DETERMINANTS OF COMMUNITY-BASED HEALTH INSURANCE SCHEME ENROLMENT IN DEVELOPING COUNTRIES: A SYSTEMATIC REVIEW

Abstract:

In developing Nations, the Community-based Health Insurance (CBHI) scheme is a potential approach to increasing access to quality healthcare. It has the potency of generating financial resources for health services; plus improve on the standard of life of the people. Evidence based reports suggest that enrolment into the CBHI is still low, particularly among low income earners of the third world nations. Thus, this study was undertaken to review and help formulate policies by existential evidence on the factors that determines enrolment into the CBHI in developing countries. Study adopted the thematic synthesis of both qualitative and mixed method studies that report the above measure of interest. Study relied on Ovid Medline In-Process and other Non-Indexed citations till present. Study sourced the web of Knowledge, Google Scholar for articles relating to enrolment into CBHI in developing countries. Six studies (qualitative and mixed method studies) reporting qualitative results on the factors determining enrolment into CBHI in developing countries met the inclusion criteria. Quality assessment was carried out on each study and findings were synthesised with the aid of thematic synthesis. Four major themes were identified by interpreting and categorizing the themes across all selected studies; Individual factors, Scheme factors, Service provider factors and Requirement to team up with others before enrolment. In the end, study observed enrolment into CBHI scheme in developing countries to be driven by several factors including age and policy making, most of which positively or negatively influence decisions made by households to enrol or not in the CBHI scheme. Findings from this review are expected to contribute to policy and decision making for health care centres under CBHI scheme in developing countries.

INTRODUCTION

The National Health Insurance Scheme (NHIS) is a programme instituted in most developing countries to complement sources of financing the health sector [1], [2]. The scheme was established due to the general poor state of healthcare centres, excessive rise in cost of treatment, marked dependence on government provided

health centres and markedly increasing out-of-pocket expenses to purchase health services [1]. It was designed to improve fair financing, risk protection and cost-burden sharing for people by protecting against high cost of health care through prepaid mechanism before falling sick [3]. The scheme is also committed to ensuring universal coverage and access to health care to improve the health status of people in developing countries. However, the NHIS is not there in all developing countries and where the informal sector predominates it is advised to use Community-Based Health Insurance (CBHI) scheme.

As noted by the World Health Organization (WHO), countries with a small formal sector can only enhance pooling of financial reserves at community level [3]. This community financing is a measure to cover a large variety of health financing arrangements. It includes micro-insurance, community health funds, mutual health organizations, rural health insurance, revolving drug funds and community involvement in user-fee management. The CBHI is known to be a promising mechanism to increase access to healthcare and generate additional financial resources for health services [2], [3]. This is known to be based on the concepts of mutual aid and social solidarity. It was designed for people in the informal and rural sectors who are unable to get adequate public, private, or employer-sponsored health insurance.

The CBHI in developing countries is funded from a variety of sources, most notably through contributions collected by the central government, supports from private sectors, donor organizations, non-governmental organizations (NGOs), investment dividends and other miscellaneous sources[1], [3], [5]. The central government in developing countries provide funds for many of the programs [1], [2]. It pays about 60 per cent of the contributions for participants registered under the scheme [1], [2]. Private contributions account for about 5 per cent of the total contribution made by participants in the informal sectors. There is 10 per cent co-payment per prescription by every participant at the point of service [1], [2], [5].

Payment for services under the CBHI scheme in developing countries is based on scheduled negotiation by the health care providers and the central governing body. Two specified provider-payment arrangement have been identified. The Capitation payment, which is a lump sum paid to the health care providers for services to be rendered to the insured person irrespective of usage [5]. There is a

defined specification on the amount to be paid per patient within a stated period of time, regardless of the cost of services rendered. The other method is fee-for-services [5]. This consists of payments made to the health care providers for specific services provided upon appropriate referrals or for prescriptions.

Ghana among all other developing countries began implementation of CBHI in the year 2003 [6], [12]. The scheme started gaining increased attention after one year in other developing countries that are seeking to reform their health care system [6]. It is worth noting that most developing countries achieved success in the first few years after establishment of CBHI, but this apparent success lacked sustainability due to a number of reasons one of them being the problems concerning long term financial sustainability [1], [2], [12].

The coverage of CBHI, following assessment after few years of establishment in most developing countries was found to remain low [1], [2]. There was a need to have more insight on why this is so in most developing countries. The central government in collaboration with the Ministries of Health (MoH) in most developing countries hypothesized that people may have rational and understandable reasons for not joining the scheme [3], [12], [14]. Studies carried out in most developing countries have tried to investigate the causes of this low enrolment [5], [13]. Findings from these studies revealed factors such as poverty, poor quality of care in the health services, convenience of the scheme and lack of community participation in setting up the scheme as the main causes of low enrolment in developing countries. This study aims to collate the evidence from these studies to contribute to a better understanding of the factors determining enrolment into the CBHI scheme in developing countries.

Mode of Operation of CBHI in Developing Countries

The CBHI scheme was designed to ensure equal access to quality health care services to everyone, regardless of the level of income and socio-economic status [4], [14]. The management is vested in a central governing body that comprise representatives from public and private sectors [5], [7]. There is equal representation from MoH, Ministry of Labour and Ministry of Finance [7], [11]. There is also the Health Maintenance Organization (HMO) which is the organization that provides or

arranges managed care for health insurance, self-funded health benefit plans, individuals and other entities in connection with health care providers on a prepaid basis [4], [7]. The HMO only covers care rendered by health professionals who have agreed by contract to treat patients in accordance with stipulated guidelines and restrictions. The guideline defines the Formal Sector Program (FSP)in which the cost of health care of employees is defrayed by pooling the contributions of employees and employers [5]. Under the FSP are the public and private sector employees, members of the armed forces, police and allied services, tertiary institution students and other voluntary contributors. The Informal Sector Program (ISP) provides coverage to urban self-employed individuals, rural community dwellers, children under the age of 5years, permanently disabled persons and prison inmates [5].

Strengths and Weaknesses of CBHI in Developing Countries

The strength of a scheme is assessed by the way it affects the standard of living of the citizenry. One of the greatest achievements of CBHI so far is its acceptance by most developing countries [7]. In the recent time, Rwanda and Ghana among all other developing countries are known to have taken the CBHI scheme to great lengths in terms of coverage and scope [11], [12]. Rwanda has achieved an estimated coverage of 91 per cent from 7 per cent in the year 2003[11]. In Ghana, the CBHI has achieved coverage of 66 per cent since it was established in the year 2003[12]. It is worth noting that despite this relative success, recent evidence shows that CBHI in developing countries is falling short of its equity goals with relatively lower enrolment among the poor [1], [2]. Evidence has revealed a variety of implementation problems such as poor quality of care, lack of trust in the scheme and high enrolment dropout rate to be responsible for the low enrolment in developing countries.

Health Care Benefits Of CBHI in Developing Countries

The covered health care benefits for participants in the FSP in developing countries include in-patient care, out-patient care, and prescription drugs as contained in the approved list [5]. For other participants in the ISP, the guidelines implement two methods of allocating benefits [5]. The vulnerable groups (children, disable persons and prisoners) are entitled to a defined set of minimum health

services as stipulate in the approved list. The other two groups (urban self-employed and rural dwellers) are treated from flexible monthly voluntary contributions.

CBHI Challenges in Developing Countries

The CBHI scheme has provided gratis coverage for participants with low socio-economic status in developing countries. However, it is worth noting that the coverage is still highly restrictive [1], [2]. The low rate of enrolment into the scheme has been attributed to a decline in the standard of living of people in developing countries [6], [14]. The 'Non-compulsory participation' policy has affected enrolment into the CBHI scheme in developing countries [8]. Also there are challenges linked with superstitious notions particularly among illiterates that purchasing health insurance is "inviting illness". The scheme in developing countries has also been faced with the challenge of inadequate mobilization campaigns [8]. It is known that the success of any government sponsored program depends on the level of support rendered by the government. Policy experts also recognize that in order to secure adequate level of support, the program has to be packaged in such a way that it will be "sellable" to those whose acceptance of the scheme is necessary for its success. The inequitable health care packages and excessive costs of transportation to the health care centres have also posed a number of threats on this scheme in developing countries [8]. The scheme is also faced with the problem of poor staff motivation and concentration of health personnel in the urban areas [1], [8], [9]. There is also lack of interest in the existing facilities by the health workers and the entire populace[9]. All these lead to patients not being treated with sufficient courtesy and respect. Inability of the government to carry citizens along is also a big problem [9], [10]. There exists political influence and power tussles among principal officers in most developing countries [9], [10]. Political instability is also a major challenge to the scheme [9], [10]. Mismanagement of funding and lack of accountability has also posed a large threat on the CBHI scheme in most developing countries [1], [9], [10]. Though there is awareness of the existence of the scheme among professionals, the knowledge of the principles of operation is poor [9], [10].

AIM

To aimed at providing evidence(s) on the factors determining enrolment into CBHI in developing countries, with the view to contributing towards policy formulation. Specifically, study assessed determining factors for enrolment into CHBI in developing countries. Study also examined the present level of coverage of CBHI in developing countries; comparing it at various levels of enrolment into CBHI scheme between low and high income earners in developing countries.

Materials and Methods

Both qualitative and mixed methods were adopted. Study assessed the determinant factors of enrolment into CBHI in developing countries in this review. This review also included qualitative findings from questionnaires, in-depth interviews, focus group discussions, semi-structured key informant and exit interviews. Findings from the quantitative aspects of mixed method studies may be useful in recruiting members of the focus group, hence making the qualitative approach easier [17]. Quantitative findings in the mixed method may also make this review internally valid, while the qualitative finding makes it externally valid [16].

Mixed method review design was selected for this review to guarantee quality evidence of the factors determining enrolment into CBHI in developing countries. Hence, findings on individual perception derived from selected studies can be analysed. However, reliability of results of this review is dependent on the quality of findings from selected studies and researcher bias. Findings from this review will explain variations in the findings from the included primary studies. This may help develop new theories that will contribute to the understanding of the reasons for low enrolment into CBHI in developing countries.

Research Design

Study adopted the systematic type of research design. It systematically reviewed literatures and assessing the determining factors for enrolment into CBHI in developing countries. It followed the SPICE concept, which was adopted from Booth [20], modifying it to formulate review question. The SPICE concept stands for S-setting, P-population, I-intervention, C-comparison and E-evaluation; serving as a guide towards accomplishing the aims and objectives of this review. The research protocol was modified in a way to describe the methodology, benefits and

purpose of the research, materials and problems that may be encountered in the research. This research protocol may also help to maintain a focus bearing in mind the research question. It may serve as a template on which the entire research work is built. The factors determining enrolment into CBHI in developing countries will be assess and analysed in the course of this study.
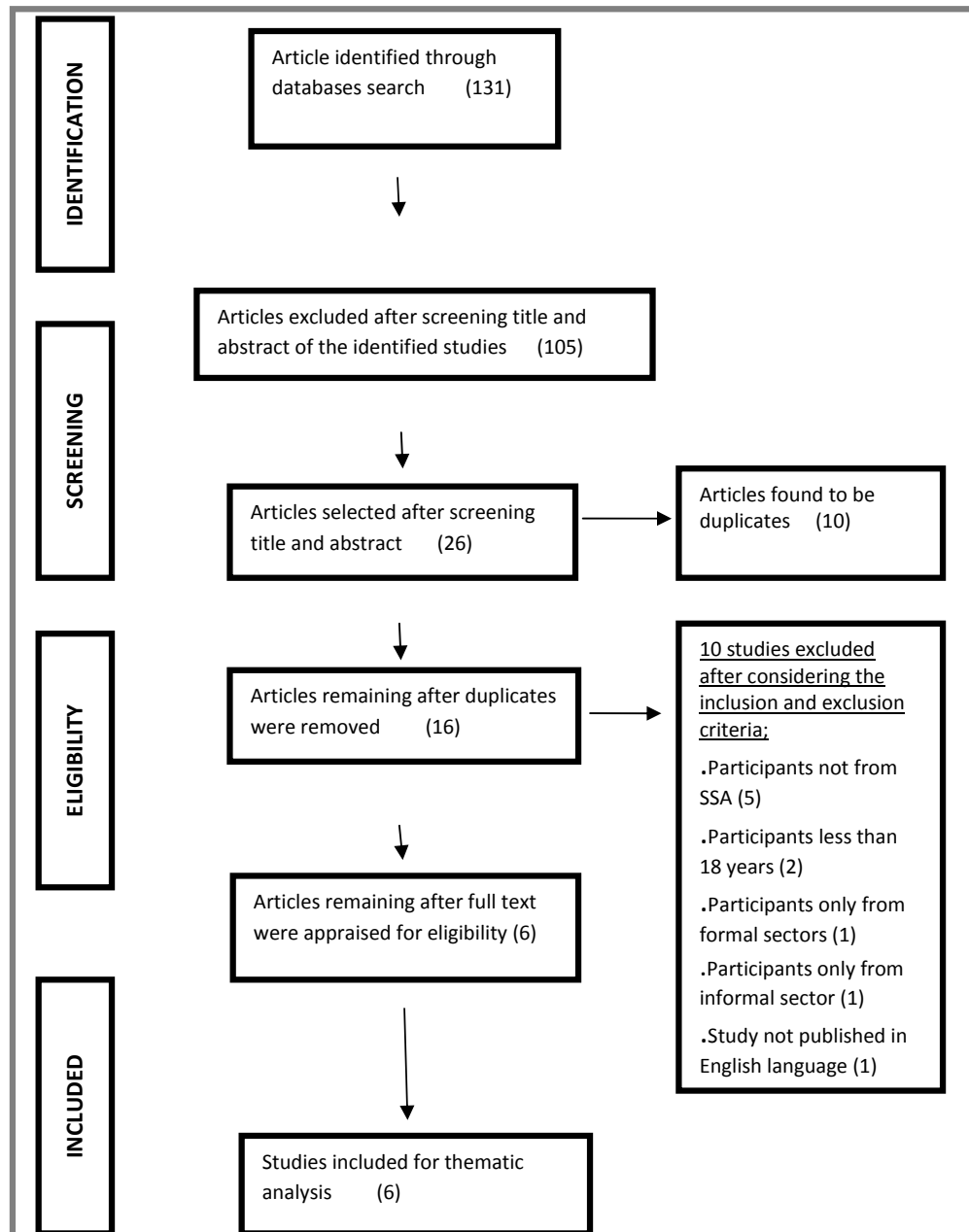
Search Terms

The SPICE concept was used to split the search terms into five parts. Keywords from the authors' abstract, grey literature and plain English summary were identified and used as search terms. Advanced search of key databases was utilised, and search terms linked together with Boolean Logics.

Ethical consideration: Study was a systematic literature review, and did not involve human participation. Hence, ethical approval was not required by SCHARR library, but an ethical form signed by the supervisor and reviewer was applied to the study.

Selection Criteria

Studies for this review were selected by screening titles, abstract, full text and relevance to the review topic. A few identified studies were not relevant to the review topic and were excluded at title and abstract levels. Other excluded studies are reports, conference proceedings, editorials and professional seminar presentations. The remaining studies were carefully read to understand the methodology and rationale, as this is to ensure they fulfil study criteria. Eligible studies were assessed based on the inclusion and exclusion criteria from the title, abstract and full text, bearing in mind the SPICE concept. Studies that are similar to the review topic were carefully assessed, as this is to prevent repetition of already conducted review. Few studies were found to be duplicated, and were excluded from this review. Only relevant studies were included in this review. Few of the identified studies were also found not to be subscription-free, hence details of the author and article submitted to SCHARR library for retrieval. A few studies were accessed by contacting the author through E-mail, and were included in this review.

Figure I: Flow Chat Summary of selection process for this study

```
┌─────────────────────────────────────────────────────────────────────────┐
│  IDENTIFICATION    ┌──────────────────────────┐                          │
│                    │ Article identified through│                          │
│                    │ databases search    (131) │                          │
│                    └──────────────────────────┘                          │
│                               │                                           │
│                               ↓                                           │
│  SCREENING    ┌──────────────────────────────┐                           │
│               │ Articles excluded after screening │                      │
│               │ title and abstract of the        │                       │
│               │ identified studies      (105)    │                        │
│               └──────────────────────────────┘                           │
│                               │                                           │
│                               ↓                                           │
│               ┌──────────────────────────┐    ┌──────────────────┐       │
│               │ Articles selected after   │───▶│ Articles found to │      │
│               │ screening title and       │    │ be duplicates (10)│      │
│               │ abstract      (26)        │    └──────────────────┘       │
│               └──────────────────────────┘                               │
│                               │                                           │
│                               ↓                                           │
│  ELIGIBILITY  ┌──────────────────────────┐    ┌──────────────────┐       │
│               │ Articles remaining after  │───▶│ 10 studies       │       │
│               │ duplicates were removed   │    │ excluded         │       │
│               │         (16)              │    │ ...              │       │
│               └──────────────────────────┘    └──────────────────┘       │
└─────────────────────────────────────────────────────────────────────────┘
```

- Article identified through databases search (131)
- Articles excluded after screening title and abstract of the identified studies (105)
- Articles selected after screening title and abstract (26)
- Articles found to be duplicates (10)
- Articles remaining after duplicates were removed (16)

10 studies excluded after considering the inclusion and exclusion criteria;

- Participants not from SSA (5)
- Participants less than 18 years (2)
- Participants only from formal sectors (1)
- Participants only from informal sector (1)
- Study not published in English language (1)

- Articles remaining after full text were appraised for eligibility (6)
- Studies included for thematic analysis (6)

Stages (left column): IDENTIFICATION, SCREENING, ELIGIBILITY, INCLUDED

This SPICE concept also guided in the identification of themes since this review was more of exploratory than experimental. It explores individual perception of CBHI scheme and relates this to the reason for enrolling, never enrolled and never renewed enrolment in the scheme. Both qualitative and quantitative studies with study population 18 years and above, conducted in SSA, comprising participants in informal sectors and published in English Language were considered in this review.

Exclusion Criteria

Exclusion criteria for the purpose of this review were based on;

1. Studies comprising participants that are less than 18 years of age
2. Studies comprising participants outside SSA
3. Studies not published in English Language

Data Collection Strategy

A structured review question was used to guide this review. A comprehensive search was carried out in electronic databases using keywords and a combination of 'MESH' terms. Due to the extensive nature of the review topic, databases specific to science were searched as they produce a wide range of up to date articles. The databases searched as highlighted thus;

1. Electronic databases

   i. Ovid MEDLINE (R) 2008 to June week 4 2012. Available from: http://ovidsp.tx.ovid.com/sp-3.5.1a/ovidweb.cgi?&S=LAPPFPFAMIDDCAFPNCALLCGCEKIK AA00&New+Database=Single|19Accessed 10/7/2012 – see Appendix II for details of the search

   ii. PsycINFO 2002 to July week 1 2012. Available from: http://ovidsp.tx.ovid.com/sp-3.5.1a/ovidweb.cgi?&S=KNMFFPFAOKDDCAHANCALJCGCIHN AAA00&New+Database=Single|24 Accessed 10/7/2012 – see Appendix II for details of the search

   iii. Scopus. Available from: http://www.scopus.com/home.url Accessed 10/7/2012 – see Appendix II for details of the search

   iv. CINAHL via EBSCO. Available from: http://web.ebscohost.com/ehost/search/advanced?sid=26b3769d-eca2-4452-8a09-4a4e3f3781c2%40sessionmgr10&vid=1&hid=8 Accessed 10/7/2012 – see Appendix II for details of the search

   v. Web of Knowledge (WoK). Available from: http://apps.webofknowledge.com/UA_GeneralSearch_input.do?product=UA&search_mode=GeneralSearch&SID=Y2d5OMgg6FLLiINC2

AP&preferencesSaved=   Accessed 10/7/2012 – see Appendix II for details of the search

    vi. Google. Available from: http://www.google.co.uk/   Accessed 10/7/2012

    vii. Google Scholar. Available from: http://scholar.google.co.uk/ Accessed 10/7/2012

    viii.   Scribd. Available from: http://www.scribd.com/   Accessed 10/7/2012

2. References from identified articles

3. Hand searching of key journals based on database search results; the under-listed journals were searched from University of Sheffield Star-Plus using "Community-based health insurance" as the keyword. This was done due to the number of related articles found on database search

    i. Parmar, Divya. 2012. Adverse selection in a community-based health insurance scheme in rural Africa: Implications for introduction targeted subsidies [Internet]. BMC Health Serv Res; Volume: 12, Issue: 1, Pages: 120-190. Accessed 16/7/2012.

    ii. Kent, R.M. Making health insurance work for the poor: learning from the self-employed women's association (SEWA) community-based health insurance scheme in India. 2006. SocSci Med; Volume: 62, Issue: 3, Pages: 700-750. Accessed 16/7/2012.

    iii. Kent, R.M. Reduction of catastrophic health care expenditures by a community-based health insurance scheme in Gujarat, India: current experiences and challenges. 2002. Bull World Health Organ; Volume: 80, Issue: 8, Pages: 600-630. Accessed 16/7/2012.

Though few identified studies in the Cochrane register met the inclusion criteria, the database was searched to identify previous review on the review topic. A thorough search of Google and Google scholar was done to discover grey literature of published and unpublished articles. In the series of databases searched, the results of each search were combined using Boolean Logic "OR" and "AND" to either

widen or narrow the result. The ScHARR library was utilised to obtain articles that met the inclusion criteria but could not be accessed from the University of Sheffield database. A few authors were contacted through E-mails for further clarification of some aspects of the included articles.

After sifting through title and abstract of all the articles retrieved from database search, twenty-six articles were selected for further assessment. Details of the search carried out in the databases are as shown in the table below;

Databases search	Number of articles retrieved	Number of articles selected
Ovid MEDLINE	1	1
ProQuest	46	7
SCOPUS	51	8
CINAHL via EBSCO	8	3
Web of Knowledge (WoK)	7	3
Google	5	2
Google Scholar	7	1
SCRIBD	6	1
Total	131	26

Data Extraction

This was done solely by the author using data extraction form which was designed and piloted with two identified studies.

Quality Assessment

This is the process of systematically examining research evidence to assess its validity, results and its relevance before it can be used to inform a decision [19]. There are identified criteria for appraising the methodological quality of qualitative, quantitative and mixed method studies [18]. The use of a single set of criteria for assessing qualitative studies is known to have been challenged in health science review [18]. There is always the problem of cut-off point to be applied in the assessment of findings from primary studies in most checklists. The checklist for Systematic Mixed Study Research (SMSR) was used in this review [18]. This was identified to have been used in the past for review of qualitative and mixed method studies. Whether studies satisfy the fifteen sub categories is indicated by designating

responses to each category as either 'PRESENT' or 'ABSENT'. While awarding scores to each of the primary selected studies, the answers to each parameter on the checklist is taken into account[18]. This is increasingly considered preferable in exploring impact of quality on estimation effect. In addition, the aim of using the SMSR checklist is to systematically appraise issues in included studies and consider if it is worth proceeding with the review [18].

Data Synthesis

Findings from selected studies were synthesized by a qualitative thematic data analysis [27]. This was done using themes developed from selected studies. Thematic synthesis was employed due to heterogeneity among selected studies. This method draws on other established methods but uses techniques to formalize the identification and development of themes. A thematic synthesis is also known to have combined findings from included primary studies to addresses questions related to appropriateness and effectiveness without compromising on key principles in the primary research [27]. Findings can hence be compared and contrasted in order to relate relevant findings in the selected studies to the review question.

RESULTS

Four major themes were identified by interpreting and categorizing the themes across all the selected studies. These include;

   i.   Individual factors

   ii.   Scheme factors

  iii.   Service provider factors

  iv.   Requirement to team up with others before enrolment

This process is ideally supposed to be performed independently by at least two researchers, so as to improve the reliability of the findings. It was done only by the author since this review is a student dissertation. The author extracted data from selected studies using the data extraction form, which was designed for this review and piloted with two of the selected studies. Data extracted include general study information which is the title, name of author, date of publication, country of study, setting of study, details of participants and details of intervention. Multiple reports of

findings were noted in one of the selected studies [21], but while in doubt, effort was made to contact the study author for clarity. The findings first recorded by the author were thereafter used in this review as they provide better answers to the review question.

Information from studies	Study 1	Study 2	Study 3	Study 4	Study 5	Study 6
Name of author(s)	Jehu-Appiah C., et al	De Allegri M., et al	Basaza R., et al	Jehu-Appiah C., et al	De Allegri M., et al	Basaza R., et al
Title of study	Household perceptions and their implications for enrolment in the National Health Insurance Scheme in Ghana	Understanding consumers' preferences and decision to enroll in community-based health insurance in rural West Africa	Community health insurance in Uganda: Why does enrolment remain low? A view from beneath	Equity aspects of the National Health Insurance Scheme in Ghana: Who is enrolling, who is not and why?	"To enroll or not to enroll?" : A qualitative investigation of demand for health insurance in rural West Africa	Low enrolment in Ugandan Community Health Insurance Scheme: underlying causes and policy implications
Year of publication	2011	2005	2007	2010	2005	2007
Language of publication	English Language	English Language	English Language	English Language	English Language	English Language
Name of journal	Health Policy and Planning	Health Policy	Health policy	Social Science & Medicine	Social Science & Medicine	BMC Health Services Research
Study design	Quantitativestudy	Qualitative study	Qualitative study	Quantitative study	Qualitative study	Qualitative study
Aim(s) of study	To assess association between perceptions and enrolment into CBHI	To provide adequate policy-guidance to decision makers in low and middle income countries by providing an in-depth understanding of how consumers' preferences may	To provide relevant elements for the design of a national policy on CBHI in sub-Sahara countries	To add to existing literature by looking at whether the CBHI is reaching the poor or not	To provide evidence on the determinants of enrolment into CBHI in low-income countries	To provide evidence for policy implications of the factors responsible for low enrolment into CBHI

		affect decision to enroll in CBHI				
Country of study	Ghana	Burkina Faso	Uganda	Ghana	Burkina Faso	Uganda
Setting of study	Central and Eastern regions (mixed urban rural population)	Nouna Health District in north-western region	Ishakacommunity	Central and Eastern region (mixed urban rural population)	Nouna Health District in north-western region	Ishaka Adventist Health Centre in Kampala, Luwero, Nakasongola and Nakaseke districts
Participants in the study	Individuals from selected households	Individuals from selected households	Members and non-members of CHI scheme in the community	Individuals from selected households	Household heads	Individuals from respective communities
Age of participant (years)	Mean age of 24.5 (SD 19.6)	Median age 42 (23-72)	18 years and above	Mean age of 24.5 (SD 19.6)	Median age 42 (23-72)	18 years and above
Sex of participants	Males and Females	Males and Females	Males and Females	Males and Females	Males and Females	Males and Females
Total number of participants (with male to female ratio)	Total number of participants=13,865 Number of Males (M)=6627 Number of Females (F)=7238 M:F is approximately 1:1	Total number of participants=32 Number of Males (M)=24 Number of Females (F)=8 M:F=3:1	Total number of participants=4,574 M:F not reported	Total number of participants=13,857 Number of Males (M)= 6624 Number of Females (F)= 7233 M:F is approximately 1:1	Total number of participants=32 Number of Males (M)=24 Number of Females (F)=8 M:F=3:1	Total number of participants=2,840 M:F not reported
Description of intervention	Ghana District-wide Mutual Health Insurance Scheme	District-wide Health Insurance Scheme which is	"Ishaka scheme" and "Save for Health Uganda" (SHU)	Ghana CBHI (a form of Social Health Insurance and Mutual	District-wide Health Insurance Scheme	The "Save for Health Uganda" (SHU) which is a Non-

15

	(DMHIS)	a form of (CBHI)	schemes. They are both forms of CBHI	Health Insurance)		Governmental organization (NGO) and the "Ishaka Scheme which is owned and controlled by the Ishaka Adventist Hospital
Inclusion criteria	Participants from both formal and informal sectors ≥ 18 years of age	Participants from both formal and informal sectors ≥ 18 years of age	Participants from both formal and informal sectors ≥ 18 years of age	Participants from both formal and informal sectors ≥ 18 years of age	Participants from both formal and informal sectors ≥ 18 years of age	Participants from both formal and informal sectors ≥ 18 years of age
Exclusion criteria	Individuals <18 years of age	Individuals <18 years of age	Individuals <18 years of age	Individuals <18 years of age	Individuals <18 years of age	In-patients and out patients, patients with chronic conditions
Method of data collection	Surveys (structured questionnaire)	In- depth interviews and focus group discussions	In-depth interviews and focus group discussion	Surveys (structured questionnaire)	In-depth interviews and focus group discussion	Review of the schemes' record, semi-structured key informant and exit interview
Authors' key findings	Perceptions play an important role in household decisions to voluntarily enroll and remain enrolled in insurance scheme	Understanding consumers' preferences is essential to guide the design of CBHI in developing countries	In order to get full picture on the reasons for low enrolment, it is recommended to also investigate how individuals and households perceive CBHI	Understanding consumers' perception of CBHI in developing country may influence decision to enroll into the scheme	Understanding individual perception of CBHI scheme in developing countries play an important role in shaping the decision to enroll	Policy makers need to understand individual and households' perception in order to improve enrolment
Authors' comment or	Perceptions related to providers, schemes and	Understanding consumers'	Understanding consumers'	Understanding consumers'	Understanding individual	Providing necessary legislative, technical

| conclusion | community attributes play an important role in household decision to enroll and remain enrolled in CBHI in developing countries | preferences and incorporating them into the design of CBHI in developing countries may result into an increased participation rate and ensures the poor gain better access to quality health care | perception is necessary to get full picture of the reasons for low enrolment into CBHI in developing countries | perception of CBHI in developing countries gives clear differences in determinant of enrollment between the rich and the poor | perception of CBHI in developing countries play an important role in shaping the decision to enrol | and regulative support to CHBI development in developing countries may increase participation rate |

Discussion

In this review, the factors determining enrolment into CBHI scheme were assessed from perceptions of participants in primary included studies and interpretation of the authors. A combination of qualitative and mixed method studies that reported the view of participants on the factors determining enrolment into CBHI scheme was considered in this review. A Mixed Study Review (MSR) is a form of mixed methods research whereby data derived from the review is primarily the text of publications reporting qualitative findings and quantitative results of primary empirical studies [18]. The MSR is also known to have been used while reporting some identified interventional studies of public health programs [17], [18].The findings from this review suggest these factors to be complex, and they determine enrolment into the CBHI scheme based on how individual household perceive them. These include Individual factors, Scheme factors, Service provider factors and Requirement to team up with others before enrolment. From the factors identified in the selected primary studies and the background of this review, it can be said that price of CBHI scheme inform of premium level and registration fee is one of the major hindrances to enrolment into CBHI scheme in developing countries. This is consistent with findings in other identified qualitative and quantitative studies conducted in developing countries[30], [31], [33]. These identified studies were not included in this review because they did not meet the inclusion criteria. The study by Ekman [31] was conducted in low income countries and most countries included in this study are outside SSA.

The study by Ibiwoye and Adeleke [33] was conducted only in Nigeria, but analysis of findings was primarily quantitative and it also comprises participants less than 18 years of age. However, findings from the selected primary studies have shown that participants with low socioeconomic status are mostly the 'uninsured' or 'previously insured'. The participants with low socio-economic status are depicted by low 'socio-economic quintiles' in most selected primary studies. It is clearly depicted across the studies that the probability of enrolment decreases if the price is perceived to be high. It was also noted across studies that a better implementation and premium waivers for the indigent poor could guarantee equitable participation in developing countries. Two of the selected studies [22], [25] also found institutional rigidity of payment modalities to be a barrier to enrolment, rather than the premium per se. These studies pointed out the need for policy makers to consider different

methods of payment modalities that suit households. This can be understood to be a huge problem affecting decision to enrol into CBHI scheme in developing countries.

In addition, findings across selected primary studies also reveal poor knowledge of the benefit package of CBHI among participants. The knowledge of the quality of care in CBHI is also very poor among participants in primary selected studies. The lack of adequate knowledge about the convenience of the scheme is one of the identified barriers to enrolment into CBHI in developing countries. Most studies reported that the attitude of health staff should be improved to encourage more enrolees into CBHI scheme. Participants across studies lack knowledge about the adequacy of the service delivery in developing countries. The lack of adequate information about the scheme has been responsible for the lack of trust by the participants across studies. This may be improved if community ownership of the scheme can be encouraged. The requirement to team up with other people before enrolment is one of the major factors affecting enrolment in developing countries.

Intervention to combat the scourge of low enrolment into CBHI in developing countries can be channelled towards striving to meet people's expectations of the benefits of the scheme. This will minimise dropouts and encourage new members. It should also be recognized that the success or failure in addressing perceptions of households in developing countries will have a positive or negative cumulative effect on enrolment.

The six selected primary studies were conducted in District Health Centres in SSA, which are mixed rural-urban health units. Hence, factors identified in this review may not be independently associated with enrolment into CBHI due to small sample size in few selected studies [22], [25]. Moreover, there may be differences in understanding and interpretation of questions by the participants in the selected primary studies or other confounding variables. This may be ascribed to recruitment of participants with different level of education, religion and health status across identified primary studies. The results in this review may be considered merely indicative and not generally applicable to the whole of SSA due to geographical, socio-cultural and socio-economic differences between regions where primary studies were conducted. The inclusion of a study [26] that aims at analysing policy implications may have posed likely methodological problems in assessing participants' perception of CBHI in this review. Although, the primary included studies in this review were conducted in developing countries (Ghana, Burkina Faso and Uganda), this review argues that factors identified determines enrolment into health insurance in other developing countries outside the scope of this review. On the other hand, this review embarked on asking

participants that were 'never insured' as to their perception about the benefits of CBHI scheme in developing countries. One can question the validity of the findings in this respect. But this review considered findings to be valid since their perception may not be based on actual experience but only their expectations. Three of the selected studies [22], [23], [25] interviewed exclusively household heads. One may consider the validity of the findings, and whether it can be generalised to the whole households. This review considers findings in this respect valid since they are the key decision-makers when it comes to allocation of economic resources in the household.

The CBHI scheme is relatively new in developing countries [32]. Due to the present low level of enrolment into CBHI scheme in developing countries, the number of identified literature on the scheme is low [32]. The identified published evidence on factors determining enrolment into the scheme in developing countries is minimal. The studies retrieved from the search strategy indicated two systematic reviews [31] [32] done in the past to assess the factors determining enrolment into CBHI in developing countries. The review by Ekman [31] assessed the evidence of the extent to which CBHI is a viable option for low income countries in mobilizing resources, providing financial protection and improving enrolment. The findings in this review was analysed quantitatively. Another review by Lagarde and colleagues [32] assessed the effectiveness of introducing, removing or changing user fees to improve access to health care in low and middle income countries. This review also adopted a quantitative study design. However, this review appraises empirical evidence on the factors determining households' decision to enrol into CBHI in developing countries and presents its findings qualitatively will contribute filling gaps in the pool of literature.

COMPARISON WITH OTHER REVIEW

The factors identified in this review include Individual factors, Scheme factors, Service provider factors and Requirement to team up with other people before enrolment into the scheme. This review shows similarity with one identified review [31] which noted that resource mobilization and financial protection are the major factors determining enrolment into CBHI in developing countries. This identified review [31] was conducted in 2004 in low income countries, but most of the countries included in this study are outside SSA. This identified review [31] was also conducted in only specific locations in the included countries under the author's discretion. The identified review [31]also concluded that enrolment into

CBHI is determined mainly by six factors namely cost-recovery, efficiency impact on care, quality impact on care, moral hazard, level of out-of-pocket spending and access to care. Although there are some similarities in the factors identified in this review and the identified review [31], but they differ in terms of the number of selected primary studies, data synthesis and quality assessment of identified primary studies. This review included six primary studies, used a thematic analysis of findings, and SMSR checklist for mixed method studies. The identified review [31] included thirty-six primary studies, used a descriptive or regression analysis, and an Ekman B checklist of quantitative studies.

In another identified review [32] that assessed the effectiveness of introducing, removing or changing price of CBHI scheme to improve access to care in low-and middle-income countries. Two factors were identified in this review which are; the price of CBHI scheme and quality of care. These factors were identified at nation-wide level in low- and middle-income countries. The identified review was conducted in 2011 in low and middle income countries. Though the criteria used to distinct these countries based on the level of income was not mentioned, but most of the countries in this review fall outside SSA. The identified review [32] differs from this review in terms of primary study selection criteria, data collection and data analysis. In this review, the perception of participants and interpretations by authors are assessed for factors determining enrolment into CBHI. The identified review [32] included interrupted time-series studies and controlled before-and-after studies that reported objectives measures of outcome. The identified review [32] review also made a re-analysis of primary studies with longitudinal data to undertake narrative summary of evidence.

Although, there is a short space of time between this review and the identified reviews [31], [32] on CBHI scheme in developing countries. This review may fill the gap in existing literature about CBHI in developing countries. This review will also add to the pool of literature about the factors determining enrolment into CBHI scheme in developing countries, contribute to policy and decision making for the MoH in SSA countries.

Implications for Policy Makers, Practice and Further Research

The factors identified in this review have shown the need for policy makers, MoHand health care professionals to understand household perception and their implications for

enrolment into CBHI in developing countries. This understanding will give an insight to policy makers while mobilising human and capital resources towards the smooth-running of CBHI scheme in developing countries. It will also enhance the mind-set of health care professional while dealing with enrolees in the accredited centres under the CBHI scheme.

Further review on CBHI in developing countries would be recommended so as to discover more factors determining enrolment into the CBHI scheme. Further studies may be qualitative and quantitative in nature, designed to develop on the organizational/structural framework of CBHI scheme in developing countries. It will also be helpful if policy makers and health care professionals both at community and national level develop feasible policies that aim at improving access to quality health care in developing countries. The poor understanding of policy makers in developing countries about household perceptions and its implications for enrolment should be tackled by presentation of evidence by health care professionals, community health workers and individuals [36]. This will thereby encourage individuals to enrol and remain enrolled in the CBHI scheme. Appropriate and detailed counselling sections should be encouraged to enlighten households about the benefits of CBHI scheme in areas where this knowledge is lacking. This will help the CBHI scheme in developing countries to combat the scourge of low enrolment.

Conclusion

Enrolment into CBHI in developing countries is complex. It is determined by several factors. The factors identified in this review include Individual factors, Scheme factors, Service provider factors and the requirement to team up with others before enrolment into CBHI scheme. These factors may positively or negatively affect households in the decision to enrol and remain enrolled in the CBHI scheme. The findings from this review are expected to contribute to the understanding of policy makers on the need to recognize household perceptions as potential barriers to enrolment, and also to invest this understanding in their design of interventions to stimulate enrolment. The need to understand household perceptions and its implication for enrolment is summarised in one of the quotations from a participants.

References

1. Abel-Smith, B. 1992. Health insurance in developing countries: lessons from experience [Internet]. Oxford. Available from: http://heapol.oxfordjournals.org/content/7/3/215.full.pdf+html   Accessed 3/7/2012.

2. Peters, D.H. et al. 2009. Improving health service delivery in developing countries: from evidence to action [Internet]. http://www.enrecahealth.dk/news/e-learning/Improving_Health_Service_Delivery.pdf/   Accessed 2/7/2012

3. World Health Organization. 2003. Community-based health insurance scheme in developing countries [Internet]. Geneva. Available from: http://www.who.int/health_financing/en/community_based_health_dp_e_03_1.pdf   Access 4/7/2012

4. Awosika, L. 2005. Health insurance and managed care in Nigeria [Internet]. Available from http://www.ajol.info/index.php/aipm/article/viewFile/39066/26230   Accessed 1/7/2012

5. Nnamuchi, O. 2009. The Nigerian social health insurance system and the challenges of access to health care: an antidote or a white elephant? [Internet]. Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1138276 Accessed 4/7/2012

6. Sarpong, N. et al. 2009. National health insurance coverage and socio-economic status in a rural district of Ghana [Internet]. Available from: http://www.ncbi.nlm.nih.gov/pubmed/19961565 Accessed 2/7/2012

7. Arnab, A. et al. 2011. Impact of National-level or social health insurance for the poor and the informal sector: a systematic review of LMICs [Internet]. Available from: http://www.lidc.org.uk/_assets/Arnab%20Acharya%20paper%20revised.pdf   Accessed 4/7/2012

8. Carrin, G. 2002. Social health insurance in developing countries: A continuing challenge [Internet]. Available from: http://www.who.int/health_financing/documents/shi_continuing_challenge.pdf   Accessed 3/7/2012

9. Ogaboh, A.A.M. et al. 2010. National Health Insurance Scheme (NHIS) and employees' access to healthcare services in Cross River State, Nigeria [Internet]. Available from: http://globaljournals.org/GJHSS_Volume10/3-National-Health-Insurance-Scheme-NHIS-and-Employees.pdf Accessed 6/7/2012.

10. Okaro, A.O. 2010. Awareness and perception of National Health Insurance Scheme (NHIS) among radiographers in South East Nigeria [Internet]. Available from: http://www.eurojournals.com/ajsr_8_03.pdf   Accessed 6/7/2012

11. Ministry of Health Rwanda. 2010. Economic development and poverty reduction strategy (EDPRS). Implementation report. Kigali. Available from: http://planipolis.iiep.unesco.org/upload/Rwanda/Rwanda_EDPRS_2008-2012.pdf   Accessed 3/7/2012

12. Gobah, F.K. 2011. The National Health Insurance Scheme in Ghana: Prospects and Challenges: a Cross-Sectional Evidence [Internet].Available from: www.ccsenet.org/journal/index.php/gjhs/article/download/.../8714 *Accessed 6/7/2012*

13. Jehu-Appiah, C. et al. 2011. Household perceptions and their implications for enrolment in the National Health Insurance Scheme in Ghana [Internet]. Available from: http://niche1.nl/resources/content/editorfile/Publication%20pdfs/Health%20Policy%20Plan_-2011-Jehu-Appiah-heapol-czr032.pdf Accessed 2/7/2012

14. Ibiwoye, A., Adeleke, I. A. 2009. A Log-Linear analysis of factors affecting the usage of Nigeria's National Health Insurance Scheme. Available from: http://www.medwelljournals.com/fulltext/?doi=sscience.2009.587.592 Accessed 13/7/2012.

15. Ekman, B. 2004. Community-based health insurance in low-income countries: a systematic review of the evidence [Internet]. Available from: http://heapol.oxfordjournals.org/content/19/5/249.full.pdf+html Accessed 17/7/2012.

16. Johnson, R.B., Onwuegbuzie, A.J., Turner, L.A. 2007. Toward a definition of mixed methods research [Internet]. Journal of mixed methods research. Available from: http://drupal.coe.unt.edu/sites/default/files/24/59/Johnson,%20Burke%20Mixed%20Methods%20Research.pdf Accessed 22/7/2012.

17. Bryman, A. 2008. *Social Research Methods*, 3rd edition. New York, Oxford University Press.

18. Pluye, P., 2009. A scoring system for appraising mixed methods research and concomitantly appraising qualitative, quantitative and mixed methods primary studies in mixed studies review [Internet].International Journal of Nursing Studies. Available from: http://meconsultingassignments.com/Docs/Research%20Methods/Pluye_2009_International-Journal-of-Nursing-Studies.pdf Accessed 23/7/2012.

19. Greenhalgh T. 1997. How to read a paper: Papers that summarise other papers (systematic reviews and meta-analyses). *BMJ,* 315(7109),672-675.

20. Booth, A. 2004. Formulating answerable questions. In A. Booth & A. Brice (Eds.), Evidence Based Practice: An information Professional's Handbook (pp. 60-80). Lnodon: Facet.

21. Jehu-Appiah, C. et al. 2011. Household perceptions and their implications for enrolment in the National Health Insurance Scheme in Ghana [Internet]. Available from: http://heapol.oxfordjournals.org/content/early/2011/04/18/heapol.czr032.full.pdf+html Accessed 10/8/2012

22. De Allegri, M. Et al. 2005. Understanding consumers' preferences and decision to enrol in community-based health insurance in rural West Africa [Internet]. Available from: http://ac.els-cdn.com/S0168851005001090/1-s2.0-S0168851005001090-main.pdf?_tid=5fb1f8f3666cca5f932ef658f9c3f192&acdnat=1345475385_b0921f3715bf4f7ddf44c401a4d03b72 Accessed 10/8/2012

23. Basaza, R. et al. 2007. Community health insurance in Uganda: Why does enrolment remain low? A view from beneath [Internet]. Available from: http://ac.els-cdn.com/S0168851007003016/1-s2.0-S0168851007003016-main.pdf?_tid=2dc8329047d7cf3513447c1e4b520a27&acdnat=1345475585_6ffc7a0b26a1251d66a458170309ebab Accessed 11/8/2012

24. Jehu-Appiah, C. et al. 2010. Equity aspects of the national Health Insurance Scheme in Ghana : Who is enrolling, who is not and why? [Internet]. Available from: http://ac.els-cdn.com/S0277953610007744/1-s2.0-S0277953610007744-main.pdf?_tid=1b0c76e1ef2f456759a79a8f0416b6d0&acdnat=1345474348_165568329568c5bb81592ebead002603 Accessed 12/8/2012

25. De Allegri, M. Et al. 2005. "To enrol or not to enrol?" A qualitative investigation of demand for health insurance in rural West Africa [Internet]. Available from: http://ac.els-cdn.com/S027795360500417X/1-s2.0-S027795360500417X-main.pdf?_tid=e75a5d77dae73da48b4c2612743ff08c&acdnat=1345476200_c02f448c1228ebae1e7f97afd62b79f9   Accessed 13/8/2012

26. Basaza, R. et al. 2007. Low enrolment in Uganda Community Health Insurance Scheme: underlying causes and policy implications [Internet]. Available from: http://www.biomedcentral.com/content/pdf/1472-6963-7-105.pdf   Accessed 13/8/2012

27. Thomas, J. and Harden, A. 2005. Methods for the thematic synthesis of qualitative research in systematic reviews [Internet]. Available from: http://eprints.ncrm.ac.uk/468/1/1007_JTAHthematic_synthesis.pdf   Accessed 14/8/2012

28. Gelberg, L. et al. 2000. The behavioural model for vulnerable populations: Application to medical care use and outcomes for homeless people [Internet]. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1089079/pdf/hsresearch00023-0019.pdf Accessed 14/8/2012

29. Sarpong, N. et al. 2010. National Health Insurance coverage and socio-economic status in rural district of Ghana [Internet]. Available from: http://sph.ug.edu.gh/lecturer/fobil/NHS_and_socioeconomic_district_in_ghana_7.pdf Accessed 16/8/2012

30. Jehu-Appiah, C. et al. 2011. Efficiency, equity and feasibility of strategies to identify the poor: an application to premium exemptions under National Health Insurance in Ghana [Internet]. Saly. Accessed 19/8/2012

31. Ekman, B. 2004. Community-based health insurance in low-income countries: a systematic review of the evidence [Internet]. Available from: http://heapol.oxfordjournals.org/content/19/5/249.full.pdf+html   Accessed 16/8/2012

32. Lagarde, M. and Palmer, N. 2011. The impact of user fees on access to health services in low- and middle-income countries (Review) [Internet]. Available from: http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD009094/pdf   Accessed 18/8/2012

33. Ibiwoye, A. and Adeleke, I.A. 2009. A log-linear analysis of factors affecting the usage of Nigeria's National Health Insurance Scheme [Internet]. Available from: http://docsdrive.com/pdfs/medwelljournals/sscience/2009/587-592.pdf   Accessed 19/8/2012

34. Demets, D.L. 1987. Methods for combining randomized clinical trials: Strengths and limitations. *Statistics in Medicine,* 6(3),341-348.

35. Olson, C.M. et al. 2002. Publication Bias in Editorial Decision Making. *JAMA,* 287(21), 2825-2828.

36. Ensor, T. and Cooper, S. 2004. Overcoming barriers to health service access: influencing the demand side [Internet]. Available from: http://info.worldbank.org/etools/docs/library/99169/CD_CC/precourse/CCFY04CDRom/Week2/4Thursday/S1BeyondHS/EnsorCooperDemandSideBarriers.pdf   Accessed 19/8/2012