

Review title

Barriers and facilitators for fitness center participation among adult people with or without physical disabilities: A systematic scoping review protocol

Authors

Helene Nikolajsen*^{1,2}, Louise Fleng Sandal³, Carsten Juhl^{1,4}, Jens Troelsen⁵, Birgit Juul-Kristensen¹

¹ Research Unit for Musculoskeletal Function and Physiotherapy, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark, Odense, DK

² Department of Physiotherapy, Institute of Health Studies, University College South Denmark, Esbjerg-Haderslev, DK

³ Research Unit for Physical Activity and Health in Work Life, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark, Odense, DK

⁴ Department of Physiotherapy and Occupational Therapy, Copenhagen University Hospital, Herlev and Gentofte, Copenhagen, Denmark

⁵ Research Unit for Active Living, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark, Odense, DK

*Corresponding author:

Helene Nikolajsen

Email address: hnikolajsen@health.sdu.dk

University of Southern Denmark

Campusvej 55

DK-5230 Odense M

www.sdu.dk



Background

Physical inactivity poses threat to public health, and according to WHO is a major risk factor for non-communicable diseases [1]. Globally 23% of the adult population did not reach general recommendations on physical activity [1]. However 39-73% of the people who are not currently active report that they wish to be more physical active [2,3].

Physical activity can prevent diseases and WHO recommends that adults perform at least 150 minutes of moderate physical activity each week, or a minimum of 75 minutes of vigorous activity per week or an equivalent combination of moderate- and vigorous-intensity activity [4]. This recommendation both holds for adults with and without physical disabilities [1], but might be of greater concern for people with disabilities as they in general tend to be more physically inactive and experience more chronic diseases and conditions, and at earlier ages [5,6].

Physical inactivity may decrease by using the growing fitness centre industry, which by some is considered the world's biggest "sport" [7]. This is stated on basis of the "Les Mills Global Consumer Fitness Survey" conducted in 13 countries (Europe, USA, Australia and Brazil) and it showed that 27% of the total adult population attends a fitness centre, and that 61% of people performing regular exercisers perform gym-type activities [2].

Fitness centre training has increased in popularity since the 1970's, but is still sparsely described in research compared to e.g. general sport activities [8]. When fitness centres are studied scientifically it is often as part of culturally or sociologically evaluations [8]. Research framed within health science or sports science in relation to the fitness centre environment is a more unexplored area. Often the research has focused on different extremes of the fitness centre environment, e.g. body building, orthorexia or performance-enhancing factors like doping or nutrition/dietary supplements. The "average" fitness center participant is often not the focus for research, and more knowledge in this area may be a key factor in increasing physical activity, and thereby reducing lifestyle diseases and maintaining physical abilities among adults in general and people with physical disabilities. Further, it may lead to changes in clinical practice on how to build and use fitness centres, organise the training and develop an inspiring atmosphere to increase the number of people exercising in fitness centres.

Objective and Review question/s

The objective of this scoping review is to summarize the evidence regarding barriers and facilitators for fitness center participation among adult people with or without physical disabilities.

The research question of this review is: Which factors influence fitness centre participation for adult people with and without physical disabilities?

Factors is here divided in the following 5 categories, modified after Di Blasi [9], to suit the the analysis of fitness center participation.

1. The setting - the specific fitness centre: e.g. building, arrangement and fitness machines
2. The fitness participant's characteristics: e.g. physical disability and other "personal factors" according to WHO's International Classification of Function [10]
3. The fitness instructor's characteristics: e.g. knowledge/education and communication skills
4. Fitness participant – instructor relationship: e.g. the personal chemistry, teaching, prejudices
5. Fitness characteristics: e.g. type of training, planning, specific exercises etc.

Keywords

Barriers, Facilitators, Fitness center, Participation, Scoping review

Methods

To answer this above mentioned research question a scoping review will be performed. Furthermore, a scoping review is designed to provide an overview of the existing evidence regardless of quality, and is useful when a body of literature has not yet been comprehensively reviewed or has a heterogeneous nature [11], as in the present area.

The method of this scoping review will be based on the recommendations from The Joanna Briggs Institute [11–13] and the new PRISMA extension for scoping reviews (PRISMA-ScR) [14].

Inclusion criteria

Participants

This scoping review will consider studies that include adult persons (+18 years of age) with or without physical disabilities. People with cognitive impairment will be excluded from the study.

Concept

The concept/s examined by this scoping review are factors that encourage or hinder fitness participation (e.g. transportation, usability, accessibility, motivation, economy).

Context

This scoping review will consider studies that have been conducted in indoor fitness center facilities.

Study types

All types of scientific papers, both quantitative and qualitative, original studies and reviews will be included. Text and opinion papers will also be considered for inclusion in this scoping review.

Grey literature, such as theses, conference abstracts, organizational reports and articles from newspapers and magazines will be included as well.

In that way we search for all sources, and do not exclude any source, as advised by Khalil et al. [15]

Studies/articles published in English, Danish, Norwegian or Swedish will be included.

No restriction regarding publication date will be applied.

Search strategy

The search strategy aims to identify both published and unpublished studies. An pilot/initial search in MEDLINE and google.com has been undertaken to identify articles on this topic, followed by analyses of the text words contained in titles and abstracts, and index terms used to describe these articles. This informed the development of a search strategy that included and identified keywords and index terms tailored for each information source. A full search strategy of the databases is detailed in Appendix 1. Furthermore, reference lists of included studies will be screened for additional studies.

The search for unpublished studies and grey literature will include:

Google.com including Google Scholar and relevant parts of CADTH's free online resource for grey literature searching [16] together with consultations of field experts and research librarians at specialized libraries.

Further search for references will be performed through reference lists and key authors.

An overview of the full study selection will be presented in a PRISMA flow diagram.

Data extraction

Data will be extracted from papers included in the scoping review, using a customized dataextraction sheet in Excel, by two independent reviewers. The data extracted will include specific details about: author(s), year of publication, origin, type of publications, aims/purpose, methodology/methods, population characteristics and numbers, context, concept, and key findings for each document. See appendix II for further details.

Any disagreements that arise between the reviewers will be resolved through discussion and if necessary a third reviewer. Authors of papers will be contacted for additional data when required. The draft data extraction tool will be modified and revised if necessary during the process of extracting data from each included study. Modifications will be detailed in the full scoping review report.

Data mapping

The extracted data will be presented in diagrammatic or tabular form in a manner that aligns to the objective/s and scope of this scoping review. The tables and charts will report on: distribution of studies by year or period of publication, countries of origin, area of practice and research methods.

No.	Author	Year	Origin	Type of publication	Methods	Aim	Population	Context	Concept	Key findings
1										
2										

A narrative summary will accompany the tabulated and charted results and will describe how the results relate to the reviews objective and research question. This may be at figures stating all barriers and facilitators in relation to the different categories of factors modified after Di Blasi.

	Barriers	Facilitators
1. The setting - the specific fitness centre: e.g. building, arrangement and fitness machines		
2. The fitness participant's characteristics: e.g. physical disability and other "personal factors" according to WHO's International Classification of Function [10]		
3. The fitness instructor's characteristics: e.g. knowledge/education and communications skills		
4. Fitness participant – instructor relationship: e.g. the personal chemistry, teaching, prejudices		
5. Fitness characteristics: e.g. type of training, planning, specific exercises etc.		

Further, we aim to identify barriers and facilitators that differ or are alike between groups; adult people with and without physical disabilities.

Conflicts of interest

The authors have no conflicts of interest.

Acknowledgements

This work is supported by the Danish foundation TrygFonden.

References

- 1 World Health Organization. 10 facts on physical activity. World Health Organization. 2017.http://www.who.int/features/factfiles/physical_activity/en/ (accessed 30 Jul 2018).
- 2 The Nielsen Company. Les Mills Global Consumer Fitness Survey (2013) Sales partner report. Les Mills 2014.
- 3 Danish Health Authority. *Danskernes sundhed: den nationale sundhedsprofil 2017 [The health of Danish citizens: The Danish National Health Profile 2017]*. Danish Health Authority 2018.
- 4 World Health Organization. *Global recommendations on physical activity for health*. Geneva: : World Health Organization 2010.
- 5 Krahn GL, Walker DK, Correa-De-Araujo R. Persons With Disabilities as an Unrecognized Health Disparity Population. *American Journal of Public Health* 2015;**105**:198–206. doi:10.2105/AJPH.2014.302182
- 6 Carroll DD, Courtney-Long EA, Stevens AC, *et al.* Vital Signs: Disability and Physical Activity – United States, 2009–2012. 2014;**63**:7.
- 7 Burgess T. Fitness is the world's biggest sport. 2013. <https://w2.lesmills.com/files/GlobalCentral/Fitness%20is%20the%20worlds%20biggest%20sport.pdf> (accessed 1 Aug 2018).
- 8 Kirkegaard KL. *Fitnesskultur.dk: Fitness-sektorens historie, de aktive udøvere og breddidrættens kommerialisering [Fitnessculture.dk: The history of the fitness sector, the active participants and the commercialisation of non-elite sport]*. 2012.
- 9 Di Blasi Z, Harkness E, Ernst E, *et al.* Influence of context effects on health outcomes: a systematic review. *The Lancet* 2001;**357**:757–762.
- 10 World Health Organization, editor. *International classification of functioning, disability and health: ICF*. Geneva: : World Health Organization 2001.
- 11 Peters MDJ, Godfrey CM, Khalil H, *et al.* Guidance for conducting systematic scoping reviews: *International Journal of Evidence-Based Healthcare* 2015;**13**:141–6. doi:10.1097/XEB.0000000000000050
- 12 Peters MDJ, Godfrey CM, McInerney P, *et al.* The Joanna Briggs Institute Reviewers' Manual 2015: Methodology for JBI Scoping Reviews. Adelaide, South Australia: : The Joanna Briggs Institute 2015. http://joannabriggs.org/assets/docs/sumari/Reviewers-Manual_Methodology-for-JBI-Scoping-Reviews_2015_v2.pdf (accessed 24 Aug 2018).
- 13 Peters MDJ, Godfrey CM, Soares CB, *et al.* Chapter 11: Scoping reviews. In: Aromataris E, Munn Z, eds. *Joanna Briggs Institute Reviewer's Manual*. The Joanna Briggs Institute 2017. <https://reviewersmanual.joannabriggs.org/> (accessed 12 Aug 2018).
- 14 Tricco AC, Lillie E, Zarin W, *et al.* PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Annals of Internal Medicine* Published Online First: 4 September 2018. doi:10.7326/M18-0850
- 15 Khalil H, Peters M, Godfrey CM, *et al.* An Evidence-Based Approach to Scoping Reviews. *Worldviews on Evidence-Based Nursing* 2016;**13**:118–123.
- 16 Canadian Agency for Drugs and Technologies in Health (CADSTH). Grey Matters: a practical tool for searching health-related grey literature [internet]. 2018.<https://cadth.ca/resources/finding-evidence/grey-matters> (accessed 5 Sep 2018).

Appendix I: Search Strategy

The PCC mnemonic is framed like this:

Population	Concept	Context
Adult people (+18 years of age)	Factors that encourage or hinder fitness center participation	Fitness centers

Following is the Population and Context, as the aim of the search is to identify the Concept.

The search terms buildet for Medline:

(((((("over 18 years") OR "+ 18 years") OR ("18 years and over")) OR adult) OR adults) OR "Adult"[Mesh])) AND (((((((("Fitness Centers"[Mesh]) OR "fitness center") OR "fitness centers") OR gym) OR gyms) OR "health club") OR "health clubs") OR "fitness facility") OR "fitness facilities") OR "fitness centre") OR "fitness centres")

The above mention searchterms will be adjusted for the following 6 databases:

Medline (via PubMed)

Scopus (via Elsevier)

Cinahl (via EBSCO)

SportDiscus (via EBSCO)

PsycInfo (via Ovid)

Embase (via Ovid)

Appendix II: Draft study details, characteristics, and results extraction instrument/s

1) Author(s)	
2) Year of publication	
3) Origin (where the study was conducted)	
4) Type of publication	
5) Aims/purpose	
6) Methodology/Methods	
7) Population characteristics and numbers	
8) Context – type of indoor fitness center	
9) Concept – fitness center participation, barriers and facilitators	
10) Key findings regarding barriers and facilitators to fitness centre participation	