



STUDY PROTOCOL

REVISED Community-based models of care for management of type 2 diabetes mellitus among non-pregnant adults in sub-Saharan Africa: a scoping review protocol [version 2; peer review: 2 approved]

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Abstract

Background: The burden of type 2 diabetes mellitus (T2DM) is increasing in low- and middle-income countries, including sub-Saharan Africa (SSA). However, awareness of and access to T2DM diagnosis and care remain low in SSA, leading to delayed treatment, early morbidity, and mortality. Particularly in rural settings with long distances to health care facilities, community-based care models may contribute to increased timely diagnosis and care. This scoping review aims to summarize and categorize existing models of community-based care for T2DM among non-pregnant adults in SSA, and to synthesize the evidence on acceptance, clinical outcomes, and engagement in care.

Method and analysis: This review will follow the framework suggested by Arskey and O'Malley, which has been further refined by Levac *et al.* and the Joanna Briggs Institute. Electronic searches will be performed in Medline, Embase, Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Scopus, supplemented with backward and forward citation searches. We will include cohort studies, randomized trials and case-control studies that report cases of non-pregnant individuals diagnosed with T2DM in SSA who receive a substantial part of care in the community. Our outcomes of interest will be model acceptability, blood sugar control, end organ damage, and patient engagement in care. A narrative analysis will be conducted, and comparisons made between community-based and

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Any reports and responses or comments on the article can be found at the end of the article.

facility-based models, where within-study comparison is reported.

Conclusion: Care for T2DM has become a global health priority. Community-based care may be an important add-on approach especially in populations with poor access to health care facilities. This review will inform policy makers and program implementers on different community-based models for care of T2DM in SSA, and critically appraise their acceptability and clinical outcomes. It will further identify evidence gaps and future research priorities in community-based T2DM care.

Keywords

community-based care, diabetes mellitus, treatment outcome, engagement in chronic care, access to healthcare, sub-Saharan Africa



This article is included in the **Sociology of Health gateway**.

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REVISED Amendments from Version 1

In further clarifying aspects of the protocol as recommended by reviewers, we have revised the paper to reflect the recommendations. In the introduction section, we expanded on the treatment received by people with diabetes in sub-Saharan Africa, and the challenges posed by such traditional approaches to care that necessitated community-based approaches. We also clarified the terms 'community-based care' and 'facility-based care'. We further highlighted that our aim is to map out and describe available evidence on community-based models of care, and will be interested in comparing with facility-based care where primary studies provide data for such comparison. We explained that since it was not clear what evidence existed on community-based care, a scoping review provided the needed tools at this stage to map out such evidence.

Under inclusion criteria, we clarified that participants will be included if they are diagnosed as diabetic using the World Health Organization (WHO)'s diagnostic criteria. In this section, we also clarified that intervention will be delivery of care outside of traditional facility-based care models such as in clinics and hospitals.

We classified outcomes into primary such as blood glucose indices and diabetes complications; and secondary outcomes such as engagement in care, and acceptability of care to patients and providers. We added that since acceptability of care is defined differently, it would be measured using scales adopted for each study by the authors.

We hope that these additions will improve clarity of the work.

Any further responses from the reviewers can be found at the end of the article

Introduction

Globally, there are about 463 million people living with diabetes mellitus, representing 9.3% of the global population aged 20 – 79 years.¹ This number is projected to rise to 700 million people in 2045.¹ Approximately 95% of diabetes mellitus cases are due to type 2 diabetes mellitus (T2DM), characterized by chronic hyperglycemia resulting from a decrease in insulin secretion, or insulin resistance.^{2,3} The chronic hyperglycemia results in a wide range of long-term complications such as atherosclerosis, coronary heart disease, peripheral neuropathy, diabetic foot syndrome, renal disease and retinopathy.² The burden of diabetes mellitus disproportionately affects low- and middle-income countries. Of the 700 million projected cases by 2045, low- and middle-income countries will account for an estimated 630 million.⁴ In sub-Saharan Africa (SSA), 20 million people currently live with diabetes with a projected increase to 47 million people by 2045.⁵

It has been reported that in SSA only 50% of persons with T2DM are aware of their diagnosis⁵ and only 29% of those are engaged in diabetes care.⁶ Late diagnosis and poor treatment contribute to high rates of T2DM complications in the region,⁷ with rising cases of retinopathy, nephropathy, and cardiomyopathy.⁷ As mortality and morbidity due to T2DM are expected to grow substantially in the region, a widely variegated approach to diagnosis and care is essential to increase awareness and treatment coverage. Such approaches should take into account the economic, geographical and socio-cultural characteristics, and the needs of the population.⁸ Traditionally, management of patients with diabetes in SSA is carried out in health facilities which are often congested, distant from patients' location and where these patients have to wait for long hours to access care.⁹ Care delivery for uncomplicated cases and low-risk groups in the community could result in fewer clinic visits, not having to travel long distances, not waiting in queues, and freeing up medical services in the facility for complicated cases and high-risk groups like pregnant women.¹⁰

Community-based care refers to interventions delivered outside of health facilities, in contrast to facility-based care which is delivered or based in clinics or hospitals.¹¹ It includes the services of professionals in residential and community settings in support of self-care and home care resulting in reductions in clinic visits, and not simply as 'add-on' to facility care.¹¹ Community-based healthcare utilizes the various supportive structures in the community such as family, peers, lay health workers, outreach health posts, community-based- and faith-based organizations, to deliver convenient, affordable, and effective care. As part of an integrated health system, community-based care emphasizes the localization of care close to the patient's residence rather than in a hospital or clinic.¹² The advantages of this approach include community ownership of health responsibility, identification and treatment of diseases at an early stage which reduces health costs faced by the patient and the health system.¹² Task-shifting from physicians to nurses or lay cadres is an essential component of community-based care.¹³ In the HIV/AIDS response, task-shifting and community care have yielded positive results, improving linkage to care, engagement in care, and patient clinical outcomes.^{14–17} T2DM programs could leverage on the lessons learnt and the success of this approach to improve screening and early diagnosis, as well as engagement in care. Currently, however, there is little evidence about T2DM community-based care models in SSA and how they perform with regards to acceptance, clinical endpoints, and long-term patient engagement in care.

Study rationale

To inform future policies and programs for T2DM in SSA, as well as identify evidence gaps and future research priorities in community-based T2DM care, this scoping review aims to summarize and categorize models of T2DM community-based care among non-pregnant adults in SSA, and to synthesize evidence on acceptance, clinical outcomes, and patient engagement in care. This review will also conduct within-study comparisons of community-based care models and facility-based care models, where primary studies report such comparison.

Method and analysis

Study design

We decided to use the scoping review approach to identify and map out available evidence on community-based models of T2DM care in SSA as the approach is well-suited to produce an overview of research evidence within the subject area, and on this particular topic. Using this approach, we will not conduct quality appraisal of selected studies, as we anticipate heterogeneity in the studies in terms of design and methodology. However, the scoping review approach will enable us to compile, categorize, and describe the existing evidence and its capacity to contribute to acceptable and quality T2DM care, which will inform practice, policy-making and future research.

We will conduct this scoping review using the six-stage approach initially developed by Arskey and O’Malley, which has been further refined by Levac *et al.* (2010) and the Joanna Briggs Institute methods of evidence synthesis, to ensure efficiency, quality, and reproducibility, as well as allow for critical appraisal of the findings.^{18–20} This approach recommends the following stages:

1. identifying the research question;
2. identifying relevant studies;
3. selecting studies;
4. charting the data;
5. collating, summarising and reporting the results;
6. expert consultation (optional and included).

Stage 1: Identifying the research questions

An iterative process guided by the PICO framework (Table 1) was undertaken to identify the research questions, following consultations with experts as well as within our longstanding research teams in Switzerland and Lesotho. During this process we realized that we would need to include studies that assess community-based T2DM care models on their own as well as studies that compare community-based T2DM care models versus facility-based models. Thus, question 3 below will only be answered by studies including a comparison. Following this process, three research questions were identified:

1. What kind of community-based T2DM care models among non-pregnant adults exist in SSA?
2. What are clinical outcomes of community-based T2DM care models in SSA in terms of acceptability to both patient and care provider, blood sugar control, end organ damage, and patient engagement in care?
3. How do community-based T2DM care models in SSA perform compared to facility-based care models (within study comparison)?

Table 1. The PICO framework.

Criteria	Determinants
Population	Adult persons with non-gestational type 2 diabetes mellitus in sub-Saharan Africa
Intervention	Community-based care delivery
Comparison	Facility-based care (where available)
Outcome	Acceptability, Fasting blood glucose, Random blood glucose, glycated haemoglobin (HbA1c), engagement in care, development of T2DM-related complications

Stage 2: Identifying relevant studies - search terms and inclusion/exclusion criteria Search strategy

We will conduct searches in Medline, Embase, Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Scopus. The initial search will be developed for Embase (Elsevier). The search string is divided into three parts, namely “community-based care”, “type 2 diabetes” and “sub-Saharan Africa”. The search strategy will include identification of Emtree terms and keywords relating to each part of the search string. The research team will develop the search string iteratively, based on preliminary searches.

In an initial step, search will be conducted for the concept ‘community-based care’, to identify different terms and keywords used in the literature to describe such out-of-facility care. The first 500 abstracts will be screened by the reviewers (EF, LG, JB, JH, FR) to also identify relevant synonyms. Terms and keywords will be considered ‘care-based community terms and keywords’ if they describe a care, treatment, or management-centred activity outside of a traditional facility setting. Terms and keywords will be considered ‘non-care-based community terms and keywords’ if they only describe activity outside of traditional facility setting without a care, treatment, or management-centred component. In a following step, search will be conducted for the concept ‘care, treatment, or management’. Similarly, the abstracts will be screened for relevant terms and keywords, which will then be combined with the non-care-based community terms and keywords using Boolean and proximity operators; the latter combination will be associated with the care-based community terms and keywords for a final search string for the concept ‘community-based care’; See [Figure 1](#).

During the preliminary search phase, the research team observed that some authors combined the reporting of diabetes mellitus, arterial hypertension or other cardiovascular conditions. Thus, the search string for the disease concept ‘type 2 diabetes mellitus’ will also include terms for hypertension and cardiovascular diseases. The string related to the geographical concept will be developed based on Campbell *et al.*²¹ and the United Nations standard country or area codes for statistical use.²²

Following development of search strings for each concept, the search will be carried out in a stepwise, building block fashion which will be connected to obtain a final total of relevant publications in the database. The search string will then be translated into other databases using Polyglot Search Translator (Systematic Review Accelerator).²³ The design of the search strategy will be conducted in consultation with a medical librarian. Details of the search including a preliminary search string are available as *extended data* on Figshare.²⁴ Language restrictions will not be placed on retrieved studies. Date restrictions will also not be placed on reviewed articles. From articles extracted for full text screening, a forward and backward search will be conducted for relevant references in the selected articles as well as for articles that cite the selected studies.

Criteria for identification of studies included in this review

Studies

We will include primary studies that have examined community-based models of care among patients with T2DM. Systematic or other reviews on community-based models of care will be included as a source of relevant original publications.

Participants

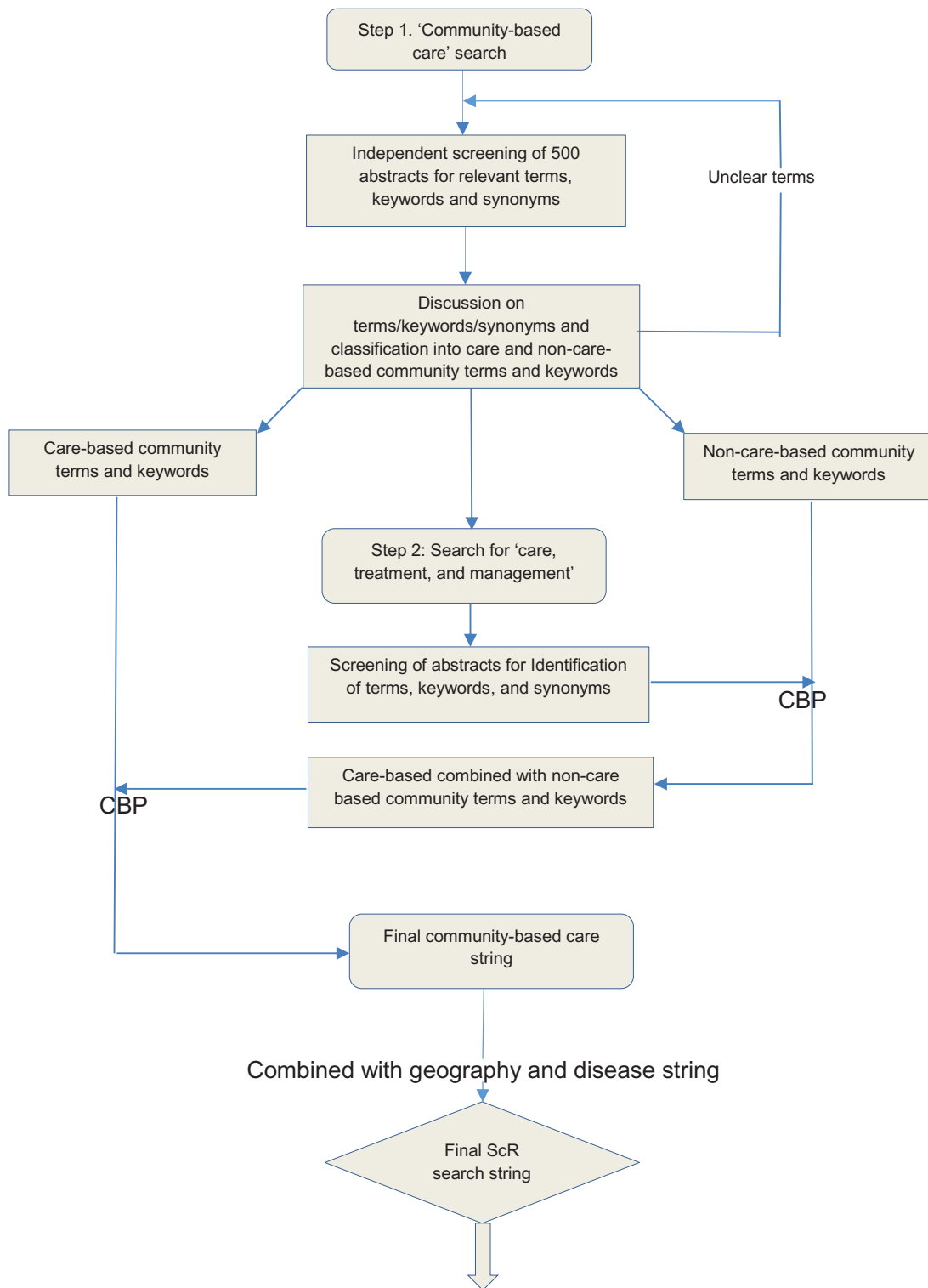
We will include studies that involved adults who have been diagnosed with T2DM using the World Health Organization (WHO)’s diagnostic criteria.²⁵ These adults will be resident and receiving care for their condition in sub-Saharan Africa.

Intervention

Intervention will be delivery of care outside of traditional facility-based care models such as in clinics and hospitals. See [Table 2](#) for components of a community-based model of care.

Comparator

With facility-based care, where primary studies provide data for comparison of facility-based care with community-based care.



Translation into other databases, deduplication, and application of eligibility criteria

Figure 1. Flow diagram of search and study selection process. CBP = combined with Boolean and proximity operators. ScR = scoping review.

Table 2. Components of a community-based model of care.

WHO	<ul style="list-style-type: none"> Any professional and non-professional cadre Doctors, medical non-physician clinicians, nurses, pharmacists, community health workers (and similar), peers, self-care, psychologists and social workers, family members Traditional healers (community members not providing western health care approaches) If non-professional providers: whether the project provides (or not) supervision and training from medical providers (inclusion criteria).
POPULATION	<ul style="list-style-type: none"> Individuals who screen positive for type 2 diabetes mellitus.
WHERE	<ul style="list-style-type: none"> Outside of the compound of a permanent health care facility. This may include, but not restricted to: community-based settings: outreach services, home-based care, places used for gathering (religious centres, schools, markets, shops) or delivering other services to citizens. Also, it includes e-health interventions.
HOW OFTEN	<ul style="list-style-type: none"> Model foresees a reduction in number of patients visits to the permanent health facility, as compared to the standard of care. The community part should not be an add-on to the care at the facility, but substitute some of the patient's contact with facilities.
WHAT	<p>Treatment provision in the community should include one of the following components:</p> <ul style="list-style-type: none"> Long-term medication prescription/distribution Point of care monitoring (e.g. with glucometer) Long-term lifestyle change support (at least 1 follow up encounter with a care provider) <p>The following elements may be part of the model and will be described:</p> <ul style="list-style-type: none"> Diagnosis of chronic complications Pharmaceutic treatment Screening and early diagnosis of disease Rehabilitation Behavioural interventions, health promotion, education

Outcome

Our primary outcomes will be clinical outcomes like blood glucose indices and T2DM complications. Our secondary outcomes will be engagement in care, and acceptability of care to patients and providers. As acceptability of care is variously defined,²⁶ we will measure acceptability using scales adopted for each study by the authors.

See [Table 3](#) for details.

Stage 3: Study selection

Initially, two reviewers (EF and LG) will independently screen abstracts based on the pre-defined inclusion and exclusion criteria. Studies will be classified as 'included' if they meet the inclusion criteria, 'excluded' as per the inclusion and exclusion criteria, or 'pending' if inclusion or exclusion cannot be immediately determined. Afterwards, full texts of all included and pending studies will be retrieved and the two independent reviewers will screen the full text for inclusion. Any disagreements during the screening process will be resolved by a meeting of the reviewers. Studies which were initially included but excluded during screening of the full text will be specifically labelled as such in a table of excluded studies including the reason for exclusion. Studies that were initially 'pending' but later included on closer application of criteria to full text will be documented similarly.²²

Stage 4: Charting the data

A data extraction tool will be created to electronically capture relevant information from each included study. Extracted data will include information on journal, authors and dates, study design, participants, type of community-based care model, and assessed outcomes ([Table 4](#)). The data extraction tool will be piloted on a subset of studies. Where applicable, outcomes in a comparator arm (facility-based care) will be extracted. Similar to the selection process, the extraction of data will be done in duplicate by two researchers independently, and any discrepancies will be iteratively discussed and resolved within the team.

Stage 5: Collating, summarising and reporting the results

A Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) flow diagram will be used to illustrate final numbers from included/excluded articles to fully reviewed studies. Studies will be grouped according to the type of care model and categorized according to outcomes reported. Study findings will be synthesized using narrative reporting based on themes that emerge from the extracted data. Where outcomes are stated for facility-based care, exploratory within-study comparison of outcomes will be described.

Table 3. Inclusion/exclusion criteria

Parameter	Inclusion criteria	Exclusion criteria
Population	<ul style="list-style-type: none"> Individuals aged 18 years and above, all genders, ethnic groups, education levels, socio-economic levels Diagnosed with type 2 diabetes mellitus (T2DM) using the standard diagnostic criteria In any of Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo, Cote d'Ivoire, Equatorial New Guinea, Eritrea, Ethiopia, eSwatini, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, Sudan (North, South), United Republic of Tanzania, Togo, Uganda, Zaire, Zambia, Zimbabwe. 	Individuals diagnosed as having impaired glucose tolerance, pregnant women
Intervention	Community-based care, that is a form of patient care differing from the traditional facility-based model considering the location, frequency of contact with care provider and cadre of staff (see Table 2)	
Comparator	Traditional facility-based care, where available.	
Outcomes	<p>Studies reporting at least one the following outcomes will be included:</p> <ul style="list-style-type: none"> Clinical outcomes: of interest are fasting blood glucose, random blood glucose, glycated haemoglobin (HbA1c), episodes of hypoglycaemia and hyperglycaemia, adherence to T2DM medication, development of complications like retinopathy, nephropathy, diabetic foot syndrome, cardiovascular diseases and cerebrovascular diseases Engagement in care Acceptability to patients or providers 	Studies not reporting any of the outcomes
Study design	<ul style="list-style-type: none"> Prospective or retrospective cohorts Randomised control trials Non-randomised control trials Quasi-randomised control trials Systematic or other reviews (to screen for additional original articles) 	Treatment guidelines, mathematical models, editorials, viewpoints, commentaries
Timing	None	
Sector	Services to the general public provided and or managed by government health infrastructure, or through non-governmental organisations	
Required descriptive data about model	<ul style="list-style-type: none"> Population/target groups Type of patients Community site Health provider cadre Frequency of service Other services provided within the same care-model, e.g. arterial hypertension, HIV, tuberculosis 	<ul style="list-style-type: none"> Incomplete information that impedes full model characterization and definition

Stage 6: Expert consultation

We will consult experts on community-based diabetes care for input. This input will help to confirm and interpret our findings, as well as contextualize implications of the findings.

Table 4. Fields to be extracted from included studies.

Parameter	Field
Publication identifiers	Authors Publication title Publication type Date of publication Journal
Study	Design Data collection dates and duration Study locations/sites
Population	Age grouping Sex
Intervention	Location of service delivery Frequency of interaction at community-site Frequency of interaction at the health care facility Cadre of healthcare provider Services provided
Outcome	Where reported: Fasting blood glucose values Random blood glucose values Glycated haemoglobin (HbA1c) values Development of complications like retinopathy, nephropathy, diabetic foot syndrome, cardiovascular diseases and cerebrovascular diseases Rates of engagement in care Acceptability to patients or providers Feasibility to implement

Ethics

Ethical clearance will not be required for this study as this review will utilize publicly available data.

Data availability**Underlying data**

No underlying data are associated with this article.

Extended data

Figshare: Community-based models of care for management of type 2 diabetes mellitus among non-pregnant adults in sub-Saharan Africa: a scoping review search strategy, <https://doi.org/10.6084/m9.figshare.14610090.v3>.²⁴

This project contains details of the search string in Embase.

Reporting guidelines

Figshare: PRISMA-P checklist for “Community-based models of care for management of type 2 diabetes mellitus among non-pregnant adults in sub-Saharan Africa: a scoping review protocol”, <https://doi.org/10.6084/m9.figshare.14762403.v1>.²⁷

Data are available under the terms of the [Creative Commons Attribution 4.0 International license \(CC-BY 4.0\)](https://creativecommons.org/licenses/by/4.0/).

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The authors have responded to all comments and suggestions. No further comments. Thank you.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Medicine taking behavior; community-based interventions; pharmacy practice

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 25 January 2022

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Mahmoud M. Werfalli

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Thank you very much for responding to my comments and suggestions. The manuscript is now much improved than the previous one, I have no further comments and questions. Thanks.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Evidence-based medicine, evidence-based health practices, epidemiology, prevention and management of diabetes and cardiovascular diseases

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Reviewer Report 15 November 2021

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Anna Wahyuni Widayanti 

Department of Pharmaceutics, Faculty of Pharmacy, Universitas Gadjah Mada, Yogyakarta, Indonesia

In the introduction, could you please explain further how the people with diabetes in SSA countries received care in general? This may include the differences in the health system, that may lead to variabilities in the care types.

Please be clearer in stating the rationale of the study. At the beginning, the authors only explained about community-based care, but later the authors also want to investigate the performance of community-based care compared to facility-based care.

It should be clearer what 'facility-based care' and 'community-based care' mean? As in other country settings, the community-based care for people with diabetes may include care managed by the health care facility, it may be conducted in the health care facilities or in the community, but in groups of community and involving not only health care professionals, but also community volunteers/cadres, as opposed to individual care provided by health care professionals.

A systematic review may provide a better results in comparing effectiveness among different types of community-based care.

Identifying relevant study: Is there any time frame set for the articles that will be included in the review?

Is the rationale for, and objectives of, the study clearly described?

Partly

Is the study design appropriate for the research question?

Partly

Are sufficient details of the methods provided to allow replication by others?

Partly

Are the datasets clearly presented in a useable and accessible format?

Not applicable

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Medicine taking behavior of and community-based intervention for people with type 2 diabetes

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 22 Dec 2021

Emmanuel Firima, Swiss Tropical and Public Health Institute, Basel, Switzerland

In the introduction, could you please explain further how the people with diabetes in SSA countries received care in general? This may include the differences in the health system, that may lead to variabilities in the care types.

Author response: We have addressed this and included a traditional approach to care in the revised version of the manuscript on lines 20 to 25 of the revised manuscript.

Please be clearer in stating the rationale of the study. At the beginning, the authors only explained about community-based care, but later the authors also want to investigate the performance of community-based care compared to facility-based care.

Author response: Even though our main interest is to present evidence on available community-based care models, we intend to evaluate performance against community-based care in studies where comparisons are made between community-based care and facility-based care. This has been clarified in the rationale. See lines 50 to 52.

It should be clearer what 'facility-based care' and 'community-based care' mean? As in other country settings, the community-based care for people with diabetes may include care managed by the health care facility, it may be conducted in the health care facilities or in the community, but in groups of community and involving not only health care professionals, but also community volunteers/cadres, as opposed to individual care provided by health care professionals.

Author response: Thank you for these comments. We have clarified the term 'community-

based care' and 'facility-based care' in lines 26 to 30.

A systematic review may provide a better results in comparing effectiveness among different types of community-based care.

Author response: As this is an area with little evidence, we opted to conduct a scoping review to map out what evidence is available.

Identifying relevant study: Is there any time frame set for the articles that will be included in the review?

Author response: There is no restriction on the time/date the study was conducted. See lines 126 and 127 of the revised manuscript.

Thank you.

Competing Interests: No competing interests were disclosed.

Reviewer Report 13 August 2021

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Mahmoud M. Werfalli

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Title

Are the authors focusing only on sub-Saharan Africa (SSA) or all African countries? Which classification have they used, WHO, IDF, etc.

Introduction

Please elaborate further and explain why the review questions/objectives lend themselves to a scoping review approach. The authors may consider rephrasing the Introduction section to help the readers understand the contributions of this study in an explicit manner. For example, some parts of the content, such as related work, could be moved to a new related work section in particular up-to-date published related work.

In SSA there is a wide range of community-based care for diabetes care including for non-

pregnant women - for example, in South Africa and other southern countries where most of those models are operating in the community health centers (CHCs) (facility-based) via CHWs in the community. I am wondering in the search strategy, how many articles addressing the community-based models in those facilities would be missed from these communities?

Methods

Study design

I would suggest the review be restricted to RCTs (and possibly other controlled designs but not observational studies), which would make it more likely that a meta-analysis would be appropriate and the review might benefit from the pooling of the data.

The authors stated: "We will conduct this scoping review using the six-stage approach initially developed by Askey and O'Malley, which has been further refined by Levac *et al.* (2010) and the Joanna Briggs Institute methods of evidence synthesis...". I would suggest to the authors using the updated framework: Munn *et al.* 2018¹:

- As a precursor to a systematic view.
- To identify the types of available evidence in a given field.
- To identify and analyze knowledge gaps.
- To clarify key concepts/ definitions in the literature.
- To examine how research is conducted on a certain topic or field.
- To identify key characteristics or factors related to a concept.

Identifying relevant studies

I would suggest using the **African search filter** for a comprehensive and strengthening search strategy.

Participants

"...adults who have been diagnosed with T2DM using the standard diagnostic criteria.": Please clarify what do you mean by standard? Do the authors mean WHO diagnostic methods or using others?

Intervention

"Intervention will be the delivery of care different from the traditional facility-based care model, which attempts to make care available in the community, at patients' homes, or a central, non-formal health facility location where patients with similar conditions can access care.": This is a confusing statement. Please justify as I have mentioned the terms community and facility-based care are used interchangeably.

Comparator

"With facility-based care, where available.": If not available, would it be compared to the usual care in the facility provided that facility doesn't refer to the community center, for example in South Africa?

Outcome

"Of primary interest will be clinical outcomes like blood glucose indices and T2DM complications. Also of interest will be engaged in care, and acceptability of care to patients and providers.": Please categorize your outcomes as primary outcomes (clinical) and secondary. Please indicate how the authors define acceptability of care and how will be measured?

Thanks.

References

1. Munn Z, Peters M, Stern C, Tufanaru C, et al.: Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Medical Research Methodology*. 2018; **18** (1). [Publisher Full Text](#)

Is the rationale for, and objectives of, the study clearly described?

Partly

Is the study design appropriate for the research question?

Partly

Are sufficient details of the methods provided to allow replication by others?

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Are the datasets clearly presented in a useable and accessible format?

Not applicable

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Evidence-based medicine, evidence-based health practices, epidemiology, prevention and management of diabetes and cardiovascular diseases

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 22 Dec 2021

Emmanuel Firima, Swiss Tropical and Public Health Institute, Basel, Switzerland

Title

Are the authors focusing only on sub-Saharan Africa (SSA) or all African countries? Which classification have they used, WHO, IDF, etc.

Author response: We focused only on sub-Saharan Africa, using geographic regions classification according to the methodology of the United Nations Statistics Division. See lines 118 and 119 of the revised manuscript.

Introduction

Please elaborate further and explain why the review questions/objectives lend themselves to a scoping review approach. The authors may consider rephrasing the Introduction section to help the readers understand the contributions of this study in an explicit manner. For example, some parts of the content, such as related work, could be moved to a new related work section in particular up-to-date published related work.

Author response: We have significantly revised the introduction section as well as the study design paragraph of the methods section to further clarify the contributions of this work and why we opted for the scoping review approach.

In SSA there is a wide range of community-based care for diabetes care including for non-pregnant women - for example, in South Africa and other southern countries where most of those models are operating in the community health centers (CHCs) (facility-based) via CHWs in the community. I am wondering in the search strategy, how many articles addressing the community based models in those facilities would be missed from these communities?

Author response: We understand that some community models of interest emerge or operate in health centers. Working together with a librarian, we attempted to make the search strategy very comprehensive, not excluding such community models. However, since we are interested in community models that are not simply 'add-ons' to facility care, in the full-text review, only such models are included.

Methods

Study design

I would suggest the review be restricted to RCTs (and possibly other controlled designs but not observational studies), which would make it more likely that a meta-analysis would be appropriate and the review might benefit from the pooling of the data.

Author response: Thank you for this comment. We anticipate very little evidence within this area. Thus, our initial interest is to map out what evidence is available to inform more research. Thus, by restricting to RCTs, we might miss out on models of community care that were possibly being implemented in observational studies.

The authors stated: "We will conduct this scoping review using the six-stage approach initially developed by Askey and O'Malley, which has been further refined by Levac et al. (2010) and the Joanna Briggs Institute methods of evidence synthesis...". I would suggest to the authors using the updated framework: Munn et al. 2018:

- As a precursor to a systematic view.
- To identify the types of available evidence in a given field.
- To identify and analyze knowledge gaps.
- To clarify key concepts/ definitions in the literature.
- To examine how research is conducted on a certain topic or field.

○ **To identify key characteristics or factors related to a concept.**

Author response: This is a good suggestion. We have incorporated statements from this framework. See lines 55 and 56 of the revised manuscript. But we also kept the six-stage approach as clear steps on how we intend to implement the review.

Identifying relevant studies

I would suggest using the African search filter for a comprehensive and strengthening search strategy.

Author response: This has been considered by our librarians in the search. Thank you for the suggestion

Participants

"...adults who have been diagnosed with T2DM using the standard diagnostic criteria.": Please clarify what do you mean by standard? Do the authors mean WHO diagnostic methods or using others?

Author response: We mean the WHO diagnostic criteria. We have clarified this on lines 131 and 132 of the revised manuscript, and also added a reference. Thank you for this comment.

Intervention

"Intervention will be the delivery of care different from the traditional facility-based care model, which attempts to make care available in the community, at patients' homes, or a central, nonformal health facility location where patients with similar conditions can access care.": This is a confusing statement. Please justify as I have mentioned the terms community and facility-based care are used interchangeably.

Author response: This statement has been revised to reflect our purpose. See lines 140 and 141. Also, the terms 'community-based care' and 'facility-based care' have been clarified. See lines 23 to 27.

Comparator

"With facility-based care, where available.": If not available, would it be compared to the usual care in the facility provided that facility doesn't refer to the community center, for example in South Africa?

Author response: If the primary study does not compare a community model to facility model, then we will consider that suitable comparison was not available.

Outcome

"Of primary interest will be clinical outcomes like blood glucose indices and T2DM complications. Also of interest will be engaged in care, and acceptability of care to patients and providers.": Please categorize your outcomes as primary outcomes (clinical) and secondary. Please indicate how the authors define acceptability of care

and how will be measured?

Author response: The outcomes have been clearly categorized into primary and secondary. We intend to define and measure acceptability using scales adopted for each study by the authors. See lines 147 to 150 of the revised manuscript.

Thank you.

Competing Interests: No competing interests were disclosed.

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