FACTORS THAT AFFECT UPTAKE OF COMMUNITY-BASED HEALTH INSURANCE IN LOW AND MIDDLE-INCOME COUNTRIES: A SYSTEMATIC REVIEW PROTOCOL

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FACTORS THAT AFFECT UPTAKE OF COMMUNITY-BASED HEALTH INSURANCE IN LOW AND MIDDLE-INCOME COUNTRIES: A SYSTEMATIC REVIEW PROTOCOL

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ABSTRACT

Introduction: Health insurance schemes pool prepaid funds for financing health systems in ways that allow for risks to be shared, but not all schemes are suitable in every setting. Community-based health insurance (CBHI) that is operated by not-for-profit organisations other than government departments is the most suitable scheme for poor rural populations, as well as the informal sector in low and middle-income countries (LMICs). CBHI protects citizens from potential impoverishment arising from having to pay for use of healthcare services. However, we are not aware of previous systematic reviews of factors that determine CBHI coverage in LMICs. We therefore plan to search for and summarise current best evidence on this important topic.

Methods: We will conduct a comprehensive search in relevant electronic databases and platforms, check reference lists of pertinent publications, contact appropriate researchers and organisations, and check proceedings of suitable conferences; for potentially eligible studies available by 30 September 2013. We will independently screen the search output, select studies and extract data in duplicate; resolving discrepancies by discussion and consensus. If we find eligible quantitative studies with homogenous study settings and design we will statistically pool outcome data in a meta-analysis. If eligible quantitative studies are not homogenous in settings and designs, we will present a narrative synthesis of the findings. Regarding eligible qualitative studies, we will pool appropriate data in a meta-synthesis following the guidelines of the Joana Briggs Institute.

Ethics and dissemination: We did not seek ethical approval, as this is not required for systematic reviews. We expect the findings of the proposed systematic review to be useful to policymakers, their support staff, and other relevant stakeholders in LMICs and international development agencies. We will present the findings at relevant scientific conferences and publish them in an international peer-reviewed journal.

Key words: Health insurance, Community-based health insurance, Low and middle-income countries, Access, Uptake, Informal health sector

Article summary

Article focus

- Community-based health insurance refers to a scheme operated by non-governmental not-for-profit organizations, which provides risk pooling to cover the costs of healthcare services.
- We describe plans for a systematic review aimed at summarizing the currently available evidence on factors that affect community-based health insurance coverage in low and middle-income countries.

Key messages

- The study will provide the first independent systematic review on the reasons for low enrolment and willingness to pay for community-based health insurance schemes.
- Based on the findings of this study, recommendation will be made to health policy makers, researchers and managers in low and middle-income countries in order to increase uptake of community-based health insurance or to incorporate these schemes into a broader universal scheme to enhance financial protection and reduce fragmentation.

Strengths and limitations

- The systematic review is non-commercial and is planned by a multidisciplinary team of experts working in the low and middle-income countries.

INTRODUCTION

The ultimate goals of national health systems according to the World Health Organization (WHO) are health equality, good health status, responsiveness to an individual's non-medical expectation, and fairness in financial contribution (1). Fairness in financial contribution for health occurs when healthcare expenditures of households are distributed in accordance with the ability to pay rather than the cost incurred as a result of illness. Therefore, a national health system should raise funds for health care in ways that ensure people can use needed healthcare services and are protected from impoverishment arising from having to pay for such services (1). However, over the past two decades, many low and middle-income countries (LMICs) have found it progressively more difficult to maintain sufficient financing for health care. As a result out-of-pocket payments remain high, creating constraints to utilising essential healthcare services (2) and pushing families deeper into poverty (3, 4). Amongst other things, health insurance is set up to provide financial risk protection and to mobilize resources to avert impoverishments that may arise from paying out-of-pocket for health care. Health insurance has also the potential to increase utilization and affordability of health care especially among the poor and vulnerable population. Through health insurance, risks are shared and financial inputs pooled by way of contributions, e.g. from salaries or taxation (5). However, health insurance coverage still remains very low in many LMICs, a situation which is compounded by the large number of informal sector workers and rural populace in these countries (5). Increasing access to affordable health care is essential for achieving the Millennium Development Goals (MDGs), which aim to eradicate poverty. Due to the recent call for countries to ensure universal coverage of the population with essential healthcare services, the need arose to provide some sort of health insurance to the large informal sector in LMICs (6)

One of the ways to provide health insurance for the informal sector and the rural populace is through community-based health insurance (CBHI). CBHI [a] operates by risk pooling, [b] is financed through regular premiums and [c] is tailored to poor people who would otherwise not be able to take out large-scale health insurance (7). CBHI, despite challenges regarding the extent of resource pooling, has been shown to facilitate and improve access to healthcare services especially among children and pregnant women (8, 9). More so, CBHI also

addresses healthcare challenges faced specifically by the rural poor and informal sector workers (10).

A systematic review published in 2012 found that the uptake of health insurance is less than optimal in Africa (11). In an era when universal health coverage is more relevant than ever before, it is important to understand the reasons for low enrolment into health insurance schemes in Africa as well as other low and middle-income regions of the world. To the best of our knowledge, no previous systematic reviews have been specifically designed to summarize factors associated with uptake of CBHI.

Researchers studying German experience with health insurance from the country's early phase of development of a health insurance system have recommended that "small, informal, voluntary health insurance schemes may serve as learning models for fund administration and solidarity, both of which will make introduction of larger, more formal, compulsory schemes an easier task" (12). In addition, several studies conducted in different settings have evaluated the factors that determine enrolment into CBHI or people's willingness to pay for CBHI. Potential factors include age, income, education and distance to health facility (13, 14). The association between age and willingness to pay has been mixed in the literature. Respondent's age is found to have a positive effect on willingness to pay in some studies; while in others it is the opposite (15). Likewise, distance to the nearest health facility has been found to have a positive effect on willingness to pay in some cases, in the sense that a short distance increases likelihood of willingness to pay (13, 14) while in others it has had a negative effect (15). Some studies have shown that household income has a positive effect on willingness to pay (16, 17), while others have not found such an effect (13). Other factors that have been found to significantly influence willingness to pay for CBHI programmes include education, household size, level of trust that households have in the management of the insurance programme, sex, knowledge of the CBHI programme, and place of residence (urban versus rural) (16, 18).

There is great need for a rigorous synthesis of current best evidence on factors that determine enrolment and willingness to pay for CBHI programmes in LMICs. We therefore conceived this review to summarise all the currently available evidence around factors affecting uptake of CBHI in LMICs. Such evidence would be useful to health policy makers, managers, and

other stakeholders seeking to improve quality and access to healthcare services in such resource-constrained settings.

Methods

Inclusion criteria of studies

Types of studies

We will include both quantitative and qualitative studies in the review. Quantitative studies to be included are randomized control trials (RCTs), controlled before-and-after studies (CBAs), interrupted time series designs (ITS), cohort studies, case-control studies, contingent valuation studies, and cross-sectional surveys. Qualitative studies to be included are those that used known qualitative methods of data collection such as focus group discussions, interviews, direct observation, case studies, ethnography and action research; and known methods of qualitative analysis such as thematic analysis, grounded theory, coding and discourse analysis.

Participants and interventions

We will include all primary studies conducted in low and middle-income countries (as defined by the World Bank) on all types of health services that involve community financing, community-based health insurance or mutual health organization, community health funds, micro insurance, or rural health insurance operated by organisations other than governments or private for-profit companies.

Types of outcome measures

Primary outcomes: The primary outcomes of interest for this review are uptake of community-based insurance schemes and utilization of health services (as defined by the authors of the primary studies).

Secondary outcomes: The secondary outcomes include acceptability of insurance schemes, availability of health services, ability to pay, willingness to pay, financial protection, and fairness in financial contribution.

Search methods for identification of studies

We will perform a comprehensive and extensive search of peer-reviewed and grey literature with the help of an information specialist, to identify all appropriate studies available by 30 September 2013 regardless of publication status (published and unpublished) with no language restriction.

Database

The following electronic databases and platforms will be searched for primary studies: PubMed, Scopus, Cochrane Central Register Controlled trials (CENTRAL), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Education Resources Information Centre (ERIC), PsycINFO, Humanities international, International Bibliography of the Social Sciences (IBSS), Sociological abstracts, Social online, Africa-Wide information, Academic Search Premier, Business Source Premier, WHO library databases. We will develop a comprehensive search strategy for each database or platform, consisting of both medical subject headings and free-text words (as appropriate); for example, determinants, factors, enrolment, uptake, willingness to pay, community based insurance, community health insurance, voluntary health insurance, community health plan, mutual health organization, mutual health insurance, community-based health financing, rural health insurance, and micro health insurance.

Searching other resources

We will also search the proceedings of the International Health Economics Association conference; and contact key researchers, organizations and companies working in the area of health care financing for potential eligible unpublished studies.

Reference lists

In addition, we will conduct a thorough check of the reference lists of relevant reviews and the full-text articles reviewed for inclusion in this review for potential eligible studies.

Data collection and analysis

Internationally recognised methodology for data collection and analysis will be used based on the guidance of the Cochrane Handbook of Systematic Reviews for Interventions (19).

Selection of studies

We will develop and pilot a study selection guide using the inclusion criteria described above, in order to make sure that the criteria are clear and can be applied consistently by all review authors. Two authors will independently screen the titles and abstracts from the search and retrieve the full text of records deemed potentially eligible by at least one of the two authors.

Data extraction and management

Two authors will independently assess the full-text articles for eligibility, followed by duplicate extraction of data from included studies using standardised forms. For each study, we will extract the following information: citation, study design and methodology, geographic setting, nature of CBHI, outcomes, types of analysis performed, and findings.

Assessment of methodological quality

We will assess the methodological quality of all included studies using the appropriate quality assessment tool; for example, the Newcastle-Ottawa Scale for non-randomised studies and the Cochrane risk of bias tool for RCTs. We will provide a thorough description of missing data and dropouts for each included study, and the extent to which these missing data could influence the results of the study. During each stage (i.e. screening, study selection, data extraction, and quality assessment), the two authors will compare their results and resolve any differences by discussion and consensus; failing which a third author will arbitrate.

Data synthesis

We will present a table of included studies (clearly describing the methods, participants, type of CBHI, outcome measures, and other relevant information) and another table of studies that were considered potentially eligible but which ended up being excluded, with reasons for exclusion. If relevant studies that report similar outcomes are included, we will perform a random-effects meta-analysis by statistically pooling quantitative data from the studies. We will then assess statistical heterogeneity between study results using the Chi^2 test of homogeneity (with significance defined at the 10% alpha-level) and quantify any between-study heterogeneity using the I^2 statistic (20). If the included studies differ significantly in design, settings, outcome measures or otherwise, we will summarize the findings in a

narrative format. For qualitative studies, designs such as phenomenology, grounded theory and ethnography will be considered. For the latter, data will be extracted using standardised data extraction tools adapted from the Joanna Briggs Institute Qualitative Assessment and Review Instrument (JBI-QARI) and put together in a meta-synthesis. This will involve the synthesis of findings using three steps: (i) assembling the findings according to their quality; (ii) categorising these findings on the basis of similarity in meaning; and (iii) subjecting these categories in a meta-synthesis to produce a single comprehensive set of synthesised findings. We will report the methods, findings and implications of the findings of this review according to the preferred reporting items for systematic reviews and meta-analyses (PRISMA) recommendations (21).

Discussion

Expected significance of the review

The findings of this systematic review will have practice, policy and research implications for low and middle-income countries. Our results will present evidence of factors that influence the uptake of community-based health insurance schemes amongst the poor in the urban and rural populace. Such information will be useful to decision makers, programme managers and implementers alike. In addition to providing policy and programmatic insights the review will also provide a management and organisational framework of community financing.

Abbreviations

LMICs: low and middle income countries;

OOP: out-of-pocket;

CBHI: community-based health insurance;

WHO: world health Organization;

RCTs: randomized control trials;

CBAs: control before and after studies;

ITS: interrupted time series designs;

CINAHL: Cumulative Index to Nursing and Allied Health Literature;

OVID: Offshore Vessel Inspection Database Full Text;

ERIC: Education Resources Information Centre;

IBSS: International Bibliography of the Social Sciences;

MeSH: Medical subject heading.

Competing Interest

The authors declare that they have no competing interest.

Authors Contributions

All authors contributed to the conception and design of the review, and will be involved in data acquisition. EFA will analyze the data with input from all co-authors, and all authors will contribute in the interpretation of the results. All authors were involved in the drafting of this protocol and have given their permission for publication.

Acknowledgement

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FACTORS THAT AFFECT UPTAKE OF COMMUNITY-BASED HEALTH INSURANCE IN LOW AND MIDDLE-INCOME COUNTRIES: A SYSTEMATIC REVIEW [PROTOCOL]

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ABSTRACT

Introduction: Many people residing in low and middle-income countries (LMIC) are regularly exposed to catastrophic healthcare expenditure. It is therefore pertinent that LMICs should finance their health systems in ways that ensure their citizens can use needed healthcare services and are protected from potential impoverishment arising from having to pay for the services. Ways of financing health systems include government funding, health insurance schemes and out-of-pocket payment. A health insurance scheme refers to pooling of prepaid funds in a way that allows for risks to be shared. The health insurance scheme particularly suitable for the rural poor and the informal sector in LMICs is community-based health insurance (CBHI) i.e. insurance schemes operated by organisations other than governments or private for-profit companies. We plan to search for and summarise currently available evidence on factors associated with the uptake of CBHI, as we are not aware of previous systematic reviews that have looked at this important topic.

Methods: This is a protocol for a systematic review of the literature. We will include both quantitative and qualitative studies in this review. Eligible quantitative studies include both intervention and observational studies. Qualitative studies to be included are focus group discussions, direct observations, interviews, case studies and ethnography. We will search Embase, PubMed, Scopus, ERIC, PsychInfo, Africa-Wide Information, Academic Search Premier, Business Source Premier, WHOLIS, CINAHL and the Cochrane Library for eligible studies available by 31 October 2013; regardless of publication status or language of publication. We will also check reference lists of included studies, proceedings of relevant conferences and contact researchers for eligible studies

Two authors will independently screen the search output, select studies and extract data; resolving discrepancies by consensus and discussion. Qualitative data will be extracted using standardised data extraction tools adapted from the Critical Appraisal Skills Program (CASP) qualitative appraisal checklist and put together in a thematic analysis where applicable. We will statistically pool data from quantitative studies in a meta-analysis; but if included quantitative studies differ significantly in study settings, design and/or outcome measures, we will present the findings in a narrative synthesis.

Dissemination: Recommendations will be made to health policy makers, managers and researchers in LMICs to help inform them on ways to strengthen and increase uptake of community-based health insurance.

Ethics: Ethics approval is not required.

Key words: Health insurance, Community-based health insurance, Low and middle -income countries, Access, Uptake, Informal sector

Article focus

- To describe the plans of a systematic review aimed at synthesising the currently available evidence around factors that affect uptake of community-based health insurance in low and middle income countries.
- To highlight the unmet need of health sector in low and middle-income countries.

Key messages

- The study will provide the first independent systematic review on the reasons for low enrolment and willingness to pay for community-based health insurance schemes.
- Based on the findings of this study, recommendations will be made to health policy makers, researchers and managers in low and middle-income countries in order to increase uptake of this scheme and enhance financial protection.

Strength and Limitation

- The systematic review is non-commercial and is planned by a multidisciplinary team of experts working in the low and middle-income countries.

INTRODUCTION

The final goals of the health system as a whole as considered by World Health Organization (WHO) are health equality, health status, responsiveness of health system to individual's non-medical expectation and fairness in financial contribution (1). Fairness in financial contribution for health occurs when healthcare expenditures of households are distributed in accordance to the ability to pay rather than the cost incurred as a result of illness. Therefore, a national health system should raise funds for health care in ways that ensure people can use needed healthcare services and are protected from impoverishment arising from having to pay for such services (1). However, over the past two decades, many low and middle-income countries (LMICs) have found it progressively more difficult to maintain sufficient financing for health care. As a result out of pocket (OOP) payments remain high creating constraints to utilising essential health services (2), and pushing families deeper into poverty (3, 4). Amongst other things, health insurance is set up to provide financial risk protection and to mobilise resources to avert impoverishments that may arise from paying OOP for health care. Health insurance has also the potential to increase utilisation and affordability of health care especially among the poor and vulnerable population. Through health insurance, risks are shared and financial inputs pooled by way of contributions, e.g. from salaries or taxation (5). However, health insurance coverage still remains very low in many LMICs, a situation which is compounded by the large informal sector workers and rural populace in these countries (5). Increasing access to affordable health care is essential for achieving the Millennium Development Goals (MDGs); which aim to eradicate poverty. Due to the recent call for countries to ensure universal coverage of the population with essential healthcare services, the need arose to provide health insurance to the large informal sector in LMICs (6).

One of the ways to provide health insurance for the informal sector and the rural populace is through community-based health insurance (CBHI). CBHI [a] operates by risk pooling, [b] is financed through regular premiums and [c] is tailored to poor people who would otherwise not be able to take out large scale health insurance (7). CBHI, despite its problems relating to the extent of resource pooling, has been shown to facilitate and improve access to healthcare services especially among children and pregnant women (8, 9). More so, CBHI also addresses health care challenges faced specifically by the rural poor and informal sector workers (10).

A systematic review published in 2012 found that the uptake of health insurance is less than optimal in Africa (11). In an era when universal health coverage is more relevant than ever before, it is important to understand the reasons for low enrolment into health insurance schemes in Africa as well as other low and middle-income regions of the world. To the best of our knowledge, no previous systematic reviews have been specifically designed to summarise factors associated with uptake of CBHI.

Researchers studying German experience with health insurance from the country's early phase of development of a health insurance system have recommended that "small, informal, voluntary health insurance schemes may serve as learning models for fund administration and solidarity, both of which will make introduction of larger, more formal, compulsory schemes an easier task" (12).

In addition, there are many studies, conducted in different settings to evaluate the factors that determine enrolment into CBHI or people's willingness to pay for CBHI. Potential factors include age, income, education and distance to health facility (13, 14). The association between age and willingness to pay (WTP) have been mixed in the literature. Respondent's age is found to have a positive effect on WTP in some studies; while in others it is the opposite (15). Likewise, distance to the nearest health facility has been found to have a positive effect on WTP in some cases, in the sense that, short distance increased likelihood of WTP (13, 14) while in others it has had a negative effect (15). Some studies have shown that household or income has a positive effect on WTP (16, 17), while others have not found such an effect (13). Other factors that have been found to significantly influence WTP for CBHI programmes include education, household size, level of trust that households have in the management of the insurance programme, sex, knowledge of the CBHI programme and place of residence (urban versus rural) (16, 18).

There is great need for a rigorous synthesis of current best evidence on factors that determine enrolment and willingness to pay for CBHI programmes in LMICs. We therefore conceived this review to summarise all the currently available evidence around factors affecting uptake of CBHI in LMICs. Such evidence would inform health policy makers and managers seeking to improve quality and access to healthcare services in such resource-constrained settings.

Methods

Inclusion criteria of studies

Types of studies

We will include both quantitative and qualitative studies in the review. Quantitative studies to be included are randomised control trials (RCTs), controlled before-and-after studies (CBAs), interrupted time series designs (ITS), cohort studies, case-control studies, contingent valuation studies, and cross-sectional surveys. Qualitative studies to be included are those that used known qualitative methods of data collection such as focus group discussions, interviews, direct observation, case studies, ethnography and action research; and known methods of qualitative analysis such as thematic analysis, grounded theory, coding and discourse analysis. This mixed-method approach offers an opportunity for complementary answers to research questions that cannot be answered completely by either the qualitative or quantitative method. This will help in making the review more relevant and robust, by maximising the findings and the ability of these findings to inform policy and practice. Thus, the fusion of both qualitative and quantitative evidence in this review will enhance its impact and effectiveness. Inclusion of both components would help identify priority research gaps and boost the relevance of the review for decision makers. The mixed-methods facilitate the incorporation of qualitative understanding from people's lives and robust quantitative estimates of benefits and harms.

Participants and Interventions

We will include studies conducted in low and middle-income countries (as defined by the World Bank) on all types of health services that involve community-based health insurance, community financing, mutual health organisations, community health funds, micro insurance, or rural health insurance managed and operated by organisations other than governments or private for-profit companies.

Types of outcome measures

Primary outcomes: The primary outcomes of interest for this review are uptake of, or willingness to pay for, community-based insurance schemes (as defined by the authors of the primary studies).

Secondary outcomes: The secondary outcomes include acceptability of insurance schemes, availability of health services, ability to pay, financial protection, fairness in financial contribution, and utilisation of health services.

Search methods for identification of studies

We will perform a comprehensive and extensive search of peer-reviewed and grey literature with the help of an information specialist, to identify all appropriate studies available by 31 October regardless of publication status (published and unpublished) with no language restriction.

Electronic databases

The following electronic databases and platforms will be searched for primary studies: PubMed, Excerpta Medica Database Guide (EMBASE), Cochrane Central Register Controlled trials (CENTRAL), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Education Resources Information Centre (ERIC), PsycINFO, Humanities international, International Bibliography of the Social Sciences (IBSS), Sociological abstracts, Social online, Africa-Wide Information, Academic Search Premier, Business Source Premier, WHO library databases. We will develop a comprehensive search strategy for each database or platform, consisting of both medical subject headings and free-text words (as appropriate), for example determinants, factors, enrolment, uptake, willingness to pay, community based insurance, community health insurance, voluntary health insurance, community health plan, mutual health organisation, mutual health insurance, community based health financing, rural health insurance and micro health insurance.

Searching other resources

We will also search the proceedings of relevant conferences conducted in the last 10 years such as the International Health Economics Association conference; and contact key researchers, organisations and companies working in the area of healthcare financing for potentially eligible unpublished studies

Reference lists

We will obtain reference lists of relevant studies identified and the full text articles reviewed for inclusion in the review will be checked for additional information.

Data collection and analysis

Internationally recognised methodology for data collection and analysis will be used based on the guidance of the Cochrane Handbook of Systematic Reviews for Interventions (19).

Selection of studies

We will develop and pilot a study selection guide using the inclusion criteria described above to make sure that the criteria are clear and can be applied consistently by all review authors. Two authors will independently screen the titles and abstracts obtained from the search and retrieve the full text of records deemed potentially eligible by at least one of the two authors. Two authors will independently screen the titles and abstracts of the records obtained from the search, compare their results, and obtain the full text of any study deemed potentially eligible by at least one of them. The two authors will then independently review the full text of each potentially eligible study, compare their results, and resolve any discrepancy by discussion and consensus. If a decision is not reached, a third review author will be consulted.

Data extraction and management

Two authors will independently extract data from included studies using standardised forms. For each study, we will extract the following information: citation, study design and methodology, geographic setting, nature of CBHI, outcomes, types of analysis performed, and findings. The two authors will compare the extracted data and resolve discrepancies by discussion and consensus; failing which a third author will arbitrate.

Assessment of methodological quality

We will assess the methodological quality of all included studies in duplicate using the appropriate quality assessment tool; for example, the Newcastle-Ottawa Scale for non-randomised studies and the Cochrane risk of bias tools for RCTs. We will provide a thorough description of missing data and dropouts for each included study, and the extent to which these missing data could have influenced the results of the study. The authors will compare their results and resolve any differences by discussion and consensus; failing which a third author will arbitrate.

Data synthesis

We will present a table of included studies (clearly describing the methods, participants, type of CBHI, outcome measures and other relevant notes) and another table of studies that were considered potentially eligible but which ended up being excluded; with reasons for exclusion. If relevant quantitative studies that report similar outcomes are included, we will perform a random-effects meta-analysis by statistically pooling quantitative data from the

studies. We will then assess statistical heterogeneity between study results using the Chi^2 test of homogeneity (with significance defined at the 10% alpha-level) and quantify any between-study heterogeneity using the I^2 statistic (20). If the included studies differ significantly in design, settings, outcome measures or otherwise, we will summarise the findings in a narrative format. For qualitative studies, designs such as phenomenology, grounded theory and ethnography will be considered. For the latter, data will be extracted using standardised data extraction tools adapted from the Critical Appraisal Skills Program (CASP) qualitative appraisal checklist and put together in a thematic analysis. This will involve the synthesis of findings using three steps: (i) assembling the findings according to their quality; (ii) categorising these findings on the basis of similarity in meaning; and (iii) subjecting these categories to produce a single comprehensive set of synthesised findings.

We will report the methods, findings and implications of the findings of this review according to the PRISMA guidelines, including the extended guidance on reporting equity-focused systematic reviews(21).

Discussion

Expected significance of the review

The findings of this systematic review will have policy, practice and research implications for low and middle-income countries. Our results will present evidence of factors that influence the uptake of community-based health insurance schemes amongst the poor in the urban and rural populace. Such information will be useful to decision makers, programme managers and implementers alike. In addition to providing policy and programmatic insights, the review will also provide a management and organisational framework of community financing.

Abbreviations

LMICs, low and middle-income countries; OOP, out of pocket; CBHI, community-based health insurance; WHO, World Health Organization; WTP, willingness to pay; RCTs, randomised control trials; CBAs, control before-and-after studies; ITS, interrupted time series designs; CINAHL, Cumulative Index to Nursing and Allied Health Literature; OVID, Offshore Vessel Inspection Database Full Text; EMBASE, Excerpta Medica Database Guide; ERIC, Education Resources Information Centre; IBSS, International Bibliography of the Social Sciences; MeSH, Medical subject heading.

Competing Interest

The authors declare that they have no competing interest

Authors Contributions

All authors contributed to the conception and design of the review and will be involved in data acquisition. All authors were involved in the drafting of this protocol and have given their permission for publication. EA and KM will conduct study selection, data extraction, and analyses; with input from all co-authors. All authors will contribute in the interpretation of the results and the writing of the review.

Acknowledgement

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Appendix 1: Search strategy used for PubMed database

	Query
#10	#3 AND #9
#9	#4 OR #5 OR #6 OR #7 OR #8
#8	developing countries[MeSH Terms]
#7	(Low income country OR lower income country OR third world country OR middle income country)
#6	(Angola OR Republic of Angola OR Albania OR Republic of Albania OR Algeria OR The People's Democratic Republic of Algeria OR American Samoa OR Argentina OR Azerbaijan OR Belarus OR Belize OR Bosnia and

	Herzegovina OR Bosnia-Herzegovina OR Bosnia OR Botswana OR Brazil OR Federative Republic of Brazil OR Bulgaria OR China OR People's Republic of China OR Colombia OR Costa Rica OR Fiji OR Gabon OR Gabonese Republic OR Grenada OR Hungary OR Islamic Republic of Iran OR Persia OR Iran OR Iraq OR Jamaica OR Jordan OR Hashemite Kingdom of Jordan OR Kazakhstan OR Lebanon OR Lebanese Republic OR Libya OR State of Libya OR Macedonia OR Republic of Macedonia OR Malaysia OR Maldives OR Republic of the Maldives OR Maldive Islands OR Marshall Islands OR Republic of the Marshall Islands OR Palau OR Republic of Palau OR Panama OR Republic of Panama OR Peru OR Romania OR Serbia, OR the Republic of Serbia OR Seychelles OR the Republic of Seychelles OR South Africa OR Saint Lucia OR Saint Vincent and the Grenadines OR Suriname OR Thailand OR Kingdom of Thailand OR Tonga OR Kingdom of Tonga OR Tunisia OR Turkey OR Turkmenistan OR Turkmenia OR Cuba OR Dominica OR Commonwealth of Dominica OR The Dominican Republic OR Ecuador OR Mauritius OR Mexico OR United Mexican States OR Montenegro OR Namibia OR Tuvalu OR Ellice Islands OR Venezuela OR the Bolivarian Republic of Venezuela)
#5	(Armenia OR armenia OR Bhutan OR Kingdom of Bhutan OR Bolivia OR Plurinational State of Bolivia OR Cameroon OR Republic of Cameroon OR Republic of Cameroun OR Cape Verde OR Republic of Cape Verde OR Cote D'ivoire OR Ivory Coast OR Republic of Cote D'ivoire OR Djibouti OR Republic of Djibouti OR Arab Republic of Egypt OR Egypt OR El Salvador OR Georgia OR Ghana OR Republic of Ghana OR Guatemala OR Republic of Guatemala OR Guyana OR Co-operative Republic of Guyana OR Honduras OR Republic of Honduras OR Spanish Honduras OR Republic of Indonesia OR Indonesia OR India OR Republic of India OR Kiribati OR Republic of Kiribati OR Kosovo OR Kosovo and Metohija OR Laos OR Lao Lao People's Democratic Republic OR Lesotho OR Kingdom of Lesotho OR Mauritania OR Islamic Republic of Mauritania OR Micronesia, Fed. Sts. OR Federated States of Micronesia OR FSM OR Moldova OR Republic of Moldova OR Mongolia OR Morocco OR Kingdom of Morocco OR Nicaragua OR Republic of Nicaragua OR Nigeria OR Federal Republic of Nigeria OR Pakistan OR Islamic Republic of Pakistan OR Papua New Guinea OR Independent State of Papua New Guinea OR Paraguay OR Republic of Paraguay OR Philippines OR Republic of the Philippines OR Samoa OR Independent State of Samoa OR Sao Tome and Principe OR Democratic Republic of Sao Tome and Principe OR Senegal OR Republic of Senegal OR Solomon Islands OR Sri Lanka OR Democratic Socialist Republic of Sri Lanka OR Sudan OR Republic of the Sudan OR North Sudan OR Swaziland OR Kingdom of Swaziland OR Ngwane OR Yuwatini OR Syrian Arab Republic OR Syria OR East Timor OR Timor-leste OR Democratic Republic of Timor-leste OR Ukraine OR Uzbekistan OR Republic of Uzbekistan OR Vanuatu OR

	Republic of Vanuatu OR Vietnam OR the Socialist Republic of Vietnam OR West bank and Gaza OR Yemen OR Yemeni Republic OR Zambia OR Republic of Zambia.)
#4	(Afghanistan OR Islamic Republic of Afghanistan OR Bangladesh OR People's Republic of Bangladesh OR Benin OR Dahomey OR Republic of Benin OR Burkina Faso OR Burkina OR Republic of Upper Volta OR Burundi OR Republic of Burundi OR Cambodia OR Kingdom of Cambodia OR Central African Republic OR Chad OR Republic of Chad OR Comoros OR Union of the Comoros OR Democratic Republic of the Congo OR DR Congo OR Congo-Kinshasa OR DRC OR Zaire OR Eritrea OR State of Eritrea OR Ethiopia OR Federal Democratic Republic of Ethiopia OR The Gambia OR Republic of the Gambia OR Guinea OR Republic of Guinea OR Guinea-Conakry OR Guinea-Bissau OR Republic of Guinea-Bissau OR Haiti OR Republic of Haiti OR Kenya OR Republic of Kenya OR North Korea OR Democratic People's Republic of Korea OR Kyrgyz Republic OR Kyrgyzstan OR Liberia OR Republic of Liberia OR Madagascar OR Republic of Madagascar OR Malawi OR Republic of Malawi OR The Warm Heart of Africa OR Mali OR Republic of Mali OR Mozambique OR Republic of Mozambique OR Myanmar OR Burma OR Republic of the Union of Myanmar OR Nepal OR Democratic Republic of Nepal OR Niger OR Republic of Niger OR Rwanda OR Republic of Rwanda OR Sierra Leone OR Republic of Sierra Leone OR Somalia OR Federal Republic of Somalia OR South Sudan OR Republic of South Sudan OR Tajikistan OR Republic of Tajikistan OR Tanzania OR United Republic of Tanzania OR Republic of Tanganyika and Zanzibar OR Togo OR Togolese Republic OR Uganda OR Republic of Uganda OR Zimbabwe OR Republic of Zimbabwe OR Rhodesia)
#3	#1 AND #2
#2	“community based” OR “rural” OR “mutual” OR “micro” OR “community” OR “group”
#1	"health insurance"[MeSH Terms]

Appendix 2: Summary of the search outputs for the different databases

Name of database	Number of records retrieved
PubMed	968
Academic Search Premier via EBSCO	2979
Africa-Wide Information via EBSCO	126
Business Source Premier via EBSCO	4235
Sociological abstracts	239
CINAHL	227
EconLit via EBSCO	286
ERIC via EBSCO	419
Humanities	42
PsycInfo via EBSCO	764
SocIndex via EBSCO	600
Scopus	4428
Africa Index Medicus	35
Cochrane (Trials and economic evaluation)	438
LILACS	272
IndMED	2
Social care online	165
Web of Science	812
Academic onefile	523
JSTOR	139

Appendix 3: Proposed timeline for the review

Activity	Start date	End date
Protocol development	2 January 2013	31 October 2013
Registration in Prospero and submission of protocol for publication	1 September 2013	30 November 2013
Electronic database search	1 November 2013	5 November 2013
Screening and study selection	6 November 2013	28 February 2014
Data extraction	1 March 2014	30 April 2014
Data analysis and write up	1 May 2014	31 May 2014
Submission of review for publication	1 June 2014	30 June 2014

FACTORS THAT AFFECT UPTAKE OF COMMUNITY-BASED HEALTH INSURANCE IN LOW AND MIDDLE-INCOME COUNTRIES: A SYSTEMATIC REVIEW [PROTOCOL]

Esther F. Adebayo[1,2], John E. Ataguba[1], Olalekan A. Uthman[3,4,5], Charles I. Okwundu[4,5], Kim T. Lamont[6], Charles S. Wiysonge[2,5*]

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[4]Liverpool School of Tropical Medicine, International Health Group, Liverpool, Merseyside, UK
[5]Centre for Evidence-based Health Care, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa
[6] Soweto Cardiovascular Research Unit, University of the Witwatersrand, Johannesburg, South Africa

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KTL: kimmylamont@gmail.com

ABSTRACT

Introduction: Many people residing in low and middle-~~-~~income countries (LMIC) are regularly exposed to catastrophic health-care expenditure. It is therefore pertinent that LMICs should finance their health systems in ways that ensure their citizens can use needed healthcare services and are protected from potential impoverishment arising from having to pay for the services. Ways of financing health systems include~~s~~ government funding, health insurance schemes and out-~~-~~of-~~-~~pocket payment. A health insurance scheme~~s~~ refers to pooling of prepaid funds in a way that allows for risks to be shared. The health insurance scheme particularly suitable for the rural poor and the informal sector in LMICs is community-based health insurance (CBHI) i.e. insurance schemes operated by organisations other than governments or private for-profit companies. We plan to search for and summarise currently available evidence on factors associated with the uptake of CBHI, as we are not aware of previous systematic reviews that have looked at this important topic.

Methods: This is a protocol for a systematic review of the literature. We will include both quantitative and qualitative studies in this review. Eligible ~~Q~~quantitative studies ~~will~~ include both intervention and observational studies. Qualitative studies to be included are focus group discussions, direct observations, interviews, case studies and ethnography. We will search Embase, PubMed, Scopus, ERIC, PsychInfo, Africa-Wide Information, Academic Search Premier, Business Source Premier, WHOLIS, CINAHL and the Cochrane Library for eligible studies available by 31st ~~of~~ October~~August~~ 2013; regardless of publication status or language of publication. We will also check reference lists of included studies, proceedings of relevant conference~~s~~ and contact researchers for eligible studies

Two authors will independently screen the search output, select studies and extract data; resolving discrepancies by consensus and discussion. Qualitative data will be extracted using standardised data extraction tools adapted from the Critical Appraisal Skills Program (CASP) qualitative appraisal checklist and put together in a thematic analysis ~~Joana Briggs Institute Qualitative Assessment and Review Instrument (JBI QARI) and poled in a meta-synthesis~~ where applicable. We will statistically pool data from ~~relevant~~ quantitative studies in a meta-analysis; but if included quantitative studies differ significantly in study settings, design and/or outcome measures, we will present the findings in a narrative synthesis.

Dissemination: Recommendations will be made to health policy makers, managers and researchers in LMICs to help inform them on ways to strengthen and increase uptake of community-based health insurance.

Ethics: Ethics approval is not required.

Key words: Health insurance, Community-based health insurance, Low and middle -income countries, Access, Uptake, Informal sector

Article focus

- To describe the plans of a systematic review aimed at ~~revising~~ synthesising the currently available evidence around factors that affect uptake of community-based health insurance in low and middle income countries.
- To highlight the unmet need of health sector in low and middle-income countries.

Key messages

- The study will provide the first independent systematic review on the reasons for low enrolment and willingness to pay for community-based health insurance schemes.
- Based on the findings of this study, recommendations will be made to health policy makers, researchers and managers in low and middle-income countries in order to increase uptake of this scheme and enhance financial protection.

Strength and Limitation

- The systematic review is non-commercial and is planned by a multidisciplinary team of experts working in the low and middle-income countries.

INTRODUCTION

The final goals of the health system as a whole as considered by World Health Organization (WHO) are health equality, health status, responsiveness of health system to individual's non-medical expectation and fairness in financial contribution (1). Fairness in financial contribution for health occurs when healthcare expenditures of households are distributed in accordance to the ability to pay rather than the cost incurred as a result of illness. Therefore, a national health system should raise funds for health care in ways that ensure people can use needed health-care services and are protected from impoverishment arising from having to pay for such services (1). However, over the past two decades, many low and middle-income countries (LMICs) have found it progressively more difficult to maintain sufficient financing for health care. As a result out of pocket (OOP) payments remain high creating constraints to utilising essential health services (2), and pushing families deeper into poverty (3, 4). Amongst other things, health insurance is set up to provide financial risk protection and to mobilise resources to avert impoverishments that may arise from paying OOP for health care. Health insurance has also the potential to increase utilisation and affordability of health care especially among the poor and vulnerable population. Through health insurance, risks are shared and financial inputs pooled by way of contributions, e.g. from salaries or taxation (5). However, health insurance coverage still remains very low in many LMICs, a situation which is compounded by the large informal sector workers and rural populace in these countries (5). Increasing access to affordable health care is essential for achieving the Millennium Development Goals (MDGs); which aim to eradicate poverty. Due to the recent call for countries to ensure universal coverage of the population with essential health-care services, the need arose to provide health insurance to the large informal sector in LMICs (6).

One of the ways to provide health insurance for the informal sector and the rural populace is through community-based health insurance (CBHI). CBHI [a] operates by risk pooling, [b] is financed through regular premiums and [c] is tailored to poor people who would otherwise not be able to take out large scale health insurance (7). CBHI, despite its problems relating to the extent of resource pooling, has been shown to facilitate and improve access to health-care services especially among children and pregnant women (8, 9). More so, CBHI also addresses health care challenges faced specifically by the rural poor and informal sector workers (10).

A systematic review published in 2012 found that the uptake of health insurance is less than optimal in Africa (11). In an era when universal health coverage is more relevant than ever before, it is important to understand the reasons for low enrolment into health insurance schemes in Africa as well as other low and middle-income regions of the world. To the best of our knowledge, no previous systematic reviews have been specifically designed to summarise factors associated with uptake of CBHI.

Researchers studying German experience with health insurance from the country's early phase of development of a health insurance system have recommended that "small, informal, voluntary health insurance schemes may serve as learning models for fund administration and solidarity, both of which will make introduction of larger, more formal, compulsory schemes an easier task" (12).

In addition, there are many studies, conducted in different settings to evaluate the factors that determine enrolment into CBHI or people's willingness to pay for CBHI. Potential factors include age, income, education and distance to health facility (13, 14). The association between age and willingness to pay (WTP) have been mixed in the literature. Respondent's age is found to have a positive effect on WTP in some studies; while in others it is the opposite (15). Likewise, distance to the nearest health facility has been found to have a positive effect on WTP in some cases, in the sense that, short distance increased likelihood of WTP (13, 14) while in others it has had a negative effect (15). Some studies have shown that household or income has a positive effect on WTP (16, 17), while others have not found such an effect (13). Other factors that have been found to significantly influence WTP for CBHI programmes include education, household size, level of trust that households have in the management of the insurance programme, sex, knowledge of the CBHI programme and place of residence (urban versus rural) (16, 18).

There is great need for a rigorous synthesis of current best evidence on factors that determine enrolment and willingness to pay for CBHI programmes in LMICs. We therefore conceived this review to summarise all the currently available evidence around factors affecting uptake of ~~community-based health insurance~~CBHI in LMICs. Such evidence would inform health policy makers and managers seeking to improve quality and access to health-care services in such resource-constrained settings.

Methods

Inclusion criteria of studies

Types of studies

We will include both quantitative and qualitative studies in the review. Quantitative studies to be included are randomised control trials (RCTs), controlled before-and-after studies (CBAs), interrupted time series designs (ITS), cohort studies, case-control studies, contingent valuation studies, and cross-sectional surveys. Qualitative studies to be included are those that used known qualitative methods of data collection such as focus group discussions, interviews, direct observation, case studies, ethnography and action research; and known methods of qualitative analysis such as thematic analysis, grounded theory, coding and discourse analysis. This mixed-method approach offers an opportunity for complementary answers to research questions that cannot be answered completely by either the qualitative or quantitative method. This will help in making the review more relevant and robust, by maximising the findings and the ability of these findings to inform policy and practice. Thus, the fusion of both qualitative and quantitative evidence in this review will enhance its impact and effectiveness. Inclusion of both components would help identify priority research gaps and boost the relevance of the review for decision makers. The mixed-methods facilitate the incorporation of qualitative understanding from people's lives and robust quantitative estimates of benefits and harms.

Participants and Interventions

We will include ~~all~~ studies conducted in low and middle-income countries (as defined by the World Bank) on all types of health services that involve ~~community financing,~~ community-based health insurance, community financing, ~~or~~ mutual health organisations, community health funds, micro insurance, or rural health insurance managed and operated by organisations other than governments or private for-profit companies.

Types of outcome measures

Primary outcomes: The primary outcomes of interest for this review are uptake of, or willingness to pay for, community-based insurance schemes ~~and utiliation of health services~~ (as defined by the authors of the primary studies).

Secondary outcomes: The secondary outcomes include acceptability of insurance schemes, availability of health services, ability to pay, ~~willingness to pay,~~ financial protection, ~~and~~ fairness in financial contribution, and utilisation of health services.

Search methods for identification of studies

We will perform a comprehensive and extensive search of peer-reviewed and grey literature with the help of an information specialist, to identify all appropriate studies available by 31st ~~of August~~October regardless of publication status (published and unpublished) with no language restriction.

Electronic ~~D~~databases

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Searching other resources

~~In addition, we will conduct a thorough check of the reference lists of included studies and relevant reviews for potential eligible studies.~~ We will also search the proceedings of relevant conferences conducted in the last 10 years such as the International Health Economics Association conference~~-~~; and contact key researchers, organis~~z~~ations and companies working in the area of health~~-~~care financing for potentially eligible unpublished studies

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Data synthesis

We will present a table of included studies (clearly describing the methods, participants, type of CBHI, outcome measures and other relevant notes) and another table of studies that were considered potentially eligible but which ended up being excluded; with reasons for exclusion. If relevant quantitative studies that report similar outcomes are included, we will perform a random-effects meta-analysis by statistically pooling quantitative data from the studies. We will then assess statistical heterogeneity between study results using the Chi^2 test of homogeneity (with significance defined at the 10% alpha-level) and quantify any between-study heterogeneity using the I^2 statistics (20). If the included studies differ significantly in design, settings, outcome measures or otherwise, we will summarise the findings in a narrative format. For qualitative studies, designs such as phenomenology, grounded theory and ethnography will be considered. For the latter, data will be extracted using standardised data extraction tools adapted from the ~~Joanna Briggs Institute Qualitative Assessment and Review Instrument (JBI QARI) and put together in a meta-synthesis.~~ Critical Appraisal Skills Program (CASP) qualitative appraisal checklist and put together in a thematic analysis. This will involve the synthesis of findings using three steps: (i) assembling the findings according to their quality; (ii) categorising these findings on the basis of similarity in meaning; and (iii) subjecting these categories ~~in a meta-synthesis~~ to produce a single comprehensive set of synthesised findings.

We will report the methods, findings and implications of the findings of this review according to the PRISMA guidelines, including the extended guidance on reporting equity-focused systematic reviews~~recommendation for systematic reviews and meta-analyses~~ (21).

Discussion

Expected significance of the review

The findings of this systematic review will have policy, practice and research implications for low and middle-~~-~~income countries. Our results will present evidence of factors that influence the uptake of community-based health insurance schemes amongst the poor in the urban and rural populace. Such information will be useful to decision makers, programme managers and implementers alike. In addition to providing policy and programmatic insights, the review will also provide a management and organisational framework of community financing.

Abbreviations

LMICs, low and middle-income countries; OOP, out of pocket; CBHI, community-based health insurance; WHO, World Health Organization; WTP, willingness to pay; RCTs, randomised control trials; CBAs, control before-and-after studies; ITS, interrupted time series designs; CINAHL, Cumulative Index to Nursing and Allied Health Literature; OVID, Offshore Vessel Inspection Database Full Text; EMBASE, Excerpta Medica Database Guide; ERIC, Education Resources Information Centre; IBSS, International Bibliography of the Social Sciences; MeSH, Medical subject heading.

Competing Interest

The authors declare that they have no competing interest

Authors Contributions

All authors contributed to the conception and design of the review and will be involved in data acquisition. All authors were involved in the drafting of this protocol and have given their permission for publication. EA and KM will conduct study selection, data extraction, and analyses; with input from all co-authors. All authors will contribute in the interpretation of the results and the writing of the review.

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Appendix 1: Search strategy used for PubMed database

	Query
#10	#3 AND #9
#9	#4 OR #5 OR #6 OR #7 OR #8
#8	developing countries[MeSH Terms]
#7	(Low income country OR lower income country OR third world country OR middle income country)
#6	(Angola OR Republic of Angola OR Albania OR Republic of Albania OR Algeria OR The People's Democratic Republic of Algeria OR American Samoa OR Argentina OR Azerbaijan OR Belarus OR Belize OR Bosnia and Herzegovina OR Bosnia-Herzegovina OR Bosnia OR Botswana OR Brazil OR Federative Republic of Brazil OR Bulgaria OR China OR People's Republic of China OR Colombia OR Costa Rica OR Fiji OR Gabon OR Gabonese Republic OR Grenada OR Hungary OR Islamic Republic of Iran OR Persia OR Iran OR Iraq OR Jamaica OR Jordan OR Hashemite Kingdom of Jordan OR Kazakhstan OR Lebanon OR Lebanese Republic OR Libya OR State of Libya OR Macedonia OR Republic of Macedonia OR Malaysia OR Maldives OR Republic of the Maldives OR Maldive Islands OR Marshall Islands OR Republic of the Marshall Islands OR Palau OR Republic of Palau OR Panama OR Republic of Panama OR Peru OR Romania OR Serbia, OR the Republic of Serbia OR Seychelles OR the Republic of Seychelles OR South Africa OR Saint Lucia OR Saint Vincent and the Grenadines OR Suriname OR Thailand OR Kingdom of Thailand OR Tonga OR Kingdom of Tonga OR Tunisia OR Turkey OR Turkmenistan OR Turkmenia OR Cuba OR Dominica OR Commonwealth of Dominica OR The Dominican Republic OR Ecuador OR Mauritius OR Mexico OR United Mexican States OR Montenegro OR Namibia OR Tuvalu OR Ellice Islands OR Venezuela OR the Bolivarian Republic of Venezuela)
#5	(Armenia OR armenia OR Bhutan OR Kingdom of Bhutan OR Bolivia OR Plurinational State of Bolivia OR Cameroon OR Republic of Cameroon OR Republic of Cameroun OR Cape Verde OR Republic of Cape Verde OR Cote D'ivoire OR Ivory Coast OR Republic of Cote D'ivoire OR Djibouti OR Republic of Djibouti OR Arab Republic of Egypt OR Egypt OR El Salvador OR Georgia OR Ghana OR Republic of Ghana OR Guatemala OR Republic of Guatemala OR Guyana OR Co-operative Republic of Guyana OR Honduras OR Republic of Honduras OR Spanish Honduras OR Republic of Indonesia OR Indonesia OR India OR Republic of India OR Kiribati OR Republic of

	Kiribati OR Kosovo OR Kosovo and Metohija OR Laos OR Lao Lao People's Democratic Republic OR Lesotho OR Kingdom of Lesotho OR Mauritania OR Islamic Republic of Mauritania OR Micronesia, Fed. Sts. OR Federated States of Micronesia OR FSM OR Moldova OR Republic of Moldova OR Mongolia OR Morocco OR Kingdom of Morocco OR Nicaragua OR Republic of Nicaragua OR Nigeria OR Federal Republic of Nigeria OR Pakistan OR Islamic Republic of Pakistan OR Papua New Guinea OR Independent State of Papua New Guinea OR Paraguay OR Republic of Paraguay OR Philippines OR Republic of the Philippines OR Samoa OR Independent State of Samoa OR Sao Tome and Principe OR Democratic Republic of Sao Tome and Principe OR Senegal OR Republic of Senegal OR Solomon Islands OR Sri Lanka OR Democratic Socialist Republic of Sri Lanka OR Sudan OR Republic of the Sudan OR North Sudan OR Swaziland OR Kingdom of Swaziland OR Ngwane OR Yuwatini OR Syrian Arab Republic OR Syria OR East Timor OR Timor-leste OR Democratic Republic of Timor-leste OR Ukraine OR Uzbekistan OR Republic of Uzbekistan OR Vanuatu OR Republic of Vanuatu OR Vietnam OR the Socialist Republic of Vietnam OR West bank and Gaza OR Yemen OR Yemeni Republic OR Zambia OR Republic of Zambia.)
#4	(Afghanistan OR Islamic Republic of Afghanistan OR Bangladesh OR People's Republic of Bangladesh OR Benin OR Dahomey OR Republic of Benin OR Burkina Faso OR Burkina OR Republic of Upper Volta OR Burundi OR Republic of Burundi OR Cambodia OR Kingdom of Cambodia OR Central African Republic OR Chad OR Republic of Chad OR Comoros OR Union of the Comoros OR Democratic Republic of the Congo OR DR Congo OR Congo-Kinshasa OR DRC OR Zaire OR Eritrea OR State of Eritrea OR Ethiopia OR Federal Democratic Republic of Ethiopia OR The Gambia OR Republic of the Gambia OR Guinea OR Republic of Guinea OR Guinea-Conakry OR Guinea-Bissau OR Republic of Guinea-Bissau OR Haiti OR Republic of Haiti OR Kenya OR Republic of Kenya OR North Korea OR Democratic People's Republic of Korea OR Kyrgyz Republic OR Kyrgyzstan OR Liberia OR Republic of Liberia OR Madagascar OR Republic of Madagascar OR Malawi OR Republic of Malawi OR The Warm Heart of Africa OR Mali OR Republic of Mali OR Mozambique OR Republic of Mozambique OR Myanmar OR Burma OR Republic of the Union of Myanmar OR Nepal OR Democratic Republic of Nepal OR Niger OR Republic of Niger OR Rwanda OR Republic of Rwanda OR Sierra Leone OR Republic of Sierra Leone OR Somalia OR Federal Republic of Somalia OR South Sudan OR Republic of South Sudan OR Tajikistan OR Republic of Tajikistan OR Tanzania OR United Republic of Tanzania OR Republic of Tanganyika and Zanzibar OR Togo OR Togolese Republic OR Uganda OR Republic of Uganda OR Zimbabwe OR Republic of Zimbabwe OR Rhodesia)

#3	#1 AND #2
#2	“community based” OR “rural” OR “mutual” OR “micro” OR “community” OR “group”
#1	"health insurance"[MeSH Terms]

Appendix 2: Summary of the search outputs for the different databases

Name of data-base	Number of records retrieved
PubMed	968
Academic Search Premier via EBSCO	2979
Africa-Wide Information via EBSCO	126
Business Source Premier via EBSCO	4235
Sociological abstracts	239
CINAHL	227
EconLit via EBSCO	286
ERIC via EBSCO	419
Humanities	42
PsycInfo via EBSCO	764
SocIndex via EBSCO	600
Scopus	4428
Africa Index Medicus	35
Cochrane (Trials and economic evaluation)	438
LILACS	272
IndMED	2
Social care online	165
Web of Science	812
Academic onefile	523
JSTOR	139

Appendix 3: Proposed timeline for the review

Activity	Start date	End date
Protocol development	2 January 2013	31 October 2013
Registration in Prospero and submission of protocol for publication	1 September 2013	30 November 2013
Electronic database search	1 November 2013	5 November 2013
Screening and study selection	6 November 2013	28 February 2014
Data extraction	1 March 2014	30 April 2014
Data analysis and write up	1 May 2014	31 May 2014
Submission of review for publication	1 June 2014	30 June 2014