

Title:

The role of microfinance in reducing poverty-driven healthcare costs: A systematic review

Authors:

Lolita L. Aranas ^{a,d}, Rasheda Khanam ^b, Mafiz Rahman ^b, Son Nghiem ^c

^a Graduate Research Studies, University of Southern Queensland

Lolita.Aranas@usq.edu.au lolita.aranas@jru.edu

^b School of Commerce, University of Southern Queensland

rasheda.khanam@usq.edu.au

Mafiz.Rahman@usq.edu.au

^c Centre for Applied Health Economics, Griffith University

sngkiem@griffith.edu.au

^d Corresponding author: Lolita.Aranas@usq.edu.au

AUTHOR CONTRIBUTION

LA conceived the paper, designed the method, screened articles, made the full-paper review of the eligible articles and carried out the descriptive analysis of included articles, drafted and edited the manuscript. RK, MR and SN verified the articles, oversee the data analysis, reviewed and edited the manuscript. All authors contributed in search of articles, interpretation of results, critical review and revision of the manuscript.

Declaration: No payment or services from a third party received for any aspect of the submitted work.

No relationships/conditions/circumstances that present a potential conflict of interest.

1.1. Abstract

The global health sector has identified poverty-driven healthcare costs that compel poor people to delay or forgo needed medical care. This can lead to disease progression or worse, death. The health sector alone cannot address such a challenge. This study focuses on the role of microfinance in promoting health among marginalised populations by reducing medical care and treatment costs. It aims to provide insights that will guide health promotion practices among MFIs and make a valuable contribution to the healthcare system.

The authors conducted a systematic review of the literature published between 1990 and the present from the databases of EBSCO, EconLit, RePEc, Web of Science, PubMed, Google Scholar, and webpages from the World Health Organization. Using the search terms: *microfinance* OR *microlending* OR *microcredit* OR *microfinance, medication costs* OR *cost of medical care* OR *cost of health care* OR *healthcare costs* OR *medical costs* OR *health care costs*, 817 articles were reviewed, 39 articles qualified for further reading after a title and abstract review. Only seven articles met the criteria and were analysed.

This review suggests that microfinance institutions' (MFIs') core competencies in finance and healthcare linkage capabilities can potentially reduce poverty-driven healthcare costs using different schemes of combined microfinance-healthcare models. Although promoting healthcare and sustaining healthcare cost-reduction interventions are challenging for many MFIs, it is imperative to sustain these interventions. More studies are needed to examine more MFIs' healthcare cost-reduction initiatives, their outcomes, and other sustainable actions towards promoting medical care and treatment adherence.

Keywords: microfinance, healthcare cost, medical care cost, poverty

1.2. Introduction

Globally, the issue of rising healthcare costs is a constant challenge to the healthcare system. For the poor, the costs of treatment and medical care services are a significant financial burden (World Bank, 2014). Healthcare costs, however, are not only confined to direct spending for medical procedures and medicines. Costs also include indirect outlays incurred by to-and-fro transport, accommodation, and other equipment used for health-related care. For people with low incomes, both direct and indirect healthcare spending can be catastrophic and deter adherence to medical care (Flores, Krishnakumar, O'Donnell, & van Doorslaer, 2008). Poor households cope by reducing food consumption, children's education (Alam & Mahal, 2014), or forgoing medical treatment (Russell, 2004). Others respond through borrowing, increasing their mortgage (Habib et al., 2016), or selling their limited assets (Islam, 2011) The burden of healthcare costs are not only impoverishing but also cyclical to poverty.

In parallel with initiatives to combat poverty and the burden of diseases; the healthcare sector has positioned itself to take the populace closer to achieving the goals of UHC. However, despite advances which improve healthcare, issues with overcoming the burden of acute and chronic diseases, poor health-seeking behaviour and the cost of medical treatment continue to confront healthcare systems. Russell (2004) argued that improving health services alone could not protect households from all illness costs. Essue et. al (2015) mentioned that an estimate of 150 million people around the world struggle to meet the costs of accessing and using health care. Many impoverished people delay treatments as long as possible and a collective response to illness is to "wait and see" (Chronic Poverty Research Centre, 2008-09). Unless an illness is perceived as severe, household members do not seek treatment (Jembere, 2018). The issue of healthcare costs is significant because a higher level of healthcare service (tertiary and secondary healthcare) mostly entails the higher cost of service utilisation (Ensor & Cooper, 2004). Access to all levels of healthcare services is vital because diseases are dealt with based on the stage of progression – from risk factors, signs, symptoms, sickness, rehabilitation, to death if left untreated.

Healthcare issues are mostly faced by people from developing countries where government and healthcare systems do not adequately provide financial protection to their population against high-care costs. With limited or no financial

health protection and where medical care is inevitable, people are forced into OOP expenditure. The World Health Organization (2010) defines OOP as direct payments made by individuals to healthcare providers at the time of service use. Accordingly, low to middle-income countries registered an average of 38.89% to 56.19% OOP expenditure in 2016, which equates to many people not having enough financial protection for health. In the quest to alleviate impoverishing healthcare costs, strategies directed towards social health risk protection are essential. The WHO noted that a lack of social health protection impedes health service access (2019). Likewise, Aregbeshola and Khan (2018) concluded that aside from an increase in public healthcare funding, there is an urgent need to provide social health protection plans against OOP health payments to afford financial risk protection.

One of the development initiatives which focuses on financial risk protection and poverty alleviation involves organising microfinance for the poor. Community-led microfinance adheres to the principle of cooperativism. In most cases, members take the membership into a microfinance system. It is, thus, easy to integrate health and welfare concerns such as practical health courses, nutrition, and sanitation into the system (Leatherman & Dunford, 2010). MFIs in Africa, Asia and Latin America successfully offered services beyond microcredit by employing interventions which provided financial and health risk protection among their members (Ruducha & Jadhav, 2018). Habib (2016) posited that MFIs contribute financial protection by reducing OOP health expenditure, total health expenditure and household borrowing. Particularly noted is evidence illustrating an increased number of health-related services that facilitate access to healthcare (Amin, St. Pierre, Ahmed, & Haq, 2001) and significant improvement in the use of medical care (Agha, Balal, & Ogojo-Okello, 2004). Other studies mentioned that microfinance membership promoted greater health awareness of health services (Hamid, Roberts, & Mosley, 2011a) and demonstrated positive effects on health knowledge and health-seeking behaviour among households (Bhuiya, Khanam, Rahman, & Nghiem, 2018). Gertler (2009) confirmed the ability of microfinance to mitigate the effects of health shocks such as hospitalisation, medical treatment or death due to ill health, and non-medical expenditures including food and transportation.

The effects of mitigating health cost shocks by using microfinance programs (Pham Tien Thanh, 2017), increases health awareness and health-seeking behaviour. These effects reduced the barriers to healthcare utilisation for primary and preventive care (Hamid et al., 2011a), but not necessarily medical care or treatment costs. Medical care affordability continues to be an issue. Impoverishing healthcare costs are considered to be one of the significant causes of poverty (World Health Organization, 2019), along with the burden of diseases (Taber, Leyva, & Persoskie, 2015) and poor healthcare utilisation (Jembere, 2018). Similarly, healthcare systems identified these issues as significantly contributing to why many people forgo or do not adhere to medical care.

On a positive note, as governments advocate microfinance, their healthcare systems can capitalise on the strength and promising role of MFI-healthcare partnerships. Molyneux (2007) argued for the importance of building on organisational networks that will assist households in meeting treatment and medical service costs. However, to our best knowledge, there is no systematic review that synthesised evidence of the extent to which microfinance affects healthcare costs. This review will explore the MFIs' interventions in addressing healthcare costs which compel poor people to forgo or not adhere to medical care or treatment. Exploring their potential will answer the call of UHC and add valuable information to the existing body of knowledge.

1.3. Method

Search strategy

The authors conducted a rigorous and systematic review of the literature published between 1990 and the present from the databases of EBSCO, EconLit, RePEc, Web of Science, PubMed, Google Scholar, and retrieved peer-reviewed articles and webpages from WHO. We used the search terms search terms: *microfinance OR microlending OR microcredit OR microfinance, medication costs OR cost of medical care OR cost of health care OR healthcare costs OR medical costs OR health care costs*. The selection criteria considered were: (1) Population: MFIs, (2) Intervention: Health strategies that aim to reduce medical care costs, treatment costs, (3) Outcome: Supports medical care service utilisation, treatment adherence and reduced medical care costs, particularly among the poor.

Study selection

PRISMA was used to manage the literature search and selection process (Appendix A). The preliminary search returned 817 papers from different databases. Following de-duplication, title and abstract searches on 778 articles were conducted. The first author independently assessed the title, abstracts and full paper of shortlisted articles. With considerations of the inclusion criteria, two reviewers voted on each article and conflicts were resolved through discussions and by a third reviewer. The identified articles for initial review were uploaded to two developed Excel data templates. One template was customised to screen and assess articles and resolve disagreements. Another was tailored to display the characteristics of the study such as author/s name, article type, publication year, country, objectives, study design and results/key finding concerning medical and treatment cost-reduction.

In the screening stage, 778 articles did not meet the inclusion criteria, thus were excluded; while 39 articles were shortlisted for eligibility. After a full paper review of all eligible articles, seven articles met all inclusion criteria and were critically examined. Since the methodologies and settings of the study/report were heterogeneous, we decided not to conduct a quantitative synthesis or meta-analysis. The included articles had differences in study designs, population covered, and the inability to directly examine MFI interventions on medical care or treatment costs. However, all seven articles found that MFIs' health-related activities had reduced healthcare or treatment costs. Appendices B and C show the Excel template populated with characteristics and quality (Critical Appraisals Skills Programme, 2019) of the articles which met the inclusion criteria.

While many studies were found to reduce poverty and improve health, none were found to specifically investigate medical care and treatment cost-reduction. The primary objective of this study is to present essential elements that will help understand and clarify what is known about the role of microfinance in reducing poverty-driven healthcare costs. Hence, only articles/reports that explicitly narrated the activities and results were included. Articles that did not stipulate cost-reduction measures by an MFI were excluded. Peer-reviewed reports from the WHO were considered to be included articles.

1.4. Results

From the list of 39 articles initially shortlisted after the title and abstract review, 32 were excluded either due to lack of evidence of medical care or treatment cost-reduction. Most of the excluded articles demonstrated protection from OOP expenditure caused by ill health but did not necessarily reduce the cost of medical care or treatment. Table 3.1 shows a summary of the characteristics of the seven articles that were finally included.

All seven articles/reports in this review showed evidence of potential microfinance medical care or treatment cost-reducing initiatives. Peer-reviewed studies came from Argentina, Bangladesh, Bolivia, Ethiopia, Guatemala, India, Mexico, Nicaragua and Peru. The analysis of the seven articles revealed that interventions employed by MFIs could potentially reduce medical and treatment costs, namely: (1) microfinance and community-based health insurance; (2) microfinance and micro-health insurance; (3) microfinance and micro-franchise; (4) microfinance with integrated services; (5) a microfinance and care model. Notably, all measures were geared towards an MFI network and collaborative effort. Table 3.1 shows the summary of findings of MFI interventions in reducing medical and treatment costs of the included articles.

Table 3.1:

Summary of findings of MFI interventions in reducing medical or treatment costs of the included articles

MFI interventions	Description	Number of studies and participants	Quality of evidence	Included article
Integrated health services	MFIs provide primary healthcare or combine health programs with microfinance activities With collaborative partnerships With health organisations	Three studies MFI with integrated health programs Health organisation linkage	High quality	Colom et al. (2018) Geissler and Leatherman (2015)
Model of care	Microfinance and health organisation provides social support to clients with specific health needs.	One studies MFI Groups with specific health	High quality	Muñoz et al. (2011) Saha et al. (2015)
Micro-franchise	Microfinance creating health franchises using groups of affiliated doctors or nurses within the community	One article MFI Affiliated doctors or nurses	Good	Lashley (2008)
Community-based health insurance	MFIs linkage with existing community-base health insurance	One study MFIs community-based health insurance partnering with non-government hospitals	High quality	Devadasan et al. (2007)
Micro-health insurance	MFI in collaboration with medical centres	One study	High quality	Hamid et al.(2011b)

This review identified five interventions employed by MFIs which potentially contribute to the reduction of medical care or treatment costs among their members.

1. *Microfinance and integrated health services.* The literature offers ample confirmation that MFIs' networks with organisations offering free or discounted health services and utilities had gained popularity. A case study conducted in Latin America regarding the provision of a universal screening program and primary care services in conjunction with microfinance loans showed evidence of the capability of MFIs to reduce healthcare costs and access-barriers to

healthcare use (Geissler & Leatherman, 2015). As mentioned in the study, MFI clinics were co-located with loan services to directly provide preventive and primary care services to female adult clients and their children. Primary care services included annual health screenings, counselling, and delivery of modules on health education. Referral for secondary and tertiary care was covered, and point of care was free. Other services, such as diagnostic tests and dental services, were fee-for-service at nominal or discounted rates. Notably, the MFIs' health program component addressed the affordability of health services and products. Services were reduced to an affordable price, thus improving treatment and medical service adherence among clients from Argentina, Bolivia, Mexico, Nicaragua, and Peru.

In a similar manner, an MFI Friendship Bridge alliance with Wuqu Kawoq, a primary healthcare system providing services in rural Guatemala, reduced the barrier to care by offering preventive services at no cost, a low treatment package for clients with confirmed diabetes and hypertension and assistance with follow-up care at no cost for positive cervical and breast cancer screening (Colom et al., 2018). Accordingly, the overall acceptance of the medical care services under the MFI Friendship Bridge program was high.

2. *Microfinance and model of care.* Muñoz et al. (2011) mentioned that through an MFI and the Peru National HIV Program partnership, patients starting antiretroviral therapy received Community-based Accompaniment with Supervised Antiretrovirals (CASA), psychosocial group support and microfinance assistance. Alongside business technical training, HIV patients were given financial aid for diagnostic tests and treatment, transportation and nutritional support. Unquestionably, CASA tailored a treatment adherence intervention which targeted the reduction of indirect healthcare costs for HIV clients. The study concluded that the MFI-CASA partnership increased the adherence to retroviral treatment among the vulnerable populations in Peru. Meanwhile, in India, Saha (2015) mentioned that the MFI Swayan Krishi Sangaw offers cashless maternity, hospitalisation and accident benefits to its members among network hospitals.
3. *Microfinance and micro-franchise.* In Kenya, HealthStore clinics used microfinance and a micro-franchise model (Lashley, 2008) to provide cheap and quality medicines (Berk & Adhvaryu, 2012). Some of the services offered by

the HealthStore were diagnostic tests, medicines for common illnesses, and general health counselling. The HealthStore Clinic is an example of an emerging development strategy that builds on microfinance (Berk, 2011) and works with three classes of partners – the government, donors and suppliers (Fertig & Tzaras, 2005). In Argentina, MFI members access healthcare services such as maternal and child care, and specialised and general medicine through a system of affiliated doctors and an MFI subsidy (Lashley, 2008). Accordingly, MFI members and their extended families only pay a third of the consultation cost per visit.

4. *Microfinance and community-based health insurance*. In India, access for the self-help group to microfinance which offered health products through Community Health Insurance (CHI), reported lower expenditure than the comparison group, for the treatment of health problems. Devadasan et al. (2007) mentioned that the CHI scheme reduced OOP expenditure among insured members as they were entitled to hospital care up to US\$23, while non-insured members paid the whole of a hospital bill costing between US\$15-20. The CHI was effective in halving the incidence of catastrophic health events among hospitalised patients (Somen Saha & Annear, 2015). It indicated that the CHI package for MFI members protected up to US\$83 in medical expenses per year while paying only a US\$3 annual contribution. Similarly, the community-based health insurance scheme introduced in Ethiopia improved the overall utilisation of health services. Jembere (2018) noted that the CHI scheme made healthcare services more affordable and equitable, thus, it increased the access and use of healthcare services.
5. *Microfinance and micro-health insurance (MHI)*. In Bangladesh, the microinsurance for health targeted towards the poor and the ultra-poor, provided basic healthcare at an affordable rate (Werner, 2009). The micro-health insurance scheme of Grameen Bank offered primary healthcare directly from its health centres (Hamid et al., 2011b). Accordingly, its service package comprising mainly curative care, maternal and child healthcare, benefitted its members with reduced medical consultation fees, discounts on drugs and tests, hospitalisation benefits, free annual health check-ups and immunisations. Compared to non-cardholders, MHI cardholders benefitted from a 40 to 50% lower consultation fee, 25% lower pathological test fees, hospitalisation benefits

of US\$29, school health packages and cataract operations. Hamid concluded that MHI affordable offerings significantly improved the use of basic healthcare services among MFI members. In developing countries, MHI has been used as a means of risk pooling and reducing OOP health expenditure (Habib et al., 2016). Accordingly, it allowed the poor to smooth consumption, and avoid informal loans and health shocks. MHI helped prevent households from potentially reducing food consumption, thereby protecting the health of vulnerable household members (Akotey & Adjasi, 2018). MHI is a microinsurance defined as "protection of low-income people against financial risk, in exchange of payment of premiums, according to the probability and cost of the risk" (Churchill, 2019).

1.5. Discussion

This systematic review primarily focused on the role of MFIs in reducing direct and indirect costs of health and medical care utilisation. Our analysis supports the findings of other studies which indicate that MFIs had made significant contributions in supporting health and protecting financial health risks and are considered to be emerging potential actors in reducing financial barriers to medical treatment (K. Geissler et al., 2013).

This review points out that many studies have been undertaken to evaluate the roles of MFIs in improving health and reducing access-barriers to healthcare services. However, none evaluated the medical care and treatment cost-reduction strategies of MFIs. This review examined the pieces of evidence that linked the role of MFIs in reducing medical care and treatment costs. Remarkably, the range of actions was geared towards an MFI and health organisation collaboration and linkages. Such partnerships, with each having a distinctive experience in microfinance or healthcare, made a successful MFI-healthcare alliance which facilitated the access to health service products and providers. This result is consistent with the findings of Ruducha (2018), which concluded that MFIs' current leading intervention to expand health and social services are through cooperative and collaborative partnerships. This finding is also in line with the WHO's advocacy to promote and support partnerships within the private sector for health development (Buse & Waxman, 2001).

Notably, we found that most studies were based on large-scale MFIs. This finding supported a prior study which posited that studies involving MFI integrated health services were linked to large and motivated organisations (2015). For example, Grameen Bank played a significant role in developing microcredit in Bangladesh (Hamid et al., 2011b). Pro-Mujer was one of the few long-term and fully integrated MFIs operating in Latin America (Geissler & Leatherman, 2015). SHGs were extensively promoted in India through government and non-government organisations and have reached an estimate of 93 million members in 2012 (Saha et al., 2015). In Guatemala, Friendship Bridge provided microfinance services and education to more than 20,000 indigenous Mayan women (Colom et al., 2018). Banco Mundial de la Mujer provided microcredit to over 5000 accounts in 2008 in Argentina (Lashley, 2008). These large-scale MFIs' core competencies extended beyond financing, and their expertise and capacities in building up partnerships (Cull & Morduch, 2017) could be a tool in reducing poverty-driven healthcare costs.

Studies are few, although evidence from the Philippines and India were identified. The outcomes of these studies are not published in peer-reviewed journals, hence they are excluded from this review. In the Philippines, the CARD created linkages with healthcare providers to increase affordable access to primary care and essential drugs in rural and semi-rural areas. Meanwhile, other MFIs integrated various health initiatives into their programs, such as periodic medical and dental missions, medical assistance during emergencies, medical loans, and blood monitoring. Some large- to medium-scale MFIs provided feeding programs, free annual check-ups, vitamins, health and safety training, a refund for x-ray and urinalysis, and set-up of blood bank and pharmacies (CDA, 2019). Also, the emergence of a health maintenance cooperative provided a promise to deliver accessible and affordable healthcare among Filipinos (Literatus, 2019). The health cooperative package provided outpatient services, laboratory tests and preventive healthcare services at a reduced price of US\$76.50. Corporate service providers offered a similar range of services at a much higher premium of US\$224.00 to US\$1,263.00 per year. Meanwhile, in India, an MFI Swayan Krishi Sangaw offered cashless maternity, hospitalisation and accident benefits among network hospitals to its members (Saha et al., 2015). It is vital to investigate and measure the impact of

these ongoing initiatives on the incidence of foregone care and treatment adherence and its contribution to alleviating catastrophic healthcare costs.

There are limitations to this review. Reducing medical care or treatment care costs was not the primary outcome of all included studies. The medical care and treatment cost-reduction components were merely within the scope of the studies relating to integrated microfinance and health programs. There is a need to conduct studies using more rigorous designs and indicators to unveil MFIs' contributions to treatment and medical care cost-reduction.

This systematic review emphasised the importance of medical care and treatment in promoting health and reducing the burden of disease. The need for affordable healthcare products is pronounced; thus, interventions beyond the health sector are necessary. Promoting healthcare and sustaining healthcare cost-reduction interventions are challenging for many MFIs; thus, it is imperative to support these interventions.

1.6. Conclusion

MFIs' collaborative and partnership efforts with healthcare potentially play a significant role in reducing the costs of medical care. Although limited, evidence shows that such a unique partnership potentially helps promote medical care or treatment adherence using different schemes of combined microfinance-healthcare models. These schemes can be replicated and customised accordingly by other MFIs. The challenge for more MFIs to advocate and sustain healthcare cost-reduction interventions is urgently encouraged. Notably, a knowledge gap exists due to the scarcity of literature. Not all the included articles solely and extensively focused on reducing medical care or treatment costs. In addition, the data was from large-scale MFIs. Some MFIs are seen to have medical care cost-reducing initiatives; however, there are no studies confirming this. Exploring their practice and output will help fill this gap in the literature. Additionally, the conduct of more studies will help ascertain the potential contribution of microfinance to reduce medical care and treatment costs.

REFERENCES

References:

- Agha, S., Balal, A., & Ogojo-Okello, F. (2004). The impact of a microfinance program on client perceptions of the quality of care provided by private sector midwives in Uganda. *Health services research*, 39(6 Pt 2), 2081-2100. doi:10.1111/j.1475-6773.2004.00333.x
- Akotey, J. O., & Adjasi, C. K. D. (2018). Microinsurance And Consumption Smoothing Among Low-Income Households In Ghana. *The Journal of Developing Areas*, 52(4), 151-165. doi:10.1353/jda.2018.0057
- Alam, K., & Mahal, A. (2014). Economic impacts of health shocks on households in low and middle-income countries: A review of the literature. *Globalization and Health*, 10(1). doi:10.1186/1744-8603-10-21
- Amin, R., St. Pierre, M., Ahmed, A., & Haq, R. (2001). Integration of an Essential Services Package (ESP) in Child and Reproductive Health and Family Planning with a Micro-credit Program for Poor Women: Experience from a Pilot Project in Rural Bangladesh. *World Development*, 29(9), 1611-1621. doi:10.1016/S0305-750X(01)00055-9
- Aregbeshola, B. S., & Khan, S. M. (2018). Out-of-Pocket Payments, Catastrophic Health Expenditure and Poverty Among Households in Nigeria 2010. *International Journal of Health Policy and Management*, 9, 987-806. doi:10.15171/ijhpm.2018.19
- Berk, J., & Adhvaryu, A. (2012). The impact of a novel franchise clinic network on access to medicines and vaccinations in Kenya: a cross-sectional study. *BMJ Open*, 2(4), e000589. doi:10.1136/bmjopen-2011-000589
- Bhuiya, M. M. M., Khanam, R., Rahman, M. M., & Nghiem, H. S. (2018). The relationship between access to microfinance, health-seeking behaviour and health service uses: Evidence from Bangladesh. *Economic Analysis and Policy*, 60, 9-17. doi:<https://doi.org/10.1016/j.eap.2018.08.004>
- Buse, K., & Waxman, A. (2001). Public-private health partnerships: a strategy for WHO. *Bulletin of the World Health Organization*, 79, 748-754. Retrieved from https://www.scielosp.org/scielo.php?script=sci_arttext&pid=S0042-96862001000800011
- CDA. (2019). *A Co-operative Journey to Success: 2017 Gawad Parangal National Winners*. Retrieved from Philippines: http://www.cda.gov.ph/images/Featured_Coops/Success_Stories_Updated.pdf
- Churchill, S. A. (2019). The macroeconomy and microfinance outreach: a panel data analysis. *Applied Economics*, 51(21), 2266-2274. doi:10.1080/00036846.2018.1540857

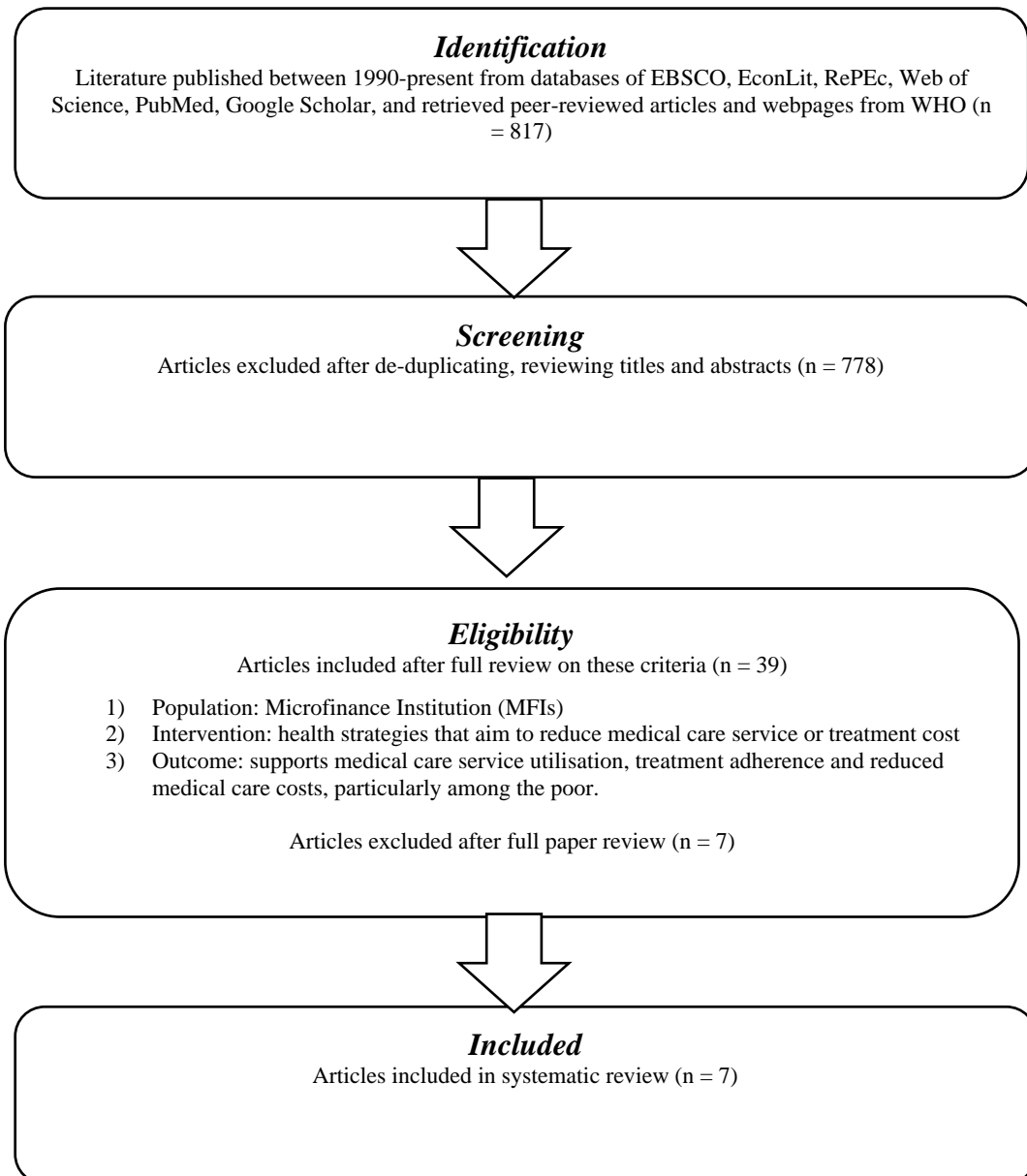
- Colom, M., Austad, K., Sacuj, N., Larson, K., & Rohloff, P. (2018). *Expanding access to primary healthcare for women through a microfinance institution: A case study from rural Guatemala* (2213-0764). Retrieved from
- Critical Appraisals Skills Programme (2019). CASP. Systematic Review Checklist Retrieved from <https://casp-uk.net/casp-tools-checklists/>
- Cull, R., Demirguc-Kunt, A., & Morduch, J. (2018). The Microfinance Business Model: Enduring Subsidy and Modest Profit. *World Bank Economic Review*, 32(2), 221-244. doi:10.1093/wber/lhx030
- Devadasan, N., Criel, B., Van Damme, W., Ranson, K., & Van Der Stuyft, P. (2007). Indian community health insurance schemes provide partial protection against catastrophic health expenditure. *BMC Health Services Research*, 7. doi:10.1186/1472-6963-7-43
- Ensor, T., & Cooper, S. (2004). Overcoming barriers to health service access: influencing the demand side. *Health Policy and Planning*, 19(2), 69-79. doi:10.1093/heapol/czh009
- Essue, Kimman, M., Svenstrup, N., Kjoerge, K. L., Laba, T. L., Hackett, M. L., & Jan, S. (2015). The effectiveness of interventions to reduce the household economic burden of illness and injury: A systematic review. *Bulletin of the World Health Organization*, 93(2), 102-112B. doi:10.2471/BLT.14.139287
- Essue, B. M., Laba, T.-L., Knaul, F., Chu, A., Minh, H. V., & Nguyen, T. K. P. Economic Burden of Chronic Ill Health and Injuries for Households in Low- and Middle-Income Countries. In *Disease Control Priorities, Third Edition (Volume 9): Improving Health and Reducing Poverty* (pp. 121-143).
- Flores, G., Krishnakumar, J., O'Donnell, O., & van Doorslaer, E. (2008). Coping with health-care costs: implications for the measurement of catastrophic expenditures and poverty. *Health Econ*, 17(12), 1393-1412. doi:10.1002/hec.1338
- Geissler, K., Leatherman, S., Gray, B., & Gash, M. (2013). HEALTH FINANCING: A NEW ROLE FOR MICROFINANCE INSTITUTIONS? *Journal of International Development*, 25(7), 881-896. doi:10.1002/jid.2829
- Geissler, K. H., & Leatherman, S. (2015). Providing primary health care through integrated microfinance and health services in Latin America. *Social Science & Medicine*, 132, 30-37. doi:<https://doi.org/10.1016/j.socscimed.2015.03.013>
- Gertler, P., Levine, D. I., & Moretti, E. (2009). Do microfinance programs help families insure consumption against illness? *Health Economics*, 18(3), 257-273. doi:10.1002/hec.1372
- Habib, S. S., Perveen, S., & Khuwaja, H. M. (2016). The role of micro health insurance in providing financial risk protection in developing countries--a systematic review. *BMC Public Health*, 16, 281. doi:10.1186/s12889-016-2937-9

- Hamid, S. A., Roberts, J., & Mosley, P. (2011a). Can Micro Health Insurance Reduce Poverty? Evidence From Bangladesh. *The Journal of Risk and Insurance*, 78(1), 57-82. Retrieved from <http://www.jstor.org.ezproxy.usq.edu.au/stable/23019538>
- Hamid, S. A., Roberts, J., & Mosley, P. (2011b). Evaluating the Health Effects of Micro Health Insurance Placement: Evidence from Bangladesh. *World Development*, 39(3), 399-411. doi:<https://doi.org/10.1016/j.worlddev.2010.08.007>
- Islam, A. (2011). Medium- and Long-Term Participation in Microcredit: An Evaluation Using a New Panel Dataset from Bangladesh. *American Journal of Agricultural Economics*, 93(3), 843-862. doi:10.1093/ajae/aar012
- Jan, S., Laba, T. L., Essue, B. M., Gheorghe, A., Muhunthan, J., Engelgau, M., . . . Atun, R. (2018). Action to address the household economic burden of non-communicable diseases. *The Lancet*, 391(10134), 2047-2058. doi:10.1016/S0140-6736(18)30323-4
- Jembere, M. Y. (2018). Community-Based Health Insurance Scheme as a New Healthcare Financing Approach in Rural Ethiopia: Role on Access, Use and Quality of Healthcare Services, the Case of Tehuledere District, South Wollo Zone, Northeast Ethiopia. *Family Medicine & Medical Science Research*, 7: 227. doi:10.4172/2327-4972.1000227
- Lashley, K. (2008). Health-care provision meets microcredit finance in Argentina. *Bulletin of the World Health Organization*, pp. 9-10. Retrieved from <http://ezproxy.usq.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=c8h&AN=105861205&site=ehost-live>
- Leatherman, S., & Dunford, C. (2010). Linking health to microfinance to reduce poverty. *Bulletin World Health Organization*, 88, 470-471. doi:10.2471/BLT.09.071464
- Literatus, R. F. (2019). *Health maintenance cooperative: an alternative model to universal healthcare coverage in the Philippines*. Paper presented at the Implementing the Sustainable Development Goals: What Role for Social and Solidarity Economy?, Geneva, Switzerland. <http://unsse.org/knowledge-hub/health-maintenance-cooperative-an-alternative-model-to-universal-healthcare-coverage-in-the-philippines/>
- Molyneux, C., Hutchison, B., Chuma, J., & Gilson, L. (2007). The role of community-based organizations in household ability to pay for health care in Kilifi District, Kenya. *Health Policy & Planning*, 22(6), 381-392. doi:10.1093/heapol/czm031
- Muñoz, M., Bayona, J., Sanchez, E., Arevalo, J., Sebastian, J., Arteaga, F., . . . Shin, S. (2011). Matching Social Support to Individual Needs: A Community-Based Intervention to Improve HIV Treatment Adherence in a Resource-Poor Setting. *AIDS and Behavior*, 15(7), 1454-1464. doi:10.1007/s10461-010-9697-9

- Perrigot, R. (2018). Franchising in the healthcare sector: The case of Child and Family Wellness clinics in Kenya. *Journal of Retailing and Consumer Services*, 41, 227-238.
- Pham Tien Thanh, P. B. D. (2017). Health shocks and the mitigating role of microcredit—The case of rural households in Vietnam. *Economic Analysis and Policy*, 56, 135-147. doi:**10.1016/j.eap.2017.08.006**
- Rakib, M. (2019). Prevalence of health shocks and the influencing factors: evidence from rural Bangladesh. *Research in Agriculture Livestock and Fisheries*, 6(3), 363-371.
- Ruducha, J., & Jadhav, M. (2018). A review of organizational arrangements in microfinance and health programs. *Journal of Global Health Reports*, 2. doi:10.29392/joghr.2.e2018024
- Saha, S., & Annear, P. L. (2015). Overcoming access barriers to health services through membership-based microfinance organizations: a review of evidence from South Asia. *WHO South-East Asia J Public Health*, 3, 125-134. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4326680/pdf/emss-61812.pdf>
- Saha, S., Kermode, M., & Annear, P. L. (2015). Effect of combining a health program with a microfinance-based self-help group on health behaviors and outcomes. *Public Health*, 129(11), 1510-1518. doi:<https://doi.org/10.1016/j.puhe.2015.07.010>
- Taber, J. M., Leyva, B., & Persoskie, A. (2015). Why do People Avoid Medical Care? A Qualitative Study Using National Data. *J Gen Intern Med.*, 30(3), 290-297. doi: 10.1007/s11606-014-3089-1
- Werner, W. J. (2009). Micro-insurance in Bangladesh: Risk Protection for the Poor? *Journal of Health, Population and Nutrition*, 27(4), 563-573. Retrieved from <http://www.jstor.org.ezproxy.usq.edu.au/stable/23499644>
- World Health Organization. (2019). Out-of-pocket payments, user fees and catastrophic expenditure. Retrieved from https://www.who.int/health_financing/topics/financial-protection/out-of-pocket-payments/en/

APPENDICES

Appendix A: PRISMA 2009 Flow Diagram



Appendix B: Characteristics of the included articles

Reference/ Year	Type of article	Aim	Country/ Populatio n	Intervention	Study Design	Results/Key Findings in relation to healthcare cost
Colom et al. (2018)	Journal article	To quantify the impact of cash transfer and microfinance interventions on a selected list of tuberculosis (TB) risk factors and assess their potential role in supporting TB control.	Guatemala	Partnership with a healthcare organisation. A "mobile clinic" approach that focuses on serving female clients in their own homes and communities is a useful approach when target populations live in rural, isolated areas.	Case study	MFI Friendship Bridge alliance with Wuqu Kawoq, a primary healthcare system providing services in rural Guatemala, reduced the barrier to care by offering preventive services at no cost, low treatment package for clients with confirmed diabetes and hypertension and assistance with follow-up care at no cost for positive cervical and breast cancer screening
Devadasan et al. (2007)	Journal article	To determine whether insured households are protected from CHE	India	Provision of community health insurance among the indigenous population	Comparative study	CHI scheme reduced OOP among insured members as they were entitled to hospital care up to US\$23, while noninsured members paid the whole of hospital bill costing between US\$15-20.
K. H. Geissler and Leatherman (2015)	Journal article	To examine the supply- and demand-side factors in a microfinance client population receiving integrated services.	Latin America	Universal screening program and primary care services provided in conjunction with microfinance loans	Case study analysis	The components of the Pro Mujer health program address four dimensions of healthcare access: geographic accessibility, availability, affordability, and acceptability. Significant progress has been made to meet basic health needs
Hamid et al. (2011b)	Journal article	Examine the impact of micro health insurance placements in health awareness, health utilisation and health status of microcredit members in rural Bangladesh	Bangladesh	Provision of micro health insurance	Econometric analysis	MFI provision of a healthcare package directly from health centres that it operates, showed reduced consultation fees, discounts on drugs, tests, and hospitalisation, and free annual check-ups and immunisation

Lashley (2008)	WHO Bulletin	To create a health enterprise that seeks to help low-income people through MFI service	Guatemala	Healthcare model creating health franchises, using groups of affiliated doctors	Archived news bulletin	On the preliminary survey, 76% of respondent felt that access to service was vital. Healthcare model franchise helped clients generate income and gained access to quality and affordable health care
Muñoz et al. (2011)	Journal article	To maximise treatment adherence of antiretroviral treatment among participants living with HIV/AIDS	HIV/AIDS clients in Peru	Community-based accompanied treatment with MFI loans and financial	Comparative study	Clients under community-based accompaniment with supervised antiretrovirals (CASA) program had higher adherence to treatment.
S. Saha et al. (2015)	Journal article	To investigate the effect of combining health intervention with a microfinance based SHF on health behaviours and outcomes	Self-help group in India	Access of SHG to microfinance offering health products such as mobile health camps, health awareness campaigns and insurance	Comparative study	One participating MFI offered an annual contribution of US\$3 from each member, providing protection for up to US\$83 in medical expenses per year

Appendix C: Critical Appraisal Skills Programme (CASP) checklist of the included articles

Reference/Criteria	The research aims clearly stated	Appropriate methodology	Study design addressed the aims of the research	Recruitment strategy appropriate to the aims of the research	Data collected in a way that addressed the research issue	Relationship between researcher and participants been adequately considered	Ethical issues have been taken into consideration	Data analysis sufficiently rigorous	A clear statement of findings	Research is valuable	Total Mark
Colom et al. (2018)	y	y	y	y	y	Y	Y	Y	Y	Y	10 High Quality
Devadasan et al. (2007)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 High Quality
K. H. Geissler and Leatherman (2015)	y	y	y	y	y	Y	NK Secondary Data	Y	Y	Y	10 High Quality
Hamid et al. (2011b)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 High Quality
Lashley (2008)	Y	NK	NK	NK	NK	Y	NK	NK	Y	Y	4 Good
Muñoz et al. (2011)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 High Quality
S. Saha et al. (2015)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10 High Quality

Legend: Y = yes; N = no; NK = not known

HQ (high quality) = 10 points VG (very good) = 7-9 points G (good) = 4-6 points A (acceptable) = 1-3 points

