

Barriers and Facilitators to Yoga for Obesity, Diabetes, and Hypertension: A Qualitative Systematic Review Protocol

Abstract

The global burden of obesity, diabetes, and hypertension is high and increasing. Several systematic reviews suggest yoga, an ancient mind–body discipline from the Indian subcontinent, is safe and can be beneficial for preventing and managing obesity, diabetes, and hypertension. Several qualitative studies have been conducted to explore barriers and facilitators to yoga practice among people at high risk of or with obesity, diabetes, or hypertension and providers who delivered yoga to these people. However, no systematic review on this topic has been conducted to date, and this systematic review will aim to synthesize such barriers and facilitators to yoga practice. We will follow the JBI guideline on systematic reviews of qualitative evidence. For published studies, we will search the following electronic databases from inception dates: MEDLINE, EMBASE, CINAHL Plus, APA PsycInfo, AMED, and Web of Science. For gray literature, we will search EthOS and ProQuest Dissertations and Theses. Screening of studies, methodological quality assessment, and data extraction will be performed independently by two reviewers. Any disagreements between reviewers will be resolved through discussion or by involving a third reviewer. Initially, a narrative synthesis will be conducted. Study findings from the included studies will be pooled using the meta-aggregation approach, where possible.

Systematic Review Registration Number: PROSPERO (CRD42020220640).

Keywords: *Barriers, diabetes, facilitators, hypertension, obesity, qualitative studies, systematic review, yoga*

Introduction

In 2016, more than 1.9 billion adults worldwide were overweight; of these, over 650 million were obese.^[1] In 2019, around 463 million adults worldwide had diabetes, with type 2 diabetes mellitus (T2DM) accounting for about 90% of cases.^[2] In 2015, around 1.13 billion people worldwide had hypertension.^[3] These health conditions are associated with each other and are major risk factors for other health conditions such as cardiovascular diseases.^[4-6] Therefore, the burden of obesity, diabetes, and hypertension is intertwined, with a considerable impact on morbidity and mortality worldwide.^[7,8] These conditions also have significant socioeconomic consequences, including reduced quality of life.^[9-11] The economic burden includes direct costs, such as health-care expenses for treating these related health conditions, as well as indirect costs, such as lost

productivity due to disability and premature death.^[9-11] A healthy lifestyle, including diet and physical activity, can help in preventing and managing these health conditions.^[12-14]

Yoga, an ancient mind–body discipline from the Indian subcontinent, covers many aspects of a healthy lifestyle and has gained popularity globally.^[15] Various styles of yoga are practiced, but one style is not necessarily superior or more authentic than another, and all focus on the same important topic, i.e., a healthy lifestyle.^[16] In general, yoga uses a gentle approach, is easy to learn, requires a low-to-moderate level of guidance, is inexpensive to maintain, and can be practiced indoors and outdoors by older people or those with comorbidities.^[17-19] Several systematic reviews suggest yoga is safe and can be beneficial for preventing and managing obesity, diabetes, and hypertension.^[20-34] For example, in one systematic review of 30 randomized controlled trials (RCTs), relative to usual care, yoga had an effect on the waist–hip ratio in healthy

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Access this article online

Website: <https://journals.lww.com/IJOY>

DOI: 10.4103/ijoy.ijoy_138_23

Quick Response Code:



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How to cite this article: Chattopadhyay K, Biswas I, Wang H. Barriers and facilitators to yoga for obesity, diabetes, and hypertension: A qualitative systematic review protocol. *Int J Yoga* 2023;16:148-52.

Submitted: 31-Jul-2023

Revised: 03-Sep-2023

Accepted: 08-Sep-2023

Published: 21-Nov-2023

people (standardized mean difference [SMD]: -1; 95% confidence interval [CI]: -1.44, -0.55) and on body mass index in overweight or obese people (SMD: -0.99; 95% CI: -1.67, -0.31).^[33] In another systematic review of 44 RCTs, relative to usual care or no intervention, yoga improved fasting blood glucose in T2DM (mean difference [MD]: -25.56 mg/dL; 95% CI: -39.60, -11.53) and glycated hemoglobin in T2DM and metabolic syndrome (MD: -0.45%; 95% CI: -0.87, -0.02).^[34] Another systematic review included 34 RCTs conducted among people with hypertension and reported that, compared to control, yoga reduced systolic blood pressure (MD: -6.49 mmHg; 95% CI: -8.94, -4.04) and diastolic blood pressure (MD: -2.78 mmHg; 95% CI: -4.11, -1.45).^[21]

Barriers and facilitators to yoga practice can vary among individuals and are influenced by a range of factors, including personal beliefs, preferences, benefits, physical capabilities, and access to resources and facilities.^[35] Several qualitative studies have been conducted to explore barriers and facilitators to yoga practice among people at high risk of or with obesity, diabetes, or hypertension and providers who delivered yoga to these people.^[36-38] However, no systematic review on this topic has been conducted to date, and this systematic review will aim to synthesize such barriers and facilitators to yoga practice. The review findings would be helpful in developing strategies to address barriers and enhance facilitators to yoga practice for preventing and managing obesity, diabetes, and hypertension.

Methods

We will follow the JBI guideline on the systematic reviews of qualitative evidence and enhancing transparency in reporting the synthesis of qualitative research statement.^[39,40] The systematic review protocol has been registered with PROSPERO (CRD42020220640).

Inclusion criteria

Participant

The systematic review will include studies conducted among the following participant groups: adults (aged ≥ 18 years) at high risk of or with obesity, diabetes, or hypertension (i.e., health conditions) and providers who delivered yoga to these adults.

Phenomena of interest

The review will include studies that explored views, experiences, attitudes, understandings, perceptions, or perspectives regarding barriers and facilitators to yoga practice. Among people at high risk of or with health conditions, barriers and facilitators are factors that impede and help them with the uptake and adherence to yoga practice, respectively. Among yoga providers, barriers and facilitators are factors that impede and help them to deliver yoga, respectively.

Context

The review will include studies conducted in any country or setting (e.g., community, primary care, secondary care, or tertiary care).

Study design

The review will include qualitative research studies that used data collection methods such as semi-structured interviews, focus group discussions, observational studies, or ethnographic studies. We will also consider mixed-method studies reporting relevant qualitative data.

Databases and search strategy

We will search the following electronic databases for published studies: MEDLINE (Ovid; from 1946), Embase (Ovid; from 1974), CINAHL Plus (EBSCOhost; from 1937), APA PsycInfo (Ovid; from 1806), AMED (Ovid; from 1985), and Web of Science (from 1900). For gray literature, we will search EthOS and ProQuest Dissertations and Theses. The search strategies are being developed in consultation with an experienced research librarian at the University of Nottingham (UK). Yoga, obesity, diabetes, and hypertension search concepts are based on the search strategies used for developing the National Institute for Health and Care Excellence guidelines and a previous relevant systematic review, and for the qualitative study design concept, a predesigned search filter is used.^[21,41-45] A combination of search terms and index terms is used. The MEDLINE search strategy is reported in Table 1. No date or language restrictions will be applied, and translations will be sought if needed. The reference list of all the included studies and previous relevant systematic reviews will be screened for additional studies.

Study selection

Following the searches, all identified citations will be collated and uploaded into EndNote X9 (Clarivate, PA, USA),^[46] and duplicates will be removed. Titles and abstracts will be independently screened for eligibility using the inclusion criteria by two reviewers. Studies identified as potentially eligible and those without an abstract will have their full text retrieved. Full texts of the studies will be independently assessed for eligibility by two reviewers. Any disagreements between reviewers will be resolved through discussion or by involving a third reviewer. We will exclude full texts of studies that do not meet the inclusion criteria, and reasons for exclusion will be reported.

Methodological quality assessment

We will critically assess the included studies using the standardized JBI critical appraisal tool for qualitative studies and independently by two reviews.^[39] The tool uses a series of criteria that can be scored as being met (yes), not met (no), unclear, or, where appropriate, not applicable (n/a) to the particular study. Any disagreements

Table 1: MEDLINE search strategy

1	exp Yoga/
2	exp Meditation/
3	(yoga or yogic or asana* or pranayam* or dhyana* or meditat* or ashtanga or bikram or hatha or iyengar or kripalu or kundalini or vinyasa or raja or radja or bhakti or jnana or kriya* or karma or yama or niyama or pratyahara or dharana or samadhi or bandha or mudra* or chanda or sivananda).ti, ab.
4	1 or 2 or 3
5	exp Obesity/
6	exp Adiposity/
7	(obes* or overweight or adipos*).ti, ab.
8	5 or 6 or 7
9	exp Diabetes Mellitus/
10	exp Glucose Intolerance/
11	exp Metabolic Syndrome/
12	(("diabetes mellitus" or diabet* or DM* or "glucose intoleran*" or prediabet* or pre-diabet* or "pre diabet*" or "impair* glucose toleran*" or IGT or "impair* fast* glucose" or "impair* fast* glyc*" or IFG or "impair* glucose regulation" or IGR or "non-diabet* hyperglyc*" or "non diabet* hyperglyc*" or "metabolic syndrome").ti, ab.
13	9 or 10 or 11 or 12
14	exp Hypertension/
15	exp Prehypertension/
16	(hypertens* or prehypertens* or pre-hypertens* or "pre hypertens*" or ((high or increas* or elevat*) adj2 ("blood pressur*" or BP))).ti, ab.
17	14 or 15 or 16
18	8 or 13 or 17
19	((("semi-structured" or semi-structured or unstructured or informal or "in-depth" or in-depth or "face-to-face" or structured or guide) adj3 (interview* or discussion* or questionnaire*).ti, ab.
20	(focus group* or qualitative or ethnograph* or fieldwork or "field work" or "key informant").ti, ab.
21	interviews as topic/
22	focus groups/
23	narration/
24	qualitative research/
25	19 or 20 or 21 or 22 or 23 or 24
26	4 and 18 and 25

between reviewers will be resolved through discussion or by involving a third reviewer. All studies, regardless of their methodological quality, will undergo data extraction and synthesis, where possible.

Data extraction

Data from included studies will be extracted independently by two reviewers using an adapted data extraction tool.^[39] Any disagreements between reviewers will be resolved through discussion or by involving a third reviewer. The following data will be extracted: author and year of publication; health condition; participant group and characteristics (e.g., sample size and their age and sex); phenomena of interest; country and setting; study period; study design, qualitative research methodology, data collection methods, and data analysis technique; and study findings (i.e., barriers and facilitators to yoga practice). Where possible, illustrations (quotes) that support these findings (themes) will be extracted (i.e., one illustration per finding). The findings and illustrations will be the actual verbatim words of the study author and participants, respectively. The credibility of each finding will be assessed using the following criteria:

- Unequivocal: The finding is accompanied by an illustration that is beyond a reasonable doubt and is not open to challenge
- Credible: The finding is accompanied by an illustration that lacks a clear association with it and is open to challenge
- Not supported: When neither unequivocal nor credible can be applied and when the most notable findings are not supported by the data.^[39]

Data synthesis

Initially, a narrative synthesis will be conducted. Study findings from the included studies will be pooled using the meta-aggregation approach, where possible.^[47] This will involve the aggregation or synthesis of findings to generate a set of statements representing that aggregation through assembling and categorizing these findings based on the similarity in meaning. These categories will then be synthesized to generate a single comprehensive set of synthesized findings. To explore differences and similarities in barriers and facilitators to yoga practice, data for each health condition and participant group will be synthesized

separately, using the following structure: (i) microlevel barriers and facilitators (i.e., related to individuals and families), (ii) mesolevel barriers and facilitators (e.g., related to communities and specific groups), and (iii) macrolevel barriers and facilitators (i.e., related to countries and societies as a whole, e.g., social, political, and economic factors).^[48]

Acknowledgments

The authors thank Sarah Beach, a Research Librarian at the University of Nottingham (UK), for her contribution to the search strategies.

Financial support and sponsorship

This study will be funded internally by the University of Nottingham (UK). The funding agency will have no role in conducting the study or in writing the manuscript.

Conflicts of interest

There are no conflicts of interest.

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