

ORIGINAL ARTICLE

Over half of the WHO guidelines published from 2014 to 2019 explicitly considered health equity issues: a cross-sectional survey

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Accepted 16 July 2020; Published online 24 July 2020

Abstract

Objective: To evaluate how and to what extent health equity considerations are assessed in World Health Organization (WHO) guidelines.

Study Design and Setting: We evaluated WHO guidelines published between January 2014 and May 2019. Health equity considerations were assessed in relation to differences in baseline risk, importance of outcomes for socially disadvantaged populations, inclusion of health inequity as an outcome, equity-related subgroup analysis, and indirectness in each recommendation.

Results: We identified 111 WHO guidelines, and 54% (60 of 111) of these used the Evidence to Decision (EtD) framework. For the 60 guidelines using an EtD framework, the likely impact on health equity was supported by research evidence in 28% of the recommendations (94 of 332). Research evidence was mostly provided as differences in baseline risk (23%, 78/332). Research evidence less frequently addressed the importance of outcomes for socially disadvantaged populations (11%, 36/332), considered indirectness of the evidence for socially disadvantaged populations (2%, 5/332), considered health inequities as an outcome (2%, 5/332) and considered differences in the magnitude of effect in relative terms between disadvantaged and more advantaged populations (1%, 3/332).

Conclusion: The provision of research evidence to support equity judgements in WHO guidelines is still suboptimal, suggesting the need for better guidance and more training. © 2020 Elsevier Inc. All rights reserved.

Keywords: WHO; Health equity; GRADE; Guidelines; Guideline development; Evidence to decision

Transparency declaration: The manuscript's guarantor (O.D.) affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

Funding: The authors received no financial support for the research or the publication of this article.

Ethics approval: Not required.

Competing interest statement: All authors have completed the ICMJE uniform disclosure format http://www.icmje.org/coi_disclosure.pdf and declare: no support from any organization for the submitted work; Peter Tugwell recused himself from the entire editorial process. Holger Schünemann is the co-chair of the GRADE working group and reports no financial conflict of interest, Peter Tugwell is the recipient of Canada Research

Chair in Health Equity (Tier 1d2016 to 2024) from the Canadian Institutes of Health Research, Vivian Welch reports grants from World Health Organization, outside the submitted work; no other relationships or activities could have influenced this work.

Contribution: V.W., Peter Tugwell, E.A., P.C., K.P., and H.S. conceived the study. O.D., V.W., Philip Tsang, J.P., and T.P. developed the screening and data extraction forms. O.D., Philip Tsang, M.L., C.M., A.A., and T.B. screened the reviews and extracted data. O.D. conducted data quality check, analyzed the data, and wrote the first draft of the manuscript. V.W., Peter Tugwell, E.A., P.C., K.P., H.S., A.A., M.L., and T.P. suggested revisions to the manuscript. All authors approved the final version of the manuscript.

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1. Introduction

Health inequity has been defined as differences in health that are avoidable and also considered unfair or unjust [1]. Health inequities are present both between and within countries for many health-related issues, such as noncommunicable diseases, communicable diseases, and injuries [2–4]. Those differences are related to social dimensions that condition these health-related issues [5]. This has led to health equity being increasingly considered as a fundamental principle in clinical practice, public health, and health policy making [6–9]. The World Health Organization (WHO) is an autonomous organization that works with the United Nations in addressing international public health matters. The WHO recognizes the importance of reducing health inequities as health is a fundamental human right [10]. Similarly, many global organizations have pledged to address health inequities [11–13].

One way WHO contributes to public health is through the production of guidelines that play a role in the formulation of public health policies in many countries. As in other health guidelines, WHO guidelines provide population level recommendations that can impact health equity at the individual patient level [14]. In addition, WHO produces manuals and technical handbooks to provide technical and procedural guidance for developing WHO guidelines. The WHO was first advised to include consideration about equity in 2006 by its Advisory Committee on Health Research [15]. The official technical handbook of WHO, published in 2014, includes a specific chapter on integrating health equity into guidelines [16]. This emphasis reflects WHO's goal of reducing health inequities while improving population health.

Since 2003, the WHO has used the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach to develop its guidelines and the GRADE summary of findings (SoF) to evaluate the quality of evidence, and grade the strength of recommendations [17,18]. In 2016, the GRADE working group published its Evidence to Decision (EtD) frameworks, which provide a set of transparent and structured approaches for panels to consider when deciding on the strength and direction of recommendations [19]. The frameworks can be used to inform different types of decisions (e.g., public health or coverage), including clinical recommendations [20,21].

The EtD frameworks include health equity as one of the core criteria to consider for deciding on the strength and direction of recommendations. The criterion assesses the impact on health equity (“What would be the impact on health equity?”) and the judgment needs to be made based on identifying and estimating the effect in disadvantaged groups in relation to the problem or intervention, anticipating differences in relative or absolute effectiveness of the intervention between groups, and determining intervention implementation considerations to reduce health inequities [19].

In 2017, the GRADE Equity project group developed further guidance to consider health equity throughout the guideline development process, including the following five aspects that need to be assessed: (1) differences in baseline risk, (2) differential effects, (3) valuation of outcomes, (4) assessing population-level inequalities, and (5) assessing indirectness [14,22–24]. In addition, panels may consider health equity at different steps in the guideline development process, such as when assembling a guideline panel, including populations that experience health inequities or practitioners who work with those communities [22]. Furthermore, health equity consideration may apply for other EtD criteria, such as acceptability and feasibility [24].

The purpose of this project is to evaluate how and to what extent health equity considerations are assessed in WHO guidelines.

2. Methods

2.1. Search

We evaluated WHO Guideline Review Committee (GRC)–approved guidelines published from January 1, 2014, to May 1, 2019, and available at the WHO web site [25]. To verify that we obtained all the GRC-approved guidelines, we contacted WHO staff and obtained a confirmed list of published guidelines. We used both sources to develop a final list ([Appendix 1](#)).

2.2. Eligibility of guidelines

We included all WHO guideline documents, irrespective of the topic, that provided one or more recommendations or guidance for a health-related issue. WHO guidelines eligible for this study should have applied the GRADE approach and were accompanied with a GRADE SoF table or an evidence profile. We chose to assess WHO guidelines from 2014 onwards, the year of the publication of the 2nd edition of the WHO handbook for guideline development that included a chapter on gender, equity, and human rights [16]. We included “supplementary guidelines” as they are developed independently from the main version of guidelines. In the case of guidelines with updated versions, we included the latest version.

2.3. Data extraction

One reviewer extracted the topic and edition of the guideline. The remaining extractions were conducted in duplicate independently. We resolved discrepancies through discussion.

2.3.1. Guidelines as unit of analysis

We developed and pilot tested an extraction form on descriptive characteristics (e.g., topic), process (e.g., guideline panel membership, question formulation), and

What is new?**Key findings**

- Our work suggests that health equity considerations are improving over time in WHO guidelines.
- However, we have observed that there is a lack of empirical evidence to support judgements on the impact of health equity.

What is added to what is known?

- This is the first assessment of health equity considerations in guidelines using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) equity methodology.

What is the implication and what should change now?

- A priori consideration of impact health equity is required to assess the impact of recommendations on different social groups.
- Guidance needs to be developed for improved collection of evidence on health equity in WHO guidelines.

consideration of health equity using elements described in the GRADE series on equity [22,23] (Appendix 2). We used the PROGRESS factors (Place, Race, Occupation, Gender, Religion, Education, Socioeconomic status, Social capital) to evaluate the populations described in the guidelines [26].

We classified guidelines that described the target audience (i.e., intended users) as stakeholders whom might be concerned with a socially disadvantaged population. In each guideline, information in the SoF table was assessed for health equity and classified into either as a subgroup analysis within a population or an equity-tailored recommendation. Guidelines were classified as using EtD frameworks if they included EtD frameworks, or if they stated that they used it.

2.3.2. Recommendations as unit of analysis

For the guidelines that provided EtD frameworks, each individual recommendation was appraised to collect data on the judgments made on the impact on health equity criterion. We also collected verbatim the text included as research evidence or as additional considerations for impact on health equity made to support judgements about the ratings [19]. We classified evidence according to whether one or more PROGRESS factors were reported, and characterized the methods used to support judgments about health equity according to the GRADE Equity available guidance (Appendix 3) [23].

3. Results**3.1. Characteristics of included guidelines**

A total of 119 guidelines were identified. After excluding a summary of rapid advice guideline [27], a policy brief [28], a rapid advice guideline [29], a compilation guideline [30], and four duplicates, 111 guidelines were included (Fig. 1).

A total of 51 of 111 guidelines (46%) were developed without using the EtD framework, whereas 60 of 111 guidelines (54%) were developed using the EtD framework. Of these 60 guidelines, two guidelines were excluded because they were inaccessible (i.e., web site links were broken), and in 18 of the remaining 58 guidelines, the frameworks were not published. Finally, the use of the frameworks was assessed in a total of 40 guidelines.

Table 1 shows the characteristics of included guidelines. There was an uneven distribution of the year of the publication of the GRC-approved guidelines during the selected period, where 2016 was the year with the highest proportion of guidelines published (26%, 29 of 111 guidelines). Almost all the guidelines (88%, 98 of 111) were first-edition guidelines and nearly all (91%, 101 of 111) were focused on socially disadvantaged populations. The topics of the guidelines mostly focused on sexual and reproductive health (24%, 27 of 111), followed by nutrition (16%, 18 of 111) and tuberculosis (14%, 16 of 111). Guideline panels typically included health care workers (97%, 108 of 111) and NGO/advocates (80%, 89 of 111). Policy makers were also often involved (50%, 56 of 111); however, community representatives were less frequently underrepresented (32%, 36 of 111).

3.2. Health equity considerations in the guideline process

The target audience was identified as policy makers and program managers in low- and middle-income countries in 33% of the included guidelines (37 of 111; Table 2). Guidelines developed with EtD frameworks addressed socially disadvantaged populations (42%, 25 of 60) more often than the guidelines developed without EtD (24%, 12 of 51).

In total, 18% of all the guidelines (20 of 111) with health equity considerations in the SoF tables were identified. These considerations were present in 20% of the guidelines (12 of 60) formulated with the EtD frameworks and 16% of the guidelines (8 of 51) developed without the EtD frameworks. Guidelines developed with the EtD frameworks considered health equity in the SoF table in a similar fashion to the guidelines developed without the EtD frameworks.

Fig. 2A shows that there has been a continuous increase in the use of the EtD framework since its adoption in 2014, with 10% guidelines (2 of 20) published in 2016, 84% (16 of 19) in 2018, and 100% (9 of 9) in 2019.

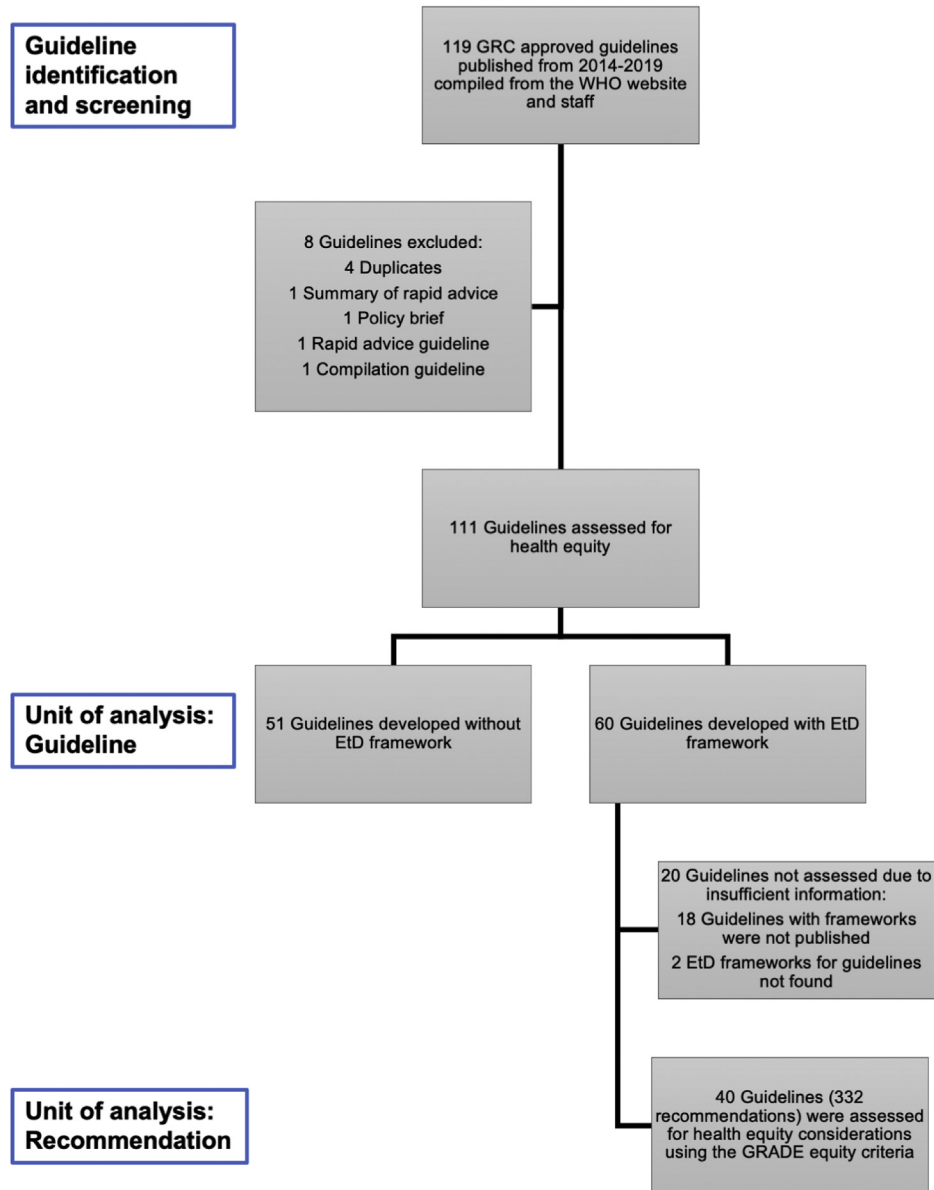


Fig. 1. Guidelines flow chart. GRC, Guideline Review Committee; WHO, World Health Organization; EtD, Evidence to Decision; GRADE, Grading of Recommendations Assessment Development and Evaluation.

There was a steady increase in guidelines mentioning health equity from 2014 to 2019 (Fig. 2B). Almost half of the guidelines published in 2014 (55%, 11 of 20) and 2015 (56%, 9 of 16) included the term “health equity.” All guidelines published in 2019 did include the term “health equity.”

3.3. Health equity considerations reported in the “impact on health equity” criterion of the EtD frameworks

Although 60 guidelines reported using the EtD framework, only 67% of the guidelines (40 of 60) developed with EtD, published their EtD frameworks with panel

ratings. In these 40 guidelines, 332 recommendations were appraised for impact on health equity judgments and justifications.

3.3.1. Frequency of judgments

Fig. 3 shows that the most frequent judgment was “Probably increased,” assigned to 24% of the recommendations (80 of 332), followed by “Don’t Know/Uncertain,” assigned to 15% of the recommendations (51 of 332), and “Increased” to 14% of the recommendations (47 of 332). This criterion was not included in 14% of the recommendations (45 of 332) available in the EtD frameworks. No judgements were provided for 8% of the recommendations (27 of 332).

Table 1. Characteristics of included guidelines (111 guidelines)

Characteristics	Count (n)	Percentage (%)
Publication year		
2014	20	18
2015	16	14
2016	29	26
2017	19	17
2018	19	17
2019	8	7
Guidelines edition		
First edition	93	84
Update	18	16
Guidelines focused on socially disadvantaged population	101	91
Topic		
Sexual and reproductive health	27	24
Nutrition	18	16
Tuberculosis	16	14
Other	50	45
Guidelines groups composition		
Health care workers	108	97
Non-governmental organization (NGO)/ Advocates	89	80
Policy makers	56	50
Community representatives	36	32

3.3.2. Information included in research evidence section of the frameworks

Fig. 4A shows that a quarter of the recommendations (25%, 84 of 332) explicitly mentioned socially disadvantaged populations. The most frequent PROGRESS factor considered was place of residence (27%, 88 of 332), followed by socioeconomic status (17%, 56 of 332), and gender/sex (17%, 55 of 332). Occupation (0.6%, 2 of 332) was the least reported and religion was not reported.

We found that 28% of the recommendations (94 of 332) provided evidence classifiable by our criteria. Fig. 4B shows that assessment of baseline risk differences was reported in 23% of the recommendations (78 of 332). Guidelines considered the importance of outcomes for socially disadvantaged populations in 11% of their

Table 2. Health equity considerations in the guideline development process

Guideline sections	With EtD	Without EtD
	n = 60 n (%)	n = 51 n (%)
Target audience	25 (42)	12 (24)
Summary of findings	12 (20)	8 (16)

Target audience, proportion of guidelines that identified representatives of socially disadvantaged populations in the target audience; summary of findings, proportion of health equity considerations in the summary of findings/evidence profiles.

recommendations (36 of 332). Only 2.0% of the guidelines' recommendations (5 of 332) mentioned indirectness of the evidence for socially disadvantaged. Conducting subgroup analysis (2%, 5 of 332) and reporting differences in the magnitude of effect in relative terms between disadvantaged and more advantaged populations (0.9%, 3 of 332) were less frequent. More than half of the evidence (65%, 61 of 94) on health equity reported in the evidence section were accompanied with a source citation.

3.3.3. Information provided in additional considerations section of the frameworks

Socially disadvantaged populations were described in 17% (57 of 332) of the recommendations with place of residence was described in 12% of them (40 of 332). Gender was described in 9% (31 of 332) followed by socioeconomic status (7%, 56 of 332). Social capital was reported the least in 2% (7 of 332), and occupation and religion were not reported.

Evidence on health equity was found in 17% of the recommendations (57 of 332). The reporting of evidence in the additional considerations section was similar to the research evidence section but less frequent. Baseline risk differences between disadvantaged populations were reported in 7% of the recommendations (23 of 332). Patient important outcomes for disadvantaged groups were considered in 6% of the recommendations (21 of 332). Generalizability and conduction of subgroup analysis were reported in 1% of the recommendations. Consideration of relative differences was only reported in one recommendation. A source was cited with half of the research evidence (51%, 29 of 57) reported on health equity in this section.

4. Discussion

Our evaluation of WHO guidelines published since 2014 shows that gradually more guidelines are incorporating health equity. Despite this, we found that almost two-thirds of the recommendations provided no supporting evidence for their health equity-related judgments. Similarly, we also observed an increase in the use of the EtD frameworks by the WHO, a change that could partially explain the change observed in relation to the incorporation of equity.

4.1. Strengths and challenges

The main strengths of our study are the use of a rigorous methodology including independent data extraction and the use of a previously pilot tested ad hoc form, based on GRADE guidance and the PROGRESS framework [26]. Analysis in this blinded manner minimized the two main types of bias, detection and performance bias. Selection bias was minimized by appraising all the WHO published guidelines, as well as by contacting the WHO for validating

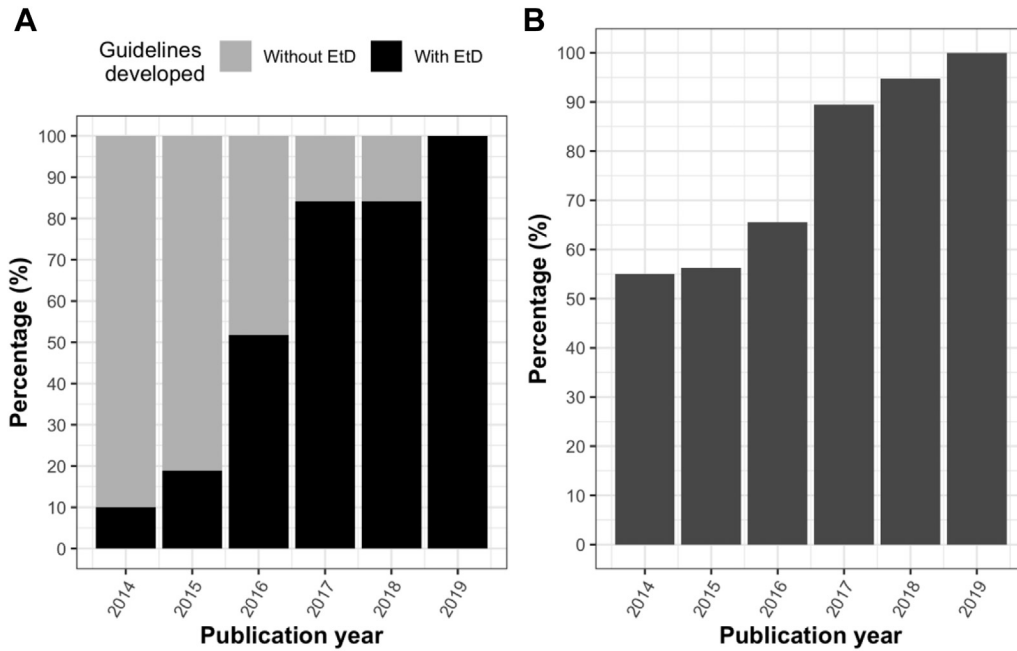


Fig. 2. Health equity considerations in guidelines. (A) Percentage of guidelines published from 2014 to 2019 that were formulated with or without EtD framework. (B) Percentage of guidelines that mentioned health equity throughout the guideline. Proportion of guidelines was calculated from the number of guidelines published annually.

GRC-approved guidelines. Our study has some limitations. We only assessed publicly available reports of WHO guidelines and their accompanying EtD frameworks. It is possible that health equity was discussed in greater detail

with or without additional supporting data in the guideline panel meetings. However, we think that this is unlikely. Finally, we did not verify the information provided to support equity judgments.

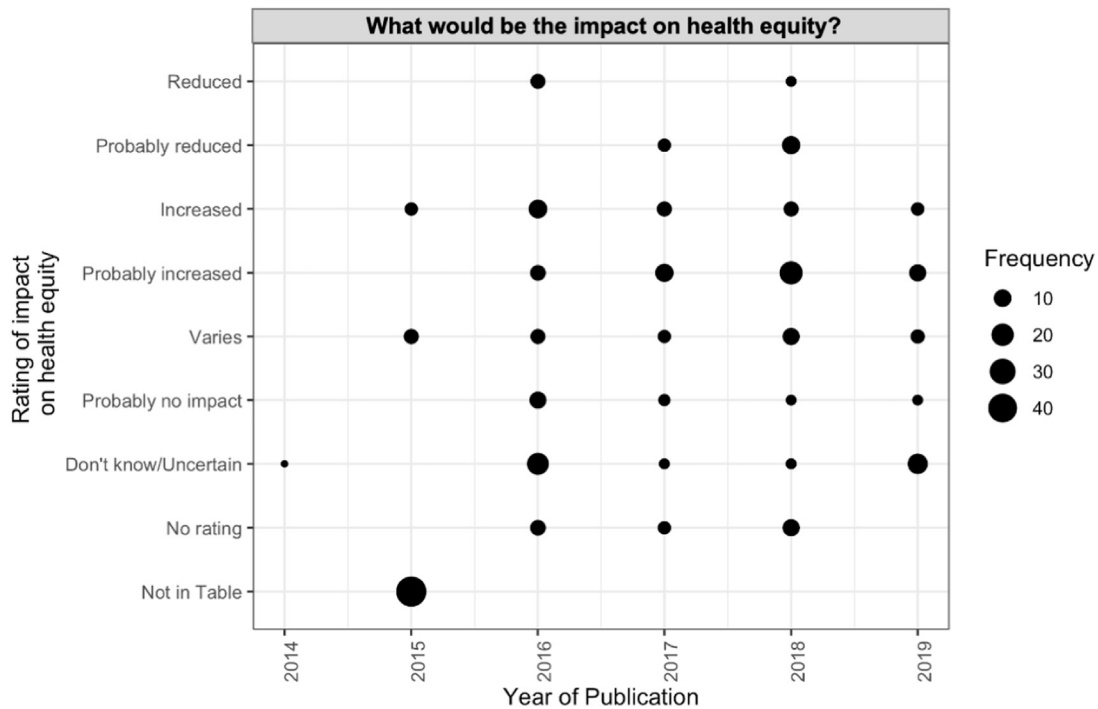


Fig. 3. Judgements made for the equity criterion in Evidence to Decision frameworks. Distribution of judgments across years in the equity criterion made in 40 guidelines (332 recommendations) developed with Evidence to Decision frameworks.

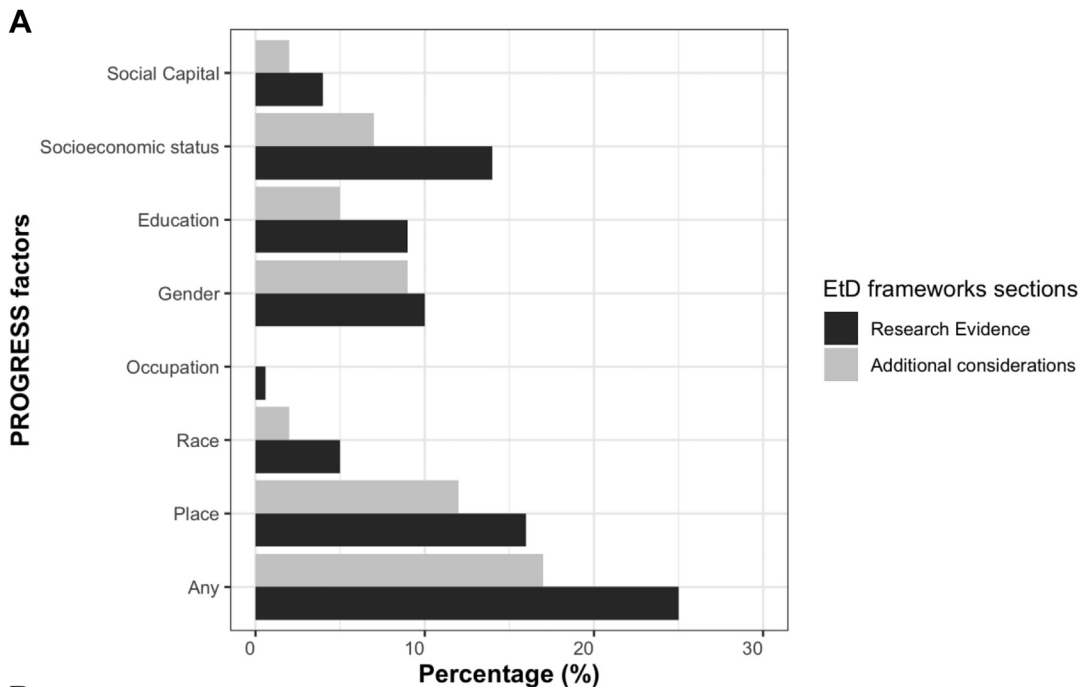


Fig. 4. Health equity considerations made in guidelines using the Evidence to Decision framework. (A) Distribution of health equity considerations across PROGRESS factors. (B) Health equity considerations according to the GRADE equity criteria in the research evidence and additional consideration sections for “impact on health equity” in 332 recommendations (40 guidelines developed with EtD frameworks).

4.2. Implications for policy makers and clinicians

Two-thirds of the WHO guidelines with EtD evaluated included additional information associated with the guideline development process, including the EtD frameworks. Evaluation of the research evidence reported supporting health equity judgments in the EtD frameworks indicates that WHO is gradually making more informed equity judgements. However, the process of reporting lacks standardization and is still scarce.

Assessment of PROGRESS factors found that place of residence and socioeconomic status were the most frequently reported. Appraisal of the provided evidence on the inclusion of equity in the EtD frameworks indicated that the reporting could be incomplete as it is referred mostly to differences in burden of disease between low- and high-income countries, rather than investigating other important equity aspects across populations. In addition, differences across different religions were never considered. We also observed that sex and gender considerations in the guidelines mainly referred to sex rather than gender,

which will miss the opportunity to understand the effects of gender on patient preferences and uptake of interventions. Consequently, there is a need to develop further guidance for the reporting of equity research evidence in the EtD frameworks.

Practitioners and health care workers are an important target stakeholder audience for WHO guidelines recommendations that may differentially affect disadvantaged groups; they should interpret the equity recommendations of existing guidelines with caution because of the lack of supporting empirical evidence for most recommendations. This absence of evidence reflects a need to improve reporting of health equity in primary studies, systematic reviews, and other forms of research [31,32].

4.3. Future research

The WHO has an important role in determining global health policy, as it strives to ensure that its health guidelines meet the highest international standards. Continued efforts are needed to operationalize the rigorous collection of data

on health equity in WHO guidelines, thus helping to attain its goals of addressing social injustice in health.

CRedit authorship contribution statement

Omar Dewidar: Methodology, Formal analysis, Investigation, Data curation, Writing - original draft, Visualization, Project administration. **Phillip Tsang:** Methodology, Investigation, Data curation. **Montserrat León-García:** Investigation, Writing - review & editing. **Christine Mathew:** Investigation. **Alba Antequera:** Investigation, Writing - review & editing. **Tejan Baldeh:** Investigation. **Elie A. Akl:** Conceptualization, Methodology, Writing - review & editing. **Pablo Alonso-Coello:** Conceptualization, Methodology, Writing - review & editing. **Jennifer Petkovic:** Methodology. **Thomas Piggott:** Methodology, Writing - review & editing. **Kevin Pottie:** Conceptualization, Methodology, Writing - review & editing. **Holger Schünemann:** Methodology, Writing - review & editing. **Peter Tugwell:** Conceptualization, Methodology, Writing - review & editing. **Vivian Welch:** Conceptualization, Methodology, Validation, Writing - review & editing, Supervision.

Acknowledgments

The authors gratefully acknowledge the WHO for their support in this project and Olympe Perez for assisting in obtaining the list of GRC-approved guidelines. They also would like to thank Astha Saxena for reviewing and verifying the recommendations of the guidelines that used the EtD frameworks.

Patient and public involvement: No patients or public were involved in the conduction or the design of this project.

Data sharing: Data sets are available on request.

Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jclinepi.2020.07.012>.

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