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Building a rights-based approach to nutrition of women and children: Harnessing the potential of women's groups and rights-based organization in South Asia

Authors and affiliations:

Monica Shrivastav[1†], Vani Sethi[2*†], Avishek Hazra[1†], Zivai Murira[2], Roopal Jyoti Singh[3], Krishna Wagh[3], Anuradha Nair[2], Veronica Kamanga Njikho[2], Sapna Desai[3*]

1. Population Council Consulting, NOIDA, Uttar Pradesh, India
2. UNICEF Regional Office for South Asia, Lekhnath Marg, Kathmandu, Nepal
3. Population Council Institute, India Habitat Centre, Lodi Road, New Delhi, India
4. UNICEF India Country Office, New Delhi

† These authors contributed equally to this work

Abstract:

Introduction: Women in South Asia face multiple barriers denying them access to resources and power to access nutritious foods, nutrition services and maternity entitlements and make decisions on what to eat, with gender inequality remaining an obstacle. There exists rich evidence of women's groups improving women's economic and social empowerment as well as nutrition and health outcomes. Women's rights-based organizations and movements have a long history and landscape in South Asia for women's representation in political space and collectivized for voicing maternity rights and gender equality.

Methods:

A scoping study was conducted between October 2022 and March 2023 across 8 South Asian countries. A rapid review of literature spanning studies from January 2018 to November 2022 was conducted to identify pathways through women's groups for health and nutrition outcomes. A qualitative study was done to map rights-based organizations and movements and gather their perspectives to address social determinants and advance nutrition rights. Total 17 studies were reviewed from Bangladesh, India, Nepal and 78 women's rights-based organizations and movements were mapped across eight countries of South Asia, of which 27 stakeholders representing six countries – Afghanistan, Bangladesh, India, Nepal, Pakistan and Sri Lanka – were interviewed to gather details on their approaches and actions to advance rights. Data was summarized and thematically analyzed.

Results: Rapid review of studies highlight seven distinct pathways through women's groups implemented across Bangladesh, India and Nepal – A) income, (B) agriculture, (C) health and nutrition behavior change communication (with or without participatory learning and

action approach), (D) rights pathways, (E) food access, (F) cash transfers, and (G) strengthening service delivery and fostering convergence with health systems. Pathways A to D were highlighted in the systematic review by Kumar et al. (2018). This review identified 3 additional pathways (E to G). Women's rights-based organizations and movements address diverse issues, including microfinance, livelihoods, women's rights and women's health and nutrition, and violence against women. They adopt the following strategies: a) creating an enabling environment, b) enhancing access to food, and c) increasing access to services through grassroots mobilization, programmatic actions, and policy advocacy. They have varied geographic spread and reach from sub-national to national level across South Asia with representation in government committees, legal and political spaces and networks.

Discussion: The findings can be adopted to design and test the implementation of integrated interventions that harness a combination of the food-systems-rights pathways through women's groups to improve complex nutritional outcomes among adolescent girls and women. Interventions could harness through women's groups platforms to lead community-led participatory actions adopting multiple pathways. Women's rights-based organizations and movements across South Asia have led actions to address social determinants by creating an enabling environment as well as addressing access to food and services. These approaches can be further leveraged by integrating nutrition rights as their agenda. They can further build coalitions that include advocates, grassroots champions, researchers, organizations and movements to advance nutrition rights for women and girls.

Keywords:

Women's groups, women's rights-based organizations, movements, nutrition, rights, pathways, South Asia

1. Introduction

South Asia is estimated to have 40 per cent of the global burden of low birth weight (<2500 gm) children [1], a barometer for poor nutrition status of women – before and during pregnancy. One in five women and adolescent girls in South Asia are underweight, and one in two are anemic with these statistics being worse in geographies with weak social, economic, and governance systems [1]. Analysis of national surveys data indicate inequities in underweight, anemia and short height are higher for adolescent girls and women belonging to the poorest wealth quintile, having no or only primary education and residing in rural areas in low- and middle-income countries [1]. Maternal health and nutritional outcomes are factored by deeply entrenched health system barriers and gendered issues. Health system factors such as vacancies of frontline workers, poor mentoring or motivation, increased work catchment load on existing health workers and constraints in reaching distinct geographies and sensitive climatic zones pose challenges to effective service delivery [2–4]. Discriminatory gender norms affect adolescent girls' and women's decision-making power and autonomy, contributing to adverse birth outcomes [5, 6].

Women's groups have emerged as solid institutions for low-income people to improve women's economic and social empowerment in parts of the South Asian region [7]. Women's groups are generally defined as a group of individual women from a community coming together with a common purpose. These include self-help groups, livelihoods groups, and groups formed with social action, health, and empowerment objectives, community-based women's groups or special population groups [8]. Studies have shown that membership in women's self-help groups can improve outcomes such as financial inclusion, income control, decision making and political participation [9–13], depending on specific design and implementation characteristics. In addition, women's groups, women's rights-based

organizations and movements have a long history and rich landscape in the South Asian region. These are defined as social and political efforts united by common goal to advance women's rights [14]. Many such organizations closely engage with women's groups, and their efforts have furthered women's representation in political spaces [15], education, public and private safety and combating poverty and inequality [16].

Nutrition programs have engaged women's groups to mobilize nutrition service demand, but usually as volunteers. As a result, often the momentum dies down upon closure of projects, and in-kind motivation costs remain high during and beyond the project. There are examples of using a service-cost approach with nurtured federations for running grain banks, serving meals, and building toilets. Extensive experimentation has been done with nutrition interventions through women's self-help groups, particularly in India, to improve the nutritional outcomes of women and children. A recent systematic review summarizing 36 studies across Bangladesh, India, Nepal, and Pakistan noted the potential of women's groups in improving some nutrition behaviors but also highlighted variations in outcomes across different types of intervention pathways [17]. This review outlined a framework describing pathways through which women's groups interventions can improve nutrition outcomes among women and children in South Asia. A subsequent systematic review in India found mixed evidence on the effectiveness of women's groups in improving health and nutrition outcomes, indicating the importance of understanding which approaches work, where, and for whom [18].

Several programs have leveraged women's groups to improve nutritional outcomes by addressing underlying determinants at the community level. Women's movements, at large, remain an untapped platform to achieve nutrition rights of adolescent girls and women by

addressing basic (resources, norms, governance), underlying (food, practices, services) and immediate (diet and care) determinants of malnutrition. We set out to explore opportunities on how working with women's groups and movements can improve nutrition outcomes amongst adolescent girls, women and children in South Asia. We undertook a scoping to: (i) identity different intervention pathways through women's groups to address social determinants of nutritional outcomes and (ii) understand the potential of engaging women's movements to achieve nutritional outcomes in South Asian countries.

2. Methods

We conducted a rapid review of the literature on pathways through women's groups to improve health and nutrition outcomes in South Asia. We also mapped and gathered perspectives of women's rights-based organizations and experts across South Asia through qualitative interviews. This scoping study was conducted between October 2022 and March 2023. Countries under the geographical this scoping included were – Afghanistan, Bhutan, Bangladesh, India, Maldives, Nepal, Pakistan and Sri Lanka.

2.1. Landscaping of pathways through women's groups

We studied Kumar et al. (2018) systematic review to identify pathways through women's groups for improving health and nutrition outcomes. Further, a rapid review of published and grey literature was conducted to identify interventions, examine outcomes and elicit the pathways of how women's groups have improved nutrition outcomes among girls 10-19 years and women in South Asia. Literature published after Kumar et al. (2018) review, i.e. from January 2018 to November 2022 were identified and included in the review process. Databases included for the search were PubMed, Scopus, and Google Scholar. Table 1 lists

the key terms applied in the search strategy. Inclusion of studies for the review was guided by the following primary criteria: (i) any experimental evaluations assessing the effect of women's groups in improving nutrition outcomes amongst women and children, (ii) quantitative or qualitative sibling studies linked to experimental studies that focus on intervention pathways and (iii) qualitative studies focusing on pathways for women's groups and nutrition in South Asia. Secondary criteria for inclusion were: (i) conducted in any of the South Asian countries, (ii) published peer-reviewed journals or grey literature reports and (iii) available in English language publications. Any studies and/or publications that are not based on research, such as blogs, interviews, perspectives, opinion pieces, studies not conducted in South Asian countries, not focusing on nutrition outcomes amongst women and children, not published in English and beyond the specific time period were excluded.

List of studies identified from database search were listed and duplicates were removed. Two researchers independently screened the titles and abstracts as well as assessed the full text of potentially eligible studies. Figure 1 depicts the flow diagram describing the study screening and selection process. Data was extracted from the included studies on study type, setting, intervention design, types of women's groups, type of implementor, methodology, findings, key outcomes, pathways, and what did or did not work. The other two researchers from the team checked data extraction for accuracy. Finally, to identify pathways, the included studies were analyzed and classified based on (i) intervention content, (ii) type of women's groups, further categorized by characteristics of group interventions [19], (iii) results, (iv) outcomes and (v) contextual, intervention-related and methodological enablers and barriers affecting outcome measures.

2.2. Mapping and gathering the perspectives of women's rights-based organizations and experts

We interviewed experts to gather perspectives on interventions adopted by women's rights-based organizations and experts to address factors, including social determinants that can directly or indirectly influence adolescent girls and women's nutrition outcomes. Moreover, with the absence of published or grey literature in Afghanistan, Maldives, Pakistan and Sri Lanka, it is essential to identify context-specific approaches and highlight the potential of engaging with women's movements in South Asia. Women's rights-based organizations and experts (N=78) were mapped and listed across seven South Asian countries through a google search, snowballing through interactions with respondents and approaching networks of women's rights-based organizations. Organizations collaborating with women's groups to advance women's rights at the community/ system/ policy level were included. After excluding those for whom contact details were unavailable, 57 organizations and experts were approached. Out of these, 30 individuals did not respond to the follow-up requests or were unavailable for the interview.

Between 17 February 2023 and 21 March 2023, 27 key informant interviews across six countries – Afghanistan, Bangladesh, India, Nepal, Pakistan and Sri Lanka – were conducted, covering a wide range of stakeholders at the national and sub-national level who spanned across – non-governmental and network organizations, academicians, government representatives, advocates, and experts. Figure 2 illustrates the process of identification of organizations/experts. Interviews were conducted by two experienced researchers in English language through virtual mediums (Zoom or Microsoft Teams). Verbal consent was taken from each participant for audio-recording the interviews.

Descriptive details of each organization and expert insights were examined and a qualitative synthesis was conducted. An analytical framework was created using five broad themes: i) interventions, ii) domains or focus areas, iii) type of activities by women's groups, iv) level of operation and v) potential pathways to improve nutritional outcomes. Two researchers listened to the audio recordings of interviews and charted the data into these five broad themes. In a spreadsheet, a matrix of the interventions (in the column) and levels of pathways (in the row) was created, and data was mapped in the matrix for each intervention. The types of women's group activities were categorized into types of interventions and mapped against the levels of pathways. UNICEF's 2020 conceptual framework on determinants of maternal and child nutrition [20] was applied to thematically summarize the findings based on the types of interventions of women's movements, categorized into three broad domains – (i) creating an enabling environment (governance, family-friendly policies, education, preventing child marriage, violence against women and girls), (ii) access to food (agriculture, food security), and (iii) access to services (maternity benefits, health, nutrition entitlements).

3. Results

3.1. Women's groups and nutrition: Intervention pathways

We found 17 studies on women groups implementing interventions to improve women's and children's health and nutrition outcomes. These studies were from Bangladesh (1), India (12) and Nepal (4) between 2018 and 2022. No published or grey literature was found for Afghanistan, Maldives, Pakistan and Sri Lanka. The included studies consisted of 14 primary studies [21–34] and three process evaluation studies [35–37] related to 3 primary studies. Study characteristics are presented in Table 2. The systematic review by Kumar et al. (2018), which included 36 studies conducted between 1980 and November 2017, outlined four

pathways: (A) income, (B) agriculture, (C) health and nutrition behavior change communication (with or without participatory learning and action approach) and (D) rights pathways [17]. Our review of the 17 studies highlighted three additional pathways – (E) food access, (F) cash transfers, and (G) strengthening service delivery and fostering convergence with health systems. A brief description of the types of pathways through women's groups-led intervention is presented in Figure 3. In total, seven pathways emerged from a combined total of 53 studies in South Asia. From the 14 primary studies reviewed across India (n=11) [22, 23, 25–27, 29–34], Nepal (n=2) [21, 24] and Bangladesh (n=1) [28], it was found that a combination of pathways, including income, agriculture and livelihoods, behavior change communication (BCC), rights, food access, cash transfers, and working with health systems for strengthening service delivery have been implemented with the aim to achieve nutritional outcomes for adolescent girls and women (Figure 4).

Two studies conducted in India and Nepal combined participatory learning and action approach with – (i) food transfers [21] and (ii) food provisions through creches [23] through women's groups to improv child birthweight and child anthropometric measures. One study from Nepal implemented cash transfers with participatory learning and action through women's group to improve nutrition behaviors during pregnancy [21]. Another study from India tested women's groups implementing participatory learning and action cycles (going beyond BCC) with agriculture and livelihoods and rights-based interventions to improve maternal and child nutrition outcomes [29]. All these interventions were implemented via open participation and a *collective* approach.

Three studies (two from India and one from Nepal) reported combining behavior change communication using traditional health education interventions with agriculture and

livelihoods [24, 31, 32] and two other studies from India [25] and Bangladesh [28] reported combining behavior change communication using didactic and classroom approach with social accountability and demand for rights and entitlement pathways.

One study from India implemented a combination of pathways, including women's self-help groups-led participatory learning and action approach with agriculture and livelihoods, rights and systems strengthening implemented via open participation and *collective* approach and intended to improve body mass index of adolescent girls and mothers of children under two and mean mid-upper arm circumference of pregnant women [30, 38]. Another study from India demonstrated a combination of behavior change communication intervention with health systems, delivered via closed participation and *collective* approach to improve childcare and feeding behaviors and practices [34].

Three studies from India reported implementation of behavior change communication intervention delivered via closed and *classroom*-based groups to improve knowledge of marginalized women on maternal, newborn child healthcare practices and nutrition behaviors [22, 27, 33]. One study from India reported implementation of savings and credits-based interventions delivered via closed membership using the *club* approach with the aim to health and wellbeing [26].

3.2. Mapping women's rights-based organizations, their networks and movement

We interviewed 27 women's rights-based organizations and experts across 6 South Asian countries – Afghanistan, Bangladesh, India, Nepal, Pakistan and Sri Lanka. Women's rights-based organizations and movements in South Asia address diverse domains, ranging from

microfinance, agriculture and livelihoods, natural resources and land rights, violence against women and girls, sexual and reproductive health rights, human rights and social justice, child rights, gender and security, skill development, political representation and special groups like home-based workers, sex workers and LGBT community (Figure 5). Their geographic spread ranges from sub-national and national to across the countries in South Asia. Often, such movements are also part of government expert committees, legal and political spaces, and networks. The women's rights-based organizations and movements engage with the community at three levels of action – grassroots mobilization, programmatic actions, and policy advocacy, focusing on three intervention domains – (i) creating an enabling environment (governance, family-friendly policies, education, preventing child marriage, violence against women and girls), (ii) access to food (agriculture, food security), and (iii) access to services (maternity benefits, health, nutrition entitlements) (Figure 6). The following sections discuss the three levels of action under the three intervention domains.

3.2.1. Creating an enabling environment

Grassroots mobilization: Women's rights-based organizations and movements mobilize the community through campaigns, peer support, building women's leadership skills and capacity to become "change-makers", and using participatory methods to identify and prioritize issues for collective action.

"Engaging with the local community and building women's leadership skills has always been our priority. Violence against women is a major challenge in our country… most of the violence happen within the home by the family members. Majority of working women are engaged in the informal sector. We organize women and make women's groups as the change agents to have large effect; we train, capacitate and prepare the cadre from the local areas.

We engaged men, local ward-level people and religious leaders in the community to bring change by involving them in the advocacy." (Women's organization, Nepal)

They also build alliances with other networks and local women's groups to organize campaigns on land rights, livelihoods, farmer's rights and natural resources as well as address social issues like alcohol and domestic abuse. Organizations focus on fostering community and government system dialogues that are critical for strengthening governance.

Program actions: More than 10 organizations reported to have implemented activities, including collective mapping, learning, demonstration and actions to prioritize issues, create demand and peer learning facilitated by local female leaders. Additionally, actions such as formation of forums or collectives of adolescent girls, men, and social influencers support in advancing women's rights and participation in decision-making within and outside households.

"We take a combination of strategies – in a village, we work primarily with the most marginalized households from backward castes – scheduled castes and scheduled tribes (called Adivasis, Dalit in local terms). A lot of our interventions could be in different forms – sitting together, learning, identifying, creating alternatives, demonstrations conducted with a focused group; some issues we would take to the larger group through ward meetings, panchayat, social audits, and mass information dissemination. We are not based on microfinance groups, not closed groups – it's a collective. For us, collectives are intrinsic because it's the question of power. Actually, if women and girls need to change their situation, they have to engage and negotiate with power, you cannot do it by general approach." (Women's organization, India)

In some communities, women have formed special groups for informal workers or home-based workers. These groups support shelter homes, childcare centers, community vocational centers, training spaces or workplaces and provide platforms for services, including providing nutritious food, counselling services, addressing issues around gender-based violence, linking with health services, and training on livelihoods and literacy programs.

Organizations noted that social audits are an effective strategy to identify issues and work with health systems to address the gaps. Skill-based training by these organizations have improved income and empowered adolescent girls and women. Organizations also engage women's groups to function as first responders or reporters of domestic violence cases and provide mental health support and psychosocial counselling. Organizations build capacity of local governments in addressing violence against women and facilitate dialogues with women's groups. Girl's education and development programs help adolescent girls enhance their leadership skills, provide peer support and counselling, and promote business models with the purpose to address child marriage and out-of-school girls.

Advocacy actions: Some rights-based organizations have made efforts to advocate and strengthen the gender-responsiveness of government systems to address violence against women. Among these efforts are lobbying for better services and accountability within the system, mobilizing women's constituencies, engaging local government and constituencies for improved governance, and advocating for women's issues and redressal through increased women's representation in wards and forums.

"We started with identifying some of the key issues that affect women's lives through discussions and workshops with women where women are encouraged to share their life experiences. Our agenda evolved through this. Violence and discrimination emerged as the key issues from every workshop. Through this, we have conducted policy advocacy with governments. One of the areas where we played a cutting-edge role was on the issue of acid violence in the 90s. Our approach has been to identify the issues and try to identify the range of implications they have on the lives of women and girls, as well as look, on the other hand, the institutions that are meant to respond to provide redressal… and then what are the problems of access to those institutions. This is an emerging framework for working on these issues." (Women's organization, Bangladesh)

Membership-based women's activist organizations conduct campaigns, cultural events, training, research and advocacy for violence against women. They support state institutions to combat violence against women by regular monitoring of police stations, hospitals & courts. Organizations have operationalized protocols to manage such cases in government hospitals. Several initiatives undertaken by the organization include monitoring government healthcare facilities and improving accountability of service providers, advocating and lobbying local authorities to solve existing problems and improve services.

3.2.2. Access to food

Grassroots mobilization: Organizations have aimed to improve access to natural resources as a right for communities to ensure local availability, access to resources, and promote local food production and consumption. Various approaches are used to achieve this, including tapping into the Right to Food campaign to leverage the movement's agenda to improve nutrition outcomes in communities and working with local governments to identify and

address local issues. They empower women by organizing women's groups in villages, leading public hearings, campaigns and monitoring and influencing the inclusion of maternity entitlements within the Right to Food Act.

"Local women's collectives that are grounded in the local reality focus on local issues such as control over natural resources, access to land rights and state entitlements and livelihoods security. They adopt the format of protests that are done spontaneously without external help. Women farmers' network has been very active in the last decade; they work effectively across a platform that comprises grassroots collectives, women's organizations, academicians and networks working together across their capabilities to advocate their issues, such as women farmers and their access to land, ignored in schemes and policies and access to natural resources." (Expert, India)

Program actions: Organizations and movements have implemented nutrition-sensitive agriculture methods to diversify food production for small-landholding and landless farmers and to promote local or Indigenous food consumption, with the overall aim to improve women's decision-making control over production, selling and consumption, thereby linking 'field to plate'. These approaches aim to enhance livelihoods, agricultural practices, and household food security. Cash transfers to individual/ family/ groups is another mechanism implemented to support purchasing and consumption capacity of families. Various interventions, including micro-enterprises, market linkage and food fortification and processing, are implemented to promote livelihoods and generate income, which promotes household access to food. They have also undertaken food provision interventions by cooking hot meals and creating grain and seed banks to secure access to food.

Advocacy actions: Movements such as Right to Food integrate women's rights issues through grassroots mobilization, advocacy actions via public hearings, networks and campaigns, and monitoring of outcomes at a community level. Organizations also advocate for addressing the protein gap in girls' and women's diets through the public distribution systems and re-introducing local foods into their meals. Advocacy groups have suggested strategies to enhance nutrition in conflict areas such as Afghanistan, including grants for actions managed by community groups. These grants can help improve nutrition and food security and promote sustainable livelihoods in humanitarian settings. These strategies focus on ensuring that "nutrition kits" are provided instead of "food kits".

"In conflict areas, besides livelihoods, we also need to raise awareness on food hygiene and food security...climate change has affected the country a lot (floods destroying crops and agriculture land, earthquakes, scant rainfalls). Generally, NGOs focus less on climate, nutrition and food security and interventions are restricted to the distribution of food to people… we raise awareness, but we could provide nutrition kits for people suffering from malnutrition." (Women's organization, Afghanistan)

3.2.3. Access to services

Grassroots mobilization: To ensure access to essential services, women's rights-based organizations and movements facilitate dialogues between community and government systems to bridge the gap and build synergy to improve community access to services and entitlements. Public hearings, networks and campaigns are approaches to unite communities for joint action.

"We are working with constituencies of women, that can be women's groups at the village level, or it can be women's organizations at sub-district, district or national level. So, directly women as well as women's organizations are our main constituencies. So, mobilizing these constituencies, and giving voice to their demands and issues is one aspect of our work. But on the other hand, we are also working with the State in order to give concrete expressions to those demands and issues. For example, helping the Ministry of Women's Affairs to design programs which have now been running for 21 years and are institutionalized. We observe particular events on days, such as International Women's Day – we use that as a way of mobilizing women and also publicize the issue. We provide templates to partner organizations at the local level… activities take the form of street theatre, seminars at local college/ school or public hearing." (Women's organization, Bangladesh)

Program actions: Organizations implement group-led activities, including health camps with local government, nutrition rehabilitation centers and referral/ linkage to health services to facilitate access to reproductive health and nutrition rights. Organizations in humanitarian settings have undertaken activities to establish private clinics to provide primary healthcare support to women to advance their rights. A concerted effort is made to engage with local government in planning and budgeting to support access and accountability of services.

"We have established clinics where it's safe and secure and the services are accessible for the beneficiaries. Counsellors provide psycho-social counselling support to women who visit the clinics." (Women's organization, Afghanistan)

Advocacy actions: Movements advocate for representation from women's organizations at forums and committees to improve the fidelity of programs. Efforts are also made to

strengthen state institutions by providing technical assistance for capacity building, planning, and monitoring of interventions. Their approaches include gathering women's voices as evidence to influence policy interventions and engaging with the government by providing technical assistance in planning, capacity building, and monitoring of programs and policies. It adopts a bottom-up approach and facilitates dialogues between women from communities and the government systems to address their demands and improve access, coverage and quality of services, rights, and entitlements.

"We believe the most important stakeholder is the government…for the intervention to sustain and have maximum impact. We assist them in addressing the gaps, we do our landscaping analysis, identify the gaps, and then work with the government and give technical assistance to address those [gaps]. Started campaigns where these women's voices are as strong as any evidence, not just numbers… every sentence is a story." (Women's organization, Pakistan)

Local mobilisers with women's self-help groups implement actions at the community level to address gender norms and practices, create awareness, generate demand for services, and support access to rights. Organizations also foster multi- and inter-departmental convergence to improve coverage, intensity, and quality of services. Other methods implemented to improve access to maternity entitlements and rights for the unorganized rural sector include influencing acts, public hearings, networks and campaigns and community-level monitoring of outcomes.

4. Discussion

Our findings from the rapid review of literature on women's groups and qualitative interviews with women's rights-based organizations and experts provide insights on the pathways through women's groups as well as the potential of engaging rights-based organizations for improving nutrition outcomes of women, girls and children across South Asian countries. First, women's groups are engaged through seven distinct pathways to improve health and nutrition outcomes – A) income, (B) agriculture, (C) health and nutrition behavior change communication (with or without participatory learning and action approach), (D) rights pathways**,** (E) food access, (F) cash transfers, and (G) strengthening service delivery and fostering convergence with health systems. Second, women's rights-based organizations and movements in South Asia address diverse issues, including women's rights, microfinance, livelihoods, women's health and nutrition, and violence against women. They work towards a) creating an enabling environment, b) enhancing access to food, and c) increasing access to services by leveraging grassroots mobilization, programmatic actions, and policy advocacy.

Nutrition is a complex outcome that requires sustained efforts to change. There are multiple reasons why nutritional behaviors and hard nutritional outcomes such as anthropometry are challenging to make an impact on. Nutrition outcomes are complex and challenging to achieve for multiple reasons: a) many of the nutrition practices, such as iron folic acid consumption, dietary diversity and exclusive breastfeeding, require sustained inputs and support [22] b) effects of optimal nutrition practices are not seen immediately on the measurable long-term outcomes, such as anemia, thinness, overweight/obesity, stunting and wasting; and c) negative influence of other social determinants including but not limited to lack of information about appropriate nutrition practices and government schemes/ policies/ entitlements, food accessibility/ affordability, gender stereotypes and prevailing socio-

cultural norms. These factors thereby highlight the need for a multidimensional approach and pathways to improve nutrition outcomes among adolescent girls and women. Few studies in our review from Bangladesh, India and Nepal demonstrate women's groups implementing a combination of pathways rather than a single pathway to improve health and nutrition outcomes, i.e., a) participatory learning and action approach along with food transfers [21]; b) participatory learning and action approach with cash transfers [21]; and c) integrating income, participatory learning and action approach with agriculture and livelihoods, rights, and systems strengthening [38]. These were implemented via open participation and a *collective* approach.

Women's rights-based organizations and movements have been engaged in advocating for and advancing women's rights [39]. Our findings highlight their scope and potential strength to provide a multisectoral approach for improving nutrition outcomes by addressing gender-based violence as well as other interrelated issues, including occupational health and safety and economic and social deprivations, to promote human rights that affect nutritional outcomes. They can catalyze food and nutrition agendas, contributing to program design, implementation and monitoring. Engaging women through participatory learning, identifying problems and solutions has promise to address the most pressing and/or feasible barriers to nutrition outcomes. The power of collectivization of women through women's rights-based organizations and movements can support in improving the supply of services as well as increasing the uptake and utilization of services. Through a participatory learning and action (PLA) approach, the service-level gaps and challenges identified by groups can be addressed through systems strengthening efforts [30]. These efforts include improvement of existing service delivery platforms, building capacity of service providers and regular review and

505 convergence meetings or forums. Such efforts create a systemic push to strengthen the supply
506 of services.
507
508 Leveraging widespread movements such as the Right to Food and access to land and natural
509 resources can promote local food access, production, and consumption. Women's groups and
510 organizations can aid and supplement government efforts through outreach, advocacy and
511 community engagement and ensure better resource allocation within local government.
512 Women's rights-based organizations and experts across India, Nepal and Bangladesh
513 highlighted that social auditing of programs via women's groups can build accountability and
514 enhance implementation of programs and schemes. Recent programs trialed at scale in one
515 state of India noted improvements in knowledge and awareness of services, entitlements and
516 grievance mechanism as well as increase in community engagements and voice in local
517 decision-making [40]. In addition, they can positively impact high coverage and could be a
518 mechanism to engage a wider demographic, including young women and other family
519 members, including males.
520
521 Different pathways through women's groups have been implemented across geographies,
522 highlighting their potentiality and approaches to improve health and nutrition outcomes.
523 Evidence on their effectiveness to improve nutrition is varying, with an underlining emphasis
524 on adopting multi-pronged, participatory strategy with adequate intensity [18]. Poor nutrition
525 is a cause and consequence of gender inequality and lack of agency among women and girls
526 across the economy, food system, health system and climate change. To promote nutrition
527 rights, nutrition programs should address inequalities and enhance women's empowerment
528 [29, 41]. Women's groups have the potential to strengthen women's capabilities to create an
529 enabling environment and improve resources that can empower them socially, politically, and

economically. We found that women's groups and movements have demonstrated the potential of working with local government and in legislation and policy; mobilizing communities and improving health and nutrition behavior outcomes; promoting nutrition-sensitive agriculture practices; securing reproductive health rights; and addressing gender barriers at scale. Recent Lancet series on maternal and child nutrition provides updated evidence to address maternal and child malnutrition, focusing on indirect health-care and other sectoral interventions affecting nutrition (including poverty alleviation strategies, women empowerment, mental health, child protections, among others) [42]. With their reach to the most marginalized, at-scale and potential multiplier factor, women's groups, rights-based organizations and movements can be key strategies to address indirect health-care and other sectoral interventions and achieve Sustainable Development Goals.

4.1. Limitations of the study

The rapid review of literature aimed to consolidate existing evidence and identified pathways rather than appraise the quality of the evidence or assess the effect sizes. The findings, thus, need to be interpreted within this context. Also, this review and mapping are not representative of all South Asian countries and possibly have missed grey literature and other documentation of women's rights-based organizations and movements across these countries due to time and resource constraints. We could identify studies only across India, Bangladesh and Nepal. No published or grey literature published between 2018 and 2022 was available for Pakistan, Afghanistan, Sri Lanka and Maldives. Furthermore, only a few studies measured interventions designed to improve girls' and women' nutrition outcomes. This highlights the need for robust testing of the effectiveness of a combination of pathways of women's groups to improve girl's and women's nutrition outcomes and calls for more updated research from Pakistan, Afghanistan, Sri Lanka and Maldives.

555

556 ***4.2.Recommendations***

557 We recommend expanding investments in examining the effective implementation of
558 integrated interventions that harness the combination of food-systems-rights pathways
559 through women's groups. This will showcase evidence to improve nutritional outcomes
560 among adolescent girls and women from interventions using a combination of pathways
561 compared to those using a single pathway in South Asian settings. Investing in women's
562 groups can support advancing women's rights by transforming social, economic, political,
563 and legal systems. Initiating pilot interventions using a combination of effective pathways in
564 different settings in South Asia can support generating robust evidence for scale-up.
565 Women's groups are strategically placed to assess and challenge social norms and powers as
566 well as collectivize to act together. Such characteristics provide women's groups with the
567 leverage and the potential for change at-scale. It is critical to identify strategies and
568 opportunities to strengthen advocacy, policies, program design, research, and knowledge on
569 nexuses between women's groups, gender and social determinants, and nutrition outcomes
570 among girls and women in the region. Expanding experiments across South Asia and building
571 evidence on the effectiveness of women's groups interventions and what works can support
572 actualizing their potential in different contexts.

573

574 We also recommend building coalitions of women's rights-based organizations across South
575 Asia to advance women's nutrition rights. This can be achieved by establishing a network of
576 organizations with a nodal entity in South Asia that amplifies collective voice in
577 policymaking and programmes to advance nutrition rights and improve nutritional outcomes
578 among adolescent girls and women. The existing potential of coalitions of women's

579 organizations working with women's groups that include advocates, grassroots champions,
580 researchers, organizations, and movements can be harnessed to improve nutrition across
581 South Asia. The fundamental principles of group or movement-based engagement, i.e.,
582 women-centered and led programming, strengthening social capital and leadership, while
583 building networks and community advocacy, are instructive to improve future nutrition
584 programming in South Asia. It is critical also to ensure sustained engagement through broad
585 dissemination, including seminars/ conferences, webinars, virtual meetings and
586 policy/advocacy briefs, knowledge exchange and sharing of research methods, tools and data.
587 It becomes imperative bring the spirit of a 'movement' rather than 'layering' an add-on
588 intervention to harness the 'power' with women's rights-based organizations as partners in
589 improving nutrition. Working with women's groups and movements can ensure justice and
590 equity in nutrition agendas, where women are at the forefront of deciding their priorities,
591 demanding their rights and services, and acting and pushing for social change and
592 accountability through collective actions.
593

594 **Conflict of Interests**

595 The authors declare that they have no conflict of interests
596

597 **Author Contributions**

598 VS, SD, AH and MS were involved in the conceptualization and design of the study. RJ, KW
599 and MS implemented the study and completed the collection of data. RJ, KW and MS
600 undertook the search and screening of literature, analysis, synthesis, and interpretation of
601 data. MS and AH wrote the manuscript. VS, ZM, SD, AN, VKN and SD reviewed the
602 manuscript. MS and AH revised the manuscript based on reviewers' and Editor's comments.
603 All authors read and approved the final manuscript.

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Availability of data and materials

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

Ethics statement

Not applicable

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Tables

Table 1: Search terms used in the rapid review of literature

Database	Query
PubMed	(Microfinance*[tw] OR microcredit*[TW] OR "cash transfer*"= OR "micro-finance" OR "micro-credit" OR microloan* OR "micro-loan" OR microlending OR microinsurance OR "micro-insurance" OR "village bank" OR "savings group" OR "village banks" OR "savings groups" OR "self help group" OR "self help groups" OR "self-help group" OR "self-help groups" OR "self-help groups"[Mesh] OR "community mobilization"[TW]OR "community mobilization"[TW] OR "social mobilisation" OR "social mobilization" OR "community mobilisation"[TW] OR "financial support"[Mesh]) AND ("female"[Mesh] OR women OR "women"[Mesh] OR "mothers"[Mesh] OR "women's group" OR "women's groups" OR "women's group-based") AND ((("breastfeeding" OR "breast feeding"[Mesh] OR "breast feeding" OR "maternal health" OR "neonatal health" OR "child health" OR "family health" OR Nutri* OR Micronutri* OR Macronutri* OR Body Mass Index OR Anthropometr* OR Arm circumferen* OR Stunt* OR Wast* OR Underweight OR Anemi* OR Hemoglobin OR Diet* OR Food* OR Feed* OR Calori* OR Grow* OR Breast*fe* OR Complementar* OR Feed* OR Birth* OR weigh* OR Vitamin* OR Mineral* OR feeding[tiab] OR "malnutrition"[Mesh]) AND (intervention*[tiab] OR program*[tiab] OR promotion[tiab] OR train*[tiab] OR education[TW] OR campaign*[TW] OR service*[Tiab] OR control*[tiab]) OR "health promotion"[Mesh] OR "health education"[Mesh]OR "health knowledge, attitudes, practice"[Mesh]) AND (South Asia[tw] OR India[tw] OR Maldives[tw] OR Nepal[tw] OR Pakistan[tw] OR Sri Lanka[tw] OR Ceylon[tw] OR Afghanistan[Mesh:noexp] OR Bangladesh[Mesh:noexp] OR Bhutan[Mesh:noexp] OR Sri Lanka[Mesh:noexp]) AND (("2017/01/01"[Date - Entry] : "2022/10/01"[Date - Entry]))
Google Scholar	(Wom* OR Moth* OR Mat*) AND (Group* OR Collectiv* OR Organi* OR Coop*) AND (Nutri* OR Micronutri* OR Macronutri* OR Body Mass Index OR Anthropometr* OR Arm circumferen* OR Stunt* OR Wast* OR Underweight OR Anemi* OR Hemoglobin OR Diet* OR Food* OR Feed* OR Calori* OR Grow* OR Breast*fe* OR Complementar* OR Feed* OR Birth* OR weigh* OR Vitamin* OR Mineral*) AND (South* OR Asia* OR Afghanistan* OR Bangladesh* OR Bhutan* OR India* OR Maldives* OR Nepal* OR Pakistan* OR Sri Lanka*) Or women group + nutrition+ SHG+ anthropometry (filter since 2018)
Scopus	((((microfinanc* OR microcredit* OR "cash transfer*" OR microlending OR "micro-lending" OR "saving group*" OR "savings group*") OR TITLE-ABS-KEY("micro-finance" OR "micro-credit" OR microloan* OR "micro-loan" OR microinsurance OR "micro-insurance" OR "village* bank*" OR "community mobilization" OR "community mobilization" OR "social mobilization" OR "community participation" OR "financial support" OR financ* OR funding OR economic)) AND (((female OR woman OR women OR mother* OR women`s OR mother`s) W/6 group*) OR "women`s group" OR "women`s groups" OR "women`s group-based")) OR "self help group" OR "self help groups" OR "self-help groups" OR "self-help group" OR ("self help" W/4 (group* OR base*))) AND (((health OR "infection" OR "sanitation" OR "waste management" OR "psychiatry" OR "wellbeing" OR "well-being" OR "human immunodeficiency virus infection" OR "breastfeeding" OR "breast feeding" OR "acquired immunodeficiency syndrome" OR

	“malaria” OR “violence” OR “maternal health” OR “maternal care” OR “neonatal health” OR “family health” OR “child health” OR “sexual health” OR “women`s health” OR “newborn health” “safety” OR “family planning” OR immunization OR “vaccination” OR “malnutrition” OR “medication compliance” OR “child growth” OR “sexually transmitted disease” OR “obstetric deliver*” OR TITLE-ABS-KEY(infection* OR infectious OR toilet* OR “toilet facilit*” OR psychiat* OR “mental health” OR “hiv” OR “aids” OR violen* OR vaccine* OR nutrition OR “health behavior*” OR “health behaviour*” OR “water-borne” OR “vector-borne” OR “health awareness” OR “sexually transmitted disease*” OR “school health”) OR TITLE-ABS(feeding OR “std”)) AND (TITLE-ABS(intervention* OR program* OR promotion OR train* OR education OR service* OR control*) OR TITLE-ABS-KEY(campaign*))) OR “health promotion” OR “health education” OR TITLE-ABS-KEY(“attitude to health” OR “health knowledge”)) AND (India OR Maldives OR Nepal OR Pakistan OR Sri Lanka OR Ceylon OR Afghanistan OR Bangladesh OR Bhutan OR Sri Lanka)

750

751 **Table 2:** Details of studies included in the rapid review

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
1	Nepal Rural areas - two districts	Saville et al. (2018) [21]	Impact evaluation	Cluster-randomized control trial	Married, pregnant women aged 10–49 years	**<u>Low Birth Weight South Asia Trial (LBWSAT) intervention</u>** 1. All intervention arms had a participatory learning and action (PLA) component where malnutrition during pregnancy and low birth weight in newborns is discussed. Activities included monthly PLA meetings, home visits to pregnant women, meetings with mothers-in-law, adolescent girls, and male family members, rallies; mass media like video screening 2. The food transfer in the PLA plus food arm was 10 kgs per pregnant woman per month of a fortified balanced energy protein (BEP) supplement of wheat-soya blended flour with 10% added sugar called Super Cereal (previously Wheat Soya Blend +) 3. The cash transfer in the	Existing government programs (Women in control arms received NPR 1000 at the end of the study)	Compared to the control arm (n = 464), mean birthweight was significantly higher in the PLA plus food arm by 78.0 g (95% CI 13.9, 142.0; n = 626) and not significantly higher in PLA only and PLA plus cash arms by 28.9 g (95% CI -37.7, 954; n = 488) and 50.5 g (95% CI -15.0, 116.1; n = 509), respectively. The odds of not having a low birthweight baby were statistically insignificant across all arms, compared to control. Diet diversity (not significant) and adequate frequency (significant) for women in PLA plus cash arm. Institutional deliveries, low rate of colostrum discarding in PLA plus food arm (significant). No effect on neonatal morbidity, weight-for-age *Z* scores, maternal and child anthropometry, preterm birth, infant and young child feeding

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
						PLA plus cash arm was NPR 750 (= USD 7.5) per pregnant woman per month, equivalent to the cost of 10 kgs of Super Cereal or two days' wage labor. 4. Women in PLA-only arms received NPR 1000 (= USD 10) at the end of the study.		behaviors, child dietary diversity, consumption of green leafy vegetables, fruits or meat
2	Nepal Rural areas - two districts	Harris-Fry et al. (2018) [35]	Process evaluation#	(Same as above)	(Same as above)	(Same as above)	(Same as above)	Providing cash has better effects on dietary diversity of women. Food transfers increase equity in intra-household energy allocation. PLA improve food security and nutrition for pregnant women. Dietary iron adequacy was higher for both transfer arms. PLA plus cash arm recorded higher odds of consuming iron-folate supplements, dairy and mean dietary diversity than control arm. PLA plus food arm resulted in significantly higher relative dietary energy adequacy ratios (RDEARs) for pregnant women and mothers-in-law.
3	Nepal Rural areas - two districts	Gram et al. (2019) [36]	Process evaluation#	Qualitative process evaluation informed by	Beneficiary women, mothers-in-law, sisters-in-	(Same as above)	(Same as above)	Women's group and cash transfer intervention achieved substantial improvements in dietary diversity, micronutrient

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
				grounded theory	law and husbands; Supervisors			adequacy, consumption of dairy foods, and relative intra-household allocation of dairy foods to pregnant women but not particularly on birthweight.
4	India One state Rural Bihar	Saggurti et al. (2018) [22]	Impact evaluation	Quasi-experimental	Mothers of children up to 12 months of age	Behavior change health intervention with participatory training around maternal, neonatal, and child health issues and supply and demand intervention, layered with existing microcredit interventions by self-help groups.	Existing microcredit intervention	The net increase with health integration among self-help groups for timely initiation of breastfeeding was 20 percentage points (p<0.05), exclusive breastfeeding showed statistically significant increase over time for self-help groups with health integration than without health integration. The findings indicate that behavior change communication on life-saving maternal and newborn care practices with women's groups led to a substantial improvement in maternal, newborn and child healthcare practices among most marginalized women in India.

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
5	India Three states Rural areas - Jharkhand, Odisha, Bihar	Gope et al (2019) [23]	Impact evaluation	Quasi-experimental; non-randomized controlled repeated cross-sectional survey	Children under three years of age and their mothers	**<u>Action Against Malnutrition (AAM) intervention</u>** 1. Monthly Participatory Learning and Action (PLA) meetings with women's groups followed by counselling through home visits 2. Crèches for children aged six months to three years (providing one full meal, two snacks and two eggs per week combined with PLA meetings and home visits.	No project intervention	Effects on: Wasting (vs control): PLA + home visits: p=0.004 Creches + PLA + home visits: p=0.028 Underweight (vs control): PLA + home visits: p=0.018 Creches + PLA + home visits: p<0.001 Stunting (vs control): PLA + home visits: p=0.099 Creches + PLA + home visits: p=0.012 Mixed results among PLA+ home visits & Creches++ for infant and young child feeding practices and services Composite index of anthropometric failure (either wasted, or stunted, or underweight, or any combination of these anthropometric failures) PLA + home visits: p=0.617 Creches: p<0.001

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
6	Nepal Rural - 1 district	Miller et al. (2020) [24]	Impact evaluation	Longitudinal randomized control trial	Children aged 1–60 months and their family members	**Heifer Intervention** 1. Partial package: livestock training and nutrition education only 2. Full package: Social Capital Development (poverty alleviation, citizen empowerment, community development), Nutrition education and livestock management training. Trainings were delivered intensively for 12 months and followed by another 24 months of less concentrated supervision. The intervention was delivered through self-help groups biweekly meetings. At the end of the 12-month period, each woman was given a female goat with an obligation that the first born of the goat must be given to the next-door neighbor. This was done to ensure sustainability and a sense of responsibility.	No project intervention	Households receiving full package showed better results on child anthropometric outcomes at endline (weight-for-height *Z* scores: 0·59***, height for age *Z* scores: −0·38***, weight-for-age *Z* scores: 0·18***, head circumference *Z* scores: 0·24***, mid upper arm circumference *Z* scores: 0·58***). Full Package households demonstrated preferential child feeding practices and had significantly more improvement in household wealth and hygiene habits.
7	India	Hazra et al. (2020) [25]	Impact evaluation	Quasi-experimental; two cross-	Currently marriage women aged	**Uttar Pradesh Community Mobilization Project**	Regular microfinance activities and	Statistically significant improvement in six outcomes that increased by 5–11

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
	One State - Uttar Pradesh			sectional surveys	15–49 years with child age <1 year	multi-component intervention including: 1. self-help group meetings 2. Health discussion in self-help group meetings, 3. Swasthya Sakhis made home visits, 4. Leaflets distribution, 5.Village Health and Nutrition Day, 6. Night meetings with women who missed morning regular meetings, 7. *Purwa* meeting including non-self-help groups members and men, 8. health video shows. 9. *Godhbharai event and Annaprasan diwas.*	government programs	percentage points over time in self-help group families in the intervention areas, as compared to self-help group families in comparison areas: at least four antenatal care visits (p=0.004), at least three tests during antenatal care visits (p<0.001), postnatal check-up (p=0.013), current use of any contraceptive methods (p<0.001), clean cord care (p=0.004) and timely initiation of breastfeeding (p=0.047). The process evaluation (Hazra et al., 2022) tells us that the health discussion only happened for about 30 minutes over a month, thus retention of key information is questionable. No effects of mass media due to low exposure.
8	India One state - Rural Bihar	Ojha et al. (2020) [26]	Impact evaluation	Cluster-randomized control trial	Women and children under five years	**<u>Rojiroti intervention</u>** Formation of self-help groups and regular loan taking for various reasons as the discretion of the women.	No Rojiroti intervention; women could join non-Rojiroti self-help groups.	Significant differences only for weight-for-age *Z* scores (p=0.02) and the prevalence of underweight (p=0.02). Nutritional outcomes were similar in children in intervention areas where their mothers were members of a Rojiroti self-help groups. There were no differences with non-

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
								Rojiroti self-help groups membership.
9	India - 1 State (Rural Bihar)	Mehta et al. (2020) [27]	Impact evaluation	Cross-sectional survey	Mothers of children up to 12 months of age	Layering SHG platforms with health actions - demand creation, self-efficacy, collective actions, linkage with FLWs of health and health systems	Non-SHG members	Self-help groups membership was associated with higher levels of a range of health, nutrition and sanitation-related indicators compared to non-members. The effect sizes were modest (significant odd ratios ranging from 1.0 to 1.7) and evident across domains of antenatal care and birth preparedness, postnatal care, complementary feeding/nutrition, sanitation and family planning. The effect sizes were weaker for delivery and no immunization indicators
10	Bangladesh	de Hoop et al. (2020) [28]	Impact evaluation	Cross-sectional survey	Mothers of children 0-24 months	**BRAC nutrition maternal nutrition and child health program** 1. Capacity building of Community health workers in nutrition who make household visits to children up to 24 months at regular intervals. 2. Additionally, BRAC staff delivers infant and young child feeding information through home visits, health forums and social	No project intervention	Positive effects on child nutrition outcomes such as dietary diversity for children >6 months (p<0.01), number of meals per day (p<0.01) and exclusive breastfeeding for children <6 months (p<0.01). Interventions reduced stunting by seven percentage points (p<0.01).

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
						mobilization. 3. Community health workers maintain records of all new births in their area and report their vital stats regularly up to five years of age of child; provide counselling during antenatal care and postnatal care visits		
11	India One State - Rural Odisha	Kadiyala et al. (2021) [29]	Impact evaluation	Cluster-randomized control trial	Mothers/ caregivers of children aged 0–23 months	**UPAVAN trial** 1. Agriculture group: women's groups met fortnightly and reviewed Nutrition-Sensitive Agriculture (NSA) videos. 2. Agriculture + Nutrition group: women met fortnightly and saw and discussed NSA videos and nutrition videos on maternal and child nutrition. 3. Agriculture + Nutrition + PLA: women's groups met fortnightly-saw NSA and nutrition videos and had four cycle PLA procedure on the groups to identify and solve nutrition concerns in the community.	No UPAVAN intervention	Increase in children's minimum diet diversity (ate >4 groups) in Agriculture + Nutrition vs control (p=0.02) and Agriculture + Nutrition + PLA (p<0.001) and maternal Diet diversity (ate >5 groups) in Agriculture + Nutrition + PLA (p<0.001). No effects were found on maternal body mass index and child wasting.

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
						All three groups had follow-up visits by facilitator Government Front Line Workers (FLWs) – Anganwadi Workers (AWW), Accredited Social health Activist (ASHA) received 2-day training on maternal and child nutrition		

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
12	India Three states Rural areas - Bihar, Chhattisgarh and Odisha	Shrivastav et al. (2021) [30]	Impact evaluation	Prospective, non-randomized control trial, cross-sectional survey	Adolescent girls aged 10–19 years, pregnant women and mothers of child under two years of age	**Swabhimaan program** Interventions are delivered through a combination of community-led and systems-led efforts. Community-led intervention delivered through self-help groups and its federations (Village organization and Cluster-level federation), using PLA approach for adolescent girls and women. These include monthly PLA meeting, actions for nutrition risk, NSA activities and linkage with services and entitlements. Systems strengthening includes improvement of Village Health, Sanitation and Nutrition Days, Adolescent Health Days, capacity building of service providers from food security, Health, Integrated Child Development Services (ICDS) and water and sanitation departments, regular review and convergence meetings.	Only systems strengthening	Midline results show a reduction in thinness in adolescent girls (13.8% versus 18.5% at baseline) and mothers with children under two years of age (44.6% versus 48.4% at baseline) and an increase in the average mid-upper arm circumference of pregnant women (24.0 cm versus 23.5 cm at baseline). Evidence also shows improved household food security and improved uptake of government health, water, sanitation and hygiene and social protection services.

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
13	India One State- Rural Odisha	Das (2021) [31]	Process documentation	Qualitative	Program team at State, District and Block; women leaders and group member from self-help group institutions; women farmers; community cadres	**Mo Upakari Bagicha initiative** 1. Community meetings through PLA-LANN (Participatory Learning Action – Linking Agriculture and Natural Resources to Nutrition) approach. 2. Promotion of nutrition gardens for improving diet diversity 3. Home visits to promote infant and young child feeding practices and access to nutrition entitlements	N/A	Positive change in community knowledge and behavior on nutrition and dietary diversity, increased dietary diversity in the household, adoption of organic process of cultivation, reduced market dependency. Other changes observed included increased household disposable income, decision making by women regarding household diet, better farming practices, increase livestock productivity.
14	India Five States Rural Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha and West Bengal	Scott et al. (2022) [32]	Impact evaluation.	Quasi-experimental, cross-sectional survey.	Women with children ages 6–23 months.	**WINGS intervention** 1. Standard PRADAN intervention (STD group). PRADAN forms self-help groups and has agriculture focused discussions in self-help groups as a standard livelihood enhancing feature. 2. Nutrition intensive group: behavior change communication intervention delivered to self-help groups women by Poshan Sakhis.	No project intervention	Positive effect on knowledge of timely introduction of animal-sources food among women in nutrition intensive blocks. Egg or flesh food consumption significantly increased in nutrition intensive group compared to STD group ($p<0.01$). No effect found on any anthropometry or diet measures of children 6–23 months.

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
						Additional community events include body mass index camps and cooking demonstrations.		
15	India Two States Chhattisgarh and West Bengal	Nichols et al. (2021) [37]	Process study^	Qualitative	Block level program staff, Mentors, Nutrition volunteers, self-help group members and mothers of children up to two years	(Same as above)	N/A	Early marriage and dietary diversity appeared to be the most frequently and enthusiastically discussed topics with maximum retention. Topics like contraception, child nutrition and maternal nutrition, etc were not as successful. Stories were less effective due to their complexity and difficult for volunteer facilitators to communicate.
16	India One state Rural Bihar	Irani et al. (2022) [33]	Outcome-process evaluation	Quasi-experimental, cross-sectional survey and process evaluation	Mothers of children aged below two years	**Mobile Vaani** is direct to beneficiary mobile health communication program comprising a two-way messaging system, which include outbound interactive voice response calls and a mechanism for beneficiaries to call in and record their own content.	No project intervention.	When introduced to Mobile Vaani through self-help groups, women's knowledge of key health and nutrition outcomes improved for two out of seven key indicators. The study provides evidence that mobile-based interventions could evolve into a modality to reach marginalized populations through systematic planning when coupled with other interventions on the ground.

S. N.	Setting	Study	Type	Design	Participants	Intervention	Comparison	Outcome(s)
17	India One state Rural Bihar	Verma et al. (unpublished ; 2022) [34]	Impact evaluation	Quasi-experimental	Women with children ages 6–23 months	**Nutrition Intensive Sustained Engagement (NISE) pilot intervention:** a) discussions on nutrition in self-help group meetings b) targeted reinforcement of messages through home visits by Health Sub-Committee member c) community level campaigns d) Village organization-level review of activities through Navratna tool e) convergence with other line departments, mobilization to Village Health, Sanitation and Nutrition Day, organizing behavior change communication events.	No project intervention	Improvements recorded in timely initiation of breastfeeding (*DID*: 9.4, $p<0.05$), exclusive breastfeeding (*DID*: 13.0, $p<0.001$), child dietary diversity (*DID*: 12.9, $p<0.001$), minimum meal frequency (*DID*: 24.9, $p<0.001$) and minimum acceptable diet (*DID*: 16.1, $p<0.001$).

Note: [#]Harris-Fry et al., 2018 and Gram et al., 2018 are process studies related to the impact evaluation by Saville et al., 2018; [^]Nichols et al., 2021 is a process study related to the impact evaluation by Scott et al., 2022

Abbreviations: ASHA, Accredited Social Health Activist; AWW, Anganwadi Workers, BEP, balanced energy protein; FLWs, Front Line Workers, ICDS, Integrated Child Development Services; N/A, Not Applicable; NSA, Nutrition-Sensitive Agriculture; PLA Participatory Learning and Action; RDEARs, relative dietary energy adequacy ratios

760 **Figures**

761 **Figure 1:** Flow diagram showing study selection

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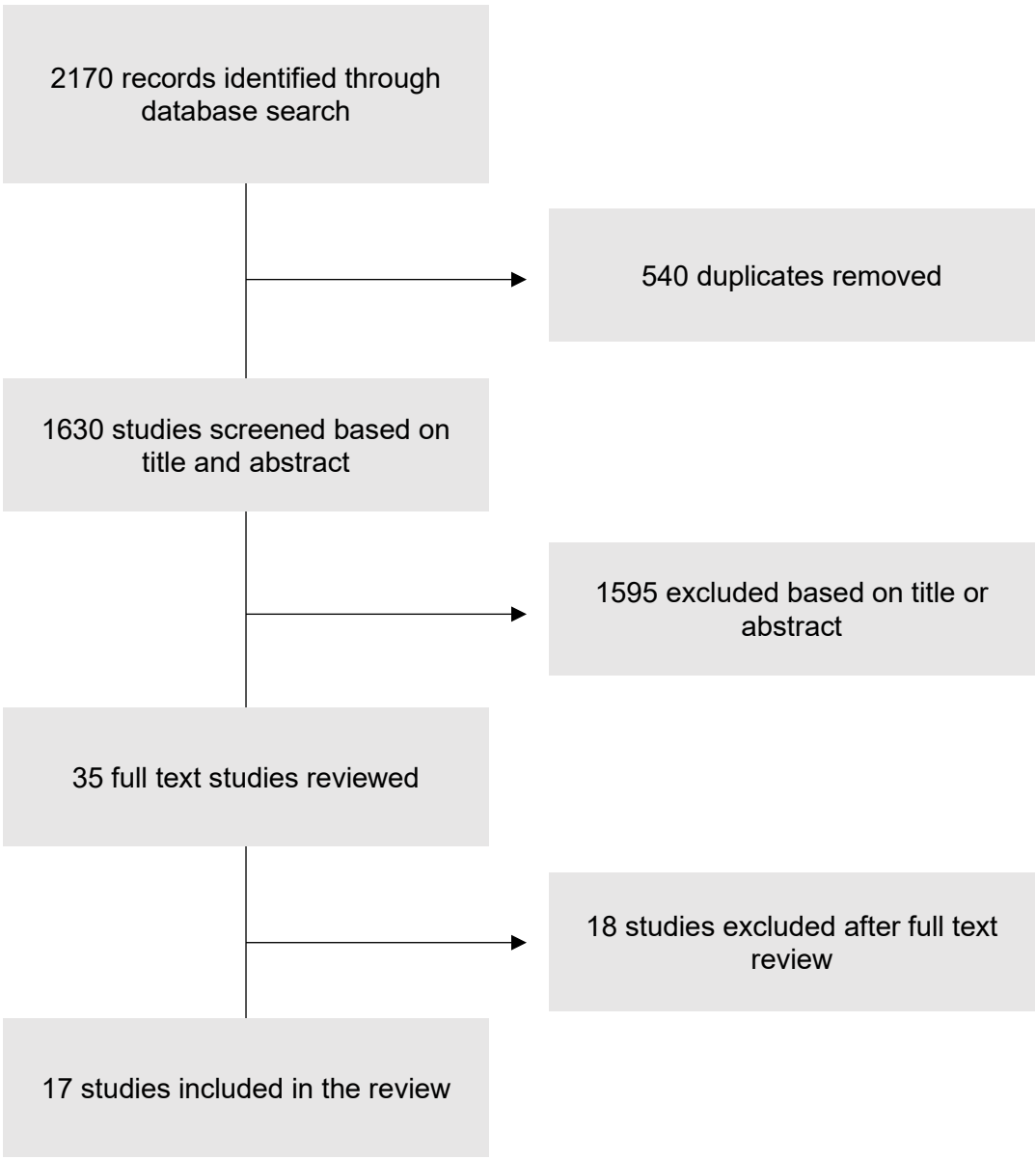

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Figure 2: Process of identification of women's rights-based organizations and experts across seven South Asian Countries (Afghanistan, Bangladesh, India, Maldives, Nepal, Pakistan and Sri Lanka)

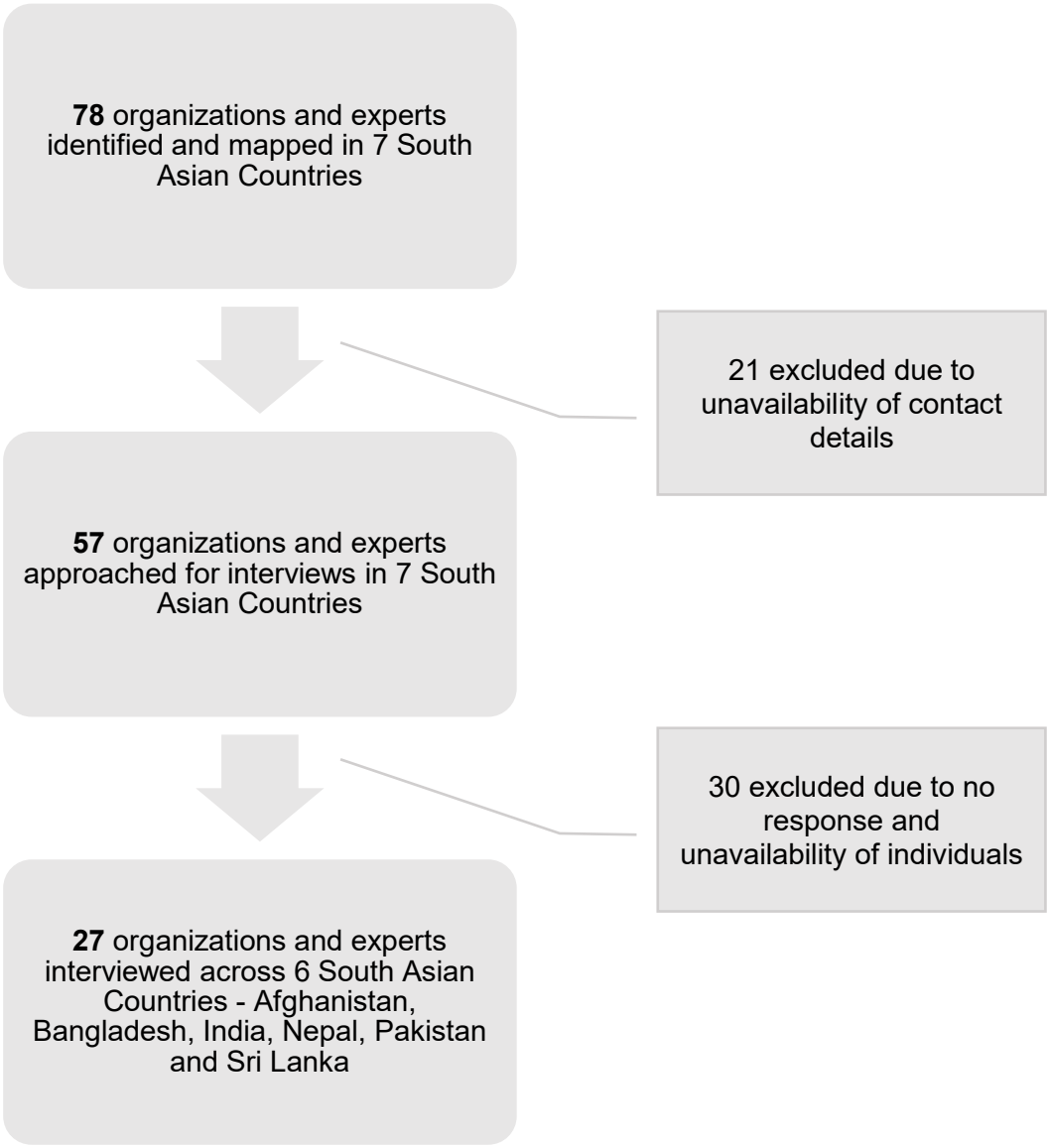


Figure 3: Types of women's groups led interventions and their descriptions

Income: Invites women from the community to form savings and credit groups that meet regularly to invest small monetary sums, which enable them to receive loans for emergencies and/ or other livelihood ventures [26]

Agriculture: Directly providing a livestock animal to women (along with trainings to keep the animal healthy and thriving), which could function as a source of livelihood.[24, 29, 32]

Behavior change communication: Taps existing functional groups to educate women on various themes such as health, nutrition and agriculture using verbal discussions, flip charts, videos, etc. These discussions may be didactic, classroom style or participatory depending on the intervention design – behaviour change communication is expert-led whereas, participatory learning and action cycle is community-led [21–25, 27–29, 32, 34, 38]

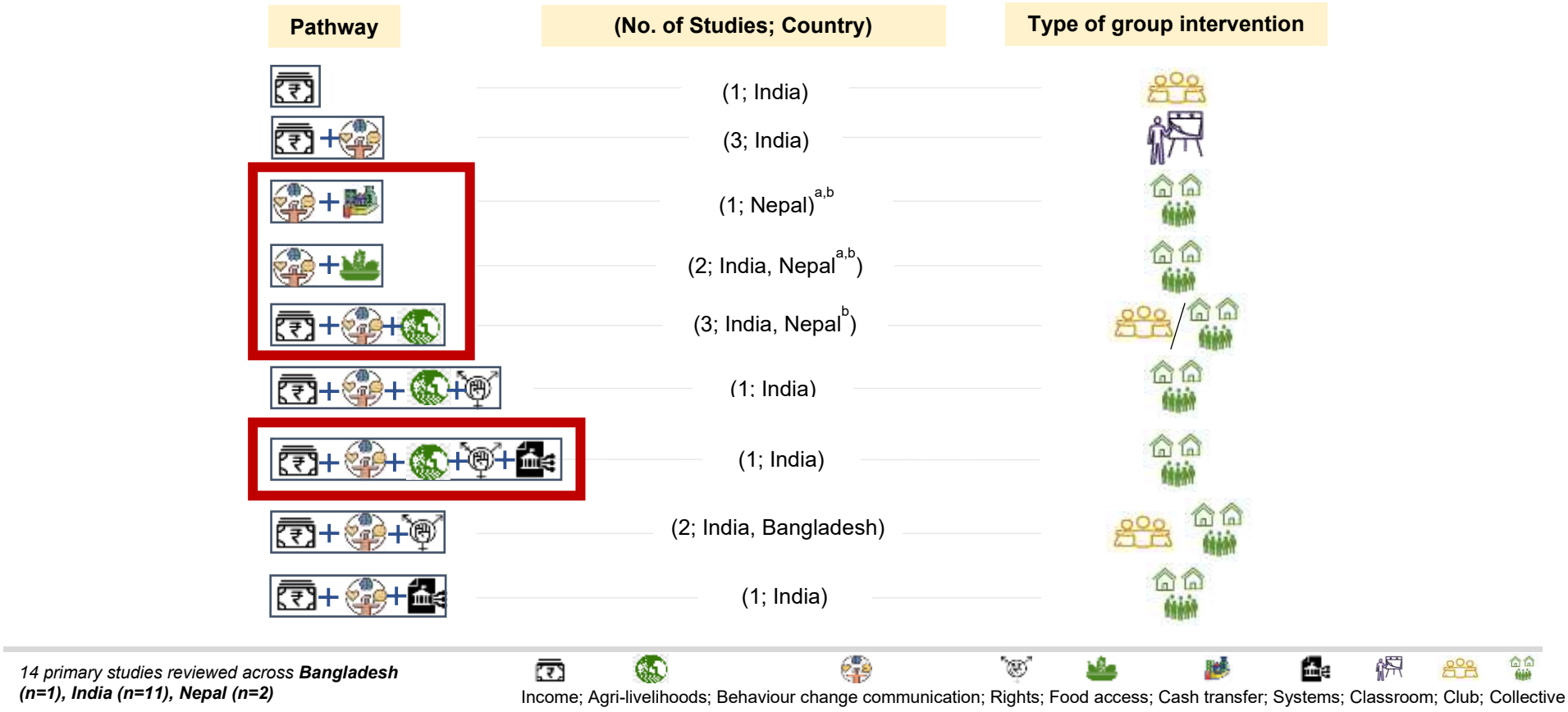
Rights: Trains women about their rights and entitlements as well as mobilizes and supports them to demand for their rights and hold service providers accountable to deliver the services [25, 28, 29, 38]

Food access: Directly supplements women and children with nutritious food. These could be distributed in women's groups' meeting or given to malnourished children in creches [21, 23]

Cash transfer: Provides cash in hand, minimal sums of money are given to women during pregnancy, childbirth, etc. with the aim to overcome the financial deficit barrier in attaining a healthy nutritious diet [21]

Systems: Strengthens service delivery of health systems by capacitating staff, follow-up, and review. Also establishing convergence across government departments for service delivery [34, 38]

Figure 4: Women's groups and nutrition: Intervention pathways



Source: Rapid review of literature by Population Council Institute

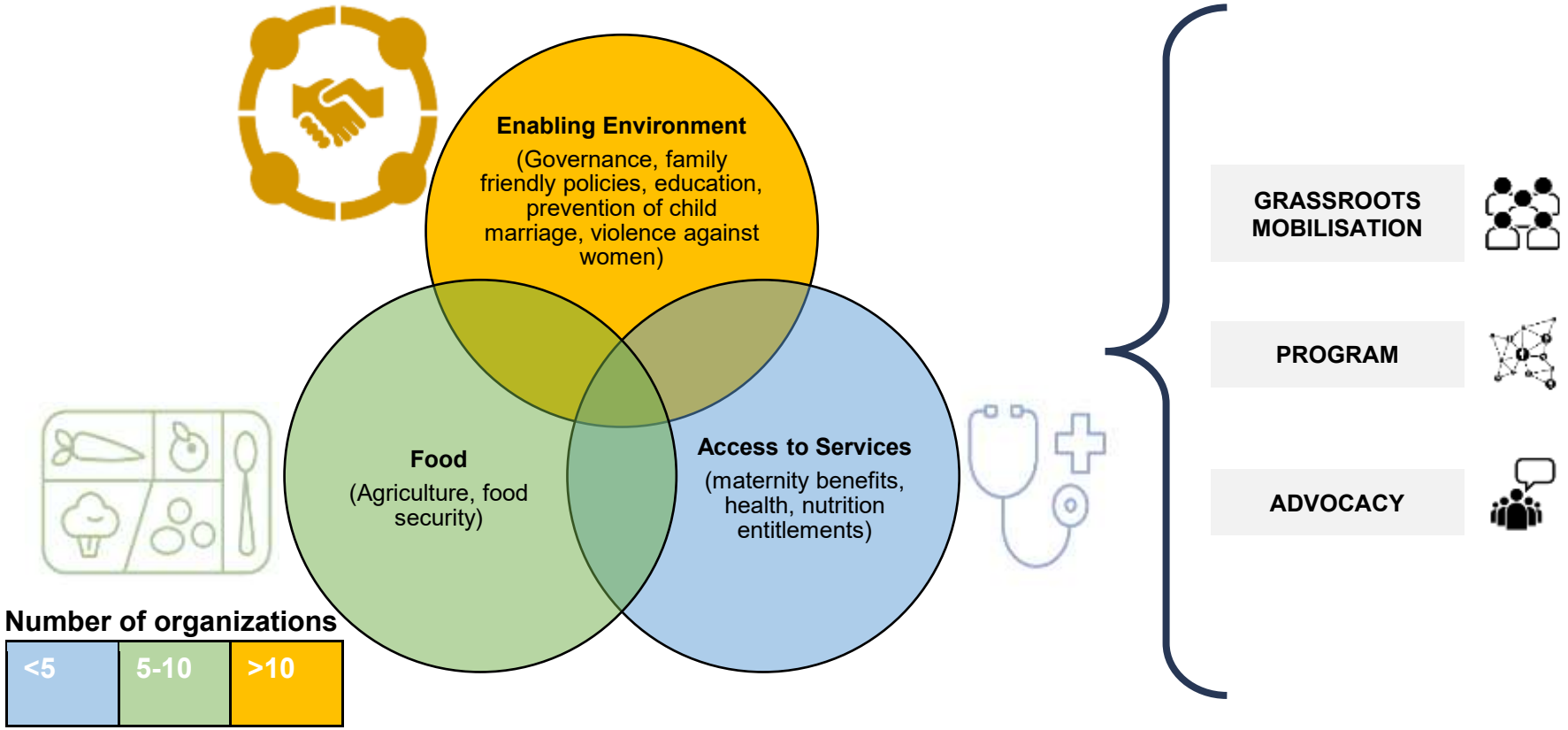
Note: Total 17 studies, including 14 primary and 3 process studies related to primary studies; [a]One study in Nepal has two arms - cash and food transfer – for identifying the pathways, the authors have separated this study into two distinct pathways; [b]Three studies (Harris Fry et al., 2018; Gram et al., 2018; Nichols et al., 2021) are not shown as they were process/qualitative evaluations of the two studies (Saville et al., 2018; Scott et al., 2022)

Figure 5: Women's organizations' broad work domains in South Asia

Source: Based on the literature review and key informant interviews by Population Council Institute

Abbreviation: SRHR, Sexual and Reproductive Health and Rights

Figure 6: Approaches and actions used by the women's organizations



Source: Based on stakeholder interviews by Population Council Institute