The Role of Microfinance-based Self-Help Groups in Improving Health Behaviours and Outcomes of the Poor in India

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**Declaration**

This is to certify that:

i. the thesis comprises only my original work towards the Ph.D. except where indicated in the Preface,

ii. due acknowledgement has been made in the text to all other material used,

iii. the thesis is fewer than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices.

Somen Saha
Abstract

Introduction: Despite an intense national discussion in India during 2010 – 2012, progress towards universal health coverage (UHC) has stalled. Coverage of the entire population is still a challenge, especially effective coverage of the poor. Through the mechanism of microfinance-based self-help groups (SHGs), poor women and their families are provided not only with access to finance in a way that is understood to improve livelihoods, but also in many cases with a range of basic health services. With 93 million people organised nationally, SHGs provide an established organised network that can potentially be used to extend health coverage. Through a combination of quantitative and qualitative research approaches, this thesis aims to explore the potential for existing microfinance networks, using SHGs with attached health programs, to contribute to improved health coverage for the poor.

Methods: A mixed-methods approach was used to address the study aim. A review of published evidence on the role of microfinance programs in improving health outcomes was conducted. This was followed by analysis of a national survey dataset to assess the impact of the presence of an SHG at village level on key health indicators at the individual level. Finally, a mixed methods study to assess the effect of combining a health program with microfinance-based SHGs was undertaken. This mixed methods study comprised two rounds of surveys to collect pre-test and post-test data with matched comparison groups and subsequent qualitative investigation to better understand the interconnections between SHGs, health programs and health.

Results: The presence of SHGs was associated with significantly higher odds of women delivering their babies in an institution, feeding colostrum to their newborns, having knowledge of modern family planning methods and using family planning products and services. Additionally, the inclusion of a health program within microfinance-based SHGs was associated with further improvements in health behaviours, including facility-based deliveries, feeding newborns colostrum and having a toilet at home. However, the SHG health program led to no significant reduction in diarrhoea among children and no effect in reducing household money spent on health care.

Conclusion: Capitalising on SHGs with health programs to improve the health of poor women and their families is an avenue worth investigating further. These established organised networks of SHGs provide an administrative apparatus to more effectively reach
poor women and their families with essential health programs. Public health planners could leverage SHGs to increase the proportion of the population enjoying health coverage and make progress in relation to financial coverage and utilisation of existing publically-financed health protection schemes, although a lot more work is needed to optimise these possibilities.
Preface

This research was supported by a Research Higher Degree grant from the University of Melbourne, Australia, and a Wellcome Trust Capacity Strengthening Strategic Award to the Public Health Foundation of India and a consortium of UK Universities. I did part of the primary data collection, particularly a baseline survey prior to commencement of my PhD at the University of Melbourne. This data was analysed and compared with a follow-up survey data, as detailed in the thesis, during my PhD candidature period. The baseline data collection process was approved by the institutional ethics committee of the Public Health Foundation of India, and the Nossal Institute for Global Health Human Ethics Advisory Group at the University of Melbourne approved the full study design.

The following publications emerged out of this thesis:

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At the onset, I wish to thank Professor Graham Brown, the founding Director of the Nossal Institute for Global Health, for his confidence and support in selecting me for this Ph.D. position. He was a constant source of support until his retirement in 2014. Also the academic committee of the Public Health Foundation of India and Dr Dileep Mavalankar, Director, Indian Institute of Public Health, Gandhinagar, granted a study leave to pursue the Ph.D. program and I am grateful to them.

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Dr Shakil Ahmed also advised me on different aspects of this thesis. Colleagues at the Nossal Institute for Global Health and the Statistical Consulting Centre of the University had at different points of time helped me with my statistical queries.

Without a scholarship from the University of Melbourne I would have had trouble to support my tuition fees and living in Melbourne. My sincere thanks to the Wellcome Trust Capacity Strengthening Award to the Public Health Foundation of India for funding my field study.

Dr James Hargreaves, Senior Lecturer at the London School of Hygiene and Tropical Medicine, provided useful advice in designing my field work. Thanks are also due to Ms Mirai Chatterjee from Self Employed Women’s Association, Gujarat and Dr LM Manjunath from Shri Kshetra Dharmasthala Rural Development Project, Karnataka, for allowing me to do my field work with members from their program areas.

A special note of thanks to the anonymous reviewers of the journals that published my work and also the journals that did not accept my initial draft. Their valuable comments helped tremendously in identifying weaknesses and thereby improving my thesis. Without their very high quality review comments I would not have been able to raise the standard of my work to the current level.
My family, specially my parents, my wife and my little daughter, spent countless days and hurdles without me for an extended period. This work is dedicated to them for providing me with the opportunity to enter the path of higher learning.

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### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACCION:</td>
<td>ACCION International is a global non-profit organization that supports microfinance institutions</td>
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<tr>
<td>ARI:</td>
<td>Acute Respiratory Infection</td>
</tr>
<tr>
<td>ASHA:</td>
<td>Accredited Social Health Activist</td>
</tr>
<tr>
<td>AYUSH:</td>
<td>Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy</td>
</tr>
<tr>
<td>BRAC:</td>
<td>Bangladesh Rural Advanced Committee</td>
</tr>
<tr>
<td>CGAP:</td>
<td>Consultative Group to Assist the Poor</td>
</tr>
<tr>
<td>CBHI:</td>
<td>Community-based health insurance</td>
</tr>
<tr>
<td>CI:</td>
<td>Confidence Interval</td>
</tr>
<tr>
<td>DID:</td>
<td>Difference-in-difference</td>
</tr>
<tr>
<td>DLHS:</td>
<td>District-Level Household Survey</td>
</tr>
<tr>
<td>EBSCO:</td>
<td>EBSCO offers a broad range of full text and bibliographic databases</td>
</tr>
<tr>
<td>FGD:</td>
<td>Focus Group Discussion</td>
</tr>
<tr>
<td>GDP:</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>HLEG:</td>
<td>High-Level Expert Group</td>
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<tr>
<td>ICMR:</td>
<td>Indian Council of Medical Research</td>
</tr>
<tr>
<td>IMF:</td>
<td>International Monitory Fund</td>
</tr>
<tr>
<td>INR:</td>
<td>Indian Rupee</td>
</tr>
<tr>
<td>IRDA:</td>
<td>Insurance Regulatory Development Authority</td>
</tr>
<tr>
<td>ITN:</td>
<td>Insecticide Treated Bed Net</td>
</tr>
<tr>
<td>IQR:</td>
<td>Inter-Quartile Range</td>
</tr>
<tr>
<td>JEEViKA:</td>
<td>Bihar Rural Livelihoods Project is known as JEEViKA</td>
</tr>
<tr>
<td>JSY:</td>
<td>Janani Surakshya Yojana</td>
</tr>
<tr>
<td>KII:</td>
<td>Key Informant Interview</td>
</tr>
<tr>
<td>LMIC:</td>
<td>Low and Middle Income Countries</td>
</tr>
</tbody>
</table>
MDG: Millennium Development Goals
MFI: Microfinance Institution
MHI: Micro-Health Insurance
MoRD: Ministry of Rural Development
MPI: Multidimensional Poverty Index
MS: Mahila Samakhya
MVM: Mahila Vikas Mandal
NABARD: National Bank for Agricultural and Rural Development
NBFC: Non-Banking Financial Company
NGO: Non Government Organisation
NITI: National Institution for Transforming India
NIMS: National Institute of Medical Science
NRLM: National Rural Livelihood Mission
NRHM: National Rural Health Mission
NSS: National Sample Survey
OR: Odds Ratio
PSU: Project Support Unit
RBI: Reserve Bank of India
RSBY: Rashtriya Swasthya Bima Yojana
SBLP: SHG-Bank Linkage Program
SCAT: Social Capital Assessment Tool
SERP: Society for Elimination of Rural Poverty
SEWA: Self-Employed Women’s Association
SGSY: Swarnajayanti Gram Swarojgar Yojana
SKDRDP: Shri Kshetra Rural Development Project
SKS: Swayam Krishi Sangam
SHG: Self-help Group

SPSS: Statistical Package for Social Science

UHAM: Urban Health Assurance Mission

UHC: Universal Health Coverage

UNICEF: United Nations Fund for Children

UN Women: United Nations Entity for Gender Equality and the Empowerment of Women

USD: United States Dollar

VHV: Village Health Volunteers

WHO: World Health Organisation

YCO: Youth Charitable Organization
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For a variety of reasons, some groups within these societies are either not reached or insufficiently reached by opportunities for health or services and continue to experience health outcomes systematically inferior to those of more advantaged groups.


1. Introduction

Despite an intense national discussion during 2010 – 2012, progress towards universal health coverage (UHC) in India has stalled. The purpose of UHC is ‘ensuring that all people can use the promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship’ (WHO, 2009a, page 2). In 2014, The Lancet identified the grand global challenge in health as closing the gap between countries as well as finding pathways to close the gap between rich and the poor within countries (Lancet Editorial, 2014). While some health indicators have improved considerably in recent years, India contributes disproportionately to the global burden of disease. National health indicators in India are poor compared to comparable middle-income countries, and there are large disparities between rich and poor and between urban and rural areas. Exceptionally high out-of-pocket health expenditure means that a significant proportion of the population face impoverishment due to health care costs.

Writing in The Lancet, Patel and colleagues reminds us that successive governments in India have promised to transform the unsatisfactory health-care system, and in 2015, the government again promised to expand health assurance for all (Patel, Parikh, Nandraj et al., 2015, page 2422). In 2015, the government announced a series of policies relating to health:

- The Draft of National Health Policy 2015 was made public.
- An expert group argued that the proposed Universal Health Assurance Mission (UHAM) should include a universal health insurance component that would be free for all those living below the poverty line.
- The Rashtriya Swasthya Bima Yojana (RSBY), which provides health insurance for families living below the poverty line, was brought under the administration of the Ministry of Health and Family Welfare.
• New social-sector schemes were introduced, such as insurance coverage for accidental death, the Clean India Mission to clean towns and infrastructure, a plan for affordable housing in rural and urban, and assistance to small business through the Micro Units Development and Refinance Agency Bank.

Despite these initiatives, there are few signs of real progress, and there is a danger of representing UHC merely as the provision of universal insurance. The most important question, according to Patel and colleagues, is how to transform the rhetoric about health coverage into improved service delivery, better governance and a reduction in health inequalities. They propose that India needs to develop a strong public primary care health system and overcome constraints that emerge due to low levels of public funding for health care, poor regulation, the commercialisation of health care and poor governance, including corruption. They say: ‘Only a radical restructuring of the health-care system that promotes health equity and eliminates impoverishment due to out-of-pocket expenditures will assure health for all Indians by 2022’ (Patel, Parikh, Nandraj et al., 2015, page 2422).

These issues are the starting point for an investigation into the impacts of health programs attached to the microfinance-based Self-Help Groups (SHGs), which are covering a large and growing number of India’s rural poor. This thesis interrogates the following question: Can SHGs with attached health programs contribute to health coverage for the poor to support the wider development of a UHC system in India?

1.1 India’s commitment to UHC

Discussion about UHC in India culminated in the work of the High Level Expert Group commissioned by the Planning Commission of India (renamed NITI Aayog in 2015) in 2011 (The Planning Commission, 2011a). While the group’s recommendations were incorporated in the 12th five year plan (2012 – 17), little progress has been made in implementation.

Across India, poor households remain vulnerable to catastrophic health spending, particularly when earning members of the household become sick and are unable to work. Poor people frequently delay accessing care, do not access it at all or fall further into poverty or debt through spending on private care (Mishra, Duggal, Lingam et al., 2008).
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One estimate suggested that by 2015, 58.5 million people in India would fall into poverty as a result of out-of-pocket expenditures for health care (Shahrawat & Rao, 2011).

Many of India’s social groups are threatened by a lack of health care coverage. Among these are the large population working in the informal sector. The key contributors that limit the benefit of public spending on health care for the poor are high rates of poverty, lack of health awareness, and social factors that discriminate against women (Balarajan, Selvaraj, & Subramanian, 2011; Raj, 2011). Poor women are particularly disadvantaged and lack access to health care when needed. With lower income levels, they are also more likely to be impoverished by health care costs (Haussmann, Tyson & Zahidi, 2010; Victora, Wagstaff, Schellenberg et al., 2003).

The work of the Commission on Social Determinants of Health shows that much of the inequity in accessing health care is better addressed through interventions that lie outside the conventional biomedical paradigm (O’Connell, Rasanathan & Chopra, 2014; Marmot, Friel, Bell et al., 2008). Microfinance programs to promote loans, savings, insurance, and other financial products targeted at low-income clients have gained wide outreach in India. About 80 per cent of microfinance recipients are women (Reed, 2014). Organised in SHGs, poor rural women come together voluntarily in groups of 10 to 20 individuals to save money and to obtain microfinance to promote livelihoods. These SHGs are promoted extensively through government and non-government organisations in India and were estimated to have 93 million members in 2012, impacting over 300 million people in member households (Nair & Tankha, 2014). The SHG structure involves significant face-to-face interaction among members and promotes mutual trust, solidarity and social capital.

Through a combination of quantitative and qualitative research approaches, this thesis aims to explore the potential for existing microfinance networks, using SHGs with attached health programs, to contribute to improved health coverage for the poor. The research program was arranged in two parts:

i. Investigate the independent effect of the presence of SHGs on health

ii. Investigate the effect of including a health program along with microfinance-based SHG program on health.
In the following sections I summarise the progress towards UHC in India and related health policies and programs. I then discuss the key challenges to health attainment in the country and the need for action on the wider determinants of health including the need to engage in programs that work on the principle of empowering poor women. Finally, I discuss the study aim and research questions.

1.2 The idea of universalism in India

Health planners in India have been following the idea of universalism since the early years of the country’s independence. The Bhore committee set up by the Government of India (then British India) in 1943 to investigate and recommend improvements to the Indian public health system was guided by the principle that ‘nobody should be denied access to health services for his inability to pay’ and that the focus should be on rural areas (Bhore 1946, page 7). Over the course of time, a publically-funded three-tier health infrastructure (primary, secondary and tertiary) was created. Yet, the health status of the population remains poor and access to care is inequitable, negatively and disproportionately affecting the poor (for a detailed discussion on health status of people in India, see section 2.1, page 33). Public spending on health is among the lowest in the world and lack of an effective health insurance program has resulted in an inequitable health system where 57 per cent of total expenditure on health care is out-of-pocket (The World Bank, 2015). Health programs and plans in India are governed by its health policies.

1.3 Health policies in India

As a commitment to the Alma Ata declaration to achieve ‘Health for All by 2000’, in 1983 India introduced its first health policy, which advocated ‘universal provision of comprehensive primary health care services’ (Ministry of Health and Family Welfare, 1983, page 6). The policy provided for a time-bound program to set up a network of comprehensive primary health care services, linked to a referral system for secondary and tertiary-level care. While the policy focussed on the provision of comprehensive primary health care based on horizontal delivery of basic services, the failure to control malaria in India during the early 1980s led to the introduction of vertical disease-specific programs (Shiffman, Beer, & Wu, 2002).
Several vertical disease control programs were established with the goal of prevention and control of communicable diseases. These included the following:

- National Vector-Borne Diseases Control Program
- Revised National Tuberculosis Control Program
- National Leprosy Eradication Program
- National AIDS Control Program
- Universal Immunisation Program
- Integrated Disease Surveillance Program.

The programs for non-communicable diseases included the following:

- National Cancer Control Program
- National Mental Health Program
- National Diabetes Control Program
- National Program for Control of Blindness
- National Program for control of diabetes
- Cardiovascular Disease and Stroke
- National nutritional programs.

These disease-specific programs made substantial contributions to disease control through the following:

- Providing additional funds that enabled targeted action
- Making planning decentralised
- Hiring contractual staff to meet human resource challenges
- Involving civil society
- Creating dedicated health information systems to track program progress
- Improving patients’ perceptions of the facilities (Cavalli, Bamba, Traore et al., 2010; Trägård & Shrestha, 2010).

However, such programs undermined overall health care system strengthening due to the lack of horizontal integration of the individual disease control programs with the existing health care system (Rao, Ramani, Hazarika et al., 2013).

In 2002, India adopted a new (second) national health policy which aimed to
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- Reduce the overall burden of disease
- Increase public spending on health care to 2 per cent of GDP by 2010
- Encourage inter-sectoral coordination
- Improve the service delivery system (ICMR Bulletin, 2004).

The second national health policy recognised that between 1983 and 2002, the number of primary health care centres had tripled without significant changes in key health indicators. Inequity in health care access and low public investment in health care were identified as the key contributors (Devadasan, Ghosh, Nandraj et al., 2014; ICMR Bulletin, 2004). The private sector provides the majority of ambulatory services in India, with services mostly financed by out-of-pocket expenses paid by individuals at the point of care, resulting in high rates of impoverishment as a result of money spent on treatment (Sengupta & Nundy, 2005; Peters, 2002; Berman, 1998). Following this second national health policy, the government launched a major health program for rural areas in 2005, the National Rural Health Mission (discussed in section 1.4).

In line with its commitment to UHC, the country has formulated its third national health policy, the draft of which is currently up for discussion. The goal of the draft policy is to attain ‘the highest possible level of good health and wellbeing through preventive and promotive health care orientation in all developmental policies, and universal access to good quality health-care services without anyone having to face financial hardship as a consequence’ (Ministry of Health and Family Welfare, 2015, page 13). The policy promises ‘universal availability of free, comprehensive primary health care services as an entitlement’ (p. 14), and provision of secondary and tertiary care services through ‘a combination of public hospitals and strategic purchasing of services from private health sector’ (p. 15).

1.4 National Rural Health Mission

In 2005, the Government of India launched the National Rural Health Mission (NRHM), which was expected to infuse more funds into the health sector and bring about structural correction in the health system (Press Information Bureau, 2005). The architectural corrections were intended to enable the health care system to effectively absorb and disburse increased allocations and promote policies to strengthen public health
management and service delivery. The structural correction under NRHM was based on the following five principles:

- Set norms and standards for health services
- Use innovations in human resource development
- Increase participation and ownership by the community
- Improve management capacity
- Use innovations in financing mechanisms to improve absorptive capacity in the system (Sharma, 2009).

The NRHM took several steps including the following:

- Upgraded the health infrastructure as per the Indian Public Health Standard (standards for infrastructure and service provision in India’s primary and secondary health care facilities)
- Promoted institutional deliveries of babies through a system of conditional cash transfers (named the Janani Surakshya Yojana or JSY)
- Provided a flexible financing mechanism to promote planning and utilisation of resource as per need at the facility level
- Introduced a system of decentralized district-based planning (including establishment of Rogi Kalyan Samiti or patient welfare society in every health care institution for managerial autonomy and decentralized planning).

The NRHM fostered district and village health plans aggregated up to state level and appointed a cadre of Accredited Social Health Activist (ASHA) to facilitate access to health services. Moving away from population-based funding, the NRHM took into account disparities in revenue capacity between states and allocated resources that differentiates high-focus states from non-focus states\(^1\) (Duran, Kutzin, & Menabde, 2014). The flexible funding approach was considered to be a key initiative of NRHM that sought to correct the disconnection between planning and implementation (Reddy, Patel, Jha et al., 2014).

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\(^1\)Non-focus states include Andhra Pradesh, Goa, Gujarat, Haryana, Karnataka, Kerala, Maharashtra, Punjab, Tamil Nadu and West Bengal. These states were given a weight of 1 in the allocation of resources. High focus states include the eight north-eastern states, and Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Jammu and Kashmir, Madhya Pradesh, Odisha, Rajasthan, Uttarakhand, and Uttar Pradesh, with a resource allocation weight of 1.3.
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The NRHM is now transformed into the National Health Mission, with the addition of program components related to urban health.

An external mid-term assessment of the NRHM in 2009 recognised the substantial achievements of the program and observed ‘It is for the first time in post independent India that a rural public health program as ambitious as NRHM has been put in place to address real issues on the ground with real resources, both financial and human’ (Bajpai, Sachs, & Dholakia, 2009, page 123). The NRHM assessment report also highlighted several unfinished agendas related to increasing public health care spending, human resource planning, management structure for health facilities, infrastructure upgrading in primary care settings, and scaling up interventions to improve maternal and child health (Bajpai, Sachs, & Dholakia, 2009). A subsequent evaluation study of the NRHM in seven states of India by the Planning Commission\(^2\) echoed similar findings (The Planning Commission, 2011b).

1.5 The High Level Expert Group on UHC in India

In preparation for the 12\(^{th}\) five-year plan of India (2012 – 17), and in line with the 65\(^{th}\) World Health Assembly resolution for UHC, the Ministry of Health and Family Welfare has set a target to achieve UHC by 2022 (The Planning Commission of India, 2012). A High-Level Expert Group (HLEG) on UHC was constituted by the Planning Commission in October 2010 with the mandate of developing a framework for providing easily accessible and affordable health care for all Indians. Strongly recommending a reconfiguration of the entire health system where the government will have a major role to play, although not necessarily the sole provider of health services, the HLEG proposed making health care an entitlement for every citizen (The Planning Commission, 2011a, page 3). The report of the HLEG defined UHC as:

\[
\text{Ensuring equitable access for all Indian citizens, resident in any part of the country, regardless of income level, social status, gender, caste, or religion, to affordable, accountable, appropriate health services of assured quality (promotive,}
\]

\(^2\) In 2015, the Government of India established NITI Aayog (National Institution for Transforming India) to replace the Planning Commission. However, in this thesis I will refer it by the name that appeared in the original report.
preventive, curative, and rehabilitative) as well as public health services addressing the wider determinants of health delivered to individuals and populations, with the government being the guarantor and enabler, although not necessarily the only provider, of health and related services.

The HLEG recommendations relate to the following six areas:

- Health financing and financial protection
- Health service norms
- Human resources for health
- Community participation and citizen engagement
- Access to medicines, vaccines and technology
- Management and institutional reforms.

Key recommendations of the HLEG were the following:

- Increase public expenditure on health to at least 2.5 per cent of GDP by the end of the 12th plan and to at least 3 per cent of GDP by 2022
- Develop a national health package as part of the entitlement of every citizen
- Provide essential health services at different levels of the health care delivery system
- Establish contracting of services
- Establish participatory health councils by transforming the existing village health committees.

The HLEG report highlighted that reliance on a health insurance solutions alone is inadequate for achieving UHC; such schemes provide some protection against the cost of hospitalisation for secondary or tertiary care, but neglect primary care and outpatient care, which are the major sources of out of pocket expenditure (The Planning Commission, 2011a). The HLEG promotes a health rights framework and calls for a shift towards the goal of ‘Health for All’ by ensuring free essential drugs, a national health package, and quality assurance.

The report and its recommendations were criticized by some public health professionals for focusing on ‘what and why’ and not adequately on ‘how’ to achieve better health for the population and for being top-down in its approach to solving India’s health sector
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problem (Narayan & Narayan, 2012). The Planning Commission has revised and reduced the target for health care spending to 1.87 per cent of GDP by 2017 as a more realistic target amidst substantial interest and debate from public health practitioners in India (The Planning Commission of India, 2012). Critics argue that an increase in public financing for health care alone is not sufficient in light of the following:

- Poor absorptive capacity among states
- Gender disparity in access to health care
- Socio-economic factors that prevent the population living in poverty to get benefits of public financing on health care (for a detail discussion on gender disparity in access to health care in India see section 2.1.5, page 42).

Addressing these factors would require action on social determinants of health (Duran, Kutzin, & Menabde, 2014; Anil, Seshadri, Ganesh et al., 2014; Balarajan, Selvaraj, & Subramanian, 2011; Gilson, Loewenson, & Francis, 2007). The complex endeavour of achieving UHC in India requires a long term plan over 10 to 15 years, a fact acknowledged in the 12th five-year plan (Duran, Kutzin, & Menabde, 2014; The Planning Commission of India, 2012).

1.6 Universal health coverage

A key debate within the global health community is on ways to close the health gap between the rich and the poor in a generation (Jamison, Summers, Alleyne et al., 2013; Marmot, Friel, Bell et al., 2008). With an objective to develop a health care system that ensures better health and protection from poverty, in 2005, member states of WHO adopted a resolution to develop health financing systems aimed at providing Universal Health Coverage or UHC. According to WHO, the purpose of UHC is ‘ensuring that all people can use the promotive, preventive, curative, rehabilitative and palliative health care services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship’ (WHO, 2009a, page 2). The call for UHC builds on the previous call for ‘Health for All’, which characterised the primary health care approach in the Alma Ata declaration of 1978 (WHO, 1978). The 65th World Health Assembly meeting in Geneva and the 2010 World Health Report described
1. Introduction

UHC as the key imperative for all countries to improve the health of populations. The 2010 World Health Report highlights three pathways for countries to achieve UHC:

- Raise sufficient funds through increased efficiency in revenue collection (including development assistance for low income countries)
- Reduce reliance on direct payments to finance services through risk pooling and prepayments approaches

There is high-level political commitment towards UHC as a sustainable development goal with UHC poised to be an umbrella goal for health in the post-2015 development agenda\(^3\) (Horton, 2013; United Nations, 2013; Evans, Marten, & Etienne, 2012). WHO Director-General Margaret Chan in her address to the 65\(^{th}\) World Health Assembly said that the UHC ‘is the single most powerful concept that public health has to offer’ (Chen, 2012, page 3). Some commentators equated UHC to a third global health transition changing how health care is financed and how health systems are organised, after the demographic transition that begun in the late 18\(^{th}\) century and the epidemiological transition that began in the 20\(^{th}\) century (Rodin & de Ferranti, 2012). The World Bank and WHO have set a target of 2030 when no one will be pushed into poverty by paying for health care (World Bank, 2014). While there are several approaches and challenges on the journey to UHC, the focus of this thesis is on addressing inequity in health coverage, particularly for poor women in India.

1.7 Progressive Universalism

The 2005 resolution of the 58\(^{th}\) World Health Assembly (WHO, 2009a) and the commitment to UHC by the global health community on the eve of the launch of the World Health Report 2010 (WHO, 2010) was the harbinger to a commitment from WHO member countries to develop their health care systems as whole. However, a number of challenges have to be overcome to achieve UHC. Some critics argue that there is ambiguity in the way UHC is defined, with no consistent framework to guide policy

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\(^3\) The Post-2015 development agenda refers to a process led by the United Nations that aims to help define the future global development framework that will succeed the Millennium Development Goals.
makers aiming to achieve more equitable health outcomes (O’Connell, Rasanathan, & Chopra, 2014). Citing examples of national aggregate Millennium Development Goal targets that sometimes exacerbated disparities, critics argue that UHC needs to be unpacked into sub-targets that can be used to measure progress towards UHC and the extent to which it is reducing disparity in health outcomes (O’Connell, Rasanathan, & Chopra, 2014; UNICEF., 2010).

Some of the key bottlenecks in low and middle income countries are the following:

- Poverty
- Low levels of literacy
- Weak health care systems
- Interventions focused heavily on technical and individual behaviours without addressing the factors that exclude poor people from health care services (Campbell & Books, 2005; Travis, Bennett, Haines et al., 2004; Allen, 2004; Barnett & Whiteside, 2002).

Jamison and his colleagues argued that along with increased public investment on health care, focussed attention on lower-income groups in rural sub-regions of middle-income countries and populations in low-income countries is required (Jamison, Summers, Alleyne et al., 2013, page 1903). Advocates of UHC argue that it should not be treated as a one-off program but rather as a strategy for increasing access to health care services across the population over time through successive steps that account for the needs of the poor and cost associated with wider population coverage (Wagstaff, Cotlear, Eozenou et al., 2015). Kutzin (2013, page 608) observed ‘universal coverage is a journey and not a destination’.

However, to move towards the implementation of UHC principles in practice, the Government of India must first address the national failure to give priority to public spending in the health sector. India spends just over 1 per cent of its GDP on publicly-financed health care; almost 6 in 10 people pay for their own health care (The World Bank, 2015). In absolute terms, the government spends around USD 20 billion each year on health care. Summers (2014) observed that to achieve grand convergence in global health – a reduction in infectious, maternal, and child deaths down to universally low levels everywhere on the planet – the country needs to double its spending to about USD
45 billion per year. In preparing the health chapter of the current 12th five-year plan of India, the Planning Commission recognised that achieving UHC is unlikely to happen in the short-term (The Planning Commission of India, 2012).

Inequities in access to health care that negatively and disproportionately affect the poor are a major barrier in progress towards UHC. Background analysis by a 2013 Lancet Commission on ‘Investing in Health’ shows that the rate of birth and under-5 deaths are higher in poor people than in wealthier people in India (Figure 1) (Jamison, Summers, Alleyne et al., 2013). A more in-depth analysis of the state of inequity in health status in India can be found in Section 2.1.1 (page 35) of this thesis.

![Births and under-5 deaths by wealth quintile in India, 2000 – 2010](image)

**Figure 1**: Births and under-5 deaths by wealth quintile in India, 2000 – 2010

Source: (Jamison, Summers, Alleyne et al., 2013, page 1910)

To address the health gap between the rich and poor, Gwatkin and Ergo (2011) advocated progressive universalism or a determination to include people who are poor in any public health program, as a pro-poor pathway towards UHC (Gwatkin & Ergo, 2011). Brazil’s Family Health Program, Mexico’s Seguro Popular program (a national health insurance scheme launched in 2003), Rwanda’s mandatory insurance (with exemptions for the poor), Thailand’s publicly financed health care (with a large benefits package given only to the poor) are examples of approaches towards progressive universalism (Lagomarsino, Garabrant, Adyas et al., 2012; Gwatkin & Ergo, 2011; Hughes & Leethongdee, 2007; Frenk, González-Pier, Gómez-Dantés et al., 2006).
1. Introduction

An understanding of the interconnected cycle of poverty and ill-health is well established (Wagstaff, 2002; Narayan, Patel, Schafft et al., 2000; Bloom, Sachs, Collier et al., 1998). In 2015, 11.5 per cent of the world’s population or 836 million people were estimated to live on less than USD 1.25 a day and are therefore unable to lead a healthy and productive life (The World Bank, 2015). People living in poverty are affected by high rates of child mortality, maternal deaths and infectious and non-communicable diseases. Poverty affects health outcomes in a range of ways:

- Not enough money to pay for health care
- Inadequate diet to cater for nutrition needs
- Poor quality water and sanitation
- An unsafe home environment, exposure to toxic substances in the environment
- Poor literacy leads to lack of awareness about health-promoting behaviours
- Low social status leads to physiological stress and psychosocial problems (Sachs, 2012).

While WHO recognizes that government subsidises from general revenues as well as cash transfers, vouchers and other mechanisms are key mechanisms for reducing financial barriers associated with seeking health care, redressing inequalities requires more than good health financing systems (WHO, 2010). WHO recommends action on social determinants of health linked to broader set of initiatives outside the health sector as necessary step to redress inequity in health care.4

1.8 Action on the Social Determinants of Health

Health has many determinants that lie outside the conventional biomedical paradigm. Much of the inequity in health status between the rich and the poor results from a range of factors that differentially affect the distribution of health services within a population (Balarajan, Selvaraj, & Subramanian, 2011). The unequal distribution of health-damaging experiences as a result of poor social policies and programs, unfair economic arrangements, and conditions of daily life constitute the social determinants of health and

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4 WHO highlights the distinction between inequality in health and inequity in health. Health inequalities are differences in health status between different population groups – some attributable to biological variation, while others relate to external environment and conditions outside individual control. Inequity in health refers to the avoidable uneven distribution of health determinants across population group.
cause much of the health inequity between and within countries (Marmot, Friel, Bell et al., 2008; Commission on Social Determinants of Health, 2008; Daniels, 2008). With lower income levels and unequal social status, poor women are more likely to be impoverished by health care costs (Haussmann, Tyson, & Zahidi, 2010; Victora, Wagstaff, Schellenberg et al., 2003).

In particular the Commission on Social Determinants of Health’s first recommendation relates to improving the well-being and living condition of girls and women, with active involvement of civil society, governments and global institutions. Action on the social determinants of health should not be restricted only to the health sector but also involve allied sectors (such as water and sanitation, nutrition, rural development, women and child development, road safety), civil societies, organisations working with women, local communities, and international agencies (Marmot, Friel, Bell et al., 2008). Yet a majority of health research tends to over-emphasise the biomedical determinants of health at the individual level (Venkatapuram, 2010; Marmot, Friel, Bell et al., 2008).

Evidence from India (detailed in section 2.1.4, page 40) demonstrates that social assistance programs, without simultaneously addressing the issues of awareness and exclusion of poor women, are unlikely to bring the desired social change and will struggle to address gender inequity in health care access. Amartya Sen, the noted development economist, observed in his seminal work on social exclusion that while several governments in low and middle income countries are taking affirmative actions to develop health programs for the poor, such programs could achieve greater gains by addressing the wider determinants that results in the exclusion of poor women and children from health care, a fact echoed in the work of the Commission on Social Determinants of Health (Marmot, Friel, Bell et al., 2008; Marmot, 2005; Sen, 2000).

Programs that work on the principle of empowering poor women, such as microfinance schemes, are a vital approach to promoting gender and health equity, along with macro-economic measures. A WHO report ‘Social Determinants Approaches To Public Health: From Concept To Practice’ gave examples from Bangladesh and South Africa on the use of microfinance-based programs to address health inequity (Blas, Sommerfeld, & Kurup, 2011). In particular, the group lending model of microfinance reduces health inequities by promoting social capital (Blas, Sommerfeld, & Kurup, 2011; Schurmann, 2007).

Microfinance programs that assist members to save money and provide access to capital as
1. Introduction

a business loan have seen widespread coverage in India. They were estimated to reach 93 million members during 2012 – 13 (Nair & Tankha, 2014). Analysing the contribution of microfinance-based SHG programs in improving health outcomes of the poor is the focus of this thesis.

1.9 Significance, aim and research questions

The poor health status of people in India is a consequence of the high rate of poverty leading to lack of health awareness, an inability to pay for healthcare and gender inequity in access to health services (Balarajan, Selvaraj, & Subramanian, 2011). Even though the Government of India is taking affirmative action to strengthen the health system through initiatives such as the NRHM, vertical disease control programs and through social health protection schemes for the poor such as Rashtriya Swasthya Bima Yojana (RSBY) and Janani Surakshya Yojana (JSY), poor women frequently remain excluded from public health programs due to lack of awareness and other social factors such as denial of their right to welfare by local health authorities. This is due to socio-cultural stigma, exclusion at the household level because male and earning members are prioritised for enrolment in government-sponsored social health insurance schemes, and women’s internalised sense of inferiority that prevents them from seeking health care when needed (Anil, Seshadri, Ganesh et al., 2014; Ganesh, 2014; Commission on Social Determinants of Health, 2008; Iyer, Sen, & George, 2007). A major failing in the proposals for UHC in India has been the inability to find a realistic and affordable approach that addresses the health care needs of the poor, the exclusion of the socio-economically disadvantaged communities from health care, and the persistent high out-of-pocket expenditure on health care (Balarajan, Selvaraj, & Subramanian, 2011; Raj, 2011). While the HLEG report on UHC states that policy makers need to prioritise actions that remove the barriers preventing poor women from accessing health care services when needed (The Planning Commission, 2011a), no major initiatives to address this concern are evident. Nonetheless, it is possible to identify opportunities for addressing this need, in India and elsewhere.

Some examples from Bangladesh show how India could build on existing initiatives targeting poverty to address gender disparity in accessing health care. Bangladesh has made much progress towards improving the health of mothers and children, despite
economic poverty (Koehlmoos, Islam, Anwar et al., 2011; Balabanova, McKee, & Mills, 2011). Putting women’s empowerment (education, participation in economic activity, and constitutional guarantee of equal rights) in the forefront of public policy is considered to be the most powerful strategy for the health gains made in Bangladesh (Chowdhury, Bhuiya, Chowdhury et al., 2013). Microfinance programs in Bangladesh have been a key contributor to the empowerment of women in relation to decision making for resource use, health and family planning (Chowdhury & Bhuiya, 2004). Programs that work with women’s groups to promote empowerment and gender equity in utilisation of health services are a potential solution to address health needs of poor women and their children (Prost, Colbourn, Seward et al., 2013; Raj, 2011; Gilson, Loewenson, & Francis, 2007; Sen, 2000). As in Bangladesh, India has a large microfinance program – promoted both by government and non-government organisations – to provide access to capital and livelihood options for people living in poverty.

Microfinance programs organised through SHGs seek to alleviate poverty and empower poor women by providing them with access to capital. Microfinance-based SHGs are usually organised around an informal group of 10 to 20 members who save money and obtain loans, but they can also influence some of the social determinants of health related to poverty, social exclusion, and gender equity (for a detail discussion, please see section 2.2 on page 44). As we discuss in Chapter 2, microfinance programs for access to credit, livelihood and economic empowerment are actively promoted in India by government and non-government entities. Evidence suggests (as will be discussed Chapter 3) that microfinance-based SHG programs can improve the social and economic situation of poor women. Understanding the pathways through which microfinance programs improve health outcomes of the poor is therefore of critical importance.

\[^5\]Amartya Sen defines empowerment as one’s capacity to fulfil ones capability (Sen, 1993). In the context of microfinance, by focussing on women, microfinance programs empower women by strengthening their economic roles to control their assets and income, freedom of mobility, ability to make small and large independent purchases, participation in important family decisions, relative freedom from domination by family, political and legal awareness, and participation in political campaigns and public protests (Hashemi, Schuler, & Riley, 1996).
1. Introduction

1.10 Research approach

This thesis explores the potential for existing microfinance networks, using self-help groups (SHGs) with attached health programs, to contribute to improved health coverage for the poor in India. Two research questions are addressed:

1. Do SHGs contribute to better health knowledge and health behaviours?
2. Does the addition of a health program to a microfinance-based SHG further improve health behaviours and outcomes?

The first of these questions is addressed through an analysis of a nationally representative data set. The District-Level Household Survey (DLHS) Phase-III was conducted in 2007–08 by the Ministry of Health and Family Welfare, Government of India, with the International Institute for Population Studies, Mumbai, as the nodal data collection agency. DLHS-III was a household survey at the district level and covered 611 districts of India. It collected information on family planning, reproductive health of ever married women and adolescent girls and utilisation of maternal and child health care services in India. DLHS-III also gathered information on existence of SHGs in villages (IIPS, 2010). I analysed individual-level data from DLHS-III to assess whether the presence of SHGs in a village contributed to better health knowledge and health behaviours among poor women.

The second research question was addressed using a mixed methods study comprising a pre-test and post-test survey with matched comparison groups in three blocks (district subdivision) of India and qualitative methods to further understand the interconnections between SHGs, health programs and health. The intervention groups had access to a health program combined with SHGs. The comparison groups consisted of SHG members from similar areas but not exposed to the SHG health program. For the qualitative study, Key Informant Interviews (KII) with program managers and Focus Group Discussions (FGD) with SHG members in intervention areas were conducted. Survey and interview procedures are detailed in the research methods chapter.

The thesis is presented as follows: Chapter 1 introduces the problem statement, aim, research questions and research approach for this thesis. Chapter 2 describes the health care sector in India, and some of the determinants of inequity in access to health care. Further, the chapter describes the history of the microfinance movement in India, the
forms of microfinance available and the concept of self-help groups. Finally, the chapter considers the role of microfinance-based self-help groups in improving health outcomes of the poor in India. Chapter 3 describes the study methods including a review of the evidence on microfinance health programs from South Asia, analysis plan for the district-level household survey, context of the field study, methods of data collection, process of developing the questionnaire and study guides, and approaches to quantitative and qualitative data analysis. Also issues related to rigour and ethics of the study are discussed in this chapter. Chapter 4 presents a review of evidence on microfinance health programs in South Asia. Chapter 5 presents results pertaining to the first research question, the effect of self-help groups on health knowledge and behaviours. This question was addressed through the secondary analysis of the district-level household survey or DLHS-III in India. Chapter 6 addresses the second research question assessing the effect of combining a health program with the microfinance-based SHG program. This question was addressed using a mixed methods approach comprising two rounds of surveys to collect pre-test and post-test data with matched comparison groups and subsequent qualitative investigation to understand the interconnections between SHGs, health programs and health. Chapter 7 discusses the implications of the findings, study limitations and conclusion.
2. Context of Health Care in India and the Role of Microfinance-based Self-Help Groups

An unfolding demographic and economic transition in India presents new challenges for the health of the population and the health system required to deliver appropriate care. With gross domestic product growing at an average 7.5 per cent per annum, a program of economic reforms and lower global oil prices, the International Monetary Fund and the World Bank predict India will become the world’s fastest growing major economy, overtaking China (IMF, 2015). Demographic change is producing more population of working-age and a smaller dependent population, which is sustaining a high growth rate that requires a healthy workforce (Bloom, 2011). But progress will be limited without overcoming the inequalities in health and health care or addressing the needs of the poor. In this chapter I describe the inequities in health status in India, the context of health care and the challenges in effectively financing health care. This is followed by a discussion of the microfinance system, its form and outreach, and women’s participation in self-help group programs.

2.1 Health and the health system

Health status in India has improved markedly since independence in 1947. Life expectancy at birth has improved from 36 years in 1951 to 66 years in 2013, though this is four years less than the global average and 17 years less than the average of high income countries (Jeemon & Stephen, 2009). Mortality measured in terms of the crude death rate has fallen from 25 to 7 deaths per 1,000 people from 1951 to 2010 (Registrar General, 2011). The infant mortality rate has declined by more than 70 per cent, from 140 in the 1970s to 41 per 1,000 live births in 2013 (SRS, 2013). Maternal mortality has also fallen from 560 maternal deaths per 100,000 live births in 1998 to 190 in 2009 (The World Bank, 2015). But the health gains are not equally distributed. For example, maternal mortality varies widely across states, ranging from 110 per 100,000 live births in Kerala to 517 per 100,000 live births in Uttar Pradesh (Jeemon & Stephen, 2009). Family size is becoming smaller. As per the Census of 2011, 12 states, covering half of the population, achieved the replacement level of fertility, though the
national average is 2.44 births per woman. Table 1 summarizes key health-related indicators over time.

Table 1: Key health-related indicators of India

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<tbody>
<tr>
<td>Population (in millions)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>568</td>
<td>715</td>
<td>886</td>
<td>1059</td>
<td>1221</td>
<td>1252</td>
</tr>
<tr>
<td>Life expectancy at birth&lt;sup&gt;a&lt;/sup&gt;</td>
<td>49</td>
<td>56</td>
<td>59</td>
<td>62</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td>Crude birth rate&lt;sup&gt;b&lt;/sup&gt;</td>
<td>39</td>
<td>35</td>
<td>32</td>
<td>27</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Crude death rate&lt;sup&gt;a&lt;/sup&gt;</td>
<td>17</td>
<td>13</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Total fertility rate&lt;sup&gt;b&lt;/sup&gt;</td>
<td>5.7</td>
<td>4.9</td>
<td>4.1</td>
<td>3.3</td>
<td>2.7</td>
<td>2.4</td>
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<tr>
<td>Infant mortality rate&lt;sup&gt;b&lt;/sup&gt;</td>
<td>140</td>
<td>111</td>
<td>86</td>
<td>64</td>
<td>45</td>
<td>41</td>
</tr>
<tr>
<td>Under-5 mortality rate&lt;sup&gt;a&lt;/sup&gt;</td>
<td>209</td>
<td>162</td>
<td>122</td>
<td>88</td>
<td>58</td>
<td>53</td>
</tr>
<tr>
<td>Maternal mortality ratio&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td>560</td>
<td>370</td>
<td>-</td>
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<tr>
<td>Out-of-pocket health expenditure (% of total expenditure on health)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>70</td>
<td>60</td>
<td>58</td>
</tr>
<tr>
<td>Improved water source (% of population with access)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
<td>71</td>
<td>81</td>
<td>92</td>
<td>93</td>
</tr>
<tr>
<td>Improved sanitation facilities (% of population with access)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-</td>
<td>-</td>
<td>18</td>
<td>26</td>
<td>35</td>
<td>36</td>
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</table>


Despite progress in doubling life expectancy from that in 1947, eradication of smallpox and guinea worm, and the most recent achievement of being a polio-free country, India has an unacceptably high level of morbidity and mortality. India is experiencing an epidemiological transition, moving from a phase of high burden of infectious disease to a phase of triple burden of infectious disease, chronic non-communicable diseases, and injuries due to lifestyle, as well as nutritional and environmental changes (Bloom, 2011; Jeemon & Stephen, 2009). Diarrhoeal diseases and respiratory infections continue to affect children and the poor disproportionately. Chronic conditions such as cancers, diabetes, mental illness, and cardiovascular diseases cause death mainly among adults. Initially, such chronic conditions were more frequent in urban areas, but over time rural areas have become increasingly affected with chronic conditions. India is now estimated to have about 120 million people with hypertension and 40 million with diabetes; every fifth diabetic in the world is an Indian (Gupta & Yusuf, 2014).

Progress towards the Millennium Development Goals including eradication of extreme hunger and improved maternal health is either slow or off-track (Ministry of Statistics and Programme Implementation, 2013). India’s progress in these targets is behind other Asian
countries including China, Sri Lanka, Bangladesh, Nepal and Thailand. China had the same crude death rate, infant mortality rate and life expectancy at birth in 1950-55 as India has today (IMR of China and India was 195 and 190 respectively in 1950 – 55). By 2000 – 2005, the infant mortality rate in China declined by more than six times, compared to a decline of only three times in India (NIMS, ICMR, & UNICEF, 2012). One in every four child deaths and every fifth maternal death in the world occurs in India (Hogan, Foreman, Naghavi et al., 2010). A reduction in preventable maternal and child deaths in India will go a long way towards reducing the global burden of disease.

The lack of sanitation in India is a major cause for concern. WHO estimates that 597 million people, or about half of the population, defecate in the open, and 44 per cent of mothers dispose of their children’s faeces in the open. This results in a substantial microbial contamination of water, which contributes to 386,600 annual child deaths due to diarrhoea (WHO, 2009b). Bangladesh, India’s neighbour with half the per capita income, has only 8 per cent of its population without access to a toilet (WHO and UNICEF, 2014; Drèze & Sen, 2013).

The nutritional status of children has remained poor. Data from a Rapid Survey on Children conducted by the Ministry of Women and Child Development in 2013-14 shows that 29.4 per cent of under 5 years children are underweight, and 38.7 per cent are stunted (Ministry of Women and Child Development, 2014). Half of childhood under-nutrition in India can be linked to poor hygiene and sanitation. Nutrition and health exhibit a two-way relationship; a child with diarrhoea cannot retain nutrients, and a poorly nourished child easily falls prey to infections (Srinath, 2013).

### 2.1.1 Inequity in health status

The Planning Commission of India (renamed NITI Aayog) estimates that 21.9 per cent of the population lives below the official poverty line. A radically different estimate is provided by the United Nations Development Program’s Multidimensional Poverty Index (MPI), which estimates over 55 per cent of India’s population lives in poverty (Klugman, 2011).

Importantly, the MPI estimates highlight wide variations between states: while only 10 per

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6Based on consumption or spending per individual over a certain period for a basket of essential goods: INR 26 a day ($0.43) in rural areas and about INR 32 per day ($0.53) in urban areas.

7MPI uses 10 indicators to measure poverty in three dimensions: education, health and living standard. It shows the number of people who are poor (suffering deprivations in 33.33% of weighted indicators).
cent of the population in Kerala lives in poverty over 81 per cent of Bihar’s population are poor (Horton & Das, 2011).

People living in rural areas, marginalized castes, religious minorities, women and the poor are the first to suffer from inequity in health care. Balarajan and colleagues in their study on health care inequity in India found people from the poorest quintile, children and women experience a disproportionate burden of disease and find it most difficult to access health care (Balarajan, Selvaraj, & Subramanian, 2011). They analysed three rounds of National Family Health Surveys and found that deaths among children below five years have declined over time. But a wide gap between the rich and the poor is clear throughout: for example, in 2005–06 there were 82 and 34 deaths per 1,000 live births among the poorest and richest wealth quintiles respectively. Similarly, the under-5 mortality was higher among mothers with no education, in rural areas, and among female children, and the situation has not markedly improved in the last 10 years (Figure 2).

![Figure 2: Inequities in under-5 mortality in India](image)

Notes: Under-5 mortality rates calculated from three rounds of national family health survey data; Inequities are presented as: Wealth: poorest quintile versus richest quintile; Education: no education versus higher education.

Source: (Balarajan, Selvaraj, & Subramanian, 2011, page 506)
2. Context of health care in India and the role of microfinance-based self-help groups

2.1.2 Health system

India has a federal structure in which each state and union territory has its own government. The provision of health care is a state’s responsibility. Within the federal system, the union government shapes health policy and planning and designs national programs, and the state governments implement them. India’s five-year national plans determine the direction of health care while the states play a leading role in setting priorities and financing health services. The union government directs the health system through the Ministry of Health and Family Welfare, which comprises four departments:

- Health and Family Welfare
- Health Research
- AIDS Control
- Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH).

In each state, the State Department of Health and Family Welfare is in charge of the health system. In terms of health care financing, the state fully finances government hospitals and primary health care services while family-welfare programs are financed by the union government. The district is considered as a unit of action and the district administration is responsible for delivery of health programs, including peripheral structures such as primary health care centres, sub-centres and sub-divisional hospitals. For planning purpose the district is divided into four levels: taluks, blocks, gram panchayat, and villages. Certain health facilities are also run by local government (panchayats) and municipals (in urban areas).

More broadly, India has a mixed public-private health care system with different kinds of delivery structures, in which the private sector predominates. The public health care delivery system includes teaching hospitals, secondary-level hospitals (at district and subdivisional level), first-level referral hospitals (community health centres/rural hospitals), dispensaries, primary health centres, sub-centres and health posts. In the private sector, both for-profit and not for profit, however, services range from 2-bed facilities to 1000+ bed hospitals (Deiaco, 2013).
2. Context of health care in India and the role of microfinance-based self-help groups

2.1.3 Health care financing and its challenges

By the end of the current, 12th five-year plan period (2012 – 17), the Government of India intends to increase public spending on health care to 1.8 per cent of GDP, from 1.3 per cent in 2012 (The Planning Commission of India, 2012). Data from the World Bank shows India’s public spending on health care is among the lowest in the world, with China spending 3.1 per cent and industrialized economies such as United Kingdom, Spain and Germany spending between 6.5 to 8 per cent of their GDP on health care (Table 2). Further data from the World Bank shows India’s per capita health expenditure was USD 61 in 2013, only USD 6 more than Afghanistan’s for the same year (The World Bank, 2015).

Table 2: Health care spending in 2013 of selected countries

<table>
<thead>
<tr>
<th>Countries</th>
<th>Per capita health expenditure (current USD)</th>
<th>Total health expenditure as % of GDP</th>
<th>Public health expenditure as % of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>61</td>
<td>4.0</td>
<td>1.3</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>55</td>
<td>8.1</td>
<td>1.7</td>
</tr>
<tr>
<td>China</td>
<td>367</td>
<td>5.6</td>
<td>3.1</td>
</tr>
<tr>
<td>UK</td>
<td>3,598</td>
<td>9.1</td>
<td>7.6</td>
</tr>
</tbody>
</table>

Source: (The World Bank, 2015)

Three levels of government incur public expenditure on health care. The central government funds national health programs and provides grant-in-aid to state governments for health care expenditure. State governments fund health care out of their own resources. State governments also transfer resources to rural and urban local bodies for health spending – the third level of government (Choudhury & Nath, 2012).

An analysis of public expenditure on health care as percent of GDP by Choudhury and Nath demonstrates that over the six year periods between 2004 – 05 and 2010 – 11, health expenditure increased by only about 0.2 percent of GDP (Choudhury & Nath, 2012). In per capita terms, this rose from INR 263 in 2004 – 05 to about INR 486 in 2010 – 11 (at 2004 – 05 prices). The relative share of expenditure between centre and states has remained steady at around 40:60 over the period 2004 – 05 to 2010 – 11.

There is a large variation in health care expenditure between states. Annual per capita public spending on health care in Bihar is estimated to be INR 93 (USD 1.5) compared to INR 630 (USD 10.5) in Himachal Pradesh in 2004 – 05 (Balarajan, Selvaraj, & Subramanian, 2011).
Some early analysis on public spending on health care by states led to interesting findings on the priority of states to spend on health care. In 2006, Ramani and Mavalankar studied the trend in public spending on health care and found that state budgetary allocations for health care on average have declined from 7 per cent to less than 5.5 per cent of state gross domestic product in major states between 2001 and 2005 (Ramani & Mavalankar, 2006). In terms of elasticity, for every 1 per cent increase in state per capita income, per capita public health care expenditure has increased by only about 0.68 per cent (Bhat & Jain, 2006). A more recent analysis (1990 – 2007) of the elasticity of government health care spending to GDP indicates marked difference between central and state health funding: elasticity of central spending on health care is 1.15, while that of aggregate state health spending is 0.87, implying that state health care spending has grown at a lower rate than GDP growth (Berman, Ahuja, Tandon et al., 2010). The authors conclude that with an overall (i.e. centre and state) elasticity of 0.94 it is unlikely that government health care spending will grow at the rate needed to achieve the target of 1.8 per cent of GDP. This evidence explains the insufficient public spending on health care. At commonly less than 1 per cent of a state’s domestic product, public health care spending is low and is allocated principally to salaries and wages, which are tied to administrative norms, leaving little provision for facilities, drugs and other consumables.

Health care in India is dominated by private provision of health care services. An early analysis of the Indian health care system by Berman showed that the co-existence of systems of medicine such as ayurveda, siddha, unani and yoga, naturopathy and homoeopathy together with a government focus on hospital care and primary prevention has resulted in the private sector emerging as the major provider of ambulatory care across much of India (Berman, 1998). For example, in Madhya Pradesh (67 million people), approximately 75 per cent of all providers operate in the private sector (De Costa & Diwan, 2007). Additionally, a weak and under-funded public health care system has resulted in poor utilization of public health care facilities: 20 per cent of all outpatient services and 45 per cent of all inpatient care (Ramani & Mavalankar, 2006). The private provisioning of health care grew from a mere 5 to 10 per cent of total patient care during the time of India’s independence to 82 per cent of outpatient visits, 52 per cent of inpatient expenditure, and 40 per cent of institutional births in 2005 (Sengupta & Nundy, 2005). A report of the task force on medical education for the
National Rural Health Mission determined that the private sector provides close to 60 per cent of hospital buildings, 30 per cent hospital beds, and 80 per cent of the doctors in India (Ministry of Health and Family Welfare, 2006). More recent estimates from the Central Bureau of Health Intelligence confirms the increased share of private provisioning of health care in India (Gudwani, Mitra, Puri et al., 2012). A weak under-funded health system and an over-reliance on private health care, much of which is unregulated, partially explains the high out-of-pocket expenditure on health care in India.

Drug costs constitute a high proportion of out-of-pocket expenditure in India, particularly among those who are poor (Balarajan, Selvaraj, & Subramanian, 2011). Inefficient control of drug prices, weak procurement and distribution mechanisms, over-prescription of medications and a poor risk-pooling system exacerbate inequitable access to affordable and effective drugs (Selvaraj & Nabar, 2010; Yip & Mahal, 2008). India has recently implemented a USD 5.4 billion plan to provide essential medicines free of cost through its public health care facilities, a decision that has the potential to reduce its high proportion of out-of-pocket spending on health care but results are yet to be seen (Bhaumik & Biswas, 2012).

As a consequence of high out-of-pocket expenditures for health care and the lack of universal social health protection, the poor frequently delay availing care when ill, do not avail it at all, or fall further into poverty or debt as a result of spending on health care (Mishra, Duggal, Lingam et al., 2008). Most poor families are vulnerable to catastrophic out-of-pocket health care spending, particularly if the earning members of the family get sick. In the next section I argue that even with the current publically-funded social health protection schemes for the poor, a range of factors, including limited awareness of entitlements, hinder the benefit of such schemes for those who need them most.

### 2.1.4 Issues with publicly-funded social health protection program

In 2008, the Government of India launched a national health insurance scheme for the poor, called Rashtriya Swasthya Bima Yojana or RSBY. Families living below the poverty line are eligible to enrol in the scheme in return for a registration fee of USD 0.50 per family per annum. The family gets coverage for treatment cost up to USD 500 per annum in empanelled public and private hospitals (Swarup & Jain, 2011). While RSBY is largely tax-funded,
implementation is contracted at the state level to public and private insurance companies based on a tender process (Duran, Kutzin, & Menabde, 2014).

Several state governments also have initiated their own social health protection schemes to cover the poor against tertiary care expenses: Rajiv Aarogyasri scheme in Andhra Pradesh, Vajpayee Arogyashri scheme in Karnataka, Kalaaignar in Tamil Nadu, and the Mukhyamantri Amrutum Yojana in Gujarat. These schemes cover, on a cashless basis, higher-end tertiary care for people living below the poverty line (La Forgia & Nagpal, 2012). These schemes, together with private voluntary health insurance and central government insurance schemes for the formal sector employees (Central Government Health Scheme and Employees State Insurance System) covered an estimated 216 million people in 2015, which is less than a fifth of India’s population, from a low of 75 million in 2007 (Central Bureau of Health Intelligence, 2015).

However, there are limitations in these social assistance schemes. Health insurance schemes such as RSBY that largely cater to expensive hospitalisation treatment have resulted in a disproportionate increase in tertiary care expenditure, compared to the primary and secondary services (Shahrawat & Rao, 2011). A recent study by Nandi and colleagues on socio-economic determinants of participation in RSBY shows that districts with greater numbers of socio-economically disadvantaged groups are less likely to have people enrolled under the RSBY scheme (Nandi, Ashok, & Laxminarayan, 2013). Districts with more households in the higher income groups were more likely to participate in RSBY. This suggests ‘elite capture’ where the richer districts draw more resources from the program by virtue of administrative and political control. Another study on RSBY highlighted poor awareness of the scheme’s details and benefits, the list of empanelled providers and the types of illnesses covered as the most important reasons for non-enrolment in RSBY and non-utilisation amongst members enrolled in the scheme (Seshadri, Trivedi, Saxena et al., 2012).

Women are particularly disadvantaged, even among the enrolled households. RSBY has a cap of enrolling five members per family. In case of larger family, as is the case in much of rural India, working and male members were prioritised for enrolment in the scheme, thus leaving women out of the scheme (Seshadri, Trivedi, Saxena et al., 2012). In Karnataka, experience during the early period of RSBY implementation showed that while two-thirds of the target population were enrolled in the scheme, utilisation was virtually nil; beneficiaries either had not received cards or had no information on where to access care when sick (Rajasekhar,
Berg, Ghatak et al., 2011). Women and the elderly were more likely to be excluded from RSBY enrolment (Anil, Seshadri, Ganesh et al., 2014). In a study on social exclusion of women in Karnataka, Ganesh (2014) found evidence of selective exclusion of women while imparting information about the RSBY scheme by local authorities. Local authorities (gram panchayat members) gave out information to their relatives and friends and those who patronised them by participating in and contributing to political campaigns. Male local authorities do not consider women important enough or educated enough to receive information on RSBY scheme.

This evidence shows that without simultaneously addressing the issues of awareness and exclusion of poor women, social assistance programs are unlikely to result in reduction of poverty and better health outcomes, for women in particular.

2.1.5 Prioritising action on gender inequity

Gender has a strong interface with health. With lower average income levels, women are more likely to be impoverished by health care costs (Haussmann, Tyson, & Zahidi, 2010; Victora, Wagstaff, Schellenberg et al., 2003). Women in India are in many cases excluded from schooling, employment, and land ownership (Raj, 2011; Sen, 2000). Globally, India is ranked among the lowest nations in terms of gender equity: 132nd of 134 nations by the World Economic Forum (Haussmann, Tyson, & Zahidi, 2010). Compared to their male counterparts, women are three times more likely to go without treatment for long-term ailments (Iyer, Sen, & George, 2007). A girl in India is 40 per cent more likely to die between her 1st and 5th birthdays than a boy.

The reasons for this gender inequity are deeply ingrained socio-cultural factors. Commonly, when care is needed, girls are taken to a health facility in a more advanced state of illness than boys; they are taken to a less qualified doctor when ill; and less money is spent on medicine for girls (Victora, Wagstaff, Schellenberg et al., 2003). Women often face disparity in access to health care due to a number of factors, such as:

- Denial of the right to welfare programs by local health authorities due to socio-cultural stigma
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- Intra-household prioritisation of male and earning family members for enrolment in government sponsored social health insurance schemes
- An internalised sense of inferiority that deters women from seeking health care when needed (Anil, Seshadri, Ganesh et al., 2014; Ganesh, 2014; Commission on Social Determinants of Health, 2008; Iyer, Sen, & George, 2007).

Programs that work with women’s access to credit and livelihood are argued to lead to improved well-being of women and empower them to bring about wider changes in gender inequality as well as access to healthcare (Desai & Alva, 1998; Caldwell, 1979). Women are the key to improving the health of families and communities; improved education and employment of women have been shown to raise immunisation rates, reduce child mortality, and result in smaller family size and greater well-being of families (Gakidou, Cowling, Lozano et al., 2010; Murray & Lopez, 1997). However, empowerment cannot be assumed to be an automatic outcome of access to credit and livelihood, unless it is an integral part of the planning process (Linda 2000).

Women’s groups have a key role to play in addressing gender disparities including the disparity in access to health care. Balaraj and colleagues drew attention to the role of local networks of women’s groups and the need to engage, empower, and build capacity within these groups to attain equity in health and improve quality health care at reasonable costs (Balaraj, Selvaraj, & Subramanian, 2011). Case studies for the Commission on Social Determinants of Health on challenging inequity through health systems emphasized the role of women’s groups in promoting health equity (Gilson, Loewenson, & Francis, 2007). A meta-analysis of seven trials on a participatory learning and action program from Bangladesh, India, Malawi, and Nepal found that participation in women’s groups was associated with a 37 per cent reduction in maternal mortality, a 23 per cent reduction in neonatal mortality, and a 9 per cent reduction in still births, compared to control areas that did not have women’s groups (Prost, Colbourn, Seward et al., 2013). Prost and colleagues observed that the women’s group approach was inspired by a commitment to the participation of people in health care and that it addresses powerlessness and creates social and political empowerment among the group members (page 1737).

Evidence reviewed thus far suggests the need to prioritise action on gender disparity as a means of addressing health inequity in India. Along with macro-economic measures, programs that seek to empower women economically have the potential to influence positive
health behaviours and health outcomes. It is in this context the next section discusses the structure and context of microfinance programs and their role in improving the health behaviours and outcomes of the poor. Evidence, as discussed in the next section, suggests that along with affirmative action by governments to reach out to the poor, programs to address gender disparities that exclude poor women from accessing health care are also important.

2.2 Microfinance-based self-help group programs

2.2.1 Microfinance: Forms and reach

Microfinance refers to small-scale loans, savings, insurance and other financial products targeted at low-income clients (Ledgerwood, 1998). The terms microfinance and microcredit are often used interchangeably, although in absolute sense microcredit refers to the money lent to a client by a bank or other institution, while microfinance refers to a range of financial services, including microcredit loans, savings and business training for the poor who are unable to access formal banking services (Cornford, 2001; Robinson, 2001).

The United Nations Conference on Women and Development in Mexico City in 1975 called for access to financial capital as a strategy to benefit the poor, especially poor women (Chen, 1995). Around the same time, the pioneering work of Professor Muhammad Yunus in Bangladesh represented microfinance as a major initiative to address poverty (Perkins, 2008; Rajan & Zingales, 2003). The important role of microfinance in lifting people out of poverty in many countries was recognized in the United Nation’s resolution of 15 December 1998, and the year 2005 was celebrated as the ‘international year of microcredit’ (United Nations, 2004). Recognizing the role and scope of microfinance to extend the same financial rights and services to low-income households that are available to everyone else, the then UN Secretary General Kofi Annan advocated expanding microfinance programs as a strategy for poverty eradication (Imboden, 2005; United Nations, 2005). In 2006, Professor Muhammad Yunus and the Grameen Bank were jointly awarded the Nobel Peace Prize for ‘their efforts through microcredit to create economic and social development from below’ (Norwegian Nobel Committee, 2006, page 1).

However, the concept of microfinance is not a recent development; microfinance existed in Europe as early as the 16th century. Credit and savings institutions have been in existence for
centuries in different forms using different names across countries in Africa, Europe, Latin America, and the Indian sub-continent (Perkins, 2008; Seibel, 2003).

Microfinance programs have gained wide outreach globally among people living in poverty. According to the State of Microcredit Summit Campaign report 2014, microfinance institutions are reaching out to 204 million clients globally, 82.3 per cent of whom are women; and two-thirds of them were among the poorest when they took their first loan (Reed, 2014). Eighty-two per cent of microfinance activities are concentrated in the Asia-Pacific region; 68.8 per cent of these families lived in absolute poverty when they took their first loan.

Syed Hashemi and Sidney Schuler in their analysis on rural credit and women’s empowerment in Bangladesh observed that by offering a range of financial services and training, microfinance programs empower members by promoting the following:

- Freedom of mobility
- Economic security
- Ability to make small and large independent purchases
- Participation in important family decisions
- Relative freedom from domination by family
- Political and legal awareness
- Participation in political campaigns and public protests (Hashemi, Schuler, & Riley, 1996).

As a population group ‘the poor’ are not homogenous, and hence a plurality of microfinance programs exists, some delivered through not-for-profit oriented NGOs, while others are delivered through for-profit commercial banks or other financial institutions. The wide variety of models and levels of financing range from the Grameen Bank model of group-based lending primarily to women by a microfinance institution (MFI) to the more informal village savings model where the very poor organise into SHGs both to save money and to provide loans to one another (Dasgupta, 2005; Bhatt & Tang, 2001; Gonzalez-Vega, Schreiner, Meyer et al., 1996).
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2.2.2 Criticism and debate around ‘The Promise of Microfinance’

Microfinance programs have been the subject of a huge promise and much criticism regarding their impact on the poor. While a complete analysis of the debates around microfinance is not within the scope or purpose of this thesis, it is prudent to state how the contemporary literature has engaged with this debate.

Early experience with microfinance programs, such as the Grameen Bank in Bangladesh, Accion’s BancoSol in Bolivia, and Bank Rakyat Indonesia’s Unit Desa in Indonesia, demonstrate the power of microfinance institutions to financially empower poor people. The possibilities offered by microfinance were first introduced to the academic community by a seminal paper, ‘The Promise of Microfinance’ by Jonathan Morduch, in the *Journal of Economic Literature* in 1999 (Morduch, 1999). Morduch observed that by providing financial services to low-income households, microfinance can transform the members’ – predominantly women’s – economic and social structures (page 1570). However, not all microfinance programs are successful, and some programs have been criticized for lack of sustainability or for excluding the poorest (Dichter, 2006; Bhatt & Tang, 2001; Woolcock, 1999).

A little over a decade following the publication of ‘The Promise of Microfinance,’ public opinion changed and microfinance was accused of showing little or no effect on improving the livelihoods of the poor (Drake, 2009; Harford, 2009). Microfinance programs were criticized for charging exorbitantly high interest rates, high default rates, farmers’ suicide, inability to reach large number of poor borrowers and high dependence on subsidies (Field & Pande, 2008; Bhatt, 1997). Among the most recent, in 2010 a major microfinance crisis broke out in Andhra Pradesh, India, where loan default was reportedly linked to farmers’ suicide (Taylor, 2011). There was similar opposition to microfinance in 2009 through the ‘No Pago’ (I won’t pay) movement in Nicaragua against high interest rate charged by microfinance institutions and in 2010 a standoff ensued between Muhammad Yunus and the Bangladesh government over control of the Grameen Bank (Bajaj, 2011; Pachico, 2009). Other examples of opposition to microfinance have been reported since 2005 in Bosnia and Herzegovina, Morocco, and parts of Pakistan (Chen, Rasmussen, & Reille, 2010).

Many of these claims were criticized for being based on anecdotes and having little empirical evidence. There is so far no consensus among academics on the negative impact of
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microfinance (Tedeschi, Karlan, & Initiative, 2010). Eva Terberger maintains that rather limited impact studies support the claim of over-indebted clients due to microfinance (Terberger, 2013). Five randomized control trials in India, Philippines, Morocco, Mongolia, and Bosnia and Herzegovina (conducted between 2006 and 2010) showed that microcredit does stimulate micro-enterprise (business starts, investment and profits) but found no impact on poverty (Augsburg, De Haas, Harmgart et al., 2015; Attanasio, Augsburg, De Haas et al., 2014; Banerjee, Duflo, Glennerster et al., 2013; Karlan & Zinman, 2011; Crépon, Devoto, Duflo et al., 2011). In reviewing results from the five studies, Roodman (2013, page 27) observed that the studies were limited in scope, and measured – ‘a particular product offered at a particular time in a particular place to a particular population, tracked for one or two years’.

In analysing the determinants of microcredit interest rates, Richard Rosenberg and colleagues observed the microcredit rates are higher than normal bank rates because it costs more to administer thousands of tiny loans than to lend and collect the same amount in a few large loans (Rosenberg, Gaul, Ford et al., 2013). In analysing trends in microcredit rates from 6,043 microfinance institutions over 2004 – 2011, the authors concluded that, in reality, profits for microfinance institutions dropped over the period by 2.7 percentage points.

In analysing the microfinance crisis in Andhra Pradesh (India), Vijay Mahajan and colleagues (2013) noted that the period 1996 – 2010 could be characterized as a period of rapid expansion of microfinance sector, and the phase 2011 onwards (i.e. post-Andhra Pradesh microfinance crisis) is a period of qualitative consolidation of the microfinance industry with better regulatory framework and consumer protection norms (Mahajan & Navin, 2013). To ensure client safety and resilience, an additional role is played by credit bureaus, consumer protection laws, and effective regulators (Roodman, 2013). Roodman further noted that the strength of microfinance ‘is not in systematically lifting people out of poverty, but building dynamic institutions to mass-produce inherently useful services for the poor’ (page 128).

As discussed in the following section, the dominant form of microfinance delivery in India is the self-help group (SHG) model. A consensus among researchers is that microfinance cannot be viewed as a panacea for poverty alleviation (UN Women, 2012). While microfinance is an important initiative, economic empowerment through ‘assisted’ self-employment or credit lending to SHGs is not alone sufficient to achieve poverty alleviation. There is a wider role for the state. The success of large-scale SHG promotion programs, such as the Velugu project
in Andhra Pradesh and the Kudumbashree project in Kerala, is in ensuring back-end subsidies to borrowing SHGs that effectively reduces their interest rates when the borrower returns the last loan instalment – through a subsidy from the government. In other words, there is a bigger role for the state in ensuring institutional credit, livelihood training, raw materials, and marketing of finished products. This aspect of microfinance, which goes beyond mere provision of credit, has been widely discussed in the literature (Swain & Varghese, 2010; Dunford, 2001; Dawson & Jeans, 1997).

2.2.3 Microfinance in India

The growth of the microfinance movement in India was preceded by a need to improve financial access for India’s poor, the overwhelming majority of whom were concentrated in rural areas and dependent on money lenders (also referred to as loan sharks), who charged exorbitant interest on the money lent (Morduch & Rutherford, 2003). The formal banking system, which largely catered to the urban and organised sector until 1950s, expanded its coverage in rural areas by establishing a network of rural cooperative credit banks after the post-nationalisation period of banks in 1969. This led to the establishment of many new bank branches in rural and sub-urban areas across the country, which provided access to credit for the rural poor through the granting of targeted low-priced loans (Bell & Rousseau, 2001).

Despite this, financial inclusion through the formal banking system remained sub-optimal, as is still the case today – only 48 per cent of Indian adults used formal financial services in 2008 (Pal & Pal, 2012; Honohan, 2008). Several non-banking financial institutions emerged in the 1990s to provide microcredit to the informal sectors of the population, most notably pioneered by non-governmental organisations (NGOs), private microfinance institutions (MFI), and then supported by the state to create links between commercial banks, NGOs, and informal local microfinance-based SHGs (Basu & Srivastava, 2005).

2.2.4 Forms of microfinance in India

Microfinance organisations adopt a variety of methods for delivering services. The Indian microfinance sector is characterized by two dominant models: the SHG-bank linkage (SBLP) model and the Microfinance Institution (MFI) model. These two models are very different, both in terms of service delivery and legal form (Sinha, 2009):
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In the SBLP model:
- Banks that create networks of SHGs provide finance
- Operates as membership-based group
- NGOs and the state governments implement the model (Batra, 2012).

In the MFI model:
- Private MFIs and non-banking finance companies (NBFC) that organize SHGs provide finance
- Private NBFCs manage the model; these institutions are regulated by the Reserve Bank of India (RBI)
- The model includes variations in legal form ranging from not-for-profit societies or trusts and not-for-profit companies registered under Section 25 of the Companies Act to NBFCs licensed by the Reserve Bank of India (Sinha, 2009)
- The joint liability group, such as the Grameen Bank, is the most common model internationally (Besley & Coate, 1995)
- Group members opt out and join in as and when they need loans, thereby do not operate as membership-based organization.

While the popularity of the MFI approach is growing rapidly, the SBLP model is more widespread in India (Ghate, 2008). The overall reach of microfinance programs in India was estimated at around 93 million members during 2012 – 13 (Nair & Tankha, 2014). This included 65 million members from SBLP and 28 million from MFIs. However, some overlap between the two models is possible. More than 80 per cent of the members are women.

2.2.5 Self-help groups

Self-help groups are informal groups of 10 to 20 individuals, mostly women and usually from the same village, formed with the objective of promoting collective savings. A comprehensive definition of SHGs can be found in Katz and Bender (1976, page 9).

Self help groups are voluntary, small group structures for mutual aid and the accomplishment of a special purpose. They are usually formed by peers who have come together for mutual assistance in satisfying a common need, overcoming a common handicap or life-disrupting problem, and bringing about desired social and/or personal change. The initiators and
members of such groups perceive that their needs are not, or cannot be, met by or through existing social institutions. Self help groups emphasize face-to-face social interactions and the assumption of personal responsibility by members. They often provide material assistance, as well as emotional support: they are frequently ‘cause’ oriented, and promulgate an ideology or values through which members may attain an enhanced sense of personal identity.

Self-help groups are not only a source of microcredit, they also encourage saving among members. The money raised through internal savings within the SHG is lent to group members for specific purposes. The group decides which members will be lent money and for what purpose. When groups are able to manage their savings and lending portfolio successfully, banks can step in to provide additional loans for onward lending to members. SHGs are allowed by the Reserve Bank of India to open savings account with local banks (Batra, 2012). The total value of bank loans to the SHG is on average two to four times the savings mobilized by the group.

The quality of the group’s functioning is the prime criteria for the banks to lend money: groups that have been in existence for about six months and have successfully undertaken savings and credit operations from members own resources are eligible to receive bank loans (Sinha, 2009). Upamanyu Dutta (2015) found that the average annual interest rate for formal microcredit loans was 24 per cent, compared to rates of 60 per cent to 120 per cent annually from informal money lenders. The size of individual loans varies from INR 60 to INR 60,000 (approximately USD 1 to USD 1,000), and repayment tenure varies from 1 to 25 monthly instalments. Often, smaller SHGs federate into a larger organisation and become a registered entity with a larger corpus fund (Saha, Rao, Dutta et al., 2014). Other than business loans, such SHG federations may also provide loans to meet medical costs. These health loans are generally provided from a health risk fund that typically carries a lower average annual interest rate, around 12 per cent per annum (Datta, 2015). This model of SBLP is promoted extensively by the National Bank for Agricultural and Rural Development (NABARD), an apex development bank in India.

The SBLP has been the backbone of the financial inclusion program of the Government of India and has witnessed consistent growth since 1990, when it was launched. There are four segments of population involved in these types of microfinance activities:

- Landless agricultural and manual labourers
- Small and marginal farmers and rural weavers
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- Workers from the informal sector who are largely self-employed
- Farmers engaged in dairy farming, poultry, fisheries etc. (Batra, 2012).

As per the District-Level Household Survey (DLHS III) data, 57.9 per cent of Indian villages had an SHG in 2007 – 08. The majority of these groups are concentrated in the southern and north-eastern states of India. Figure 3 plots the percentage of villages with an SHG, by states in India.

![Map showing percentage of villages with an SHG, by states](image)

Figure 3: Percentage of villages with an SHG, by states

Source: (Saha, Annear, & Pathak, 2013)

However, not all SHGs were equally active in terms of operation. In the report ‘State of Microfinance in India 2009’, Frances Sinha (2009) discussed some of the issues with SHGs.
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(Sinha, 2009). Though SHGs witnessed high growth since their inception, there was a decline in the amount of loans disbursed to SHGs in 2008. Loans disbursed to new groups declined in 2008 to USD 105 million from USD 165 million in 2007. This has been attributed to three factors:

- Onset of saturation in south Indian states
- Slow progress in SHG formation in other states
- Adoption of better reporting standards by banks, such as counting only operative accounts.

The report expressed concerns related to the lack of skills of members to invest the loans for productive use, thus diminishing the credit absorption capacity of SHGs.

With the task to analyse the credit related issues of SHGs in India and suggest measures to improve efficiency of the group, the government of India constituted the Radhakrishna committee in 2008 (Radhakrishna, 2009). In its report, the committee identified the key problem as the focus of the SHGs on low productivity, primary sector activities. The reasons for this, as identified in the committee findings, were:

- In 2009, only 22 per cent of SHGs had access to bank finance for undertaking income generating activities including micro enterprises
- Assistance from banks was abysmally low and the procedure of lending was often cumbersome, leading to a low level of investment activity
- Only 6 per cent of the total program funds were utilised for training and capacity building.

The committee, in its report, made several recommendations, key among which were the following:

- Create a National Rural Livelihood Mission to improve vocational skills and promote more effective organisation of rural poor
- Create SHG federations from village to national level
- Increase bank branches in un-banked areas
- Provide interest subsidy and revolving fund for SHGs
- Make skill development a key component of the program
- Increase financial allocation for the program.
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Following the Radhakrishna committee recommendations and with a focus on promoting self-employment, vocational skills improvement and more effective organisation of the rural poor, an umbrella program called the National Rural Livelihood Mission was launched in 2011 by the Ministry of Rural Development, aided in part through an investment from the World Bank (NRLM, 2011). The program included activities of earlier poverty alleviation initiatives and aimed to create efficient and effective institutional platforms to enable the rural poor to increase their household income through a process of sustainable livelihood enhancements and through improved access to financial services. The mission intends to reach out to 600,000 villages across India by 2021. Under the NRLM, several states introduced their own large scale SHG programs: the JEEViKA program in Bihar, and the Mission Managalam in Gujarat were designed after the success of Velugu or Indira Kranti Patham program in Andhra Pradesh and the Kudumbashree program in Kerala (Datta, 2015). Velugu and Kudumbashree programs are hailed as India’s largest and most successful poverty alleviation and empowerment programs (Mahajan, 2009; Ramesh, 2007). An evaluation of the program found significant positive changes in debt burden, ownership of assets, women’s social empowerment (measured in terms of mobility, decision making, and collective action), overall per capita consumption households (measured in terms of caloric and protein intake), and decrease in defecation in open fields (Datta, 2015; Deininger & Liu, 2009).

2.2.6 SHGs and social capital

Self-help group meetings are coordinated by a facilitator (credit officer in case of a microfinance institution) and occur at regular intervals. They generally adopt strict financial discipline regarding collection and accounting for savings and credit transactions. This involves significant face-to-face interaction between members and strong commitment to the well-being of all group members. Typically, each member of the group tries to help other members as the need arises, according to the ‘helper therapy principle’ (Gartner & Riessman, 1977). Members help to find solutions to the personal problems of other members and at the same time contribute to the group’s collective affairs (Folgheraiter & Pasini, 2009). This promotes horizontal associations among group members that enhances mutual trust and reduces their sense of isolation (d'Hombres, Rocco, Suhrcke et al., 2010; Szreter & Woolcock, 2004). The key feature of SHGs is the principle of reciprocity and the strong emphasis on building social cohesion among members. To achieve this, members have to
overcome their social, economic, and political differences and develop the strength to promote their collective interests (Chen, Jhabvala, Kanbur et al., 2006). By strengthening the networks and trust within their communities, these groups are better able to work collaboratively to resolve the social, economic and health care issues affecting the community (Whittaker & Banwell, 2002).

Membership in these groups can therefore act to create solidarity and social capital among group members (Narayan-Parker, 2002). Social capital refers to the networks, norms and trust that exists within communities and that can be mobilised as a resource for addressing several development needs (Productivity Commission, 2003; Kawachi & Berkman, 2000; Putnam, 1995). Social capital is recognized as having a positive effect on individual and community health status (Wilkinson, 1997). Social capital influences health care in two ways:

- Through formal networks of members as a means to access social and health care
- Through informal networks in which an individual draws upon groups’ collective body of knowledge that facilitates access to health care and scarce resources, including information exchange that enhances members’ ability to make healthy choices (d'Hombres, Rocco, Suhrcke et al., 2010).

In their study of maternal education and childhood immunization, Vikram and colleagues (2012) noted there are several different types of social capital depending on the type of network affiliation. Within their study context, they observed membership of an organisation related to one’s religion or caste may reinforce traditional practices such as the use of indigenous medicine and encourages conservative norms, which may discourage mothers from using more modern health interventions such as childhood immunisation programs. In contrast, membership of development organisations such as SHGs tends to encourage more modern practices and may increase the availability of information about the benefits of immunisation and promote patronage of local immunisation campaigns (Vikram, Vanneman, & Desai, 2012). However, membership alone does not automatically lead to women’s empowerment; women’s empowerment also has to be an integral part of the program design and planning process.

In order to redress traditional gender imbalances in education access the *Mahila Samakhya* (MS) program was launched in 1989 by the Ministry of Human Resource Development. The program acknowledges women’s empowerment as the key to social transformation (Baru and
Dhaleta, 2012; Arends-Kuenning, 2012). The program strategy empowers women to explore the power of collective action. Women are mobilized and organized into groups (referred as *sanghas* or *samoohs*) where they come together, discuss, reflect, organise and analyse, and articulate their needs and address them jointly. The MS program is modelled such that groups federate in self-reliant structures. The program was first introduced in ten districts of three states in 1989 expanding to 126 districts from 11 states of India in 2015. The MS programme has had far-reaching and spill over effects on education, health and early marriage practices for women, their children, families and their community. This program highlights the need to acknowledge and focus on women’s empowerment as a key strategy of SHG formation and functioning to make a positive change in the lives of women’s health and life.

While the major responsibility for redressing inequity in health care should rest with public policies, there is an important role for civil society groups, including women’s active participation in SHGs. In a study on social exclusion from the RSBY scheme in Karnataka (India), involvement of SHGs was recommended to identify, enrol and assist vulnerable groups of women (Ganesh, 2014). Earlier studies indicated that participation of mothers in saving groups in Bangladesh (such as Grameen Bank), or even residing in a program area served by such groups, increased mothers’ knowledge about child care practices and their children’s probability of being fully immunized (Amin & Li, 1997). The Integrated Child Development Services of the Government of India utilizes NGOs and SHGs in its distribution of supplementary nutrition program. The initiative reaches out to all beneficiaries with a standard weekly menu, meeting the protein and calorie norms within the allocated ration cost, removing contractors and encouraging local SHGs and *mahila mandal* to be involved in the supply and distribution of the meals. Results from a social audit indicate that 71% of the respondents felt that the menu chart was followed (Paul, Sachdev, Mavalankar et al., 2011).

Social capital as a result of participation in development organizations such as microfinance programs, is associated with: improved child development; well-being of adolescents; better mental health care; a reduction in violent crime and youth delinquency; a reduction in mortality; and lower susceptibility to binge drinking, depression, and loneliness (Howard, 2001; Kawachi & Berkman, 2001; Keating, 2000; Kawachi, Kennedy, Lochner et al., 1997; Hagan, Merkens, & Boehnke, 1995). Social capital is also linked to sustained participation in anti-smoking programs and higher perceptions of well-being and self-rated health status (Szreter & Woolcock, 2004). An analysis of indicators of social capital and individual self-
rated health status among 167,259 individuals residing in 39 US states found strong associations between low social capital and self-rated poor health status (Kawachi, Kennedy, Lochner et al., 1997). However, it was D’Hombres and his colleagues who established the causal impact of social capital on self-rated health status in eight transition countries of Eastern Europe and central Asia (d’Hombres, Rocco, Suhrcke et al., 2010). They found that individual levels of trust were positively and significantly correlated with health care and social isolation was negatively and significantly associated with health care. Similarly, microfinance programs could potentially harness members’ social capital for positive health outcomes.

2.2.7 Microfinance health program

While microfinance programs have traditionally emerged as a strategy for raising the financial security of the poor, the nature of microfinance arrangements, where members usually organise in an informal group of 10 to 20 members to obtain loans, presents an opportunity for introducing other development initiatives, such as programs to promote positive health behaviours and practices. Sheila Leatherman and Christopher Dunford identified two reasons for including health program with groups organised by microfinance institutions:

- Health services are an extension of the MFI mission of financial security and social protection of the client
- When clients are healthier they provide better business and growth of microcredit business for the MFIs (Leatherman & Dunford, 2010).

In her foreword to a report on Integrated Health and Microfinance in India, the founder of the Self-Employed Women’s Association, Ela Bhatt, summarized the rationale for MFIs to include health programs as part of their portfolios (Metcalfe, Saha, Rao et al., 2012, page 3):

*All too frequently, the poor default on paying back their loans because of the ill health of the borrowers—the accumulated financial strain of health care and being unable to earn. For microfinance to achieve its objective of providing financial security to the poor, it has to address health security as a crucial element of social security.*
Recognising that poverty is not simply about lack of funds and the potential value of social capital, several large microfinance institutions have adopted an approach that goes beyond the provision of financial services alone (Bhatt, 1998; Khandker, 1996). This includes providing a health program to address health needs of their members. Health programs linked to microfinance programs are designed to promote awareness of key health issues, coupled with the delivery of simple but potentially life-saving health services (Leatherman, Saha, Metcalfe et al., 2014).

Combining health programs with microfinance programs aims to bring a positive change in health awareness and practices that are known to reduce the incidence of the most common and preventable diseases. Such health programs can provide both the means and the knowledge for addressing priority health needs as a result of increased trust and confidence with the organisation (Pronyk, Harpham, Busza et al., 2008). Such programs can not only improve members’ health awareness but also their access to and use of affordable health services and products (Leatherman, Metcalfe, Geissler et al., 2012). A five-country pilot program (Bénin, Bolivia, Burkina Faso, India, and the Philippines) on integrating microfinance and health protection found that once a microfinance organisation has developed and piloted an efficient and effective health program, the program can be expanded to very large numbers of people at low cost to the institution and with significant positive impacts on clients and the financial services organisation itself (Metcalf, Leatherman, & Gash, 2012).

### 2.2.8 Types of microfinance health program

From a review of literature, I identified three main community health needs that microfinance-linked health programs seek to address:

- **Knowledge** – awareness and information for behaviour change
- **Affordability** – financial ability to pay for health care
- **Availability** – convenience of access to effective and safe health services and products.

Here I address these three issues. A more in-depth review of the impact of such programs on measured health indicators is provided in Chapter 4.
Awareness and information for behaviour change

Programs that focus on creating awareness through health education and counselling are predominant among microfinance-based SHG health programs.

An early initiative that adopted a holistic approach to community health care in India was the Jamkhed experiment, a community development block in the Ahmednagar district in Maharashtra, India (Arole & Arole, 2002). In 1970, two doctors, Raj and Mabelle Arole, started a primary health care program that was linked to the broader development needs of the area, and the project continues today. The essential element of the project was community empowerment. Their work involved participatory approaches to organising the community members. The participatory group addressed community health care as part of a holistic approach to overall development. This community development model included improvements in water and sanitation and promoting savings and access to credit through women’s development associations, referred to as mahila vikas mandals (MVM). The MVM became a platform to share health knowledge and skills with other village people to enable them to appreciate their crucial role in improving the health status of their village. In a Lancet series on ‘Alma-Ata: Rebirth and revision 5 - Community participation: lessons for maternal, newborn, and child health’, Mikey Rosato and colleagues described the Jamkhed experiment as one of the world’s most successful community empowerment projects (Rosato, Laverack, Grabman et al., 2008).

Ekjut works with tribal populations in Jharkhand and Odisha for improvement of maternal and newborn child health using a participatory intervention with women’s groups (Tripathy, Nair, Barnett et al., 2010). These groups take part in a participatory learning action cycle to identify and prioritise maternal and newborn problems, find feasible solutions and implement and evaluate together. Local facilitators work with women’s groups to consider the causes and underlying problems leading to maternal and newborn deaths, develop practical strategies for improved maternal and newborn health, and implement and assess the outcomes of these strategies. A range of activities aimed at strengthening the links between communities and primary health care providers to increase use of services are performed and then tracked to assess the effectiveness of the program.

The participatory learning and action cycle program involves four phases:

- Identify and prioritise difficulties
2. Context of health care In India and the role of microfinance-based self-help groups

- Plan strategies to address the difficulties
- Put together a program to realise strategies in practice
- Assess the effectiveness of the program.

This activity of participatory learning and action cycle through women’s group members are widely adopted by microfinance institutions in South Asia.

*Bandhan*, a microfinance institution with nearly 4 million members in 18 Indian states, initiated a health program in 2009 in West Bengal (Leatherman, Saha, Metcalfe et al., 2014). The Bandhan Health program comprised health education (forums facilitated by Bandhan's community health volunteers), health care product distribution (via health care kits) and provision of linkages/referrals to public health centres for women children and adolescents. The program included monthly educational sessions reinforced by a network of *Shastho Shohayikas* (community health volunteers). The volunteers made home visits to increase awareness of key maternal and child health care issues, promote low-cost health products (e.g. oral rehydration solution, paracetamol, oral contraceptives, pregnancy tests, de-worming pills, antiseptic lotions), and encourage people to use local health services when appropriate. The health program, initially supported through a Bill & Melinda Gates Foundation Grant with Freedom from Hunger, was later supported by surplus generated by the microfinance operations of the parent company – Bandhan.

**Financial ability to pay for health care**

Microfinance health programs are also designed to provide financing approaches to cover catastrophic health expenditure of its members.

*BRAC*, one of the major nongovernmental organisations in Bangladesh with extensive microfinance capabilities, targets the ‘ultra poor’ with a package that included health-care subsidies, training health workers, interventions for social inclusion and cash subsidies to meet members’ immediate health care expenditure (Sinha & Batniji, 2010). To address catastrophic health care expenditure of its members, *BRAC* creates a health micro-insurance scheme. Policyholders received a health card upon payment of an annual premium. Once insured, cardholders receive services at *BRAC* health centres with a co-payment. Policyholders also receive the following subsidized services:
2. Context of health care in India and the role of microfinance-based self-help groups

- Doctor consultations
- A free annual check-up for the head of the household
- Pathology testing
- Discounted medicine
- Birth deliveries (Ahmed, Islam, Quashem et al., 2005).

Grameen Bank, another major microcredit institution in Bangladesh, had several programs addressing the health needs of its members. Grameen Kalyan is a comprehensive health service financing and delivery program, established by Grameen Bank to provide quality, affordable health care for its members (Hamid, Roberts, & Mosley, 2011). The program provides an affordable health micro-insurance scheme, with a network of community-based health centres and satellite clinics, managing a referral system for secondary and tertiary care, and coordinating outreach health services by community-based female health workers.

The Society for Elimination of Rural Poverty (SERP) was started in 2000 by the Government of Andhra Pradesh (India) as a poverty alleviation program. SERP works closely with women SHG members reaching out to 10.7 million women using trained health workers and managing health savings and health risk funds to help defray expenses related to medical emergencies, while offering additional risk protection through a link with the Arogyashree social health insurance scheme of Andhra Pradesh (Leatherman, Saha, Metcalfe et al., 2014; Deshmukh-Ranadive, 2004).

The Insurance Regulatory and Development Authority (IRDA) of India is a strong proponent of the formal insurance industry serving the low income and rural market. The IRDA rural sector regulation stipulates that formal insurance companies had to generate an existing client base among low income and rural markets. This creates a broad range of insurance opportunities for the microfinance industry due to its already existing network among low income and rural households (Roth, Churchill, Ramm et al., 2005). Three models of micro insurance operate in India:

- The community-based model where a group of people get together and develop their own insurance scheme usually supported by an NGO, in which they pool their own funds and develop their own rules. An example of this model is the Swayamkrushi Youth Charitable Organization (YCO) in Andhra Pradesh. It is primarily a savings and credit association that has an added health insurance component;
2. Context of health care in India and the role of microfinance-based self-help groups

- The in-house or full service model where an MFI or NGO runs its own insurance schemes for its members. This approach was more common before the IRDA regulation 2005\(^9\) came into force. Microfinance institutions, such as SEWA, Spandana and SKDRDP, started their micro insurance scheme as full service models;
- The partner-agent model where an MFI or NGO act as an agent, while risk is borne by an insurance company. This model is the dominant approach to micro-insurance in India. Partnerships between formal risk carriers and microfinance programs are aggressively promoted by formal health insurance companies in India to expand insurance coverage among the poor in rural areas.

**Access to health services and products**

Access to medically appropriate health services and products is a major problem among the poor in India. Several socially motivated microfinance institutions made contribution to address this through direct and indirect delivery of health products and services.

*Gram Utthan*, a microfinance institution in Odisha, provides both microfinance and other development services to over 100,000 clients (Leatherman, Saha, Metcalfe et al., 2014). *Gram Utthan’s* health program includes health education and health savings organised through SHGs, health camps and community medicine points that make a range of generic medicines and health supplies available in small villages. The medicine points operate from the residence of the organisation’s village health volunteers (VHVs), who provide health education and facilitate formation of health savings groups. The VHVs earn a 20 per cent commission on the sale of commonly used generic medicines.

Microfinance organisations, such as *Swayam Krishi Sangam* (SKS) train village health volunteers as barefoot doctors to identify non-critical ailments such as cough, cold, body aches and to dispense medicine. Since most of the beneficiaries, including the barefoot doctors, were illiterate, they were trained to recognize a particular drug by the colour of the packet it was wrapped in. This activity not only created new livelihood options but also proved beneficial for the villagers who previously had to travel long distances, even to procure basic medication (Gutta, 2012). More detailed case studies of microfinance health

\(^9\)The Micro Insurance Regulations of 2005 by the IRDA does not allow an in-house micro-insurance in India.
programs in India is documented in a report titled ‘Integrated Health and Microfinance in India, Volume II: the Way Forward’ (Saha, Rao, Dutta et al., 2014).

2.3 Summary

In this chapter I argued that a key challenge for health policy-makers in India is to address the health needs of poor women who have limited access to health services due to a range of social factors. The same social factors and lack of awareness about entitlement impede the poor from benefitting from public spending on health care ranging from the publically-funded health insurance schemes for the poor to the drive to end open defecation. Field studies from India and elsewhere have demonstrated the influence of social networks and social capital in spreading health-related and social behaviours. Microfinance-based SHGs are described as a potential pragmatic solution to promote equity in access to health care in the immediate future. However, the role of microfinance-based SHGs in improving health outcomes of the poor has not been a policy priority in India. Further evidence regarding the impact of combining SHGs with health programs is needed to fill a gap in knowledge that can be used to inform subsequent policy development. Assessing the likely effect of combining SHGs with health programs is the focus of the work undertaken for this thesis. In the next chapter I describe the study methods used to address this gap in knowledge.
3. Methods

3.1 Introduction

The study was undertaken in a real-life context in which outcomes are affected by a wide range of variables (socio-economic status of respondents, existing development programs) and in which there are many different actors (SHGs, governments, NGOs), all within a low income setting. The use of the mixed methods is the most appropriate approach in these conditions. The study used three different methods to address the study aim:

1. A review of the published evidence from the South Asian region
2. A quantitative analysis of secondary data from the District-Level Household Survey-III (DLHS-III)
3. A comparison of microfinance-based SHG programs with and without a health program using a quantitative survey and qualitative interviews and focus group discussions.

This chapter describes the methods used to address each of the above three approaches. Section 3.2 discusses the approaches taken when conducting the review of evidence. Section 3.3 describes analysis of the DLHS-III, which investigated the impact of SHGs on selected health indicators. I explain the rationale for using the DLHS-III data and the approach to data analysis. Section 3.4 describes the design of the study undertaken to assess the impact of combining a health program with microfinance-based SHGs. I explain the context of the field work, describe the health program studied and outline the quantitative and qualitative methods adopted for the study. Section 3.5 covers the ethical approach taken in relation to the study. Finally sections 3.6 and 3.7 discuss data triangulation and the validity of the findings.

3.2 Review of published evidence from South Asia

Together, India and Bangladesh are home to more than half of all microfinance clients globally (Reed, 2014). For this reason, and because the microfinance industry has the longest and most developed history in these two countries, the review of published literature focused exclusively on the countries of South Asia. The purpose of the review was to assess the role of microfinance programs in improving health outcome.
I searched for peer-reviewed publications between 1993 and 2013 in the following electronic databases: Academic Search Complete (EBSCO), Google Scholar, PubMed, Scopus and Web of Knowledge. To identify the keywords, a thesaurus (such as MeSH headings in PubMed) was consulted in all the databases. In the advanced search feature of the databases, the search terms used were the following: (microfinance* or microcredit* or micro-financ* or micro-credit* or microinsuranc*) and (health* or disease or barrier*) and (Bangladesh or Bhutan or India or Nepal or Pakistan or Sri Lanka or the Maldives). Keywords for the initial search were adopted from Leatherman et al. (Leatherman, Metcalfe, Geissler et al., 2012) but restricted to South Asian countries. I also searched for relevant references among citations in the reviewed publications. This returned few relevant studies that were from outside South Asia.

Additional grey literature, such as unpublished reports, was also identified through Google, Google Scholar and Microfinance Gateway. Studies were included if they assessed the impact of a health program or intervention through a randomized controlled trial or a quasi-experimental design, or a defined quantitative or qualitative research design. Non-original papers, such as theoretical reviews, book reviews, letters, editorials, summaries of conferences, historical papers or papers without an abstract, were excluded. All abstracts identified using these search terms were read. Once a comprehensive list of abstracts had been retrieved and reviewed, studies appearing to meet the inclusion criteria were obtained and reviewed in full. A simple data-extraction table organised the information by country, publication year, nature of study and key messages.

The initial search returned 661 studies. Of the 661 papers, 635 were removed because they did not fulfil the inclusion criteria; of these, 158 were simply case-studies, 325 were letters, conference summaries or historical papers, and 152 dealt with barriers other than health access. Twenty-six papers were included for final review. Of these, five were evidence reviews. Of the remaining 21 papers, 12 were from India, seven from Bangladesh, and one each from Sri Lanka and Indonesia. Three papers addressed more than one theme. No papers from Bhutan, Nepal, Pakistan or Maldives were found. All these papers were reviewed for characteristics, quality and outcomes of each study.
3.3 Secondary analysis of the District-Level Household Survey - III

The first research question for this thesis was: does the presence of a self-help group (SHG) in a village positively influence health knowledge and health behaviours? This question was addressed by analysing nationally representative survey data from India, collected from the third round of the District-Level Household Survey or DLHS-III.

3.3.1 Design and sampling strategy of DLHS-III

Three rounds of the DLHS have been conducted by the Ministry of Health and Family Welfare, Government of India, with the International Institute for Population Studies (IIPS), Mumbai, as the coordinating agency.\(^\text{10}\) The third round was conducted in 2007 – 08. The DLHS is conducted at individual and household level, and the data published at national level with estimates at district level (a district is an administrative division in India). Data from DLHS-III was obtained from IIPS.

All districts reported in Census 2001 were included in the DLHS-III, which adopted a multi-stage, stratified, systematic sampling design to produce representative samples at national and state levels after applying sampling weights to control for the complex survey design. Fifty Primary Sampling Units or PSUs were identified for each district. PSUs were selected by probability proportionate to size, and then households from each PSU were selected by systematic random sampling. A house-listing operation covering all households in each PSU was conducted prior to sampling for the survey. Ten percent oversampling of households was planned to compensate for anticipated non-response. All ever-married women aged 15 – 49 years from sampled households were the respondents. Villages with less than 50 households were joined with contiguous villages, and villages with more than 300 households were divided into two or more parts for sampling.

Information was collected from 22,825 villages through the village questionnaire, and from 643,944 ever-married women (15–49 years) through the ever-married women’s questionnaire. Additional data was collected from unmarried women, district hospitals,

\(^{10}\) A fourth round of DLHS was conducted in 2012 – 13. However, unit level data from that survey was not available during the time of this study.
community health centres, primary health centres, and sub-centres, but this data was not included in the current analysis (IIPS, 2010).

3.3.2 Rationale for using DLHS-III data

The DLHS-III collected representative sample data on family planning, maternal and child health, reproductive health of ever-married women and adolescent girls, and their utilization of maternal and child healthcare services. In addition, DLHS-III collected information regarding structures and groups available at the village level, including micro-finance-based self-help groups. This provided the opportunity to investigate the relationship between the presence of a SHG at village level and the health knowledge and health behaviours of women.

3.3.3 Explanatory and control variables

The dependant variable of interest was the presence of an SHG in the village. The relationship between the presence of an SHG and women’s health knowledge and behaviours at village level was tested by examining several health-related variables at the level of individual women. Four measures of knowledge and behaviours were investigated:

- Institutional delivery
- Feeding new-born colostrum
- Knowledge about family planning methods
- Use of family planning methods.

Knowledge and use of family planning methods refers to at least one of the following methods: female sterilization, intra-uterine device, oral contraceptive pills, emergency contraception and female condom. Indicators were transformed from responses into a binary measure by re-coding all ‘yes’ responses as 1 and ‘no’ as 0. The actual questions in the DLHS-III and recoding are shown in Table 3.
Table 3: Study variables and related questions from DLHS-III 2007 – 08

<table>
<thead>
<tr>
<th>Concept</th>
<th>Question</th>
<th>Response category</th>
<th>Recoded for analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-help group</strong></td>
<td>Facilities available in the village: Self Help Group</td>
<td>1. Yes</td>
<td>Yes.....1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. No</td>
<td>No......0</td>
</tr>
<tr>
<td><strong>Institutional delivery</strong></td>
<td>Where did your last delivery take place?</td>
<td>1. Government Hospital</td>
<td></td>
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<td></td>
<td></td>
<td>2. Dispensary</td>
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<td></td>
<td></td>
<td>3. UHC/UHP/UFWC</td>
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<td>4. CHC/ Rural Hospital</td>
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<td></td>
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<td>5. PHC</td>
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<td></td>
<td>6. Sub Centre</td>
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<td></td>
<td>7. NGO/Trust hospital/clinic</td>
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<td></td>
<td></td>
<td>8. Private Hospital/ clinic</td>
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<td></td>
<td></td>
<td>9. Ayush hospital/clinic</td>
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<td></td>
<td></td>
<td>10. On the way to hospital</td>
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<tr>
<td></td>
<td></td>
<td>11. At home</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>12. At parent’s home</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>13. Work place</td>
<td></td>
</tr>
<tr>
<td><strong>Feeding colostrum to newborn</strong></td>
<td>Did you feed milk ‘colostrum / khees’ (thick yellowish milk) secreted during the first few days after child birth?</td>
<td>Yes.....1</td>
<td>Yes.....1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No......2</td>
<td>No......0</td>
</tr>
<tr>
<td><strong>Knowledge of family planning</strong></td>
<td>Which ways or methods have you heard about?</td>
<td>1. Female sterilization</td>
<td>Yes for at least one of these methods coded as 1, else 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Male sterilization</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>3. IUD</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>4. Pill</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Emergency contraception</td>
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<tr>
<td></td>
<td></td>
<td>6. Injectables</td>
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<td></td>
<td>7. Condom or Nirodh</td>
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<td></td>
<td></td>
<td>8. Female condom</td>
<td></td>
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<td></td>
<td></td>
<td>9. Rhythm method</td>
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<td></td>
<td>10. Withdrawal</td>
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<td></td>
<td>(DLHS-III questionnaire had an explanation for each of the above methods)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ever used family planning</strong></td>
<td>Which method are you/your husband using?</td>
<td>All the methods listed above</td>
<td>Yes on any one of the methods coded as 1, else 0</td>
</tr>
</tbody>
</table>

To account for individual and village attributes that potentially confounded the dependent variables, several control variables were introduced into the model.

Individual heterogeneity was controlled by inclusion of the following variables: respondent education, wealth quintile, and heard or seen messages related to antenatal care. Village level heterogeneity was controlled by the inclusion of: accessibility of Community Health Centre or Rural Hospital, presence of beneficiaries of Janani Surakshya Yojana (JSY) in the last one
year, and presence of health and sanitation committee in village. Table 4 lists the relevant questions as phrased in DLHS-III.

Table 4: Control variables and questions in DLHS-III

<table>
<thead>
<tr>
<th>Concept</th>
<th>Question</th>
<th>Response category</th>
<th>Recoded for analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent education</td>
<td>What is the highest standard you have passed?</td>
<td>Continuous</td>
<td>Illiterate, Primary, Middle, Middle, Higher secondary and above</td>
</tr>
<tr>
<td>Wealth quintile</td>
<td>Calculated in DLHS based on ownership of a number of consumer items</td>
<td>Poorest, Second, Middle, Fourth, Richest</td>
<td>Same codes used</td>
</tr>
<tr>
<td>Heard or seen health messages</td>
<td>Have you seen/heard/read the messages related to antenatal care?</td>
<td>Yes, No</td>
<td>Coded 1 for yes, 0 for no</td>
</tr>
<tr>
<td>Accessibility of Community Health Centre/ Rural Hospital (CHC/RH)</td>
<td>CHC/RH available in the village</td>
<td>Yes, No</td>
<td>Coded 1 if CHC/RH available, else 0</td>
</tr>
<tr>
<td>Villages with any beneficiaries of JSY</td>
<td>Are there any beneficiaries in the village from Janani Suraksha Yojana?</td>
<td>Yes, No</td>
<td>Coded 1 for yes, 0 for no</td>
</tr>
<tr>
<td>Health and sanitation committee in village</td>
<td>Is there any Health &amp; Sanitation Committee in your village?</td>
<td>Yes, No</td>
<td>Coded 1 for yes, 0 for no</td>
</tr>
</tbody>
</table>

3.3.4 Data analysis

Individual level data of DLHS-III was obtained from the IIPS. Unit level data from DLHS-III was available in separate files – the village questionnaire data and the ever-married women questionnaire data was used for analysis. Data from the two files was merged using a unique key, generated by combining the district numbers and the PSU numbers of the two datasets. The analysis was carried out using SPSS Version 19.

Forward stepwise logistic regression models were computed adding different levels of control variables to a base model that regressed the four outcome variables (institutional delivery, feeding colostrum, knowledge of family planning, and ever used family planning) on the availability of SHG in the village. District fixed effect was used to adjust for the time-invariant differences across districts.

For each of the four outcome variables, three regression models were estimated.
3. Methods

- In Model 1, the effect of the presence or absence of an SHG in the village was modelled. This model represented the total variance in the four outcome variables with the presence or absence of an SHG.
- In Model 2 individual-level control factors (respondent education, wealth, and heard or seen health messages) were included.
- In Model 3 individual and village background control factors (accessibility of Community Health Centre/Rural Hospital, beneficiaries of JSY in last one year, and health and sanitation committee in village) were included.

All models used survey weights to account for sample design; population weighting and standard errors were adjusted for clustering at the district level. The final model (Model 3) reported the regression co-efficient for presence of an SHG, controlling for individual and village-level variables. The results are reported as odds ratios with 95 per cent confidence intervals.

3.4 An assessment of microfinance-based SHG health programs

Following analysis of the independent effect of the presence of an SHG on women’s health knowledge and behaviours, I analysed the effect of combining a health program with a microfinance-based SHG at the village level. This question was addressed using a mixed methods approach. The use of mixed methods is a well-established approach in public health research. Mixed-methods research is particularly valuable where an understanding of the social, economic and cultural context is essential to assess health systems performance, such as in low and middle income countries (LMICs) (Ozawa & Pongpirul, 2014). It allows analysis of the research problem from multiple perspectives, helps to contextualize the findings, and ultimately develop a more complete understanding of the problem. In their synthesis of the key methodological literature on mixed methods research, Tariq and Woodman (2013) recommend using mixed methods as a pragmatic approach appropriate for health research carried out in an unfolding or live environment where it is not possible to hold independent variables constant over time (Tariq & Woodman, 2013). Often, qualitative approaches are used to explain quantitative results in more depth or within context and are of particular value in reflecting the understanding and practice of a wide range of different
stakeholders. A key challenge in using the mixed-methods approach is to achieve the most accurate and meaningful integration of the quantitative and qualitative data during analysis and interpretation.

A quantitative study was carried out using a quasi-experimental design comprising two survey rounds to collect pre-test or baseline and one-year post-test or follow-up data from intervention villages and matched comparison villages. The same respondents were surveyed on both occasions (with some drop-outs), using the same survey instrument and data collection process. The study was conducted during 2012 and 2013. Part of the primary data, particularly the baseline data, was collected prior to commencement of my Ph.D. at the University of Melbourne but with the required ethics approval as discussed in the following sections. This data was re-analysed and compared with the follow-up survey data, as detailed in the following sections. The quantitative survey was followed by a qualitative investigation using key informant interviews and focus-group discussions to gain a deeper understanding of the interconnections between SHGs, health programs and health. The study design was based on the analytical framework, presented in Appendix 1, page 161. The following sections describe the context of the study, the health program provided by the participating NGOs, and the quantitative and qualitative methods used in this study.

3.4.1 Context of the field work

To analyse the effect of combining a health program with a microfinance-based SHG, I conducted a field study in 34 villages from three blocks (district subdivisions) of India: Dahegam in Gujarat, and Udupi and Gadag in Karnataka. These blocks were chosen for two reasons:

- Local communities in the blocks had access to microfinance services from two organizations, Self Employed Women’s Association (SEWA) in Gujarat and Shri Kshetra Dharamstala Rural Development Project (SKDRDP) in Karnataka
- A set of villages from these blocks were identified for roll-out of a health program at the start of the study, which provided the opportunity to assess changes in health knowledge and behaviours before and one year after program implementation.

The study sites are shown in Figure 4.
Figure 4: Map identifying the three study sites

Map not to scale

Both Gujarat and Karnataka are similar in terms of the Human Development Index (HDI) and both are listed as medium human development states in India. Gujarat and Karnataka were ranked 11th and 12th respectively out of the 36 states and union territories in India (The Planning Commission, 2011c). As in India generally, public spending on health in both states was low at about 1 per cent of gross state domestic product. Both Gujarat and Karnataka have a thriving private-for-profit health care sector with multiple public private partnership
schemes, such as ambulance facilities for emergency care transportation, contracting private sector organisations to manage government health centres, providing grant-in-aid to private health facilities, and contracting private paediatricians to deliver essential newborn care. Both states provide access to safe drinking water to more than 87 per cent population. However, only about half of the population in these states had access to a sanitary latrine in 2011 (Census of India, 2011). Table 5 presents a comparison of key macro-economic indicators for the two states.

Table 5: Key indicators for the states of Gujarat and Karnataka

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Karnataka</th>
<th>Gujarat</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per capita gross domestic product at 2004-05 price</td>
<td>52,097</td>
<td>51,025</td>
<td>46,492</td>
</tr>
<tr>
<td>at 2004-05 price (2009-10) (INR)</td>
<td>(USD 868)</td>
<td>(USD 850)</td>
<td>(USD 775)</td>
</tr>
<tr>
<td>Per capita public spending on health at 2004-05 price</td>
<td>468</td>
<td>480</td>
<td>486</td>
</tr>
<tr>
<td>at 2004-05 price (2009-10) (INR)</td>
<td>(USD 8)</td>
<td>(USD 8)</td>
<td>(USD 8)</td>
</tr>
<tr>
<td>Rank of states by HDI (2011)</td>
<td>12</td>
<td>11</td>
<td>-</td>
</tr>
<tr>
<td>Literacy rate (2011)</td>
<td>75.6</td>
<td>79.3</td>
<td>74.0</td>
</tr>
<tr>
<td>Infant mortality rate (2011)</td>
<td>45</td>
<td>38</td>
<td>47</td>
</tr>
<tr>
<td>Maternal mortality ratio (2011)</td>
<td>190</td>
<td>148</td>
<td>212</td>
</tr>
<tr>
<td>Population with access to safe drinking water (2011) (%)</td>
<td>87.5</td>
<td>90.3</td>
<td>85.5</td>
</tr>
<tr>
<td>Population with access to a sanitary latrine (2011) (%)</td>
<td>51.2</td>
<td>57.3</td>
<td>46.9</td>
</tr>
</tbody>
</table>

Source: (Choudhury & Nath, 2012; Census of India, 2011)

Dahegam is one of the four blocks in Gandhinagar, the capital of the state of Gujarat. It has many public and private health care providers and a number of NGOs work at the grass roots level. People in Dahegam organise into SHGs to save money and obtain microcredit from SEWA, a trade union of more than 1.2 million women working in the informal sector established in Ahmadabad in 1972 (Chen, Mirani, & Parikh, 2006).

Of the two blocks in Karnataka, Udupi is one of three blocks in Udupi district and is ranked high on the human development index in the state (HDI rank: 3 out of 27 districts of Karnataka), while Gadag is one of seven blocks in Gadag district (HDI rank: 13 out of 27 districts of Karnataka) (Planning and Statistics Department, 2006). People residing in these two blocks have access to microfinance services from SKDRDP (Shri Kshetra Dharamstala
Rural Development Project), a religious trust managed by the Shri Manjunatheswara Temple, Dharmasthala.

3.4.2 **An introduction to SEWA**

SEWA is a membership-based organization currently working across nine states of India. The goal of the organisation is to achieve full employment for its members and make women self-reliant, economically independent and able to make their own decisions (Ranson, Sinha, Gandhi et al., 2006). SEWA members comprise hawkers, vendors, home-based producers, manual labourers and service providers, who come together to form cooperatives.

The cooperative group members (referred to hereinafter as SHG members) have the option of opening a savings account in the SEWA Bank. After saving for a fixed duration with the SEWA Bank, members can obtain unsecured loans underwritten by group guarantors. The primary objective of SEWA Bank’s microfinance program is to increase asset ownership among its members (Chen & Snodgrass, 2001).

SEWA’s founder, Ela Bhatt, believed that for microfinance to achieve its objective of providing financial security to the poor, it has to address health security as a crucial element of social security (Bhatt, 1998). Recognizing illness, disability and death as a threat to the overall security of its members, SEWA introduced a range of health activities. SEWA’s health activities started at the time of its inception in 1972, and initially included programs for health education and provision of maternity benefits, meant primarily for SEWA union members but also offered to non-members in SEWA program areas. Maternity benefits were in the form of antenatal care, four to six weeks of wage compensation, a safe delivery kit, one kilogram of clarified butter, and health care for their newborn babies, with support from the government of India (Rose, 1992). Health education sessions were organised by SEWA health workers (called *aagewans* or barefoot doctors). The main topics addressed during the health education sessions were adolescent health, childcare practices, first aid, nutrition and anaemia, immunisation, HIV/AIDS, hygiene and sanitation, physical and mental health, substance abuse, and sexual and reproductive health (Ranson, Joshi, Shah et al., 2005).
SEWA health programs were later expanded in terms of program content, beneficiaries and areas. The program was organised as member-owned cooperatives, called \textit{LokSwasthya SEWA} or SEWA Health. Activities included primary healthcare delivered through stationery and mobile health camps, health education and training, provision of generic drugs through drug shops, and production and marketing of traditional medicines. The awareness programs of SEWA are supported through funding from philanthropic organisations.

In 1992 SEWA started VimoSEWA, its micro-insurance program. VimoSEWA offers various integrated insurance packages, which include coverage for life, asset loss, personal accident, sickness and maternity benefits. The initial corpus funding was from German bilateral cooperation (Desai, 2009; Chatterjee, 2006). The health package of VimoSEWA covers hospitalisation costs up to INR 2,000 (USD 33) annually for an individual, with options of family coverage up to INR 25,000 (USD 416) per year. Women are the principal members of VimoSEWA and have an option to buy additional coverage for their husband and children. The insurance premium is paid annually, which is passed on to a formal risk carrier or insurance company. These programs were initially concentrated in Ahmadabad, Patan and Kheda districts of Gujarat but have gradually been rolled out in other areas.

3.4.3 An introduction to SKDRDP

SKDRDP works with three million members, organised along the lines of Joint Liability Groups, each consisting of about 10 to 15 members (referred to hereafter as SHGs). Members can opt out and join in as and when they need loans. The microfinance activities of SKDRDP are supported by the Small Industries Development Bank of India, an apex development bank for microfinance.

Under this microfinance program, the SHGs become mutual guarantee groups to obtain microfinance from SKDRDP. While the SHGs started initially as farmers’ groups, the groups expanded to include other livelihood generating programs such as the dairy cooperative group, weavers and small business owners. The smaller SHGs organise to form a larger federation of SHGs, with one federation made up of 25 SHGs. In addition to monitoring the microfinance programs, the federations train members on sustainable livelihood skills, make them aware of government social assistance programs, and show them how to market raw
materials produced by group members (Harper, Rao, & Sahu, 2008). To enable its members to improve their standard of living, SKDRDP offers a range of services including a health insurance product (*Sampoorna Suraksha*) and programs to improve the health of the community.

The health and hygiene program at SKDRDP started in Karnataka in the early 1990s as a *Jana Jagruthi* or public awareness program (Idler, 2014). Health awareness sessions were organised with the routine loan group meetings to discuss priority health issues of the members. Key health topics discussed during the meetings include reproductive and child health, immunisation and childcare, hygiene and sanitation, and alcohol de-addiction. A woman from the group is nominated as a volunteer health worker and receives training from SKDRDP. In addition to conducting health awareness sessions, the volunteer health worker also conducts home visits to reinforce health messages, monitor child growth, identify and refer women with danger signs of pregnancy and children with health problems. The program also strives to make hygiene facilities available to the rural poor using the low cost sanitation model\(^\text{11}\) of the Government of India and provides loans to construct toilets at home.

In 2003, SKDRDP introduced *Sampoorna Suraksha*, a micro-health insurance scheme that provides financial risk coverage to SKDRDP members for medical emergencies. This health insurance scheme is underwritten by a national insurance company. An annual contribution of INR 190 (USD 3) is collected from each member, which gives clients protection for INR 5,000 (USD 83) in medical expenses per year (SKDRDP, 2014). Beneficiaries living below the poverty line are entitled to obtain cashless treatment in the scheme’s partner hospitals. The volunteer health workers are known by different names in Gujarat and Karnataka. However, in this study I will refer them as village health workers (VHWs).

### 3.4.4 SHG health programs

Both SEWA and SKDRDP extended their health programs to villages in Dahegam, Udupi and Gadag blocks in 2012. These blocks had established SHGs but, up until this point, no additional health program. For the health program intervention, each SHG under both SEWA

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\(\text{11} \) The low cost sanitation program of the Government of India aims to construct low cost sanitation units for economically weaker households.
3. Methods

and SKDRDP nominated a volunteer to be trained as a village health worker or VHW. The VHWs were provided with induction training on health-related issues by the participating NGOs. Each training session lasted for two days and covered following packages: orientation to the organisation, first aid, general disease and HIV/AIDS, immunization and childcare, airborne and waterborne diseases, and sexual and reproductive health. The induction training was followed by regular training updates during a monthly monitoring-cum-orientation meeting of the VHWs. The VHWs held fortnightly group education sessions linked to the SHG meetings. While the SHG meetings were restricted to members, non-members were encouraged to participate in the health education sessions. Each meeting focused on one topic of interest and was usually supervised by a staff member from the parent organisation. The VHWs also provided a number of preventive and promotive health services through home visits to reinforce health messages, conduct child growth monitoring, identify and refer women with danger signs of pregnancy and children with health problems, advice on sanitation, and promote the organisation’s health insurance product.

3.4.5 Quantitative survey method

3.4.5.1 Difference-in-difference method

Quasi-experimental designs, such as pre-test and post-test studies with matched comparison groups, are often used when the use of a randomised control trial design is not possible (Rossi, Lipsey, & Freeman, 2003). Studies using a quasi-experimental design involve comparison between an intervention and a comparison group using matched variables. For this study, comparison groups were constructed by selecting villages which had no SHG-based health program but matched the intervention villages on other relevant characteristics such as SHG membership and socio-economic status. Respondents from the intervention and comparison villages were surveyed twice: prior to implementation of the health program and one-year after the health program had commenced.

This design was used to assess the health impacts of exposure to the health program linked to the microfinance-based SHGs, compared to participating in an SHG alone. This design enabled analysis of the difference-in-difference (DID) in a natural setting (Lechner, 2011). DID or double difference estimators rely on a comparison of respondents from the
intervention and the comparison groups both before and after the intervention. By controlling for initial conditions in the study areas, the DID approach also resolves non-random program placement that might bias the program effect (Khandker, Koolwal, & Samad, 2010).

3.4.5.2 **Sample villages with SEWA and SKDRDP health programs**

SEWA and SKDRDP health programs were operational in only some but not all SHG program areas, allowing with and without comparison. In early 2012, 80 villages in total were identified for roll-out of the health program by SEWA (in Dahegam) and SKDRDP (in Udupi and Gadag). These villages represented new health program areas but were already included in the SHG activities of the two organisations. The comparison groups were selected based on criteria discussed in section 3.4.5.4.

3.4.5.3 **Outcome indicators and definitions**

Improving the health of mothers and children and the quality of sanitation and reducing the financial burden due to illness were priority issues common to both organisations. Hence five indicators were selected to assess the benefit of combining a health program with SHGs: diarrhoea among children, institutional delivery for babies, feeding colostrum to newborns babies, toilet at home, and money spent on treatment. Each of these indicators related to program priority areas and was selected in consultation with the respective program managers of the two organisations.

Diarrhoea episodes among children under two years in the two weeks preceding the survey was the primary indicator for measuring the impact of the health program. Change in the number of episodes of diarrhoea in children is considered to be a sensitive indicator of health program effectiveness in the short-term (Patil, Arnold, Salvatore et al., 2014; Waddington & Snilstveit, 2009).

Institutional delivery of babies is an important indicator for monitoring progress towards Millennium Development Goal 5 (to reduce the maternal mortality ratio by three quarters between 1990 and 2015) (Kesterton, Cleland, Sloggett et al., 2010).
Not feeding colostrum to newborn babies, along with late initiation of breastfeeding and inappropriate complementary feeding were found to be significant risk factors for underweight among children (Kumar, Goel, Mittal et al., 2006).

The practice of open defecation poses a major challenge for health and safety in India, a fact acknowledged at the highest political level (Press Information Bureau, 2014). With half of the population defecating in the open, there is a high risk of microbial contamination of water, which poses a major health risk to surrounding communities.

The indicator selected to measure changes in money spent on treatment was reduction in out-of-pocket treatment expenditure.

Indicators related to changes in mortality and morbidity such as neonatal mortality were considered for inclusion, but not included due to the short duration of the study.

The exact wordings of the questions related to each of the indicators are listed in table 6. The questionnaire is attached in Appendix 3.
Table 6: Study outcome variables and related questions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Questions</th>
<th>Reference</th>
<th>Response category</th>
<th>Coding for analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhoea among children</td>
<td>Has your child suffered from diarrhoea in last two weeks?</td>
<td>Last born child, less than two years</td>
<td>1. Yes</td>
<td>Yes coded as 1, and no coded as 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. No</td>
<td></td>
</tr>
<tr>
<td>Institutional delivery</td>
<td>Where was your last delivery?</td>
<td>Child less than two years during baseline survey, and less than one year during follow-up survey</td>
<td>1. Home delivery assisted by dai relatives/friends</td>
<td>Response 1 coded as 0, and response 2 – 4 coded as 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Home delivery assisted by doctor/ANM/ nurse/other health professional</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Government health centre/hospital</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. Private nursing home/hospital</td>
<td></td>
</tr>
<tr>
<td>Feeding colostrum to newborn</td>
<td>Was the first milk of the mother thrown away?</td>
<td>Child less than two years during baseline survey, and less than one year during follow-up survey</td>
<td>1. Yes</td>
<td>No coded as 1, Yes coded as 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. No</td>
<td>Response was reverse coded for analysis.</td>
</tr>
<tr>
<td>Toilet</td>
<td>Do you have toilet at home?</td>
<td></td>
<td>1. Yes</td>
<td>Yes coded as 1, and No coded as 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. No</td>
<td></td>
</tr>
<tr>
<td>Money spent on treatment</td>
<td>How much money was spent for travel to and from (medical) consultation in the last month?</td>
<td></td>
<td></td>
<td>Aggregate expenditure</td>
</tr>
<tr>
<td></td>
<td>How much did you pay in official charges, including payments for laboratory tests in the last month?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How much did you pay for medicine in the last month?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>What was the value of any gifts made to the medical staff in the last month?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(The above questions were asked for each family members)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.4.5.4 Community matching

Intervention villages were those with a microfinance program and a health program, while comparison villages were from the same block, with a microfinance program but no health
program. Selected intervention villages were matched with non-intervention villages using the following criteria: population size, SHG membership, from the same block but not with a common boundary.

The matching exercise was primarily carried out by program managers from the participating NGOs. A total of 20 intervention villages were matched with 20 control villages. However, after commencing the study and completing the baseline survey, three comparison villages from Dahegam were inadvertently provided with the health program. Hence those three villages and the corresponding three intervention villages were excluded from the study. Results are therefore reported for 17 intervention villages and 17 matched comparison villages.

Our village matching process addressed key threats to validity, which included contamination due to mixing of groups that are in close proximity, and the existence of other health programs that might influence the outcomes. To test the validity of the matching process, I compared the baseline survey findings of the intervention and comparison villages. Socio-economic characteristics of respondents from the intervention and comparison villages were compared to evaluate the effectiveness of the matching process.

3.4.5.5 Recruitment criteria

The inclusion criteria for survey respondents selected at the time of baseline recruitment were: women of reproductive age, having a child aged less than two years old. An equal number of respondents were recruited from the intervention and comparison villages, based on the calculated sample size. The same sample of women respondents (minus a small number of drop-outs) was used for the follow-up survey.

3.4.5.6 Sample size

Calculation of the sample size was based on establishing a 95 per cent chance of rejecting the null hypothesis of zero change in outcome indicators, with a design effect of 1.5, and an assumed 20 per cent non-response rate. Diarrhoea among children being the primary
indicator, the sample size calculation was based on a known awareness among mothers about diarrhoea management (65.7 per cent, as per least estimate of Gujarat and Karnataka in DLHS-III). The formula used for calculating sample size was:

\[
n = \frac{\text{DEFF} \cdot N \cdot (1-p)}{\frac{d^2}{Z^2} \cdot \left( \frac{N-1}{N} + p(1-p) \right)}
\]

where

\[
N = 1,000,000 \text{ for finite population correction factor, hypothesized } \% \text{ frequency of outcome factor in the population}
\]

\[
p = 65.7\% \pm 5\%, \text{ confidence limits as } \% \text{ of 100 (absolute } \pm \% \text{)}
\]

\[
d = 5\%
\]

and design effect (for cluster surveys-DEFF) = 1.5.

The sample size thus calculated was 265 in each group. Field surveys were conducted on two occasions involving 265 respondents from each of the intervention and comparison villages, i.e. a total of 530 members. Pre-test or baseline data were collected before the health program was rolled out and the survey was repeated after 12 months among the same respondents. I managed to track 472 respondents during the follow-up survey: 219 from the intervention villages and 253 from the comparison villages. Analysis included only those respondents interviewed at both the time points.

### 3.4.5.7 Sampling procedure

A list of SHG members in the intervention and comparison villages was made available by the participating NGOs. Based on the list, I first identified eligible houses in each village, i.e., houses with at least a woman of reproductive age and having a child aged less than two years old. Based on the calculated sample size, I then selected households proportionate to size using systematic random sampling. Using this process, the first household is randomly picked, and then each n’th subject is selected from the list. In case of non-consent, the next household was approached for the study. Figure 5 illustrates the research design, including the selection of villages and respondents.
SHG members from three blocks: Udupi, Gadag, and Dahegam

Intervention group (villages that received the health program)

80 villages considered for inclusion

20 villages selected for survey; Final analysis with 17 villages

N=265 at baseline

Follow-up survey: 12 months Completed N = 219

Comparison group (villages that did not received the health program)

20 matched villages from the same block, no common boundary with the intervention villages. Final analysis with 17 villages

N=265 at baseline

Follow-up survey: 12 months Completed N = 253

Health-related indicators

- Diarrhoea among children
- Place of last delivery
- Feeding colostrum to newborns
- Toilet at home
- Money spent on treatment

Analysis: Difference-in-difference
Data collection:
T0: Before roll-out of health program
T1: Follow-up same household after one year

Figure 5: Research design and analysis plan
3. Methods

3.4.5.8 Questionnaire design

The structure and content of the survey tool reflected the research aim (Section 1.9). Initially a series of discussions was organised with program managers of the participating organizations to explain the study aim and the variables that we sought to measure through the study.

The exact wording of questions related to four of the five study outcome variables (institutional delivery, childhood diarrhoea, toilet at home and feeding colostrum to newborns) as well as the socio-economic variables were the same as used in the DLHS-III survey (IIPS, 2010), while the section on health expenditure was adapted from the National Sample Survey on Household Consumer Expenditure, which was conducted in all Indian states in 2009 – 10 (NSS, 2011).

The same survey tool was used for both the baseline and the follow-up survey. Prior to the baseline survey, the questionnaire was pilot-tested in villages that were not part of the study. The final questionnaire was redesigned based on response received from the pilot-testing. Data from the pilot-test areas were not included in the final analysis.

With the help of local translators, the questionnaire was translated into Kannada language for administration in Karnataka and Gujarati language for administration in Gujarat. A different translator translated the questions back into English to check for the accuracy of translation.

A copy of the questionnaire used for the survey can be found in Appendix 3, page 183. The variables of interest and questions related to each of the variables are summarized in Table 7.

Table 7: Key variables covered in the survey question

<table>
<thead>
<tr>
<th>Variable</th>
<th>Section with relevant questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic information</td>
<td>B</td>
</tr>
<tr>
<td>Socio-economic condition</td>
<td>C.1 – C.5</td>
</tr>
<tr>
<td>Place of delivery</td>
<td>E.1.2 – E.1.3</td>
</tr>
<tr>
<td>Health status</td>
<td>E.2</td>
</tr>
<tr>
<td>Spending on health</td>
<td>E.3</td>
</tr>
<tr>
<td>Breastfeeding practices</td>
<td>F.1 – F.4</td>
</tr>
<tr>
<td>Diarrhoea among children</td>
<td>F.5 – F.9</td>
</tr>
<tr>
<td>Toilet at home</td>
<td>G.4 – G.5</td>
</tr>
</tbody>
</table>
3.4.5.9  Data collection process

For both the baseline and the follow-up surveys, the questionnaires were administered in the local language by six local field investigators with prior experience in conducting similar research. All field investigators participated in a two-day training session that included survey administration, discussion on ethical issues associated with research, and compliance with the study protocol. The training included elements of role play where field investigators practiced asking for consent and trialled different ways to conduct the interviews. In the case of questions related to knowledge of services or illness, investigators were instructed not to prompt for responses in the first place and to encourage participants to answer from their own knowledge and beliefs.

I was present during the entire primary data collection period and had primary responsibility for oversight of the process and management of the data collection process. Every third day I organised a debriefing session to serve as a form of monitoring and to check the completed questionnaires for incomplete and contradictory responses. The debriefing facilitated reflections from the field investigators on difficulties they may have encountered and issues relating to participants that needed addressing.

After the surveys were completed, all data was entered into a purpose-built SPSS electronic database using a double-entry system. The double-entry system entailed two data-entry operators (hired for the purpose and different from the field investigators) entering the data independently. By running simple frequency checks on the two sets of data, entered independently, I was able to address errors in data entry. All participant identifiers were removed from the final dataset, final report and publications arising out of the study.

3.4.5.10  Difference-in-difference analysis

Responses from the three blocks were aggregated for each of the baseline and the follow-up surveys. Using the DID approach, data was analysed for differences between the intervention and the comparison groups at the point of the baseline survey and then compared to the same differences measured at the time of the follow-up survey.
The DID analysis followed two steps.

- The validity of the village matching process performed on the baseline data was tested. This was done through chi-square value of pooled estimates for intervention and comparison groups and Wilcoxon equality of medians test where a median value was reported.
- The DID analysis to assess the additional impact of the health program was carried out, controlling for the baseline value of the study outcome variables.

The DID analysis was carried out using the following regression model:

Let intervention group \( A = 1 \mid 0 \), time \( T = 0 \mid 1 \)

Then

\[
Y = \left( E[Y \mid A = 1, T = 0] - E[Y \mid A = 0, T = 0] \right) - \left( E[Y \mid A = 1, T = 1] - E[Y \mid A = 0, T = 1] \right)
\]

The regression equation then can be written as:

\[
Y_i = \alpha + \beta_1 T_i + \beta_2 A_i + \beta_3 \left( T_i A_i \right) + X_i + \varepsilon_i
\]

Where \( Y \) is the outcome of interest, \( A \) takes the value 1 if respondent \( i \) from block \( j \) were from an intervention area (i.e. SHG with access to both microfinance and health program), \( T \) takes the value 1 if survey is conducted at the time of the one year follow-up period, \( X \) is a vector for control variables. The regression coefficient of interest is the interaction of intervention group and follow-up period, referred to as \( \beta_3 \).

This model assumes a common trend across the intervention and comparison groups, i.e., in the absence of the NGO health program it would be expected that the unobserved differences between the intervention and comparison groups would be the same over time. As both the intervention and comparison groups were matched and were from the same block, assuming a common trend across the groups is reasonable.

The binary outcome variables (institutional delivery, childhood diarrhoea, toilet at home and feeding colostrum to newborns) were analysed using a binary logistic regression. Adjusted odds ratios, with 95 per cent confidence intervals, were reported as increased or decreased.
odds of occurrence of an event. For the continuous outcome variable (money spent on
treatment during the month preceding the survey) I used a two-part model.

First, respondents who had no expenditure on treatment in the previous month were identified
and then a linear regression was performed among data from those respondents who had
spent money on treatment in the previous month. This is a recommended approach in
working with continuous outcome variable where many of the cases equal zero (Humphreys,
2013; Jones, 2000). Per capita monthly expenditure on treatment was calculated by dividing
the total expenditure on treatment by the number of family members in the household.
Monetary values are reported in USD with 1 USD equals to 60 Indian Rupee.

Control variables introduced into the model are reported in Table 8. Because the three blocks
had different socio-economic status, which could have had an impact on the result, I used the
block as a categorical variable to control for the block effects.

Table 8: Control variables in the model

<table>
<thead>
<tr>
<th>Control variables</th>
<th>Levels</th>
</tr>
</thead>
</table>
| Respondent’s level of education | No formal education  
                                | Primary                        
                                | Middle                         
                                | Higher Secondary & above |
| Type of house\(^{12}\)       | Permanent (Pucca)                          
                                | Semi-permanent (Semi-pucca)       
                                | Temporary (Kutchha)              |
| Monthly total household     | Less than USD 50                           
                                | USD 51 – 100                     
                                | More than USD 100                |
| expenditure                 | Dahegam                                     
                                | Udupi                          
                                | Gadag                          |

\(^{12}\) House types are defined as per the Indian National Sample Survey questions: a permanent or *pucca* house is one that has walls made of burnt bricks, stones or cement, and a roof made of tiles, iron sheets, RCC or timber; a semi-permanent or semi-*pucca* house is made of *pucca* material, but the roof is made of material other than those used for a *pucca* house; and a temporary or *kutch* house has walls and a roof made of materials other than those mentioned above, such as mud walls and a thatched roof.
3. Methods

3.4.6 Qualitative method

3.4.6.1 Value of qualitative methods

To analyze the effect of combining a health program with a microfinance-based SHG it was not simply important to answer whether the program was effective or not, but also to provide a detailed analysis of the context in which the program was implemented, challenges in program design and implementation, as well as the contributing factors and conditions to explain the extent of program effect. In social research of this kind, it is important to understand the situation in which the intervention is being implemented and the contextual factors influencing the effectiveness of the intervention (Mertens, 2005). For this reason, I used qualitative research methods to supplement the findings of the quantitative studies I undertook, including focus group discussions (FGDs) with community members and key informant interviews (KIIs) with program managers and NGO health workers.

My aim in carrying out the qualitative enquiry was to delve into the why and how of the topic and to build a more comprehensive picture of the issues being studied. I used KII as a method to gather information that is commonly difficult to capture and understand using the questionnaire surveys (Gilchrist, 1992). In the case of FGDs, I encouraged respondents to talk to one another and to comment on each other’s experiences and points of view in order to draw out their real and spontaneous understanding of the issues. I also used probing questions to examine ‘why they think that way’ (Morgan, 1997, Kitzinger, 1995).

The data from the FGDs and KIIIs provided contextual information that enhanced my understanding of the observed outcomes. Such qualitative findings give ‘voice’ to the perspectives of community members and program managers in a way that is not possible using quantitative methods alone (Creswell, 2013; Phillips & Burbules, 2000).

3.4.6.2 Study sample

The FGDs and KIIIs were administered 12 months after the commencement of program implementation in the intervention villages. The sample size was determined by the need to achieve theoretical saturation during the process of data analysis, i.e., a sufficient number of interviews and group discussions so that new information no longer emerged (Creswell, 2012; Sandelowski, 1995). In total 17 FGDs involving 153 participants from the intervention
villages, and 17 KIIs with village health workers (VHWs) involved in delivery of the health program were conducted to reach data saturation.

3.4.6.3 **FGD and KII guides**

FGD and KII question guides were designed to explore the quantitative survey results further and to understand the underlying factors contributing to the observed outcomes.

Both the FGD and KII guides were designed to seek information on three themes:

- Community context
- Group structure and functioning
- Contribution of the health program (Table 9 and Table 10).

Each FGD lasted approximately one hour, while KIIs lasted for about 20 minutes. Both the FGD and KII guides were open-ended to encourage discussion among participants.

Probing questions were introduced in FGDs when responses might otherwise have been brief leaving concepts inadequately explored and groups were encouraged to discuss any inconsistencies in what was being said. Finally, participants were given an opportunity to speak privately after the group discussion was completed.

Table 9: Themes for FGD guide

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sub-themes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community context</strong></td>
<td>- Socio-economic situation</td>
</tr>
<tr>
<td></td>
<td>- Community context</td>
</tr>
<tr>
<td><strong>Groups and networks</strong></td>
<td>- Group structure and function</td>
</tr>
<tr>
<td></td>
<td>- Common issues discussed during group meeting</td>
</tr>
<tr>
<td></td>
<td>- Key health issues discussed</td>
</tr>
<tr>
<td></td>
<td>- Role of the group in community health issues</td>
</tr>
<tr>
<td><strong>Contributions of health program</strong></td>
<td>- Key community health issues</td>
</tr>
<tr>
<td></td>
<td>- Contribution of health program to address the above issues</td>
</tr>
</tbody>
</table>
Table 10: Themes for KII guide

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sub-themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group structure</td>
<td>- Group functioning</td>
</tr>
<tr>
<td></td>
<td>- Strength of group</td>
</tr>
<tr>
<td></td>
<td>- Challenges in working in group</td>
</tr>
<tr>
<td>Community awareness and access to health services</td>
<td>- Priority issues for women and children</td>
</tr>
<tr>
<td></td>
<td>- Major health issues in the community</td>
</tr>
<tr>
<td></td>
<td>- Health seeking behaviour</td>
</tr>
<tr>
<td>Health programs</td>
<td>- Key issues addressed by health program</td>
</tr>
<tr>
<td></td>
<td>- Mechanism of program delivery</td>
</tr>
<tr>
<td></td>
<td>- Support from the health program</td>
</tr>
</tbody>
</table>

Both the FGD and KII guides were pilot-tested among a representative community, prior to finalisation. The findings were then discussed with program managers of the two organisations for their feedback. Interview guides were developed in English, translated into local languages and then back-translated into English to check for meaning and consistency. All translations were validated by an independent person as well as one of the responsible senior managers from the local organisation to ensure that the translated question guides were suitable for the local context.

3.4.6.4 Participant recruitment and conducting the interviews

For the KII s, participants were VHWs from the intervention communities. For the FGDs, participants were women SHG members from the intervention communities. Inclusion criteria were the same as in the survey, i.e., women of reproductive age group having a child aged less than two years old. I ensured that no respondents were common between the quantitative survey and the FGDs. Consenting women fulfilling the inclusion criteria were approached to participate in the FGD. Sessions were organised close to where participants lived, in a relaxed environment such as a school or the place of the fortnightly SHG meeting. Participants were provided with light refreshments after completion of the interview.
Interviews were conducted in Kannada in Karnataka and Gujarati in Gujarat. A native speaker was trained to facilitate the FGD. For the FGDs, participants were informed that the purpose of the discussion was to better understand their community, their group and its activities, and the contribution of the NGO health program. They were informed about the rules, such as they should speak one at a time, they were welcome to discuss with each other but should not interrupt other participants. They were informed that the discussion was confidential and they should respect each other’s right to privacy. For each of the key themes, probing questions were asked when more information was needed or when participants were not providing enough information. Discussions were audio-recorded with the consent of participants.

3.4.6.5 Analysis of FGD and KII data

Responses from both the KIIs and the FGDs were firstly transcribed in the local language and then translated back into English for analysis. The KII and FGD data was coded, based on the three themes as explained in section 3.4.6.3 (Table 9 and Table 10). Responses were then further coded according to the sub-themes that emerged from each of the three broad themes. Analysis involved drawing together and comparing discussions of similar themes. When reporting the qualitative findings, original quotes are included where relevant, without the identifiers to maintain confidentiality.

3.5 Ethics

For data collection for both the quantitative and the qualitative surveys, the interview process was explained to the participants in plain and relevant vernacular language by the data collectors. Care was taken to ensure confidentiality of participants and to obtain informed consent. Participants were informed that they were not obligated to participate in the study nor were they required to answer any questions they did not wish to answer.

Before beginning data collection for the quantitative surveys, written informed consent was obtained from literate women willing to participate in the study. For women who were not literate, verbal informed consent was obtained after the purpose and proceedings of the study
were carefully explained to them. Similar consent was also taken for the KIIs. For the FGDs, informed consent was obtained individually with each participant before the person joined the group.

The research protocol for this study received approval from the Nossal Institute for Global Health Human Ethics Advisory Group (Ethics Id: 1239067.1) and the Institutional Ethics Committee of the Public Health Foundation of India, New Delhi, India (TRC-IEC-124/12). Approvals from both the ethics committee are included in Appendix 2, page 175.

3.6 Data triangulation

Several research methods were applied to address the study aim and to improve the validity of the study findings. Inferences were drawn by triangulating findings from four sources: secondary data analysis, pre-test and post-test surveys, key informant interviews and focus group discussions.

Triangulation refers to the practice of using multiple sources of data or multiple approaches to analyse data to enhance the credibility of a research study (Salkind, 2010, page 212). Four types of triangulation are discussed in literature: data triangulation, investigator triangulation, theory triangulation, and methodological triangulation (Salkind, 2010; Tashakkori & Teddlie, 2010; Jick, 1979). I used methodological triangulation, the most commonly used form of triangulation when applying mixed methods. Quantitative methods used to determine the effect of adding health program with SHGs. The qualitative KIIs and FGDs were employed to explore informants’ experiences and perceptions of the health program.

3.7 Validity of the research findings

A critical issue relevant to the significance of the research findings is the validity and reliability of the research. Validity is a reflection of the extent to which the research truly measures that which it was intended to measure or how truthful the research results are. Researchers generally determine validity by asking a series of questions and will often look
for the answers in the research of others (Golafshani, 2003). Validity in research has two essential parts:

- Internal validity encompasses whether the results of the study are legitimate because of the way the groups were selected, data was recorded or analysis performed.
- External validity, often called ‘generalisability’, involves whether the results given by the study are transferable to other groups (i.e. populations) of interest (Last, 2001, page 24).

Internal validity or legitimacy of the study findings was ensured in the following ways: The study tools were designed through a series of processes that involved informal discussion with program managers and community members and were reviewed by academic peers and program managers of the participating NGOs. Segments of the survey questionnaire were adapted from two nationally representative survey tools: DLHS-III, and NSS-2009 – 10. Being a pre-test and post-test comparison group study design, another threat to validity was the legitimacy of the way intervention and comparison groups were selected. Comparison villages were matched with villages identified for roll-out of health program. Baseline survey data was analysed to check the validity of the matching process. Findings from the baseline survey indicated the intervention and comparison groups were similar on key socio-economic variables (reported in Chapter 6). This indicates that the matching process was effective at baseline and hence supports the internal validity of the study design. Moreover, when analysing the study outcome, I introduced statistical controls for key socio-economic variables that are known to influence the outcomes.

The external validity, or generalisability of the findings from this study to other settings in India, should be treated with caution. While the sample for the first research question was representative of the country, for the second research question samples from three blocks, representing two states of India were used. Organisations included in this study were large, socially motivated, and had been active for long periods of time. Attempting to generalise these findings across the country, without accounting for the membership structure, level of activity, duration of participation, quality of the health program, and organisational ethos may produce less than satisfactory results.
In summary using a mixed methods approach allowed analysis of the research problem from multiple perspectives, helped to contextualize the findings, and ultimately develop a more complete understanding of the problem. The integration of different methods in data collection and analysis made it possible to explain more fully the research results.
4. Review of evidence

4.1 Introduction

This chapter presents a review of evidence on the role of microfinance-based SHGs in improving health outcome of the poor in South-Asian countries. Together, India and Bangladesh are home to more than half of all microfinance clients globally. For this reason, and because the microfinance industry has the longest and most developed history there, this review of the published literature focuses exclusively on the countries of South Asia. The review was published in the WHO South-East Asia Journal of Public Health, and is reproduced in the published version.

4.2 Published paper
Overcoming access barriers to health services through membership-based microfinance organizations: a review of evidence from South Asia

Somen Saha,1,2 Peter Leslie Annear1

ABSTRACT

It is a challenge for the poor to overcome the barriers to accessing health services. Membership-based microfinance with associated health programmes can improve health outcomes for the poor. This study reviewed the evidence published between 1993 and 2013 on the role of membership-based microfinance with associated health programmes in improving health outcomes for the poor in South Asia. A total of 661 papers were identified and 26 selected for inclusion, based on the relevance and rigour of the research methods. Of these 26, five were evidence reviews. Of the remaining 21 papers, 12 were from India, seven from Bangladesh, and one each from Sri Lanka and Indonesia. Three papers addressed more than one theme. Five key themes emerged from the review: (i) the impact of microfinance programmes on the social and economic situation of the poor; (ii) the impact of microfinance programmes on community health; (iii) the impact of integrated microfinance health programmes on raising client awareness; (iv) the impact of integrated microfinance health programmes on financing health care; and (v) the impact of integrated microfinance health programmes on affordable health-care products and services. The review provides new evidence on the pathways through which microfinance helps to improve population health and value for money for such programmes. Among countries with large populations in the informal sector, there is a strong case for policy-makers to support these groups in providing access to life-saving health care among the poor.

Key words: Bangladesh, community health, India, microfinance, poverty, women’s group

INTRODUCTION

Poverty and ill health are strongly linked.1 To have maximum impact, interventions designed to improve health outcomes need to address this dual burden. Evidence from low- and middle-income countries shows that barriers to accessing health services are likely to be higher for the poor and other vulnerable groups, for whom the cost of access, lack of information and cultural barriers reduce the optimum benefit that they could derive from public spending on health care.2,3 Factors such as poverty, inadequate housing and lack of education are among the social roots of morbidity in developing countries,4 and governments need to address these barriers, which lie outside the health sector.

One of the development initiatives with a primary focus on poverty alleviation and empowerment of women consists of organizing the poor around microfinance. Although outside the health sector, microfinance, which involves poor (mostly) women organizing themselves around women’s groups or self-help groups (SHGs), can complement health-sector initiatives.

An earlier review indicated the positive health benefits of integrating microfinance and health strategies on maternal and child health, domestic violence, malaria and other infectious diseases.5 This article updates and extends the argument with a focus on nations of South Asia, which have remained the cornerstone of the global microfinance movement. In addition, the review aims to explore the pathways through which microfinance improves population health, and provide evidence on the economic benefit of such programmes.
In South Asia, and elsewhere, an extensive network of microfinance institutions and programmes has been established in recent decades. As a model to address poverty, and as a development tool, microfinance was popularized by the work of Professor Muhammad Yunus in Bangladesh in the 1970s. At its simplest, microfinance is the provision of financial services such as loans, savings facilities and business training for the poor, who otherwise lack access to formal banking services. In many cases, membership-based organizations, such as SHGs, as well as savings and credit groups, have been established to implement programmes. Comprising predominantly women, these groups focus on poverty reduction and women’s empowerment through access to credit and business training.

The wide variety of models and levels of financing range from perhaps the best known model by the Grameen Bank of group-based lending (primarily to women), to the more informal village savings model where the very poor both save and give loans to one another, without an intermediary. In India, the most common models of microfinance are: 

- the SHG model, where members (10–20 per group, predominantly women) form a group facilitated by a nongovernmental organization (NGO) or by the microfinance institution (MFI) or bank, or a traditional revolving savings and credit group;
- the Grameen model, wherein regular, and usually weekly, meetings are supervised by an MFI worker, who collects savings and repayments, and maintains records;
- a joint-liability group model of informal groups comprising 4–10 individuals coming together to take advantage of a bank loan, either singly or through the group mechanism, against a mutual guarantee;
- a cooperative society model where at least 10 individuals with common economic objectives, such as farming, weaving or consuming, form a group.

In India, the SHG model is promoted by state governments, NGOs, regional rural banks and specialized MFIs. Operationally, the programme works in two different ways: the SHG–bank linkage model involves SHGs financed directly by the banks; and MFI–bank linkage involves financing of MFIs by banking agencies for subsequent lending to SHGs and other small borrowers within the microfinance sector. A detailed description of the forms of lending in India is available elsewhere. 

According to The State of Microcredit Summit Campaign report 2014, 204 million clients globally, 82.3% of whom were women, were associated with microfinance as of 31 December 2012. Two thirds of the microfinance-assisted entrepreneurs were among the poorest within the total population when they took their first loan. Eighty-two per cent of microfinance activity was concentrated in the Asia-Pacific region. In 2010, 68.8% of families living in absolute poverty in the Asia-Pacific region took advantage of a microloan.

The primary objective of microfinance has been developmental in nature, aimed at reducing poverty and overcoming hunger. However, these aims cannot be addressed adequately without factoring in the issue of health. By combining financial services for the poor with proven community health interventions, two fundamental needs can be met through an outreach infrastructure that already exists within the microfinance sector and SHG movement. Health programmes are usually designed to address three principle barriers: awareness and information for behaviour change; ability to pay for health care; and convenience of access to effective and safe health services and products. Some MFIs routinely provide health services to their members, primarily to ensure healthier clients, and to reduce the rate of loan defaults. However, adoption of such an integrated approach remains low. Part of the reason for this has been an inadequate understanding of the impact of such programmes on improving access to health services. There is also an uncertain understanding of the pathways, and economic benefit of such programmes. This gap in knowledge is addressed in this paper through a review of evidence from South Asia.

METHODS

A literature review was conducted of evidence published between 1993 and 2013 on microfinance programmes that addressed access barriers to health. Several databases were searched for peer-reviewed publications in the English language: Academic Search Complete (EBSCO), Google Scholar, PubMed, Scopus and Web of Knowledge. To identify the keywords, a thesaurus (such as MeSH) was consulted in all the databases. In the advanced search feature of the databases, the search terms used were (microfinanc* or microcredit* or micro-financ* or micro-credit* or microinsuranc*) and (health* or disease or barrier*) and (Bangladesh, Bhutan, India, Nepal, Pakistan, Sri Lanka or Maldives). Keywords for the initial search were adopted from Leatherman et al., but restricted to South Asian countries. Two of these countries, India and Bangladesh, represent more than half of the total number of global microfinance clients. The initial review of articles was based on title and abstract content. If relevance could not be determined and the full text was readily available, the text was also reviewed. The study also searched for relevant references among citations in the reviewed publications. Given the paucity of literature in peer-reviewed journals, additional grey literature, including unpublished reports, were searched for through Google, Google Scholar and Microfinance Gateway. The research was considered rigorous if it dealt with analysing the impact of a health programme or intervention through a randomized controlled trial or a quasi-experimental design or a defined quantitative or qualitative research design. Non-original papers such as theoretical reviews, book reviews, letters, editorials, summaries of conferences, historical papers or papers without an abstract were excluded. The first author primarily reviewed the papers, under supervision of the second author. All abstracts deriving from the search terms were read. Once a comprehensive list of abstracts had been retrieved and reviewed, studies appearing to meet the inclusion criteria were obtained and reviewed in full. A simple data-extraction table organized the information by country, publication year, nature of study and key messages.
RESULTS

The initial search returned 661 studies. Of the 661 papers, 635 were removed because they met the exclusion criteria; of these, 158 were simply case-studies, 325 were letters, conference summaries or historical papers, and 152 dealt with barriers other than health access. Twenty-six papers were included for final review. Of these 26, five were evidence reviews. Of the remaining 21 papers, 12 were from India, seven from Bangladesh, and one each from Sri Lanka and Indonesia. Three papers addressed more than one theme. No papers from Bhutan, Nepal, Pakistan or Maldives were found.

Five key themes on overcoming access barriers to health through microfinance programmes emerged from the review: (i) the impact of microfinance programmes on the social and economic situation of the poor; (ii) the impact of microfinance programmes on community health; (iii) the impact of integrated microfinance health programmes on raising client awareness; (iv) the impact of integrated microfinance health programmes on financing health care; and (v) the impact of integrated microfinance health programmes on affordable health-care products and services.

Table 1 lists the papers included in the review. The five key themes are illustrated below.

The impact of microfinance programmes on the social and economic situation of the poor

There has been intense debate about the impact of microfinance on the social and economic situation of the poor. Critics of microfinance doubt whether the mechanism actually contributes to poverty reduction, with some researchers arguing that the poorest are deliberately excluded from microfinance programmes. In India, an excess of microfinance loans was linked to an increased rate of suicides, and a study by the Consultative Group to Assist the Poor found that households in Andhra Pradesh had too many loans and more debt than seemed sustainable, considering their income levels and ability to repay. A randomized evaluation of the impact of introducing the standard microcredit group-based lending product in a new market found no effect on health outcomes in the short run.

Proponents of microfinance, on the other hand, argue that access to finance can help to reduce poverty substantially. Leatherman et al. argued that, in general, studies that found no effect of microfinance programmes on women’s empowerment were relatively short term, and thus less likely to detect impacts on poverty and health that were slower to develop. An intensive year-long study using financial diaries from about 300 poor and low-income families in Bangladesh, India and South Africa showed that business investment is just one use of microloans, others being money for health care, schooling, housing, nutrition, transportation and unexpected emergencies. The study showed that discrimination against women and gender inequality result not only from the financial aspect but also from other structural impediments. Microfinance cannot be viewed as the sole contributor to poverty reduction, or as an alternative to government intervention, but may certainly help reduce some of the ill effects of income inequity, and can be effective for consumption smoothing among those living in poverty.

In the post-tsunami period in Sri Lanka, a quasi-natural experiment was conducted involving recapitalization of a Sri Lankan MFI. The aim was to assess the effectiveness of microfinance as a recovery tool. Analysis of retrospective panel data from 350 randomly selected borrowers, both damaged and non-damaged by the tsunami disaster, showed that microfinance loans provided after the disaster were instrumental in reducing the income gap between borrowers who were affected by the disaster and those who were not. Using examples from the Grameen Bank in Bangladesh (land leasing and housing loans), Anand Milk Union Limited (commonly known as Amul) in India, and the Self-Employed Women’s Association (SEWA) in India, Kay argued that, when combined with savings and credit, SHGs have enabled women to benefit economically by monetizing their contributions and, in the process, have empowered women to become the agents of change.

The impact of microfinance programmes on community health

While microfinance has essentially been a tool for poverty alleviation, the nature of the microfinance transaction – where (usually) women get together on a regular basis to repay loans and deposit savings – promotes group solidarity, trust and mutual support. Microfinance can improve long-term development, as women are the main brokers of children’s health and education. Globally, there is emerging evidence to show that microfinance programmes have created non-financial benefits, including improved health, hygiene and sanitation.

The Indonesian Family Life Survey (1993–2000), representing 83% of the Indonesian population living in 13 of the country’s 26 provinces, collected anthropometric data related to the measurement of child health and development. The survey also collected information on the types of financial institutions available, as well as other key infrastructures that typically come with development. After 1993, Indonesia experienced significant growth preceding the 1997 economic crisis. Deloach and Lamina analysed this shock-induced variation, to study the effects on child health due to changes in the presence of microfinance and those due to changes in other indicators associated with community development. Using height as a proxy indicator for child health, the authors found that the presence of an MFI in the community had a substantial and positive effect on changes in children’s health. Children in communities with MFIs gained roughly one standard deviation in height relative to the international standard. The result was valid after inclusion of indicators to control for real household expenditure, community-level economic development and important infrastructure. The authors concluded that part of the increase in height can be attributed to the improved bargaining power of women, the strengthening of social capital through the MFI, and consequently a larger share of the limited food resources going to children than had done so previously.
### Table 1: Articles included in the review and key messages

<table>
<thead>
<tr>
<th>Country</th>
<th>Design</th>
<th>Primary outcome</th>
<th>Sample</th>
<th>Key messages</th>
<th>Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFIs from India, Bangladesh and South Africa</td>
<td>Review</td>
<td>Participation of the poorest in microfinance programmes</td>
<td></td>
<td>Inadequate exploration of financial products and low-cost service-delivery mechanisms that would allow MFIs to include extremely poor households without compromising their sustainability objectives</td>
<td>Simanowitz, 2001</td>
</tr>
<tr>
<td>India</td>
<td>Randomized trial on the impact of introducing microcredit in a new market</td>
<td>Consumption, new business creation, business income, etc., as well as measures of other human-development outcomes such as education, health and women's empowerment</td>
<td>6850 households from 52 neighbourhoods in Andhra Pradesh state of India</td>
<td>No effect of access to microcredit on average monthly expenditure per capita, but expenditure on durable goods increased in intervention areas. No impact on measures of health, education or women's decision-making</td>
<td>Banerjee et al., 2009</td>
</tr>
<tr>
<td>India</td>
<td>Situation analysis</td>
<td>Analysis of the microfinance crisis in Andhra Pradesh state of India</td>
<td></td>
<td>Households in Andhra Pradesh have too many loans and more debt than seem to be supportable, considering their income levels and ability to repay</td>
<td>Consultative Group to Assist the Poor, 2010</td>
</tr>
<tr>
<td>Asia and Africa region</td>
<td>Analysis of MIX Market, and Microcredit Summit Campaign database</td>
<td>Scale, sustainability and impact of microfinance</td>
<td>41 microfinance programmes that were serving at least 20 000 very poor clients.</td>
<td>Microfinance – particularly when provided to relatively poorer women – increases incomes and savings, improves nutrition and health, and empowers women. Many microfinance programmes are reaching large numbers of the very poor while fully covering their costs</td>
<td>Dunford, 2006</td>
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<tr>
<td>Asia and Africa region</td>
<td>Review of evidence</td>
<td>Impact of microfinance as it relates to the attainment of Millennium Development Goals</td>
<td></td>
<td>Availability of microfinance services for poor households has a strong impact on the achievement of the Millennium Development Goals</td>
<td>Morduch et al., 2003</td>
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<tr>
<td>Sri Lanka</td>
<td>Retrospective panel survey</td>
<td>Microfinance as a recovery tool after tsunami</td>
<td>Random sample of 305 borrowers: 200 with at least one type of damage (treatment group) and 105 with no damage (control group).</td>
<td>Loans obtained from the MFI after a catastrophic event (tsunami) have a positive and significant effect on the change in real income. The impact is stronger for damaged than non-damaged borrowers</td>
<td>Becchetti et al., 2004</td>
</tr>
<tr>
<td>Global</td>
<td>Review of evidence</td>
<td></td>
<td></td>
<td>While existing evidence is of uneven quality, it indicates positive health benefits in diverse areas such as maternal and child health, malaria and other infectious diseases, and domestic violence</td>
<td>Leatherman et al., 2012</td>
</tr>
<tr>
<td>Global</td>
<td>Review of literature</td>
<td>Women's empowerment</td>
<td></td>
<td>Microcredit will not work in locations that do not have sufficient cash-based market activity, are isolated and with low population densities, or are largely self-contained with few outside ties</td>
<td>Kay, 2002</td>
</tr>
</tbody>
</table>
### Key theme (ii) The impact of microfinance programmes on community health

<table>
<thead>
<tr>
<th>Country</th>
<th>Design</th>
<th>Primary outcome</th>
<th>Sample</th>
<th>Key messages</th>
<th>Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>Analysis of data from the Indonesian Family Life Survey 1993–2000</td>
<td>Height as a proxy indicator for child health</td>
<td>7224 households from 13 of the country’s 26 provinces</td>
<td>The presence of MFIs in communities significantly improves the health of children</td>
<td>DeLoach and Lamanna, 2011⁶⁹</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Analysis of panel dataset</td>
<td>Household outcomes</td>
<td>3000 households in 91 villages</td>
<td>Households with access to microcredit are less likely or not likely to sell productive assets (livestock) in response to idiosyncratic health shocks</td>
<td>Islam and Maitra, 2012²⁰</td>
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<tr>
<td>India</td>
<td>Cross-sectional survey</td>
<td>Health exclusion</td>
<td>928 non-elderly poor women from one panchayat (territorial decentralized unit) in Kerala</td>
<td>The odds of facing exclusion are significantly lower among SHG participants compared to non-participants. Early joiners of an SHG are less likely to report emotional stress and poor life satisfaction compared to non-members</td>
<td>Mohindra et al., 2008²¹</td>
</tr>
</tbody>
</table>

### Key theme (iii) The impact of integrated microfinance health programmes on raising client awareness

<table>
<thead>
<tr>
<th>Country</th>
<th>Design</th>
<th>Primary outcome</th>
<th>Sample</th>
<th>Key messages</th>
<th>Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>Controlled trial (not randomized)</td>
<td>Stillbirth rate; perinatal mortality rate; neonatal mortality rate; infant mortality rate</td>
<td>The baseline population was 39 312 in 39 intervention villages and 42 617 in 47 control villages</td>
<td>Over the first 20 years, the Jamkhed project showed a reduction in infant mortality rate from 176 to 19 per 1000 and a birth rate decline from 40 to 20 per 1000. Community empowerment, delegation of responsibility and authority to community members made the programme resilient.</td>
<td>Rosato et al., 2008;²²Arole and Arole, 2002²³</td>
</tr>
<tr>
<td>India</td>
<td>Cluster-randomized controlled trial</td>
<td>Stillbirth rate; perinatal mortality rate; neonatal mortality rate; maternal mortality ratio</td>
<td>36 clusters across 3 districts; 7000 people per cluster</td>
<td>Neonates born to mothers who are the main decision-makers within their households have significantly improved likelihood of survival within the first 6 weeks of life compared to babies born to analogous households in non-SHG communities</td>
<td>Montalvao et al., 2011;²⁴</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Cluster-randomized controlled trial</td>
<td>Neonatal mortality</td>
<td>19 301 births during the final 24 months of intervention</td>
<td>The neonatal mortality rate was significantly lower in the intervention arm – a reduction in neonatal mortality of 38% when adjusted for socioeconomic factors</td>
<td>Fottrell et al., 2013²⁶</td>
</tr>
<tr>
<td>India, Bangladesh and other countries</td>
<td>Meta-analysis</td>
<td>Neonatal mortality</td>
<td>Seven trials with 119 428 births</td>
<td>Meta-analyses showed that exposure to women’s groups was associated with a 37% reduction in maternal mortality, a 23% reduction in neonatal mortality and a 9% non-significant reduction in stillbirths</td>
<td>Prost et al., 2013²⁷</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Cross-sectional survey</td>
<td>Acute respiratory infection</td>
<td>2814 mothers of children aged under 5 years residing in 200 randomly selected villages in five districts of Bangladesh</td>
<td>A microcredit programme can be a catalytic agent in raising knowledge of acute respiratory infection among poor women</td>
<td>Hadi, 2002²⁸</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Cross-sectional survey</td>
<td>Health awareness, health-care utilization</td>
<td>Grameen bank clients with health insurance: 329 households</td>
<td>MHI placement contributes to increasing awareness of important health problems and to the probability of seeking formal health care</td>
<td>Hamid, 2011²⁹</td>
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<tr>
<td>Bangladesh</td>
<td>Sample survey</td>
<td>Maternal health knowledge</td>
<td>500 mothers covering 70 villages in 10 regions of Bangladesh</td>
<td>Participation in a microcredit forum has a significant positive effect on maternal knowledge of prenatal care. Further duration of participation raised the odds ratio for knowledge of prenatal care</td>
<td>Hadi (2001)³⁰</td>
</tr>
</tbody>
</table>
### Key theme (iv) The impact of integrated microfinance health programmes on financing health care

| Country    | Design                               | Primary outcome                                     | Sample                                                                 | Key messages                                                                                                                                                                                                 | Study          |
|------------|--------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------|ampoans convince us to take them into account.                                                                                                                                             |                |
| India      | Household survey                      | Financial protection                                 | Eight pilot subdistricts.                                             | Vimo SEWA, a comprehensive insurance scheme of SEWA, does provide some elements of financial protection, particularly for less expensive hospitalizations. | Ranson et al., 2007 |
| India      | Cluster randomized controlled trial   | Malaria                                             | 150 villages randomly assigned to intervention and control arm       | Ownership of insecticide-treated bed nets increased substantially in the group that had a microloan for net purchase, relative to a control area where nets were not offered for sale. The increased ownership was also associated with large increases in use of nets. | Tarozzi et al., 2011 |
| India      | Secondary analysis                    | Utilization of health insurance                      | 280 000 microfinance borrowers in India                               | Women who were borrowers made significantly more use of health insurance than non-borrowing women who had obtained the insurance through their husbands. | Rai and Ravi, 2011 |
| Bangladesh | Cross-sectional survey                | Health awareness, health-care utilization            | Grameen Bank clients with health insurance: 329 households           | MHI placement contributes to increased probability of seeking formal health care. | Hamid et al., 2011 |

### Key theme (v) The impact of integrated microfinance health programmes on affordable health-care products and services

| Country    | Design                               | Primary outcome                          | Sample                                                                 | Key messages                                                                                                                                                                                                 | Study          |
|------------|--------------------------------------|-----------------------------------------|------------------------------------------------------------------------|ampoans convince us to take them into account.                                                                                                                                             |                |
| Bangladesh | Household survey                      | Contraceptive use                        | Data were collected in two phases: a 1992 household survey of 656 women (15–50 years), and a 1997 survey of 2105 and 1721 women from the project’s experimental and control areas | There was a significant increase in contraceptive use and a decline in fertility when essential service packages in child and reproductive health and family planning were integrated with a microcredit programme for poor women. | Amin et al., 2001 |
| India      | Randomized controlled trial           | Awareness and uptake of water purifier   | 200 primary and middle schools and anganwadis (nurseries) in the Krishnighiri and Bargur administrative blocks of Krishnighiri district, Tamil Nadu, India. | Membership in an SHG was critical to increasing awareness and uptake of water purifier. SHGs not only provide credit to members but also influence other critical aspects for diffusion through exposure to product demonstrations, early adopters, or changing social norms through peer influence | Freeman and Clasen, 2011 |
| India      | Cluster-randomized controlled trial   | Stillbirth rate; perinatal mortality rate; neonatal mortality rate; maternal mortality ratio | 36 clusters across 3 districts; 7000 people per cluster                 | The incremental cost of the women’s group intervention was US$ 910 per neonatal life saved, increasing to US$ 1308 (in 2007 prices) when health-service-strengthening activities were included. The incremental cost per year of life lost averted was US$ 33 for the women’s group intervention (US$ 48 inclusive of health-service-strengthening activities) | Tripathy et al., 2010 |
| Bangladesh | Cluster-randomized controlled trial   | Neonatal mortality                        | 19 301 births during the final 24 months of intervention              | The cost per neonatal death averted was US$ 393 for the intervention group. The estimated cost-effectiveness of scaleup is US$ 220 per year of life lost averted. | Fottrell et al., 2013 |
| India      | Quantitative before-and-after outcome research | Impacts on clients’ health and financial status | Data from five MFIs in Benin, Bolivia (Plurinational State of), Burkina Faso, India and the Philippines | The cost to the MFI (for offering health protection package) was low – average annual net marginal cost of US$ 0.29 per client and average total annual cost, including allocated expenses, of US$ 1.59 per client. The health protection products resulted in a drop in MFI profit margin from 23.58% to 21.67% on average. | Reinschet al., 2011 |

MFI: microfinance institution; MHI: microhealth insurance; SEWA: Self-Employed Women’s Association (India); SHG: self-help group.
In Bangladesh, analysis of a household-level panel dataset, spanning about 8 years, showed that access to microcredit enabled households to insure against health shocks.\textsuperscript{20} Households with access to microcredit were less likely to sell productive assets (livestock) in response to idiosyncratic health shocks. If there was a sick member in the household, those who did not receive microcredit reduced ownership of livestock on average by 7.94 thousand Taka, while those receiving an average amount of 10 000 Taka in microcredit actually increased ownership of livestock by an average of 5.03 thousand Taka.

The duration of participation in a microcredit scheme seems to matter in terms of the health and well-being of members. In Kerala state in India, a cross-sectional survey among 928 non-elderly poor women showed that the odds of facing exclusion from health care were significantly lower among microcredit participants organized in an SHG, compared to non-participants. Early joiners of an SHG were less likely to report emotional stress and poor life satisfaction compared to new members or non-members.\textsuperscript{21} Social capital as a result of participation in the SHG activity of microfinance programmes acted as a coping strategy, helping women to overcome financial barriers and budgetary constraints.

The impact of integrated microfinance health programmes on raising client awareness

While direct behaviour change communication improves awareness, in the presence of community structures like microfinance and SHGs, the incremental effect may be further enhanced. As early as 1970, in rural areas of Jamkhed, Maharashtra state of India, and within a broader holistic community development initiative, a programme was implemented among women’s groups in which one woman was trained as a health worker and funds were provided to assist women with a household health emergency. An evaluation of the initiative over the first 20 years found a reduction in the infant mortality rate from 176 to 19 per 1000, and a birth rate decline from 40 to 20 per 1000. Access to antenatal care, safe delivery and immunization was nearly universal, and malnutrition declined from 40% to less than 5%.\textsuperscript{22,23} In Jharkhand and Odisha states of India, a cluster-randomized trial was carried out to assess the impact of a community mobilization programme working through participatory women’s groups among the indigenous communities.\textsuperscript{25,41} A participatory learning and action cycle was undertaken with group members to identify maternal and neonatal health problems in the community. Health committees were formed to discuss maternal and neonatal health-entitlement issues. The trial found neonates born to mothers in SHG communities had a significantly improved likelihood of surviving within the first 6 weeks of their lives compared to babies born to analogous households in non-SHG communities.\textsuperscript{24,25} A follow-up study conducted through prospective surveillance among the trial population found the intervention effect was stronger among the most marginalized women.\textsuperscript{41}

A similar cluster-randomized trial conducted from January 2009 to June 2011 with a participatory women’s group in Bangladesh found a 38% reduction in neonatal mortality, adjusting for socioeconomic factors. The trial researchers attributed the findings to improvement in hygienic home delivery practices, neonatal thermal care and breastfeeding practices.\textsuperscript{26} The most conclusive evidence to date on the effect of women’s group intervention comes from a meta-analysis of seven trials from Bangladesh, India, Malawi and Nepal. The analysis found that membership of a women’s group was associated with a 37% reduction in maternal mortality, a 23% reduction in neonatal mortality and a 9% reduction in stillbirths.\textsuperscript{27} The study further concluded that the proportion of pregnant women participating in groups and the population coverage of groups were key predictors of the effect.

BRAC, a nongovernment development organization in Bangladesh, requires women in its microcredit programme to know basic health practices as a condition of loan eligibility. BRAC’s health-promotion activities include social-awareness education, monthly meetings on issues such as violence against women and human rights, and essential health care, including family planning, water and sanitation, immunization, nutrition education and basic curative services. An analysis of demographic and health-surveillance data from the study area found that credit recipients paid more attention to health-promotion activities, in order to retain their eligibility to receive credit, free education for their children and subsidized health care for their family members.\textsuperscript{28} The study found participation in a microcredit forum had a significant positive effect on maternal knowledge of prenatal care. Furthermore, longer duration of participation raised the odds ratio for indicators of prenatal care. BRAC also involved community health volunteers as frontline health workers, to identify and treat acute respiratory infection. Although the acute respiratory infection control project was aimed at raising maternal awareness in the community in general, it was expected that the social development aspects of BRACs microcredit programme would add to the process of promoting knowledge among its participants.\textsuperscript{28} The project used electronic media such as radio and television to disseminate health information among BRAC microcredit members. Compared to a control group, knowledge of clinical signs of acute respiratory infection was greater where women participated in a microcredit programme, received information about acute respiratory infection from volunteers, and had regular exposure to the media.
The impact of integrated microfinance health programmes on financing health care

In India, one promising approach to delivering health insurance to the poor works in partnership with the existing rural networks of microfinance branches. A study on health insurance and microfinance in the Andhra Pradesh state of India found that members of a women’s credit group made significantly more use of health insurance than non-borrowing women who obtained health insurance through their husbands. This provides evidence for the claim that access to microfinance empowers women. Since 1992, Vimo-SEWA, a trade union with over 1.2 million poor self-employed women workers in India, has been providing voluntary integrated insurance, covering life, assets and medical expenditure, to informal sector workers. Data suggest that the scheme does provide some elements of financial protection, particularly for less expensive hospitalizations. By reducing the financial barriers, the scheme has improved access to inpatient health care. The Grameen Bank in Bangladesh provides members with access to voluntary MHI schemes to protect its clients from health risks. A 2006 survey among 32 branches of the Grameen Bank found that participation in MHI contributed to increasing awareness of important health problems and to the probability of seeking formal health care. Micro-insurance programmes for health reduced barriers to health services for the poor, for basic and preventive health care.

In Odisha state, India, a cluster-randomized controlled trial was conducted to evaluate the uptake of insecticide-treated bed nets through micro-consumer loans, as compared to a control group in which the nets were distributed free. The trial found the use of insecticide-treated bed nets increased substantially in the group that had microloans for net purchase, with 16% of individuals using a treated net the previous night compared to only 2% in control areas where nets were distributed free of charge.

The impact of integrated microfinance health programmes on affordable health-care products and services

In Bangladesh, a programme between 1992 and 1997 involved members of an organized microcredit group as outreach volunteers for door-to-door educational campaigns, delivery of nonclinical family planning methods and child immunization, and provision of an essential service package. An evaluation of the programme found that the contraceptive prevalence rate increased from 28% to 53%, while the total fertility rate decreased from 4.66 to 3.66 per woman. The corresponding contraceptive prevalence and total fertility rates in the control area at the end of the project were 38.41% and 4.72, respectively. Members in the intervention area had higher use of static clinic services for the purpose of vaccination, minor illnesses, family planning and nutritional supplements, compared to non-members.

In September 2007, the United Nations Children’s Fund (UNICEF) and Hindustan Lever Limited collaborated in a pilot study among 200 schools in Krishnagiri district of Tamil Nadu, India, designed to provide (through a local credit group) safe drinking water to children in school, while increasing awareness and adoption of effective point-of-use water treatment at home. The intervention consisted of placing a water purification system in classrooms; providing basic instruction to students, parents and teachers on waterborne diseases; and providing generic information on effective point-of-use water treatment (boiling, chlorination, filtration, solar disinfection and safe storage). The programme found that membership in an SHG was critical to increasing awareness and uptake of the purifier. SHGs not only provided credit to members to meet the upfront cost of purchasing the purifier, but also added to other critical aspects for diffusion, through exposure to product demonstrations, early adopters, or changing social norms via exposure to peer influence.

A programme for community mobilization through participatory women’s groups among the indigenous communities of Jharkhand and Odisha states of India estimated a cost–effectiveness ratio of US$ 910 per neonatal life saved. In a similar intervention in Bangladesh, the same effect was US$ 220 to US$ 393 per year of life lost averted. According to the World Health Organization (WHO) generalized benchmark for cost-effectiveness, these interventions were cost effective. There is scope for MFIs to absorb the additional cost of health programmes. A 5-year demonstration project by Freedom from Hunger, with five MFIs from different countries, found the programme cost was US$ 1.59 per client per year. This cost can be absorbed by the microfinance operation, and at best resulted in an average drop in MFI profit margin from 23.58% to 21.67%.

DISCUSSION

While universal health coverage is considered a key imperative for all countries to consolidate public health advances, the grand global challenge is still inequity in coverage, particularly among the poor and vulnerable in the informal sector. This is acute for countries like India, where 90% of the workforce is in the informal sector. Along with strengthening existing health systems, plans for universal health coverage need to work with allied sectors and programmes that seek to address the wider determinants of health linked to poverty, livelihood and empowerment. In this context, this review provides new evidence on the role of membership-based microfinance with associated health programmes in improving health outcomes for the poor.

The review has identified five themes or pathways via which microfinance facilitates access to health: (i) the impact of microfinance programmes on the social and economic situation of the poor; (ii) the impact of microfinance programmes on community health; (iii) the impact of integrated microfinance health programmes on raising client awareness; (iv) the impact of integrated microfinance health programmes on financing health care; and (v) the impact of integrated microfinance health programmes on affordable health-care products and services. Microfinance transactions were usually organized as members who meet together to form SHGs. Such groups
meet on a frequent basis to repay loans and deposit savings. This creates solidarity and social capital among members. These group meetings also serve as a medium to communicate health messages and generate community awareness on key health issues. Also, the microfinance organization can reduce vulnerability through tailored products such as health loans and insurance that provides financial risk protection. Such programmes address not only demand-side access barriers related to awareness and care-seeking, but also several supply-side barriers like access to finance, consumption smoothing, and products. The success of such community interventions depends on their ability to engage and strengthen social capital.

In addition to impact-evaluation type research design, future research must analyse programme-intervention factors and learning through process evaluation. This is particularly important in expanding learning from individual interventions to a country-level initiative.

A solution through a microfinance-based approach works within the structural impediments that exist in the society, such as gender discrimination, power relations and inequity in access to care. Such an approach cannot be viewed as the sole contributor to poverty reduction, or as an alternative to government intervention. Also, to achieve the desired impact on community health, a community health programme with a microfinance-based SHG needs a maturity period. While a cut-off time frame is hard to predict, there is a strong correlation between duration of participation and measured changes in health outcome.

Finally, although evidence is scarce, it indicates that a programme that relies on a women’s group or SHG can provide value for money. There is scope for MFIs to absorb the additional cost of health programmes. Over time, such initiatives can deliver business savings for MFIs, through reduced microcredit default and increased trust among members.

In summary, this review confirms the work by Leatherman and colleagues, which concludes that MFIs can provide a platform for integrating poverty-alleviation and health-improvement programmes. In addition, the key message from the review is that, among countries with a large population in the informal sector, public spending on health will continue to have a limited impact unless vulnerabilities linked with poverty and inadequate social pressures are addressed. In the presence of a vibrant microfinance infrastructure in countries like India, aligning community health programmes with membership-based MFIs is a pragmatic approach to address both financial and social security for the poor. From a research and evaluation perspective, the pressing need is for a framework to analyse such programmes. Such a framework should help analyse the determinants of health, structure and operation of microfinance programmes, the structure of health programmes and the regulatory and policy environment in the country.

There are a few limitations in this review. Almost all evidence of integrated microfinance and health programmes was from India and Bangladesh, the two countries where the microfinance movement is the strongest. There is little or no evidence from other countries in the South Asian region, though evidence from Sri Lanka was identified and used. While many community-oriented MFIs routinely integrate health services in their programmes, with support from local government or donors, the outcomes have not been published in peer-reviewed journals, and hence are not included in this review. Notable programmes were Swayam Shakti, a mandatory pilot health-insurance programme of Swayam Krishi Sangam, an MFI in India offering cashless maternity, hospitalization and accident benefits among network hospitals to its members, and the Velugu II project in Andhra Pradesh (renamed as Indira Kanti Patham) that mitigated risk and improved security through a comprehensive insurance package covering health, life, crops and livestock. These are some of the limitations of this review. While compelling, the evidence in the literature is limited to projects and research activities linked to large, motivated organizations that have integrated health services with a microfinance programme, and dedicated research funding to implement, analyse and publish the effect. With the exception of a few countries, like Bangladesh and Indonesia, large-scale national health surveys have traditionally ignored the collection of information on savings and credit groups. There are notable gaps regarding an in-depth understanding of factors that contribute to the observed change in health outcomes. These remain issues for future research.

This review shows that membership-based organizations, like MFIs, provide an effective platform to improve a range of priority health and hygiene services in the community. It shows that access to health care is just one facet among many social issues, and that complementary programmes focusing on empowerment, social capital and social exclusion, along with health access, can result in a greater impact. Targeted health programmes delivered with microfinance-based SHGs, while not an alternative to government interventions, can improve the social determinants of health by reducing poverty, income disparities and gender inequity. When carefully designed, such programmes offer a low-cost alternative to reach the poor with much-needed health services and generate demand for quality health services within the community. In communities with a wider network of such membership-based organizations, there is a strong case for policy-makers to take note, and work with these groups in providing access to life-saving health care in poor rural communities.

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3. Dasgupta R. Microfinance in India: empirical evidence, alternative

2. Dasgupta R. Microfinance in India: empirical evidence, alternative

1. Dasgupta R. Microfinance in India: empirical evidence, alternative

4.3 **Summary**

This review indicates that microfinance programs improve the socio-economic situation and health of the community. Existing evidence that included rigorous randomized trials, panel data survey, and secondary analysis of national survey data does show the presence of microfinance programs significantly improve health of women and their children. One of the key issues emerging from the review is that women’s group need a period of maturity before health gains are evident. In addition to the indirect effect of participation in microfinance program on health of members, several microfinance organisations have health programs to address population health needs. I summarized five pathways through which microfinance programs influence health measures.

However, despite the positive health gains evident from the review there are critical gaps that need to be addressed. Within the context of India, most evidence arises from a few motivated organisations. India has large programs to promote self-help groups (SHGs) – both supported by government and non-government organisations. These SHGs were promoted for livelihood and financial access among low income households and represent broad population coverage primarily among women in the unorganized sector. Yet there is no national analysis of the effect of existing SHG programs on population health measures. Insufficient is an in-depth analysis of how these SHG programs can address gap in health attainment for women and their children. As a result the role of microfinance-based SHGs in improving health outcomes of the poor has not been a national policy priority.
5. Effect of self-help group on health knowledge and health behaviours

5.1 Introduction

In India the self-help group (SHG) model of microfinance is widely promoted for financial inclusion and livelihood promotion among women. Considering the nature of group formation that emphasizes regular meetings and solidarity among group members, the spill-over effects of SHGs on population health are easily comprehensible. However, till date there is no empirical country-level analysis of the effect of SHGs on health knowledge and behaviours.

To address this gap, I analysed whether presence of an SHG in a village has any positive influence on key health indicators at the individual level. Four measures of knowledge and behaviours were analysed:

- Institutional delivery
- Feeding newborn colostrum
- Knowledge of family planning methods
- Use of family planning methods.

I addressed this question through an analysis of a nationally representative survey data, the District Level Household Survey phase III or DLHS-III. The finding was published in the International Journal for Equity in Health and is reproduced below in the published version.

5.2 Published paper

*When tiny, tiny things start happening a million times, it becomes a large thing. It lays down the foundation of a strong economic base. With women participating in building this economic base, it becomes the foundation for better social and economic future...*

- Professor Muhammad Yunus, Founder, Grameen Bank
The effect of Self-Help Groups on access to maternal health services: evidence from rural India

Somen Saha1,2*, Peter Leslie Annear1 and Swati Pathak3

Abstract

Introduction: The main challenge for achieving universal health coverage in India is ensuring effective coverage of poor and vulnerable communities in the face of high levels of income and gender inequity in access to health care. Drawing on the social capital generated through women’s participation in community organizations like SHGs can influence health outcomes. To date, evidence about the impact of SHGs on health outcomes has been derived from pilot-level interventions, some using randomised controlled trials and other rigorous methods. While the evidence from these studies is convincing, our study is the first to analyse the impact of SHGs at national level.

Methods: We analyzed the entire dataset from the third national District Level Household Survey from 601 districts in India to assess the impact of the presence of SHGs on maternal health service uptake. The primary predictor variable was presence of a SHG in the village. The outcome variables were: institutional delivery; feeding new-borns colostrum; knowledge about family planning methods; and ever used family planning. We controlled for respondent education, wealth, heard or seen health messages, availability of health facilities and the existence of a village health and sanitation committee.

Results: Stepwise logistic regression shows respondents from villages with a SHG were 19 per cent (OR: 1.19, CI: 1.13-1.24) more likely to have delivered in an institution, 8 per cent (OR: 1.08, CI: 1.05-1.14) more likely to have fed newborns colostrum, have knowledge (OR: 1.48, CI 1.39–1.57) and utilized (OR: 1.19, CI 1.11–1.27) family planning products and services. These results are significant after controlling for individual and village-level heterogeneities and are consistent with existing literature that the social capital generated through women’s participation in SHGs influences health outcome.

Conclusion: The study concludes that the presence of SHGs in a village is associated with higher knowledge of family planning and maternal health service uptake in rural India. To achieve the goal of improving public health nationally, there is a need to understand more fully the benefits of systematic collaboration between the public health community and these grassroots organizations.

Keywords: Self help group, Institutional delivery, Family planning, Barriers, India

Introduction

As India strives to achieve universal health coverage, the main challenge is to expand coverage to all citizens with protection from the costs of basic health services. The poor generally have worse health outcomes and access to care compared to the non-poor. Poor health contributes to the persistence of India's high poverty rates, with health expenditures driving 39 million families into poverty each year [1]. Even when treatment is sought, significantly smaller sums of money are spent on treatment of women than on men [2]. Gender discrimination exists in child feeding, health care, and nutrition status in India [3-9], and other South Asian countries [10,11].

Overcoming barriers to health service access is likely to be more difficult for the poor and other vulnerable groups as the costs of care, lack of information and cultural barriers impede them from benefiting from
public spending [12,13]. Factors such as poverty, inadequate housing and lack of education are the social roots of morbidity in developing countries [14]. Health cannot be achieved without addressing these social determinants of health, and the answer does not lie only in the health sector [15-18]. Socioeconomic disparities are the major determinants of population health [19].

In this paper we analyse the effect of social capital, generated through women’s participation in community networks known as Self-help Groups (SHGs), on access to maternal health services, using data available from a large national survey in India. SHGs have emerged as a development strategy having a primary focus on poverty alleviation and empowerment of women. Structurally, a SHG is a small economically homogeneous affinity group of the rural poor coming together to form savings and credit organizations. Members deposit an amount regularly in a common fund to meet emergency needs and to provide collateral free loans decided by the group [20]. These small groups (10–20 members each) of predominantly rural women are well established in the country. Meeting the need for access to capital, specifically articulated by women during the United Nation’s Conference on Women and Development in Mexico City in 1975, SHGs can, in many ways, be considered the cornerstone of much of the well-established microfinance activity in India. Katz [21] defined self-help groups as: “Voluntary, small group structures for mutual aid and the accomplishment of a special purpose”. They are usually formed by peers who have come together for mutual assistance in satisfying a common need, overcoming a common handicap or life-disrupting problem, and bringing about desired social and/or personal change. They often provide material assistance, as well as emotional support; they are frequently cause-oriented and promulgate an ideology or values through which members may attain an enhanced sense of personal identity.

Major NGOs like the Self Employed Women’s Association, BRAC (a major development organization), and Grameen Bank in Bangladesh have engaged extensively in promoting related activities through SHG participation. In India, organizations based on the Gandhian philosophy of self-reliance had already been popularized during the freedom movement in British India [22]. SHGs reflect a similar philosophy and provide an avenue for poor rural women to access the microcredit system. In the early 1990s, policymakers in India took notice of SHG growth and influence and established a countrywide SHG Bank Linkage Programme (SBLP). SBLP, promoted aggressively by the National Bank for Agriculture and Rural Development, links mature SHGs with the formal banking system. SHGs are linked to Regional Rural Banks (RRB), commercial banks and cooperative banks to access microcredit as a source of additional capital for the group members to supplement their savings. By establishing the Swarnajayanti Gram Swarojgar Yojana in 1999, the Government of India aimed to provide self-employment to millions of villagers. Poor families living below the poverty line were then organized into SHGs established with a mixture of government subsidy and credit from investment banks.

The main aim of these SHGs is to focus on income generation and raising poor families above the poverty line. The SHGs are supported and trained by non-government organizations (NGOs), community based organizations (CBOs), individuals, banks self-help promoting institutions, and microfinance institutions (MFI). The most prominent models of delivery for microfinance in India continue to be SHGs, promoted by the state governments, NGOs, a few regional rural banks, and specialized MFIs that use various models to make both group and individual loans [23]. The southern states of India experienced the largest concentration of SHG activities, both with state support, and promoted by private MFIs (Figure 1).

Access to Health and SHG

The nature of SHG activities, where members meet regularly for transactions and training, creates solidarity and social capital. Social capital is built on features of social organization, such as trust, social norms and networks, that can improve the efficiency of society by facilitating coordinated actions [24]. The concept of social capital is further split into three connecting strands: bonding social capital (i.e. ties between immediate family members, neighbours and close friends); bridging social capital (i.e. ties between people from different ethnic, geographical, and occupational backgrounds); and linking social capital (i.e. ties between poor people and those in positions of influence in formal organizations such as banks and schools) [25]. SHGs, which bring village women together in a common organization for mutual support, are mobilized by existing bonding social capital, and then build linking social capital as the group members get involved in activities [26].

Several studies have found an association between social capital, generated from participation in microfinance, SHG, and participatory women’s groups on diverse health behaviours and health outcomes, as well as reducing inequity.

Globally there is emerging evidence to show that microfinance programmes have created non-financial benefits including improvements in health, hygiene and sanitation [19,27,28]. In post-tsunami Sri Lanka, a study using retrospective panel data from 350 randomly selected borrowers showed that microfinance loans provided after the disaster were instrumental in reducing...
the income gap between those who were hit and those who were not [29]. One analysis of a large dataset from three waves of the Indonesian Family Life Survey, showed a positive effect on changes in children’s health as MFI members were twice as likely to live in urban areas, have sewerage systems, regular garbage collection, electricity and better access to medical facilities [30]. Studies in India and Bangladesh have shown the positive effect of SHGs on reducing exclusion [31], improved childcare and contraceptive use [32,33].

In Maharashtra state, a project that trained women SHG members as health workers, initiated literacy programmes and provided funds for household health emergencies showed in the two decades after 1970 a reduction in infant mortality from 176 to 19 per 1000, a birth-rate decline from 40 to 20 per 1000, nearly universal access to antenatal care, safe delivery, and immunization, and a decline in rates of malnutrition from 40% to less than 5% [34,35].

A clustered randomized trial was conducted to assess the impact of a community mobilization programme through participatory women’s group among the indigenous communities of Jharkhand and Odisha states of India. The trial found newborn babies born to mothers associated with a women’s group significantly improved the likelihood of surviving within the first six weeks of their lives, compared to babies born to analogous households in control communities [36].

While available evidences, that includes rigorous randomised controlled trials and other rigorous methods, suggests the positive effect of social capital in reducing income gap, exclusion, saving newborn, and gender disparity in access to healthcare, Nayar [22] noted that most of the success stories from India are from large organization that
incorporate self-help activities as part of other concurrent interventions. There has not previously been an assessment in India using nationally representative data.

The third round of the District Level Household Survey (DLHS-3), a national health survey conducted in 2007–08 in 601 districts of India included a question on the presence of a SHG in its village level questionnaire. Using this data, we are able to analyze the effect of SHGs on the knowledge and practices of women. This data provides the best available opportunity to analyze the influence of the presence of SHGs on women’s RCH knowledge and practices on a national scale. The results of our analysis are reported in this paper.

Methods

Our study is the first to use national level data to analyse the impact of SHGs on health outcomes. We made a secondary analysis of data provided through the DLHS-3, which has been made publicly available. We analysed the national dataset, which was collected from 22,825 villages through the village questionnaire and from 643,944 ever-married women (15 – 49 years) through the ever-married women’s questionnaire. The DLHS-3 adopted a multi-stage stratified systematic sampling design that produced representative samples at national and state level after applying sampling weights to control for complex survey design [37]. The DLHS-3 was designed to provide information on family planning, maternal and child health, reproductive health of ever-married women and adolescent girls, and utilization of maternal and child healthcare services at the district level. At village level, the DLHS-3 included questions about the presence of SHGs in the village; unit level data from the village file and data from the ever-married women file were merged to conduct the analysis.

We analyzed the DLHS-3 dataset from 601 districts of India. Our hypothesis is that the presence of a SHG in a village is associated with improved access to maternal health services. Members of the groups are predominantly women, and maternal health indicators are good proxy indicators for overall health access. In this paper we have used four measures of women and child health knowledge and practices: institutional delivery; feeding new-born colostrum; knowledge about family planning services; and use of family planning methods. We measured knowledge and use of family planning by women who were aware of and practiced at least one of the following methods: female sterilization, IUD, oral contraceptive pills, emergency contraception and female condom. Indicators were transformed into binary measures by re-coding all ‘yes’ responses as 1 and ‘no’ as 0. For place of delivery: deliveries at hospital, dispensary, urban health centre/urban primary health centre, community health centre/rural hospital, primary health centre, sub-center, Ayush hospital/clinic, NGO/trust clinic, private hospital/clinic and on-way-to-hospitals were re-coded as 1, and delivery at home and workplace were re-coded as 0. Data analysis was done using SPSS Version 19.

Explanatory and control variables

Pitt [38] identified three sources of bias in estimating cause-effect relationships: choice-based sampling, individual heterogeneity bias, and village heterogeneity bias. To address unmeasured individual and village attributes that affect both programme participation and health outcome, we instituted some controls. For individual heterogeneity we controlled for: respondent education (illiterate, primary, middle and higher secondary and above), wealth quintile, heard or seen health messages; and for village level heterogeneity we controlled: accessibility of Community Health Centre/Rural Hospital (CHC/RH), villages with any beneficiaries of JSY in last one year, and health and sanitation committee in village. Choice-based sampling is addressed by the sample size, and the national nature of the survey that can tease out the contribution of self-help groups independent of other concurrent activities or the organizational infrastructure. Table 1 shows the number and percentage distribution of responses by selected characteristics.

### Table 1 Predictor and control variables used in the analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictor variable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Village have SHG</td>
<td>57.9</td>
<td>13,211</td>
</tr>
<tr>
<td>Individual control variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heard or seen health messages</td>
<td>85.9</td>
<td>553,225</td>
</tr>
<tr>
<td>Wealth Quintile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poorest</td>
<td>18.0</td>
<td>51,707</td>
</tr>
<tr>
<td>Second</td>
<td>21.9</td>
<td>62,996</td>
</tr>
<tr>
<td>Middle</td>
<td>25.0</td>
<td>71,732</td>
</tr>
<tr>
<td>Fourth</td>
<td>22.4</td>
<td>64,218</td>
</tr>
<tr>
<td>Richest</td>
<td>12.7</td>
<td>36,425</td>
</tr>
<tr>
<td>Mother’s level of education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>46.7</td>
<td>300,526</td>
</tr>
<tr>
<td>Primary (1-7)</td>
<td>23.5</td>
<td>151,048</td>
</tr>
<tr>
<td>Middle (8-10)</td>
<td>20.0</td>
<td>128,739</td>
</tr>
<tr>
<td>Higher secondary and above (11+)</td>
<td>9.9</td>
<td>63,631</td>
</tr>
<tr>
<td>Village control variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health and sanitation committee in village</td>
<td>28.7</td>
<td>6,554</td>
</tr>
<tr>
<td>Accessible CHC/RH</td>
<td>77.4</td>
<td>16,609</td>
</tr>
<tr>
<td>Beneficiary of JSY</td>
<td>90.1</td>
<td>16,853</td>
</tr>
</tbody>
</table>

Numbers are unweighted.
Statistical models

We computed forward stepwise logistic regressions adding different levels of control variables to a base model that regresses our four outcome variables (institutional delivery, feeding colostrum, knowledge of family planning, and ever used family planning) on the availability of SHG in the village. We used a fixed effect unique to a district that captures the time-invariant differences across districts. For each of the four outcome variables, three models were estimated. In Model 1, the effect of presence or absence of a SHG in the village was modelled. This model represented the total variance in the four outcome variables with the presence or absence of a SHG. In Model 2 only individual level control factors (respondent education, work status, and heard or seen health messages) were included. In Model 3 individual and village background controls: village electrification, education facility available in the village, village connected through an all-weather road, distance from nearest hospital, beneficiaries of JSY in last one year, and health and sanitation committee were included. All models use survey weights to account for sample design and population weighting and standard errors are adjusted for clustering at the district level.

The focus of the analysis was the change in the coefficient of the presence of a SHG. The results are shown as odds ratios (ORs) with 95 per cent confidence intervals (CIs). The magnitude of the change was interpreted as the (exponentiated coefficient – 1.0) x 100. The small variance inflation factor of 1.09 (not reported) indicated the absence of any significant collinearity between explanatory variables in the regression model.

Results

SHGs in India

As per DLHS-3 data, 57.9 per cent of Indian villages have a self-help group (Figure 1). The majority of these groups are located in southern and north-eastern India, followed by Maharashtra, Chhattisgarh, Rajasthan and Madhya Pradesh.

Descriptive statistics

The descriptive statistics (Figure 2) show some interesting findings on the four measures of women and child health knowledge and practices. The overall use of family planning was found to be very low. The presence of a SHG has a positive and strong correlation with all four measures of knowledge and practices. Compared to households in villages without a SHG, households in villages with a SHG are more likely to go for institutional delivery, more likely to feed new-borns colostrum, and more likely to have knowledge of and use family planning products and services. Members engaged in self-help activity feel a sense of connectivity and discuss issues ranging from place of delivery to feeding the baby and family planning products and services.

Estimation results

As discussed in the methods sections earlier, we present our results on four measures of maternal and child health knowledge and practices: institutional delivery; feeding new-borns colostrum; knowledge about family planning services; and ever used family planning.

Predictor of institutional delivery (Table 2): The presence of a SHG in a village is associated with 19 per cent higher odds of mother’s delivering in an institution (CI:
1.13 – 1.24), holding other variables constant. The reduction in odds from 1.30 to 1.19 in presence of individual and village level controls indicates the influence of other factors affecting the outcome. Model 2 adds individual control. The coefficients of individual control variables illustrate that mother’s education, wealth and having heard or seen health messages are important mediating pathways to influence institutional delivery. At the village level, the presence of a health and sanitation committee in the village, accessibility of CHC/RH (OR: 1.16), and beneficiary of JSY (OR: 1.30) are important mediating pathways that influence institutional delivery.

**Predictor of feeding colostrum** (Table 3): The presence of a SHG in a village is associated with 8 per cent higher odds of an increase in colostrum feeding. Mother’s education, wealth, and having heard or seen health message are important individual level mediating pathways, while being a beneficiary of JSY (OR: 1.32) is an important village level mediating factor predicting colostrum feeding. The presence of a health and sanitation committee in a village or accessibility of a CHC/RH does not appear to influence the outcome.

**Knowledge about Family Planning** (Table 4): Households in villages with a SHG are at 48 per cent higher odds of knowing at least one modern family planning method. Model 1 produced an odds ratio of 2.13, indicating the strong influence of having heard or seen health messages in knowledge generation about family planning. More educated and wealthy women are more likely to have knowledge of family planning. Accessibility of a CHC/RH, and having been a beneficiary of JSY are village level variables influencing the outcome.

**Ever-used family planning** (Table 5): Presence of a SHG is associated with 19 per cent higher odds of ever using family planning. Women’s literacy does not show a positive association with use of family planning, suggesting the lack of empowerment and decision making on reproductive choice. Wealth status, and heard or seen health message are important individual level factors, while accessibility of CHC/RH, and beneficiary of JSY are important village level mediating pathways influencing use of family planning.

**Limitations**
As information on women’s actual participation in SHG activities was not included in the DLHS-3 dataset, our analysis provides an instructive but partial picture of the impact of SHGs on health outcomes. There are a

### Table 2 Effect on institutional delivery

<table>
<thead>
<tr>
<th>Institutional delivery</th>
<th>Only predictor variable</th>
<th>Individual control</th>
<th>Full model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of SHG</td>
<td>1.30 (1.27-1.33)</td>
<td>1.26 (1.19-1.28)</td>
<td>1.19 (1.13-1.24)</td>
</tr>
<tr>
<td>Mother’s education</td>
<td>1.52 (1.50-1.54)</td>
<td>1.52 (1.50-1.54)</td>
<td></td>
</tr>
<tr>
<td>Wealth quintile</td>
<td>1.53 (1.51-1.55)</td>
<td>1.51 (1.49-1.53)</td>
<td></td>
</tr>
<tr>
<td>Heard or seen health messages</td>
<td>1.80 (1.73-1.88)</td>
<td>1.79 (1.72-1.87)</td>
<td></td>
</tr>
<tr>
<td>Health and sanitation committee in village</td>
<td>1.16 (1.12-1.19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessible CHC/RH</td>
<td></td>
<td>1.16 (1.13-1.20)</td>
<td>1.30 (1.25-1.36)</td>
</tr>
<tr>
<td>Beneficiary of JSY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District fixed-effect</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>N</td>
<td>138,068</td>
<td>138,068</td>
<td>138,068</td>
</tr>
</tbody>
</table>

Figures are odds ratio with 95% Confidence Interval.

### Table 3 Effect on colostrums feeding

<table>
<thead>
<tr>
<th>Colostrums feeding</th>
<th>Only predictor variable</th>
<th>Individual control</th>
<th>Full model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of SHG</td>
<td>1.20 (1.17-1.23)</td>
<td>1.09 (1.06-1.12)</td>
<td>1.08 (1.05-1.14)</td>
</tr>
<tr>
<td>Mother’s education</td>
<td>1.33 (1.31-1.36)</td>
<td>1.33 (1.31-1.36)</td>
<td></td>
</tr>
<tr>
<td>Wealth quintile</td>
<td>1.08 (1.07-1.10)</td>
<td>1.08 (1.07-1.10)</td>
<td></td>
</tr>
<tr>
<td>Heard or seen health messages</td>
<td>1.46 (1.41-1.51)</td>
<td>1.47 (1.42-1.53)</td>
<td></td>
</tr>
<tr>
<td>Health and sanitation committee in village</td>
<td>0.99 (0.96-1.02)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessible CHC/Rural Hospital</td>
<td>0.91 (0.88-0.95)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beneficiary of JSY</td>
<td></td>
<td>1.32 (1.27-1.37)</td>
<td></td>
</tr>
<tr>
<td>District fixed-effect</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>N</td>
<td>135,823</td>
<td>135,823</td>
<td>135,823</td>
</tr>
</tbody>
</table>

Figures are odds ratio with 95% Confidence Interval.
number of limitations to our study. First, we did the analysis at the aggregate country level. This masks variations in the spread and intensity of SHG activity across India, as depicted in Figure 2 above. Secondly, the presence of a SHG in a village could only partially explain the level of activity. The level of women’s participation in a SHG [39], the availability of credit [40] and the duration of association [31,41] are other key predictors of health outcomes that the DLHS-3, due its limited scope and intent, did not address. Thirdly, we also did not find within the DLHS-3 manual an explicit definition of SHGs, or any distinction between the possible impact of SHGs and other women’s or community groups. The fourth limitation relates to the design and nature of the DLHS-3, including its reliance on self-reported information from respondents and the cross-sectional nature of the survey, as described by Jat et al. [42]. The survey collected the responses to the questionnaire only at their face value and had no opportunity to probe. Hence we could examine only the association between explanatory variables and four indicators of maternal health services uptake; we were not able to draw conclusions about causality. Nonetheless, ours is the first attempt to analyse these issues using a nationally representative dataset. Using this large national level dataset allowed us to address two important biases revealed in previous studies: choice based sampling [38] and teasing out the contribution of SHGs within the organizational infrastructure [22].

Discussion and conclusions
Using a large national health survey data set from India, we examined the association between the presence of a SHG and maternal health service uptake measured through institutional delivery, feeding colostrum to newborn, knowledge and use of family planning (after controlling for individual and village level factors). Our study shows respondents from villages with a SHG were more likely to have delivered in an institution, fed newborn with colostrum, and known about and utilized family planning products and services. These groups give the communities an avenue to voice their concerns and provide a unique space in which solidarity is created through promoting shared visions and goals and combining collective strengths. The presence of trust and social capital empowers communities and positively influences individual and community health. However, on their own, SHGs can have only limited impact. This

### Table 4 Stepwise logistic regression of knowledge of family planning

<table>
<thead>
<tr>
<th>Knowledge of family planning</th>
<th>Only predictor variable</th>
<th>Individual control</th>
<th>Full model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of SHG</td>
<td>2.13 (2.01-2.26)</td>
<td>1.54 (1.45-1.63)</td>
<td>1.48 (1.39-1.57)</td>
</tr>
<tr>
<td>Women’s education</td>
<td>1.11 (1.06-1.16)</td>
<td>1.11 (1.06-1.16)</td>
<td></td>
</tr>
<tr>
<td>Wealth quintile</td>
<td>1.44 (1.40-1.49)</td>
<td>1.43 (1.39-1.47)</td>
<td></td>
</tr>
<tr>
<td>Heard or seen health messages</td>
<td>9.35 (8.80-9.94)</td>
<td>9.23 (8.68-9.81)</td>
<td></td>
</tr>
<tr>
<td>Health and sanitation committee in village</td>
<td></td>
<td>1.03 (0.96-1.11)</td>
<td></td>
</tr>
<tr>
<td>Accessible CHC/RH</td>
<td></td>
<td>1.35 (1.27-1.43)</td>
<td></td>
</tr>
<tr>
<td>Beneficiary of JSY</td>
<td></td>
<td>1.29 (1.18-1.40)</td>
<td></td>
</tr>
<tr>
<td>District fixed-effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>N</td>
<td>397,055</td>
<td>397,055</td>
<td>397,055</td>
</tr>
</tbody>
</table>

Figures are odds ratio with 95% Confidence Interval.

### Table 5 Stepwise logistic regression of using family planning

<table>
<thead>
<tr>
<th>Ever used family planning</th>
<th>Only predictor variable</th>
<th>Individual control</th>
<th>Full model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of SHG</td>
<td>1.20 (1.13-1.28)</td>
<td>1.21 (1.14-1.29)</td>
<td>1.19 (1.11-1.27)</td>
</tr>
<tr>
<td>Women’s education</td>
<td>0.77 (0.75-0.80)</td>
<td>0.77 (0.75-0.80)</td>
<td></td>
</tr>
<tr>
<td>Wealth quintile</td>
<td>1.24 (1.21-1.29)</td>
<td>1.24 (1.20-1.27)</td>
<td></td>
</tr>
<tr>
<td>Heard or seen health messages</td>
<td>1.36 (1.16-1.59)</td>
<td>1.35 (1.16-1.59)</td>
<td></td>
</tr>
<tr>
<td>Health and sanitation committee in village</td>
<td></td>
<td>1.06 (0.99-1.14)</td>
<td></td>
</tr>
<tr>
<td>Accessible CHC/RH</td>
<td></td>
<td>1.12 (1.03-1.20)</td>
<td></td>
</tr>
<tr>
<td>Beneficiary of JSY</td>
<td></td>
<td>1.20 (1.08-1.34)</td>
<td></td>
</tr>
<tr>
<td>District fixed-effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>N</td>
<td>19,143</td>
<td>19,143</td>
<td>19,143</td>
</tr>
</tbody>
</table>

Figures are odds ratio with 95% Confidence Interval.
is explained by the relatively low odds ratio in presence of individual and village level controls. Clearly, in order to have maximum impact on community health, there is a need for additional complementary health programmes to build on the solidarity and social capital generated as a result of the group.

The study adds to the evidence that trust, solidarity and sense of belongingness as a result of participation in a SHG are important determinants of health outcomes. Additionally, by using a large national health survey dataset, our study shows this effect is independent of organizational infrastructure. There is a strong case for policy makers to work closely with these groups and leverage on their strengths for health improvement and poverty reduction.

By linking the activities of SHGs to broader programmes, such as the National Rural Health Mission (NRHM), Indian policy makers could increase the impact of these proven interventions designed to provide improved access to health care and address poverty. Programs like the NRHM could effectively use the SHG community structures to promote awareness and generate increased demand for services. The NRHM would benefit by linking with the range of services provided in the community by both the individual SHGs and their federated structure. These services include creating community awareness, promoting institutional delivery, childhood immunization, preventive care and lay counselling through village health and sanitation committees, community monitoring, emergency health loans and health savings funds, and the provision of low-cost health products, such as sanitary napkins, contraceptive choices and first-aid care at the community level. Even so, scaling-up such programmes to national level must be based on reliable evidence related to implementation procedures to avoid difficulties that were previously experienced with the Jamkhed, Kakamega and other similar experiments [34].

This has implications for low- and middle-income countries where barriers to access to health services, including informational and cultural barriers, prevent poor and vulnerable groups from benefiting from public health spending. With a global outreach to 205 million poor and vulnerable groups from benefiting from public health spending. With a global outreach to 205 million

Authors’ contributions
SS led the drafting of the manuscript, and contributed to all aspects of the study. PA participated in conceptualization of the study design, and advised on most aspect of the study. SP provided support for statistical analysis, and drafted part of the manuscript. All authors have read and approved the final manuscript and declare no competing interest.

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5. Effect of self-help group on health knowledge and health behaviours

5.3 Summary

The study concludes that presence of an SHG in a village is associated with higher odds of women delivering their baby in an institution, feeding colostrum to newborn, having knowledge of modern family planning methods and using family planning products and services. These findings are significant for two reasons:

- It is the first attempt to analyse the impact of SHGs on population health measures at the country level
- The indicators chosen are important predictors of maternal and child health.

These findings confirm existing evidence that suggests membership of development organisations such as SHGs tend to encourage modern practices such immunisation and promote patronage of local immunisation campaigns (Vikram, Vanneman, & Desai, 2012).

In addition, the major strength of analysing a national-level dataset, such as DLHS-III, is that it enables drawing a more general conclusion about the relationship between the presence of an SHG and changes in population health behaviours. Despite the strength of drawing a general conclusion, a limitation of this national analysis remains. It masks any regional patterns in SHG presence and health outcomes. As explained in Figure 1 of the paper, there is a higher concentration of villages with an SHG in southern and north-eastern regions of India than in other regions. Hence, a question remains: does the effect analysed in this study vary with the geographic concentration of SHGs? In other words, a state disaggregated analysis would have provided further insights into the measured associations. This question although important remains an area of future research.

As mentioned in chapter 2 section 2.2.6, the Integrated Child Development Services of Government of India utilizes SHGs in its distribution of supplementary nutrition program. The effect of this program as a mediating pathway to the association between the presence of an SHG and health outcomes would have been interesting issue to assess. Not including the Integrated Child Development Services program as a control variable is therefore another limitation of the analysis. However, inclusion of a control variable – ‘presence of village health and sanitation committee’ addresses the effect of any government health program in the observed association.
The immediate implication of this finding is that the existing SHG programs have a positive spill-over effect on population health indicators. With an estimated 93 million people in India involved with microfinance activity in 2012 – both government and non-government organised – leveraging the extensive network of SHGs has the potential to improve population coverage and health care access. Further analysis on the effect of combining health programs with SHGs is warranted. This question is discussed through a field study with SHG members of two organisations in Gujarat and Karnataka, in the next chapter.
6. Effect of combining a health program with a microfinance-based self-help group on health behaviours and outcomes

6.1 Introduction

In this chapter I investigated the effect of combining a health program with a microfinance-based SHG program on health behaviours and outcomes. A mixed methods approach was adopted comprising two rounds of surveys to collect pre-test and post-test data with matched comparison groups and subsequent qualitative interviews to understand the interconnections between SHGs, health programs and health. The finding was published in the journal Public Health and is reproduced below in the published version.

6.2 Published paper
Original Research

Effect of combining a health program with a microfinance-based self-help group on health behaviors and outcomes

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Abstract

Objectives: Women’s participation in microfinance-based self-help groups (SHGs) and the resultant social capital may provide a basis to address the gap in health attainment for poor women and their children. We investigated the effect of combining a health program designed to improve health behaviours and outcomes with a microfinance-based SHG program.

Design: A mixed method study was conducted among 34 villages selected from three blocks or district subdivisions of India; one in Gujarat, two in Karnataka.

Methods: A set of 17 villages representing new health program areas were pair-matched with 17 comparison villages. Two rounds of surveys were conducted with a total of 472 respondents, followed by 17 key informant interviews and 17 focus group discussions.

Results: Compared to a matched comparison group, women in SHGs that received the health program had higher odds of delivering their babies in an institution (OR: 5.08, 95% CI 1.21–21.35), feeding colostrum to their newborn (OR: 2.83, 95% CI 1.02–5.57), and having a toilet at home (OR: 1.53, 95% CI 0.76–3.09). However, while the change was in the expected direction, there was no statistically significant reduction in diarrhoea among children in the intervention community (OR: 0.86, 95% CI 0.42–1.76), and the hypothesis that the health program would result in decreased out-pocket expenditures on treatment was not supported.

Conclusion: Our study found evidence that health programs implemented with microfinance-based SHGs is associated with improved health behaviours. With broad population coverage of SHGs and the social capital produced by their activities, microfinance-based SHGs may provide an avenue for addressing the health needs of poor women.

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Introduction

Self-help groups (SHGs), usually comprising 10–20 individuals (predominantly women) and organized to save money and obtain microfinance, are an important initiative that provide access to capital and promote livelihoods among the rural poor in India. These SHGs are promoted extensively through government and non-government organizations and were estimated to reach 93 million members in 2012.1 The SHG
structure facilitates significant face-to-face interaction between members and promotes mutual trust, solidarity and social capital. Women’s participation in microfinance-based SHGs and the resultant social capital may provide a basis for improving health outcomes and addressing the gap in health attainment for women and their children.

In a previous study in India, we found that the presence of an SHG in a village was associated with improved maternal and child health knowledge and practice. Elsewhere, a clustered randomized trial among indigenous communities in Jharkhand and Odisha states of India found that newborn babies born in communities with an SHG had a significantly improved likelihood of surviving the first six weeks of life compared to babies born to analogous households in non-SHG communities. Within a broader holistic community development initiative in the early 1970s in Jamkhed, Maharashtra state of India, a program was implemented among women’s groups in which one woman from each group was trained as a health worker and funds were provided to assist the group members in the event of health emergencies. During the first 20 years, the project showed a reduction in infant mortality rate from 176 to 19 per 1000 live births, and the birth rate declined from 40 to 20 per 1000 people. Access to antenatal care, safe delivery and immunization was nearly universal and malnutrition declined from 40% to less than 5% in the study population. A study of women’s participation in savings groups in Bangladesh found that membership of microfinance programs was associated with an increased probability of children being fully immunized. Within a broader health program delivered through stationery and mobile health camps, health education and training, and the production and marketing of traditional medicines. The SEWA health program was supported by funding from philanthropic organizations. SEWA also offered insurance schemes that included health cover for its members. The health package covered hospitalisation costs up to Rs. 2000 (US $33) annually for an individual, with options for family coverage up to Rs. 25,000 (US $416) per year, against payment of an annual premium. Health and hygiene programs at SKDRDP started as a Jana Jagruti or public awareness program and included health awareness sessions at routine credit group meetings, home visits by a village health worker, the promotion of low cost sanitary latrines, and Sampoorna Suraksha, an insurance scheme with health cover. For the health insurance, an annual contribution of Rs. 190 (US $3) was collected from each member, providing protection for up to Rs. 5000 (US $83) in medical expenses per year.

These health programs were available to some, but not all, program areas of the two organizations. At the start of this study, half of the participating villages were identified for roll out of the health program — the intervention villages. For the purpose of this study, we selected matched comparison villages from the same block. The comparison villages were from the microfinance program areas with no health program. Village pairs were matched on four criteria: population size, SHG membership, location in the same block but not with a common boundary. The matching exercise was carried out primarily by the program managers from the participating organizations. To test the validity of the matching process, before the start of the health program we conducted a survey of the intervention and comparison villages to collect information regarding key socio-economic characteristics. These characteristics were compared to evaluate the effectiveness of the matching process.

Improving the health of mothers and children by improving the quality of sanitation and reducing financial burden due to illness were priority issues common to both organisations. Hence, five indicators were selected to assess the benefit of combining a health program with SHGs: diarrhoea among children, institutional delivery of babies, colostrum feeding to newborns, having a toilet at home, and money spent on treatment. These indicators were selected in consultation with the respective program managers of the two organizations.

The survey questions were defined in the following ways: diarrhoea in the youngest child less than two years old, and occurring in the two weeks preceding the survey; institutional delivery and feeding colostrum to newborn babies (for the youngest child less than two years old during the baseline survey and less than one year during the follow-up survey).

Methods

Study design and sites

To assess the effect of combining a health program with a microfinance-based SHG program, a difference-in-difference analysis was conducted through two rounds of surveys to collect baseline and one-year follow-up data from intervention and matched comparison group. The quantitative field study was conducted during 2012 and 2013, followed by a qualitative investigation of the contextual factors and challenges associated with the health program. The study was conducted among 34 villages selected from three blocks or district subdivisions of India: Dahegam in Gujarat, Udupi and Gadag in Karnataka.

Women in these villages had access to microfinance programs from two organizations: the Self Employed Women’s Association (SEWA) in Gujarat, and the Shri Kshetra Dharamstala Rural Development Project (SKDRDP) in Karnataka. Both organizations provided a health program for member groups. In the case of SEWA, the health programs were organized as member-owned cooperatives, and included primary care delivered through stationery and mobile health camps, health education and training, and the production and marketing of traditional medicines. The SEWA health program was supported by funding from philanthropic organizations. SEWA also offered insurance schemes that included health cover for its members. The health package covered hospitalisation costs up to Rs. 2000 (US $33) annually for an individual, with options for family coverage up to Rs. 25,000 (US $416) per year, against payment of an annual premium. Health and hygiene programs at SKDRDP started as a Jana Jagruti or public awareness program and included health awareness sessions at routine credit group meetings, home visits by a village health worker, the promotion of low cost sanitary latrines, and Sampoorna Suraksha, an insurance scheme with health cover. For the health insurance, an annual contribution of Rs. 190 (US $3) was collected from each member, providing protection for up to Rs. 5000 (US $83) in medical expenses per year.
The variable for money spent on treatment was an aggregate of four questions related to different types of medical expenditure and was asked for each family member. Changes in episodes of diarrhoea in children is a sensitive indicator of health program effectiveness in the short-term.12,13 Institutional delivery of babies is an important indicator in monitoring progress towards Millennium Development Goal five (to reduce the maternal mortality ratio by three quarters between 1990 and 2015).14 Not feeding colostrum to newborn babies, along with late initiation of breastfeeding and improper complementary feeding were found to be significant risk factors for underweight among children.15 The practice of open defecation poses a major challenge for health and safety in India, a fact acknowledged at the highest political level.16 With half of the population defecating in the open, there is a high risk of microbial contamination of water, which poses a major health risk. The indicator related to money spent on treatment was selected to capture reduction in out-of-pocket treatment expenditure across the study period. Indicators related to changes in mortality and morbidity such as neonatal mortality were considered for inclusion, but not included because of the limited sample size.

Sampling and recruitment

Two rounds of the survey were conducted with 472 respondents: 219 from the intervention villages, and 253 from the comparison villages. Baseline data were collected before the roll out of the health program, and the follow-up survey was conducted with the same respondents after 12 months. The inclusion criteria at the time of the baseline survey were women of reproductive age having a child aged less than two years. An equal number of respondents were recruited from intervention and comparison villages. A list of SHG members in the intervention and comparison villages was made available by the participating organizations. Based on the list, we firstly identified eligible houses in each village. Based on the calculated sample size, we then selected households proportionate to size using systematic random sampling.

Study tool and analysis plan

Face to face interviews were conducted with the respondents. A questionnaire was used to collect socio-economic information, general health status, and key indicators. Questions related to socio-economic variables were the same as those used in the District Level Household Survey – phase III,17 while the section on health expenditure was adapted from the National Sample Survey on Household Consumer Expenditure, which was conducted in all Indian states in 2009–10.18 The questionnaire was pilot-tested in villages that were not part of the study.

Responses from the three blocks were aggregated to perform the analysis. Disaggregated analysis by study sites was deemed inappropriate as sample sizes were too small if each of the two groups were analysed separately. The analysis followed two steps. A test of equality on the study variables was performed on the baseline survey data to assess the validity of the village matching process. This was done through chi square value of pooled estimates for intervention and comparison groups, and Wilcoxon equality of medians test where median value is reported.

A difference-in-difference analysis was performed to assess the additional impact of the health program, controlling for the baseline measures. The following explains our analysis:

\[ Y_j = Y_1 + Y_2 + Y_3 + Y_4 + e_j \]

where \( Y_j \) is the outcome of interest (five outcome variables), \( A \) takes the value one if respondent \( j \) is from an intervention area (i.e. SHG with access to both microfinance and health program), \( T \) takes the value one if survey is conducted at the time of the one year follow-up period, \( X \) is a vector for control variables. The regression coefficient of interest is the interaction of intervention group and follow-up period, referred to as \( \beta_3 \). This model assumes a common trend across the intervention and comparison groups, that is, in absence of the health program, the unobserved differences between the intervention and comparison groups would be same over time. As both the intervention and comparison group are matched at baseline, and are from the same block, assuming a common trend across the groups is reasonable.

Binary logistic regressions were performed on the binary outcome variables: institutional delivery, childhood diarrhoea, toilet at home and feeding colostrum to newborns. Adjusted odds ratios, with 95% confidence intervals, were reported as increased or decreased odds of the occurrence of an event. For the continuous outcome variable, money spent on treatment, a two-part model was applied: first, respondents who had no expenditure on treatment in the previous month were identified, and then a linear regression was performed among those respondents who had spent money on treatment in the previous month. Per capita monthly expenditure on treatment was calculated by dividing the total expenditure on treatment by the number of family members in the household.

All regression equations were controlled for respondents education, types of house (permanent, semi-permanent, or temporary structure), and monthly household expenditure. The three blocks included in the study have different socio-economic status which may have confounded the result. Hence we included the blocks as a categorical variable to control for the block effects.

Focus group discussions and key informant interviews

A qualitative study was conducted after the follow-up survey in the intervention villages to understand the contextual factors and challenges associated with the health program. In total, 17 key informant interviews with program managers and village health workers (VHWs), and 17 focus group discussions (FGDs) involving 153 community members were conducted in order to achieve data saturation. Both the FGD and key informant guides were designed to seek information...
on three themes: community context, group structure and functioning, and contribution of the health program. All interviews were conducted in the local language.

Results

Characteristics of the participants

A description of the socio-economic characteristics of the sample at baseline is presented in Table 1. The median age of respondents in the intervention group was 28 years (range: 23–33) and in the comparison group was 29 years (range: 24–34). A quarter of respondents (27.4%) lived in a permanent or pucca house. Respondents from Udupi had better housing, compared to Gadag and Dahegam. The majority of respondents (73% in intervention group, and 77% in comparison group) had access to tap-water, either at their own house or from a near-by public source. Again, respondents from Udupi and Dahegam had better access to tap-water, compared to respondents from Gadag. A quarter of the respondents did not have any formal education. Average monthly household expenditure was US$ 73 for both groups.

The intervention and comparison groups were not significantly different on key socio-economic variables: type of housing, access to piped water, and average monthly household expenditure. This supports the validity of the village matching process.

Among the 17 key informants interviewed for the qualitative study, three were program managers (one from each program block) while the rest were village health workers. Additionally, 17 FGDs were conducted with a total of 153 participants. The mean age of the participants was 28 years (range: 25–30) (Table 2).

Program impact

Compared to the comparison group, SHG members with a health program had higher odds of delivering their babies in an institution, feeding colostrum to newborns, and having a toilet at home after one year of program implementation. However, the SHG plus health program group showed no significant improvement in the incidence of diarrhoea among children and no effect on money spent on treatment. The results were adjusted for pre-program measures, and socio-economic characteristics of the household. The following section discusses the results for each of the five selected indicators.

Before implementation of the health program, 76.4% (149/195) of women in the intervention villages, and 80.0% (184/230) of women in the comparison villages reported delivering their most recent baby in an institution. At follow-up, 70 women from the intervention villages, and 93 women from the comparison villages had a delivery experience. The proportion of respondents reporting delivery in an institution during the 12 months preceding the follow-up survey rose in both groups, but significantly more so in the intervention group (from 76.4% to 95.7%) than in the comparison group (from 80.0% to 86.0%). The difference between groups after adjustment for baseline values was significant (OR: 5.08, 95% CI 1.21–21.35) (Table 3) suggesting that the combination of a health program with a SHG was associated with an increase in institutional delivery of babies. The study hypothesis that the health program would result in an increase in institutional delivery is supported by this result.

Before implementation of the health program, 56.3% (103/183) of respondents in the intervention villages, and 59.3% (118/199) of respondents in the comparison villages reported feeding colostrum to their newborns. During the follow-up survey feeding colostrum to newborns was reported for babies born during the 12 months follow-up period: 70 respondents from the intervention villages, and 93 respondents from the comparison villages. There was a larger increase in the proportion of newborns fed colostrum in the intervention group compared to the comparison group; the percentage went up from 56.3% to 77.5% in the intervention group and from 59.3% to 62.0% in the comparison group. There was a statistically significant difference between the intervention and comparison groups at the follow-up period, after adjustment for baseline characteristics (OR: 2.83, 95% CI 1.02–5.57).

### Table 1 – Characteristics of respondents at baseline.

<table>
<thead>
<tr>
<th>Villages</th>
<th>Intervention group</th>
<th>Comparison group</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of villages enrolled</td>
<td>17</td>
<td>17</td>
<td>0.12</td>
</tr>
<tr>
<td>Type of house</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permanent (Pucca) house</td>
<td>68 (27.4%)</td>
<td>58 (26.7%)</td>
<td></td>
</tr>
<tr>
<td>Semi permanent (Semi-pucca) house</td>
<td>125 (50.4%)</td>
<td>116 (53.0%)</td>
<td></td>
</tr>
<tr>
<td>Temporary (Kutcha) house</td>
<td>55 (22.2%)</td>
<td>43 (20.0%)</td>
<td></td>
</tr>
<tr>
<td>Proportion of household with access to tap water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of respondents interviewed at baseline</td>
<td>219</td>
<td>253</td>
<td></td>
</tr>
<tr>
<td>Age of respondent (median in years, IQR)</td>
<td>28 (23–33)</td>
<td>29 (24–34)</td>
<td>0.35</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>59 (24.0%)</td>
<td>57 (26.6%)</td>
<td></td>
</tr>
<tr>
<td>Education: 1–8 grade</td>
<td>127 (51.6%)</td>
<td>101 (47.0%)</td>
<td></td>
</tr>
<tr>
<td>Education: 9–12 grade</td>
<td>49 (19.9%)</td>
<td>45 (21.0%)</td>
<td></td>
</tr>
<tr>
<td>Education: more than 12 grade</td>
<td>11 (4.5%)</td>
<td>11 (5.1%)</td>
<td></td>
</tr>
<tr>
<td>Monthly household expenditure (mean in US$)</td>
<td>73</td>
<td>73</td>
<td>0.92</td>
</tr>
</tbody>
</table>

### Table 2 – Characteristics of key informants and focus group discussion participants.

| Key informant interviews | 17 |
| Gender of participants | | |
| Male | 1 |
| Female | 16 |
| Role of participants | | |
| Program manager | 3 |
| Village health worker | 14 |
| Focus group discussion | 17 |
| Gender of participants | | |
| Female | 153 |
| Mean age (years) | 28 |
The study hypothesis that the health program would result in an increase in feeding colostrum to newborns is supported by this result. Before the start of the health program, 62.6% (137/219) of respondents in the intervention villages and 51.8% (131/253) of respondents in the comparison villages reported having a toilet at home. This is more than the estimate of 46.9% toilet ownership in India as per the 2011 census.19 The proportion increased slightly from 62.6% to 65.8% in the intervention group and was essentially unchanged at 51.8%–50.6% in the comparison group. The difference between groups after adjustment for baseline values was in the expected direction, although not statistically significant (OR: 1.53, 95% CI 0.76–3.09) (Table 3). While survey results highlight the effect of the health program on toilet ownership, qualitative interviews highlighted some of the challenges faced by women due to lack of access to toilet:

Having no toilet is an insult to women. We are forced to defecate in the open field. If males are walking on the road, we have to stand. This is shaming. It was not easy. After attending the sessions on cleanliness and personal hygiene, I decided that for the sake of my two adolescent daughters I needed a small toilet. I had to convince my husband and my in-laws of the need to have a toilet of our own. (FGD, Gadag).

Before implementation of the health program, 26.0% (57/219) of respondents in the intervention villages, and 25.3% (64/253) of respondents in the comparison villages had a child who suffered from diarrhoea in the preceding two weeks. This fell to 11.0% (24/219) and 12.6% (32/253) at the time of the follow-up survey. The proportion of children suffering from diarrhoea went down in both the intervention and comparison villages. While respondents from villages in the intervention group had 14% lower odds of having a child suffering from diarrhoea in the study reference period compared to those in the comparison villages the difference was not statistically significant (OR: 0.86, 95% CI 0.42–1.76) (Table 3). Nevertheless, during FGDs, women attributed the reduction in diarrhoea episodes to the awareness generated through the health program:

This year we had fewer cases of diarrhoea among children, compared to the same period last year. I would count this as a success. We are more aware about how to keep children clean, how to assist growing children, what food should be given, feeding boiled water to small children, etc. She [NGO health worker] advises us to give salt-sugar solution and ORS if any child suffers from diarrhoea. (FGD, Udupi).

About 40% of the respondents surveyed at both time points reported no expenditure on treatment for health problems in the previous month. Among respondents who had spent money on treatment, the per capita spending at baseline was higher in the comparison group than in the intervention group (US$ 6.64 in the intervention group compared to US$8.80 in the comparison group). This declined to US$ 3.93 in the intervention group, and to US$ 4.19 in the comparison group. The adjusted estimates suggest that the study hypothesis that the health program would result in a reduction in money spent on treatment is not supported by this result (Table 3).

### Contextual factors and challenges

The qualitative study among the intervention villages focussed on understanding the community context, experience in implementing the health program, and challenges in program implementation. The following section discusses the findings from the qualitative study.

### Rationale for the health program

Program managers reported that primary health care services in their villages were limited; government health facilities were either not present or, if present, were under-resourced. Moreover, poor health awareness meant that people often resorted to unqualified providers for care, or did not adopt appropriate approaches to prevent diseases. For example, people defecated in the open, women had poor sanitary practices, and traditional beliefs about child care practices were common.

Some program managers said that the primary business of a microfinance institution is to lend money to SHG members.

#### Table 3 – Difference-in-difference effect of the health program on measured indicators.

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Baseline</th>
<th>Follow-up</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention group</td>
<td>Comparison group</td>
<td>Intervention group</td>
<td>Comparison group</td>
</tr>
<tr>
<td>Institutional delivery</td>
<td>149/195 (76.4%)</td>
<td>184/230 (80.0%)</td>
<td>67/70 (95.7%)</td>
<td>80/93 (86.0%)</td>
</tr>
<tr>
<td>Feeding colostrum to newborns</td>
<td>103/183 (56.3%)</td>
<td>118/199 (59.3%)</td>
<td>55/70 (77.5%)</td>
<td>57/93 (62.0%)</td>
</tr>
<tr>
<td>Toilet at home</td>
<td>137/219 (62.6%)</td>
<td>131/253 (51.8%)</td>
<td>144/219 (65.8%)</td>
<td>128/253 (50.6%)</td>
</tr>
<tr>
<td>Diarrhoea among children</td>
<td>57/219 (26.0%)</td>
<td>64/253 (25.3%)</td>
<td>24/219 (11.0%)</td>
<td>32/253 (12.6%)</td>
</tr>
<tr>
<td>Respondents that reported nil expenditure on treatment in previous month</td>
<td>83/219 (37.9%)</td>
<td>107/253 (42.3%)</td>
<td>79/219 (36.1%)</td>
<td>107/253 (42.3%)</td>
</tr>
<tr>
<td>Per capita mean monthly spending in USD on treatment (SD)</td>
<td>6.64 (4.43)</td>
<td>8.80 (6.30)</td>
<td>3.93 (10.02)</td>
<td>4.19 (10.04)</td>
</tr>
</tbody>
</table>

Results are from binary logistic regression (odds ratio with 95% confidence interval), and linear regression coefficient. Coefficient of interest is the interaction of study arm and study round, which is adjusted for baseline measures, respondent’s education, type of house, monthly household expenditure, and blocks. Some variables had missing data. In case of the variables: institutional delivery and feeding colostrum to newborn, figures in the follow-up period refers to respondents who had a delivery experience over the 12 months follow-up period.
This money is meant to develop businesses that can be used to generate income. While investing the borrowed money for business expansion was an important option for self-sufficiency of members, such a mechanism sometimes met with limited success due to illness and lack of health awareness among the SHG members. Loans taken for generating income were being used to meet the cost of treatment for health problems if someone in the house fell sick. Respondents reported that some SHG members were occasionally unable to repay their loans due to illness.

They spend their meagre resources on food that barely meets their nutritional requirements. Malnutrition and sickness force them to contain health spending, and they are unable to even seek treatment thereby reducing their family income. This creates a vicious cycle. It is impossible to escape the clutches of poverty. Poor health is one of the biggest contributors to poverty; members needed awareness of good health, appropriate and affordable healthcare options. (KII, Program Manager, Gadag).

The program was designed around a cadre of VHWs, nominated by the SHGs. The VHWs worked to raise awareness of reproductive and child health, immunization and childcare, hygiene and sanitation; to refer people with danger signs of pregnancy and child health complications; and to promote a health insurance product to cover health-related consultations and treatments. Many VHWs said that the contents of the training sessions challenged some of their own misguided health beliefs, and this learning was subsequently shared during the SHG meetings. Some respondents reported that non-members were also encouraged to participate in the health education sessions:

Through training we gained knowledge about family planning, diarrhoea among children, immunization, breast feeding, diet of the mother, and how to maintain hygiene within the community. My own beliefs about child care practices have changed as a result of the training. (KII, Village Health Worker, Udupi).

After our regular [SHG] meeting, we organized a discussion on one topic at a time. Some meetings focused on diarrhoea and cleanliness, some focused on health of girls in our community, while others focused on sanitation. We reinforced the health messages during home visits. (KII, Village Health Worker, Gadag).

Trust and social capital

A strong and common theme emerging from the interviews and discussions was trust and solidarity between group members and with their respective organizations. Respondents attributed their trust and confidence with the participating organizations to their origins: one of the organizations is associated with a famous and respected temple trust in Udupi (SKDRDP), while another emerged as a trade union for self employed women (SEWA). Both organizations had been involved with microcredit activities in the study areas for over a decade. Another common theme emerging from the discussions was members’ belief that their groups were based on the principles of equality, trust, discipline, respect and helping each other. Members believed that the group leader played a key role in setting up and maintaining the group values and norms.

Our group is formed on the principle of cooperation, trust, and respect...By joining the SHG I am happy. Earlier if I asked for Rs. 10 from my husband, I used to get a scolding. After opening accounts with the group, I am also getting interest on my savings. I also got Rs. 50,000 [US $833] as a loan for my daughter’s marriage. (FGD, Udupi).

Over the course of discussions, participants described the ways in which the organizations influenced their daily lives. SHG meetings acted as a platform for discussing issues that commonly concerned the communities, such as education of children, access to safe drinking water, sanitation, and illness. Respondents also narrated incidents where the organizations provided material assistance to help them solve local issues such as support for setting up a local water treatment plant, constructing toilets at home, and setting up milk dairy cooperatives that were then maintained by SHG members. However, there were larger issues such as improvements in road and drainage infrastructure, issues related with employment and farming that could not be addressed at the SHG level. These issues were raised with the village panchayat (local government in the Indian subcontinent) by the SHG leaders and organization representatives.

We used to face difficulty in treating water for drinking. The water obtained from the well is not suitable for drinking. SKDRDP supported us in setting up a water treatment plant in our village. Our group now runs the plant. One of us is trained in maintaining the plant. We also sell the water at low-cost in our village. (FGD, Udupi).

Challenges in health program implementation

The interviews and FGDs highlighted several challenges encountered by VHWs while delivering the health program. It was difficult to change behaviours that are deeply entrenched in the community. The program design and delivery also presented a challenge in some places.

Challenges related to the community context

In-depth interviews with key informants identified some of the challenges that negatively affected efforts to achieve behaviour change. These included: traditional beliefs about health and illness; relying on unqualified traditional healers as the first point of care resulting in delayed care seeking from the formal health service; and money wasted when seeking care from unqualified health practitioners. On respondent said:

They usually take medicine from a small hut/shop. If they cannot see any change then they go to a qualified doctor. We do constantly remind them to go to a qualified doctor. However, it is usually the head of the family who takes the decision. Also there are superstitions and religious beliefs that stop them from taking care. (KII, Program Manager, Dahegam).
The primary recipients of microcredit are women, and hence the health programs were developed with women as the primary target group. While participants believed the women-centric approach has promoted their participation in household decision making and control over resources, they also highlighted instances where control over resources was the cause of tension and intimate partner violence within the family, particularly when males felt that their dominance was being challenged. SHG members called for programs that also involved males in the behaviour change process, particularly related to alcohol and substance abuse, and risky sexual practices.

Programmatic challenges

VHWs highlighted several programmatic challenges in delivering the health program. Some challenges related to the way they were compensated, while others related to procedural issues. In some instances, the VHWs complained that the honorarium was not sufficient to compensate for the responsibilities associated with the program, while for others motivating the community to change their long held beliefs and behaviours was difficult. One respondent said:

We have a long way to go. Our members have faith in us. However, others doubt our intention. There are ignorance and wide-spread superstitions. Initially we faced difficulties in convincing people to change their behaviours. (KII, Village Health Worker, Dahegam).

There were also procedural delays in processing SHG members’ health insurance claims. This contributed to poor perception of the health insurance product. There were instances of delays in receiving reimbursement after discharge from hospital, as administrative staff at the hospital did not always cooperate in providing the information or documentation required to process the claim. Sometimes the beneficiaries did not carry the required documentation (for example an insurance card) with them to the hospital. This led to delays in authorization of the payment procedure at the hospital. As one respondent reported:

There were too many delays in processing the health insurance claims. We come from faraway places. When the delay occurs we have to miss our bus to go back home. (FGD, Gadag).

However, the program managers also mentioned that, overtime, they had succeeded in overcoming most of the initial hurdles through a system of routine feedback to the VHWs, dialogue with concerned stakeholders, and training. These activities had resulted in members feeling encouraged to increase the frequency and quality of participation in group activities.

Program managers and VHWs emphasized the need for more interaction with local health officials to upgrade their own knowledge related to health issues affecting their communities. Some of the critical issues identified for skill building were related to adolescent health issues, sexually transmitted infections, and government programs and schemes operational in their villages.

On being asked about future program efforts, program managers stressed the need to promote cleanliness in their villages, work with local authorities to build and maintain drainage systems, and strengthen programs that aimed to stop the practice of open defecation. Participation of males in the programs was listed as another priority area. Additionally, the need to attend to broader development issues such as creating opportunities for employment, and training in vocational skills were highlighted during the course of interviews with the program managers.

Discussion

The findings from this study indicate that compared to a matched comparison group, an intervention combining a health program with microfinance-based SHG activities positively influences some, but not all, health behaviours and outcomes over a one-year follow-up period. Adjusting for baseline measures, and controlling for respondents’ education, type of house, monthly household expenditure, and geographical location, being a member of a village with an SHG health program was associated with a higher odds of delivering their most recent baby in an institution, feeding colostrum to their newborn babies, and having a toilet at home, compared to a matched comparison group.

The effects observed in our study are consistent with existing evidence. However, most of the existing evidence found changes in a controlled research setting, while our study was in a real-life setting associated with real-life challenges to implementation.

The SHG structure emphasizes social cohesion and promotes collective action related to members shared needs. While the health programs in the study villages were new initiatives, both organizations (SEWA and SKDRDP) had implemented microcredit activities in those villages for more than a decade. Long duration of association with the community, SHG structure, and reputation of the organization seems to have played a crucial role in promoting trust for their organization among members. Personal bonds and trust of SEWA members has been documented in several ethnographic studies. Trust and social capital as a result of members’ participation in SHG activities echoes findings widely documented in the literature.

While change occurred in the expected direction, there was no evidence of a statistically significant reduction in diarrhoea among children in the intervention community, and the study hypothesis that the health program would result in a reduction in money spent on treatment was not supported by the results. Possible reasons for this mixed effect could relate to the way the health program was delivered. In the absence of a process evaluation of the health program we have limited information on the program’s content, quality, and frequency of delivery across the different sites. An explanation for the lack of success in relation to some indicators could be the fact that the VHWs were inexperienced – being the first year of program implementation, they were new in their role so had not had time to consolidate their knowledge and gain confidence. Time and mentoring may be necessary for VHWs to learn to function effectively in this role and to gain respect for their knowledge.
More changes may have been evident with a longer follow-up period. Additionally, our qualitative findings highlighted initial challenges in motivating the community, especially issues with honorarium payments for VHWs, delays in processing health insurance claims, and delays in seeking care from qualified healthcare providers due to traditional beliefs about health and illness. While several of these hurdles were ultimately addressed, a longer period of time would be required to implement the health program in its entirety than was possible in this study. This mixed program effect is, however, not uncommon among completed research on this subject.25–28

Conclusion

Our study found evidence that combining a health program with microfinance-based SHG activities is associated with a significant increase in women delivering their babies in an institution, feeding colostrum to their newborn, and a non-significant increase in having a toilet at home. However, the program did not produce a significant change in the outcome indicator related to diarrhoea among children, and had no effect in reducing money spent on treatment.

With broad population coverage, microfinance-based SHGs provide an avenue for increasing universal health coverage and particularly for addressing the health needs of poor women. Our results indicate that further research on this theme is required. There are additional reasons, from a social perspective, for investigating the possible positive impact of these programs. These include the impact of broad population coverage provided by SHGs and the social capital produced by their activities. A key area of future research would be an assessment of cost of adding a health program to SHGs more widely, and an analysis of cost-effectiveness of such an integrated approach. Public health planners stand to benefit from the membership-based structures and social capital that already exist through microfinance-based SHGs. However, such programs should not be viewed as a panacea for government failures. Rather, the SHG-based programs can be seen as complementary to public provisioning of health services, and as a means for increasing awareness about entitlement for public services in the community.

Author statements

Acknowledgement

Dr. James Hargreaves from the London School of Hygiene and Tropical Medicine provided useful guidance in the study design. Thanks are due to the NGO program managers, village health workers and study participants for sharing their experience.

Ethical approval

The interview process was explained to respondents in plain and relevant vernacular language. Before initiating the survey, interviews or FGDs, written informed consent was obtained from eligible respondents who were literate. Verbal informed consent was obtained from women who were illiterate, after the purpose and proceedings of the study were explained to them. The research protocol for this study received approval from both the Nossal Institute for Global Health Human Ethics Advisory Group at the University of Melbourne, Australia (Ethics Id: 1239067.1), and the Institutional Ethics Committee of the Public Health Foundation of India, New Delhi, India (TRC-IEC-124/12).

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Competing interests

None.

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6. Effect of combining a health program with a microfinance-based self-help group

6.3 Summary

Compared to an SHG only group, population that received the health program was associated with higher odds of women delivering their babies in an institution, feeding colostrum to newborn and having a toilet at home. The results were observed over a one year follow-up period, and adjusted for pre-program measures, and socio-economic characteristics of the household. In addition, I found trust with the participating microfinance organisation and between group members helped ensure ownership and community participation in the program.

In summary, findings from the secondary analysis of a national dataset and the field study indicates definite changes in knowledge and practices on key maternal and child health indicators, and on sanitation as a result of women’s participation in microfinance-based self-help group program. However, the SHG health program led to no significant improvement in outcome indicator related to diarrhoea among children and no effect in reducing money spent on treatment. Possible reasons for this mixed effect are short duration of follow-up, and challenges both related to community context and program delivery.
Policy approaches to women and development in India have changed over more than fifty five years of planned development. But, the shift from ‘welfare’ based (women seen primarily as mothers/wives and passive beneficiaries) to an ‘empowerment’ approach (women as self reliant and active participants in development), has remained more in the realm of the rhetoric.

- Critic of the 12th five year plan of India by the UN Women, the United Nations Entity for Gender Equality and the Empowerment of Women, page 78.

7. Discussion and conclusion

7.1 Introduction

To fulfil its commitment to universal health coverage (UHC), it will be necessary for the Indian government to expand the population that has access to appropriate and affordable health services in the coming period. This thesis explores the potential for existing microfinance networks, using self-help groups (SHGs) with attached health programs, to contribute to improved health coverage for the poor to support the wider development of a UHC system in India.

Through the mechanism of microfinance-based SHGs, poor women and their families are provided not only with access to finance to improve livelihoods but also in many cases with a range of basic health services. With 93 million people organised nationally, the SHGs provide an established population base that can potentially be used to extend health coverage.

This chapter is divided into five sections. Following the introduction, the second section synthesises the key findings described in the results chapters. The third section discusses implications of the findings in progressively reaching out to difficult to reach populations, particularly poor women and their families. The fourth section describes the strengths and limitations of the study. The chapter concludes with a discussion of important policy issues related to the role that microfinance-based SHGs could play in progress towards UHC in India, and identifies further research priorities arising from this study.
7. Discussion and Conclusion

7.2 Synthesis of key findings

Evidence from existing field studies (discussed in Chapter 4), validated by the analysis of a national survey data (DLHS-III) presented in this thesis (Chapter 5), indicates that the presence of an SHG in a community is associated with improvements in certain health behaviours for the members of the group and their families. Additionally, the inclusion of a health program with an SHG leads to improved health behaviours, as indicated in Chapter 6. The extent to which these hypotheses are substantiated is discussed in the following sub-sections. An investigation of the pathways through which these health improvements occur provides further evidence for the possibility that SHGs combined with health programs have the potential to help move towards universal coverage. The final sub-section here takes up this issue.

7.2.1 SHGs are associated with improved health behaviours

The presence of an SHG centred around microfinance activities was associated with improvements in key aspects of health knowledge and in some behaviours.

Earlier studies on the role of microfinance-based SHGs in facilitating improvements in health indicators have been limited because they were from field-based experiments that were small in scale (Leatherman, Metcalfe, Geissler et al., 2012; Nayar, Kyobutungi, & Razum, 2004). With the scale and reach of the existing SHG structure, findings from the current study indicate that there is potential for these groups to be effectively harnessed to reach more women and their families with programs that promote desired health behaviours, which in turn are expected to improve health outcomes.

It is probable that such outcomes are not limited to the context of India but may have a wider international significance. Studies of similar situations in both Bangladesh and Indonesia also demonstrate that the introduction of microfinance facilities can help to improve health outcomes. In Indonesia, an analysis of the Indonesian Family Life Survey data found that the presence of microfinance-based SHGs was associated with a positive change in children’s health (DeLoach & Lamanna, 2011). In Bangladesh, an analysis of a household-level panel dataset collected over eight years found that access to microcredit enabled households to insure against health shocks (Islam & Maitra, 2012).
Previous studies suggest that membership of development organisations such as SHGs tends to be associated with better health knowledge and behaviours, which are likely to contribute to better health outcomes. The factors mediating these improvements in health behaviours have been attributed to strengthening of trust, solidarity and social capital through the activities of the SHGs (d'Hombres, Rocco, Suhrcke et al., 2010; Szreter & Woolcock, 2004). However, absence of information from the Indian DLHS-III on the above variables prevented detailed analysis of these mediating factors. This would be a fruitful area for future research.

7.2.2 Microfinance-based SHGs with health programs lead to better health practices

The inclusion of a health program within microfinance-based SHGs, such as health awareness sessions during routine SHG meetings, followed by home visits from village health workers, was associated with improvements in health behaviours, including facility-based deliveries, feeding newborns colostrum and having a toilet at home (as reported in Chapter 6). Several factors contribute to the observed outcomes.

Previous evidence indicates that behavioural interventions focusing primarily on the elements of interpersonal interactions, rather than mass communication are critical to effective promotion of life-saving newborn care behaviours, such as skin-to-skin care, early initiation and exclusive breastfeeding (Kumar, Kumar, & Darmstadt, 2010). Several community-based randomised controlled trials in low-resource settings found that improvements in health-promoting behaviours, such as skilled birth attendance, cord care, early initiation and exclusive breastfeeding and skin-to-skin care have been associated with reductions in neonatal mortality (Prost, Colbourn, Seward et al., 2013; Azad, Barnett, Banerjee et al., 2010; Tripathy, Nair, Barnett et al., 2010; Baqui, El-Arifeen, Darmstadt et al., 2008; Manandhar, Osrin, Shrestha et al., 2004). While the health behaviours measured in this study were not comprehensive, the recorded improvements in sanitation, facility-based deliveries and immediate breastfeeding (measured through feeding colostrum to newborn) all indicate an increase in health-promoting behaviours among SHG members where health programs are provided.
While some health behaviours improved in the SHG study areas, others did not. In particular, there was no significant reduction in the outcome variable of diarrhoea among children and the program had no effect in reducing household money spent on health care. Possible reasons why the program did not reduce the amount of money spent on treatment are many, but the explanation for this could not be fully ascertained from this particular study. This mixed result is not uncommon among research on this subject (Datta, 2015; Banerjee, Duflo, Glennerster et al., 2013; Park & Wang, 2010). Health insurance systems in China and India found limited success in reducing catastrophic health spending (Sakhtivel and Karan 2012; Ghosh 2011; Wagstaff and Lindelow 2008). In a highly privatized, lightly regulated health care system, such as India, which largely relies on fee-for-service payment availability of health insurance does not always result in reducing money spent on treatment. Possible reasons can be opportunities to consume expensive high-technology care, and provider induced demand for healthcare.

7.2.3 Pathways through which microfinance programs influence health care outcomes

Analysis of national survey and field study results indicate that the effect of combining health programs with microfinance-based SHGs has the potential to improve population coverage and health care access. To further generalise these findings for wider application, a key issue is to identify the pathways through which this association operates. If the pathways are understood further interventions can be designed to strengthen both the administrative mechanism – the SHG – and the health program and this could contribute to improved health outcomes across India more broadly.

The published literature indicates several different pathways through which the presence of a microfinance organisation facilitates health care gains. These include:

- Participation in a microfinance program improves the socio-economic situation of the members by reducing some of the ill effects of income inequity through consumption smoothing (Becchetti & Castriota, 2011; Dunford, 2001)
- Participation in a microfinance program offers non-financial benefits, including improved health, hygiene and sanitation, and the longer the duration of association
the better the health outcome (Islam & Maitra, 2012; DeLoach & Lamanna, 2011; Mohindra, Haddad, & Narayana, 2008)

- Microfinance with an associated program to raise health awareness is linked to improved access to antenatal care, safe delivery and immunisation, and reduction in infant mortality and birth rate (Prost, Colbourn, Seward et al., 2013; Azad, Barnett, Banerjee et al., 2010; Rosato, Laverack, Grabman et al., 2008; Hadi, 2002)
- Financing healthcare costs through micro-insurance and health loans has been linked to increased utilisation of healthcare services and better financial protection against the costs of care (Ranson, Sinha, & Chatterjee, 2007)
- Affordable health care products and services, such as non-clinical family planning methods, and point-of-use water treatment products, provided through SHGs have been linked to the greater awareness and increase adoption of such products (Fottrell, Azad, Kuddus et al., 2013; Reinsch, Dunford, & Metcalfe, 2011).

Further literature indicates that when members are associated with an SHG program for a longer duration they are more likely to adopt better health behaviours and practices (Mohindra, Haddad, & Narayana, 2008; Hadi, 2001). Taken together, there is a strong indication that SHGs promote healthy behaviours. In addition, the health care gains were even greater when there is a health program compared to when there is not. The implications of these findings for furthering health coverage in India are discussed in the following section.

### 7.3 Implications of the study findings

Despite support for UHC by successive governments, healthcare for most Indians is far from assured (Patel, Parikh, Nandraj et al., 2015). Neither the existing health care system nor social security systems in India provide adequate protection against financial risks associated with health costs. From a low of 4.5 per cent of the total population enjoying some form of financial protection in 2003 – 04, the situation improved to only about 25 per cent by 2010 (Central Bureau of Health Intelligence, 2015; La Forgia & Nagpal, 2012). In the absence of adequate financial protection and high reliance on out-of-pocket expenditure to fund healthcare, in 2011 – 12 alone 55 million people in India fell into
poverty because of costs associated with healthcare (Shepherd-Smith, 2012). Despite several recommendations to increase public spending, public health spending as a proportion of GDP remains low, at just 1.28 per cent of the country’s GDP in 2013 – 14 (Patel, Parikh, Nandraj et al., 2015). This low level of expenditure compares poorly with neighbouring countries, such as Sri Lanka (1.8 per cent), China (2.3 per cent) and industrialized economies such as USA, UK, Spain and Germany spending between 6.5 – 8 per cent of their GDP on health care (The World Bank, 2015).

Health spending in India is only about USD 60 per capita, and government spending accounts for about one-third of that (Patel, Parikh, Nandraj et al., 2015). Mexico’s SeguroPopular universal insurance scheme – which covers all Mexicans not otherwise included in social insurance schemes for civil servants and the private formal sector and is regarded as a model for upper middle income countries – annual per capita expenditure is USD 1,000, with half the amount funded by the government. According to one estimate, to achieve per capita health expenditure that matches Mexico, India would have to allocate an estimated 80 percent of all its tax revenues to health (Prichett & Natarajan, 2015). This is not achievable and indicates that a major reform of India’s taxation system is required if the government actually intends to move along the road towards UHC.

Global health advocates such as Davidson Gwatkin and others have advocated for a more progressive approach to reach the difficult-to-reach populations, particularly poor women and their families (Gwatkin & Ergo, 2011). My study findings indicate that working with the SHGs with health programs in order to improve the health of poor women and their families is an avenue worth investigating further. In the following sub-sections I discuss the implications of these findings and strengths and limitations of working with SHGs to further health coverage in India.

7.3.1 SHG health programs reach women and their families
It has been demonstrated that assisting women generates a multiplier effect for the wellbeing of their families (Gordon, 2012; Burjorjee, Deshpande, & Weidemann, 2002). Sen (2000) argues, within the household women are more likely to favour using household income directly for family needs (food, education and health care) than their male counterparts; this increased spending has a positive effect on household welfare.
In India and in other similar countries, women are generally less likely to access health services when needed. Reasons for this have been documented in literature, including the fact that women are socially and economically disadvantaged relative to men (Bishokarma & Amir, 2014; Baden & Milward, 1997). As India ranks among the lowest countries in the world in terms of gender equity (Haussmann, Tyson, & Zahidi, 2010), women’s health and women’s access to health care are more threatened than in countries with similar social and economic status but better gender equity. In the pursuit of improved health outcomes for women and the rapid extension of population health coverage, introducing policies, programs and interventions that target women and help to advance women’s full and active participation in the community can be an effective approach to achieving change.

SHGs provide both a wide population base (approximately a quarter of the Indian population) and an administrative apparatus (through the microfinance network) for a rapid expansion of health and financial protection programs and create a population base for the extension of health coverage among the poor. The primary lesson learnt from the investigations undertaken for this thesis is the potential value of working with SHGs to improve health behaviours of poor women and their families.

It is pertinent to ask if SHGs had another focus instead of microfinance would inclusion of a health program with SHGs still contribute to improved health coverage for the poor. While most of the SHGs in India work with a microfinance program, there are groups that were formed not within the perspective of microfinance. The Mahila Samakhya program is an example where women’s groups were formed with education, empowerment and addressing women’s shared needs jointly as the key purpose. Another example is the Government’s Integrated Child Development Services that promoted and nurtured SHGs in the distribution of its supplementary nutrition program. While analysing the national dataset to assess the impact of SHGs on population health measures, I made no distinction between the varied philosophies of SHG formation. Although my primary survey had data only from microfinance-based SHGs, the secondary literature reviewed as part of this thesis points to the principle of reciprocity, and puts a strong emphasis on building social cohesion, solidarity and social capital as the key feature of SHGs that provides benefit to their members. It is the participation predominantly of women in the SHGs that adds to their effectiveness in achieving better health behaviours because of the role of women in the family and in broader society and the characteristics that women bring to these groups.
These principles would hold good whether the SHGs were attached to an MFI or not. For the purpose of our study, the association with MFIs provides the SHGs with an administrative base and an organizational and social structure within which it operates. However, it is the self-organization of the women’s groups that provides the underlying dynamic that assists in achieving the observed outcomes.

Public health planners could leverage the SHG structure to disseminate health messages and increase health service access for poorer communities. Working with SHGs could therefore be an incremental step towards improving access to health services more broadly – both reaching the difficult-to-reach population with direct health behaviour promotion interventions, as well as facilitating access to a range of existing public health services. However, experience from the three program sites included in my primary study also shows that working with SHGs to expand population health coverage is not a quick-fix achievable through short-term projects or programs – it is more likely to contribute to a process of gradual behaviour change in the community that empowers people over time with basic healthcare knowledge and behaviour change. It remains that SHGs need a period of maturation during which procedural issues, initial hurdles, expectations and perceptions of stakeholders are managed.

7.3.2 **SHGs drive uptake of existing health protection schemes**

My study found no statistically significant effect of the SHG health program on reducing out-of-pocket expenditure on health among the SHG members. However, there are indications that existing SHGs could be leveraged to make progress in improving coverage of existing publicly-funded financial protection and health insurance schemes. The following section takes up the question of the ways in which the SHG organisational base could be used to facilitate enhanced financial protection for the populations organised into SHGs.

Continued low access to healthcare and the associated lack of financial protection from cost of care have prompted the government to introduce scheme-based programs for health coverage. The most important of these is the *Rashtriya Swasthya Bima Yojana* (RSBY), which provides health insurance benefits to around 40 million families from low income and informal sector workers. Several state governments have introduced additional
schemes to extend coverage for tertiary-care illnesses. It has been shown that the relatively limited uptake of these publicly-funded health insurance schemes is mainly due to the following:

- Lack of information about scheme entitlements
- Non-renewal of membership
- Social exclusion of women (Anil, Seshadri, Ganesh et al., 2014; Seshadri, Trivedi, Saxena et al., 2012; Rajasekhar, Berg, Ghatak et al., 2011).

Such scheme-based programs have lagged behind in both the breadth of population coverage and height of financial protection for the poor. According to one group of authors, the work of publicly-financed health protection schemes should involve more than just financing access to health care; equally important is organising and empowering the demand side in the health care system (Soors, Devadasan, Durairaj et al., 2010). As discussed in Chapter 2, poor awareness of scheme details, types of illness covered, or list of empanelled providers were the most important reasons for non-enrolment or non-utilisation among members enrolled in public-financed health insurance schemes. It is for this reason that using the social network provided through SHGs to drive demand and uptake of publicly-funded health insurance schemes appears to offer a means to these ends.

The results of the studies completed for this thesis provide sufficient (if not complete) evidence that SHGs offer an existing social network that could be used for this process. Further evidence has been previously reported in the literature. Offering community-based health insurance coverage through women’s SHGs create a more inclusive and sustainable health protection scheme – the scheme becomes less susceptible to social exclusion and reduces adverse selection (Panda, Chakraborty, Dror et al., 2014). A study of RSBY enrolment in Maharashtra state found that social networks such as SHG positively influenced enrolment in RSBY, extending on social links that have already been established (Ghosh & Mladovsky, 2014). A study on the role of financial incentives used to motivate local agents (selected from local SHGs) to spread information about RSBY in Karnataka found improved awareness about health insurance entitlements among beneficiaries living in villages that had an agent compared to villages that did not have an agent (Berg, Manjula, Rajasekhar et al., 2011).
SHGs play an extensive and crucial role in identifying, educating, enrolling and assisting vulnerable groups of women to access health care (Ghosh & Mlado, 2014; Ganesh, 2014; Panda, Chakraborty, Dror et al., 2014). SHGs could play an important role in encouraging the uptake and utilisation of existing publicly-funded health insurance schemes in which the government has invested substantial resources. While it can be shown that SHGs play a role in improving some health activities directly, they may also be used as a vehicle to support population coverage of the existing and new social health protection schemes.

7.3.3 Collaboration with SHG federations

Not only do SHGs provide a potential population base for the expansion of UHC, the value of this contribution could be increased significantly by working to strengthen the SHG federations and the expansion of the SHGs into wider national and social groupings. The Mahila Samkhya program that started in 1989 has already demonstrated federating groups or samoohs into self-reliant federations is feasible and can have positive spill over effect on several developmental issues including health (Baru and Dhaleta, 2012).

To date, public health planners have failed to explore ways to integrate SHGs into the health system (Ganesh, 2014; Sheth, 2014; Panda, Chakraborty, Dror et al., 2014; Leatherman, Metcalfe, Geissler et al., 2012; UN Women, 2012). A significant starting point for increased collaboration between health planners and organisations sponsoring SHGs would be to map the institutions working with SHGs so as to have an explicit understanding of the resources available and the opportunities for collaboration. Already, the National Rural Livelihood Mission (NRLM), under the Ministry of Rural Development, plays a crucial role in promoting livelihood through its work with SHGs. The National Health Mission (NHM), under the Ministry of Health and Family Welfare, could work closely with the NRLM and the SHG federations to provide a platform for innovative and scalable methods of disseminating health messages and increasing access to health services. Closer contact between NHM and the SHG federations would be facilitated by more frequent interaction between local health officials and the SHGs. While SHG members could gain information about important public health programs and
7. Discussion and Conclusion

entitlements, health officials could engage SHG’s intimate knowledge of their community to reach out to more families with health messages.

Where SHGs are federated to village organisations and further into larger federations (example, block-level federations) they could potentially be more effective in addressing the major issues affecting the village, in bargaining with public representatives, and in providing support to smaller groups. SHG federations emerged as a means to strengthen the financial sustainability of individual SHGs (Karmakar, 2008; Nair, 2005; Reddy & Prakash, 2003) by providing economies of scale that reduce transaction costs and make the provision of savings and credit services more viable. The federations could additionally serve as an entry point into different levels of government organisation.

It is understood that SHG federations provide a potential platform to identify suitable target groups for behavioural interventions, develop appropriate behavioural change programs, expedite behaviour change, and increase access to health services (Gopalan & Durairaj, 2015; Ruducha, Potter, Lemaire et al., 2014; McKelway, 2014). The role of the federated SHG structures in supporting and training individual SHGs in working to change health behaviours and to create linkages for improved access to health services needs to be further explored.

Further work on this issue will need to keep in mind the limitations of SHGs because providing increased health coverage and health-related financial protection is not their primary role. Program planners will have to gauge the most effective ways to maximise the benefit from such an integrated approach. Issues that may well lie beyond the capability of individual SHGs include wider livelihood concerns, the village environment, or water and sanitation challenges. Moreover, women members of SHGs are commonly confronted with a wider range of issues such as food inadequacy, lack of family support or intimate partner violence. Such challenges need to be considered when proposing a stronger role for SHGs in expanding social health protection.

7.4 Strengths and limitations of the study

Conducting an analysis of the role of SHGs on health knowledge, behaviours and outcomes is a complex task given the breadth of SHGs and parameters to measure
7. Discussion and Conclusion

population health. To address the broader needs of the study I relied on the following methods, each of them adding something to the result:

- Review of published evidence
- Secondary analysis of a national survey dataset
- Primary data collection (both quantitative and qualitative).

The review of published evidence provided insights to the current state of knowledge on the subject. Analysis of DLHS-III dataset provided insights on the effect of SHGs on population health indicators at the national level. Findings from the primary study provided further evidence on the effect of including a health program with SHGs. Yet, each of the methods had its own threat to validity and limitations. These are discussed in the following sections.

7.4.1 Analysis of DLHS-III dataset

The major strength of analysing a national level dataset, such as DLHS-III, is that it enables drawing a more general conclusion about the relationship between presences of an SHG and changes in population health behaviours. Some of the challenges of working with a secondary dataset are common to any survey data sources. In this activity, researchers are constrained by the inability to influence sample selection, data collection instruments (including relevant questions) and the data collection process. Survey data is often collected for purposes that may not align perfectly with the research task. By its very design, the DLHS-III captured only limited information about SHGs. The DLHS-III survey questionnaires were designed to assess the utilisation of services provided by government health care facilities and people’s perceptions about the quality of services (IIPS, 2010). Available data on the presence of SHGs in a village (which is the relevant variable captured in DLHS-III) only partially explains SHG activity. But the DLHS-III did not collect information on other essential indicators that would add greatly to the analysis. These include the following:

- Level of women’s participation in an SHG (Schurmann & Johnston, 2009)
- Availability of credit (Islam & Maitra, 2012)
• Duration of association (Hamad & Fernald, 2010; Mohindra, Haddad, & Narayana, 2008).

Again, data on presence of SHGs was not collected in preceding DLHS survey rounds. Thus, I had to restrict my analysis with cross-sectional DLHS dataset. I compared villages that had an SHG with comparison villages that did not have an SHG. Comparing the DLHS-III data with subsequent rounds of DLHS would enable a more robust difference-in-difference effect analysis. This can help identify trends that may differentially affect the treatment and comparison groups and provide useful information about change in health behaviours over time. Further, the current analysis could not answer if there is any perceptible regional pattern in SHG presence and health outcomes. This remains an area of future research.

7.4.2 Limitations of primary surveys

To assess the effect of combining a health program with an SHG program, I performed a mixed methods study that involved primary data collection at two time periods and qualitative data collection involving focus group discussion and key informant interviews. The primary surveys were designed to collect information on health knowledge, behaviours and outcome measures to assess the effect of the SHG program. Several standard controls, for example respondent’s socio-economic status, were included in the survey. The data collection method was based on retrospective recall, which can be affected by recall bias. However, a short recall period was selected to minimise this bias. Additionally, bias may arise from the circumstance in which respondents behave in a way they feel is socially acceptable – participation in the SHG health program may make women from the intervention villages more aware of the expected response to survey questions, so they give the answer they think is expected rather than what they actually believe in or do.

Samples for my primary surveys were drawn from three blocks of India. The members were affiliated with organisations that had been working in the study areas for more than a decade. The study sample was not representative of all locations and all SHGs across India. Any attempt to generalise the finding across the country, without accounting for the
membership structure, level of activity, duration of participation, and organisational ethos may be of limited relevance. For example, not all SHGs in India function at the same level in terms of composition, regular meetings, economic activities or other relevant variables. The variations in SHGs by level of activity were not accounted for in selection of the sample for this study. However, given that both of the organisations involved in the study had a large membership base, the study sample was moderately representative of the population in those locations.

A limitation of my quantitative survey design was the short duration of follow-up. One year was a relatively short time frame to detect a significant change in outcomes, and several studies have indicated that duration of participation is linked to improved health outcome (Moseson, Hamad, & Fernald, 2014; Mohindra, Haddad, & Narayana, 2008). Given the limited resources available to conduct the doctoral research, it was not possible to extend the follow-up period. I therefore selected time sensitive indicators that are more amenable to change in the short-term (Patil, Arnold, Salvatore et al., 2014; Waddington & Snilstveit, 2009). However, further follow-up of the same groups over time may possibly detect a more positive program effect.

7.4.3 Limitations of the qualitative data

The qualitative study comprised focus group discussions with SHG members and key informant interviews with village health workers. This qualitative study was conducted after completion of the data collection for the one year follow-up survey. While the qualitative study provided insights on the program design and challenges, absence of any rigorous process evaluation of the health program has resulted in limited information on the program’s content, quality and frequency of delivery across different sites. Also the qualitative study was conducted only in the intervention areas and not the comparison areas. Thus it was not possible to perform any comparative assessment of the sites with and without SHG-health programs.
7.4.4 Summary: the validity of the mixed methods study

Despite limitations in each of the methods used for this study, the use of a mixed methods approach strengthens the findings. By drawing on the findings from the review of evidence, analysis of secondary survey data, primary before and after surveys and qualitative interviews we are more confident about inferences drawn from the study. Triangulating findings from the different studies makes the findings more credible than a single method would have produced.

7.5 Conclusion

Governments and non-government organisations in India have implemented large-scale programs for promotion of SHGs. However, evaluation of the impact of these programs and their real and potential impact on population-level health indicators and other health-related outcomes, including financial protection, has been limited. In the absence of rigorous evaluation, the potential for working with SHGs to improve people’s access to health services has not been an active part of the national policy discourse.

The positive role of microfinance-based SHGs in improving maternal and child health indicators observed in this study suggests a mechanism for increasing universal health coverage and addressing the health needs of poor women and their families. There are additional reasons, from a social perspective, for investigating the possible positive impact of these programs including the broad population coverage of SHGs and the social capital they produce.

While findings from this study provide important insights into the role of microfinance-based SHGs, there are issues that are still open to question. Any further evaluation of the value of SHGs in extending health coverage and financial protection to poor women and their families in India would have to adopt a design with a long time horizon in order to incorporate slower and gradual change in health behaviours.

The cost of forming and nurturing of SHGs and subsequently of SHG federations is a concern among policy makers. There is very limited evidence on the cost and cost-effectiveness of SHG health programs and only a few rigorous studies on the costs of formation and nurturing of SHGs. Several of these estimates are quite old. A key area of
future research would be costing the addition of a health program to the SHGs and an analysis of cost-effectiveness of such an integrated approach.

As discussed earlier, SHG health programs can take different forms and shapes. Mature SHGs are expected to deliver better results compared to newly formed groups. Future evaluation of SHG programs, including their health programs, should take this group maturity and functionality of SHGs into account.

There has been interest among federal and state governments and non-government organisations to invest in the SHG movement for livelihood generation and financial inclusion among poor women and their families. There is a bigger role for the government and SHG federations in supporting individual SHGs as well as integrating health programs within the broader SHG development and livelihood programs. More research is needed on the range of health programs and services that can be integrated with SHGs and the extent to which this contributes to improved health knowledge, behaviours and outcomes. Additionally, the nature and quality of the health program itself and the effectiveness of its delivery could well influence the effectiveness of the outcomes.

It is the participation predominantly of women in the SHGs that adds to their effectiveness in achieving better health behaviours because of the characteristics that women bring to these groups. While some of the measured behaviours showed further improvement with the addition of an SHG health program, certain gaps and limitations were identified. The observed behavioural changes assessed in the study are plausible pathways to improve maternal and child health. With the established organised networks of SHGs, through government and non-government programs, these findings have implications in making progress in UHC.

In summary, the starting point of my thesis was the question ‘Can SHGs with attached health programs contribute to health coverage for the poor in order to support the wider development of a UHC system in India?’ Public health planners could leverage SHGs to increase the proportion of the population enjoying health coverage and make progress in relation to financial coverage and utilisation of existing publically-financed health protection schemes, although a lot more work is needed to optimise these possibilities. The established organised networks of SHGs provide an administrative apparatus to more
effectively reach poor women and their families with essential health programs. Public health planners should invest in further investigating the role of existing SHG programs to expand health coverage among the difficult to reach population, particularly poor women and their families.
References


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Appendices

Appendix 1: Analytical framework paper

Introduction

This paper reports a framework to analyse the effect of combining health programs with microfinance-based self-help groups. Based on a review of contemporary literature, three key dimensions were identified:

- determinants of health
- structure of microfinance groups
- the design of health program.

This framework formed the basis for developing my study design and data collection. The paper was published in the Community Development Journal and is reproduced below in the published version.
‘More health for the money’: an analytical framework for access to health care through microfinance and savings groups

Somen Saha

Abstract The main contributors to inequities in health relates to widespread poverty. Health cannot be achieved without addressing the social determinants of health, and the answer does not lie in the health sector alone. One of the potential pathways to address vulnerabilities linked to poverty, social exclusion, and empowerment of women is aligning health programmes with empowerment interventions linked to access to capital through microfinance and self-help groups. This paper presents a framework to analyse combined health and financial interventions through microfinance programmes in reducing barriers to access health care. If properly designed and ethically managed such integrated programmes can provide more health for the money spent on health care.

Introduction

The main contributors to inequities in health relates to widespread poverty. About 1.29 billion people in developing world are living in extreme poverty, and are unable to lead healthy, productive lives because they are incapacitated by high rate of child mortality, maternal deaths, infectious, and non-communicable diseases (Chen and Ravallion, 2010). Disparities between poor and better off exist with respect to access to health care (Gwatkin, Wagstaff and Yazbeck, 2005). Social determinants of health such as poverty, inadequate housing and lack of education are at the root of morbidity in developing countries (Djukanovic and Mach, 1975). Good health cannot be achieved without addressing the social determinants of health, and the

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answer does not lie only in the health sector (Twigg, 1999; Hunter, 2003; WHO, 2011; Tucker et al., 2012).

Access to capital as an empowerment strategy for women has emerged as one of the options to address the effect of inequalities in power, prestige, income and wealth linked to different socioeconomic positions. The pioneering work of Prof. Muhammad Yunus in Bangladesh presented microfinance as a major tool to address poverty. Microfinance refers to provision of financial services such as loans, savings, and business training for the poor. There are wide varieties of microfinance models; the best known is the Grameen Bank model of group-based lending to the poor. In India, most of the microfinance-assisted entrepreneurs are organized as self-help group (SHG), with active support from the government. Members are mostly women, and are vulnerable to poor health conditions and financial shocks of illness. Routine group meetings are a forum to discuss not only financial activities, but also common problems affecting the community and family. This interaction and connectedness among members generates solidarity and social capital. Targeted health programmes through these existing community level groups have the potential to reduce the unequal consequences of ill-health among a vast majority of the poor. Some of the benefits of integrating health services with microfinance include economic and social empowerment, and reduced gender disparity. This paper attempts to present and discuss a framework to analyse the role of those SHGs, organized around microfinance institutions (MFIs), with associated health programmes in reducing barriers to access health care.

**Barriers to health services: social exclusion and marginalization**

Multiple obstacles exist across the greater health system, including demand-side issues such as people’s participation, knowledge, and behaviour. Krishna (Krishna, 2006) estimates the cost of treatment for illness to account for 85 percent of all causes of impoverishment in India. Poor health contributes to the persistence of India’s high poverty rates, with health expenditures driving 39 million families into poverty each year (Selvaraj and Karan, 2009). In rural India, women are three times more likely than men to go without treatment for long-term ailments, a trend that persists even among the non-poor. Even when treatment is sought, significantly smaller sums of money are spent on medical treatment for women than for men (Iyer, Sen and George, 2007). Individuals with the greatest need for health care have the greatest difficulty in accessing health services and are least likely to have their health needs met (Balarajan, Selvaraj and Subramanian, 2011).
Access to health care has four dimensions: availability, geographic accessibility, affordability, and acceptability (O’Donnell, 2007). While traditionally health systems access barriers are classified as supply-side and demand-side barriers (Ensor and Cooper, 2004; Peters et al., 2008), other important determinants of access include lack of female autonomy, lack of social support, social exclusion, and marginalization (Rutherford, Mulholland and Hill, 2010; Jacobs et al., 2011). In Indian society where women are marginalised and have limited access to resources, these elements are likely to be of greater relevance (Adams, Madhavan and Simon, 2002). Social exclusion is a dynamic multi-dimensional process (Richardson and Le Grand, 2002; Doherty, 2003; Levitas et al., 2007; Boon and Farnsworth, 2011) that produces barriers for those living in poverty. World Bank’s work ‘Voice of the Poor’ argues that poor people lack a set of fundamental assets and capabilities. These capabilities include both distributional and relative issues, e.g. material assets, bodily health, bodily integrity, emotional integrity, respect and dignity, social belonging, cultural identity, imagination, information and education, organizational capacity and political representation and accountability (Narayan and Petesch, 2002). According to social exclusion theory, health risks are positively associated with involuntary social, economic, political, and cultural exclusion from society (Schurmann and Johnston, 2009). Research from Gambia suggests that strong social support networks are an important factor in health care access (Cassell et al., 2006). These factors were more important than the traditional measures of access, where social support, not wealth, was a predictor of the care received by an ill child (Rutherford, Mulholland and Hill, 2010).

**Microfinance and SHGs as a platform for health access**

Microfinance has emerged from a development paradigm to alleviate poverty. However, poverty alleviation without addressing health will lead to a partial impact; poverty limits the capacity to produce health, and ill-health leads to further impoverishment (Wagstaff and Claeson, 2004). The nature of the microfinance transaction where (usually) women meet together in formal groups or SHG on a frequent basis to repay loans and deposit savings creates solidarity and social capital among members (Dunford, 2001). The groups hold meetings at regular interval, which last ~15–45 min, often in supervision of a credit officer, to save money, use their accumulated savings as a loans fund to help members repay loan when they are facing an emergency. A series of training meeting ensures financial discipline, record keeping of transactions, etc. These networks of savings and credit groups can influence health outcome through utilizing the financial and credit discipline, and creating social capital. Social capital (Putnam, 1993) is
feature of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions. When women meet in the community group they discuss issues affecting their community and individual health, and exposure to health messages in such group meetings provides a critical pathway to influence health promotion (Viswanath, Steele and Finnegan, 2006), and increases the probability of being in good health (Rocco and Sulcice). Woolcock (Woolcock, 1998) further splits social capital into three connecting strands: bonding social capital, i.e. ties between immediate family members, neighbours and close friends; bridging social capital, i.e. ties between people from different ethnic, geographical, and occupational backgrounds; and linking social capital, i.e. ties between poor people and those in positions of influence in formal organizations such as banks, schools, etc. Savings and credit groups such as microfinance are initiative mobilized by existing bonding social capital, and then built upon linking social capital as the group members get involved into activities (Kanak and Iguni, 2007).

Researchers argue that the peer pressure as disciplinary force in micro-credit, and relying on social collateral rather than material collateral, undermine trust and support. This increases the likelihood of poor and vulnerable groups being excluded from health care (Coetz and Gupta, 1996; Davis, 2001; Todd, 2005). Yet, an increasing body of primary research and review of evidence found participation in micro-credit and other women’s group programme to be associated with positive health behaviour and outcome (Morduch and Haley, 2002; Leatherman and Dunford, 2010; Islam and Maitra, 2012; Leatherman et al., 2012; Prost et al., 2013). Schurmann and Johnston (Schurmann and Johnston, 2009) suggest four broad pathways in which micro-credit could have a positive impact: first, micro-credit serves as a medium to communicate health messages during regular repayment meetings. Second, micro-credit can improve the general quality of life of borrowers by increasing disposable income, reducing vulnerability through diversifying income sources, strengthening financial shock-coping mechanisms (insurance, savings), and building assets. Third, availability of credit can assist the poor with financing health emergencies, such as ill-health of the main breadwinner. The final pathway is building social capital through group meetings and mutual support.

**Combining health and financial security for the poor**

Unless vulnerabilities associated with health indicators outlined in the millennium development goals are addressed, public spending on health will continue to have a limited impact on population level outcome. Since much of the inequities in health result from a wide range of social, economic, and
political circumstances or factors that differentially affect the distribution of health within a population, the social determinants of health needs to be addressed (Balarajan, Selvaraj and Subramanian, 2011). Microfinance programmes and organizations promoting women’s group emerged as a solution for access to capital for women and to address the effect of inequalities in power, prestige, income, and wealth linked to different socioeconomic positions. Aligning health programme with microfinance can address the ‘double bottom line’ of financial and social security for the poor. Such programme can leverage on the financial discipline and social capital generated out of members’ participation in routine credit group meetings. The routine credit group meetings are an effective platform for delivering health message and information. In addition important interventions that can be combined include: loans for improved water source, home visits to counsel mothers on primary care including care of newborn, social marketing of family planning products and services, health insurance, loans and savings, and creating awareness about public health programmes and schemes.

NGOs like SEWA in India, BRAC and Grameen Bank in Bangladesh have extensively engaged in promoting health-related activities through participation of savings and credit group members. Such combined programme can take the form of

(I) Programmes to address client awareness about preventive and promotive health care such as the programme to train women SHG members as health workers and to provide literacy training in the Comprehensive Rural Health Project, Jamkhed in Maharashtra state of India.

(II) Programmes to address financing cost of treatment such as the mandatory pilot health-insurance programme of SKS Microfinance in India that offered cashless maternity, hospitalization and accident benefits among network hospitals to its members (Banerjee, Banerjee and Duflo, 2011). Another example of such a programme is the Velugu II project in Andhra Pradesh, India (renamed as Indira Kanti Patham) that sought to mitigate risk and improved security through a comprehensive insurance package covering health, life, crops, and livestock.

(III) Programmes for access to healthcare products and services at doorstep such as community medicine points of Gram-Uttan, an MFI in Odisha state of India that makes a range of generic medicines and health supplies available in small villages; or other programmes that facilitate referrals of clients to diagnostic and screening services.
Globally integrating the delivery of health education with microfinance resulted in positive outcomes in reproductive health, prevention, and primary care for children: nutrition, breastfeeding and diarrhoea, HIV prevention, domestic abuse/gender-based violence, tuberculosis, and sexually transmitted infections. Health education alone, usually delivered during the routinely scheduled microfinance group meetings, improve knowledge that leads to positive health behavioural change (Leatherman and Dunford, 2010). Health programmes by microfinance institutions have positive impact on under-nutrition and diarrhoea, which are the most common causes of illness and childhood deaths in the developing world (Johnson and Rogaly, 1997; Marcus, Porter and Harper, 1999). A rare randomized control trial in the area demonstrated the impact of microfinance-based intervention on reduction of intimate partner violence in South Africa (Kim et al., 2007). Evidence from Bangladesh showed credit recipients of BRAC pay more attention to health promotion activities in order to retain their eligibility to receive credit, free education for their children, and subsidized health care for their family members (Hadi, 2001).

A clustered randomized trial conducted assessed the impact of a community mobilization programme through participatory women’s group among the indigenous communities of Jharkhand and Odisha states of India. Newborn babies born to mothers in SHG communities showed significantly improved likelihood of surviving the first 6 weeks of their lives, compared with babies born to analogous households in non-SHG communities (Tripathy et al., 2010). A participatory approach to community mobilization through SHG in Maharashtra state of India resulted in a significant reduction in infant mortality, and birth rate. The initiative resulted in near universal antenatal care, safe delivery and immunization, and decline in malnutrition from 40 percent to <5 percent over the first 20 years of the programme (Arole and Arole, 2002; Rosato et al., 2008).

Grameen Bank, the micro-credit pioneer in Bangladesh, provides its members with micro health insurance schemes in order to protect its clients from health risks with the aim of preventing their economic downfall. In 2006, a survey of members found insurance group placement contributes to increasing awareness of important health problems and to the probability of seeking formal care, compared with a control group (Hamid, Roberts and Mosley, 2011). In Andhra Pradesh state of India, women credit group members made significantly more use of health insurance than non-borrowing women who have obtained the insurance through their husbands (Rai and Ravi, 2011). A pilot project in Bangladesh integrating a micro-credit programme for poor women with an essential service package resulted in significant increase in contraceptive use, and a decline in fertility (Amin et al., 2001).
### Appendices

#### Figure 1: Framework for analysis.

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**A framework for analysing health outcomes**

An integrated framework to address the social determinants of health by combining health with financial services is presented in Figure 1. This framework is intended to help analyse the effect of delivering health programme through SHGs and microfinance mechanism.

In analysing the impact of combining health with financial services, three main dimensions have been identified in the framework: determinants of health, structure, and operation of microfinance programmes, and form of health programme. A fourth overarching dimension relates to regulatory and policy environment.

Health has multiple determinants that include: social factors linked to poverty, social norms and support; access to health services which again is an interplay of availability, geographic accessibility, affordability, and acceptability (O’Donnell, 2007); and individual factors that governs people’s knowledge, attitude, and beliefs about health and health services. An analysis of the context in which the programme operates is crucial in measuring programmatic impact.

The structure and operation of microfinance should consider history of the organization, its structure, and duration of participation. Joint liability model of microfinance that works on the principle of social cohesion as collateral for provision of the loans are instrumental in generating trust and social capital (Dunford, 2001; Szreter and Woolcock, 2004). The duration of participation in a microfinance programme matters in terms of the health and wellbeing of members (Mohindra, Haddad and Narayana, 2008). Organizations that are in operation for a relatively short term are less likely to detect slower-to-develop impacts such as on poverty and health (Leatherman et al., 2012).
Programme to address members’ health needs can be designed around demand-side access factors related to awareness and care seeking, as well as supply-side factors such as access to finance, consumption smoothing, and products. While health education is the most commonly reported intervention, other intervention include health camps, linkages to health providers, direct provision of services, health loans, health savings, and health micro-insurance (Metcalfe, Leatherman and Gash, 2012). Along with type of services, the mechanism for delivery of health service needs to be analysed. An organization that has a deep routed structure to ensure community participation mobilization and empowerment is more likely to succeed in addressing client health needs, then one that lacks such structure. Successful programmes like the Kakamega project in Western Kenya or the Jamkhed project in the state of Maharashtra in India had arisen from the process, and not from setting of performance targets or from external financing (Were, 2002; Rosato et al., 2008). Hence a discussion on scalability of programme should delve on the structure, process and mechanism for delivery of health programme.

The starting point for this analysis is inadequate coverage among the poor due to a weak health system and imbalanced resource allocation. High level of illiteracy, lack of empowerment, and awareness among the poor and marginalized have left a gap that membership-based organizations like microfinance and SHGs can seek to address. Such organizations operate on a broader regulatory and policy environment that supports or hinder such initiative. Hence scalability of such integrated approach should also delve on the regulatory structure in which such schemes operate.

Discussion

Inequity in access to health care is a key barrier to achieve the Universal Health Coverage (UHC) vision of the 65th World Health Assembly. Work of the Commission on Social Determinants of Health emphasized the role of civil society in promoting health equity (Gilson et al., 2007). Community system strengthening and community mobilization are crucial for ensuring that UHC works equally for the general population as well as for poor and marginalized groups (Ravenscroft and Marcos, 2012). Financial service providers of all types (MFIs, SHGs, or other NGOs providing financial services to the poor) represent a viable, sustainable channel for reaching the poor: In India, 93 million clients – are involved in microfinance activities offered by MFIs and SHG-Bank Linkage programme, such as Self-Health Group Federations. They were actively promoted by various national and state programmes for financial inclusion and livelihood promotion among rural population particularly women. Increasingly, the financial services sector is
exploring the addition of other non-financial services critical to the well-being of the poor, most notably, the delivery of simple but life-saving health services. MFIs and SHGs not only have compelling business reasons to attend to their clients' health needs, they are often uniquely positioned in the communities they serve as trusted intermediaries between community members and the outside world. A growing body of evidence from around the world indicates that when health and financial services for the poor are linked in a systematic and cohesive manner, key barriers to health for the poor can be reduced.

In this paper, we have discussed a framework to analyse the effect of access to health care through community-based SHGs and microfinance programmes. The micro-financing model can simultaneously promote access to quality maternal health services, better reproductive and child-health awareness, and ultimately integrate SHGs into formal community health programmes and policy development structures. If properly designed and ethically managed, such groups can provide more health for the money spent on healthcare. Yet questions and concerns remain, particularly related to financing the start-up capital, absorbing cost of the development interventions, models for convergence, and capacity to deliver health programme. Governments have a constructive role in building systems that work for the poor. The role of the state encompasses insuring a minimum banking structure in the rural areas, subsidizing microfinance start-up capital and innovations, and investing in complementary services such as infrastructure, health, and education (Lapenu, 2000). Such structure should play an effective role in ensuring people's participation in health system as an agent that actively shapes the system and how services are financed and delivered. This calls for increased focus on training and capacity building of these organizations in terms of leadership skills and strengthen accountability and participation. The focus should be on building sustainable institutions, rather than projects. Yet, such programmes cannot be viewed as a panacea for government failures, but rather a complement to public provisioning of health services (Leatherman et al., 2014). Also rigorous evaluations that not only look into programme impact, but also intervention factors and studying scalability of successful models are the need of the hour. Wider replication of these programmes requires large-scale effectiveness studies with active support and involvement of public health policy planners and donors.

**Funding**

The research is supported by a Research Higher Degree grant from the Nossal Institute for Global Health at The University of Melbourne, Australia, and a Wellcome Trust Capacity Strengthening Strategic Award to the Public
Appendices

Page 10 of 13  Somen Saha

Health Foundation of India and a consortium of UK Universities. Dr. Peter Annear from the Nossal Institute for Global Health, University of Melbourne, Australia provided useful guidance in drafting the manuscript.

Somen Saha, Nossal Institute for Global Health, The University of Melbourne, Level 4, Alan Gilbert Building, 161 Barry St, Carlton, Victoria, 3010, Australia.

Somen Saha, Indian Institute of Public Health Gandhinagar, Drive in Road, Thaltej, Ahmedabad, Gujarat 380054, India.

References


Davis, P.R. (2001) Rethinking the welfare regime approach, Global Social Policy, 1, 79.


Appendices


Appendix 2: Ethics Approval

8 March 2013

Affiniti Jim Blake
Nossal Institute for Global Health
The University of Melbourne
Level 4, Alan Gilbert Building
161 Barry Street,
Carlton VIC 3050

Dear Dr Annear,

I am pleased to advise that the Nossal Institute for Global Health Human Ethics Advisory Group has approved the following Minimal Risk Project.

Project Title: The impact of microfinance-related health programmes in addressing access barriers to health services in India

Researcher(s): Dr Peter Annear, Sumen Saha

Ethics ID: 12290067.1

The Project has been approved for the period: 8-March-2013 to 31-December-2013.

It is your responsibility to ensure that all people associated with the Project are made aware of what has actually been approved.

Research projects are normally approved to 31 December of the relevant year. Projects may be renewed yearly for up to a total of five years upon receipt of a satisfactory annual report. If a project is to continue beyond five years a new application will normally need to be submitted.

Please note that the following conditions apply to your approval. Failure to abide by these conditions may result in suspension or discontinuation of approval and/or disciplinary action.

(a) Limit of Approval: Approval is limited strictly to the research as submitted in your Project application.

(b) Amendments to Project: Any subsequent variations or modifications you might wish to make to the Project must be notified formally to the Human Ethics Advisory Group for further consideration and approval before the revised Project can commence. If the Human Ethics Advisory Group considers that the proposed amendments are significant, you may be required to submit a new application for approval of the revised Project.

(c) Incidents or adverse affects: Researchers must report immediately to the Advisory Group and the relevant Sub-Committee anything which might affect the ethical acceptability of the protocol including adverse effects on participants or unforeseen events that might affect continued ethical acceptability of the Project. Failure to do so may result in suspension or cancellation of approval.

(d) Monitoring: All projects are subject to monitoring at any time by the Human Research Ethics Committee.

(e) Annual Reports: Please be aware that the Human Research Ethics Committee requires that researchers submit an annual report on each of their projects at the end of the year, or at the conclusion of a project if it continues for less than this time. Failure to submit an annual report will mean that ethics approval will lapse.

(f) Auditing: All projects may be subject to audit by members of the Human Ethics Sub-Committee.

Please quote the ethics registration number and the name of the project in any future correspondence.

On behalf of the Human Ethics Advisory Group I wish you well in your research.

Yours sincerely,

[N. Black, Chair]

Nossal Institute for Global Health HEAG

THE NOSSCAL INSTITUTE FOR GLOBAL HEALTH
Faculty of Medicine, Dentistry & Health Sciences
The University of Melbourne. Level 4, Alan Gilbert Building, 161 Barry Street, Carlton, Vic. 3052, Australia
# Institutional Ethics Committee

**Public Health Foundation of India**

Public Health Foundation of India (PHFI) | 4, Institutional Area | Vasant Kunj | New Delhi - 110 070 | INDIA

## Communication of Decision of the IEC

**Form II**

<table>
<thead>
<tr>
<th>TRC-IEC No:</th>
<th>TRC-IEC-124/12</th>
<th>Date:</th>
<th>13/4/2012</th>
</tr>
</thead>
</table>

**Project Title:** Impact of credit with health access on health status of MFI clients in India: Study of MFI programs at different levels of integration

**Principal Investigator:** Somen Saha

**Review:** Full Review

**Expedited Review**

**Date of review:** 28/03/2012 (DD/MM/YYYY)

**Date of previous review:** Not applicable (In case of re-submitted applications) (DD/MM/YYYY)

**Decision of the IEC:**

- Approval
- Study can begin
- Resubmission
- Study cannot begin

**Requirements to be fulfilled in case of conditional approval:**

Not applicable

**Suggested alterations in case of resubmission:**

Not applicable

**In case of approval, recommended for a period of:**

Duration of study

**Comments:** No comments

---

1. PI will inform the Secretariat of the start date of the study.
2. The PI will inform the IEC in case of any adverse events.
3. The PI will inform the TRC (Technical Review Committee) and IEC in case any change of study procedure (including changes in the informed consent form, recruitment procedure, potential research participants information), site and investigator.
4. PI will inform the TRC - IEC Secretariat on termination of the study and submit a final report within 3 months of completion of the study.
5. Members of the IEC have the right to monitor the study with prior intimation.
6. Progress report to be submitted to the TRC-IEC Secretariat every 6 months from the date of start of study.
7. The permission is only for the period mentioned above.

Prof. Ramanan Laxminarayan
Name and signature of Member Secretary

**Chairman / Member Secretary**

PUBLIC HEALTH FOUNDATION OF INDIA

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1. Adapted from the ICMR form; available at [http://www.icmr.nic.in/bioethics/Communication%28IEC%29/Decision%28IEC%29/04-02012%28IEC%29.doc](http://www.icmr.nic.in/bioethics/Communication%28IEC%29/Decision%28IEC%29/04-02012%28IEC%29.doc)
Plain Language Statements

An invitation to participate in a study assessing the impact of microfinance health program on access barriers to health services

This study is being conducted by researchers from the Nossal Institute for Global Health at the University of Melbourne, Australia, and the Public Health Foundation of India. This is a funded research project.

During the process, we will ask you some questions about your general health status and service utilization, and questions on hygiene and sanitation practices. This will take about an hour of your time. The data will be used for research purpose only, and your name or identity will never be disclosed. All information will be kept confidential, and destroyed after analysis.

Your participation is completely voluntary. You can stop the interview/being involved in the group discussion at any stage and this will not disadvantage you. There are no immediate personal benefits from your participation in the study.

The study has been approved by the Institutional Ethics Committee at the Public Health Foundation of India, New Delhi, and the Human Research Ethics Committee (HREC) at the University of Melbourne in Australia. If you would like to contact the HREC, their contact details are:

Executive Officer, Human Research Ethics Committee, The University of Melbourne. Ph: +61 3 8344 2073; fax +61 3 9347 6739

For more information you may contact:

Somen Saha and Peter Annear from the Nossal Institute for Global Health, Level 4, 161 Barry Street, Carlton, Victoria 3010.

Dr. Dileep Mavalankar, Director, Indian Institute of Public Health Gandhinagar, Drive-in Road, Thaltej, Ahmadabad, Gujarat 380054, Ph:+917940240444.
An invitation to participate in a key informant interview assessing the impact of microfinance health program in addressing access barriers to health services

This study is being conducted by researchers from the Nossal Institute for Global Health at the University of Melbourne, Australia, and the Public Health Foundation of India. This is a funded research project.

We will conduct an interview with you. Questions will be asked about your village, types of health problem, how the program respond to the problem, and areas that need to be addressed in future. I will conduct the interview, and it will take about 30 minutes of your time. The data will be used for research purpose only, and your name or identity will never be disclosed. All information will be kept confidential, and destroyed after analysis. We will audio-tape the interview, but if you disagree, we will only write down the interview points.

Your participation is completely voluntary. You can stop the interview/being involved in the group discussion at any stage and this will not disadvantage you. There are no immediate personal benefits from your participation in the study.

The study has been approved by the Institutional Ethics Committee at the Public Health Foundation of India, New Delhi, and the Human Research Ethics Committee (HREC) at the University of Melbourne in Australia. If you would like to contact the HREC, their contact details are:

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Dr. Dileep Mavalankar, Director, Indian Institute of Public Health Gandhinagar, Drive-in Road, Thaltej, Ahmadabad, Gujarat 380054, Ph:+917940240444.
An invitation to participate in a focus group discussion assessing the impact of microfinance health program in addressing access barriers to health services

This study is being conducted by researchers from the Nossal Institute for Global Health at the University of Melbourne, Australia, and the Public Health Foundation of India. This is a funded research project.

We will conduct a focus group discussion. This discussion will involve 6 to 10 women SHG members all discussing issues together. Questions will be asked about how you get together in your village, and experience with [insert name of MFI] health program. A member of our research team will conduct the discussion, and it will take about 2 hours of your time. The data will be used for research purpose only, and your name or identity will never be disclosed. Anonymity cannot be ensured however all steps will be taken to minimize this risk. Others in the focus group will likely hear what you have to say and that this should be considered before speaking. All information will be kept confidential, and destroyed after analysis. We will audio-tape the discussion, but if you disagree, we will only write down the discussion points.

Your participation is completely voluntary. You can stop the interview/being involved in the group discussion at any stage and this will not disadvantage you. There are no immediate personal benefits from your participation in the study.

The study has been approved by the Institutional Ethics Committee at the Public Health Foundation of India, New Delhi, and the Human Research Ethics Committee (HREC) at the University of Melbourne in Australia. If you would like to contact the HREC, their contact details are:

Executive Officer, Human Research Ethics Committee, The University of Melbourne. Ph: +61 3 8344 2073; fax +61 3 9347 6739

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Dr. Dileep Mavalankar, Director, Indian Institute of Public Health Gandhinagar, Drive-in Road, Thaltej, Ahmadabad, Gujarat 380054, Ph:+917940240444.
Consent Forms

Consent form for persons participating in a research project assessing the impact of microfinance health program on access to health services

Study title: The impact of microfinance health programs on access to health services in India

Name of participant: __________________________

Name of investigator: __________________________

1. I consent to participate in this study, the details of which have been explained to me.
2. I understand that my participation will involve an interview.
3. I acknowledge that:
   
   (a) I have been informed that I can withdraw from the study at any time without explanation or prejudice;

   (b) The study is for the purpose of a research;

   (c) I have been informed that the confidentiality of the information I provide will be safeguarded subject to any legal requirements;

   (d) I have been informed that a copy of the study findings summary report will be forwarded to me.

Date __________________________

( Participant)
Consent form for person participating in a Key Informant Interview assessing the impact of microfinance health program in addressing access barriers to health services

Study title: The impact of microfinance health programs in addressing access barriers to health services in India

Name of investigator:

1. I consent to participate in this interview, the details of which have been explained to us.
2. I acknowledge that I can withdraw from the study at any time without explanation or prejudice.
3. The study is for the purpose of research.
4. I have been informed that the confidentiality of the information will be safeguarded subject to any legal requirements.
5. I have been informed that anonymity cannot be ensured however I know all steps will be taken to minimize this risk.
6. I have been informed that the interview/discussion will be audio-taped and the taped-data will be destroyed after written notes are made.
7. My name will be referred to by a pseudonym in any publications arising from the research.
8. I have been informed that a copy of the study findings summary report will be forwarded to me.

I consent to this interview being audio-taped □ yes □ no (please tick)

Name and signature of participant:
Appendices

Consent form for person participating in a focus group discussion assessing the impact of microfinance health program in addressing access barriers to health services

Study title: The impact of microfinance health programs in addressing access barriers to health services in India

Name of investigator:

1. I consent to participate in this focus group discussion, the details of which have been explained to us.
2. I acknowledge that I can withdraw from the study at any time without explanation or prejudice.
3. The study is for the purpose of a research.
4. I have been informed that the confidentiality of the information will be safeguarded subject to any legal requirements.
5. I have been informed that anonymity cannot be ensured however I know all steps will be taken to minimize this risk.
6. I have been informed that the interview/discussion will be audio-taped and the taped-data will be destroyed after written notes are made.
7. My name will be referred to by a pseudonym in any publications arising from the research.
8. I have been informed that a copy of the study findings summary report will be forwarded to me.

I consent to this interview being audio-taped □ yes □ no (please tick)

Name and signature of participant:
### Appendix 3: Study Tools

<table>
<thead>
<tr>
<th>Serial No</th>
<th>Title of Study: The impact of microfinance-related health programs in addressing access barriers to health services in India</th>
</tr>
</thead>
</table>

**SECTION A**

<table>
<thead>
<tr>
<th>Serial No</th>
<th>STATE</th>
<th>District</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Karnataka</td>
<td>---------</td>
</tr>
</tbody>
</table>
| 2         | Gujarat    |---------

**A.4 VILLAGE:**

<table>
<thead>
<tr>
<th>Serial No</th>
<th>TOTAL HOUSEHOLDS IN VILLAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**A.5 STUDY ARM**

<table>
<thead>
<tr>
<th>Serial No</th>
<th>Intervention Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(SHG member exposed to MFI health program)</td>
</tr>
<tr>
<td>2</td>
<td>(SHG member not exposed to MFI health program)</td>
</tr>
</tbody>
</table>

**A.6**

Name of the Respondent

**A.7**

Name of the interviewer

Date of Interview

**A.8**

Address

----------------------------------------------------------------------------------------------
Section B: HOUSEHOLD LISTING

The following grid has to be filled for all members of the household. Occupation and income is restricted to earning members of the household who are contributing to the household income irrespective to their place of residence.

<table>
<thead>
<tr>
<th>Family member by number</th>
<th>Name of the household member</th>
<th>Sex (Male 1 Female 2)</th>
<th>Age</th>
<th>Education*</th>
<th>Relationship with the respondent</th>
<th>Does he/she contribute to the household (yes/no)</th>
<th>Occupation**</th>
<th>Monthly income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* No formal education—1, 1-8 grade---2, 9-12 grade---3, >12 grade---4

** Occupation

1) Too young/too old to work
2) Student
3) Farm labour
4) Construction labour
5) Factory worker
6) Service(govt/pvt)
7) Self-employed business/shop
8) Housewife/Not currently working
9) Others(specify-----------------------------)

** Relationship code

01= SELF
02= HUSBAND
03=SON OR DAUGHTER
04=SON-IN-LAW-DAUGHTER-IN-LAW
05=GRAND CHILD
06=PARENT
07=PARENT-IN-LAW
08=BROTHER OR SISTER
09=BROTHER-IN-LAW/SISTER-IN-LAW
10=NI ECE/NEPHEW
11=OTHER RELATIVE
12=ADOPTED/FOSTER/STEPCHILD
13=DOMESTIC SERVANT
14=OTHER BIT RELATED
98=DON'T KNOW
### Section C: SOCIOECONOMIC CLASSIFICATION

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.1</td>
<td>Type of house (observe)</td>
<td>Pucca house</td>
<td>Semi-pucca house</td>
<td>Kachha house</td>
</tr>
<tr>
<td>C.2</td>
<td>Does your household own any agricultural land</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>C.3</td>
<td>What is the main source of drinking water for your house?</td>
<td>Private Tap</td>
<td>Private Hand Pump</td>
<td>Public Tap</td>
</tr>
<tr>
<td>C.4</td>
<td>What is your average monthly expenditure (ask the respondent to consider the average expenditure incurred for food, rent, schooling of children, clothing, regular healthcare and other household expenses. Avoid events such as pregnancy, death, marriage etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.5</td>
<td>If the average monthly expenditure (in C.4) exceeds the monthly income (in B.1) then ask about sources of meeting the deficit</td>
<td>Loan</td>
<td>Others (specify)</td>
<td></td>
</tr>
</tbody>
</table>
**Section D: Membership and Trust**

1. Do you consider yourself/household member to be active in the group, such as by attending meetings or volunteering your time in other ways, or are you relatively inactive? Are you/household member a leader in the group?
   (Note: Let the respondent answer first, and then probe for details)

<table>
<thead>
<tr>
<th>Household Member (use roster code)</th>
<th>Name of organization</th>
<th>Type of organization (use codes below)</th>
<th>Degree of participation (use code below)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mahila mandal.................................................1</td>
<td>Leader...........................................1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trade union.....................................................2</td>
<td>Very active.................................2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-help groups..............................................3</td>
<td>Somewhat active.........................3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit or savings group.................................4</td>
<td>Not active.................................4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Religious or savings group or festival society.........5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Caste association.............................................6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development group or NGO.................................7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agricultural, milk, or other cooperative................8</td>
<td></td>
</tr>
</tbody>
</table>

2.1 In this village/ neighbourhood, do people generally get along with each other or is there some conflict or lot of conflict?
   Lot of conflict....1
   Some conflict.....2
   Get along........3

2.2 Do you think over the last one year this level of trust has gotten better, gotten worse, or stayed about the same?
   Better.........1
   The same....2
   Worse........3

2.3 In some communities, when there is a water supply problem, people bond together to solve the problem. In other communities, people take care of their own families individually. What is your community like?
   Bond together to solve problem.....1
   Each family solves individually ......2

2.4 In this village/neighbourhood, how much conflict would you say there is among the communities/jatis that live here?
   Lot of conflict....1
   Some conflict....2
   Not much conflict....3
### Section E1. GENERAL HEALTH STATUS

<table>
<thead>
<tr>
<th>E.1.1</th>
<th>How would you rate the state of your health?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Very good</td>
</tr>
<tr>
<td>2.</td>
<td>Good</td>
</tr>
<tr>
<td>3.</td>
<td>Fair</td>
</tr>
<tr>
<td>4.</td>
<td>Poor</td>
</tr>
<tr>
<td>5.</td>
<td>Very Poor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E.1.2</th>
<th>Where was your last delivery?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Home delivery assisted by dai/relatives/ friends (&lt; Q3)</td>
</tr>
<tr>
<td>2.</td>
<td>Home delivery assisted by doctor/ANM/Nurse/other health personnel</td>
</tr>
<tr>
<td>3.</td>
<td>Government health centre/ hospital</td>
</tr>
<tr>
<td>4.</td>
<td>Private nursing home/ hospital</td>
</tr>
<tr>
<td>5.</td>
<td>Others (specify) <strong>______________________________________</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E.1.3</th>
<th>What are the reasons for not going to health facility for delivery? <em>(Note: Ask the question only for home deliveries)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cost too much</td>
</tr>
<tr>
<td>2.</td>
<td>Poor quality of service</td>
</tr>
<tr>
<td>3.</td>
<td>Too far/No transport</td>
</tr>
<tr>
<td>4.</td>
<td>Not necessary</td>
</tr>
<tr>
<td>5.</td>
<td>Not customary</td>
</tr>
<tr>
<td>6.</td>
<td>Family did not allow</td>
</tr>
<tr>
<td>7.</td>
<td>Lack of knowledge</td>
</tr>
<tr>
<td>8.</td>
<td>Other</td>
</tr>
<tr>
<td>9.</td>
<td>NA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E.1.4</th>
<th>Are you or your husband currently doing something or using any method to delay or avoid getting pregnant?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Yes</td>
</tr>
<tr>
<td>2.</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E.1.5</th>
<th>Which method are you or your husband using? <em>(CIRCLE ALL MENTIONED)</em> IF MORE THAN ONE METHOD MENTIONED, HIGHEST METHOD ON LIST.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Female sterilization</td>
</tr>
<tr>
<td>2.</td>
<td>Male sterilization</td>
</tr>
<tr>
<td>3.</td>
<td>IUD</td>
</tr>
<tr>
<td>4.</td>
<td>Oral pills</td>
</tr>
<tr>
<td>5.</td>
<td>Injectables</td>
</tr>
<tr>
<td>6.</td>
<td>Condoms</td>
</tr>
<tr>
<td>7.</td>
<td>Rhythm method</td>
</tr>
<tr>
<td>8.</td>
<td>Withdrawal</td>
</tr>
</tbody>
</table>
### Section E.2 GENERAL HEALTH STATUS

<table>
<thead>
<tr>
<th>Family member by number</th>
<th>Does [NAME] suffer from a chronic illness or disability that has lasted more than 6 months?</th>
<th>How long has [NAME] had this illness or disability?</th>
<th>Has this chronic illness or disability been diagnosed by a medical doctor?</th>
<th>Which part of [NAME’s] body is most affected by this chronic illness or disability?</th>
<th>During the last 4 weeks has [NAME] had any acute illness or injury?</th>
<th>What type of acute illness or injury did [NAME] have?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES ... 1</td>
<td>IF MORE THAN ONE, TALK ABOUT THE MOST SERIOUS ONE</td>
<td>Yes...1</td>
<td>HEART/CIRCULATORY SYSTEM ....... 1</td>
<td>YES ... 1</td>
<td>COLD/FLU .............. 1</td>
</tr>
<tr>
<td></td>
<td>NO ... 2</td>
<td></td>
<td>No...2</td>
<td>LUNGS/RESPIRATORY SYSTEM ....... 2</td>
<td>NO ... 2</td>
<td>STOMACH .............. 2</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>STOMACH/DIGESTIVE SYSTEM ....... 3</td>
<td>&lt; Part D.2</td>
<td>DIARRHOEA .............. 3</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>HEAD ............................................... 4</td>
<td></td>
<td>HEADACHE .............. 4</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>ARMS OR LEGS .............................. 5</td>
<td></td>
<td>HEART .............. 5</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>BACK/SPINE .................................... 6</td>
<td></td>
<td>LUNG .............. 6</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>REPRODUCTIVE ORGANS (UTERUS/OVARIES) ....................................... 7</td>
<td></td>
<td>BROKEN BONE ........... 7</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>OTHER INTERNAL ORGANS ............. 8</td>
<td></td>
<td>TYPHOID .............. 8</td>
</tr>
<tr>
<td></td>
<td>Months</td>
<td>Years</td>
<td></td>
<td>OTHER (specify) ................................ 11</td>
<td></td>
<td>MALARIAS .............. 9</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HEPATITIS .......... 10</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OTHER .............. 11</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Specify)</td>
</tr>
</tbody>
</table>
### Section E. 3 GENERAL UTILISATION OF HEALTH CARE SERVICES

<table>
<thead>
<tr>
<th>Family member by number</th>
<th>In the past 4 weeks has [NAME] visited a health worker for any reason?</th>
<th>Yes...1</th>
<th>No.....2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(If No, go to Sec F) Report only the most significant visit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For what condition did [NAME] receive this care?</th>
<th>Where did [NAME] receive this care?</th>
<th>How long did it take to travel to consultation?</th>
<th>How much did [NAME] pay in official charges, including payments for laboratory tests, for all the consultations in the last month?</th>
<th>How much did [NAME] pay for medicine in the last month?</th>
<th>What was the value of any gifts (money, food, jewellery, services etc.) made to the medical staff for all the consultations in the last month?</th>
<th>How did you arrange money for treatment?</th>
<th>Report multiple coping mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart ..............1</td>
<td>Govt. health centre/clinic/post....1</td>
<td>TIME ONE WAY</td>
<td>Amount</td>
<td>Amount</td>
<td>Amount</td>
<td>Amount</td>
<td>1st 2nd 3rd</td>
</tr>
<tr>
<td>Respiratory ......2</td>
<td>Gov. Dispensary....................2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st 2nd 3rd</td>
</tr>
<tr>
<td>Digestive ........3</td>
<td>NGO hospital..........................3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st 2nd 3rd</td>
</tr>
<tr>
<td>Diarrhoea ........4</td>
<td>NGO health centre/clinic/post.......4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st 2nd 3rd</td>
</tr>
<tr>
<td>Malaria ..........5</td>
<td>Nursing/maternity home</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st 2nd 3rd</td>
</tr>
<tr>
<td>T.B. ...............6</td>
<td>Private hospital....................5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st 2nd 3rd</td>
</tr>
<tr>
<td>Injury ..............7</td>
<td>Private clinics......................6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st 2nd 3rd</td>
</tr>
<tr>
<td>Maternity ........8</td>
<td>AYUSH doctor..........................7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st 2nd 3rd</td>
</tr>
<tr>
<td>Abortion ............9</td>
<td>Traditional Healer...................8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st 2nd 3rd</td>
</tr>
<tr>
<td>Cancer ..........10</td>
<td></td>
<td>Report multiple places visited</td>
<td>Report actual travel time in hours</td>
<td>Amount</td>
<td>Amount</td>
<td>Amount</td>
<td>1st 2nd 3rd</td>
</tr>
</tbody>
</table>

| Other (Specify)........11 |                                   | 1st 2nd 3rd |                             | 1st 2nd 3rd |                             | 1st 2nd 3rd | 1st 2nd 3rd | 1st 2nd 3rd | 1st 2nd 3rd |

1

2

3

4

5

6
### Section F: Care of new born and childhood diarrhoea

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>F.1 How many hours after childbirth did you start breastfeeding?</td>
<td>___________</td>
</tr>
</tbody>
</table>
| F.2 Was the first milk of the mother thrown away?                        | 1. Yes  
2. No  
3. Do not know                                                         |
| F.3 For how many months did you exclusively breast feed your child?      | ___________                                                             |
| F.4 Do/did you give water to the baby before completion of six months?  | 1. Yes  
2. No                                                             |
| F.5 Has your child (<2 years) suffered from diarrhoea in last 2 weeks    | 1. Yes  
2. No                                                             |
| *Diarrhoea refers to lose watery stools three or more times a day*      |                                                                       |
| F.6 How long did the diarrhoea last?                                     | Report in no. of days                                                   |
| F.7 Did you seek medical care for diarrhoea                             | 1. Yes  
2. No                                                             |
| F.8 If no (Ques E.8), why have you not sought medical care?             |                                                                       |
| F.9 Do you know what to do when your child gets diarrhoea? (RECORD ALL  | YES        NO               |
| MENTIONED)                                                               | A. GIVE ORS SOLUTION.................  1  2                          |
|                                                                         | B. SALT AND SUGAR SOLUTION...........  1  2                          |
|                                                                         | C. GIVE PLENTY OF FLUIDS.............  1  2                          |
|                                                                         | D. CONTINUE NORMAL FOOD ...........  1  2                            |
|                                                                         | E. CONTINUE BREASTFEEDING ..........  1  2                            |
|                                                                         | F. OTHER ..................................  (SPECIFY)               |
|                                                                         | G. DO NOT KNOW........................  1  2                          |
## Section G: Hygiene and Sanitation

| G.1 | Where do you obtain drinking water? | 1. Chlorinated water  
2. Well water  
3. Municipality/ panchayat piped water  
4. Others |
|-----|------------------------------------|---|
| G.2 | Do you treat your water in any way to make it safer to drink? | 1. Yes  
2. No |
| G.3 | IF YES, what do you usually do to the water to make it safer to drink? | 1. Cloth filtration  
2. Chlorine  
3. Boiled water  
4. Water filter |
| G.4 | Do you have a toilet at home? | 1. Yes  
2. No |
| G.5 | How many households share this facility? | 1. Toilet used by only one family  
2. Toilet shared between two houses  
3. Toilet shared between three houses  
4. Community toilet facility |
| G.6 | What are components of personal Hygiene? | 1. Brushing the teeth  
2. Bathing everyday  
3. Wearing clean clothes  
4. Regular hand washing with soap  
5. Wash foods properly before cooking  
6. All the above |
Key Informant Interview Guide

For use with Program Managers and Health Animators

Area Identifier

Village: ......................................
Block: ......................................
State: ......................................

Respondent Identifier

Respondent category: Mark [v]

Project Manager [    ]
Health Animator [    ]

Organization __________________

How long have you been doing this job?

Gender of respondent: Male [    ]Female [    ]

Age [    ]

A. Organization of SHG
1. How do the self-help groups function in the community? (Probe for any group such as sakhi mandal, bachat mandali, milk cooperative etc).
2. What are some of the group’s major strengths?
3. What are some of the major challenges in working with the group?

B. Community Awareness and Access to health services
1. What do you think are the priority issues for women and children in this community?
   a. What is your basis for this view?
2. What do you think are some of the major health issues in the community?
   a. What do you think are the root causes of this problem?
   b. What do people do about this?
   c. How do people arrange money for treatment?
3. Where does the community go when they fall sick?
4. Are there any barriers in getting adequate care from nearby health centre?
   a. If so, what are the issues?
   b. Apart from savings, what are some of the available options to pay for cost of care?

C. Health Programs
1. What are the key health issues addressed by the health program?
   a. Why were those issues selected?
Appendices

b. How are the programs delivered?

c. Are there issues that were not addressed by the program?

2. What strategies did [insert name of MFI] use to change attitudes and practices related to women and child health? Does the organization provide any support for those who cannot pay for their cost of care?
   a. What are the key challenges faced?

3. What do you think has been the impact of the project in improving institutional delivery?

4. What do you think has been the impact of the project in use of toilets at home?

5. What do you think has been the impact of the project in financing cost of care?
   a. What is the basis for your view (e.g. data, observation)?

D. Lessons Learned

1. What are the lessons to ensure that their programming contributes to reduce some of the health problems faced by the community?

2. Do you have any recommendations to help the project contribute to address the problems discussed above?

E. Closing

1. Do you have any questions of the study team before we conclude the interview/discussion/activity?
FGD description Sheet (for researchers)

Number of Respondents: ..............................................

Date of discussion: ...................................................

Time of discussion: ...................................................

Place of discussion: ...................................................

Village: .................................................................

Block: .................................................................

State: .................................................................

Note to moderator

Focus group composition

It is preferable that participants are relatively similar to one another in terms of age, culture, sex, social class, etc. By attempting to create a more homogeneous profile of participants within each focus group, you may be able to increase group comfort level. The ideal size for a focus group is eight to ten respondents.

Location

The location where the discussions will be held should be carefully selected. It should be private, ideally the place where the groups normally meet, so that participants may speak without being overheard or seen by others not in the group. Avoid noisy areas where it will be difficult for participants and the moderator to hear each other. In addition, the setting should be comfortable, non-threatening, and easily accessible for the respondents. Seating should be arranged to encourage participation and interaction, preferably in a circle where all respondents can see each other and the moderator.

Conducting the Group Discussion

When the group of respondents is gathered for the discussion, the moderator should give a brief introduction to put everyone at ease. She/he should explain the purpose of the discussion, the plans to use the information collected, and the group rules (speak one at a time, avoid interrupting or monopolizing, etc.). Explain that the discussion is confidential and that participants should respect each other’s right to privacy. Of special importance, the moderator should inform the participants that she/he will be asking general questions about issues in their community affecting women, men, and families, and she/he is NOT requesting that participants disclose personal information about themselves. In fact, in focus group discussions where confidentiality cannot be absolutely ensured, moderators should monitor participants’ rates of disclosure and actively discourage participants from self-revelations within the group.
Use Probes When You Need More Information. When participants are not providing enough information, try the following probes: a. Would you explain further? b. Would you give me an example of what you mean? c. Would you say more? d. Tell us more. e. Is there anything else? f. Please describe what you mean. g. I don’t understand. h. Does anyone see it differently? i. Has anyone had a different experience?
## Topic Guide for Focus Group Discussion

<table>
<thead>
<tr>
<th>Core Study Questions for SHG members</th>
<th>Thematic areas to explore (and sample question)</th>
<th>Probing questions</th>
</tr>
</thead>
</table>
| **A. Community context**             | 1. Please tell us about different livelihood activities in this community.  
                                        2. Please tell us some of the different services (such as schools, health centres, banks) in the community.  
                                        3. Are there important religious and/or ethnic differences?  
                                        4. Tell us about some of the major problems the community faced in last three months. | Probe for problems related to livelihood, access to financial institutions, accessibility to health centres, poor roads, water or land rights, etc. |
|                                      | **B. Groups and networks**                      |                   |
|                                      | 1. Please identify some of the groups or associations that exist in the community. What are some of the key things these groups do?  
                                        2. Tell us about the networks or groups people typically rely on to resolve issues of daily life.  
                                        3. Do the networks or groups discuss common health problems in the community? If yes,  
                                            a. Please explain further the key health issues generally discussed in group meeting  
                                            b. Does anyone facilitate the discussion  
                                            c. Apart from discussion, are there additional support by [insert name of MFI] to address your health needs  
                                            d. Did the group ever got together to solve common health problems in the community? Does anyone facilitate those initiatives? | • Ask for frequency of group meeting, activities during the meeting  
• Who plays a leadership or mobilizing role in the groups or networks,  
• Characteristics most valued among network members (e.g., trustworthiness, reciprocity, cooperation, honesty, community respect, etc.) |
| C. Contributions of selected projects in reducing access barrier | 1. What do you feel are some of the major illnesses among children under three years of age in this area?  
2. What are some of the main health problems affecting adult in this community?  
3. What are the causes of these problems? Are there beliefs or external constraints that aggravate the problem? What could motivate changes in behaviour?  
4. How does the [insert name of MFI] project helped to address these problems?  
5. (Ask for key program elements, program elements that were not as successful)  
6. How do you describe the health situation before and after the health program?  
7. Please take a moment and list three ways how these project should be modified to address the problems in your community. | As a result of the health program run by [insert name of MFI] please explain:  
- Compared to last year, are more women delivering in an institution?  
- Do you think this change is due to [insert name of MFI] project? Why do you think this way?  
- Compared to last year, is there any change in hygiene and sanitation practices in your village, for example are more people having and using toilets at home?  
- Do you think this change is due to [insert name of MFI] project? Why do you think this way?  
- Compared to last year, is there any change in reported childhood diarrhoea?  
- Do you think this change is due to [insert name of MFI] project? Why do you think this way?  
- Compared to last year, have you observed any change in out of pocket expenditure on treatment?  
- Do you think this change is due to [insert name of MFI] project? Why do you think this way? |
Author/s: Saha, Somen

Title: The role of microfinance-based self-help groups in improving health behaviours and outcomes of the poor in India

Date: 2016

Persistent Link: http://hdl.handle.net/11343/122777

File Description: The Role of Microfinance-based Self-Help Groups in Improving Health Behaviours and Outcomes of the Poor in India

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