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Clinical guidelines for children and adolescents experiencing gender dysphoria or incongruence: a systematic review of guideline quality (part 1)

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ABSTRACT

Background Increasing numbers of children and adolescents experiencing gender dysphoria/incongruence are being referred to specialist gender services. There are various guidelines outlining approaches to the clinical care of these children and adolescents.

Aim To examine the quality and development of published guidelines or clinical guidance containing recommendations for managing gender dysphoria/incongruence in children and/or adolescents (age 0-18). A separate paper reports the synthesis of guideline recommendations.

Methods A systematic review and narrative synthesis. Databases (Medline, Embase, CINAHL, PsycINFO, Web of Science) were searched to April 2022 and web-based searches and contact with international experts continued to December 2022, with results assessed independently by two reviewers. The Appraisal of Guidelines for Research and Evaluation tool was used to examine guideline quality.

Results Twenty-three guidelines/clinical guidance publications (1998–2022) were identified (4 international, 3 regional and 16 national). The quality and methods reporting in these varied considerably. Few guidelines systematically reviewed empirical evidence, and links between evidence and recommendations were often unclear. Although most consulted with relevant stakeholders, including 10 which involved service users or user representatives, it was often unclear how this influenced recommendations and only two reported including children/adolescents and/or parents. Guidelines also lacked clarity about implementation. Two international guidelines (World Professional Association for Transgender Health and Endocrine Society) formed the basis for most other guidance, influencing their development and recommendations.

Conclusions Most clinical guidance for managing children/adolescents experiencing gender dysphoria/incongruence lacks an independent and evidence-based approach and information about how recommendations were developed. This should be considered when using these to inform service development and clinical practice.

PROSPERO registration number CRD42021289659.

WHAT IS ALREADY KNOWN ON THIS TOPIC

- ⇒ Increasing numbers of children and adolescents are being referred to specialist gender services.
- ⇒ Several clinical guidelines of varying quality exist to support the clinical care of children and adolescents experiencing gender dysphoria/incongruence and their families.
- ⇒ Current systematic reviews have focused on a subset of guidelines and there is a need to assess all guidelines that may be influencing care provision for these children/adolescents.

WHAT THIS STUDY ADDS

- ⇒ This review identified 23 guidelines or clinical guidance publications that contain recommendations about the management of children and/or adolescents experiencing gender dysphoria/incongruence.
- ⇒ Few guidelines are informed by a systematic review of empirical evidence and lack transparency about how recommendations were developed. Only two reported consulting directly with children and/or adolescents during their development.
- ⇒ Most national and regional guidance has been influenced by the World Professional Association for Transgender Health and Endocrine Society guidelines, which themselves lack developmental rigour and are linked through cosponsorship.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

- ⇒ Healthcare services and professionals should take into account the poor quality and inter-related nature of published guidance to support the management of children and adolescents experiencing gender dysphoria/incongruence.

INTRODUCTION

Internationally, there has been a reported increase in the number of children and adolescents describing themselves as gender questioning or identifying as transgender.[1] For some, this experience may not be distressing and require limited professional input; however, for others, difficulties in gender development can be associated with significant distress.[2] Gender dysphoria is the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition diagnostic category referring to psychological distress and/or functional impairment that results from incongruence between experienced or expressed gender and sex registered at birth.[3] The more recently published International Classification of Diseases, 11th edition uses the broader term of gender incongruence,[4] although both terms continue to be used in clinical practice. The prevalence of gender dysphoria/incongruence in children and adolescents is currently unknown due to lack of population-level data.[2 5] However, referrals to specialist paediatric gender services have increased considerably over the last 10-15 years.[2] For example, the UK paediatric gender service received 3585 referrals in 2021–2022 compared with 210 in 2011–2012.[6]

Alongside this overall rise in numbers, there has been recognition that this population have high rates of mental health and well-being needs as well as broader psychological and social complexity.[7–10] There is a need to ensure that the increasing numbers of children and adolescents presenting with experiences of gender-related distress receive timely, appropriate and evidence-based care. Guidelines for the management of gender dysphoria/incongruence can help to ensure the needs of children and adolescents are met, and that provision is equitable and evidence based.[11]

Several clinical guidelines exist to inform care provision for this population.[12 13] Recent systematic reviews have identified and appraised guidelines for transgender care, raising concerns about their quality.[12–14] However, they each focus on a subset of guidelines: Dahlen *et al*[12] only included international guidelines and Ziegler *et al*[13 14] focused on guidelines for primary care. This systematic review builds on these reviews by appraising and synthesising all published guidance that includes recommendations regarding the care of children and adolescents experiencing gender dysphoria/incongruence. The review is reported in two papers, with this first paper describing the guidelines and examining their quality and development, and the second synthesising recommendations.[15]

METHODS

This review forms part of a linked series examining the epidemiology, care pathways, outcomes and experiences for children and adolescents experiencing gender dysphoria/incongruence (protocol registered on PROSPERO: CRD42021289659[16]). The review is reported in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.[17]

Search strategy

A single search strategy was used comprising two combined concepts: ‘children’, which included all terms for children and adolescents; and ‘gender dysphoria’, which included associated terms such as gender-related distress and gender incongruence, and gender identity terms including transgender, gender diverse and non-binary.

MEDLINE (online supplemental table 1), EMBASE and PsycINFO through OVID, CINAHL Complete through EBSCO and Web of Science (Social Science Citation Index) were searched (13–23 May 2021; updated 27 April 2022).

Reference lists of included guidelines and relevant systematic reviews were assessed.[12–14] International experts were contacted and key organisational websites reviewed to December 2022.

Inclusion criteria

Published articles or documents that provide at least one specific recommendation for the assessment and/or care of children and/or adolescents (age 0–18) experiencing gender dysphoria/incongruence, and which were developed by or for a professional, healthcare or government organisation or from a research study, were included in the review.

These criteria enabled us to include documents like blueprints and position statements that include recommendations developed for practice and that are available for clinicians to use. Adopting these broad criteria enabled us to map and assess the quality of all clinical guidance that is potentially influencing practice regardless of method of development or year of publication and to examine any changes in guidance and its development over time. In making this decision, we also considered the knowledge that clinical guidelines are not always informed by a systematic review of evidence or developed robustly, despite this being implied in guideline definitions.[11] The document type or title is, therefore, potentially misleading as a criterion for inclusion.

Guidelines for adults, all ages or those not specifying a target population were included if they contained explicit recommendations for children/adolescents.

Originally we planned to include publications in the English language[16]; however, in order to include the increasing number of national guidelines published in Europe, we expanded this to include those that could be reliably translated. For guidance not published in English, we requested official or reliable translations from international experts or used DeepL Pro translation services[18] where these were not available.

Selection

The results of database and other searches were uploaded to Covidence[19] and screened independently by two reviewers. Full texts for potentially relevant articles were reviewed against inclusion criteria by two reviewers independently. Disagreements were resolved through discussion and inclusion of a third reviewer where necessary.

Data extraction

We extracted data on guidance characteristics, development and content into prepiloted data extraction templates. All extraction was undertaken by a single reviewer and second checked by another.

Quality appraisal

To be eligible for appraisal, guidance needed to describe the methodology in the main or auxiliary documents,[11] in addition to meeting inclusion criteria for the review.

We used the Appraisal of Guidelines for REsearch & Evaluation (AGREE) II instrument to assess quality.[20] This validated tool was designed to assess the quality of practice guidelines but has been successfully applied to other types of guidance in this practice area.[12 13] The tool contains 23 criteria organised around six quality domains (scope and purpose, stakeholder involvement, rigour of development, clarity of presentation, applicability and editorial independence), followed by an overall assessment on quality and whether a guideline should be recommended for use in practice. The criteria and overall assessment are rated on a 7-point scale from 1 ‘strongly disagree’ to 7 ‘strongly agree’. Response options for recommendation for use are ‘yes’, ‘yes, with modifications’ or ‘no’. A quality score is calculated for each domain, which represents the total summed score of all reviewers’ ratings as a percentage of the maximum possible domain score.[21]

Guidance was appraised independently by three reviewers using My AGREE PLUS, an online appraisal platform.[21] Following the Dahlen *et al* systematic review,[12] a colour coding

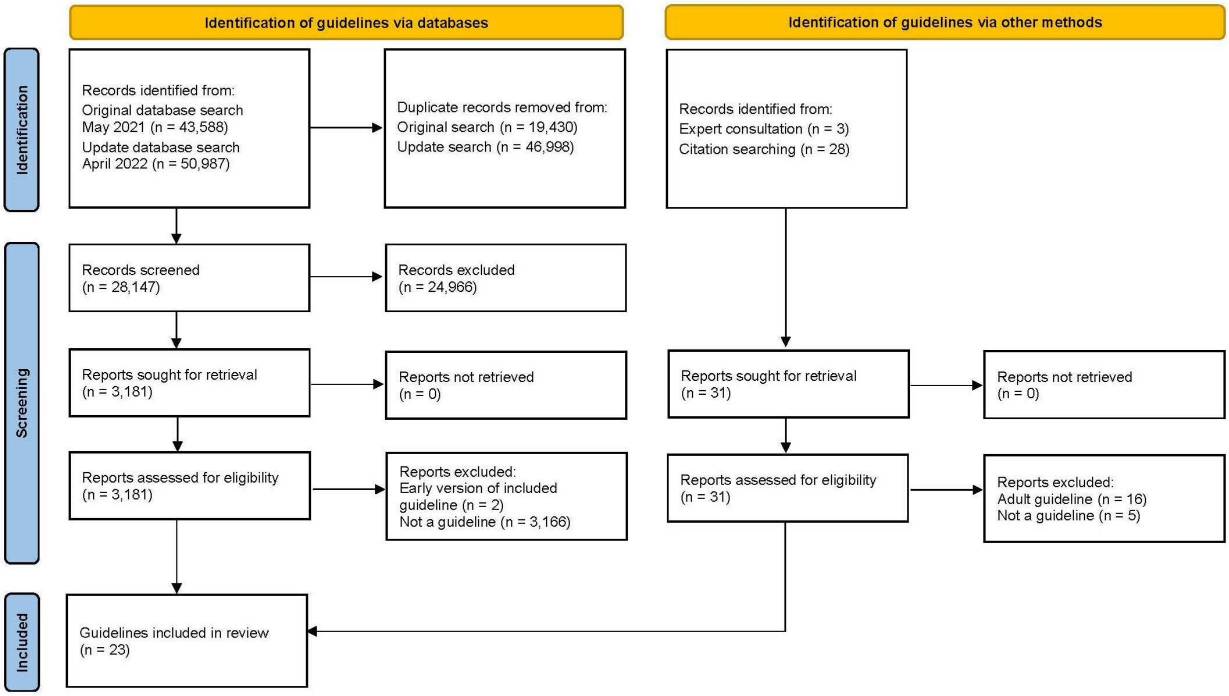

Figure 1 Study flow diagram.

scheme was used to aid visual comparison of domain scores (≤30%, 31%–69%, ≥70%). All reviewers undertaking appraisal read the AGREE II User Manual[21] and appraised and discussed the same two guidance publications first to improve reviewer competence.

Synthesis

Synthesis was undertaken using a narrative approach and involved a series of team discussions to ensure accurate interpretation of included guidance. To examine development, we reviewed reported methods against AGREE II domains, considering both quality of reporting and methods described. This included exploring how evidence was used to inform recommendations, how recommendations were developed and agreed and who was involved in this process and how the guidance referenced and used other included guidance during their development. For the latter, we produced a visual map to show these links.

RESULTS

Database searches yielded 28 147 records, 3181 of which were potentially relevant for the linked series of reviews. From these, 13 guidelines or other clinical guidance meeting our criteria were identified.[22–34] An additional 31 sources were identified as potential guidelines (via citation searching and expert consultation), 10 of which met inclusion criteria.[35–44] In total, 23 distinct clinical guidance publications (referred to in the synthesis as guidelines) were identified (see figure 1 and online supplemental table 2).

The 23 guidelines were published from 1998 to 2022, with all but two published after 2010. Four guidelines are international,[25 31 33 34] three regional (one covering Europe,[26] one Asia and the Pacific[38] and one the Caribbean[40]), and others are national, with four from the US,[22–24 44] two from Spain[32 42] and one each from Australia,[29] Canada,[37] Denmark,[36] Finland,[35] Italy,[27] New Zealand,[28] Norway,[39] South Africa,[41] Sweden[43] and the UK[30] (see figure 2). Three guidelines were translated into English.[35 39 43]

Five guidelines are position or policy statements from professional societies or organisations,[23 26 27 31 32] two are blueprints developed by multiple regional and international organisations,[38 40] and one is a practice parameter developed by a professional organisation.[22] The remaining 15 are guidelines: four were developed for national government bodies,[35 36 39 43] seven for or adopted by professional organisations,[24 25 28 30 34 41 42] three for healthcare organisations[29 37 44] and one a research study.[33]

Seven guidelines reference a previous version,[25 28 34 36 40 43 44] two of which have multiple updates.[34 36] Three guidelines were published by the developer[45–47] and as an academic paper.[28 29 41]

Seven guidelines focus on the care and/or treatment of children and adolescents experiencing gender dysphoria/incongruence[22 23 29 30 32 35 43] (one also covers practice for sexual minority children/adolescents[22]). Four guidelines cover adolescents only,[27 31 33 37] one of which is about co-occurring autism spectrum condition and gender dysphoria/incongruence.[33] One guideline, which has a specific focus on sexual function and satisfaction, covers adolescents and adults,[26] and 10 guidelines cover all transgender and/or gender diverse people but include chapters or sections specific to children/adolescents.[25 28 34 36 38–42 44] The final guideline is about psychological practice for adults but contains one section about adolescents.[24]

The target audience is generally broad, with 11 guidelines targeting healthcare providers[27–29 31 32 34–36 39 41 44] and five healthcare providers plus other stakeholders, for example, social care professionals or policymakers.[26 37 38 40 43] Two are for psychiatrists,[22 30] one for psychologists,[24] one for paediatricians,[23] one for endocrinologists[25] and two do not specify.[33 42]

Multiple areas of practice are covered in the guidelines. These include care models, principles and practices; service composition, roles and expertise; assessment; psychosocial care; information and advocacy; social transition; puberty suppression; masculinising/feminising hormones; surgical interventions;

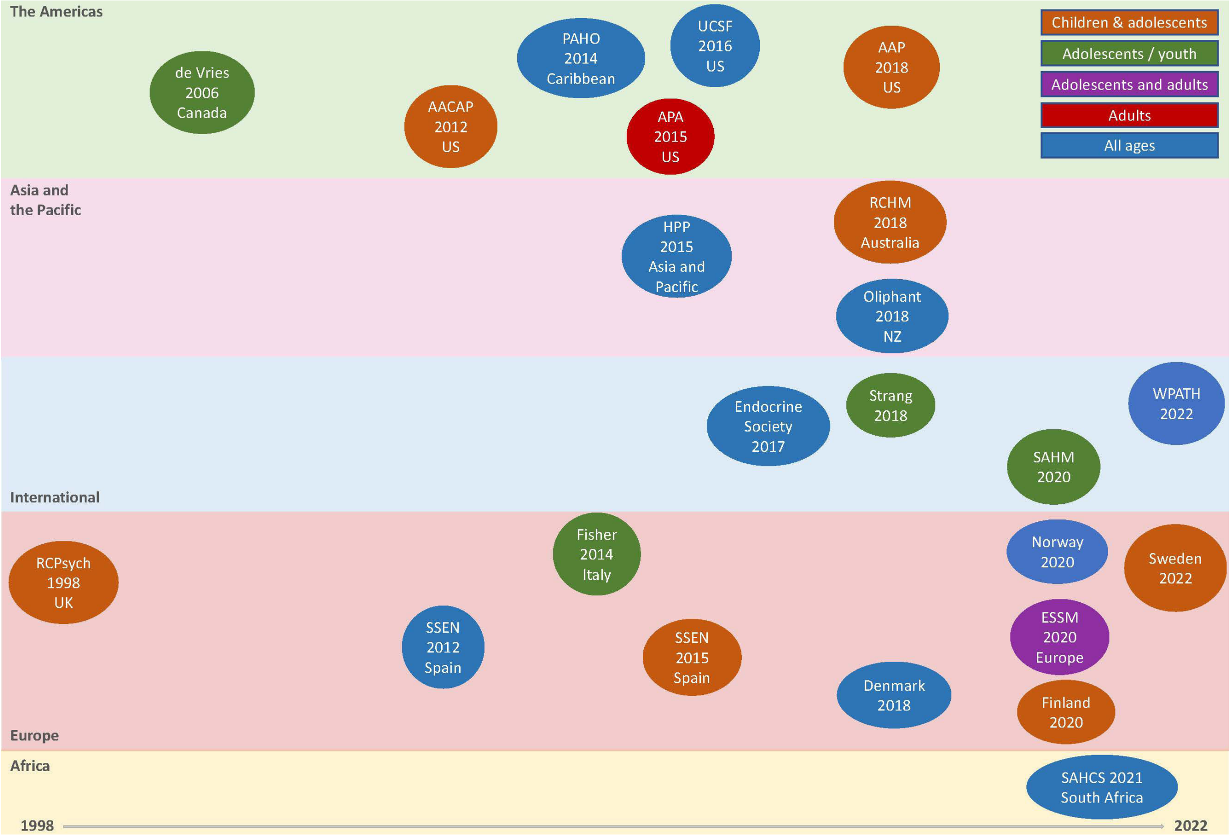

Figure 2 Regional timeline for guidelines. Presents a timeline for the included guidelines by geographical region, country and target population. AACAP, American Academy of Child and Adolescent Psychiatry; AAP, American Academy of Pediatrics; APA, American Psychological Association; ESSM, European Society for Sexual Medicine; HPP, Health Policy Project; PAHO, Pan American Health Organisation; RCHM, Royal Children's Hospital Melbourne; RCPsych, UK Royal College of Psychiatrists; SAHCS, South African HIV Clinicians Society; SAHM, Society for Adolescent Health and Medicine; SSEN, Spanish Society for Endocrinology and Nutrition; UCSF, University California, San Francisco; WPATH, World Professional Association for Transgender Health.

fertility care; other interventions (eg, voice therapy); sexual health and functioning; and physical health and lifestyle. Content varies depending on guideline scope and audience. More guidelines focus on medical treatments than psychosocial care.

Guideline methods and quality

Of the 23 guidelines, four provided no information about the process of development and could not be appraised.[30,32,36,42]

The 19 guidelines reporting methods varied in approach and quality of reporting. Most were developed by a core group of clinical experts with broader consultation with other professional stakeholders, although the nature of consultation and stakeholders varied. Few provided clear information about how experts were recruited or selected. Of the 16 that reported wider consultation,[22–25,28–30,33,34,37–41,43,44] only two described a formal consensus methodology[33,34] and a third reported a modified consensus process, but no details are provided.[44] Across guidelines, it was unclear how input from wider stakeholders informed recommendations.

Ten guidelines reported engaging with service users or service user representatives.[24,28,29,34,35,38–41,43] Methods varied, with two reporting separate research or consultation,[24,35] but most consulting with service users alongside other stakeholders during development or by obtaining their views on draft guidelines, although details are limited. Three of these guidelines also published a draft guideline for public comment,[24,34,39] which may have involved contributions from the transgender and gender diverse community although again details are limited. Only two guidelines reported consulting directly with children/adolescents or their parents,[29,43] and a second guideline listed them as potential stakeholders but it was unclear whether their views were included.[34] Others consulted with transgender or gender diverse adults or organisations representing children/adolescents experiencing gender dysphoria/incongruence or the broader transgender community.

Most guidelines reference evidence sources to support recommendations. However, only five described using a systematic approach to searching and/or selecting evidence, and in most cases, this covered one or two specific aspects of practice.[22,25,34,35,43] Three of the guidelines that reviewed evidence,[25,34,43] and another guideline not reporting a systematic approach to finding evidence,[44] reported appraising the quality and strength of evidence they reviewed. The Finnish guideline chose not to appraise quality in their systematic review because they determined all studies were poor quality on the basis of study design.[35]

Across guidelines, it was difficult to detect what evidence had been reviewed and how this informed development of recommendations, and the links between specific recommendations and evidence were often unclear or missing. For example, all but seven guidelines[27,28,30,38,40–42] describe insufficient evidence about the risks and benefits of medical treatments for adolescents, particularly in relation to long-term outcomes. At the same time, many of these guidelines then cite this evidence or

Table 1 Critical appraisal domain scores

Guideline ID	Scope and purpose	Stakeholder involvement	Rigour of development	Clarity of presentation	Applicability	Editorial independence
AACAP 2012	65	39	44	63	7	31
American Academy of Paediatrics 2018	70	26	12	30	6	69
American Psychological Association 2015	74	74	24	50	18	14
Council for Choices in Healthcare Finland 2020	91	69	51	72	56	0
de Vries 2006	63	31	10	74	17	6
Endocrine Society 2009	65	33	44	70	22	31
Endocrine Society 2017	63	33	42	72	21	92
European Society for Sexual Medicine 2020	63	52	39	70	7	58
Fisher 2014	65	20	12	35	17	44
Health Policy Project 2015	63	63	16	24	33	6
Norwegian Directorate of Health 2020	76	81	30	57	47	17
Oliphant 2018	44	39	12	33	21	0
Pan American Health Organisation 2014	52	44	13	31	21	0
Royal Children's Hospital Melbourne 2018	81	59	19	41	19	14
Society for Adolescent Health and Medicine 2020	41	24	17	41	7	0
South African HIV Clinicians Society 2021	59	59	21	43	24	69
Strang 2018	87	31	18	37	15	19
Swedish National Board of Health & Welfare 2022	91	87	71	83	25	36
UCSF 2016	70	41	23	37	26	0
WPATH 2012	85	61	26	56	17	17
WPATH 2022	83	63	35	56	24	39

≥70%, 31%–69%, ≤30%.
AACAP, American Academy of Child & Adolescent Psychiatry; UCSF, University of California, San Francisco; WPATH, World Professional Association for Transgender Health.

refer to guidelines that recommend these treatments to support a similar recommendation. Only the Swedish guideline makes a different recommendation, linking the lack of evidence about medical treatments to their recommendation that these should be provided under a research framework and for exceptional cases until this is established.[43] The Finnish guideline also takes a more cautious approach and recommends that medical interventions, which are described as experimental on the basis of their own evidence review, must be provided at the two central research clinics in Finland, and that data on the effects of these treatments should be systematically collected.[35]

Table 1 shows the AGREE II domain scores for the appraised guidelines. Most scored well regarding clarity of scope and purpose and scored poorly regarding applicability, editorial independence and rigour of development. Guidelines often differed between domains, although overall few guidelines scored highly across the domains. Only six guidelines scored higher than 30% for rigour,[22 25 26 34 35 43] and only the Swedish guideline scored higher than 70%.[43] In the stakeholder involvement and clarity of presentation domains, guidelines varied considerably. For example, in certain guidelines, it was not always easy to discern a recommendation from a suggestion, and recommendations were not always specific or unambiguous. Additionally, in guidelines covering all age groups, the terms adults and people were sometimes used interchangeably without defining them, making it difficult to assess whether recommendations about people were referring to children and/or adolescents.

Online supplemental table 3 shows the overall scores and assessment of whether guidelines should be recommended for practice. Only two guidelines were recommended for practice by all three appraisers: the Swedish[43] and Finnish[35] guidelines. These guidelines were the only two that scored higher than 50% for rigour of development due to their evidence-based approach and transparent reporting of this. They were also the only guidelines, which included a formal ethics review and they both scored highly on stakeholder involvement.

Links and influences between guidelines

All but two guidelines,[30 36] both of which contain no reference list and do not report methods of development, cite at least one other guideline. Figure 3 shows the different ways in which guidelines reference or use other guidelines and the level of influence guidelines have on each other. Examples of different links include citing another guideline as a resource for the reader, citing a guideline to justify or support a single or multiple recommendations, explicitly adopting another guideline's recommendation(s), recommending that another guideline be used alongside their own or reviewing other guidelines to inform the development of recommendations.

The links examined show that early versions of two international guidelines, the Endocrine Society[25] and World Professional Association for Transgender Health (WPATH)[34] guidelines (specifically the 2009 Endocrine Society guideline[48] and WPATH V.7 published in 2012)[49] have influenced nearly all the national and regional guidelines identified. The two guidelines also have close links, with WPATH adopting Endocrine Society recommendations in its own guideline and acting as a cosponsor for and providing input on drafts of the Endocrine Society guideline. Due to the considerable influence of these two guidelines, the quality of the current and preceding versions for both was appraised.

The type of relationship between the Endocrine Society and WPATH guidelines and other guidelines varied. For example, WPATH V.7[49] formed the basis of an initial draft of the Australian guideline[29]; the American Psychological Association (APA)[24] recommends using their guideline in tandem with WPATH[49] and Endocrine Society[48] guidelines; the guideline developed in New Zealand[28] is offered as additional guidance to WPATH[49] and adopts numerous recommendations from this and Endocrine Society[25] guidelines; the regional blueprints[38 40] adopt WPATH[49] criteria for hormone treatments; and the Norwegian guideline[39] describes their overall approach and principles as consistent with WPATH[49] and Endocrine Society,[25] along with

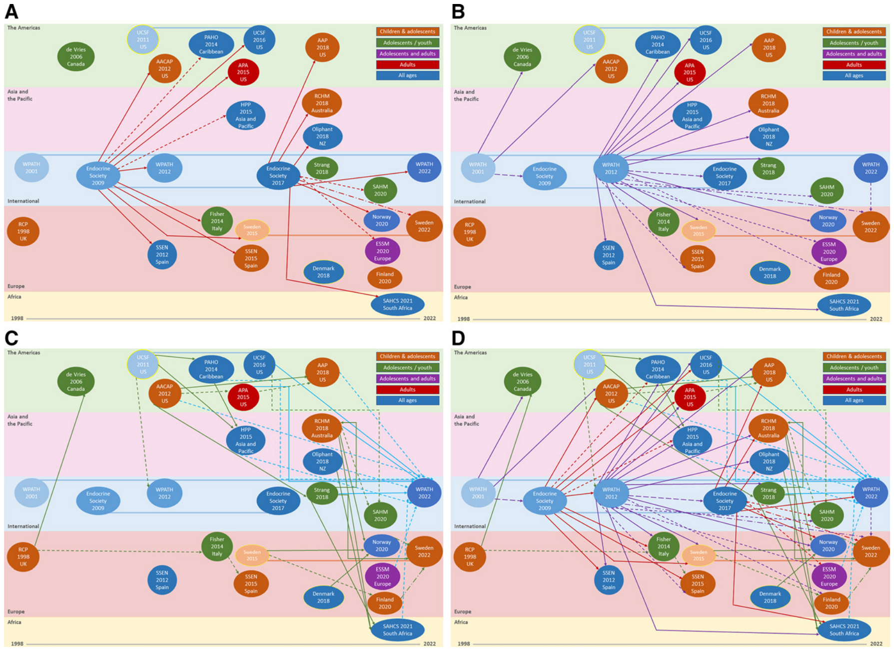

Figure 3 Links between guidelines. (A–D) show how the guidelines have influenced each other using the regional timeline shown in figure 2. (A) Shows how guidelines have cited and drawn on the Endocrine Society guidelines (indicated by red arrows). (B) Shows how guidelines have cited and drawn on the World Professional Association for Transgender Health (WPATH) guidelines (indicated by purple arrows). (C) Shows how guidelines have cited and drawn on other guidelines (indicated by green arrows). A different colour (blue) was used to show how the latest Endocrine Society and WPATH guidelines have cited and drawn on these other guidelines. (D) Shows all the links between the guidelines. Link symbol: Solid line: guideline has been adapted from the source guideline, has adopted numerous key recommendations from the source guideline or used the source guideline as evidence to support numerous key recommendations or recommends using the source guideline alongside its own. Short-dashed line: included reference to the source guideline or has adopted one or two key recommendations or used the source guideline as evidence to support these. Long dashed line: co-sponsor with direct involvement in development process. Long and short dashed line: critically reviewed recommendations from source guideline as key element of development process. Guidelines circled in yellow are those for which there are no available references to assess any potential links with other guidelines.

the Australian,[29] Danish[36] and Swedish 2015[50] guidelines. The updated 2022 Swedish guideline[43] took a different approach, which involved examining the WPATH,[49] Endocrine Society,[25] Finnish[35] and Norwegian[39] recommendations against their own evidence review and knowledge base to consider whether to adopt them (with the process reported in a separate Appendix published alongside the guideline[51]). The basis for decisions to adopt WPATH or Endocrine Society recommendations in other guidelines is unclear.

The Endocrine Society and WPATH V.7 guidelines contain few references to other guidelines. However, WPATH V.8 published in 2022 identifies numerous national and regional guidelines published as early as 2012 as potentially valuable resources and cites the APA,[24] Australian,[29] New Zealand[28] and University California, San Francisco[44] guidelines multiple times to support recommendations, all of which were themselves influenced considerably by WPATH V.7.

DISCUSSION

This systematic review identified 23 guidelines or clinical guidance publications (4 international, 3 regional and 16 national), nine of which focus solely on the management of children and/or adolescents experiencing gender dysphoria/incongruence.[23 27 29–32 35 37 43] Guidance quality and methods reporting varied considerably, and only five reported using a systematic approach to using evidence to inform recommendations.[22 25 34 35 43] Links between evidence and recommendations are often unclear, and information about how recommendations were developed in the absence of reviewing evidence is limited. There is also limited guidance on how to implement recommendations, and in some cases, a lack of clarity as to what is being recommended and for who. Although consultation with stakeholders was common, only 10 involved service users or their representatives, and it was unclear how this influenced recommendations. Only two reported consulting directly with children/adolescents or their parents, so few guidelines have been informed by an understanding of the needs and preferences of this population.

The findings from this review, therefore, raise questions about the credibility of currently available guidance, despite the majority being published in the last 5 years. Most guidelines have not followed international standards for guideline development set out by the AGREE2 initiative,[20] and/or provide insufficient information about their development. Because of this, the review team only recommended two guidelines for practice—the Finnish guideline published in 2020[35] and the Swedish guideline published in 2022,[43] neither of which were included in previously published systematic reviews.[12 13] These are the only guidelines to publish details of how developers reviewed and utilised the evidence-base and the decision-making behind their recommendations. For example, they explicitly link the lack of robust evidence about medical treatments for adolescents, as established from their own systematic reviews,[52 53] with the recommendation for a more cautious approach to treatment and the need for gender services providing these treatments to collect outcome data, with Sweden recommending that medical treatments should only occur under a research framework. They are also the only guidelines which have been informed by an ethical review conducted as part of guideline development. However, even these guidelines, like others, lack clear recommendations regarding certain aspects of practice and would benefit from more detailed guidance regarding implementation of recommendations.

Although other guidance mostly acknowledges the lack of robust evidence regarding medical treatments for adolescents, some then suggest existing evidence is sufficient to recommend them. Others have instead used a consensus or expert-led approach that results in the same recommendation or have adopted recommendations from the Endocrine Society guideline[25 48] or WPATH V.7,[49] despite the latter having been published a decade earlier in some cases. These two guidelines are themselves linked through cosponsorship and like other guidelines lack a robust and transparent approach to their development. Although it is not uncommon to adopt an expert consensus-based approach when evidence is limited, it is less common for guideline developers to draw so heavily on other guidelines.[11] This relationship may explain why there has until recently been an apparent consensus on key areas of practice for which evidence remains lacking.[54]

Previous systematic reviews have also found guidelines to be lacking in methodological quality, transparency and clarity,[12 13] and Dahlen *et al* recommend clinicians proceed with caution due to the gap between clinical practice and research in this area. Although neither highlight the interdependent nature of available guidance, this is not surprising due to their focus on a subset of mainly international guidelines. However, a recent BMJ article,[55] which too highlights the lack of an evidence-based approach, draws attention to the different conclusions in the Swedish and Finnish guidelines about the risks and benefits of medical treatments, which marks a considerable departure from all other guidance.

The different conclusions in recently published guidelines and concerns about guideline quality, combined with limited evidence about the most appropriate assessment and care pathways for children and adolescents experiencing gender dysphoria/incongruence has led to clinical uncertainty in practice and changing service provision and policy.[55] Large well-designed and conducted research that assesses long-term care outcomes for this population is urgently needed to inform future clinical guidelines, which themselves must be underpinned by an evidence-based and transparent approach that includes direct consultation with children and adolescents and their families.

Strengths and limitations

This review followed a published protocol and used robust search strategies. A systematic approach to appraise quality was used, although the AGREE2 tool was developed to appraise clinical guidelines rather than the broader set of guidance included in this review. A detailed examination of how guidance was developed facilitated new insights about the links between published guidelines. The search strategy may not have identified all guidelines not published in English. As searches were conducted to April 2022, this review does not include more recently published guidance; as this is a rapidly evolving area this is a limitation.

CONCLUSIONS

Most clinical guidance lacks an evidence-based approach and provides limited information about how recommendations were developed. The WPATH and Endocrine Society international guidelines, which like other guidance lack developmental rigour and transparency have, until recently, dominated the development of other guidelines. Healthcare professionals should consider the lack of quality and independence of available guidance when utilising this for practice. Future guidelines should adhere to standards for guideline development and provide greater transparency about how recommendations are developed and links between evidence and recommendations. The views of children, adolescents, parents and carers should also inform future guideline development.

Contributors LF and TL contributed to the conception of the review. JT, RH, LF, and TL designed the review methods. JT, RH and CH carried out screening, extraction and critical appraisal. JT, CEH, RH, LF, and TL contributed to data synthesis. JT drafted the manuscript. All authors contributed to interpretation of results and reviewed the manuscript prior to submission. CEH accepts full responsibility for the finished work and/or the conduct of the study, had access to the data, and controlled the decision to publish.

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