Received: 16 June 2022 | Revised: 15 September 2022 | Accepted: 27 September 2022

DOI: 10.1111/ecc.13738

REVIEW

European Journal of Cancer Care WILEY

Systematic review of shared decision-making in guidelines about colorectal cancer screening

Marta Maes-Carballo[1,2,3] | Manuel García-García[1] | Yolanda Gómez-Fandiño[1] | Carlos Roberto Estrada-López[1] | Andrés Iglesias-Álvarez[4] | Aurora Bueno-Cavanillas[3,5,6] | Khalid Saeed Khan[3,5]

[1]Department of General Surgery, Breast Cancer Unit, Complexo Hospitalario de Ourense, Ourense, Spain

[2]Department of General Surgery, Hospital Público de Verín, Ourense, Spain

[3]Department of Preventive Medicine and Public Health, University of Granada, Granada, Spain

[4]Department of General Surgery, University of Santiago de Compostela, Santiago de Compostela, Spain

[5]Instituto de Investigación Biosanitaria IBS, Granada, Spain

[6]CIBER of Epidemiology and Public Health (CIBERESP), Madrid, Spain

Correspondence
Ms Marta Maes-Carballo, Department of General Surgery, Breast Cancer Unit, Complexo Hospitalario de Ourense, Calle Ramon Puga Noguerol, 54, 32005. Ourense, Spain.
Email: martamaes@correo.ugr.es

Funding information
None declared.

Abstract

Introduction: We aimed to systematically evaluate quality of shared decision-making (SDM) in colorectal cancer (CRC) screening clinical practice guidelines (CPGs) and consensus statements (CSs).

Methods: Search for CRC screening guidances was from 2010 to November 2021 in EMBASE, Web of Science, MEDLINE, Scopus and CDSR, and the World Wide Web. Three independent reviewers and an arbitrator rated the quality of each guidance using a SDM quality assessment tool (maximum score: 31). Reviewer agreement was 0.88.

Results: SDM appeared in 41/83 (49.4%) CPGs and 9/19 (47.4%) CSs. None met all the quality criteria, and 51.0% (52/102) failed to meet any quality items. Overall compliance was low (mean 1.63, IQR 0–2). Quality was better in guidances published after 2015 (mean 1, IQR 0–3 vs. mean 0.5, IQR 0–1.5; $p = 0.048$) and when the term SDM was specifically reported (mean 4.5, IQR 2.5–4.5 vs. mean 0.5, IQR 0–1.5; $p < 0.001$). CPGs underpinned by systematic reviews showed better SDM quality than consensus (mean 1, IQR 0–3 vs. mean 0, IQR 0–2, $p = 0.040$).

Conclusion: SDM quality was suboptimal and mentioned in less than half of the guidances, and recommendations were scarce. Guideline developers should incorporate evidence-based SDM recommendations in guidances to underpin the translation of evidence into practice.

KEYWORDS
'clinical practice guidelines', 'colorectal cancer screening', 'consensus', 'quality of guidelines', 'shared decision-making'

INTRODUCTION

Colorectal cancer (CRC) incidence and mortality have decreased due to screening programmes, removing precancerous polyps with colonoscopy, and advances in management (Cotton et al., 1996; Zauber et al., 2012). In screening programmes, the patient's overall health, prior screening history, and preferences and values must be considered in selecting an individualised approach adapted to the

patient's risk of acquiring CRC (Hoffmann et al., 2020; US Preventive Services Task Force et al., 2021). Shared decision-making (SDM) is essential for decision-making, weighing up risks vs. benefits for each individual patient (Schrager & Burnside, 2017). In recent years, healthcare policymaking has emphasised SDM as a cornerstone of evidence-based and patient-centred care (Barry & Edgman-Levitan, 2012; Elwyn et al., 2010). Institutional promotion is fundamental for improving SDM application (Senate and House of Representatives, 2010), and clinical practice guidelines (CPGs) and consensus statements (CSs) should promote it and advise about its execution (Maes-Carballo, Munoz-Nunez, et al., 2020). Although CPGs and CSs increasingly support it (Gärtner et al., 2019), they remain unclear on accomplishing SDM in routine practice (Elwyn et al., 2012). Therefore, the analysis of the quality of SDM in guidances is critically essential. To the best of our knowledge, no systematic review has investigated SDM in CRC screening guidances.

Considering this background, this systematic review aimed to analyze SDM in CRC screening CPGs and CSs, evaluating the quality of recommendations about SDM.

1 | METHODS

Following prospective registration (Prospero no: CRD42021286156), this systematic review was conducted following advocated methods for search, assessment and reporting of guidelines using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) statement (see Appendix S1) (Liberati et al., 2009; Moher et al., 2009).

1.1 | Search strategy, data sources, inclusion and exclusion criteria

A search for relevant publications covering major electronic databases (EMBASE, Web of Science, MEDLINE, Scopus and CDSR) was developed without language restrictions to capture peer-reviewed and grey literature from 2010 until November 2021. We also searched 59 websites of important professional societies and eight guidance-specific databases. We explored the World Wide Web to include professional societies from countries with global CRC scientific production bigger than 0.5% (Maes-Carballo et al., 2021, 2022; Maes-Carballo, Mignini, et al., 2020). A total of 85,932 'Colorectal Cancer and Health' records were scrutinised from Scopus on 10 March 2022 to calculate the scientific production of each country. This decision is adhered to rules followed by other previous peer-reviewed published systematic reviews (Maes-Carballo et al., 2021, 2022; Maes-Carballo, Mignini, et al., 2020; Maes-Carballo, Munoz-Nunez, et al., 2020). We revised references from the guidances retrieved to search for conceivable additional CPGs or CSs. The final search integrated MeSH terms 'practice guidelines', 'guidelines', 'consensus', 'colorectal neoplasms', 'colorectal cancer', 'screening' and including word alternatives. Details of the search strategy were documented in Appendix S2. Endnote X9 software was employed to handle the searches downloaded.

Selection criteria captured eligible guidances about CRC screening produced by national or international professional organisations and societies or governmental agencies. Those guidances in which screening was the central issue and those in which there was a section dedicated to screening or prevention were included in our systematic review. We excluded protocols or screening programme documents, CPGs and CSs about diagnosis and treatment, out-of-date guidelines replaced by updates from the same organisation, and CPG and CSs for education and information purposes, randomised controlled trials, observational studies, narrative reviews, scientific reports, discussion papers, conference abstracts, and posters.

Studies were chosen through a multi-step approach, including deleting duplicates, reading titles and abstracts, and assessing full texts. Initially, titles and abstracts were considered for eligibility by two reviewers (CR-E and AI-A). Then, full texts were appraised for eligibility also by these two reviewers. Potential disagreements or inconsistencies were decided by arbitration of another reviewer (MM-C). Articles in duplication were recognised and excluded. When several versions of the same guidance were discovered, the most updated version was incorporated. Data were extracted independently and duplicated by three reviewers (YG-F, CR-E and AI-A). Disagreements were solved by consensus or arbitration (MM-C).

1.2 | Quality appraisal of guidances and data extraction

The included guidance's characteristics and quality were extracted into a piloted electronic data extraction sheet. The methodological quality assessment was estimated using an already published appraisal tool consisting of a 31-item checklist grouped into 11 domains (Maes-Carballo, Munoz-Nunez, et al., 2020). Three reviewers (YG-F, CRE-L and AI-A) evaluated the quality of SDM in CRC screening guidances (Appendix S3). The 11 domains were basic information (items 1–4), background (items 5–7), selection criteria (items 8–9), strengths and limitations (items 10–14), recommendations about SDM (items 15–17), facilitators and barriers (items 18–19), implementation (items 20–21), resource implications (items 22–24), monitoring and auditing criteria (items 25–27), recommendations for further research and limitations about these recommendations described (items 28–29), and editorial independence and declaration of interest (items 30–31). In those general guidances on the management of CRC, SDM was only considered if it was covered in the screening section. The questions were designed for a binary 'yes/no' answer: 'Yes' or 1 if the item was met and 'no' or '0' if the criterion was not accomplished. The high quality was related to a higher quantity of items completed in the CPG or CS evaluated. No formal score or cut-off point was specified to determine the quality (Maes-Carballo, Munoz-Nunez, et al., 2020). All three reviewers (YG-F, CRE-L and AI-A) had a prior meeting receiving a training seminar and workshop

from the arbitrator and creator of the tool (MM-C) that included education on SDM and the process and application of the SDM tool.

1.3 | Evidence synthesis, investigation of heterogeneity and data analysis

A descriptive analysis of the characteristics and quality of the selected guidances was conducted. Statistical data analysis was completed using Stata 16. The Kruskal–Wallis test was utilised to compare scores and stratify for factors or characteristics that may influence the quality of SDM in CPGs and CSs. Values were assessed statistically significant when $p < 0.05$. Inter-rater reliability between reviewers in data extraction was calculated using the intra-class correlation coefficient (ICC). A result of more than 0.75 was considered good (Koo & Li, 2016).

2 | RESULTS

2.1 | Study selection

The study selection process is illustrated in the flow diagram in Figure 1. The initial search identified 8229 citations. We removed 439 duplicates and 7676 records for not meeting the selection criteria (inappropriate population, publication, development group or outdated guidance). A total of 114 records were filtered through reviews of titles and abstracts. Later, we obtained the full text of 114 citations for eligibility assessment, and finally, 102 guidances (83 CPGs) (Alberta, 2020; Alsanea et al., 2015; Aranda et al., 2015; Aranda-Hernandez et al., 2016; Atkin et al., 2012; Austoker et al., 2012; Benton et al., 2016; Bo In Lee et al., 2012; Brenner et al., 2017; Brouwers et al., 2011; Canadian task Force on preventive health C, 2016; Clarke & Feuerstein, 2019; Cubiella et al., 2018; Day et al., 2011; Del Giudice et al., 2014; Duffy et al., 2014; European Colorectal Cancer Screening Guidelines Working Group et al., 2013; European Commission, 2010; Fabio Leonel Gil Parada et al., 2015; Gupta et al., 2019; Halloran et al., 2012; Hassan et al., 2013; Helsingen et al., 2019; Hospital provincial Neuquén, 2016; Instituto Mexicano del Seguro Social. Guía de Práctica Clínica, 2010; Instituto Nacional del Cáncer, 2015; Jenkins et al., 2018; Jenkinson & Steele, 2010; Jover et al., 2012; Kwaan & Jones-Webb, 2018; Lam et al., 2018; Lansdorp-Vogelaar et al., 2012; Leddin et al., 2013; Lee et al., 2012; Leong et al., 2017; Lieberman, 2012; Lopes et al., 2018; Malila et al., 2012; Ministry of Health, 2010, 2016; Minozzi et al., 2012; Monahan et al., 2019; Moreno et al., 2018; Moss et al., 2012; Network NCC, 2021; New Brunswick Colon Cancer Screening, 2013; NHS, 2021; Ong et al., 2014; Provenzale et al., 2016; Qaseem et al., 2019; Quirke et al., 2011, 2012; Recommended Cancer Screenings, 2013; Regula & Kaminski, 2010; Rex et al., 2017; Rubeca et al., 2017; Salzman et al., 2016; SemFYC AEdG, 2018; Seppälä et al., 2021; Shaukat et al., 2021; Society

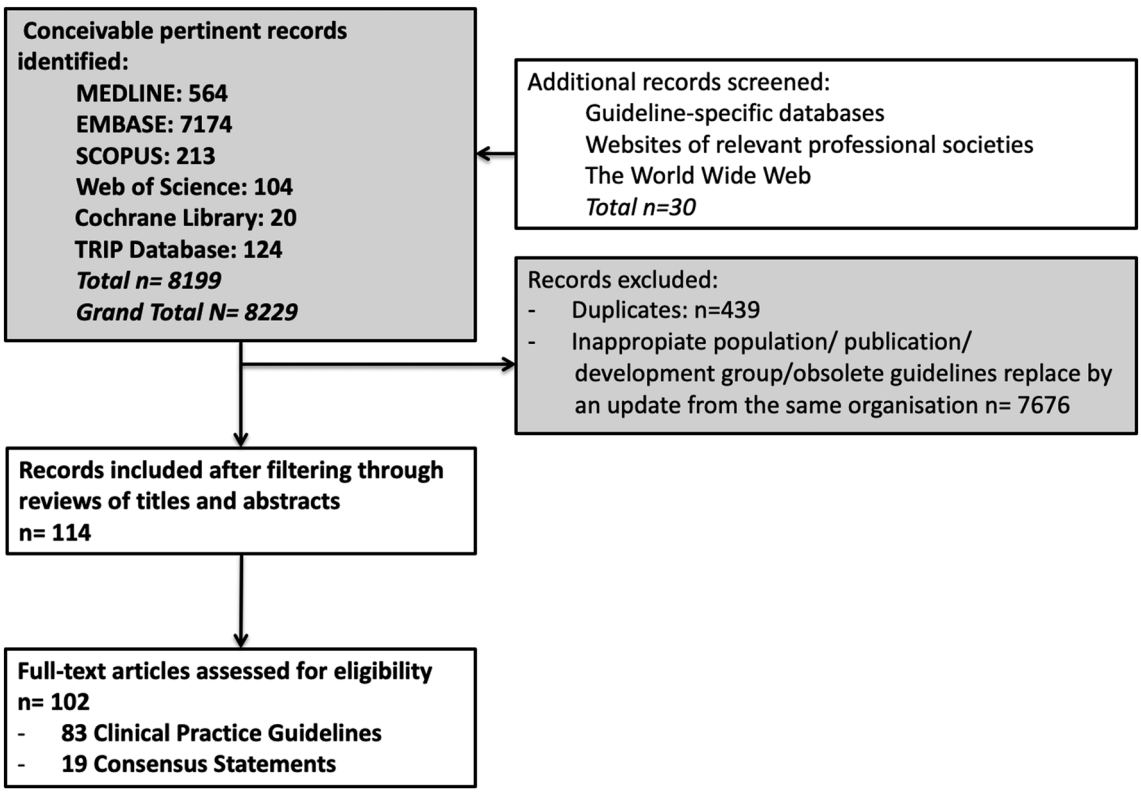

FIGURE 1 The flow diagram detailing the study selection

AC, 2018; Spada et al., 2014; Steele, Pox et al., 2012; Steele, Rey et al., 2012; Steinwachs et al., 2010; Stoffel et al., 2015; Tanaka et al., 2015; Telford, 2011; Tinmouth et al., 2014; Uruguay MdSd. Ministerio de Salud de Uruguay, 2018; US Preventive Services Task Force et al., 2021; Valori et al., 2012; Vasen et al., 2014; Vieth et al., 2012; von Karsa et al., 2012; Washington KFHPo, 2021; Wilkins et al., 2018; Wilkinson et al., 2019; Wolf et al., 2018; Wong et al., 2015; Yang et al., 2020; Zeimet et al., 2017; 손대경 김, 박윤희, 서민아, 신애선, 이희영, 임종필, 조현민, 홍성필, 김백희, 김용수, 김정욱, 김현수, 남정모, 박동일, 엄준원, 오순남, 임환섭, 장희진, 함상근, 정지혜, 김수영, 김열, 이원철, 정승용, 2015) and 19 CSs (Asociación Mexicana de Endoscopia Gastrointestinal y Colegio de Profesionistas, 2016; ANM. Programa Nacional de Consensos Inter-Sociedades, 2010; Basu et al., 2021; García-Carbonero et al., 2017; Giardiello et al., 2014; Hadjiliadis et al., 2018; Heresbach et al., 2016; Hyer et al., 2019; Johnson et al., 2014; Leddin et al., 2010, 2018; Lieberman et al., 2012; Rembacken et al., 2012; Robertson et al., 2017; Schmiegel et al., 2010; Schmoll et al., 2012; Sollano et al., 2017; Sung et al., 2015; 中国抗癌协会肿瘤内镜学专业委员会 国上国中医中中消中中中金国, 2019) were included in our study for the last appraisal.

2.2 | Characteristics of guidances and quality appraisal

The guidance's characteristics (type of document, entity, country, year, journal of publication, version and evidence analysis) were reported in Table 1. The guidances' mean number of items related to SDM was 1.63 (IQR 0–2). The quality assessment results using the SDM instrument are shown in Figure 2 and Appendix S4. No significant differences were obtained between CPGs and CSs concerning the SDM quality ($p = 0.959$). A total of 50 guidances (49.0%), 41/83 (49.4%) CPGs and 9/19 (47.4%) CSs, reported something about SDM. None of the guidelines met all the quality criteria, and 51.0% of the guidelines accomplished 0 items, and only 5.9% of them accomplished more than 25% items (8/31). When the SDM term was specifically cited in the guidance ($n = 13$), the quality of the CPG or CSs concerning SDM was better than when it did not appear ($n = 89$) (mean 4.5, IQR 2.5–4.5 vs. mean 0.5, IQR 0–1.5; $p < 0.001$).

The best-scored domains were basic information (domain 1) with a range of guidances accomplishing items from 3 to 50, background (domain 2) with a range from 1 to 15, and recommendations (domain 5) with a range from 5 to 13. Resource implications (domain 8), monitoring and auditing criteria (domain 9), and independence and conflict of interest (domain 11) did not appraise any of the items in any guidance. Only 13/102 (12.7%), 10/102 (9.8%) and 3/102 (2.9%) guidances informed SDM in their executive summary, table of content, glossary, abbreviations, acronyms or topic indexes. SDM concept was only explained in one (1.0%) guidance. Both the primary population and patient subgroups with special consideration were characterised in 15/102 (14.7%). The search strategy and the study design and methodology limitations were reported in 2/102 (2.0%), respectively. The importance of the outcomes and the consistency of the results were detailed in only one guidance (1.0%) each. No PICO question was identified in any guidance. The benefits vs. harms of SDM in CRC screening were considered only in 3/102 (2.9%). The evidence of using SDM was exhibited in 2/102 (2.0%). Recommendations about SDM use were clear, precise and reliable in only 7/102 (6.9%) guidance documents, and these recommendations were well-reported regarding specific subgroups in 5/102 (4.9%) guidances. Facilitators and barriers for SDM application were well-described in 4/102 (3.9%), advice on applying SDM in clinical routine in 7/102 (6.9%), and additional materials were provided in other 7/102 (6.9%). Suggestions for further research were located in 2/102 (2.0%), and limitations about SDM recommendations were also described in 2/102 (2.0%). No information about SDM implementation cost, any criteria to assess and measure SDM adherence, conflict of interest regarding SDM or a declaration of the value of SDM in clinical practice. The European Commission (Austoker et al., 2012; European Commission, 2010) guidances and the American Cancer Society (ACS) (Wolf et al., 2018) CPG achieved the highest number of quality SDM items completed (Appendix S4).

2.3 | Analysis of guidances' characteristics

The countries' distribution concerning SDM was erratic. Most of the guidances were from Europe (41/102; %) or North America (40/102; %). Table 2 shows factors than may influence the SDM quality of the guidances. Two CPGs or CSs were from Africa or Oceania (2/102; %). Asia and South America had 12/102 (%) and 5/12 (%), respectively. The quality of SDM did not vary between continents ($p = 0.233$).

A greater tendency to introduce and recommend SDM was observed in the most recent guidances (Figure 3). The publication year after 2015 had an important influence on the quality than older publications (mean 1, IQR 0–3 vs. mean 0.5, IQR 0–1.5; $p = 0.048$). The publication in a journal ($p = 0.131$), and the version number ($p = 0.416$). The specific quality tool referral increased the quality and reporting of SDM on guidances ($p < 0.001$). CPGs following systematic reviews had better quality than consensus or literature reviews or when it was not reported (mean 1, IQR 0–3 vs. mean 0, IQR 0–2 vs. mean 0, IQR 0–1; $p = 0.040$).

3 | DISCUSSION

3.1 | Main findings

Our results showed that CPGs and CSs for SDM in CRC screening were of low quality, with variation between guidances and across domains. Recent guidances had better quality, but there is extensive room for improvement. CPGs based on systematic reviews scored better than CSs or guidances that did not report any of it for evidence analysis. Guidances that contained a description of the use of a specific quality tool such as AGREE II or RIGHT demonstrated higher quality.

TABLE 1 Description of the screening clinical practice guidelines (CPGs) and consensus (CSs) (n=102) selected for the systematic review on the quality of reporting for SDM

	Name of the CPG or protocol	Abbreviated name	Type of document	Entity	Country
1	Screening for colorectal cancer. US preventive services task Force recommendation statement	2021 USPSTF CRC screening	CPG	USPSTF	USA
2	Bowel cancer screening: Pathology guidance on reporting lesions	2021 UK government CRC screening	CPG	UK government	UK
3	NCCN clinical practice guidelines in oncology (NCCN Guidelines). Colorectal Cancer Screening	2021 NCCN CRC screening	CPG	NCCN	USA
4	Colorectal cancer screening guideline	2021 KFHPW CRC screening	CPG	KFHPW	USA
5	European guidelines from the EHTG and ESCP for Lynch syndrome: An updated third edition of the Mallorca guidelines based on gene and gender	2021 EHTG/ESCP Lynch syndrome	CPG	EHTG/ESCP	Europe
6	Cancer screening in the coronavirus pandemic era: Adjusting to a new situation	2021 COVID pandemic cancer screening	CS	ASCO	USA
7	ACG clinical guidelines: Colorectal cancer screening 2021	2021 ACG CRC Screening	CPG	ACG	USA
8	Colorectal cancer screening. Clinical practice guideline. Nov 2013 (Revised 2020)	2020 CCAI CRC screening	CPG	CCAI	Canada
9	American Society for Gastrointestinal Endoscopy guideline on the role of endoscopy in familial adenomatous polyposis syndromes	2020 ASGE polyposis syndromes	CPG	ASGE	USA
10	Colorectal cancer screening	2019 USMSTF CRC screening	CPG	USMSTF	USA
11	Colorectal cancer screening for patients with a family history of colorectal cancer or adenomas	2019 Ottawa CRC screening	CPG	University of Ottawa	Canada
12	Colorectal cancer screening with faecal immunochemical testing, sigmoidoscopy or colonoscopy: a clinical practice guideline	2019 MAGIC CRC screening	CPG	MAGIC	UK
13	Management of familial adenomatous polyposis in children and adolescents: Position paper from the ESPGHAN polyposis working group	2019 ESPGHAN polyposis syndromes	CS	ESPGHAN	Europe
14	Colorectal cancer surveillance in inflammatory bowel disease: Practice guidelines and recent developments	2019 CRC in IBD	CPG	HMS	USA
15	中国早期结直肠癌筛查流程专家共识意见(2019, 上海)	2019 Chinese CRC screening CS	CS	SMMU	China
16	Guidelines for the management of hereditary colorectal cancer from the British Society of Gastroenterology (BSG)/Association of Coloproctology of Great Britain and Ireland (ACPGBI)/United Kingdom Cancer Genetics Group (UKCGG)	2019 BSG/ACPGBI/UKCGG CRC screening	CPG	BSG/ACPGBI/UKCGG	UK
17	Clinical practice guideline. Diagnosis and prevention of colorectal cancer. 2018 update	2019 ACP CRC screening CPG	CPG	ACP	USA

TABLE 1 (Continued)

	Name of the CPG or protocol	Abbreviated name	Type of document	Entity	Country
18	Screening for Colorectal Cancer in asymptomatic average-risk adults: A guidance statement from the American College of Physicians	2019 ACP average-risk CRC screening	CPG	ACP	USA
19	Guía de práctica clínica de tamizaje del cáncer colo-rectal 2018	2018 Uruguay CRC screening	CPG	Ministerio de Salud. Uruguay	Uruguay
20	Recommendations on prevention and screening for colorectal cancer in Hong Kong	2018 Hong Kong CRC screening	CPG	CEWGCPS	China
21	Early detection for colorectal cancer: ASCO resource-stratified guideline	2018 early detection for CRC	CPG	ASCO	USA
22	Cystic fibrosis colorectal cancer screening consensus recommendations	2018 cystic fibrosis CRC screening	CS	AGA	USA
23	Colorectal Cancer Screening in black men: Recommendations for best practices	2018 CRC screening in black men	CPG	NIH	USA
24	Colorectal Cancer Screening and prevention	2018 CRC Screening and prevention	CPG	AAFP	USA
25	Clinical practice guideline on screening for colorectal cancer in individuals with a family history of non-hereditary colorectal cancer or adenoma: The Canadian Association of Gastroenterology Banff Consensus	2018 Banff consensus	CS	CAG	Canada
26	Revised Australian national guidelines for colorectal cancer screening: Family history	2018 Australian CRC screening	CPG	CCA	Australia
27	Diagnóstico y prevención del Cáncer Colorectal	2018 AEC CRC screening	CPG	AEG	Spain
28	Detección temprana, diagnóstico y clasificación por etapas	2018 ACS CRC screening	CPG	ACS	USA
29	Colorectal cancer screening for average-risk adults: 2018 guideline update from the American Cancer Society	2018 ACS average-risk CRC screening	CPG	ACS	USA
30	ACR appropriateness criteria. Colorectal cancer screening	2018 ACR CRC Screening	CPG	ACR	USA
31	Recommendations on faecal immunochemical testing to screen for colorectal neoplasia: A consensus statement by the US multi-society task force on colorectal cancer	2017 USPSTF FOBT	CS	USPSTF	USA
32	Colorectal cancer screening: Recommendations for physicians and patients from the U.S. multi-society task force on colorectal cancer	2017 USPSTF CRC screening	CPG	USPSTF	USA
33	The Joint Philippine Society of Gastroenterology (PSG) and Philippine Society of Digestive Endoscopy (PSDE) Consensus Guidelines on the Management of Colorectal Carcinoma	2017 Philippine CRC screening CS	CS	PSG, PSDE	Philippines
34	Guidance for faecal occult blood testing: quantitative immunochemical method (FIT-HB) in colorectal cancer screening programmes	2017 Italian FOBT CRC screening	CPG	Grupo Italiano Screening Colorettale	Italy
35	AGO Austria recommendation on screening and diagnosis of Lynch syndrome (LS)	2017 AGO Lynch CRC screening	CS	AGO	Austria

TABLE 1 (Continued)

	Name of the CPG or protocol	Abbreviated name	Type of document	Entity	Country
36	Association of coloproctology of Great Britain and Ireland (ACPGBI): Guidelines for the management of cancer of the colon, rectum and anus (2017) – Diagnosis, investigations and screening	2017 ACPGBI CRC and anal cancer	CPG	ACPGBI	UK, Ireland
37	Colorectal cancer screening in average risk patients	2017 CRC average risk patients	CPG	University of North Carolina	USA
38	Turkey Cancer Control Programme	2016 Turkey CRC screening	CPG	Ministry of Health. Turkey	Turkey
39	Prévention du cancer colorectal par coloscopie, en dehors du dépistage en population. Consensus et position de la SFED	2016 SFED CRC screening	CS	SFED	France
40	NICE referral guidelines for suspected cancer: Colorectal cancer and faecal occult blood testing	2016 NICE CRC screening	CPG	NICE	UK
41	Guías de prevención y manejo endoscópico del cáncer colorrectal	2016 Mexico CRC screening	CS	AMEG	Mexico
42	Genetic/familial high-risk assessment: Colorectal. Version 1.2016	2016 JNCCN CRC high risk	CPG	NCCN	USA
43	Detección temprana de Cáncer Colorectal en población adulta	2016 HPN CRC screening	CPG	HPN	Argentina
44	2016 gastrointestinal endoscopy: Global view. Seeing better – Evidence based recommendations on optimising colonoscopy adenoma detection rate	2016 GI endoscopy	CPG	University of Toronto	Canada
45	Cancer screening in older patients	2016 CRC screening old patients	CPG	Thomas Jefferson University	USA
46	Guía de práctica clínica para la tamización de cáncer colorrectal	2016 Colombia CRC screening	CPG	ACGEDCH	Colombia
47	Recommendations on screening for colorectal cancer in primary care	2016 Canadian task force screening	CPG	CTFPHC	Canada
48	SEOM/SERAM consensus statement on radiological diagnosis, response assessment and follow-up in colorectal cancer	2015 SEOM SERAM CRC screening	CS	SEOM, SERAM	Spain
49	SEOM clinical guidelines for diagnosis and treatment of metastatic colorectal cancer 2015	2015 SEOM CRC screening	CPG	SEOM	Spain
50	National Guidelines for Colorectal Cancer Screening in Saudi Arabia with strength of recommendations and quality of evidence	2015 Saudi Arabia CSC screening	CPG	SSCRS/ SGA/SOS/MH	Saudi Arabia
51	대장암 검진 권고안	2015 Korea CRC screening	CPG	NCCK	Korea
52	Evidence-based clinical practice guidelines for management of colorectal polyps	2015 JSGE CR polyps	CPG	JSGE	Japan
53	Targeted screening for colorectal cancer in high-risk individuals	2015 CRC screening high-risk	CPG	CUHK	China
54	Colorectal cancer surveillance after index colonoscopy: Guidance from the Canadian Association of Gastroenterology	2015 CAG CRC surveillance	CPG	CAG	Canada

TABLE 1 (Continued)

	Name of the CPG or protocol	Abbreviated name	Type of document	Entity	Country
55	Hereditary colorectal cancer syndromes: American Society of Clinical Oncology clinical practice guideline endorsement of the familial risk–colorectal cancer: European Society for Medical Oncology Clinical Practice Guidelines	2015 ASCO hereditary CRC	CPG	ASCO	USA
56	GUÍA PARA EQUIPOS DE ATENCIÓN PRIMARIA DE LA SALUD. Información para la prevención y detección temprana del cáncer colorrectal	2015 Argentinian CRC screening	CPG	Ministerio de Salud. Argentina	Argentina
57	Guidelines on genetic evaluation and management of Lynch syndrome: A consensus statement by the US multi-society task force on colorectal cancer	2014 USPSTF Lynch syndrome	CPG	USPSTF	USA
58	Optimising adequacy of bowel cleansing for colonoscopy: Recommendations from the US multi-society task force on colorectal cancer	2014 USPSTF bowel cleansing	CS	USPSTF	USA
59	Colonoscopy quality assurance in Ontario: Systematic review and clinical practice guideline	2014 Ontario CRC screening	CPG	CCO	Canada
60	Clinical indications for computed tomographic colonography: European Society of Gastrointestinal Endoscopy (ESGE) and European Society of Gastrointestinal and Abdominal Radiology (ESGAR) guideline	2014 ESGE ESGAR CTC	CPG	ESGE, ESGAR	Europe
61	Guideline for referral of patients with suspected colorectal cancer by family physicians and other primary care providers	2014 CRC screening primary care	CPG	SAFHT	Canada
62	An updated Asia Pacific consensus recommendations on colorectal cancer screening	2014 Asia Pacific CRC screening CS	CS	APWGCRCS	Asia
63	Regional and national guideline recommendations for digital ano-rectal examination as a means for anal cancer screening in HIV positive men who have sex with men: A systematic review	2014 ano-rectal screening	CPG	University of Melbourne	Australia
64	Recommended Cancer screenings	2013 Swedish CRC screening	CPG	Swedish Cancer institute	Sweden
65	New Brunswick colon cancer screening. Clinical practice guidelines	2013 NBCN CRC screening	CPG	NBCN	Canada
66	Guidelines for surveillance of individuals with constitutional mismatch repair-deficiency proposed by the European Consortium 'Care for CMMR-D' (C4CMMR-D)	2013 Lynch CRC screening	CPG	LUMC	Netherlands
67	Post-polypectomy colonoscopy surveillance: European Society of Gastrointestinal Endoscopy (ESGE) guideline	2013 ESGE endoscopy	CPG	ESGE	Europe
68	Tumour markers in colorectal cancer, gastric cancer and gastrointestinal stromal cancers: European group on tumour markers 2014 guidelines update	2013 EGTM CRC tumour makers	CPG	University College Dublin	Ireland

TABLE 1 (Continued)

	Name of the CPG or protocol	Abbreviated name	Type of document	Entity	Country
69	Guidelines for colonoscopy surveillance after screening and polypectomy: A consensus update by the US multi-society task force on colorectal cancer	2012 USPSTF screening surveillance	CS	USPSTF	USA
70	Clinical practice guidelines: Quality of colonoscopy in colorectal cancer screening	2012 SEED AEG colonoscopy	CPG	SEED, AEG	Spain
71	Colorectal cancer screening: Practice guidelines	2012 Oregon CRC screening	CPG	OHSU	USA
72	대장암 선별과 대장폴립 진단검사 가이드라인	2012 Korean CRC screening	CPG	Universidad de Yonsei	Korea
73	Korean guidelines for colorectal cancer screening and polyp detection	2012 Korea CRC screening	CPG	Yonsei University	Korea
74	ESMO consensus guidelines for management of patients with colon and rectal cancer. A personalised approach to clinical decision-making	2012 ESMO CRC screening	CS	ESMO	Europe
75	Quality in screening colonoscopy: Position statement of the European Society of Gastrointestinal Endoscopy (ESGE)	2012 ESGE quality in CRC screening	CS	ESGE	Europe
76	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition professional requirements and training	2012 EC CRC screening. Training	CPG	European Commission	Europe
77	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition colonoscopic surveillance following adenoma removal	2012 EC CRC screening. Surveillance	CPG	European Commission	Europe
78	European guidelines for quality assurance in colorectal cancer screening and diagnosis: Overview and introduction to the full supplement publication	2012 EC CRC screening. Supplement	CPG	European Commission	Europe
79	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition executive summary	2012 EC CRC screening. Summary	CPG	European Commission	Europe
80	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition quality assurance in pathology in colorectal cancer screening and diagnosis	2012 EC CRC screening. Pathology	CPG	European Commission	Europe
81	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition organisation	2012 EC CRC screening. Organisation	CPG	European Commission	Europe
82	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition management of lesions detected in colorectal cancer screening	2012 EC CRC screening. Lesions	CPG	European Commission	Europe
83	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition introduction	2012 EC CRC screening. Introduction	CPG	European Commission	Europe
84	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition faecal occult blood testing	2012 EC CRC screening. FOBT	CPG	European Commission	Europe

TABLE 1 (Continued)

	Name of the CPG or protocol	Abbreviated name	Type of document	Entity	Country
85	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition evaluation and interpretation of screening outcomes	2012 EC CRC screening. Evaluation	CPG	European Commission	Europe
86	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition quality assurance in endoscopy in colorectal cancer screening and diagnosis	2012 EC CRC screening. Endoscopy	CPG	European Commission	Europe
87	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition annotations of colorectal lesions	2012 EC CRC screening. CRC lesions	CPG	European Commission	Europe
88	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition communication	2012 EC CRC screening. Communication	CPG	European Commission	Europe
89	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition principles of evidence assessment and methods for reaching recommendations	2012 CPO CRC screening principles	CPG	CPO Piemonte	Europe
90	Effective interventions to facilitate the uptake of breast, cervical and colorectal cancer screening: An implementation guideline	2011 CCO effective interventions	CPG	CCO	Canada
91	Canadian guidelines for colorectal cancer screening	2011 Canadian CRC screening	CPG	University of British Columbia	Canada
92	Colorectal cancer screening and surveillance in the elderly patient	2011 ACG CRC screening in old	CPG	ACG	USA
93	Cancer screening	2010 Singapore CRC screening	CPG	Ministry of Health. Singapore	Singapore
94	Quality assurance in pathology in colorectal cancer screening and diagnosis—European recommendations	2010 quality assurance CRC	CPG	University of Leeds	UK
95	Targeting risk groups for screening	2010 Poland risk groups screening	CPG	Institute of Oncology, roentgen	Poland
96	NIH state-of-the-science conference statement on enhancing use and quality of colorectal cancer screening	2010 NIH CRC screening	CPG	NIH	UK
97	Guía de Práctica Clínica. Detección Oportuna y Diagnóstico de Cáncer de Colon y Recto no Hereditario en Adultos en Primero, Segundo y Tercer Nivel de Atención	2010 Mexico CRC screening	CPG	AMC	Mexico
98	European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition	2010 EC CRC screening	CPG	European Commission	Europe
99	Colorectal cancer screening—Methodology	2010 Dundee CRC screening	CPG	University of Dundee	UK
100	S3 Guidelines for colorectal carcinoma results of an evidence-based consensus conference on February 6/7, 2004 and June 8/9, 2007 (for the topics IV, VI and VII)	2010 CRC screening	CS	Ruhr-Universität Bochum	Germany

TABLE 1 (Continued)

	Name of the CPG or protocol	Abbreviated name	Type of document	Entity	Country
101	Canadian Association of Gastroenterology position statement on screening individuals at average risk for developing colorectal cancer: 2010	2010 CAG risk CRC screening CS	CS	CAG	Canada
102	Programa Nacional de Consensos Inter-Sociedades. Programa Argentino de Consensos de Enfermedades Oncológicas. GUÍA DE RECOMENDACIONES PARA LA PREVENCIÓN Y DETECCIÓN PRECOZ DEL CÁNCER COLORRECTAL. Septiembre 2010	2010 Argentinian CRC screening CS	CS	ANM	Argentina

TABLE 1 (Continued)

	Year	Publication in a journal	Version	Evidence analysis	Quality tool referral	Type of cancer	Last updated date (months)
1	2021	JAMA	5	Systematic review	No	CRC	4
2	2021	Not published	3	Review	No	CRC	8
3	2021	Not published	2	Systematic review, consensus	No	CRC	8
4	2021	Not published	2	Not reported	No	CRC	3
5	2021	BJS	3	Systematic review, Delphi consensus	Yes	CRC	7
6	2021	JCO global oncology	1	Scoping review	No	CRC/breast/cervical	7
7	2021	Am J Gastroenteroly	3	Systematic review, GRADE	No	CRC	9
8	2020	Not published	6	Not reported	No	CRC	23
9	2020	Gastrointest Endosc	1	Systematic review, consensus	No	CRC	18
10	2019	JAMA	1	Systematic review, GRADE	No	CRC	31
11	2019	CFP	1	Systematic review, meta-analysis, GRADE	No	CRC	25
12	2019	BMJ	1	Systematic review, GRADE	No	CRC	34
13	2019	JPGN	1	Systematic literature, GRADE	No	CRC	33
14	2019	WJG	2	Not reported	No	CRC	28
15	2019	CGP	1	Not reported	No	CRC	25
16	2019	BMJ	1	Systematic review, GRADE, Delphi consensus	No	CRC	26
17	2019	Ann Intern Med	2	Not reported	No	CRC	29
18	2019	Ann Intern Med	1	Review	Yes	CRC	25
19	2018	Not published	2	Systematic review	Yes	CRC	48
20	2018	Hong Kong med J	3	Not reported	No	CRC	36
21	2018	JGO	1	Review, consensus	Yes	CRC	36
22	2018	Gastroenterology	1	Systematic review, consensus	No	CRC	46
23	2018	Am J Prev Med	1	Review	No	CRC	38
24	2018	Not published	1	Not reported	No	CRC	42
25	2018	Gastroenterology	1	Systematic review, GRADE, consensus	No	CRC	37
26	2018	MJA	2	Systematic review, consensus	No	CRC	36

TABLE 1 (Continued)

	Year	Publication in a journal	Version	Evidence analysis	Quality tool referral	Type of cancer	Last updated date (months)
27	2018	Not published	2	Review, GRADE	No	CRC	38
28	2018	Not published	3	Not reported	No	CRC	46
29	2018	CA Cancer J Clin	2	Systematic review, GRADE	No	CRC	31
30	2018	ACR	2	Systematic review, GRADE	No	CRC	38
31	2017	Gastroenterology	1	Review, consensus	No	CRC	58
32	2017	Am J Gastroenterol	2	Systematic review, GRADE	No	CRC	52
33	2017	PJIM	1	Review, consensus	No	CRC	55
34	2017	Not published	1	Systematic review	No	CRC	48
35	2017	Arch Gynecol Obstet	1	Consensus	No	CRC	54
36	2017	Colorectal disease	1	Not reported	No	CRC, anal cancer	58
37	2017	Med Clin North Am.	1	Review	No	CRC	53
38	2016	Not published	1	Not reported	No	CRC/breast/cervical	70
39	2016	Acta Endosc	2	Consensus	No	CRC	70
40	2016	Annals of Clinical Biochemistry	1	Review	No	CRC	70
41	2016	Not published	1	Review, consensus, GRADE	No	CRC	70
42	2016	JNCCN	1	Systematic review	No	CRC	65
43	2016	Not published	1	Systematic review	AGREE II	CRC	70
44	2016	WJG	1	Review	No	CRC	69
45	2016	American Family Physician	1	Review	No	CRC	67
46	2016	Rev Col Gastroenterol	1	Systematic review, GRADE	AGREE II	CRC	62
47	2016	CMAJ	1	Systematic review, GRADE	No	CRC	66
48	2015	Clin Transl Oncol	1	Consensus	No	CRC	78
49	2015	Clin Transl Oncol	1	Review, GRADE	No	CRC	72
50	2015	Ann Saudi Med	1	Systematic review	No	CRC	77
51	2015	J Korean Med Assoc	1	Review	No	CRC	77
52	2015	J Gastroenterol	1	Review, consensus	No	CRC	81
53	2015	Best Practice and Research Clinical Gastroenterology	1	Review	No	CRC	82
54	2015	Can J Gastroenterol	1	Review, consensus	No	CRC	82
55	2015	JCO	1	Review	AGREE II	CRC	82
56	2015	Not published	1	Not reported	No	CRC	78
57	2014	American journal of GASTROENTEROLOGY	1	Systematic review	No	CRC	87
58	2014	Gastroenterology	1	Systematic review, GRADE	No	CRC	94
59	2014	Can J Gastroenterol Hepatol	1	Systematic review	AGREE II	CRC	89
60	2014	Endoscopy	1	Review, GRADE	No	CRC	86
61	2014	Can Fam Physician	1	Systematic review	No	CRC	84
62	2014	Gut	2	Consensus	No	CRC	91
63	2014	BMC Cancer	1	Systematic review	No	Anal and rectal cancer	95
64	2013	Not published	1	Not reported	No	CRC	106
65	2013	Not published	1	Review	No	CRC	98
66	2013	J Med Genet	1	Not reported	No	CRC	96
67	2013	Endoscopy	1	Systematic review	No	CRC	96

TABLE 1 (Continued)

	Year	Publication in a journal	Version	Evidence analysis	Quality tool referral	Type of cancer	Last updated date (months)
68	2013	IJC	1	Not reported	No	CRC	96
69	2012	Gastroenterology	2	Review, consensus	No	CRC	118
70	2012	Endoscopy	1	Review	No	CRC	118
71	2012	Dig Dis	1	Review	No	CRC	119
72	2012	Korean J Gastroenterol Vol	1	Systematic review, meta-analysis	No	CRC	118
73	2012	Clin Endosc	1	Review	No	CRC	118
74	2012	Annals of Oncology	1	Consensus, GRADE	No	CRC	112
75	2012	Endoscopy	1	Review	No	CRC	118
76	2012	Endoscopy	1	Systematic review	No	CRC	118
77	2012	Endoscopy	1	Systematic review	No	CRC	118
78	2012	Endoscopy	1	Systematic review	No	CRC	109
79	2012	Endoscopy	1	Systematic review	No	CRC	118
80	2012	Endoscopy	1	Systematic review	No	CRC	118
81	2012	Endoscopy	1	Systematic review	No	CRC	118
82	2012	Endoscopy	1	Systematic review	No	CRC	118
83	2012	Endoscopy	1	Systematic review	No	CRC	118
84	2012	Endoscopy	1	Systematic review	No	CRC	118
85	2012	Endoscopy	1	Systematic review	No	CRC	118
86	2012	Endoscopy	1	Systematic review	No	CRC	118
87	2012	Endoscopy	1	Systematic review	No	CRC	118
88	2012	Endoscopy	1	Systematic review	No	CRC	118
89	2012	Endoscopy	1	Systematic review	No	CRC	118
90	2011	BMC	1	Systematic review	AGREE	CRC	130
91	2011	Can J Gastroenterol	1	Not reported	No	CRC	120
92	2011	Am J Gastroenterol	1	Review	No	CRC	125
93	2010	Not published	1	Systematic review	No	CRC	140
94	2010	Virchows Arch	1	Review, consensus	No	CRC	142
95	2010	Best Practice and Research Clinical Gastroenterology	1	Not reported	No	CRC	142
96	2010	Not published	1	Systematic review	No	CRC	142
97	2010	Not published	1	Systematic review	No	CRC	138
98	2010	Not published	1	Systematic review	No	CRC	142
99	2010	The Surgeon	1	Review	No	CRC	142
100	2010	Z Gastroenterol	3	Consensus, GRADE	No	CRC	142
101	2010	Can J Gastroentero	2	Not reported	No	CRC	130
102	2010	Not published	1	Consensus	AGREE II	CRC	133

3.2 | Strengths and weaknesses

To the best of our knowledge, this systematic review is the first to investigate the quality of SDM in CRC screening guidances. One of the main strengths of our review was its comprehensive search based on a broad conceptual framework with no language barriers. SDM is a trendy term of relatively recent appearance. Most methodological recommendation manuals remark a 2- to 3-year window for guidance renovation (Vernooij et al., 2014). However, for studying it, we included more than 10 years of published guidance documents to scrutinise the situation of SDM through time. Our study contained guidance documents of professional organisations from scientifically active nations with more than 0.5% of the global CRC research production.

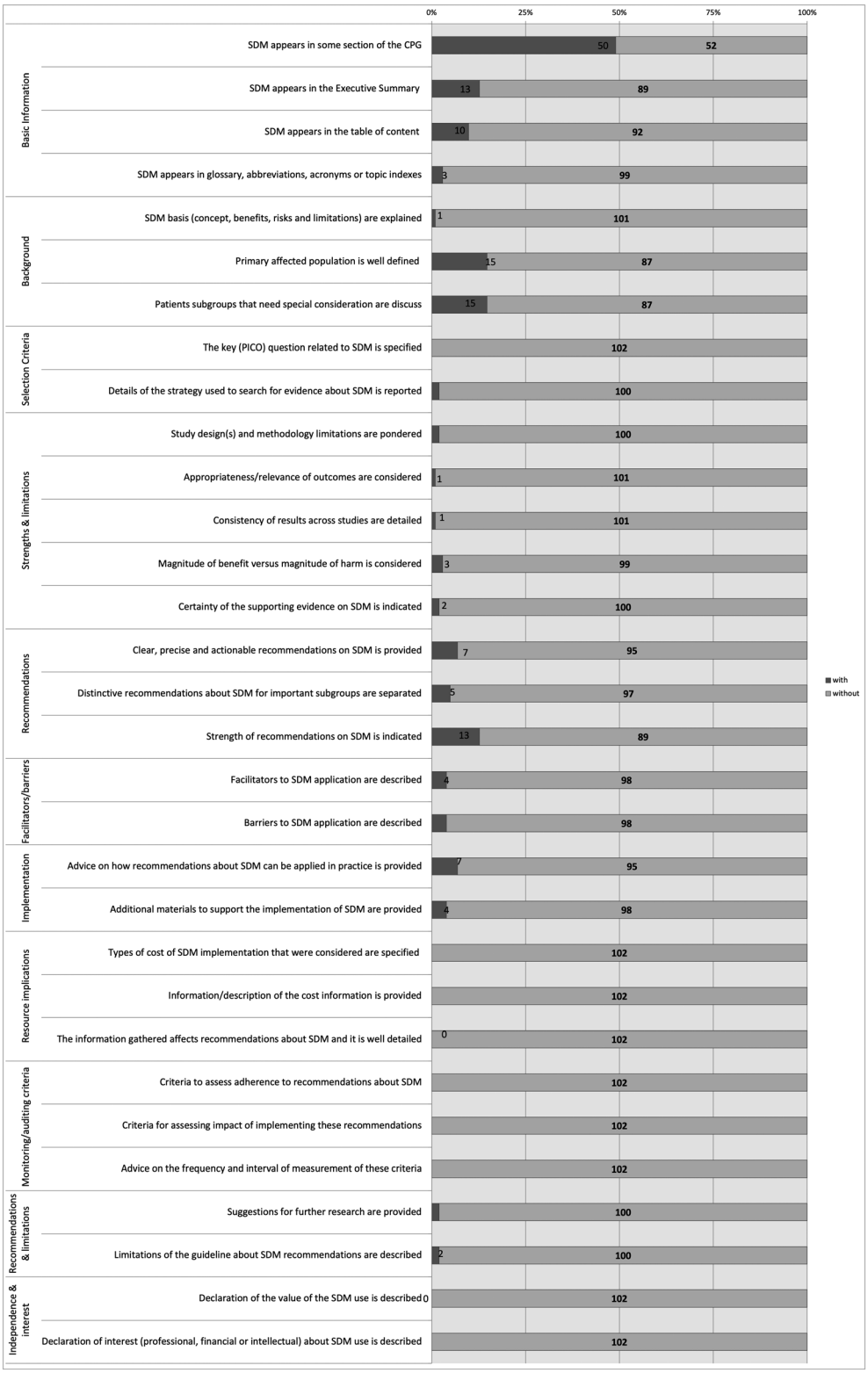

FIGURE 2 The compliance of the items with the SDM quality and reporting analysis tool

A rigorous methodology in conducting systematic reviews is mandatory to guarantee reliable results. In this concern, the trustworthiness of the study selection and the data extraction process is critical. As in similar investigations that use this SDM instrument, there is a possibility of empirical limitations related to the subjectivity of quality data extraction. To minimise this inconvenience, four reviewers performed a preliminary meeting to explain and understand the tool where doubts were solved; and three reviewers worked independently and in duplicate, with double checks included throughout the work. Arbitration was accomplished by a fourth experienced reviewer and creator of the SDM instrument used. The reviewer agreement was good (ICC = 0.88), implying reliable results (Appendix S5).

TABLE 2 Factors that may influence the SDM quality and reporting of the CRC screening guidances

Variable	Mean (items)	IQR range	*p* value
Type of document			
CPGs	1	0–2	
CSs	1	0–2	$p = 0.959$
Country			
Europe	0.5	0–1.5	
North America	1	0–3	
Other countries	1	0–1.5	$p = 0.233$
Publication year			
Before or in 2015	0.5	0–1.5	
After 2015	1	0–3	$p = 0.048$
Publication in a journal			
Yes	0.5	0–2	
No	1	0.3–3.5	$p = 0.131$
Version number			
1	0.8	0–2	
2 or more	1	0–3	$p = 0.416$
Evidence analysis			
Systematic review	1	0–3	$p = 0.040$
Consensus or reviews	0	0–2	
Not reported	0	0–1	
Quality tool referral			
Yes	0.8	0–1.5	
No	1	0–2	$p = 0.902$
SDM specifically named			
Yes	4.5	2.5–4.5	
No	0.5	0–1.5	$p < 0.001$

Our systematic review aimed to study the quality of SDM. We are conscious that 'not all the items can have the same relevance and weight' (Maes-Carballo, Munoz-Nunez, et al., 2020). This procedure involving a quality assessment instrument specifies if SDM was cited and which aspects were often considered. Further studies should focus on rating quality.

3.3 | Implications

CRC early diagnosis could decrease morbimortality by discovering less invasive lesions and permitting more efficient treatments. Furthermore, the debate about the effectiveness and overtreatment due to false-positive results has appeared on the scene. CRC screening is costly and annoying and could increase the risk of false positives or negatives, which may incur unnecessary stress or procedures and a false sense of security. The mortality reduction is not statistically significant at all ages, and the benefit vs. harm balance is unknown. So, screening should be tailored to the characteristics (age, genetic factors, race, etc.), desires and values of women. Screening programmes are an excellent area for SDM practice as there are different options with similar benefits and harms, and option choice might depend on the patient's values and preferences (Wieringa et al., 2017). The practice of SDM by clinicians could support evidence-based decisions (Heen et al., 2021) and increase patient satisfaction and treatment engagement (Baca-Dietz et al., 2020).

Our systematic review showed that SDM had gained notoriety over the years, with an increasing tendency of SDM presence and recommendations related to them. However, it has also demonstrated that SDM advice merits improvement in all the areas but specifically urgently in the reporting of the SDM resource implications and conflict of interest and the explanation of monitoring and auditing SDM use. It is essential its presence in CPGs and CSs, which hold the potential to influence the care delivered by health-care providers and the outcomes for patients. Guidances should provide clear and reasonable recommendations for SDM applicability (Rabi et al., 2020; Woolf et al., 1999). More efforts should be made in SDM (Keating & Pace, 2018), and future guidelines should play a more important role in SDM implementation (Gärtner et al., 2019).

SDM is a new trend, and recent guidances are starting to increase recommendations about basic concepts, evidence and applicability.

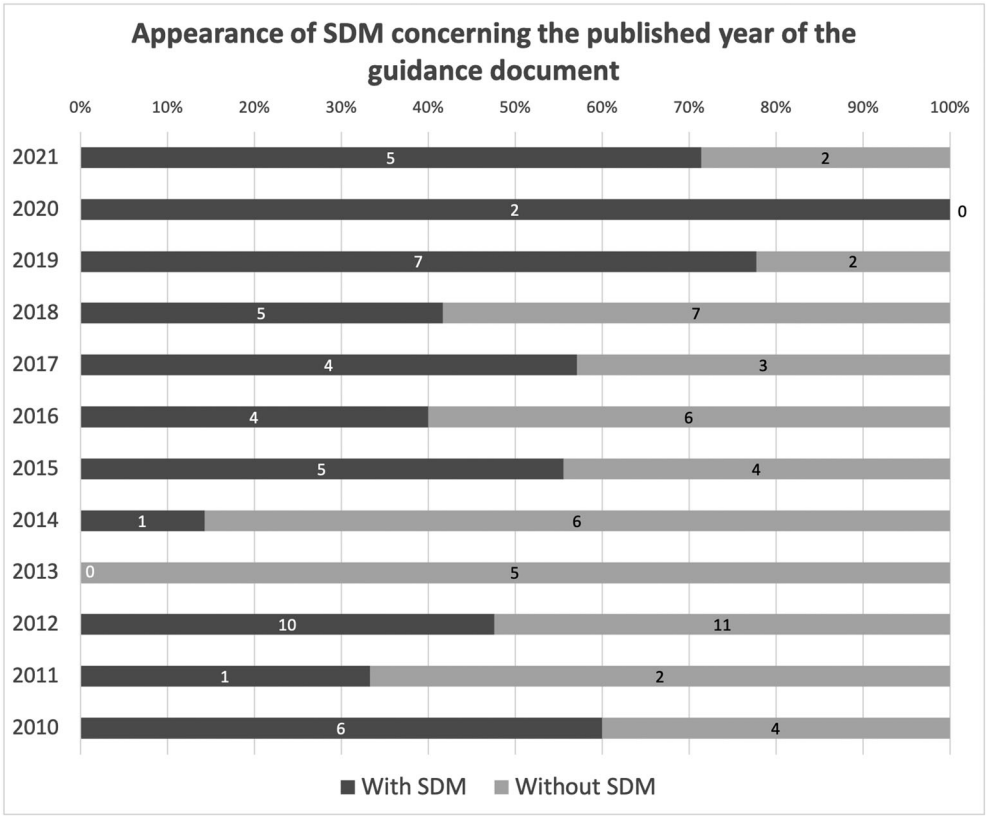

FIGURE 3 Appearance of SDM concerning the published year of the guidance document

However, it merits consideration to keep working in that direction. The evidence analysis showed that guidances underpinned by systematic reviews had better quality than consensus or not reported. The referral to SDM term in guidances has shown an improvement in SDM quality, which seems logical as normally improved precision and clearance of recommendations.

3.4 | Conclusions

This systematic review demonstrated that SDM quality in guidance documents was suboptimal as it did not appear in half of the guidances analyzed. SDM recommendations were scarce and unclear. Recent guidances following systematic reviews and referring to quality tools (e.g. AGREE II or RIGHT) had better SDM quality. Therefore, guideline developers, professional institutions, medical journals and policymakers should consider including evidence-based SDM recommendations in trustworthy and well-developed guidances to ensure proper translation of evidence into practice.

ACKNOWLEDGEMENTS

KSK is a Distinguished Investigator funded by the Beatriz Galindo (senior modality) Programme grant given to the University of Granada by the Ministry of Science, Innovation, and Universities of the Spanish Government. Funding for open access charge: Universidad de Granada / CBUA.

CONFLICTS OF INTEREST

There are no conflicts of interest.

DATA AVAILABILITY STATEMENT

All the supporting information can be accessed upon request via email to the corresponding authors of this review.

ORCID

Marta Maes-Carballo https://orcid.org/0000-0002-4852-5100
Aurora Bueno-Cavanillas https://orcid.org/0000-0002-0649-3016
Khalid Saeed Khan https://orcid.org/0000-0001-5084-7312

REFERENCES

Alberta CC. Colorectal cancer screening. Clinical Practice Guideline|Nov 2013 (Revised 2020). 2020.

Alsanea, N., Almadi, M. A., Abduljabbar, A. S., Alhomoud, S., Alshaban, T. A., Alsuhaibani, A., Alzahrani, A., Batwa, F., Hassan, A. H., Hibbert, D., Nooh, R., Alothman, M., Rochwerg, B., Alhazzani, W., & Morgan, R. L. (2015). National guidelines for colorectal cancer screening in Saudi Arabia with strength of recommendations and quality of evidence. *Annals of Saudi Medicine*, *35*(3), 189–195. https://doi.org/10.5144/0256-4947.2015.189

ANM. Programa Nacional de Consensos Inter-Sociedades. Programa Argentino de Consensos de Enfermedades Oncológicas. GUÍA DE RECOMENDACIONES PARA LA PREVENCIÓN Y DETECCIÓN PRECOZ DEL CÁNCER COLORRECTAL. Septiembre 2010. https://www.researchgate.net/publication/324877262_Programa_Nacional_de_Consensos_Inter-Sociedades_Programa_Argentino_de_Consensos_de_

Enfermedades_Oncologicas_ALTO_RIESGO_PARA_CANCER_DE_MAMA_CONSENSO_NACIONAL_INTER-SOCIEDADES. 2010.

Aranda, E., Aparicio, J., Alonso, V., Garcia-Albeniz, X., Garcia-Alfonso, P., Salazar, R., Valladares, M., Vera, R., Vieitez, J. M., & Garcia-Carbonero, R. (2015). SEOM clinical guidelines for diagnosis and treatment of metastatic colorectal cancer 2015. *Clinical & Translational Oncology*, *17*(12), 972–981. https://doi.org/10.1007/s12094-015-1434-4

Aranda-Hernandez, J., Hwang, J., & Kandel, G. (2016). Seeing better—Evidence based recommendations on optimizing colonoscopy adenoma detection rate. *World Journal of Gastroenterology*, *22*(5), 1767–1778. https://doi.org/10.3748/wjg.v22.i5.1767

Asociación Mexicana de Endoscopia Gastrointestinal y Colegio de Profesionistas. Guías de prevención y manejo endoscópico del cáncer colorrectal. https://www.amegendoscopia.org.mx/index.php/component/phocadownload/category/1?Itemid=170&lang=es. 2016.

Atkin, W. S., Valori, R., Kuipers, E. J., Hoff, G., Senore, C., Segnan, N., Jover, R., Schmiegel, W., Lambert, R., Pox, C., & International Agency for Research on Cancer. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Colonoscopic surveillance following adenoma removal. *Endoscopy*, *44*, SE151–SE163. https://doi.org/10.1055/s-0032-1309821

Austoker, J., Giordano, L., Hewitson, P., Villain, P., & International Agency for Research on C. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Communication. *Endoscopy*, *44*, SE164–SE185. https://doi.org/10.1055/s-0032-1309809

Baca-Dietz, D., Wojnar, D. M., & Espina, C. R. (2020). The shared decision-making model: Providers' and patients' knowledge and understanding in clinical practice. *Journal of the American Association of Nurse Practitioners*, *33*, 529–536. https://doi.org/10.1097/JXX.0000000000000401

Barry, M. J., & Edgman-Levitan, S. (2012). Shared decision making—The pinnacle of patient-centered care. *The New England Journal of Medicine*, *366*(9), 780–781. https://doi.org/10.1056/NEJMp1109283

Basu, P., Alhomoud, S., Taghavi, K., Carvalho, A. L., Lucas, E., & Baussano, I. (2021). Cancer screening in the coronavirus pandemic era: Adjusting to a new situation. *JCO Global Oncology*, *7*, 416–424. https://doi.org/10.1200/GO.21.00033

Benton, S., Steele, R., Logan, R., Djedovic, N., Smith, S., & Addison, C. (2016). NICE referral guidelines for suspected cancer: Colorectal cancer and faecal occult blood testing. *Annals of Clinical Biochemistry*, *53*(Pt 1), 7–9. https://doi.org/10.1177/0004563215612507

Bo In Lee, S. P. H., Kim, S.-E., Kim, S. H., Kim, H.-S., Hong, S. N., Yang, D.-H., Shin, S. J., Lee, S.-H., Kim, Y.-H., Park, D. I., Kim, H. J., Yang, S.-K., Kim, H. J., & Jeon, H. J. (2012). 대장암 선별과 대장폴립 진단검사 가이드라인. (Korean guidelines for colorectal cancer screening and polyp detection) https://www.irjournal.org/upload/pdf/IR010-01-03.pdf. *Intest Res*, *10*, 67–68.

Brenner, A. T., Dougherty, M., & Reuland, D. S. (2017). Colorectal cancer screening in average risk patients. *The Medical Clinics of North America*, *101*(4), 755–767. https://doi.org/10.1016/j.mcna.2017.03.007

Brouwers, M. C., de Vito, C., Bahirathan, L., Carol, A., Carroll, J. C., Cotterchio, M., Dobbins, M., Lent, B., Levitt, C., Lewis, N., McGregor, S. E., Paszat, L., Rand, C., & Wathen, N. (2011). Effective interventions to facilitate the uptake of breast, cervical and colorectal cancer screening: An implementation guideline. *Implementation Science*, *6*, 112. https://doi.org/10.1186/1748-5908-6-112

Canadian task Force on preventive health C. (2016). Recommendations on screening for colorectal cancer in primary care. *CMAJ*, *188*(5), 340–348. https://doi.org/10.1503/cmaj.151125

Clarke, W. T., & Feuerstein, J. D. (2019). Colorectal cancer surveillance in inflammatory bowel disease: Practice guidelines and recent developments. *World Journal of Gastroenterology*, *25*(30), 4148–4157. https://doi.org/10.3748/wjg.v25.i30.4148

Cotton, S., Sharp, L., & Little, J. (1996). The adenoma-carcinoma sequence and prospects for the prevention of colorectal neoplasia. *Critical Reviews in Oncogenesis*, *7*(5–6), 293–342. https://doi.org/10.1615/CritRevOncog.v7.i5-6.10

Cubiella, J., Marzo-Castillejo, M., Mascort-Roca, J. J., Amador-Romero, F. J., Bellas-Beceiro, B., Clofent-Vilaplana, J., Carballal, S., Ferrándiz-Santos, J., Gimeno-García, A. Z., Jover, R., Mangas-Sanjuán, C., Moreira, L., Pellisè, M., Quintero, E., Rodríguez-Camacho, E., Vega-Villaamil, P., & Sociedad Española de Medicina de Familia y Comunitaria y Asociación Española de Gastroenterología. (2018). Clinical practice guideline. Diagnosis and prevention of colorectal cancer. 2018 update. *Gastroenterología y Hepatología*, *41*(9), 585–596. https://doi.org/10.1016/j.gastrohep.2018.07.012

Day, L. W., Walter, L. C., & Velayos, F. (2011). Colorectal cancer screening and surveillance in the elderly patient. *The American Journal of Gastroenterology*, *106*(7), 1197–1206. https://doi.org/10.1038/ajg.2011.128

Del Giudice, M. E., Vella, E. T., Hey, A., Simunovic, M., Harris, W., & Levitt, C. (2014). Guideline for referral of patients with suspected colorectal cancer by family physicians and other primary care providers. *Canadian Family Physician*, *60*(8), e405–e415.

Duffy, M. J., Lamerz, R., Haglund, C., Nicolini, A., Kalousová, M., Holubec, L., & Sturgeon, C. (2014). Tumor markers in colorectal cancer, gastric cancer and gastrointestinal stromal cancers: European group on tumor markers 2014 guidelines update. *International Journal of Cancer*, *134*(11), 2513–2522. https://doi.org/10.1002/ijc.28384

Elwyn, G., Frosch, D., Thomson, R., Joseph-Williams, N., Lloyd, A., Kinnersley, P., Cording, E., Tomson, D., Dodd, C., Rollnick, S., Edwards, A., & Barry, M. (2012). Shared decision making: A model for clinical practice. *Journal of General Internal Medicine*, *27*(10), 1361–1367. https://doi.org/10.1007/s11606-012-2077-6

Elwyn, G., Laitner, S., Coulter, A., Walker, E., Watson, P., & Thomson, R. (2010). Implementing shared decision making in the NHS. *BMJ*, *341*, c5146. https://doi.org/10.1136/bmj.c5146

European Colorectal Cancer Screening Guidelines Working Group, von Karsa, L., Patnick, J., Segnan, N., Atkin, W., Halloran, S., Lansdorp-Vogelaar, I., Malila, N., Minozzi, S., Moss, S., Quirke, P., Steele, R. J., Vieth, M., Aabakken, L., Altenhofen, L., Ancelle-Park, R., Antoljak, N., Anttila, A., Armaroli, P., … Valori, R. (2013). European guidelines for quality assurance in colorectal cancer screening and diagnosis: Overview and introduction to the full supplement publication. *Endoscopy*, *45*(1), 51–59. https://doi.org/10.1055/s-0032-1325997

European Commission. European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition. https://op.europa.eu/es/publication-detail/-/publication/e1ef52d8-8786-4ac4-9f91-4da2261ee535. 2010.

Fabio Leonel Gil Parada FLTAM, Riveros Santoya, S. V., Castaño Llano, R., Ibáñez, H., Huertas Quintero, M. M., Carmona, R., Pardo, R., Otero, W., & Sabbagh, L. Guía de práctica clínica para la tamización de cáncer colorrectal. http://www.scielo.org.co/pdf/rcg/v30s1/v30s1a08.pdf. Asociaciones Colombianas de Gastroenterología, Endoscopia Digestiva, Coloproctología y Hepatología. 2015.

García-Carbonero, R., Vera, R., Rivera, F., Parlorio, E., Pagés, M., González-Flores, E., Fernández-Martos, C., Corral, M. Á., Bouzas, R., & Matute, F. (2017). SEOM/SERAM consensus statement on radiological diagnosis, response assessment and follow-up in colorectal cancer. *Clinical & Translational Oncology*, *19*(2), 135–148. https://doi.org/10.1007/s12094-016-1518-9

Gärtner, F. R., Portielje, J. E., Langendam, M., Hairwassers, D., Agoritsas, T., Gijsen, B., Liefers, G. J., Pieterse, A. H., & Stiggelbout, A. M. (2019). Role of patient preferences in clinical practice guidelines: A multiple methods study using guidelines from

oncology as a case. *BMJ Open*, *9*(12), e032483. https://doi.org/10.1136/bmjopen-2019-032483

Giardiello, F. M., Allen, J. I., Axilbund, J. E., Boland, C. R., Burke, C. A., Burt, R. W., Church, J. M., Dominitz, J. A., Johnson, D. A., Kaltenbach, T., Levin, T. R., Lieberman, D. A., Robertson, D. J., Syngal, S., & Rex, D. K. (2014). Guidelines on genetic evaluation and management of Lynch syndrome: A consensus statement by the US multi-society task force on colorectal cancer. *The American Journal of Gastroenterology*, *109*(8), 1159–1179. https://doi.org/10.1038/ajg.2014.186

Gupta, N., Kupfer, S. S., & Davis, A. M. (2019). Colorectal cancer screening. *Journal of the American Medical Association*, *321*(20), 2022–2023. https://doi.org/10.1001/jama.2019.4842

Hadjiliadis, D., Khoruts, A., Zauber, A. G., Hempstead, S. E., Maisonneuve, P., Lowenfels, A. B., Braid, A. L., Cullina, J., Daggett, A., Fink, A., Gini, A., Hadjiliadis, D., Harron, P. F. Jr., Hempstead, S., Khoruts, A., Lansdorp-Vogelaar, I., Lieberman, D., Liou, T., Lomas, P., … Sabadosa, K. (2018). Cystic fibrosis colorectal cancer screening consensus recommendations. *Gastroenterology*, *154*(3), 736–45.e14. https://doi.org/10.1053/j.gastro.2017.12.012

Halloran, S. P., Launoy, G., Zappa, M., & International Agency for Research on C. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Faecal occult blood testing. *Endoscopy*, *44*, SE65–SE87. https://doi.org/10.1055/s-0032-1309791

Hassan, C., Quintero, E., Dumonceau, J. M., Regula, J., Brandão, C., Chaussade, S., Dekker, E., Dinis-Ribeiro, M., Ferlitsch, M., Gimeno-García, A., Hazewinkel, Y., Jover, R., Kalager, M., Loberg, M., Pox, C., Rembacken, B., Lieberman, D., & European Society of Gastrointestinal Endoscopy. (2013). Post-polypectomy colonoscopy surveillance: European Society of Gastrointestinal Endoscopy (ESGE) guideline. *Endoscopy*, *45*(10), 842–851. https://doi.org/10.1055/s-0033-1344548

Heen, A. F., Vandvik, P. O., Brandt, L., Montori, V. M., Lytvyn, L., Guyatt, G., Quinlan, C., & Agoritsas, T. (2021). A framework for practical issues was developed to inform shared decision-making tools and clinical guidelines. *Journal of Clinical Epidemiology*, *129*, 104–113. https://doi.org/10.1016/j.jclinepi.2020.10.002

Helsingen, L. M., Vandvik, P. O., Jodal, H. C., Agoritsas, T., Lytvyn, L., Anderson, J. C., Auer, R., Murphy, S. B., Almadi, M. A., Corley, D. A., Quinlan, C., Fuchs, J. M., McKinnon, A., Qaseem, A., Heen, A. F., Siemieniuk, R. A. C., Kalager, M., Usher-Smith, J. A., Lansdorp-Vogelaar, I., … Guyatt, G. (2019). Colorectal cancer screening with faecal immunochemical testing, sigmoidoscopy or colonoscopy: A clinical practice guideline. *BMJ*, *367*, l5515. https://doi.org/10.1136/bmj.l5515

Heresbach, D. P. P., Chaussade, S., Barthet, M., Bories, E., Canard, J. M., Cellier, C., Dalbies, P., Hochberger, J., Joly, I., Koch, S., Lapuelle, J., Lecomte, T., Lefort, C., Lesur, G., Letard, J. C., Palazzo, L., Ponchon, T., Syschenko, R., Tarrerias, A. R., … Bulois, P. (2016). Prévention du cancer colorectal par coloscopie, en dehors du dépistage en population. Consensus et position de la SFED. *Acta Endosc*, *46*, 68–73. https://acen.revuesonline.com/articles/lvacen/abs/2016/01/101900068/101900068.html, https://doi.org/10.1007/s10190-016-0534-5

Hoffmann, S., Crispin, A., Lindoerfer, D., Sroczynski, G., Siebert, U., Mansmann, U., & Consortium, F. A. R. K. O. R. (2020). Evaluating the effects of a risk-adapted screening program for familial colorectal cancer in individuals between 25 and 50 years of age: Study protocol for the prospective population-based intervention study FARKOR. *BMC Gastroenterology*, *20*(1), 131. https://doi.org/10.1186/s12876-020-01247-6

Hospital provincial Neuquén. Guía de Práctica Clínica. Detección temprana de Cáncer Colorectal en población adulta. https://www.hospitalneuquen.org.ar/wp-content/uploads/2016/11/Guia-Practica-Clinica-Cancer-colorrectal-2016.pdf. 2016. 2016.

Hyer, W., Cohen, S., Attard, T., Vila-Miravet, V., Pienar, C., Auth, M., Septer, S., Hawkins, J., Durno, C., & Latchford, A. (2019). Management of familial adenomatous polyposis in children and adolescents: Position paper from the ESPGHAN polyposis working group. *Journal of Pediatric Gastroenterology and Nutrition*, *68*(3), 428–441. https://doi.org/10.1097/MPG.0000000000002247

Instituto Mexicano del Seguro Social. Guía de Práctica Clínica. Detección Oportuna y Diagnóstico de Cáncer de Colon y Recto no Hereditario en Adultos en Primero, Segundo y Tercer Nivel de Atención. imss.gob.mx/sites/all/statics/guiasclinicas/145GER.pdf. 2010.

Instituto Nacional del Cáncer. Argentina. GUÍA PARA EQUIPOS DE ATENCIÓN PRIMARIA DE LA SALUD. Información para la prevención y detección temprana del cáncer colorrectal. https://sage.org.ar/wp-content/uploads/2019/05/PDF-guia-INC-CCR.pdf. 2015.

Jenkins, M. A., Ait Ouakrim, D., Boussioutas, A., Hopper, J. L., Ee, H. C., Emery, J. D., Macrae, F. A., Chetcuti, A., Wuellner, L., & St John, D. J. B. (2018). Revised Australian national guidelines for colorectal cancer screening: Family history. *The Medical Journal of Australia*, *209*(10), 455–460. https://doi.org/10.5694/mja18.00142

Jenkinson, F., & Steele, R. J. (2010). Colorectal cancer screening—Methodology. *The Surgeon*, *8*(3), 164–171. https://doi.org/10.1016/j.surge.2009.10.015

Johnson, D. A., Barkun, A. N., Cohen, L. B., Dominitz, J. A., Kaltenbach, T., Martel, M., Robertson, D. J., Boland, C. R., Giardello, F. M., Lieberman, D. A., Levin, T. R., Rex, D. K., & US Multi-Society Task Force on Colorectal Cancer. (2014). Optimizing adequacy of bowel cleansing for colonoscopy: Recommendations from the US multi-society task force on colorectal cancer. *Gastroenterology*, *147*(4), 903–924. https://doi.org/10.1053/j.gastro.2014.07.002

Jover, R., Herráiz, M., Alarcón, O., Brullet, E., Bujanda, L., Bustamante, M., Campo, R., Carreño, R., Castells, A., Cubiella, J., García-Iglesias, P., Hervás, A., Menchén, P., Ono, A., Panadés, A., Parra-Blanco, A., Pellisé, M., Ponce, M., Quintero, E., … Vázquez Sequeiros, E. (2012). Clinical practice guidelines: Quality of colonoscopy in colorectal cancer screening. *Endoscopy*, *44*(4), 444–451. https://doi.org/10.1055/s-0032-1306690

Keating, N. L., & Pace, L. E. (2018). Breast Cancer Screening in 2018. Time for shared decision making. *JAMA Insights.*, *319*(17), 1814–1815.

Koo, T. K., & Li, M. Y. (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of Chiropractic Medicine*, *15*(2), 155–163. https://doi.org/10.1016/j.jcm.2016.02.012

Kwaan, M. R., & Jones-Webb, R. (2018). Colorectal cancer screening in black men: Recommendations for best practices. *American Journal of Preventive Medicine*, *55*(5), S95–S102. https://doi.org/10.1016/j.amepre.2018.05.008

Lam, T. H., Wong, K. H., Chan, K. K., Chan, M. C., Chao, D. V., Cheung, A. N., Fan, C. Y., Ho, J., Hui, E. P., Lam, K. O., Law, C. K., Law, W. L., Loong, H. H., Ngan, R. K., Tsang, T. H., Wong, M. C., Yeung, R. M., Ying, A. C., & Ching, R. (2018). Recommendations on prevention and screening for colorectal cancer in Hong Kong. *Hong Kong Medical Journal*, *24*(5), 521–526. https://doi.org/10.12809/hkmj177095

Lansdorp-Vogelaar, I., von Karsa, L., & International Agency for Research on C. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Introduction. *Endoscopy*, *44*, SE15–SE30.

Leddin, D., Enns, R., Hilsden, R., Fallone, C. A., Rabeneck, L., Sadowski, D. C., Singh, H., & Canadian Association of Gastroenterology. (2013). Colorectal cancer surveillance after index colonoscopy: Guidance from the Canadian Association of Gastroenterology.

Canadian Journal of Gastroenterology, *27*(4), 224–228. https://doi.org/10.1155/2013/232769

Leddin, D., Lieberman, D. A., Tse, F., Barkun, A. N., Abou-Setta, A. M., Marshall, J. K., Samadder, N. J., Singh, H., Telford, J. J., Tinmouth, J., Wilkinson, A. N., & Leontiadis, G. I. (2018). Clinical practice guideline on screening for colorectal cancer in individuals with a family history of nonhereditary colorectal cancer or adenoma: The Canadian Association of Gastroenterology Banff consensus. *Gastroenterology*, *155*(5), 1325–47.e3. https://doi.org/10.1053/j.gastro.2018.08.017

Leddin, D. J., Enns, R., Hilsden, R., Plourde, V., Rabeneck, L., Sadowski, D. C., & Singh, H. (2010). Canadian Association of Gastroenterology position statement on screening individuals at average risk for developing colorectal cancer: 2010. *Canadian Journal of Gastroenterology*, *24*(12), 705–714. https://doi.org/10.1155/2010/683171

Lee, B. I., Hong, S. P., Kim, S. E., Kim, S. H., Kim, H. S., Hong, S. N., Yang, D. H., Shin, S. J., Lee, S. H., Park, D. I., Kim, Y. H., Kim, H. J., Yang, S. K., Kim, H. J., Jeon, H. J., & Multi-Society Task Force for Development of Guidelines for Colorectal Polyp Screening, Surveillance and Management. (2012). Korean guidelines for colorectal cancer screening and polyp detection. *Clinical Endoscopy*, *45*(1), 25–43. https://doi.org/10.5946/ce.2012.45.1.25

Leong, K., Hartley, J., & Karandikar, S. (2017). Association of coloproctology of Great Britain & Ireland (ACPGBI): Guidelines for the management of cancer of the colon, rectum and anus (2017)—Follow up, Lifestyle and Survivorship. *Colorectal Disease*, *19*(Suppl 1), 67–70. https://doi.org/10.1111/codi.13706

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *Annals of Internal Medicine*, *151*(4), W65–W94. https://doi.org/10.7326/0003-4819-151-4-200908180-00136

Lieberman, D. (2012). Colorectal cancer screening: Practice guidelines. *Digestive Diseases*, *30*(Suppl 2), 34–38. https://doi.org/10.1159/000341891

Lieberman, D. A., Rex, D. K., Winawer, S. J., Giardiello, F. M., Johnson, D. A., & Levin, T. R. (2012). Guidelines for colonoscopy surveillance after screening and polypectomy: A consensus update by the US multi-society task force on colorectal cancer. *Gastroenterology*, *143*(3), 844–857. https://doi.org/10.1053/j.gastro.2012.06.001

Lopes, G., Stern, M. C., Temin, S., Sharara, A. I., Cervantes, A., Costas-Chavarri, A., Engineer, R., Hamashima, C., Ho, G. F., Huitzil, F. D., & Moghani, M. M. (2018). Early detection for colorectal cancer: ASCO resource-stratified guideline. *Journal of global oncology*, *5*, 1–22.

Maes-Carballo, M., Mignini, L., Martin-Diaz, M., Bueno-Cavanillas, A., & Khan, K. S. (2020). Quality and reporting of clinical guidelines for breast cancer treatment: A systematic review. *Breast*, *53*, 201–211. https://doi.org/10.1016/j.breast.2020.07.011

Maes-Carballo, M., Mignini, L., Martin-Diaz, M., Bueno-Cavanillas, A., & Khan, K. S. (2022). Clinical practice guidelines and consensus for the screening of breast cancer: A systematic appraisal of their quality and reporting. *European Journal of Cancer Care*, *31*, e13540. https://doi.org/10.1111/ecc.13540

Maes-Carballo, M., Moreno-Asencio, T., Martin-Diaz, M., Mignini, L., Bueno-Cavanillas, A., & Khan, K. S. (2021). Shared decision making in breast cancer screening guidelines: A systematic review of their quality and reporting. *European Journal of Public Health*, *31*, 873–883. https://doi.org/10.1093/eurpub/ckab084

Maes-Carballo, M., Munoz-Nunez, I., Martin-Diaz, M., Mignini, L., Bueno-Cavanillas, A., & Khan, K. S. (2020). Shared decision making in breast cancer treatment guidelines: Development of a quality assessment tool and a systematic review. *Health Expectations*, *23*, 1045–1064. https://doi.org/10.1111/hex.13112

Malila, N., Senore, C., Armaroli, P., & International Agency for Research on C. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Organisation. *Endoscopy*, *44*, SE31–SE48. https://doi.org/10.1055/s-0032-1309783

Ministry of Health. Singapore. Cancer screening. https://www.moh.gov.sg/docs/librariesprovider4/guidelines/cpg_cancer-screening.pdf. 2010.

Ministry of Health. Turkey. Turkey Cancer Control Programme. https://www.iccp-portal.org/system/files/plans/Turkiye_Kanser_Kontrol_Program_English.pdf. 2016.

Minozzi, S., Armaroli, P., & Segnan, N. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Principles of evidence assessment and methods for reaching recommendations. *Endoscopy*, *44*, SE9–S14. https://doi.org/10.1055/s-0032-1309781

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & Group P. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *Open Med.*, *3*(3), e123–e130. https://doi.org/10.1371/journal.pmed.1000097

Monahan, K. J., Bradshaw, N., Dolwani, S., Desouza, B., Dunlop, M. G., East, J. E., Ilyas, M., Kaur, A., Lalloo, F., Latchford, A., Rutter, M. D., Tomlinson, I., Thomas, H. J. W., Hill, J., & Hereditary CRC guidelines eDelphi consensus group. (2019). Guidelines for the management of hereditary colorectal cancer from the British Society of Gastroenterology (BSG)/Association of Coloproctology of Great Britain and Ireland (ACPGBI)/United Kingdom cancer genetics group (UKCGG). *Gut*, *69*(3), 411–444. https://doi.org/10.1136/gutjnl-2019-319915

Moreno, C., Kim, D. H., Bartel, T. B., Cash, B. D., Chang, K. J., Feig, B. W., Fowler, K. J., Garcia, E. M., Kambadakone, A. R., Lambert, D. L., Levy, A. D., Marin, D., Peterson, C. M., Scheirey, C. D., Smith, M. P., Weinstein, S., & Carucci, L. R. (2018). ACR appropriateness criteria ([R]) colorectal cancer screening. *Journal of the American College of Radiology*, *15*(5S), S56–S68. https://doi.org/10.1016/j.jacr.2018.03.014

Moss, S., Ancelle-Park, R., Brenner, H., & International Agency for Research on C. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Evaluation and interpretation of screening outcomes. *Endoscopy*, *44*, SE49–SE64. https://doi.org/10.1055/s-0032-1309788

Network NCC. NCCN Guidelines: Colorectal Cancer Screening Version 2.2021. https://www.nccn.org/. 2021.

New Brunswick Colon Cancer Screening. Clinical Practice Guidelines. https://www2.gnb.ca/content/gnb/en/departments/health/NewBrunswickCancerNetwork/content/ClinicalPracticeGuidelinesForColonCancerScreeningInNewBrunswick.html. 2013.

NHS. NHS. Bowel cancer screening: Pathology guidance on reporting lesions. https://www.gov.uk/government/publications/bowel-cancer-screening-reporting-lesions. 2021.

Ong, J. J., Chen, M., Grulich, A. E., & Fairley, C. K. (2014). Regional and national guideline recommendations for digital ano-rectal examination as a means for anal cancer screening in HIV positive men who have sex with men: A systematic review. *BMC Cancer*, *14*, 557. https://doi.org/10.1186/1471-2407-14-557

Provenzale, D., Gupta, S., Ahnen, D. J., Bray, T., Cannon, J. A., Cooper, G., David, D. S., Early, D. S., Erwin, D., Ford, J. M., Giardiello, F. M., Grady, W., Halverson, A. L., Hamilton, S. R., Hampel, H., Ismail, M. K., Klapman, J. B., Larson, D. W., Lazenby, A. J., … Darlow, S. (2016). Genetic/familial high-risk assessment: Colorectal version 1.2016, NCCN clinical practice guidelines in oncology. *Journal of the National*

Comprehensive Cancer Network, *14*(8), 1010–1030. https://doi.org/10.6004/jnccn.2016.0108

Qaseem, A., Crandall, C. J., Mustafa, R. A., Hicks, L. A., Clinical Guidelines Committee of the American College of Physicians, Forciea, M. A., Fitterman, N., Horwitch, C. A., Kansagara, D., Maroto, M., McLean, R., Roa, J., & Tufte, J. (2019). Screening for colorectal cancer in asymptomatic average-risk adults: A guidance statement from the American College of Physicians. *Annals of Internal Medicine*, *171*(9), 643–654. https://doi.org/10.7326/M19-0642

Quirke, P., Risio, M., Lambert, R., von Karsa, L., & Vieth, M. (2011). Quality assurance in pathology in colorectal cancer screening and diagnosis-European recommendations. *Virchows Archiv*, *458*(1), 1–19. https://doi.org/10.1007/s00428-010-0977-6

Quirke, P., Risio, M., Lambert, R., von Karsa, L., Vieth, M., & International Agency for Research on C. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Quality assurance in pathology in colorectal cancer screening and diagnosis. *Endoscopy*, *44*, SE116–SE130. https://doi.org/10.1055/s-0032-1309797

Rabi, D. M., Kunneman, M., & Montori, V. M. (2020). When guidelines recommend shared decision-making. *Journal of the American Medical Association*, *323*(14), 1345–1346. https://doi.org/10.1001/jama.2020.1525

Recommended Cancer Screenings. https://www.swedish.org/~/media/images/swedish/pdf/recommended%20cancer%20screenings%20pdf.pdf. 2013.

Regula, J., & Kaminski, M. F. (2010). Targeting risk groups for screening. *Best Practice & Research. Clinical Gastroenterology*, *24*(4), 407–416. https://doi.org/10.1016/j.bpg.2010.06.007

Rembacken, B., Hassan, C., Riemann, J. F., Chilton, A., Rutter, M., Dumonceau, J. M., Omar, M., & Ponchon, T. (2012). Quality in screening colonoscopy: Position statement of the European Society of Gastrointestinal Endoscopy (ESGE). *Endoscopy*, *44*(10), 957–968. https://doi.org/10.1055/s-0032-1325686

Rex, D. K., Boland, C. R., Dominitz, J. A., Giardiello, F. M., Johnson, D. A., Kaltenbach, T., Levin, T. R., Lieberman, D., & Robertson, D. J. (2017). Colorectal cancer screening: Recommendations for physicians and patients from the U.S. multi-society task force on colorectal cancer. *The American Journal of Gastroenterology*, *112*(7), 1016–1030. https://doi.org/10.1038/ajg.2017.174

Robertson, D. J., Lee, J. K., Boland, C. R., Dominitz, J. A., Giardiello, F. M., Johnson, D. A., Kaltenbach, T., Lieberman, D., Levin, T. R., & Rex, D. K. (2017). Recommendations on fecal immunochemical testing to screen for colorectal neoplasia: A consensus statement by the US multi-society task force on colorectal cancer. *Gastroenterology*, *152*(5), 1217–37 e3. https://doi.org/10.1053/j.gastro.2016.08.053

Rubeca, T., Rapi, S., Deandrea, S., Malaspina, M., Passamonti, B. U., Grassi, E., Cioccarelli, A. M., Marchetti, E., Boni, M., Cellai, F., & Pradella, M. (2017). Guidance for faecal occult blood testing: Quantitative immunochemical method (FIT-HB) in colorectal cancer screening programmes. *Epidemiologia e Prevenzione*, *41*(5–6), 1–31.

Salzman, B., Beldowski, K., & de la Paz, A. (2016). Cancer screening in older patients. *American Family Physician*, *93*(8), 659–667.

Schmiegel, W., Pox, C., Reinacher-Schick, A., Adler, G., Arnold, D., Fleig, W., Fölsch, U., Frühmorgen, P., Graeven, U., Heinemann, V., Hohenberger, W., Holstege, A., Junginger, T., Kopp, I., Kühlbacher, T., Porschen, R., Propping, P., Riemann, J. F., Rödel, C., … Selbmann, H. K. (2010). S3 guidelines for colorectal carcinoma: Results of an evidence-based consensus conference on February 6/7, 2004 and June 8/9, 2007 (for the topics IV, VI and VII). *Zeitschrift für Gastroenterologie*, *48*(1), 65–136. https://doi.org/10.1055/s-0028-1109936

Schmoll, H. J., van Cutsem, E., Stein, A., Valentini, V., Glimelius, B., Haustermans, K., Nordlinger, B., van de Velde, C. J., Balmana, J., Regula, J., Nagtegaal, I. D., Beets-Tan, R. G., Arnold, D., Ciardiello, F., Hoff, P., Kerr, D., Köhne, C. H., Labianca, R., Price, T., … Cervantes, A. (2012). ESMO consensus guidelines for management of patients with colon and rectal cancer. A personalized approach to clinical decision making. *Annals of Oncology*, *23*(10), 2479–2516. https://doi.org/10.1093/annonc/mds236

Schrager, S. P. G., & Burnside, E. (2017). Shared decision making in cancer screening. *Family Practice Management*, *24*(3), 5–10.

SemFYC AEdG. Diagnóstico y prevención del cáncer colorrectal. ACTUALIZACIÓN 2018. 2018.

Senate and house of representatives. Patient protection and affordable care act. HR 3590. Washington: 2010. 2010.

Seppälä, T. T., Latchford, A., Negoi, I., Sampaio Soares, A., Jimenez-Rodriguez, R., Sánchez-Guillén, L., Evans, D. G., Ryan, N., Crosbie, E. J., Dominguez-Valentin, M., Burn, J., Kloor, M., Knebel Doeberitz, M., Duijnhoven, F. J. B., Quirke, P., Sampson, J. R., Møller, P., Möslein, G., & the European Hereditary Tumour Group (EHTG) and European Society of Coloproctology (ESCP). (2021). European guidelines from the EHTG and ESCP for Lynch syndrome: An updated third edition of the Mallorca guidelines based on gene and gender. *The British Journal of Surgery*, *108*(5), 484–498. https://doi.org/10.1002/bjs.11902

Shaukat, A., Kahi, C. J., Burke, C. A., Rabeneck, L., Sauer, B. G., & Rex, D. K. (2021). ACG clinical guidelines: Colorectal cancer screening 2021. *The American Journal of Gastroenterology*, *116*(3), 458–479. https://doi.org/10.14309/ajg.0000000000001122

Society AC. America Cancer Society. Detección temprana, diagnóstico y clasificación por etapas. https://www.cancer.org/es/cancer/cancer-de-pulmon/deteccion-diagnostico-clasificacion-por-etapas.html. 2018.

Sollano, J. D., Lontok, M. A., Lusong, M. A., Romano, R. P., Macatula, T. C., Payawal, D. A., Bocobo, J. C., Dy, F. T., Bondoc, E. M., Olympia, E. G., Ignacio, J. G., Agas, F. C., Naval, M. C., Ong, E. G., Co, A. L., Moscoso, B. A., Pangilinan, J. A. N., Cloa, M. M. S., Galang, J. A. G., … Mina, Y. L. (2017). The Joint Philippine Society of Gastroenterology (PSG) and Philippine Society of Digestive Endoscopy (PSDE) consensus guidelines on the management of colorectal carcinoma. *Philippine Journal of Internal Medicine*, *55*(1), 1–16. https://psde.org.ph/wp-content/uploads/2022/01/The_Joint_Philippine_Society_of_Gastroenterology_and_Philippine_Society_of_Digestive_Endoscopy_Consensus_Guidelines.pdf

Spada, C., Stoker, J., Alarcon, O., Barbaro, F., Bellini, D., Bretthauer, M., de Haan, M. C., Dumonceau, J. M., Ferlitsch, M., Halligan, S., Helbren, E., Hellstrom, M., Kuipers, E. J., Lefere, P., Mang, T., Neri, E., Petruzziello, L., Plumb, A., Regge, D., … European Society of Gastrointestinal and Abdominal Radiology. (2014). Clinical indications for computed tomographic colonography: European Society of Gastrointestinal Endoscopy (ESGE) and European Society of Gastrointestinal and Abdominal Radiology (ESGAR) guideline. *Endoscopy*, *46*(10), 897–915. https://doi.org/10.1055/s-0034-1378092

Steele, R. J., Pox, C., Kuipers, E. J., Minoli, G., Lambert, R., & International Agency for Research on C. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Management of lesions detected in colorectal cancer screening. *Endoscopy*, *44*, SE140–SE150. https://doi.org/10.1055/s-0032-1309802

Steele, R. J., Rey, J. F., Lambert, R., & International Agency for Research on C. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Management of lesions detected in colorectal cancer screening. *Endoscopy*, *44*, SE140–SE150. https://doi.org/10.1055/s-0032-1309802

Steinwachs, D., Allen, J. D., Barlow, W. E., Duncan, R. P., Egede, L. E., Friedman, L. S., Keating, N. L., Kim, P., Lave, J. R., LaVeist, T., Ness, R. B., Optican, R. J., & Virnig, B. A. (2010). NIH state-of-the-science conference statement: Enhancing use and quality of colorectal

cancer screening. *NIH Consensus and State-of-the-Science Statements*, *27*(1), 1–31.

Stoffel, E. M., Mangu, P. B., Limburg, P. J., American Society of Clinical Oncology, & European Society for Medical Oncology. (2015). Hereditary colorectal cancer syndromes: American Society of Clinical Oncology clinical practice guideline endorsement of the familial risk-colorectal cancer: European Society for Medical Oncology clinical practice guidelines. *Journal of Oncology Practice/ American Society of Clinical Oncology*, *11*(3), e437–e441. https://doi.org/10.1200/JOP.2015.003665

Sung, J. J., Ng, S. C., Chan, F. K., Chiu, H. M., Kim, H. S., Matsuda, T., Ng, S. S., Lau, J. Y., Zheng, S., Adler, S., Reddy, N., Yeoh, K. G., Tsoi, K. K., Ching, J. Y., Kuipers, E. J., Rabeneck, L., Young, G. P., Steele, R. J., Lieberman, D., … Asia Pacific Working Group. (2015). An updated Asia Pacific consensus recommendations on colorectal cancer screening. *Gut*, *64*(1), 121–132. https://doi.org/10.1136/gutjnl-2013-306503

Tanaka, S., Saitoh, Y., Matsuda, T., Igarashi, M., Matsumoto, T., Iwao, Y., Suzuki, Y., Nishida, H., Watanabe, T., Sugai, T., Sugihara, K., Tsuruta, O., Hirata, I., Hiwatashi, N., Saito, H., Watanabe, M., Sugano, K., Shimosegawa, T., & Japanese Society of Gastroenterology. (2015). Evidence-based clinical practice guidelines for management of colorectal polyps. *Journal of Gastroenterology*, *50*(3), 252–260. https://doi.org/10.1007/s00535-014-1021-4

Telford, J. J. (2011). Canadian guidelines for colorectal cancer screening. *Canadian Journal of Gastroenterology*, *25*(9), 479–481. https://doi.org/10.1155/2011/285926

Tinmouth, J., Kennedy, E. B., Baron, D., Burke, M., Feinberg, S., Gould, M., Baxter, N., & Lewis, N. (2014). Colonoscopy quality assurance in Ontario: Systematic review and clinical practice guideline. *Canadian Journal of Gastroenterology & Hepatology*, *28*(5), 251–274. https://doi.org/10.1155/2014/262816

Uruguay MdSd. Ministerio de Salud de Uruguay. Guía de práctica clínica de tamizaje del cáncer colo-rectal 2018. https://www.paho.org/uru/dmdocuments/Guia%20de%20practica%20clinica%20de%20tamizaje%20del%20cancer%20colo-rectal%202018.pdf. 2018.

US Preventive Services Task Force, Davidson, K. W., Barry, M. J., Mangione, C. M., Cabana, M., Caughey, A. B., Davis, E. M., Donahue, K. E., Doubeni, C. A., Krist, A. H., Kubik, M., Li, L., Ogedegbe, G., Owens, D. K., Pbert, L., Silverstein, M., Stevermer, J., Tseng, C. W., & Wong, J. B. (2021). Screening for colorectal cancer: US preventive services task force recommendation statement. *Journal of the American Medical Association*, *325*(19), 1965–1977. https://doi.org/10.1001/jama.2021.6238

Valori, R., Rey, J. F., Atkin, W. S., Bretthauer, M., Senore, C., Hoff, G., Kuipers, E., Altenhofen, L., Lambert, R., & Minoli, G. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Quality assurance in endoscopy in colorectal cancer screening and diagnosis. *Endoscopy*, *44 Suppl 3*, SE88–S105. https://doi.org/10.1055/s-0032-1309795

Vasen, H. F., Ghorbanoghli, Z., Bourdeaut, F., Cabaret, O., Caron, O., Duval, A., Entz-Werle, N., Goldberg, Y., Ilencikova, D., Kratz, C. P., Lavoine, N., Loeffen, J., Menko, F. H., Muleris, M., Sebille, G., Colas, C., Burkhardt, B., Brugieres, L., Wimmer, K., & on behalf of the EU-Consortium Care for CMMR-D (C4CMMR-D). (2014). Guidelines for surveillance of individuals with constitutional mismatch repair-deficiency proposed by the European Consortium "Care for CMMR-D" (C4CMMR-D). *Journal of Medical Genetics*, *51*(5), 283–293. https://doi.org/10.1136/jmedgenet-2013-102238

Vernooij, R. W., Sanabria, A. J., Sola, I., Alonso-Coello, P., & Martinez, G. L. (2014). Guidance for updating clinical practice guidelines: A systematic review of methodological handbooks. *Implementation Science*, *9*, 3. https://doi.org/10.1186/1748-5908-9-3

Vieth, M., Quirke, P., Lambert, R., von Karsa, L., Risio, M., & International Agency for Research on C. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Annotations of colorectal lesions. *Endoscopy*, *44 Suppl 3*, SE131–SE139. https://doi.org/10.1055/s-0032-1309798

von Karsa, L., Patnick, J., & Segnan, N. (2012). European guidelines for quality assurance in colorectal cancer screening and diagnosis. First edition—Executive summary. *Endoscopy*, *44*, SE1–SE8. https://doi.org/10.1055/s-0032-1309822

Washington KFHPo. Kaiser Foundation Health Plan of Washington. Colorectal Cancer Screening Guideline. https://wa.kaiserpermanente.org/static/pdf/public/guidelines/colon.pdf. 2021.

Wieringa, T. H., Kunneman, M., Rodriguez-Gutierrez, R., Montori, V. M., de Wit, M., Smets, E. M. A., Schoonmade, L. J., Spencer-Bonilla, G., & Snoek, F. J. (2017). A systematic review of decision aids that facilitate elements of shared decision-making in chronic illnesses: A review protocol. *Systematic Reviews*, *6*(1), 155. https://doi.org/10.1186/s13643-017-0557-9

Wilkins, T., McMechan, D., & Talukder, A. (2018). Colorectal cancer screening and prevention. *American Family Physician*, *97*(10), 658–665.

Wilkinson, A. N., Lieberman, D., Leontiadis, G. I., Tse, F., Barkun, A. N., Abou-Setta, A., Marshall, J. K., Samadder, J., Singh, H., Telford, J. J., Tinmouth, J., & Leddin, D. (2019). Colorectal cancer screening for patients with a family history of colorectal cancer or adenomas. *Canadian Family Physician*, *65*(11), 784–789.

Wolf, A. M. D., Fontham, E. T. H., Church, T. R., Flowers, C. R., Guerra, C. E., LaMonte, S. J., Etzioni, R., McKenna, M. T., Oeffinger, K. C., Shih, Y. C. T., Walter, L. C., Andrews, K. S., Brawley, O. W., Brooks, D., Fedewa, S. A., Manassaram-Baptiste, D., Siegel, R. L., Wender, R. C., & Smith, R. A. (2018). Colorectal cancer screening for average-risk adults: 2018 guideline update from the American Cancer Society. *CA: a Cancer Journal for Clinicians*, *68*(4), 250–281. https://doi.org/10.3322/caac.21457

Wong, M. C., Wong, S. H., Ng, S. C., Wu, J. C., Chan, F. K., & Sung, J. J. (2015). Targeted screening for colorectal cancer in high-risk individuals. *Best Practice & Research. Clinical Gastroenterology*, *29*(6), 941–951. https://doi.org/10.1016/j.bpg.2015.09.006

Woolf, S. H., Grol, R., Hutchinson, A., Eccles, M., & Grimshaw, J. (1999). Clinical guidelines: Potential benefits, limitations, and harms of clinical guidelines. *BMJ*, *318*(7182), 527–530. https://doi.org/10.1136/bmj.318.7182.527

Yang, J., Gurudu, S. R., Koptiuch, C., Agrawal, D., Buxbaum, J. L., Abbas Fehmi, S. M., Fishman, D. S., Khashab, M. A., Jamil, L. H., Jue, T. L., Law, J. K., Lee, J. K., Naveed, M., Qumseya, B. J., Sawhney, M. S., Thosani, N., Wani, S. B., & Samadder, N. J. (2020). American Society for Gastrointestinal Endoscopy guideline on the role of endoscopy in familial adenomatous polyposis syndromes. *Gastrointestinal Endoscopy*, *91*(5), 963–82.e2. https://doi.org/10.1016/j.gie.2020.01.028

Zauber, A. G., Winawer, S. J., O'Brien, M. J., Lansdorp-Vogelaar, I., van Ballegooijen, M., Hankey, B. F., Shi, W., Bond, J. H., Schapiro, M., Panish, J. F., Stewart, E. T., & Waye, J. D. (2012). Colonoscopic polypectomy and long-term prevention of colorectal-cancer deaths. *The New England Journal of Medicine*, *366*(8), 687–696. https://doi.org/10.1056/NEJMoa1100370

Zeimet, A. G., Mori, H., Petru, E., Polterauer, S., Reinthaller, A., Schauer, C., Scholl-Firon, T., Singer, C., Wimmer, K., Zschocke, J., & Marth, C. (2017). AGO Austria recommendation on screening and diagnosis of Lynch syndrome (LS). *Archives of Gynecology and Obstetrics*, *296*(1), 123–127. https://doi.org/10.1007/s00404-017-4392-y

손대경 김, 박윤희, 서민아, 신애선, 이희영, 임종필, 조현민, 홍성필, 김백희, 김용수, 김정욱, 김현수, 남정모, 박동일, 엄준원, 오순남, 임환섭, 장희진, 함상근, 정지혜, 김수영, 김열, 이원철, 정승용. 대장암 검진 권고안. https://doi.org/10.5124/jkma.2015.58.5.420. J Korean Med Assoc. 2015;58:420–32.

中国抗癌协会肿瘤内镜学专业委员会 国上国中医中中消中中中金国. 中国早期结直肠癌筛查流程专家共识意见 (2019, 上海). Natl Med J China. 2019;99.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Maes-Carballo, M., García-García, M., Gómez-Fandiño, Y., Estrada-López, C. R., Iglesias-Álvarez, A., Bueno-Cavanillas, A., & Khan, K. S. (2022). Systematic review of shared decision-making in guidelines about colorectal cancer screening. *European Journal of Cancer Care*, *31*(6), e13738. https://doi.org/10.1111/ecc.13738