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Diabetes management outcome among Black-Africans compared to other ethnic groups in Western countries: A mixed-methods systematic review
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Review question

Is there disparity in diabetes outcome among black-Africans compared to other ethnic groups in Western countries?

Does diabetes management differ among black-Africans and black-Caribbean?

Searches

Major biomedical and sociological databases have been searched which include: PubMed, CIHNAL, MEDLINE, Embase, Web of Science, Scopus, ScienceDirect, PsycINFO, AMED, Cochrane. MeSH terms and keywords were combined and searched in all databases

All articles will be in English Language to be included. The search is limited from 2007-2018. All articles were exported into EndNote X7.7.1 for storage and management of references.

Types of study to be included

Inclusion

Quantitative and qualitative studies

Measures diabetes outcomes

Explores diabetes management

Classify participants based on ethnicity

Exclusion

Reviews and Systematic review

No classification based on ethnicity

Condition or domain being studied

Type 2 diabetes is a major public health disease in Western countries. In addition, higher prevalence have been reported among black-Africans compared to general population. This review is aim at comparing diabetes management outcomes Glycated Haemoglobin (HbA1c), Blood Pressure and Cholesterol level among black-Africans and other ethnic groups (Specifically black-Caribbean, Whites and South Asians). This is give better understanding of diabetes management among this population and how this compares to other ethnic groups in Western countries. Furthermore, qualitative synthesis of qualitative articles retrieved will be analysed to understand the findings from quantitative data in the review.

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Participants/population

Inclusion

People aged 18 years or more living with type 2 diabetes and have recorded ethnicity (White, Asia, Black-African, Black-Caribbean)

Exclusion

People without diabetes

Other ethnic groups

Intervention(s), exposure(s)

Diabetes prevalence

Mean HbA1c and HbA1c target

Mean Blood pressure and blood pressure target

Mean Cholesterol and Cholesterol target

Comparator(s)/control

Black-Caribbean

Whites

South Asia

Context

Western countries

Main outcome(s)

Synthesis of existing literature that investigated health outcome among ethnic groups based on the following diabetes management outcomes.

HbA1c

Blood pressure

Cholesterol

Diabetes prevalence

Additional outcome(s)

Body Mass Index

Data extraction (selection and coding)

First author (FA) will screen all the article's title and abstracts to assess their eligibility for the review. This means any paper to be included will have to be conducted with ethnicity comparison of intermediate outcomes of people living with diabetes including Black-Africans in the study. Qualitative studies that explore the understanding of factors that acts as barriers and facilitators to diabetes management among ethnic groups will also be included in the review. Articles that are focused on measures of access to healthcare will be excluded from the review. Diabetes prevention measure articles will also be excluded. Other authors (AH and ATW) will assess study selection, data extraction and data analysis, any disagreement will be discussed among all authors to reach a resolution.

A data extraction form will be created to record relevant demographic characteristics of each study. These characteristics will include, study aim, methodology, year of publication, country, participant's age, gender, ethnicity, key findings and conclusion. For quantitative studies, diabetes outcomes such as HbA1c, blood

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International prospective register of systematic reviews

pressure, cholesterol (Mean and target percentage) will be extracted and reported. For quantitative studies, data on diabetes management, barriers and facilitators of the management process will be reported

Risk of bias (quality) assessment

Quality assessment will be done using Critical Appraisal Skills Programme (CASP) for cross-sectional quantitative studies and qualitative studies. A percentage will be assigned to each study on how well the study answered screening questions. A 'yes' will equal 1 while 'No' will be 0. This will be then be converted to percentage for each study after screening. First reviewer will assess quality of each paper using the appraisal tool. Both (AH and ATW) will independently screen the quality assessment outcome by first reviewer (FA) and any disagreements will be discussed and resolved by going with the highest vote on study quality among the three reviewers. Authors of any paper awarded less than 50% mark will be contacted if further information can be provided. If no further information is received, the study will be excluded from the review or included with emphasis on study quality.

Strategy for data synthesis

A framework by Collaborative Environmental Evidence (CEE) will be followed to conduct this review. Data synthesis will be done in two different ways. First, data on quantitative studies that report findings on diabetes prevalence, HbA1c level, lipid cholesterol level and blood pressure outcomes will be descriptively analysed and reported. Findings from preliminary search showed that there might be significant difference between black-Africans and black-Caribbean in diabetes outcome. If possible a meta-analysis will be conducted to explore these outcomes. Particularly as studies combine both groups to pass as "blacks" which have been highlighted (Agyemang et al. 2003). If meta-analysis is not possible, then a descriptive analysis will be done and highlight differences among black-Africans and black-Caribbean. The aim of this analysis is to determine diabetes prevalence and clinical outcome of management among ethnic minority groups with focus on black-African outcomes in comparison to Whites and other recruited minority groups in studies reviewed.

Secondly, qualitative data will be analysed using thematic analysis by generating important themes from findings of each study. The aim of this is to understand the views of participants in relation to their diabetes management outcomes and relating these findings to the reported quantitative findings. This will give a better understanding of diabetes management outcomes and what factors contribute to their management of diabetes. Finally, the findings from both qualitative and quantitative analysis will be discussed as an explanation for reasons of outcome measures reported.

Reference

Agyemang, C., Bhopal, R. 2003. Is the blood pressure of people from African origin adults in the UK higher or lower than that in European origin white people? A review of cross-sectional data. *Journal of Human hypertension*, 17, 523-534.

Analysis of subgroups or subsets

The results will be analysed based on diabetes outcome, ethnicity, socioeconomic factors. Meta-analysis will be carried out for the outcomes if possible and sensible.

Contact details for further information

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Organisational affiliation of the review

Bournemouth University

Review team members and their organisational affiliations

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Anticipated or actual start date

21 November 2017

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31 May 2018

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VC PhD scholarship from Bournemouth University

Conflicts of interest

None known

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English

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England

Stage of review

Review_Ongoing

Subject index terms status

Subject indexing assigned by CRD

Subject index terms

African Continental Ancestry Group; Asian Continental Ancestry Group; Cholesterol; Diabetes Mellitus, Type 2; Emigrants and Immigrants; Ethnic Groups; European Continental Ancestry Group; Glycated Hemoglobin A; Humans; Prevalence; Public Health

Date of registration in PROSPERO

12 February 2018

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Details of any existing review of the same topic by the same authors

Stage of review at time of this submission

| Stage | Started | Completed |
|---|----------------|------------------|
| Preliminary searches | Yes | Yes |
| Piloting of the study selection process | Yes | No |
| Formal screening of search results against eligibility criteria | Yes | No |
| Data extraction | No | No |
| Risk of bias (quality) assessment | No | No |
| Data analysis | No | No |

Versions

12 February 2018

PROSPERO

This information has been provided by the named contact for this review. CRD has accepted this information in good

faith and registered the review in PROSPERO. CRD bears no responsibility or liability for the content of this registration record, any associated files or external websites.