REVIEW ARTICLE

Nutrition guidelines vary widely in methodological quality: an overview of reviews

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Accepted 22 August 2018; Published online 29 August 2018

Abstract

Objectives: To identify, describe, and map contemporary nutrition guidelines (NGs) from reviews that used the Appraisal of Guidelines, Research and Evaluation (AGREE) tool.

Study Design and Setting: We performed an overview of reviews that systematically assessed the quality of NGs using the AGREE tool. We searched MEDLINE and EMBASE from inception to February 2018. Two authors independently selected and assessed reviews and extracted data.

Results: We included nine evaluations with a total of 67 NGs. The higher median AGREE scores were for the domains "scope and purpose" (80%, Q1−Q3: 59−89%) and "clarity and presentation" (69%, Q1−Q3: 53−89%), while the lower were for "rigor of development" (58%, Q1−Q3: 31−84%), "editorial independence" (53%, Q1−Q3: 19−79%), "stakeholder involvement" (50%, Q1−Q3: 28−72%), and "applicability" (22%, Q1−Q3: 11−50%). The median AGREE overall rating was 5 (Q1−Q3: 4−6), and most were recommended for use (75%; 30/40). Twenty-nine NGs (43.3%; 29/67) scored ≥60% in three or more domains, including "rigor of development" domain. The methodological quality of NGs did not improve over time.

Conclusion: The methodological quality of NGs varies widely, but there is general need for improvement in most AGREE domains. NG developers could incorporate available tools to ensure the development of high-quality NGs. © 2018 Elsevier Inc. All rights reserved.

Keywords: AGREE tool; Guidelines; Methodological quality; Nutrition; Overview

1. Introduction

The increasing volume of nutrition research presents a challenge for dietitians, health care professionals, educators, and other stakeholders who need to keep up with the latest scientific evidence [1]. In this context, nutrition guidelines (NGs) are useful tools to apply the best available evidence in health care decision making [2]. However, the number of NGs has increased considerably over the last 25 years, with approximately 60 NGs being indexed every year (Supplementary Data 1).

NGs, like any other guideline topic, require a transparent, consistent, and rigorous development process [3,4]. There are several resources to systematize the development of clinical guidelines (CGs). First, the drafting of methodological guidance on behalf of pioneer institutions that develop CGs [5−8]. Second, newly available tools to optimize the CG development process, including the Appraisal of Guidelines, Research and Evaluation tool (AGREE) [9,10], the Grading of Recommendations Assessment, Development, and Evaluation approach (GRADE) [11], and the Guidelines International Network−McMaster Guideline Development Checklist [12]. Third, reporting checklists that inform the optimal format to report the CG development process [13,14]. Finally, other initiatives, such as GRADEpro (https://gradepro.org/) and the Making GRADE the Irresistible Choice project (http://magicproject.org/), have ventured into the use of technology to facilitate different tasks of CG development process.

What is new?

Key findings

- The methodological quality of nutrition guidelines (NGs) varies widely, but there is general need for improvement in most Appraisal of Guidelines, Research and Evaluation (AGREE) domains.

- NGs scored low on the ''stakeholder involvement,'' ''rigor of development,'' ''applicability,'' and ''editorial independence'' domains of the AGREE tool.

- The methodological quality of NGs did not improve over time.

What this adds to what was known?

- We provide an overview of reviews that systematically assessed the quality of NGs using the AGREE tool.

- We map the evidence and its methodological quality in an evidence matrix.

What is the implication and what should change now?

- NG developers could benefit from available tools and methods, such as the AGREE tool, the Grading of Recommendations Assessment, Development, and Evaluation approach or the Guidelines International Network standards, when developing NGs.

The AGREE tool is the most commonly used, valid, and easy-to-use instrument to assess the methodological quality of CGs [9,10]. The original AGREE tool was published in 2003 (AGREE), and the updated version in 2009 (AGREE II) [9,10]. Overviews of CGs showed that the methodological quality of CGs in different clinical areas has improved in recent years; however, there is still considerable room for improvement [15,16].

Until now, the overall methodological quality of NGs has not been systematically reviewed. As such, the aim of this overview was (1) to identify, describe, and map contemporary NGs included in reviews that used the AGREE tool and (2) to assess the methodological quality of NGs reported in these reviews.

2. Methods

2.1. Study design

We performed an overview to identify reviews that systematically assessed the quality of NGs using the AGREE tool. We adhered to a selection of applicable items of the Preferred Reporting Items for Systematic reviews and Meta-Analyses statement for the reporting of this overview [17]. The research protocol is available from the authors upon request.

2.2. Information sources and search strategy

We designed and executed an electronic search strategy in MEDLINE (accessed through PubMed) and EMBASE (accessed through Ovid), from their inception to February 2018 (Supplementary Data 2). In addition, we hand-searched the reference lists of eligible articles and consulted experts.

2.3. Eligibility criteria

Inclusion criteria: studies published in English that systematically assessed the quality of two or more NGs using the AGREE tool, involving two or more independent appraisers.

Exclusion criteria: studies that systematically assessed the quality of one or more CGs not focused exclusively on nutrition (e.g., CGs on cancer with recommendations related to nutrition) or using other evaluation instruments.

2.4. Study selection

Two authors (M.R. and S.G-R.R.) independently screened titles and abstracts to identify potentially eligible references and obtained the full text of the later for further assessment. Disagreements were solved by consensus or, if necessary, with the help of a third author (L.M.G.).

2.5. Data extraction

We designed a data extraction form to collect the following information from each review: (1) characteristics of the review (author, year and location of publication, clinical question, target population, nutrition topic and/or intervention); (2) characteristics of the assessment (number of NGs, number of AGREE appraisers and interobserver agreement); and (3) strengths and limitations of the study.

We designed a data extraction form to collect the following information from the NGs included in each review: (1) characteristics of the NG (year and location of publication, institution, target population, nutrition topic, and nutrition intervention) and (2) methodological quality of the NG (AGREE domains scores, overall rating, and overall recommendation). If an NG was evaluated in more than one review, we excluded AGREE assessments using the following criteria: (1) assessments from reviews that included fewer appraisers; (2) assessments from reviews with lower methodological quality; or (3) assessments with lower AGREE domains scores.

We classified target population into two categories: general population or populations with a specific condition or disease. We classified nutrition topics into four categories: (1) allergies; (2) malnutrition; (3) nutrition and disease