothers fed their children nettle and dock more than the comparison group. **Wellbeing outcomes**. Feeling like a good mother and women and children greeting one another was important (This was usual only between men). Mothers felt stronger with increased self-esteem and pride and security in feeding their children local foods. Increased social network for themselves and for their children and they valued learning the local language.
11	Kruske, S., Schmied, V., Sutton, I., & O'Hare, J. (2004)[51] Australia South East Sydney	**Conceptual underpinning** EBP Adapted from the UK Deptford model. Requires midwives to abandon role of expert. **Approach to CP** Empowerment	**Initiator** Child and Family Health NSW **Reasons** In 1990s Child and Family Health realised that first time mothers were waiting up to three weeks for an appointment for services. Early Bird (EBP) was established to provide confidence and satisfaction for mothers in a timely manner as an inability to provide one-on-one care.	**Location** Community-based government health service **Length** Commenced in 1990s and study published 2004	Qualitative comparative evaluation (20 interviews/ focus groups with EBP women and 20 interviews/ focus groups with non-participants)	**MCH and quality care outcomes** Findings of the study compared Early Bird Program (EBP) attenders with women who did not attend. Women who did not go to the EBP tended to use the child and family health services less. 75% of women who went to the EBP were breast feeding at 8 weeks. **Wellbeing outcomes** 75% of EBP women mentioned that the group support was important. Combination of peer support and professional helped most. EBP attenders self- reported increase in self-esteem and confidence. Learning that most things were normal was important.
12	O'Rourke, K., Howard-Grabman, L., & Seoane, G. (1998)[27] Bolivia Three locations within the remote Bolivian Inquivisi Province	**Conceptual underpinning** Concept of autodiagnosis and participatory community development through women's groups. Paulo Freire, who argued that sustainable social change is only possible if teachers and learners engage in a dialogue,	**Initiator** Funder unclear but probably USAID, Save the Children. Warmi project 1990-1993 commenced in remote area of Bolivia Inquivisi Province **Reasons** Bolivia had one of the highest rates of infant mortality in Latin America. Also had scarce access to modern medical	**Location** Community-based. Unclear whether Bolivian government Remote Health Post was involved. **Length**	Quantitative Quasi experimental (Perinatal mortality rates and obstetric behaviour from 409 women before and after the intervention)	**MCH outcomes** Perinatal and neonatal mortality decreased significantly after the Warmi intervention. **Wellbeing outcomes** Pre and post intervention surveys showed increase in women's awareness of women's groups and increased participation but not related to community, or demographic variables or cultures. Also decrease in participation in some mother's clubs so it was more a redistribution of participation. **Limitations** No clear reasons for increase in attendance or perinatal mortality decrease. Study recommends RCT to better explain

		exchanging ideas and experiences **Approach to CP** Instrumental Developmental Unclear	facilities in rural areas. Following Alma Ata Bolivia tried to involve communities in health care.	The Warmi project ran from 1991-1993.		change and this was a factor leading to the Nepal Manandhar et al (2004) study.
13	Manandhar, D. S., Osrin, D., Shrestha, B. P., Mesko, N., Morrison, J., Tumbahangphe, K. M., . . . Members of the MIRA Makwanpur trial team. (2004)[37] Nepal Makwanpur district	**Conceptual underpinning** MIRA used the Bolivian model, (Warmi) a participatory, rather than a didactic approach, and this might have more effect on perinatal care practices and increase consultation for difficulties in pregnancy and the newborn period. A facilitator rather than teacher necessary. **Approach to CP** Developmental	**Initiator** MIRA a Nepalese non-governmental research organisation supported by DFID (UK Department for International Development) University College London involved. **Reasons** Progress towards the Millennium developmental goals for maternal and child mortality reduction in Nepal had faltered. There were high rates of neonatal and maternal mortality in poor and remote communities.	**Location** Unclear where groups were held. **Length** Trial ran 2001-2003	Quantitative cluster randomised control trial (Birth outcomes of 28,931 women monitored)	**MCH and quality care outcomes** The intervention reduced neonatal mortality by 30%. From 2001 to 2003, the neonatal mortality rate was 26·2 per 1000 (76 deaths per 2899 livebirths) in intervention clusters compared with 36·9 per 1000 (119 deaths per 3226 livebirths) in controls (adjusted odds ratio 0·70 [95% CI 0·53–0·94]). The maternal mortality ratio was 69 per 100 000 (two deaths per 2899 livebirths) in intervention clusters compared with 341 per 100 000 (11 deaths per 3226 livebirths) in control clusters (0·22 [0·05–0·90]). Women in intervention clusters were more likely to have antenatal care, institutional delivery, trained birth attendance, and hygienic care than were controls. **Limitations** Questioned whether the intervention would work where there was no local community health worker and no strengthening of the local health system.
14	Quigley, P., Green, C., Soyoola, M., Kureya, T., Barber, C., & Mubuyaeta, K. (2018)[52] East Africa Rural Zambia (Serenje, Mkushi and Chitambo in Central Province, Mongu in Western Province, and Chama in	**Conceptual underpinning** The programme emphasised inclusive community engagement, empowerment for women and gender equity as key action for improving women's, children's and adolescents' health. **Approach to CP** Instrumental (contribution of men's	**Initiator** The Zambian government and a development company established the More Mobilising Access to Maternal Health Services in Zambia (MORE MAMaZ). **Reasons** Attempt to meet the Millennium goals 2000-2015 for better access to prenatal care and skilled birth attendance (SBA) in poor rural communities.	**Location** Common area in community used for discussions. **Length** Intervention between 2014-2016	Quantitative Quasi experimental with qualitative review (survey data from 3,538 men and women)	**MCH outcomes** Survey and qualitative reviews showed significant difference in intervention communities in antenatal care attendance, skilled care attendance, use of maternal dangers signs and modern family planning knowledge. **Wellbeing Outcomes** Self -reported data showed a substantial effect on the empowerment of women and a reduction in wife beating in intervention communities.

	Muchinga Provincebia)	time to provide transport)				
15	Skordis, J., Pace, N., Vera-Hernandez, M., Rasul, I., Fitzsimons, E., Osrin, D., . . . Costello, A. (2019)[38] Nepal Makwanpur district	**Conceptual underpinning** Extensive conceptual base. Models of health production and health care demand and structure and function of family and community networks as source of private transfers and risk sharing **Approach to CP** Developmental Instrumental	**Initiator** Originally it was MIRA a Nepalese non-governmental research organisation. This study by University College London predominantly. **Reasons** To better understand the decision-making processes behind care-seeking and the implications of family networks in rural Nepal.	**Location** The original women's groups in the 2002-2003 trial were community-based. **Length** The original groups 2001-2003	Quantitative cross sectional. This is a later study than the 2002-3 Makwanpur trial but using these data. No groups established for this study.Trial questionnaire and social network questionnaire from 1749 women)	**MCH promotion outcomes** More frequent PWG participation results in increased health knowledge. Less poor women have greater knowledge. Family networks do not affect health knowledge. Estimates of good MCH practice by women show that level of knowledge is a predictor. Number of husband's relatives in a woman's family network negatively and significantly predicts care practice.
16	Tripathy, P., Nair, N., Barnett, S., Mahapatra, R., Borghi, J., Rath, S., . . . Costello, A. (2010)[44] India Three districts in East India, largely tribal and rural	**Conceptual underpinning** Theory about participatory learning, and capacity building through decision-making **Approach to CP** Developmental empowerment (as in Makwanpur)	**Initiator** The study group initiated the controlled trial, funded externally by donors Wellcome trust and others. **Reasons** The two Indian states that this trial was conducted in are two of the poorest states in India with high rates of illiteracy, poverty, and NMR (neonatal mortality rates). These are disproportionately higher than the rest of India. Poor access to health services.	**Location** Community-based **Length** Study conducted between 2005-2008	Quantitative Cluster randomised controlled trial. (outcomes for 19,030 births monitored)	**MCH outcomes** Neonatal mortality rate was 32% lower in intervention clusters during the 3 years and 45% in years 2 and 3. No significant change in maternal depression over 3 years but noted a 57% reduction in year 3. The most likely reason for lower mortality rate was the improved hygiene and care practices. **Wellbeing outcomes** The researchers hypothesized that the large decrease in maternal depression (year 3) might have come about due to increased problem-solving skills and improvements in social support. Researchers thought that the PWGs might have increased women's "critical consciousness"
17	Damtew, Z. A., Karim, A. M., Chekagn, C. T., Fesseha Zemichael, N., Yihun, B., Willey, B. A., & Betemariam, W. (2018)[53]	**Conceptual underpinning** Researchers mention the value of community health workers in other low resource settings. **Approach to CP** Instrumental	**Initiator** Ethiopian government introduced cadre of health workers and WDA. **Reasons** Ethiopian government addressed the shortfall in health workers by increasing	**Location** Community based. **Length** WDA began in 2011	Quantitative cross-sectional study (Household survey obtained data from 12,381 women)	**MCHquality care outcomes** This paper is concerned with an investigation of effectiveness of WDA comparing areas with high density WDA (up to 40 households) with those of low density (over 60 households). In the high-density WDA areas, in 6 of 13 indicators (including contraceptive prevalence rate, four or more ANC visits and hospital delivery), were significantly higher than in the low-density WDA areas. Indicating that strategies to train and deploy WDA shows great promise.

	Ethiopia Regions of Amhara, Oromia, Southern Nation Nationalities and Peoples' (SNNP)and Tigray	Contributions	spread of the Health Extension Workers (HEW) and the WDA. The reason was to network and discuss MCH issues, address geographical reach, equity, and improve maternal, neonatal and child health.			
18	Turan, J. M., Say, L., Güngör, A. K., Demarco, R., & Yazgan, S. (2003)[45] Turkey Fatih District, Istanbul,	**Conceptual underpinning** CP as a strategy in achieving "Health for All" **Approach to CP** In CDT Developmental empowerment, instrumental, In groups instrumental	**Initiator** Multidisciplinary research team at the Istanbul University Institute of Child Health **Reasons** Need for improvement in Turkey's perinatal health and quality of care. Following the failure of a hospital-based program an accessible community-based program, the Healthy Beginnings Program, with funding from a variety of sources, was introduced by hospital staff	**Location** Based in the Findikzade Education Park community centre. **Length** Commenced in 1997 and was still operating in 2003. External funding ceased in 2000.	Qualitative Program evaluation (pre- and post-knowledge tests with program participants; and home interviews conducted with course participants (n = 100) and a control group (n = 157) 2–3 months after the baby's birth)	**MCH promotion outcomes** Many pregnant women requested an education program for their husbands and their requests resulted in the development of a special program for expectant fathers. Free antenatal courses have started elsewhere, through train the trainers' courses. **Wellbeing outcomes** There was an increase in knowledge, skills, and decision making of the community design team (CDT). The program continued beyond funding as did the support networks between women.
19	Bolton, M., Moore, I., Ferreira, A., Day, C., & Bolton, D. (2016)[28] UK South London Lambert and Southwark	**Conceptual underpinnings** The 'broad-based' community –organizing model and methodology, deriving from the work of Saul Alinsky in Chicago. Putnam's concept of social capital **Approach to CP** Developmental Empowerment	**Initiator** Project was a collaboration of Citizen's UK Kings Health Partners (non-government) **Reasons** Importance of community engagement to health improvement (NICE) and Marmott's work. The aim was to evaluate a community-led intervention of social support to increase social capital, reduce stress and improve well-being in mothers who were pregnant	**Location** Community based but not in health – drew on relevant agencies and information as required by the group members. **Length** 2013	Quantitative Quasi-experimental design (Baseline and post intervention data collected from 15 mothers)	**Wellbeing outcomes** There were no detected changes in subjective well-being, but there were important reductions in distress on a standard self-report measure (GHQ-12). There were increases in social capital of a circumscribed kind (increase in volunteering and trust) associated with the project **Acceptability of MCH program** The programme was found to be feasible and acceptable to participating mothers and perceived by them to involve co-production and community control.

			and/or with infants aged 0 –2 years.			
20	Wong, M.L., Chen, P.Y.C. (1991)[46] Malaysia Remote part of Sarawak Berawan tribe Long Jagan	**Conceptual underpinnings** Conceptual base in development theory **Approach to CP** Developmental	**Initiator** The researchers commenced the project. **Reasons** Clear focus on women's development and empowerment as a way to improve health. Involving women in decision-making would assist in ownership of services and programs.	**Location** Training held at the head man's bilik **Length** Evaluation in 1991 one year after project commenced.	Participatory evaluation with some quantitative measures. No reporting of methodology rather descriptive of the program.	**MCH related service development outcomes** Rural women planned, organized, and implemented a self-help feeding program and kindergarten. 93% of mothers were involved in feeding program. Kindergarten attendance was 61%. Children looked cleaner. Increase in the proportion of households producing fruit and vegetables. **Wellbeing outcomes** Capability and self -reliance improved among women but were unquantifiable.
21	Rath, S., Nair, N., Tripathy, P. K., Barnett, S., Rath, S., Mahapatra, R., . . . Prost, A. (2010)[47] Eastern India Jharkhand (West Singhbhum and Saraikela Kharsawan) and Orissa (Keonjhar)/Rural	**Conceptual underpinning** Community participation. Freire's concept of development of 'critical consciousness' **Approach to CP** Developmental Empowerment	**Initiator** Researchers working with local women's groups and Ekjut **Reasons** Poor neonatal and maternal health outcomes. Although primary and community health centres were located in each of the clusters, villagers experienced multiple barriers to access, including physical distance, poor transport availability, and discrimination.	**Location** Community based. **Length** 2005-2008	Qualitative process evaluation (18 focus groups with community members, 15 focus groups with facilitators, 247 group discussions with group members, analysis of data collected by facilitators, document review)	**Process evaluation findings about community participation** Six key characteristics were found essential in community mobilisation. These are: (1) acceptability; (2) a participatory approach to the development of knowledge and skills; (3) community involvement beyond the groups; (4) a focus on marginalized communities; (5) the active recruitment of newly pregnant women into groups; (6) high population coverage.
22	Pant, P. R., Budhathoki, B., Ellis, M., Manandhar, D., Deave, T., & Mytton, J. (2015)[39] Nepal Makwanpur District Rural	**Conceptual underpinning** Community participation and social mobilisation for child injury prevention **Approach to CP** Instrumental	**Initiator** MIRA a Nepalese non-governmental research organisation. **Reasons** The programme was developed to cover a number of common unintentional injuries in children including falls, drowning, burns, poisoning, animal and road traffic injuries	**Location** Community based. **Length** Women's groups established for over a decade.	Mixed methods Program Evaluation (feedback forms completed by 30 community members; review of development of program resources, number of	**Program acceptability outcomes** Key findings emerging from feedback included strong support for a programme addressing child injury prevention from FCHVs, community leaders/ social workers and from women's group chairs. Particularly important in helping the reporting of children who had sustained injuries and in spreading the prevention messages. Feasible to collect parent-reported child injury outcomes through a community supported data collection system.

	Nepal Hatiya VDC				injuries reported)	
23	Nishiuchi, M. (1985)[54] Japan Suita (city)	**Conceptual underpinning** Not described **Approach to CP** Instrumental Empowerment and Developmental	**Initiator** Suita Health Centre and housewives of Suita **Reasons** Poor health of Suita children. Club chapter states its purpose as to promote infant healthcare, to prevent illness, to improve sanitary conditions of our community and thereby to lead healthy and cultural lives.	**Location** Primary health care service Initially set up as a childcare consultation service outside of the physical building of the health service. **Length** Set up in 1968 still going at time of publication with decreased numbers.	Mixed methods Narrative case study methodology not described	**MCH outcomes** As a result of consultation service and many other social factors– infant mortality rate declined . **MCH health promotion outcomes** Family planning – 1,000 education guidance sessions conducted, condoms delivered, and classes for pregnant women ongoing. Parasite control – Ascaris control campaign increased testing, detection and treatment. Trachoma campaign – increased examination and treatment Extermination of flies and mosquitoes – 5-year plan for insect eradication (not completely successful but viewed a success) TB – club asked by Suita city (council) to help with promoting community acceptance of TB detection – the club advocated for a more acceptable approach to implement this program.
24	Morrison, J., Osrin, D., Alcock, G., Azad, K., Bamjan, J., Budhathoki, B., . . . Houweling, T. A. J. (2019)[55] India, Nepal, Bangladesh, and Malawi. All the sites were rural	**Conceptual underpinning** Mechanisms of effective behaviour change model developed. The PLA approach was based on theory to transform society, address inequalities, local stakeholders should participate in identifying problems, planning, implementing and evaluating change. Theory of the mediating role of social-cognitive factors in the relationship between socioeconomic position and health behaviour. **Approach to CP** Developmental	**Initiator** Not reported **Reasons** Reduction in newborn mortality.	**Location** Community based. **Length** Unknown	Qualitative (42 focus groups and 15 interviews with women who attended groups and with women who had not attended, 12 key informant interviews and 5 focus groups with women's group facilitators and fieldworkers)	**MCH promotion outcomes** Women's groups addressed a knowledge deficit in poor and better-off women. Women learned from the facilitator and each other. Facilitators enabled inclusion of all socioeconomic strata, ensuring that strategies were low-cost and that discussions and advice were relevant. **Wellbeing outcomes** Groups provided a social support network that addressed some financial barriers to care and gave women the confidence to promote behaviour change (especially talking to in-laws). The social process of learning and action, which led to increased knowledge, confidence to act, and acceptability of recommended practices, was key to ensuring behaviour change across social strata. L**imitations** Researchers who were directly involved in the trials might have biased data collection and reporting. They felt that the disadvantages of this approach were outweighed by the advantages of having an experienced researcher who understood the intervention and process evaluation data

25	Morrison, J., Thapa, R., Sen, A., Neupane, R., Borghi, J., Tumbahangphe, K. M., . . . Costello, A. (2010)[41] Rural Nepal Makwanpur	**Conceptual underpinning** Broadly community participation **Approach to CP** Developmental Instrumental	**Initiator** MIRA a Nepalese non-governmental research organisation. **Reasons** Demand and supply-side factors influence health service use, yet advocacy has focused mainly on the supply of services. A randomized controlled trial was conducted in rural Makwanpur district, Nepal, to test the effect of a demand-side intervention – participatory women's groups – on neonatal mortality.	**Location** Community-based **Length** 2002-3	Qualitative (8 focus groups and 5 observations with women's groups, 7 groups discussion with fund users and 7 with potential fund users)	**MCH promotion outcomes** Management of funds increases women's self-efficacy and autonomy in health care decision-making. Funds were therefore a contributing component to the positive effect of the women's group intervention on neonatal mortality and care seeking. **Wellbeing outcomes** For the poorest women, funds may serve as a disincentive to joining groups, and therefore they were unable to benefit from the capacity building or empowerment that groups stimulate. **Limitations** The qualitative data were collected and analysed by advisors of the non-governmental organization implementing the trial, which may have biased the data collection. External researchers could not collect data because of the security situation and financial constraints.
26	Morrison, J., Thapa, R., Hartley, S., Osrin, D., Manandhar, M., Tumbahangphe, K., . . . Costello, A. (2010)[40] Rural Nepal Makwanpur	**Conceptual underpinning** The intervention borrowed from the literature on participatory approaches to community development, and the ideas of Paulo Freire, who argued that sustainable social change is only possible if teachers and learners engage in a dialogue, exchanging ideas and experiences **Approach to CP** Instrumental Developmental	**Initiator** Implemented by MIRA, a Nepalese non-governmental research organisation. **Reasons** Nepal's neonatal mortality rate is among the highest in Asia, at 33 per 1000 live births. Most births (81%) occur at home, and both community interventions and health service improvements are necessary to increase child survival	**Location** Community-based **Length** Trial 2002-3	Qualitative (Overall study RCT) (2 focus groups with women group members, 4 focus groups with non-members, 2 focus groups with mothers-in-law, 3 focus groups with men and 2 focus groups and 1 interview with health volunteers, observations of women's group meetings)	**MCH wellbeing outcomes from group experience** Four key mechanisms were identified: the groups learned, developed confidence, disseminated information within communities, and increased community capacity to take action. Provided support, a place for learning and sharing knowledge. The confidence of group members developed through their involvement with the intervention, and reticence decreased. Increased knowledge, confidence and encouragement from facilitators stimulated group members to disseminate information about maternal and neonatal health to other women. Planning and implementation of strategies enabled groups to mobilise community resources and strengthen social networks
27	Morrison, J., Tamang, S., Mesko, N., Osrin, D., Shrestha, B., Manandhar, M.,	**Conceptual underpinning** Community participation in planning and implementation leading to more cost-	**Initiator** The trial was implemented by MIRA a Nepali non-governmental organisation, and involved 24 Village	**Location** Community based. **Length**	Qualitative evaluation (Participant observation, reflections	**MCH Outcomes** Women's groups established mother and child health funds, producing clean home delivery kits and operating stretcher schemes. **MCH health promotion outcomes**

	. . . Costello, A. (2005)[2] Nepal/ Makwanpur district/Rural /Makwanpur hill and plain areas,	effective delivery of health care and increasing in service utilization. **Approach to CP** Developmental Instrumental – section on striking a balance	Development Committees in rural Makwanpur district. **Reasons** In response to plateauing of infant mortality rates	Most groups remained active after 30 months.	monthly reports and topic reports)	In response to the needs of the group, participatory health education was added to the Intervention. **Limitations** Group members faced difficulties when thinking about ways to tackle perinatal problems. Fatalism affected both the way people viewed themselves in relation to a problem, and also the power and capacity they believed themselves to have in overcoming it.
28	Lugo, N. R. (1996)[30] US/Orange County, Florida/The program was implemented in an inner-city area, a rural section of the county, and a quasi-suburban area	**Conceptual underpinning** Pablo Freire's work on empowerment education **Approach to CP** Empowerment Developmental	**Initiator** The Resource Sisters/Companeras Program organisers **Reasons** The Resource Sisters/Companeras Program was an effort to develop the conditions and a structure (with peer counsellors and peer support groups) to foster empowerment health education,	**Location** Meetings were held in clients' neighbourhoods, community rooms, health department sites, and trailer camps. **Length** 2 years at time of reporting	Mixed methods Program evaluation (Birth weights of participants n=1,117 compared with non-participants n=6,975, participation rates, description of project activities and content)	**MCH Outcomes** No statistically significant difference in birth weight between participants and non-participants. **Wellbeing outcomes** For participants, repeated participation suggest that the groups played a significant role in their lives and increased social cohesion. The Program appears to have had some success in capacity building, nurturing, and building upon the strengths, resources and problem-solving abilities already present in individuals. **Limitations** The requirements of well-documented individual assessments and case management (required by the funders the Healthy Start Program) ultimately drove the program, overshadowing the focus on groups and community development or community building.
29	Dongre, A.R., Deshmukh, P.R. & Garg, B.S (2009)[29] India Rural Wardha (District) 758km east from Mumbai	**Conceptual underpinning** Participatory approaches and culturally appropriate education materials were developed and piloted. **Approach to CP** Instrumental/ Developmental	**Initiator** Community Led Initiatives for Child Survival (CLICS) Program **Reasons** A Reduction in neonatal mortality as 1/2 neonatal deaths occur in first three days.	**Location** Village based. **Length** At least 3 years	Mixed methods Program evaluation (Baseline (n=404 and follow up n=393 Surveys, focus groups n=6)	**MCH promotion outcomes** Significant improvement, over 3 years, in mothers' knowledge of newborn danger signs, mother's health care seeking for sick newborns, and level of awareness of pregnant women. After three years, the proportion of mothers giving no treatment/home remedy for newborn danger signs declined significantly. **MCH service development** Local culturally appropriate health care plan and emergency transport plan developed. **Wellbeing outcomes** The capacity of the VCC members was strengthened during their monthly village-based meetings.
30	Dickinson, P. & Joe, T. (2010)[31]	**Conceptual underpinning** Social work practice framework of empowerment,	**Initiator** Te Waipuna Puawai, a community development initiative with board members)	**Location** Community based **Length** Since 2007	Qualitative Program evaluation	**MCH wellbeing outcomes** Increased social supports and networks for young mums, increased awareness of community support, increased awareness of self-value.

	New Zealand Metropolitan Auckland	cognitive, behavioural, and systems theory, strengths-based, a feminist/anti-oppressive approach, evidence-based practice, task-centred practice, holistic case work and community development. **Approach to CP** Developmental	**Reasons** The program aimed to give young mothers a space of their own to learn and grow, as well as providing information, advice, advocacy and support to create resourceful young mothers.		(7 review of course materials observations and feedback sessions with participants n=7)	
31	Tripathy et al (2016)[42] Rural Jharkhand and Odisha, eastern India	**Conceptual underpinning** PLA cycle explicitly mentioned and used as a theory of change. WHO recommendation on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health. **Approach to CP** Developmental Instrumental	**Initiator** The trial was led by Ekjut, a non-governmental organisation (NGO) working in Jharkhand and Odisha since 2003, in collaboration with the Institute for Global Health, University College London (UK). **Reasons** To test the effect of participatory women's groups facilitated by Accredited Social Health Activist (ASHA) on birth outcomes, including neonatal mortality. ASHAs might help with group meetings, and these might lead to improvements mother's practices and reduction in neonatal mortality.	**Location** Community based. **Length** Although the intervention was originally planned for 24 months, it lasted for 31 months (Sept 1, 2010, to March 30, 2013), because the groups chose to hold additional meetings in phase 3.	Quantitative cluster randomised controlled trial. The intention-to-treat analysis for the primary outcome included 7219 births during 24 months of intervention (Jan 1, 2011, to Dec 31, 2012).	**MCH Outcomes** During the period Jan 1, 2011, to Dec 31, 2012 the neonatal mortality rate was 30 per 1000 livebirths in the intervention group and 44 per 1000 livebirths in the control group. These findings corresponded to a 31% reduction in neonatal mortality when data were adjusted for clustering and stratification by district (OR 0·69, 95% CI 0·53–0·89). The effect was more pronounced when results were adjusted for baseline differences in neonatal mortality (adjusted OR 0·54, 95% CI 0·36–0·80). The intra-cluster correlation coefficient for neonatal mortality was 0·00282.
32	Morrison, Tumbahangphe, Sen, Gram, et al. (2020)[32] Hills district of Makwanpur, central Nepal	**Conceptual underpinning** Community participation through PLA **Approach to CP** Developmental Instrumental	**Initiator** Mandated by government to be facilitated by Female Community Health Volunteers (FCHV) **Reasons** To raise awareness about health issues. To make	**Location:** Community-based **Length** Trial 2010-2012	Cluster randomised control trial. 21 intervention Village Development Committees with 22 control clusters	Cluster randomised control trial. 21 intervention Village Development Committees with 22 control clusters 39% of deliveries in institutions. No statistically significant difference in treatment arms between institutional delivery or attendance by trained health worker. **Limitations of method.** Unable to maintain status of control clusters as they received similar interventions provided by Community Based

			services more accountable. Part of wider strategy to engage citizens and communities in health.		FCHV group meeting attendees 14.3% (896) in intervention areas over 4.7% (353) in control.	Organisations (mandated by Makwanpur District Development Committee). Previous project meant 78% of women's groups in control active at baseline (so not true control). Therefore, absence of a true counterfactual.
33	Ronaasen, Steenkamp, Williams, Finnemore, & Feeley (2020)[33] Nelson Mandela Bay, Eastern Cape, South Africa	**Conceptual underpinning** Developmental model (Van Huysssten 2014) interactions amongst support group participants in the context of their social surroundings may lead to the development of skills, knowledge and increased capacity. PAR **Approach to CP** Developmental	**Initiator** Collaboration between Nelson Mandela University, UNICEF and NGO **Reason** Need to increase breast feeding, reduce social isolation due to HIV associated stigma and connect families to health care services.	**Location** Early childhood development centre **Length** Unclear	**Study design** Process evaluation through the qualitative data collected from 2 focus group discussions with 30 facilitators and four with 34 group members	**Socioemotional wellbeing outcomes** Increase in mutual connection between women gained by attending groups. Health and social support gained by sharing knowledge. Improved confidence in parenting ability
34	Sharma, S., Mehra, D., Akhtar, F., & Mehra, S. (2020)[56] Banda and Kaushambi districts in Uttar Pradesh	**Conceptual underpinning** Theory of change used as was community engagement with peer educators. **Approach to CP** Instrumental	**Initiator** Lund University Sweden and MAMTA Health Institute for Mother and Child Delhi **Reasons** Increase access to health services in order to reduce the maternal mortality rate and improve child health.	**Location** Community based. **Length** 30-month period April 2013 until September 2015	Mixed method evaluation. Non experimental post-test analysis of the project group using mixed method rapid assessment surveys with 476 women. Management information systems data for 37,324 women and qualitative assessment with focus groups.	**MCH health promotion** A perceived increase in mother's knowledge about MCH and about accessing health services. The gap in the service utilization rates between the women from non-marginalized and marginalized families seemed to have decreased after the intervention revealed in interviews. **Wellbeing outcomes** Women appeared to be financially stronger and more independent. Perceived change in equity norms in communities

35	Colbourn, T.,Nambiar, B., Bondo, A., et al (2013) [34] Three rural districts of Malawi	**Conceptual underpinning:** Use of PLA cycles to build confidence and empowerment **Approach to CP** Developmental	**Initiator** UCL Institute for Global Health, and NGO MaiKhanda **Reasons** Malawi is offtrack to meet Millennium Development Goal 5 (a three-quarters reduction in maternal mortality between 1990 and 2015).	**Location** Community-based Mid 2007 to 2010	Two-by-two factorial cluster randomized controlled trial. Interventions; Quality improvement in MCH services and women's group intervention. Primary outcomes were maternal, perinatal and neonatal mortality.	**MCH Quality improvement** In rural Malawi a combined facility improvement (supply side) and women's group community intervention (demand side) reduced neonatal mortality by 22%, and a women's group intervention alone reduced perinatal mortality by 16%, compared with control areas.

Supplementary Table 3: Summary data extraction: Group processes

No	Author year	Who is a PWG member?	Context: community, cultural, political institutional factors	PWG intra group relationships	Group processes; structure, facilitation, activities, processes, decision-making, reflexivity.
1	Lowell, A., Kildea, S., Liddle, M., Cox, B., & Paterson, B. (2015)[6]	All pregnant women in the community potential participants. Also, young women and school children	**Community/ cultural** Program of Strong Women, Strong Babies, Strong Culture Program (SWSBSC) is about Aboriginal cultural underpinning of maternity work. Acknowledgement of poor living conditions and poverty affecting women. **Institutional/political** Grant funding ceased in 2008 and program taken over directly by state government health department (NT Department of Health) and lost some of its direction.	Value of two-way cultural learning for Aboriginal and non-Aboriginal staff noted. Unclear about the effects on the participants in terms of relationships.	**Structure** Generally structured around the needs of the community and skills and interest of coordinators. **Facilitation** Two program coordinators one in top end and one central. Strong women workers (SWW) in communities. **Activities** Varied including culture camps, playgroups and Early Childhood Services, health related education sessions at schools, working with midwives in two-way learning. Many cultural activities that were "hidden" to the health service were undertaken including smoking ceremony for new babies. **Decision-making** In some communities locally SWW coordinators devise and run all activities – some input from midwives and health staff. At a higher-level unclear decision-making. **Reflexivity** Authors state researchers had extensive collaborative research experience with Aboriginal communities
2	Earle-Crane, M. (2000)[24]	Women at risk for poorer birthing outcomes and from low-income families who are socially or economically disadvantaged	**Institutional/political** Funding obtained through Health Canada Prenatal Nutrition Program for 9 Healthy Baby Clubs in designated regions of Newfoundland. Noted that having access to transport and child-care enabled attendance.	Relationships that were supportive between participants and resource mothers were reported as one of the major outcomes. So much so that participants wanted the groups to continue.	**Structure** Structured pre-natal group education with peer support. Resource mothers provide emotional support and keep in touch with women. Nutritionists and public health nurses provide education and food supplements. **Activities** Structured education sessions and resource mother support at and between meetings. Transport provided and child-care. **Process** Conducive atmosphere. Group process involved giving and receiving support and this was highly valued. Some participants wanted more input into planning the group meetings. **Decision-making** Decisions made by staff. Members wanted more input into decision-making **Reflexivity** Author notes limitations of some HBC workers understanding the situation of participants
3	USAID & Burma Shae Thot (2018)[48]	Residents of villages and towns in three Burma regions Mother's groups may	**Community/culture** Different degree of community unity across communities and differing leadership capacity. Differing levels of	Unclear- not reported on	**Structure** Shae Thot (program) established sub-committees (like WASH committees or Mothers Groups), that were responsible for implementing sector-specific activities. The VDC acted as a central coordinating body of these 17 sub committees of volunteers and was the cornerstone of the community's civil society. **Facilitation/Activities**

		have only involved women - unclear	community engagement and different Village Development Committee (VDC) working. **Institutional/political** Political instability and climate change, armed conflict in Kayah state. Lack of overall project plan, funding issues and governance issues in the groups and sponsors.		Volunteer health workers called "Change Agents" were trained in safe pregnancy practices, diagnosing and treating common illnesses, and facilitating emergency care. These Change Agents were linked to Mothers Groups, networks of mothers who met weekly to learn about and discuss MCH-related illnesses, hygiene, and nutrition. Village Development Funds were provided. **Decision-making** Unclear not reported on **Reflexivity** Authors see persistent traditional beliefs and practices as a barrier to integration with health services.
4	Saville, N. (on behalf of MIRA) Centre for International Health and Development (UCL)[35]	Unclear about how members were selected and whether the groups were pre-existing.	**Community/culture** Meetings addressed local nutritional issues particular to the Maithili-speaking ethnic group. Program material used was reported to be culturally sensitive.	Unclear – not reported on	**Structure** 270 women's groups in 30 VDCs. **Facilitation** FCHVs assisted by a literate "co-facilitator group member "to facilitate the group". Each FCHV and co-facilitator was paid Rs200 (A$2.50) incentive per meeting. PLA **Activities/Process** Issues identified by the groups about nutritional beliefs and practices. There were planning meeting topics. Groups decided what strategies to implement. Then 5 main nutritional-related topics introduced through a story based upon local practices picture card. Social dramas. Also, home visits and education. IYCF visits to targeted women with children around 6 months. **Decision-making** Reported that women made decisions about strategies to implement. **Reflexivity** Unclear
5	Ministry of Health (Sri Lanka) and UNICEF Sri Lanka (2015)[49]	Community women were members of the women's group	**Community/culture** Culture limited women joining groups. There was not a capacity building atmosphere in the traditions that were not perceived to be supportive of MCH. **Political/institutional** Conflict between North and East of the country seeing fluctuations in nutrition status, food insecurity, poverty, and emergence of female/child household heads. Community, prevalence of Domestic Violence, and marginalisation of unwed	Qualitative interviews reported that women joined new networks through the groups and strengthened unity and trust among community members	**Structure** Groups were existing but were in a winding down phase. It was the "change agents" who connected with community women and were linked to mother's support groups (MSGs). **Facilitation** Groups run by volunteer Health Workers "Change Agents" who were trained in safe pregnancy practices and diagnosing and treating common illnesses. Also encouraging the use of health services. It was a service provision rather than an empowerment approach as there was not the participatory decision-making cycle. **Activities** Some food preparations sessions were conducted. **Decision-making** Unclear whether made decisions about content or "Change Agents" delivered content they were trained in. **Reflexivity** Unclear

			mothers. Presence of cultural and religious.		
6	Roy, S. , Mahapatra, R., Rath, S., Bajpai, A., Singh, V., Rath, S., . . . Prost, A. (2013)[43]	Village women became part of the mothers' groups.	**Institutional** Two relevant government programs (1) 820,000 Accredited Social Health Activists (ASHA) who provide services but were not trained in home-based neonatal care until 2012. (2) Conditional cash transfer scheme to increase the number of institutional deliveries was introduced.	Unclear – not reported on	**Structure** Mothers' groups were run in association with Ekjut NGO. Facilitators had numbers of groups, coordinating an average of 15 meetings per month with a population cluster of around 6,000. **Facilitation** Local female facilitators (not a health worker) were supervised by the project team. The facilitator guides women's groups through a cycle of activities involving participatory learning and action. **Process** Groups went through cycle of 4 meetings – identification of local problems, prioritising, implemented strategies, evaluation, and translation. Zone 2 was different because evidence was available about greatest risks for babies (keeping warm) and so groups focused on this. Each of the groups came up with, and implemented, different strategies. **Decision-making** The phases of the mothers group include decision-making and prioritising. **Reflexivity** Unclear
7	Gill, K. (1999)[50]	NGO selects Link worker and trains them. Link volunteers are responsible for several houses. Women then are invited to meetings	**Community/culture** Explicit acknowledgement of cultural difference, gender, need for all female groups. **Political/Institutional** Tension and violent conflict between Hindu, Muslim and other minorities Early childbearing, poor status of women and female illiteracy, poor social development in the slum. History of efforts for slum improvement. World Bank, urban health posts and Ministry willing to support autonomous action of NGOs and women's groups. A changed environment enabling autonomy.	Women formed supportive relationships through the groups. Women leant a lot and women gained courage to go out and talk to people. Women felt proud of the improvements they made in the slums.	**Structure** Monthly women's (health) groups held in the slum and were existing groups. Monthly meetings held with urban health posts to liaise. The groups were the link with the urban health post. **Facilitation.** The groups are formed by Link community volunteers (training provided) and volunteer Community health workers. There is a community development approach. A history and existing leadership were the reasons given as to why this initiative worked well in Hyderabad. **Process** The groups discuss issues, prioritise and take action across health and wellbeing with relevant agencies. Information about issues on the ground is fed into government health services. **Activities** Health promotion, vocational training, social clubs, environmental sanitation. **Decision-making** NGOs and WGs autonomous in decision-making in program and financing activities **Reflexivity** Unclear
8	Ndirangu, G., Gichangi, A., Kanyuuru, L., Otai, J., Mulindi, R.,	Young women less than 30 who had given birth in the last 2 years were	**Cultural/community** Mention of gender –based violence. Noted that characteristics of women and factors affecting	Unclear	**Structure** Young mother's clubs were run through Jhpiego to share experiences and solutions to issues while receiving health education from health facility staff and community health workers. Groups were established for this purpose. **Facilitation**

	Lynam, P., . . . Archer, L. (2015)[25]	invited to attend special groups to test the effectiveness of education materials	implementation of interventions in Nairobi's informal settlements may differ substantially from those of urban poor elsewhere.		Groups were facilitated by community health workers with support. **Process/Activity** Training sessions were structured on set topics teaching about aspects of MCH (Focus on postpartum haemorrhage (PPH), positive behaviour around childbirth, and family planning). **Decision-making** The study was defined and the groups had a set curriculum and before and after quiz about knowledge gained. **Reflexivity** Unclear
9	Gram, L., Skordis-Worrall, J., Manandhar, D. S., Strachan, D., Morrison, J., Saville, N., . . . Heys, M. (2018)[36]	Inclusion in original trial was pregnant married women between 15 and 49. This study drew on 66% of the cohort of women who participated in the original trial.	**Contextual factors** Not discussed	Unclear	Information reported about the original study 2001-3 as this study did not establish groups. Reworked women's groups. **Structure** Community-based PLA women's groups with monthly group meetings, in which members explored issues around pregnancy, childbirth and newborn health. **Facilitation** Provided by a local lay facilitator conducting groups. **Decision-making** Participatory decision-making in the original study. **Reflexivity** Unclear
10	Roche, M. L., Ambato, L., Sarsoza, J., & Kuhnlein, H. V. (2017)[26]	Guide Mother (volunteer community selected) chose mothers with children 2-5 years to attend cooking sessions.	**Cultural/community** Women in the maternal land of Tungurahua and their connection with culture and the food system was the basis of the study. Mink'a is a system of community collaboration for common good and food has social and cultural value for communities. The objective of the project was to reintroduce Quichua culture and traditional foods. Elders identified local foods and their acceptability, including reintroducing two wild leafy greens.	Social contact continued after the cooking group. "What I liked most was the union between the ladies that we formed while preparing food for all of our children".	**Structure** Asset based intervention bringing small groups of women together to cook in a "Guide" mother's house. **Facilitation** Guide Mothers were community selected, trained in participatory work from the project coordinator (World Vision) and community nutrition and health specialists. Guide Mothers were to encourage use of language and culture. **Activities** Elders attended to pass on culture, support and language which had fallen away. Knitting was reintroduced as well. **Decision-making** Women made decisions including Elders and Guide Mothers. **Reflexivity** Unclear
11	Kruske, S., Schmied, V., Sutton, I., & O'Hare, J. (2004)[51]	Women with babies up to 8 weeks of age	**Cultural/community** Increasingly midwives and nurses are adopting more client directed groups where participants set their own agenda.	EBP Groups promoted relationships women learnt from each other as well as	**Facilitation** Early Bird program support group facilitated by child and family health nurses and offered to families of infants. Midwives were trained to adopt a developmental style (non-didactic) **Structure/activities** No set agenda, baby weighing and developmental assessments available before and after group.

				nurses. Peer support, and listening to others resulted in increased confidence.	**Decision-making** The EBP approach empowered mothers as a group by de-emphasising the power of the professional **Reflexivity** There was an explicit statement that none of the nurses were to position themselves in a position of "teacher" as this made participants passive recipients and reinforced medical hegemony
12	O'Rourke, K., Howard-Grabman, L., & Seoane, G. (1998)[27]	Women but unclear inclusion criteria and whether existing Mothers Clubs or set up new ones. There was a mix of women's groups in communities already.	**Community/culture** 50 communities participated and they varied greatly in traditions and demographic characteristics. Some challenges to local community health workers as women in leadership positions did not fit easily in these roles in either traditional or western medicine.	Unclear not reported on.	**Structure** Warmi project was conducted in 50 communities in Inquisivi. Project involved study personnel organising, forming, or strengthening women's groups. **Facilitation** External study personnel primarily ran the intervention. Study team consisted of 5-6 people including 2 Save the Children nurses. Each study team met monthly with the provinces women's groups together. **Activities/process** Women's groups identified problems, worked out a way to implement a formal action plan (called autodiagnosis) training husbands and birth attendants on safe birthing. Each community identified a different set of problems, but all the groups addressed certain objectives. All received core training in set curriculum MCH and family planning. Literacy and credit schemes were established in mother's groups as well. **Limitations** Reported that local community health workers had difficulty in leadership positions. **Decision-making** Unclear but study personnel conducted autodiagnosis with group members had input to decide priorities **Reflexivity** Unclear
13	Manandhar, D. S., Osrin, D., Shrestha, B. P., Mesko, N., Morrison, J., Tumbahangphe, K. M., . . . Members of the MIRA Makwanpur trial team. (2004).[37]	**Membership** Women were enrolled in the trial if they were married, between 15-49 years and potential to become pregnant.	**Community culture** Female facilitators were necessary. **Political/Institutional** The country was at war during this trial and one district excluded at baseline for security reasons. Security problems in the district escalated during the third year of the study. Meetings had to be postponed several times in two clusters in intervention and two in control.	Unclear, except that the intervention seemed to be acceptable: 95% of groups remained active at the end of the trial despite no financial incentives and the opportunity costs incurred by women spending time away from other tasks.	**Structure/process** The facilitators recruited for this trial worked in association with the Female Community Health Volunteers. Ten meetings had a formal structure with a different meeting aim for each meeting. There were community meetings held to inform community. One supervisor for every 3 facilitators and there was a manual. **Facilitation** The facilitator was locally recruited with no health background. The facilitator supported groups through an action-learning cycle in which they identified local perinatal problems and formulated strategies to address them. Facilitators had training in health once they started. Some groups set up by local female community health volunteers already existed, but their activity was sporadic. The role of the facilitator was to activate and strengthen groups and support them through an action research cycle. **Activities** Included health system strengthening in all the cohorts **Decision-making** Women in the women's groups made decisions about their strategies and all the groups had different strategies. General learning about MCH was overall but there was no agenda about which strategies were to be followed. **Reflexivity**

					Unclear
14	Quigley, P., Green, C., Soyoola, M., Kureya, T., Barber, C., & Mubuyaeta, K. (2018)[52]	The membership of Safe Motherhood Action Groups (SMAGS) unclear. Both men and women in community discussion groups	**Community/culture** Domestic violence in communities **Institutional** There were existing Safe Motherhood Action Groups (SMAGS) due to a 2003 initiative by the Ministry of Health using community-based volunteers. More Mobilising Access to Maternal Health Services in Zambia (More MAMaZ - program reported in the paper) worked with District Health Management teams to scale up coverage of interventions.	Unclear	**Structure** Project staff member managed the program in association with the District health management team (government). Volunteers trained by project staff to provide information to SMAGs. Safe Mothers Action Groups and more broadly to community. Process of SMAGS unclear. F**acilitation** Each trained volunteer engaged community in four discussions on safe pregnancy and delivery and neonatal care. **Activities** Four community discussions about maternal and child health and the need for skilled birth attendants were delivered in communities. **Decision-making** Unclear within the SMAGS but at community level men and women reportedly made decisions about strategies needed **Reflexivity** Unclear
15	Skordis, J., Pace, N., Vera-Hernandez, M., Rasul, I., Fitzsimons, E., Osrin, D., . . . Costello, A. (2019)[38]	No new groups established for this study. Original trial women were enrolled if they were married, between 15-49 years and potential to become pregnant.	**Community/culture** Family networks are distinguished between those of the wife and those of the husband's family because women usually live with husband's family. Ethnic groups described fully and their involvement in community life and care seeking behaviour.	Not available – no groups established for this study.	**Process** No groups established for this study. No details about the original groups except that they were established as a medium for health information which is only partly correct. **Decision-making** Not available **Reflexivity** Unclear
16	Tripathy, P., Nair, N., Barnett, S., Mahapatra, R., Borghi, J., Rath, S., . . . Costello, A., (2010).[44]	Women 15-49 living in the chosen clusters and who had given birth during the study period (2005-8)	**Community/culture** Acknowledgement of culture/caste makeup of the district. Adivasi (Indigenous people) and scheduled castes were included in the PWG. There were different languages spoken and high levels of poverty and illiteracy in the regions where the studies were conducted. **Institutional**	Not reported on in this paper but researchers hypothesized that the large decrease in maternal depression (year 3) might have come about due to increased problem-solving skills and	**Structure** This study was conducted by a similar team to the Makwanpur team and used the same methodology and training materials for the facilitators. In the intervention arm, a facilitator was selected by community who could travel to groups and could speak local language. Strong supervisory program and training for the facilitators was seen as essential. **Facilitation** Facilitator worked with 13 groups meeting once a month using PLA cycle. Discussion was about MCH problems and then implementation of strategies. Education provided through games about delivery and cleanliness. **Activities** Appreciative enquiry workshops for front line government health workers in the area. Village health committees were formed and women PWG members gave feedback about government health services and learned more about them.

			Accredited Social Health Activists program operating.	improvements in social support.	**Decision-making** A PLA cycle was followed **Reflexivity** Unclear
17	Damtew, Z. A., Karim, A. M., Chekagn, C. T., Fesseha Zemichael, N., Yihun, B., Willey, B. A., & Betemariam, W. (2018)[53]	Each Women's Development Army (WDA) leader had 5 neighbouring households to join together and then 6 amalgamated to a network. Presumably, everyone in the household could be involved.	**Institutional** Ethiopian government introduced the Health Extension Program with a health post and two Health Extension Workers (HEW) in each community. The Women's Development Army (WDA) was also established by government.	Unclear – not reported on	**Structure** Five participating neighbouring households brought together by 1 WDA and then 6 of these groups brought together in a network. High density was one WDA to 40 households and low density was 60 households. There were set programs that were developed and delivered. **Facilitation** WDA work in association with government HEW and they share knowledge about MCH and empower one another. No information about the group processes. **Decision-making** Unclear, but reported that the intention was to empower women and encourage participatory action. **Reflexivity** Unclear
18	Turan, J. M., Say, L., Güngör, A. K., Demarco, R., & Yazgan, S. (2003)[45]	Pregnant women and expectant fathers were recipients of the activities established by the Community Design Team (CDT). CDT were female volunteer community members and health professionals.	**Community/culture** Authors stress importance of an accurate understanding of the community, including needs, resources, social structure and values.	Course participants developed support networks and advocated for better perinatal health services. Pregnant women who attended the course together continued to support each other through pregnancy and after the birth.	**Structure** Ten step structured process 1. Situation analysis in local community 2. Establishment of the Community Design Team (CDT) (All women CDT) 3. Review of data on maternal and child health 4. Identify priority needs and audience 5. Define and understand the target audience 6. Develop educational and behavioural objectives 7. Develop messages and strategies 8. Construct program plan 9. Implement plan 10. Evaluate and refine program. **Facilitator** Project officer trained local community members (CDT) who then engaged with young women **Decision-making** CDT made decisions regarding group activities, identifying community health issues and designed and evaluated interventions. Now CDT running all aspects of groups. **Reflexivity** Unclear
19	Bolton, M., Moore, I., Ferreira, A., Day, C., & Bolton, D. (2016)[28]	Contact was made with pregnant women or with children under 2 and invited to take part. Only one group	**Political context** Overall UK National Institute for Health and Clinical Excellence (NICE) points to importance of community engagement.	Women formed their own social support network through the groups, planned their own meetings	**Structure/process** Unstructured community development approach with no prior determination of what should happen. The community-led 'intervention' that evolved comprised mothers meeting together to provide mutual social support, choosing for discussion topics, concerns and worries, and sharing advice, these sessions being supplemented by requested health information and educational workshops. **Facilitation** Professional community organisers and volunteer community leaders worked to seek out mothers.

		studied with 15 members.			**Decision-making** Groups made decisions and implemented plans. They called on support when they needed to **Reflexivity** Unclear
20	Wong, M.L., Chen, P.Y.C. (1991)[46]	18 women who were mothers between 20 and 35 were trained initially in the survey methods. Through a community development process other women and men became involved in running the feeding program and the kindergarten.	**Community/culture** Social structure ranked women below men and usually women did not make decisions. Male chair necessary to gather support for the initiatives and head man's permission needed for women to be trained. 450 people housed in apartments in the long house and social relationships characterized by harmony, reciprocity, and cooperation. **Political/institutional** Community was agrarian based, hill rice paddies, fishing hunting and fruit gathering. Economically depressed.	Probably women knew each other but working together was described in preparing food for the kindergarten, fund raising with cake stalls, management committees, planning etc.	**Structure/process** With participatory facilitation, 18 trained women prepared simple questionnaire re health and feeding, collated the problems and worked with community elders to prioritise problems. Local women may have particular skills and capabilities and more accurate views than external agents about the feasibility and viability of projects. Representatives from government agriculture, health, and community development agencies formed an advisory committee to provide technical support. **Facilitation** Facilitators of the project gained an understanding of the Berawan concept of health and prepared the community for decision-making by women. Facilitators worked within community structures to sensitize men about the potential of women. Success was largely attributable to an active participatory approach, pre-implementation planning, and facilitation. New groups established. **Activities** Women set up feeding program and kindergarten and formed a health committee to oversight this. The kindergarten had support from a nearby school. Self-funded programs so everyone involved in funding and men made furniture for the kindy. **Decision-making** Women were involved in every aspect of planning and decision-making. **Reflexivity** Unclear
21	Rath, S., Nair, N., Tripathy, P. K., Barnett, S., Rath, S., Mahapatra, R., . . . Prost, A. (2010)[47]	Local women	**Culture/community** In both Jharkhand and Orissa, Adivasi groups have distinct identities and safeguard their social institutions and ancestral territory. Illnesses were attributed to supernatural causes and local diviners/ private practitioners were used to deal with health problems in pregnancy and newborns. Villages were in hilly regions with difficulty in accessing health services. **Institutional political** Numbers of NGOs and government agencies were involved in MCH including	Unclear – not reported on	**Structure** The intervention involved a participatory learning and action cycle of 20 meetings adapted from Bolivia, and Nepal. Materials for meetings included the Ekjut team's own innovations. Existing groups used. During the trial period, 244 women's groups met monthly within groups of 15-20 to discuss problems related to pregnancy, childbirth, and the post-natal period. There were four phases – identify and prioritise problem; plan strategies; implement. Although intervention cycle lasted 3 years rather than 22 months due to festivals etc. **Facilitation** Local, literate married women, (not health educators) were selected by senior Ekjut team. Facilitators had supportive families and could travel independently to meetings. They were trained in participatory communication to discuss health problems during pregnancy and childbirth in the groups. **Decision-making** Group meetings emphasised collective problem solving **Reflexivity** Unclear

			the government community-based volunteer cadre, the Accredited Social Health Activist (ASHA).		
22	Pant, P. R., Budhathoki, B., Ellis, M., Manandhar, D., Deave, T., & Mytton, J. (2015)[39]	Women ranging in age from 20s to 50s	**Culture/community** Local Female Community Health Volunteers (FCHVs), and women's group chairs, needed family support to attend meetings. Many (80%) of them had limited time attend and meeting times adjusted during labour peak times; cultivation, harvesting or processing of crops.	Unclear – not reported on	**Structure/process** Established women's' group members worked together to develop program to cover a number of common unintentional injuries in children. A manual, posters, resources for collecting feedback on the programme and parent-reported injuries in the children were developed. The FCHVs convened 10 women's groups to run over 6 months with 24–29 mothers attending each meeting (290 mothers participated in total). **Facilitation** Female Community Health Volunteers (FCHV) act as facilitators for established monthly women's group meetings. **Decision-making** Women attending groups had demonstrated that they could understand risks and identify options to minimize risks. **Reflexivity** Unclear
23	Nishiuchi, M. (1985)[54]	Women at least 20 years of age and a resident of Suita	**Political/ Institutional** Post WWII Japan and two weeks after formation of the club Korean War broke out. Work of health centre not well known – viewed as a place for TB tests only.	Unclear –not reported on. This is a narrative of the program's success stories	**Structure** Highly structured –district reps chosen by ballot among women of the same neighbourhood. Chapter officers (covering elementary school zones and include a number of towns) are chosen by district representatives and the chapters list the ideas of their members, communicate the club's principles, and conduct activities. **Facilitation** Strong engagement and community driving –working alongside health system but also finding solutions e.g., trachoma examinations in community provided by health professionals working at a temple in the evenings. Club staff provided education. Due to success this program was taken on by the city. **Activities** Six sections of the club – general affairs; MCH services; Preventative health care section; Public Hygiene; Lecture (education); Culture. Areas of focus are decided on by looking at public health data at that time. **Decision-making** Highly structured with club representatives presenting views. **Reflexivity** Unclear
24	Morrison, J., Osrin, D., Alcock, G., Azad, K., Bamjan, J., Budhathoki, B., . . .	Community women from all socio-economic backgrounds	**Cultural/ community** Cultural context varied: In Bangladesh, 80% of the population were Muslim, In Nepal, 65% were of marginalised Tamang Buddhist ethnicity. In the	Women's groups were effective in strengthening or creating social networks, Women learned	**Structure/process** Women's groups were led through PLA cycles related to maternal and newborn health. The groups identified and prioritised problems associated with pregnancy, delivery, and the newborn period, and together with communities, they planned and implemented strategies to address these problems. Women's groups addressed a knowledge deficit in poor and better-off women. Women were engaged through visual learning and participatory tools and learned from the facilitator and each other.

	Houweling, T. A. J. (2019)[55]		Indian study site, 80% of the population were from scheduled castes or tribes. In the Malawi study site, 95% were Christian and 88% were of Chewa ethnicity. The powerful position of the mother-in-law and other family members in overseeing the behaviour of daughters-in-law, particularly newlyweds, was emphasised at Asian sites. In Bangladesh, cultural factors prevented women from going outside the home to gain information and overcome. superstitions around birthing.	from each other and shared equally among better-off and poor families and there were no discrimination discussions.	Groups provided a social support network that addressed some financial barriers to care and gave women the confidence to promote behaviour change. Information was disseminated through home visits and other strategies. The social process of learning and action, which led to increased knowledge, confidence to act, and acceptability of recommended practices, was key to ensuring behaviour change across social strata. These equitable effects were enabled by the accessibility, relevance, and engaging format of the intervention. **Facilitation** The group facilitators were local women who convened women's groups. The Facilitators were viewed as a respected source of information and knowledge. Facilitators enabled inclusion of all socioeconomic strata, ensuring that strategies were low-cost, and that discussions and advice were relevant. "The facilitator sits with us and makes us understand". **Activities** Home visits to pregnant women who were not part of the groups to tell them about safe birthing practices and newborn care, the distribution of safe delivery kits, and stretcher schemes to bring women in labour to the hospital. **Decision-making** In accordance with PLA cycle **Reflexivity** The difficulties around the cultural "ke garne" raised issues around non-Nepali's understanding of culture and the non-Nepali's facilitation role.
25	Morrison, J., Thapa, R., Sen, A., Neupane, R., Borghi, J., Tumbahangphe, K. M., . . . Costello, A. (2010)[41]	Community women	**Community/culture** The 'middle poor' – attended and literate, salaried women were less likely to attend, as were those of the most marginalized ethnic group. Fifteen different ethnic groups in Makwanpur, the largest of which were Tamang, then Brahmin/Chhetri. Caste discrimination still a powerful indicator of social inclusion and empowerment **Institutional/ political** Low-quality services, limited geographical access, and poor infrastructure constrains health service use in rural areas.	Intra group relationships were important in management and utilization of funds. Mutual trust and understanding between friends were important for funds success. Outsiders had to convince group members of the validity of their claims and their credit worthiness.	**Facilitation/structure/process** The intervention consisted of 109 women's groups convened by locally employed female facilitators. Facilitators led the groups through a participatory action cycle of problem prioritization and community planning to address salient local neonatal and maternal health problems. **Decision-making** Community women with facilitation. PLA approach **Reflexivity** Unclear

26	Morrison, J., Thapa, R., Hartley, S., Osrin, D., Manandhar, M., Tumbahangphe, K., . . . Costello, A. (2010)[40]	Community women	**Community/culture** Different ethnic groups, arranged marriages, mother in laws are in control. Women busy with home and farming. Ethnicity and caste were important. Ethnic discrimination was evidenced but not explicitly discussed. Homogeneity of ethnicity was a hindrance to social and economic development. In ethnically mixed communities villagers discuss and work for change. **Political/Institutional** Insurgency created insecurity. National strikes and army patrols sometimes restricted access to health services. Mistrust of local government health services was ubiquitous, and all respondents expressed their dissatisfaction. Some agencies were seen as trustworthy (including MIRA funds). **Approach to CP** Developmental Instrumental	Group felt to be a source of support and place for learning and support, a place for learning and sharing knowledge	**Structure** Key features were an organisational commitment to a participatory learning and action approach (PLA), and the overall aim of women's empowerment. **Facilitation** In Nepal, women met monthly, and a facilitator led them through a participatory action cycle. **Decision-making** PLA approach **Reflexivity** Aware for the need of local interviewers, translating interviews into Nepal first, social scientist with good spoken Nepali and aware of cultural differences
27	Morrison, J., Tamang, S., Mesko, N., Osrin, D., Shrestha, B., Manandhar, M., . . . Costello, A. (2005)[2]	Local women	**Community/ culture** Diverse cultural groups. Some groups were dominated by women from higher castes, but these higher castes served as a stimulant to \traditionally subservient ethnic groups. Difficulties in linking problems to strategies due to the cultural phenomenon	The continuing activity of most groups suggests that usually group members found the experience useful and enjoyable. Women actively participated in	**Structure** The facilitator used a meeting manual, adapted from the Warmi project, to guide the women's groups through problem identification and community planning using participatory iterative methods. Each facilitator leading nine groups per month, covering an average population of 7000. **Facilitation** Meetings were facilitated by a paid, locally based woman, who was selected on merit and trained in facilitation techniques. They worked with the local unpaid Female Community Health Volunteer. **Activities**

			of 'ke garne' a belief in fatalism - the feeling that "one has no personal control over one's life circumstances, which are determined through a divine external agency" Experience was that fatalism affected the way people viewed themselves in relation to a problem, and also the power and capacity they believed themselves to have in overcoming it.	learning together and gathered much information from their communities.	Strategies discussed during planning together and successfully implemented were the mother and child health fund, locally produced clean home delivery kits, management and production of stretchers, and awareness raising through video shows. **Decision-making** PLA approach **Reflexivity** Acknowledgement of the cultural phenomenon of “ke garne” that affected women's role in the study and facilitation.
28	Lugo, N. R. (1996)[30]	Pregnant women (identified as high risk)	**Community/culture** Differences in culture of urban and rural areas with rural areas more receptive to the program. Hispanics in rural area had minimal previous contact with social service agencies and community-based programs and so may have been more receptive to the program. **Institutional** This program was funded, in part, as an alternative model for providing state-mandated case management for at-risk pregnant women. The funding guidelines played a very strong role in the day-to-day functioning of the program.	The groups did develop a sense of community among participants, encouraging mutual support and problem solving. Relationships in the groups carried over beyond the group.	**Structure** Peer support groups were to provide a safe, reaffirming forum for discussing issues that participants feel are important. Some group members demonstrated a strong sense of ownership of the group meetings, taking over leadership and assigning group tasks among themselves. **Facilitation** The facilitator -hired women who were peers, in one way or another, of the women in the neighbourhoods the program had targeted. **Decision-making** Collective problem solving keeping to the principle of women being able to define their health needs and choose priorities. **Reflexivity** Unclear
29	Dongre, A.R., Deshmukh, P.R. & Garg, B.S (2009)[29]	Pregnant women	**Institutional/political** Village Coordination communities (VCC) raised health funds from villagers for village level health activities.	Unclear – not reported on	**Structure** In each village, monthly comprehensive, participatory, maternal and child health services and group health education sessions were delivered through a health personnel team including a VCC member. **Activities** Social workers ensured group members had information regarding newborn danger signs during their monthly village-based meetings.

					VCC village health and emergency transport plan developed. **Decision-making** Social worker facilitated VCC to develop village health plan and act on priorities **Reflexivity** Unclear
30	Dickinson, P. & and Joe, T. (2010)[31]	Young mums and pregnant young women-mostly Maori or from Pacific Island Nations	**Community culture/institutional/ political** Not mentioned	The program successful in connecting young women to a group of peers in similar circumstances	**Structure** The program objectives were to: encourage self-value; create individualised developmental plans for each young mother; make connections so that young mothers are supported to seek community organisations to meet their visions; provide role models and mentoring support from experienced mothers and child carers; and to meet other young mothers and reduce isolation. **Facilitation** A blend of structured and unstructured (self-directed by the young mums with support from facilitator) The designated facilitator was the Young Mums Programme Coordinator based at Te Waipuna Puawai. **Decision-making** Women and facilitators **Reflexivity** Unclear
31	Tripathy et al. (2016)[42]	Study participants were women of reproductive age (15–49 years) who gave birth between Sept 1, 2009, and Dec 31, 2012.	**Community/culture** Before randomisation, we obtained permission from local community representatives (village headmen in Jharkhand and Panchayati Raj institution leaders in Odisha) to work with women's groups and ASHAs, and to collect data in their areas. Village head men were involved in randomisation. The proportion of Adivasis (Indigenous tribes) within the study clusters was 58–70%. 70% of facilitators ASHA were Adivasi. **Institutional** One of the study districts (Khunti, Jharkhand) had experienced severe law and order problems during the baseline and evaluation periods. "In one cluster, we could	Unclear about intra group relationships amongst women	S**tructure** Meetings were held fortnightly for the first four months (phases 1 and 2), and every month thereafter. **Process** The intervention was a four phase PLA cycle of women's group meetings led by ASHAs. In the first phase, ASHAs helped the groups identify and prioritise maternal and newborn health problems using picture cards and a participatory voting game. In the second phase, groups listened to stories with local motifs featuring the causes of their prioritised problems and potential solutions, held a community meeting seeking support of other community members. In phase 3, the groups implemented their chosen strategies and learned about other practical actions to improve maternal and newborn health. Finally, in phase 4, the groups evaluated the meeting cycle and progress against their strategies. **Facilitation** Was by ASHAs, (70 % Adivasi) The 152 ASHAs were typical of ASHAs working in the study area; they had undergone at least three government training sessions and were all village based. ASHAs' motivation and earnings were strongly influenced by the support and recognition given to them in the community. Each coordinator employed by Ekjut supervised ten ASHA through bimonthly meetings in the first 3 months of the intervention, and meetings every month thereafter. ASHAs were given an incentive of INR 100 (US$2) during training and INR. 200 for each woman's group meeting. **Strengthening local health systems** In both intervention and control areas, attempt were made to carry out at least one village health sanitation and nutrition committee meeting about rights and entitlements per village. **Decision-making** PLA approach **Reflexivity** Unclear

			not do any data quality checks and the Board voted to exclude it from the final trial analyses at its final meeting in December 2013.		
32	Morrison, Tumbahangh e, Sen, et al. (2020)[32]	All women in the communities were potential members	**Community/ cultural** 43 geopolitical VDCs 83% population engaged in agriculture. Almost half Tibeto-Burman descent Difficulties implementing first PLA cycle strategies arose because FCHVs not used to facilitating discussing as usual role is information giving. **Institutional/political** Federalism and decentralisation of Nepalese health system at end of 2017. National political focus on achieving MDG 5 (reducing maternal and child mortality) through skilled attendance and institutional delivery. Increase in number of trained health workers but policy incentive was for institutional births not home deliveries.	Unclear about intra women's groups relationships	**Structure** Facilitators ran 203 women groups per month. Eight groups ran twice monthly. Timing of meetings was according to community convenience. **Facilitation** Was by 195 FCHVs trained by researchers in facilitation skills, PLA process and how to run meetings. Monthly supervision meetings were limited due to geography, remoteness, number of groups to supervise and ad hoc nature of PWGs. **Activities** Groups identified strategies to address barries to institutional delivery and implemented strategies in two PLA cycles. Printed manual contained discussion points, games and stories to assist discussion. **Health system strengthening** Health Management Committee strengthening intervention using Appreciative Inquiry was also implemented although groups did not meet regularly. FCHV attended health strengthening sessions. **Decision-making** PLA approach **Reflexivity** Awareness of culture of didactic health information
33	Ronaasen, Steenkamp, Williams, Finnemore, & Feeley (2020)[33]	Mothers and caregivers of young children from purposively chosen communities association with local Early Childhood Development centres (ECD)	**Community/ cultural** Consistently high prevalence of HIV infection in Eastern Cape, with impoverished communities experiencing interplay among biological, socio-behavioural and contextual factors including stigma. Child rearing practices affected by traditional beliefs of family.	Outcomes indicated that women received peer support from other group members	**Structure** Parent support group based at the ECD centre. **Facilitation** Mentor mothers (30) engaged with skills training materials, established program called "Sakha Esethyu: It starts with us we are building our own". Shared learning approach. Mentors received support through indigenous social workers using local language. On-site mentors **Activities** Conversations around reduction of HIV risk in both HIV positive and negative groups, PMTCT, antiretroviral drug adherence and breastfeeding support and understanding child health record. **Decision-making** Unclear **Reflexivity**

					Unclear
34	Sharma, S., Mehra, D., Akhtar, F., & Mehra, S. (2020).[56]	Women 15-35 from marginalised sections of society	**Community/cultural** Women's groups had members belonging to scheduled caste, scheduled tribe and below the poverty line. Cultural and religious views were deep rooted. Districts targeted were those falling under the category of low or very low human development index.	Unclear	**Structure** Structured two-hour community sessions held on 10 MCH topics and home visits. Groups had 23-27 women members. Training module and flip charts in Hindi were used. **Facilitation** Peer educators (1,500) were selected from the women's group and trained by outreach workers for four days in ten topics related to MCH and financial literacy. Education tools were used. **Activities** Peer educator led groups discussing ten MCH set topics. Linkages made by outreach workers between women and the Mahatma Ghandi National Rural Employment Guarantee Act (MGNREGA). Outreach workers also sensitised health workers about access to health services for poor women. Orientation meetings with community institutions concentrating on MCH village health plans. **Decision-making** Unclear **Reflexivity** Unclear
35	Colbourn,T., Nambiar, B., Bondo, A., et al (2013) [34]	All pregnant women in surveillance areas who agreed to take part were eligible and enrolled if they became pregnant.	**Community/cultural** Not linked to groups but poverty, poor MCH knowledge, illiteracy	Unclear	**Structure** Structured group program with 8 sessions of planning and then 4 other steps in implementation and 4 steps in evaluation. Each facilitator formed nine village women's groups **Facilitation** Volunteer facilitators, supported by nine staff. Volunteers followed a set program and women made decisions about local issues and implemented action. **Activities** Health education, voluntary testing and counselling for HIV/AIDS, village savings and loans, bed nets, vegetable gardens and bicycle ambulances. **Decision-making** Women in the groups **Reflexivity** Unclear

Supplementary Table 4: Quality assessment table for included papers

<=5 low quality
6-7 moderate quality
8+ high quality

	Study/paper	Quality Assessment
1	Lowell A, Kildea S, Liddle M, et al. Supporting Aboriginal knowledge and practice in health care: lessons from a qualitative evaluation of the strong women, strong babies, strong culture program. *BMC Pregnancy & Childbirth* 2015;15(1):19-19. doi: 10.1186/s12884-015-0433-3	Qualitative: 7/10
2	Earle-Crane M. The Quality of Prenatal Care: Experiences of Women Attending Healthy Baby Clubs [Masters]. Memorial University of Newfoundland, 2000.	Qualitative: 7/10
3	United States Agency for International D. USAID/Burma Shaethot Final Performance Evaluation, Evaluation Report, 2018.	Mixed methods Qualitative: 7/10 Quantitative quasi-experimental: 7/9
4	Saville N. The effect of community mobilisation through women's groups on improved IYCF: Experience from Dhanusha, Nepal [Available from: http://siteresources.worldbank.org/SOUTHASIAEXT/Resources/223546-1328913542665/UCL-MIRA_DHANUSHA.pdf.}	Quantitative RCT: 2/13 on what is presented. Note: Unclear/low based on details in presentation but moderate to high from protocol paper in Trials (no outcomes reported).
5	Ministry of Health, UNICEF Sri Lanka. Review of the Functioning and Impact of Mother Support Groups in the Northern and Eastern Provinces of Sri Lanka 2015 [Available from: https://www.unicef.org/srilanka/media/336/file/MOTHER%20SUPPORT%20GROUPS.pdf.	Mixed methods Qualitative: 6/10 Quantitative: <3/10 Note: Assessed quantitative under both cross-sectional and cohort studies; quality low on both.
6	Roy SS, Mahapatra R, Rath S, et al. Improved neonatal survival after participatory learning and action with women's groups: a prospective study in rural eastern India. *Bull World Health Organ* 2013;91(6):426-33B. doi: 10.2471/BLT.12.10517110.2471/BLT.12.105171. Epub 2013 Apr 4. [published Online First: 2013/09/21]	Quantitative prospective cohort: 7/11

7	Gill, K. 1999. If we walk together – communities, NGOs, and Government in partnership for health: the Hyderabad experience, The World Bank, Washington DC.	Qualitative: 5/10 Note: Method unclear
8	Ndirangu, G., Gichangi, A., Kanyuuru, L., Otai, J., Mulindi, R., Lynam, P., . . . Archer, L. (2015). Using young mothers' clubs to improve knowledge of postpartum hemorrhage and family planning in informal settlements in Nairobi, Kenya. *Journal of Community Health*, 40(4), 692-698. doi:10.1007/s10900-014-9986-8	Quantitative: quasi-experimental 5/9
9	Gram, L., Skordis-Worrall, J., Manandhar, D. S., Strachan, D., Morrison, J., Saville, N., . . . Heys, M. (2018). The long-term impact of community mobilisation through participatory women's groups on women's agency in the household: A follow-up study to the makwanpur trial. *PloS One*, 13(5), e0197426. doi:10.1371/journal.pone.0197426	Quantitative quasi-experimental: 7-8/9
10	Roche, M. L., Ambato, L., Sarsoza, J., & Kuhnlein, H. V. (2017). Mothers' groups enrich diet and culture through promoting traditional quichua foods. *Maternal & Child Nutrition*, 13(S3), e12530-n/a. doi:10.1111/mcn.12530	Mixed Methods Quantitative:9 cross-sectional: 4/8 Qualitative: 8/10
11	Kruske, S., Schmied, V., Sutton, I., & O'Hare, J. (2004). Mothers' experiences of facilitated peer support groups and individual child health nursing support: A comparative evaluation. *Journal of Perinatal Education*, 13(3), 31-38. doi:10.1624/105812404X1752	Qualitative: 8/10
12	O'Rourke, K., Howard-Grabman, L., & Seoane, G. (1998). Impact of community organization of women on perinatal outcomes in rural bolivia. *Revista Panamericana De Salud Pública*, 3(1), 9-14. doi:10.1590/S1020-49891998000100002	Quantitative quasi-experimental: 5/9
13	Manandhar, D. S., Osrin, D., Shrestha, B. P., Mesko, N., Morrison, J., Tumbahangphe, K. M., . . . Members of the MIRA Makwanpur trial team. (2004). Effect of a participatory intervention with women's groups on birth outcomes in Nepal: Cluster-randomised controlled trial. *The Lancet*, 364(9438), 970-979. doi:10.1016/S0140-6736(04)17021-9	Quantitative cluster RCT: 10/13
14	Quigley, P., Green, C., Soyoola, M., Kureya, T., Barber, C., & Mubuyaeta, K. (2018). Empowering women and communities to promote universal health coverage in rural zambia. *Development in Practice,* 28(8), 1094-1100. doi:10.1080/09614524.2018.1508421	Quantitative quasi-experimental: 4/9
15	Skordis, J., Pace, N., Vera-Hernandez, M., Rasul, I., Fitzsimons, E., Osrin, D., . . . Costello, A. (2019). Family networks and healthy behaviour: Evidence from Nepal. *Health Economics, Policy and Law*, 14(2), 231-248. doi:http://dx.doi.org.elibrary.jcu.edu.au/10.1017/S1744133118000130	Quantitative: cross-sectional: 7-8/8

16	Tripathy, P., Nair, N., Barnett, S., Mahapatra, R., Borghi, J., Rath, S., . . . Costello, A., (2010). Effect of a participatory intervention with women's groups on birth outcomes and maternal depression in Jharkhand and Orissa, India: A cluster-randomised controlled trial. *The Lancet*, 375(9721), 1182-1192. doi:10.1016/S0140-6736(09)62042-0	Quantitative RCT: 10/13
17	Damtew, Z. A., Karim, A. M., Chekagn, C. T., Fesseha Zemichael, N., Yihun, B., Willey, B. A., & Betemariam, W. (2018). Correlates of the women's development army strategy implementation strength with household reproductive, maternal, newborn and child healthcare practices: A cross-sectional study in four regions of Ethiopia. *BMC Pregnancy and Childbirth,* 18(Suppl 1), 373. doi:10.1186/s12884-018-1975-y	Quantitative cross-sectional: 7/8
18	Turan, J. M., Say, L., Güngör, A. K., Demarco, R., & Yazgan, S. (2003). Community participation for perinatal health in Istanbul. *Health Promotion International,* 18(1), 25-32. doi:10.1093/heapro/18.1.25	Mixed Methods Qualitative: 1/10 Quantitative: cross-sectional 0/8
19	Bolton, M., Moore, I., Ferreira, A., Day, C., & Bolton, D. (2016). Community organizing and community health: Piloting an innovative approach to community engagement applied to an early intervention project in South London. *Journal of Public Health*38(1), 115-121. doi:10.1093/pubmed/fdv017	Quantitative: quasi-experimental 4/9
20	Wong, M.L., Chen, P.Y.C. 1991, Self-reliance in health among village women, *World Health Forum*, 12, 43-48	Qualitative: 4/10
21	Rath, S., Nair, N., Tripathy, P. K., Barnett, S., Rath, S., Mahapatra, R., . . . Prost, A. (2010). Explaining the impact of a women's group led community mobilisation intervention on maternal and newborn health outcomes: The Ekjut trial process evaluation. *BMC International Health and Human Rights,* 10(1), 25-25. doi:10.1186/1472-698X-10-25	Mixed Methods Qualitative: 7+/10 Quantitative: cross-sectional 2/8
22	Pant, P. R., Budhathoki, B., Ellis, M., Manandhar, D., Deave, T., & Mytton, J. (2015). The feasibility of community mobilisation for child injury prevention in rural Nepal: A programme for female community health volunteers. *BMC Public Health*, 15(1), 430. doi:10.1186/s12889-015-1783-5	Quantitative: Cross-sectional 3/8 Note: Not really a Qualitative component but rated Qualitative: 5/10
23	Nishiuchi, M. 1985, Mothers in community health care activities-The Suita Mother's Club, *JOICFP Review* (Japanese Organization for International Cooperation in Family Planning (JOICFP). 8, 5-29	Narrative text and opinion: 3/6

24	Morrison, J., Osrin, D., Alcock, G., Azad, K., Bamjan, J., Budhathoki, B., . . . Houweling, T. A. J. (2019). Exploring the equity impact of a maternal and newborn health intervention: A qualitative study of participatory women's groups in rural south Asia and Africa. *International Journal for Equity in Health*, 18(1), 55. doi:10.1186/s12939-019-0957-7	Qualitative: 7/10
25	Morrison, J., Thapa, R., Sen, A., Neupane, R., Borghi, J., Tumbahangphe, K. M., . . . Costello, A. (2010). Utilization and management of maternal and child health funds in rural Nepal. *Community Development Journal,* 45(1), 75-89. doi:10.1093/cdj/bsn029	Qualitative: 10/10
26	Morrison, J., Thapa, R., Hartley, S., Osrin, D., Manandhar, M., Tumbahangphe, K., . . . Costello, A. (2010). Understanding how women's groups improve maternal and newborn health in Makwanpur, Nepal: A qualitative study. *International Health,* 2(1), 25-35. doi:10.1016/j.inhe.2009.11.004	Qualitative: 9/10
27	Morrison, J., Tamang, S., Mesko, N., Osrin, D., Shrestha, B., Manandhar, M., . . . Costello, A. (2005). Women's health groups to improve perinatal care in rural Nepal. *BMC Pregnancy and Childbirth*, 5(1), 6-6. doi:10.1186/1471-2393-5-6	Qualitative: 10/10
28	Lugo, N. R. (1996). Empowerment Education: A Case Study of the Resource Sisters/Compañeras Program. *Health Education Quarterly*, 23(3), 281–289. https://doi.org/10.1177/109019819602300301	Mixed methods. Quantitative cross-sectional: 2/8 Qualitative: 0/10
29	Dongre, A.R., Deshmukh, P.R. & Garg, B.S. A community based approach to improve health care seeking for newborn danger signs in rural Wardha, India. *Indian J Pediatr* 76, 45–50 (2009). https://doi-org.elibrary.jcu.edu.au/10.1007/s12098-009-0028-y	Mixed Methods Quantitative: quasi-experimental 4/9 Qualitative: 5/10
30	Dickinson, Pauline and Joe, Tara. Strengthening Young Mothers: A Qualitative Evaluation of a Pilot Support Group Program [online]. *Youth Studies Australia,* Vol. 29, No. 1, Mar 2010: 35-44. Availability: <https://search-informit-com-au.elibrary.jcu.edu.au/documentSummary;dn=950418632305501;res=IELHSS> ISSN: 1038-2569.	Qualitative: 7/10
31	Tripathy, P., Nair, N., Sinha, R., Rath, S., Gope, R. K., Rath, S., Roy SS, Bajpai A, Singh V, Nath V, Ali S, Kundu AK, Choudhury D, Ghosh SK, Kumar S, Mahapatra R,. . . Prost, A. (2016). Effect of participatory women's groups facilitated by accredited social health activists on birth outcomes in rural eastern india: A cluster-randomised controlled trial. *The Lancet Global Health*, 4(2), e119-e128. doi:10.1016/S2214-109X(15)00287-9	Quantitative cluster randomised controlled trial: 12/13

32	Morrison, J., Tumbahangphe, K., Sen, A., Gram, L., Budhathoki, B., Neupane, R., . . . Osrin, D. (2020). Health management committee strengthening and community mobilisation through women's groups to improve trained health worker attendance at birth in rural Nepal: a cluster randomised controlled trial. *BMC Pregnancy & Childbirth, 20*(1), 268. doi:https://dx.doi.org/10.1186/s12884-020-02960-6	Quantitative cluster randomised trial: 10/13
33	Ronaasen, J., Steenkamp, L., Williams, M., Finnemore, J., & Feeley, A. (2020). SAKHA ESETHU: nurturing value-centered group work for a community-based parent support Programme in the Eastern Cape, South Africa. *Social Work with Groups.* doi:http://dx.doi.org/10.1080/01609513.2020.1828227	Qualitative study: 6/10
34	Sharma, S., Mehra, D., Akhtar, F., & Mehra, S. (2020). Evaluation of a community-based intervention for health and economic empowerment of marginalized women in India. *BMC Public Health, 20*(1), 1766. doi:https://dx.doi.org/10.1186/s12889-020-09884-y	Mixed methods evaluation Quantitative: 2/9 Qualitative: 6/10
35	Colburn, T.,Nambiar, B., Bondo, A., Makwenda, C., Tsetekani, E., Makonda-Ridley,A., Msukwa, M., Barker, P., Kotagal, U., Williams, C., Davies, R., Webb, D., Flatman, D., Lewycka, S., Rosato, M., Kachale, F., Mwansambo, C. & Costello, A. Effects of quality improvement in health facilities and community mobilization through women's groups on maternal, neonatal and perinatal mortality in three districts of Malawi: MaiKhanda, a cluster randomized controlled effectiveness trial, *International Health*, Volume 5, Issue 3, September 2013, Pages 180–195, https://doi.org/10.1093/inthealth/iht011	Quantitative factorial cluster randomised trial 11/13

Supplementary Table 5: Reasons for Exclusion

Citation	Outcome	Interven-tion	Popula-tion	Process	Study design	Context	Language
Akhund S, Yousafzai AK. How successful are women's groups in health promotion and disease prevention? A synthesis of the literature and recommendations for developing countries. *East Mediterr Health J*. 2011 2011;17(5):446-452. https://apps.who.int/iris/handle/10665/118639. Accessed 22 November 2019.					X		
Aubel J, Rychtarik A. *Focus on Families and Culture: A guide for conducting a participatory assessment on maternal and child nutrition.* Senegal: Grandmother Project (GMP) – Change through Culture; 2015.	X				X		
Aubel J. A participatory concept of development and communication. Development communication report. 1992(77):24	X	X	X				
Brisbane FL, Stuart BL. A self-help model for working with black women of alcoholic parents. *Alcohol Treat Q.* 1985;2(3-4):199-219. doi: 10.1080/J020V02N03_13.	X						
Brookfield J. Group antenatal care for Aboriginal and Torres Strait Islander women: An acceptability study. *Women Birth.* 2019;32(5):437-448. doi: 10.1016/j.wombi.2019.06.021.	X		X				
Chamberlain C, Gee G, Brown SJ, et al. Healing the Past by Nurturing the Future—co-designing perinatal strategies for Aboriginal and Torres Strait Islander parents experiencing complex trauma: framework and protocol for a community-based participatory action research study. *BMJ Open.* 2019;9(6):e028397. doi: 10.1136/bmjopen-2018-028397.					X		
Crozier S. These West African women found prosperity in a garden oasis. *Frontlines*. Vol November/December: USAID; 2015. https://www.usaid.gov/news-information/frontlines/resilience-2015/these-west-african-women-found-prosperity-garden-oasis	X				X		
Department of Foreign Affairs and Trade. *Pacific Women Shaping Pacific Development in Papua New Guinea: Mid-term Review of the Papua New Guinea Country Plan (Appendix 11: Inclusive Development in post-conflict Bougainville: Case Report).* Canberra2017.	X	X	X		X		
Dominguez AV. Stimulating community involvement through mass organizations in Cuba: the women's role. *Int J Health Educ.* 1977;20(1):57-60. Accessed 14 August 2019.	X		X	X			
Friedman J. The promise of participatory women's groups in South Asia: Can education and empowerment save lives? Published on Development Impact website. https://blogs.worldbank.org/impactevaluations/the-promise-of-participatory-women-s-groups-in-south-asia-can-education-and-empowerment-save-lives. Updated July 27. Accessed 22 November 2019.					X		
Geoghegan, T. (2010). Women on the front lines of health care: State of the world's mothers 2010. Save the Children website. https://www.savethechildren.org/content/dam/usa/reports/advocacy/sowm/sowm-2010.pdf?vanityurl=publications/state-of-the-worlds-mothers-report	X	X	X	X			

Citation	Outcome	Interven-tion	Popula-tion	Process	Study design	Context	Language
Gram L, Skordis-Worrall J, Saville N, Manandhar DS, Sharma N, Morrison J. 'There is no point giving cash to women who don't spend it the way they are told to spend it' - Exploring women's agency over cash in a combined participatory women's groups and cash transfer programme to improve low birthweight in rural Nepal. *Soc Sci Med.* Jan 2019;221:9-18. doi: https://dx.doi.org/10.1016/j.socscimed.2018.12.005.	X						
Gretchen Du P, Enniah ML. The role of food gardens in empowering women: A study of Makotse Women's Club in Limpopo. *J Soc Dev Afr.* 2010;25(2):97-120.	X	X					
Guruge NDG, Goonasekara M, Dharmaratne SD, Gunathunga MW, Galmangoda Guruge ND. Engaging a rural community in identifying determinants of low birth weight and deciding on measures to improve low birth weight: an experience from a Sri Lankan study. *J Health Popul Nutr.* 2017;36:1-12. doi: 10.1186/s41043-017-0118-9.	X					X	
Hanson C, Kujala S, Waiswa P, Marchant T, Schellenberg J. Community-based approaches for neonatal survival: meta-analyses of randomized trial data. *Bull World Health Organ.* 2017;95(6):453-464C. doi: 10.2471/BLT.16.175844.					X		
Healy K, Walsh K. Making participatory processes visible: practice issues in the development of a peer support network. *Aust Soc Work.* Sep 1997 1997;50(3):45-52. Accessed 19 August 2019.	X				X		
Hickey S, Couchman K, Stapleton H, Roe Y, Kildea S. Experiences of health service providers establishing an Aboriginal-Mainstream partnership to improve maternity care for Aboriginal and Torres Strait Islander families in an urban setting. *Eval Program Plann.* Dec 2019;77:101705. doi: 10.1016/j.evalprogplan.2019.101705.		X	X		X		
Hickey SD, Maidment SJ, Heinemann KM, Roe YL, Kildea SV. Participatory action research opens doors: Mentoring Indigenous researchers to improve midwifery in urban Australia. *Women Birth*. August 2018;31(4):263-268. doi: http://dx.doi.org/10.1016/j.wombi.2017.10.011.	X	X					
Hill PS, Goeman L, Sofiarini R, Djara MM. 'Desa SIAGA', the 'Alert Village': the evolution of an iconic brand in Indonesian public health strategies. *Health Policy Plan.* 2013;29(4):409-420. doi: 10.1093/heapol/czt027.	X	X					
Kumar A. Health inequity and women's self-help groups in India: the role of caste and class. *Health Sociology Review.* 2007;16(2):160-168.		X	X	X			
Lamichhane R. Building Active Citizens: A story of struggle by village women under the My Rights, My Voice programme to attain their rights and reach positions of leadership, and the progress made through their own efforts: OXFAM; 2015. https://cng-cdn.oxfam.org/nepal.oxfam.org/s3fs-public/file_attachments/My%20Rights%20My%20Voice.pdf.	X						
Lipson JG. Consumer activism In two women's self-help groups. *West J Nurs Res.* 1980;2(1):393-405. doi: 10.1177/019394598000200111.	X		X				
Mackerras D. Birthweight changes in the pilot phase of the Strong Women Strong Babies Strong Culture Program in the Northern Territory. *Aust N Z J Public Health.* 2001;25(1):34-40.				X			

Citation	Outcome	Interven-tion	Popula-tion	Process	Study design	Context	Language
Marston C, Hinton R, Kean S, et al. Community participation for transformative action on women's, children's and adolescents' health. *Bull World Health Organ.* 2016;94(5):376-382. doi: 10.2471/BLT.15.168492.					X		
Migunani. (2017). Women's collective action for empowerment in Indonesia: A study of collective action initiated by partners of the MAMPU Program. Migunani and MAMPU. https://dfat.gov.au/about-us/publications/Pages/indonesia-australia-partnership-gender-equality-mampu-women-collective-action-research-report.aspx	X						
Minkler M, Thompson M, Bell J, Rose K, Redman D. Using community involvement strategies in the fight against infant mortality: lessons from a multisite study of the National Healthy Start experience. *Health Promot Pract*. 2002;3(2):176-187. https://search.ebscohost.com/login.aspx?direct=true&db=cin20&AN=106972340&site=ehost-live. Accessed 5 June 2019.		X	X				
Morrow AL, Dawodu A. Influencing birth outcomes in Nepal. *Lancet.* Sep 11-17, 2004;364(9438):914-915.					X		
Mottola MF, Sopper MM, Doxtator L, et al. Capacity-building and participatory research development of a community-based Nutrition and Exercise Lifestyle Intervention Program (NELIP) for pregnant and postpartum Aboriginal women: Information gathered from talking circles. *Int Indig Policy J.* 2011;2(1). doi: 10.18584/iipj.2011.2.1.8.	X						
Munns A. Yanan Ngurra-ngu Walalja Halls Creek Community Families Programme. *Neonatal, Paediatr & Child Health Nurs*. 2010;13(1):18-21.		X	X				
Mutale W, Masoso C, Mwanza B, et al. Exploring community participation in project design: application of the community conversation approach to improve maternal and newborn health in Zambia. *BMC Public Health*. Mar 23 2017;17(1):277. doi: https://dx.doi.org/10.1186/s12889-017-4187-x.	X		X				
Osrin D, Mesko N, Shrestha BP, et al. Implementing a community-based participatory intervention to improve essential newborn care in rural Nepal. *Trans R Soc Trop Med Hyg.* Jan-Feb 2003;97(1):18-21.					X		
Perry H, Freeman P, Gupta S, Rassekh B. Building on the current evidence to strengthen community-based service delivery strategies for promoting child survival. website. https://pdf.usaid.gov/pdf_docs/PA00JXJR.pdf. Published 2010.					X		
Ponnuraj S. Community protection for the health of mothers and children. *World Health Forum*. 1994;15(3):272-274.	X			X			
Prescott AS, Luippold-Roge GP, Gurman TA. Leveraging social networks to support reproductive health and economic wellbeing among Guatemalan Maya women. *Health Educ J*. 2016;75(6):664-675. doi: 10.1177/0017896915610143.		X	X				
Ray A, Ray S, George AT, Swaminathan N. Interventions for prevention and treatment of vulvovaginal candidiasis in women with HIV infection. *Cochrane Database Syst Rev*. 2011(8). doi: 10.1002/14651858.CD008739.pub2.	X		X		X		
Rueder Neves P, Salim N, Cristine Ferreira Soares G, Maria Rosa Gualda D. Experiences of women in a pregnant group: a descriptive study. *Onl Braz J Nurs.* 2013;12(4):862-841. doi: 10.5935/1676-4285.20134143.							X
Simmonds D, West L, Porter J, et al. A 'Two Ways' approach to improving antenatal education for Ngaanyatjarra Women. *Aborig Isl Health Work J*. Mar/Apr 2010, 2010;34(2):10-11.	X						

Citation	Outcome	Interven-tion	Popula-tion	Process	Study design	Context	Language
Snetro-Plewman, G., Braun, S., Howard-Grabman, L., & Crump, P. (2014). Snetro-Plewman G, Braun S, Howard-Grabman L, Crump P. Community capacity strengthening guide: Community module. website. https://www.savethechildren.org/content/dam/global/reports/health-and-nutrition/community-capacity-guide.PDF. Published 2014.: Community module. Save the Children. https://www.savethechildren.org/content/dam/global/reports/health-and-nutrition/community-capacity-guide.PDF		X			X		
Snyder DJ. The benefits of group support: peer group support for high-risk mothers. *MCN Am J Matern Child Nurs*. 1988;13(2):114-117.	X	X	X		X		
Solnes Miltenburg A, van Pelt S, de Bruin W, Shields-Zeeman L. Mobilizing community action to improve maternal health in a rural district in Tanzania: lessons learned from two years of community group activities. *Glob Health Action*. 2019;12(1):1621590. doi: https://dx.doi.org/10.1080/16549716.2019.1621590.			X				
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Stolzenberg R, Berg G, Maschewsky-Schneider U. Healthy upbringing of children through the empowerment of women in a disadvantaged neighbourhood: evaluation of a peer group project. *J Public Health.* 2012;20(2):181-192. doi: 10.1007/s10389-011-0460-0.		X	X				
Storti C. How to mobilize communities for improved maternal and newborn health. website. https://www.savethechildren.org/content/dam/global/reports/health-and-nutrition/mobilize-communities-guide-2003.PDF. Published 2009. Accessed 22 November 2019.		X			X		
Strange C, Bremner A, Fisher C, Howat P, Wood L. Mothers' group participation: associations with social capital, social support and mental well-being. *J Adv Nurs*. 2016;72(1):85-98. doi: 10.1111/jan.12809.			X	X			
Tlakula M. The Elim Care Group: conflict in community development styles. *Community Dev J.* 1998;33(2):157-164. doi: 10.1093/cdj/33.2.157.	X				X		
Torres ME, Smithwick J, Luchok KJ, Rodman-Rice G. Reducing Maternal and Child Health Disparities Among Latino Immigrants In South Carolina Through A Tailored, Culturally Appropriate And Participant-Driven Initiative. *Calif J Health Promot*. 2012;10(2):1-14.		X	X				
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United States Agency for International Development. THE 1,000-day window of opportunity: technical guidance brief. USAID website. https://www.usaid.gov/sites/default/files/documents/1864/1000-days-brief-508-revFeb2017.pdf. Published 2019. Accessed 22 November 2019.		X	X		X		

Citation	Outcome	Interven-tion	Popula-tion	Process	Study design	Context	Language
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Wallin L, Malqvist M, Nga NT, et al. Implementing knowledge into practice for improved neonatal survival; a cluster-randomised, community-based trial in Quang Ninh province, Vietnam. *BMC Health Serv Res*. Sep 27 2011;11:239. doi: https://dx.doi.org/10.1186/1472-6963-11-239.					X		
Weetra D, Glover K, Miller R, et al. Community engagement in the Aboriginal Families Study: Strategies to promote participation. *Women Birth.* 2019;32(1):72-79. doi: 10.1016/j.wombi.2018.04.002.	X	X	X				
Wickramage K, Nellapalli P. Community participatory methods in disease surveillance and public health in war-affected camps, and its potential contribution to peace building. *Int Electron J Health Educ*. 2008;11:1-14.	X		X				
Wiseman O, Hunter L, Leap N, Robinson H, Mackeith N. Advancing practice facilitating group antenatal care: a new way of working. *Pract Midwife*. 2017;20(9):1-7.	X	X					
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Woodard GRB, Edouard L, Woodard GR, Edouard L. Reaching out: a community initiative for disadvantaged pregnant women. *Can J Public Health*. 1992;83(3):188-190.		X	X	X			
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Aylward, P. (2019). An integrated group parenting model for mums with mental health issues and their babies: Findings from a participatory action research evaluation of the South Australian ACORN Program. *International Journal of Integrated Care (IJIC), 19*(S1), 1-2. doi:10.5334/ijic.s3001		X	X				
Harsha Bangura, A., Nirola, I., Thapa, P., Citrin, D., Belbase, B., Bogati, B., . . . Maru, S. (2020). Measuring fidelity, feasibility, costs: an implementation evaluation of a cluster-controlled trial of group antenatal care in rural Nepal. *Reproductive Health, 17*(1), 5. doi:https://dx.doi.org/10.1186/s12978-019-0840-4	X			X			

Citation	Outcome	Interven-tion	Popula-tion	Process	Study design	Context	Language
Nair, N., Daruwalla, N., Osrin, D., Rath, S., Gagrai, S., Sahu, R., . . . Prost, A. (2020). Community mobilisation to prevent violence against women and girls in eastern India through participatory learning and action with women's groups facilitated by accredited social health activists: A before-and-after pilot study. *BMC International Health and Human Rights, 20*(1). doi:http://dx.doi.org/10.1186/s12914-020-00224-0	X	X					
Lewycka, S., Mwansambo, C., Rosato, M., Kazembe, P., Phiri, T., Mganga, A., Chapota, H., Malamba, F., Kainja, E., Newell, M-L., Greco, G., Pulkki-Brännström, A-M., Skordis-Worrall, J., Vergnano, S., Osrin, D., Costello, A. (2013). Effect of women's groups and volunteer peer counselling on rates of mortality, morbidity, and health behaviours in mothers and children in rural Malawi (MaiMwana): a factorial, cluster-randomised controlled trial. *The Lancet*, *381*(9879) 1721-1735,https://doi.org/10.1016/S0140-6736(12)61959-X.				X			
Gram,L., Morrison, J., Saville, N., Yadav, S.S., Shrestha, B., Manandhar, D., Costello, A. & Skordis-Worrall, J. (2019) Do Participatory Learning and Action Women's Groups Alone or Combined with Cash or Food Transfers Expand Women's Agency in Rural Nepal?, *The Journal of Development Studies*, *55*(8),1670-1686, DOI: 10.1080/00220388.2018.1448069	X						