A cross-sectional analysis of published guidance about exercise training and physical activity for the secondary prevention of coronary heart disease: A trade-off between methodological quality and clinical usefulness?

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Why the need for a study of guidance?

- Clinical practice guidelines: consistent, effective and appropriate health care[1]
- Rapid proliferation of clinical guidance in the field of exercise training and physical activity for the secondary prevention of coronary heart disease
- Clinicians challenged by numerous national and international publications- this may present a barrier to implementation in practice[2]

Where can I find them? What are they called? Who develops them? Are they free? Which recommendations should I follow? Will they be useful to apply in practice?

1) Institute of Medicine. 2011. *Clinical Practice Guidelines We Can Trust*. 2) Cabana M, et al. JAMA. 1999; 282(15):1458–65

Myocardial infarction: cardiac rehabilitation and prevention of further MI

Clinical guideline

Published: 13 November 2013

nice.org.uk/guidance/cg172

AHA Scientific Statement

Cardiac Rehabilitation and Secondary Prevention of Coronary Heart Disease

An American Heart Association Scientific Statement From the Council on Clinical Cardiology (Subcommittee on Exercise, Cardiac Rehabilitation, and Prevention) and the Council on Nutrition, Physical Activity, and Metabolism (Subcommittee on Physical Activity), in Collaboration With the American Association of Cardiovascular and Pulmonary Rehabilitation

Position Paper

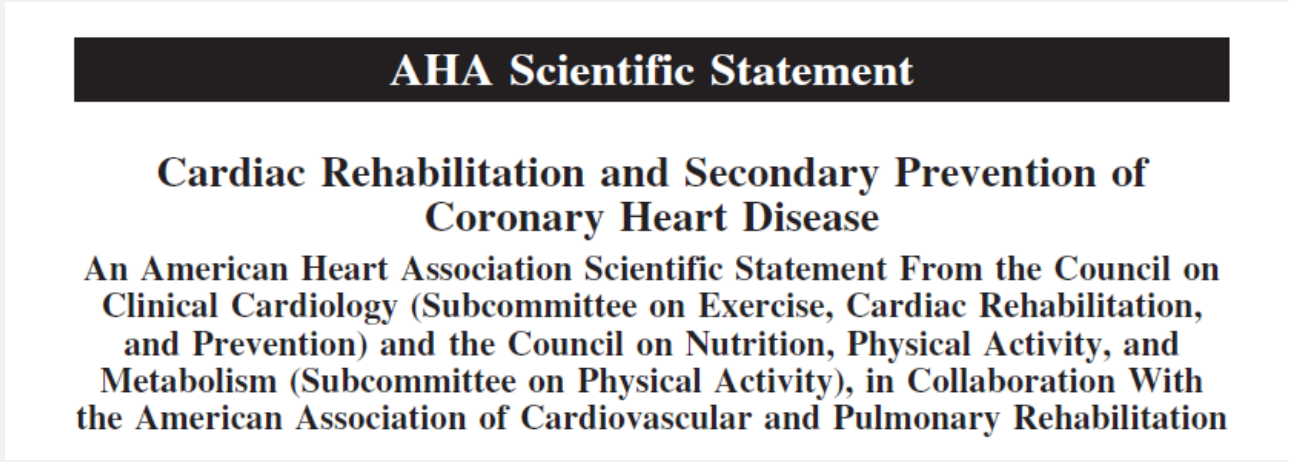
Physical activity for primary and secondary preventio Position paper of the Working Group on Cardiac Rehabilitation and Exercise Physiology of the Europe Society of Cardiology

P. Giannuzzi[a], A. Mezzani[a], H. Saner[b], H. Björnstad[c], P. Fioretti[d], M. A. Cohen-Solal[f], L. Dugmore[g], R. Hambrecht[h], I. Hellemans[i], H. Mc J. Perk[k], L. Vanhees[l] and G. Veress[m]

Australian Cardiovascular Health and Rehabilitation Association (ACRA) Core Components of Cardiovascular Disease Secondary Prevention and Cardiac Rehabilitation 2014

Scientific statements, position papers and other non-guideline publications

- Designed to provide more detailed information about topics too narrow to address in disease specific guideline
- Collective opinion about "evidence-based approaches" but not usually a systematic review and grading of evidence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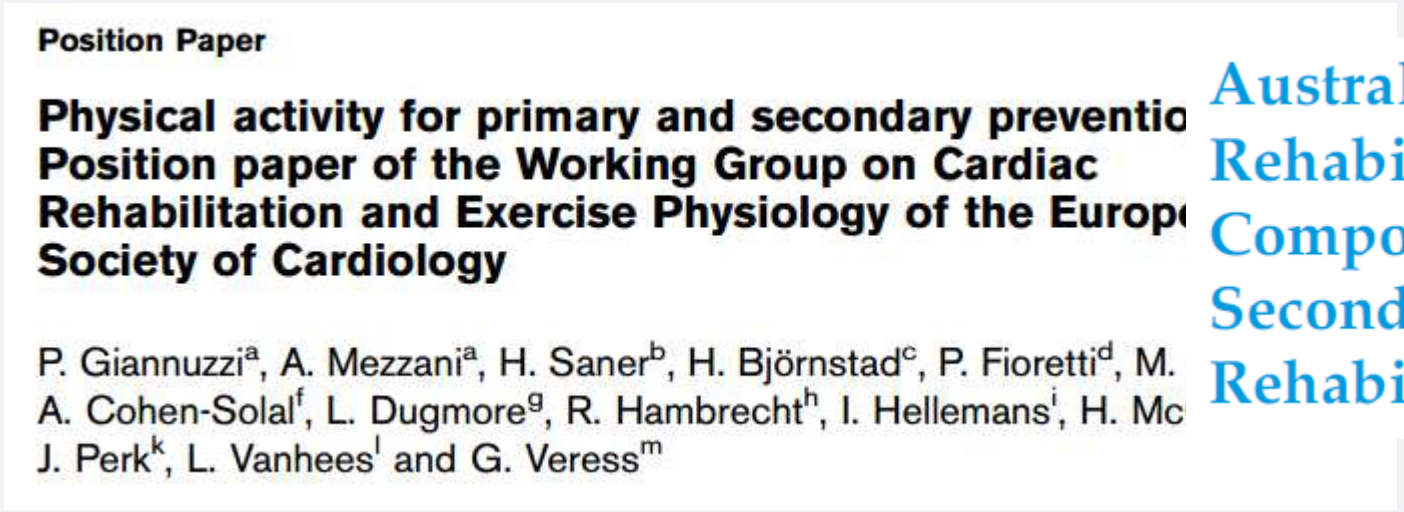
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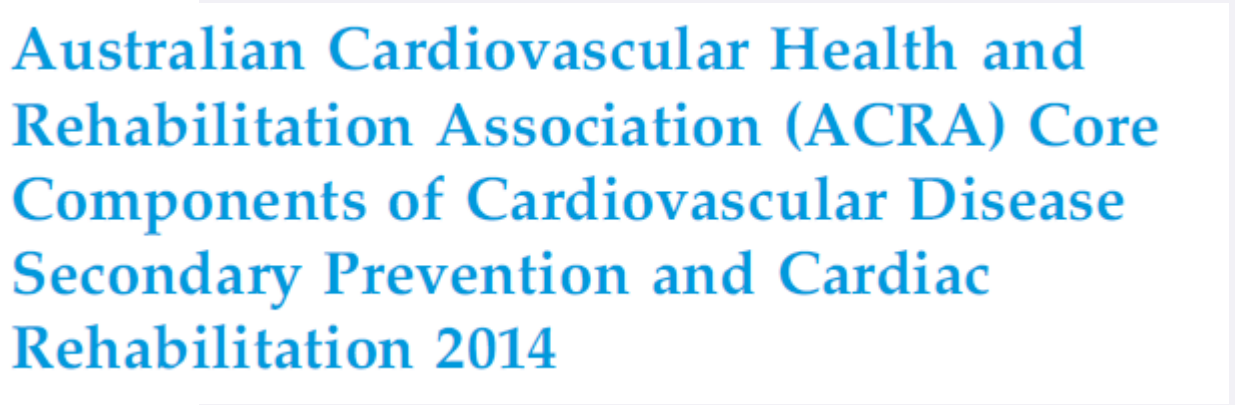

Australian Cardiovascular Health and Rehabilitation Association (ACRA) Core Components of Cardiovascular Disease Secondary Prevention and Cardiac Rehabilitation 2014

Aims

For guidance covering the use of exercise, physical activity or cardiac rehabilitation in the secondary prevention of coronary heart disease

a. Summarise the current body of publications and compare their characteristics

b. Evaluate the methodological quality of all publications

Methods

Cross-sectional analysis and comparison of selected publications

Inclusion Criteria

- All publications with recommendations for the use of cardiac rehabilitation, physical activity or exercise for people with established coronary heart disease
- English language
- No limit on date but only most recent version included

Search Strategy

01 Web-based resources of cardiology societies and cardiac rehabilitation associations internationally

02 Guideline developers and databases e.g. SIGN, NICE

03 Structured search of PubMed, PEDro and TRIP using the text term “cardiac rehabilitation”

Up until November 2016

Methods

Cross-sectional analysis and comparison of selected publications

Data Collection: classification of publications

- Type of **guidance publication** based on self-reported title
  a) Clinical guideline
  b) Other: including scientific statements, position papers, core components etc.
- Type of **exercise recommendations** provided (clinical usefulness)
  a) Detailed recommendations: exercise training protocols for use during cardiac rehabilitation
  b) Broad recommendations: physical activity advice and/or need for cardiac rehabilitation referral

- Advise people to be physically active for 20–30 minutes a day to the point of slight breathlessness. Advise people who are not active to this level to increase their activity in a gradual, step-by-step way, aiming to increa
  level that is comfortable, and increase the
  fitness. **[2007]**

Medically supervised programs (cardiac rehabilitation) and physician-directed, home-based programs are recommended for at-risk patients at first diagnosis (602,609,610). *(Level of Evidence: A)*

Methods

Cross-sectional analysis and comparison of selected publications

Data Collection: methodological quality

- Appraisal of Guidelines for Research & Evaluation (AGREE II) Instrument
- 23 items rated on Likert scale from 1 (no information/strongly disagree) – 7 (strongly agree)
- My AGREE PLUS online platform for training, definitions, data collection and scoring
- 2 independent reviewers

Domain 1. Scope and Purpose is concerned with the overall aim of the guideline, the specific health questions, and the target population (items 1-3).

Domain 2. Stakeholder Involvement focuses on the extent to which the guideline was developed by the appropriate stakeholders and represents the views of its intended users (items 4-6).

Domain 3. Rigour of Development relates to the process used to gather and synthesize the evidence, the methods to formulate the recommendations, and to update them (items 7-14).

Domain 4. Clarity of Presentation deals with the language, structure, and format of the guideline (items 15-17).

Domain 5. Applicability pertains to the likely barriers and facilitators to implementation, strategies to improve uptake, and resource implications of applying the guideline (items 18-21).

Domain 6. Editorial Independence is concerned with the formulation of recommendations not being unduly biased with competing interests (items 22-23).

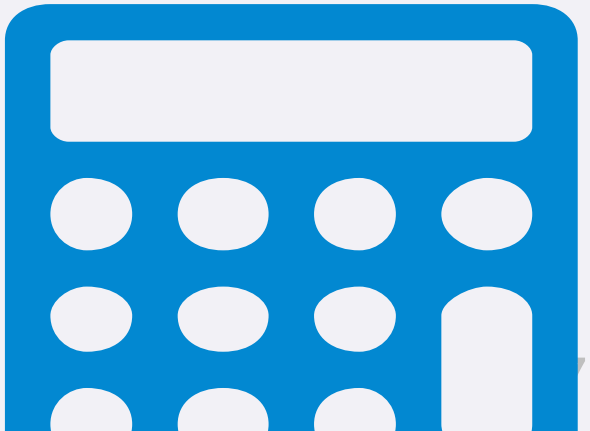
From: AGREE II: advancing guideline development, reporting and evaluation in health care. CMAJ; 2010;182(18):E839–42

Methods

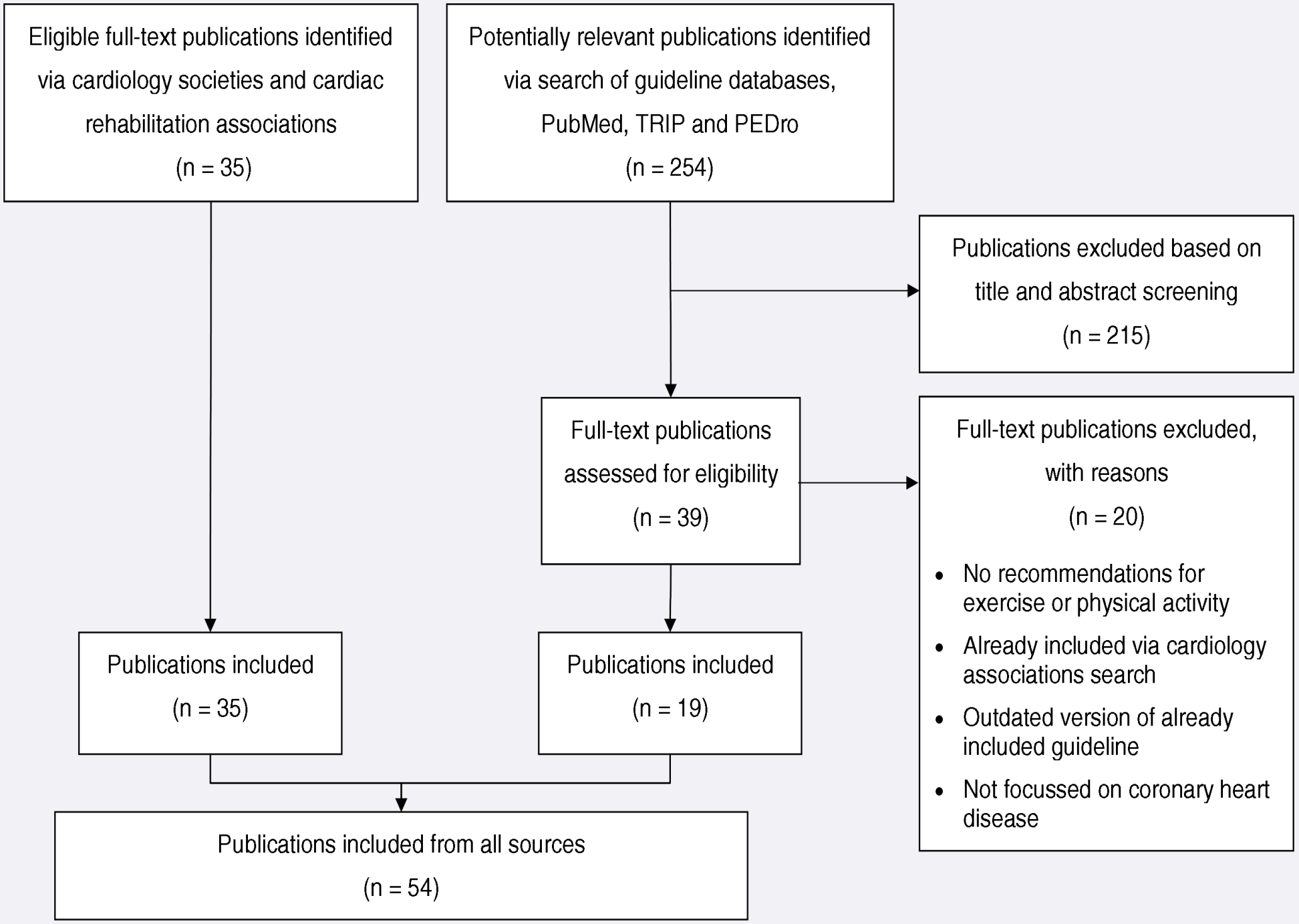
Cross-sectional analysis and comparison of selected publications

Data Analysis

- Descriptive statistics to examine the characteristics and scope of included publications
- Explored whether clinical usefulness of publications varied between publications classified as clinical guidelines vs. those classified as other guidance types ($p<0.05$)

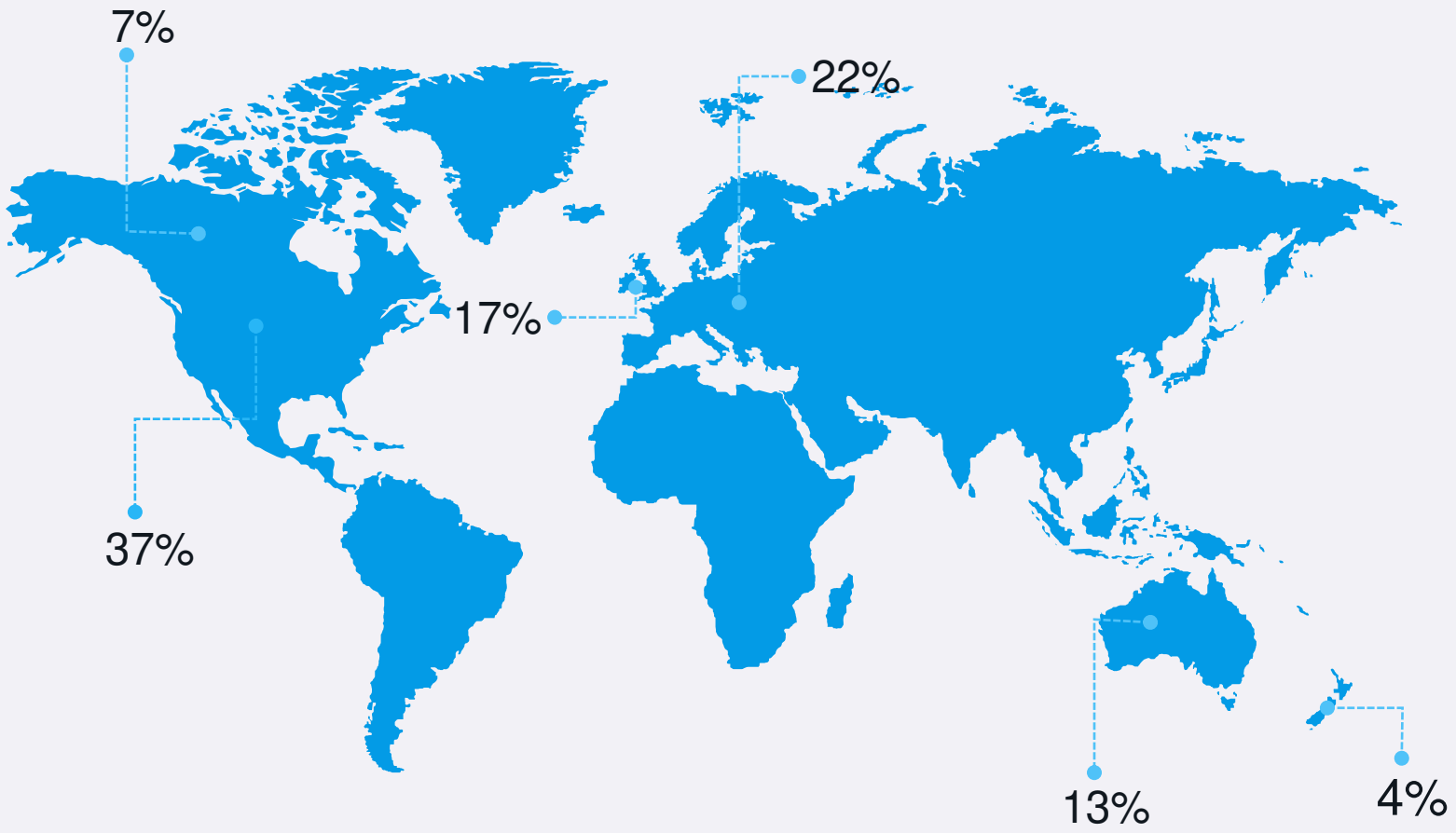


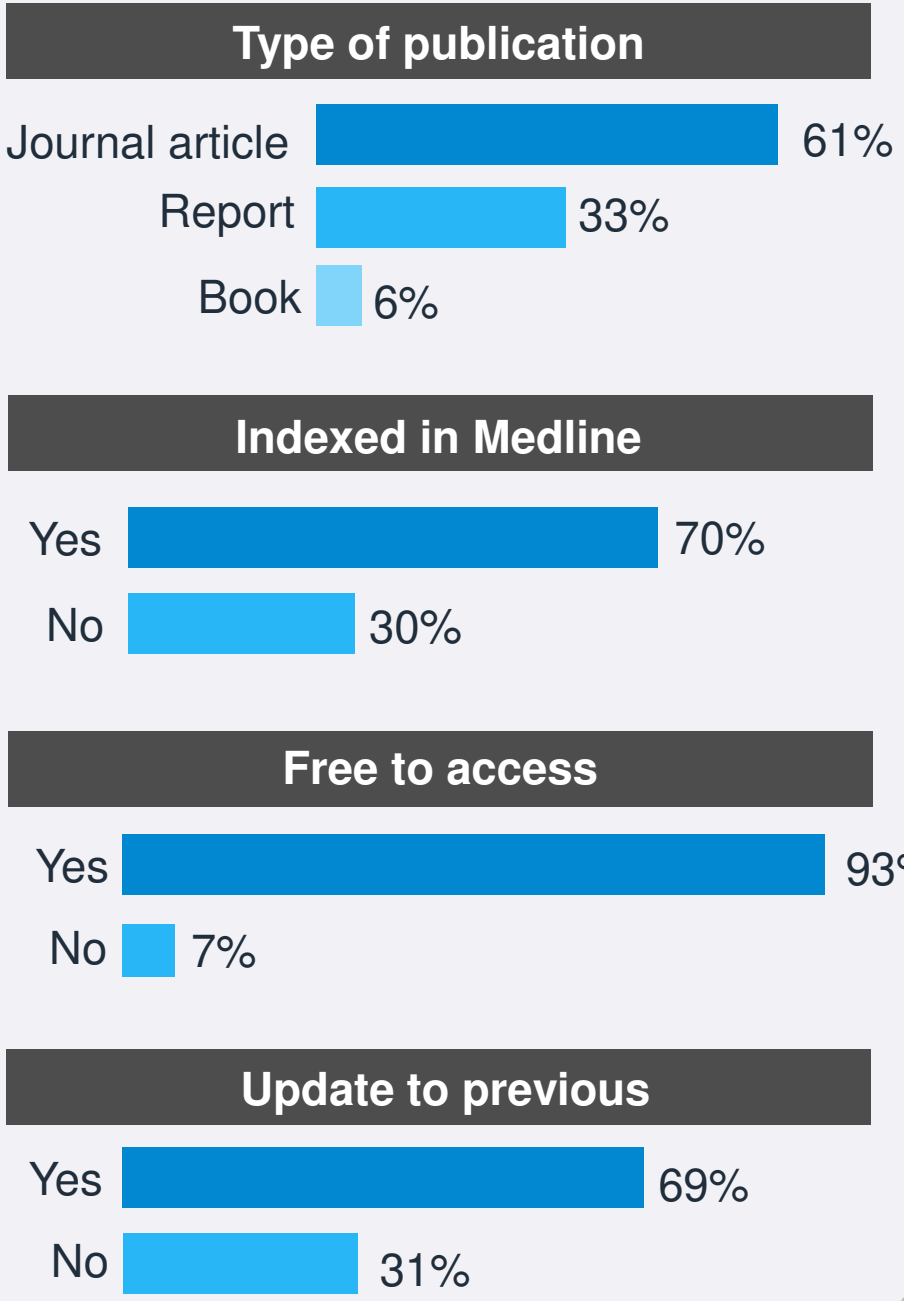
Results
Publications



Results: characteristics

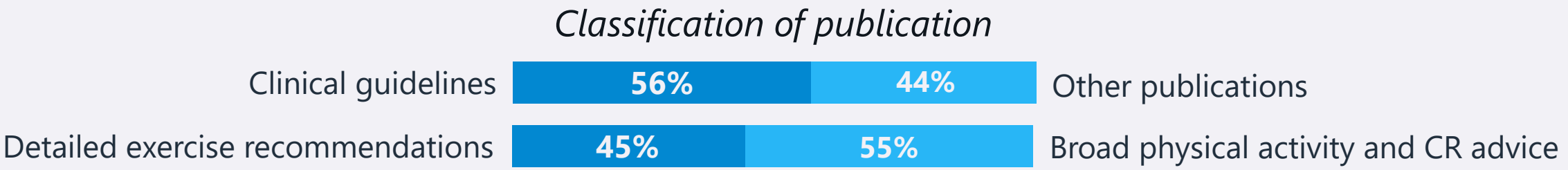
54 publications
Six different regions
Published 1994-2016





Results: classification and comparison

Clinical guidelines have broader scope & less likely to contain detailed exercise recommendations



- A significantly greater proportion of detailed exercise training recommendations were found in publications such as scientific statements compared to clinical guidelines (15/24; 63%, p=0.017)

Type of guidance document	Type of exercise recommendation	
	Broad (n=30)	Detailed (n=24)
Clinical guideline (n= 30)	21 (70%)	9 (30%)
Other (n=24)	9 (37.5%)	15 (62.5%)

Results: methodological quality of clinical guidelines

Highly variable yet modest AGREE II domain scores across all publications

AGREE II Domain (%)	Minimum	Maximum	Mean	Standard Deviation
Scope and purpose	25	100	68	19
Stakeholder involvement	19	92	56	19
Rigour of development	32	92	65	16
Clarity of presentation	58	97	79	10
Applicability	10	79	53	21
Editorial independence	0	100	74	28

Results: methodological quality of other guidance types

Variable quality, lower mean AGREE II scores than guidelines across all domains

AGREE II Domain (%)	Minimum	Maximum	Mean	Standard Deviation
Scope and purpose	44	86	63	10
Stakeholder involvement	8	64	36	14
Rigour of development	12	55	30	11
Clarity of presentation	42	92	69	12
Applicability	10	75	33	16
Editorial independence	0	96	50	35

Summary and Implications

Where to from here?

- A large volume of exercise-based cardiac rehabilitation guidance is readily available but varies substantially in terms of publication title, clinical usefulness of recommendations and methodological quality

- Clinicians need to exercise caution, and be aware of the inherent differences between types of guidance in order to understand the trade-off often required between methodological quality and clinical usefulness
    - Guidelines: a concise evidence-based "what-to-do"
    - Other guidance: the "how-to" of evidence translation

- Clinical practice guidelines should be used where possible to direct cardiac rehabilitation practice however will not always be available, therefore we encourage:
    a) efforts to improve the quality and recommendations of future guidance/updates
    b) the clear reporting of methodology and evidence used in other types of publications

Thank you.

Questions?

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Summary and Implications

Where to from here?

- A large volume of exercise-based cardiac rehabilitation guidance is readily available but varies substantially in terms of publication title, usefulness of recommendations and methodological quality

⊕ Wide search strategy and broad selection criteria

⊖ AGREE II validated tool, but not specifically designed for use with non-guideline publications

- Clinicians need to exercise caution, and be aware of the inherent differences between types of guidance in order to understand the trade-off often required between methodological quality and clinical usefulness

- Clinical practice guidelines should be used where possible to direct cardiac rehabilitation practice however will not always be available, therefore we encourage:

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