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Scoping Review

Dementia Risk Reduction in Primary Care: A Scoping Review of Clinical Guidelines Using a Behavioral Specificity Framework

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Abstract.
Background: Primary care practitioners are being called upon to work with their patients to reduce dementia risk. However, it is unclear who should do what with whom, when, and under what circumstances.
Objective: This scoping review aimed to identify clinical guidelines for dementia risk reduction (DRR) in primary care settings, synthesize the guidelines into actionable behaviors, and appraise the guidelines for specificity.
Methods: Terms related to "dementia", "guidelines", and "risk reduction" were entered into two academic databases and two web search engines. Guidelines were included if they referred specifically to clinical practices for healthcare professionals for primary prevention of dementia. Included guidelines were analyzed using a directed content analysis method, underpinned by the Action-Actor-Context-Target-Time framework for specifying behavior.

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Results: Eighteen guidelines were included in the analysis. Together, the guidelines recommended six distinct clusters of actions for DRR. These were to 1) invite patients to discuss DRR, 2) identify patients with risk factors for dementia, 3) discuss DRR, 4) manage dementia risk factors, 5) signpost to additional support, and 6) follow up. Guidelines recommended various actors, contexts, targets, and times for performing these actions. Together, guidelines lacked specificity and were at times contradictory.

Conclusion: Currently available guidelines allow various approaches to promoting DRR in primary care. Primary care teams are advised to draw on the results of the review to decide which actions to undertake and the locally appropriate actors, contexts, targets, and times for these actions. Documenting these decisions in more specific, local guidelines for promoting DRR should facilitate implementation.

Keywords: Dementia, general practice, guideline, primary health care, primary prevention, review

INTRODUCTION

A key role of primary care practitioners (PCPs) is to provide preventive health care for noncommunicable diseases such as heart disease, diabetes, cancer, and dementia. Dementia is a global health priority, and at least one-third of dementia risk is considered modifiable [1, 2]. Modifiable risk factors for dementia include hypertension, smoking, obesity, depression, physical inactivity, diabetes, hearing impairment, less education, low social contact, excessive alcohol consumption, traumatic brain injury, and air pollution [1]. While there is good evidence of the association between these risk factors and dementia, there is less robust evidence that interventions to modify risk factors effectively reduce dementia incidence [3]. Limitations in the evidence base for a preventive approach to dementia are largely due to the methodological challenges in designing dementia risk reduction trials, such as the lengthy follow-up required [4]. Nonetheless, expert consensus is that a preventive approach to dementia is warranted, and people should know that certain behaviors are good for brain health and reduce the risk of cognitive decline [5, 6].

Population-level approaches to preventing dementia include campaigns to raise awareness [7–10], massive open online educational courses [11], and manipulating environments to nudge people toward healthier choices [12–14]. To complement these population-level approaches, PCPs are being called upon to integrate dementia risk reduction (DRR) actions into their delivery of preventive care [15, 16]. Systematic reviews have shown that preventive interventions in the primary care setting can be effective in changing patient behavior, including reducing alcohol consumption [17], increasing physical activity [18], smoking cessation [19], and weight loss [20]. PCPs have the potential to reach a large proportion of individuals with risk factors for dementia and provide trusted and individualized education, advice, and support to reduce dementia risk [15]. However, if a PCP were to answer the call to implement DRR actions in their practice, what exactly would they do?

Implementation science is a relatively new area of applied health research that focusses on these questions about translating knowledge into clinical practice [21]. Implementation models are often used to describe the process of changing routine practice to better align with available evidence [22]. The Knowledge-to-Action framework [23] is one of the most established implementation process models [24]. It divides the process of implementation into knowledge creation and action. Knowledge creation is represented as a funnel from inquiry (first-generation knowledge) to synthesis (second-generation) to the development of tools or products (third-generation), with knowledge becoming more refined and more useful to stakeholders at each subsequent generation [23]. For example, in Ottawa, Canada, an interdisciplinary Leg Ulcer Protocol Task Force identified existing national and international leg ulcer guidelines (first-generation knowledge), synthesized the guidelines in terms of methodologic quality and content (second-generation knowledge), and finally developed a local care protocol for a new leg ulcer service (third-generation knowledge) by selecting recommendations from different guidelines based on level of supporting evidence and consensus discussions about appropriateness and feasibility in the service [25].

Knowledge synthesis involves the aggregation of existing knowledge. This scoping review is an exercise in knowledge synthesis, which is a key preparatory step in the broader process of embedding DRR actions in clinical practice. The review aims to identify, synthesize, and appraise currently available national and international guidelines for promoting DRR in primary care.

While it is easy enough for PCPs to locate guidelines on screening, diagnosis, or management of dementia [26–28] or on the management of lifestyle risk factors such as smoking, nutrition, alcohol, and physical activity [29–31], clinical guidelines specifically for DRR are less conspicuous. Most national dementia plans include public messaging about dementia among their goals, but these are meant to be high-level strategy documents, not specific actionable guidance for PCPs [32]. Many high-profile DRR publications focus on synthesizing evidence on the associations between dementia, modifiable risk factors, and interventions to manage them, but they stop short of providing guidance on how to use this evidence clinically [1, 2, 33, 34]. In both instances, from the perspective of translation to clinical practice, it is unclear who should do what with whom, when, and under what circumstances.

Previous research has begun to synthesize knowledge about reducing dementia risk in the clinical setting. A recent scoping review of dementia primary prevention policies and strategies and their local implementation in England [35] identified three clinical guidelines [36–38]. The authors concluded that the information they contained was limited to the modifiable risk factors associated with cardiovascular disease, with encouragement to embed the messages within other health modifying advice [35]. In the US, authors from the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDCP) described US federal government strategies, products, and documents relevant to DRR [32]. They included only one document providing evidence-based guidance for frontline public health professionals [39], and their description focused on actions for consumers rather than for health care professionals.

Both these earlier reviews considered government policies and strategies alongside clinical guidelines and recommendations for implementing them, within a single country. The current review builds on this earlier research by expanding the scope to consider both governmental and non-governmental guidelines in any country while narrowing the focus to clinical guidelines appropriate for primary care, which is the usual entry point and key coordinator of care within health care systems [16]. The review had three aims: 1) to identify clinical guidelines for promoting DRR in primary care; 2) to synthesize the guidelines by identifying actionable behaviors for PCPs; and 3) to appraise the guidelines for specificity.

METHODS

Search strategy

There is a trend for developers of guidelines to post guidelines directly on the web to avoid delays in publication by academic journals, permit rapid updates, and allow wide and inexpensive dissemination [40]. However, this means guidelines might not be indexed in academic databases. Therefore, the search strategy for this review relied on web search engines as well as academic databases.

On May 6, 2022, we searched Google (http://www.google.com), Duckduckgo (http://www.duckduckgo.com), PubMed, and CINAHL (Cumulative Index to Nursing and Allied Health Literature). Results from the two academic databases were limited to publication type “guideline” or “practice guideline”. We used 17 search terms related to search term categories “dementia”, “guideline”, and “risk reduction”. Results had to include at least one word (or variant thereof) from each of the three search term categories. Lateral search techniques were used to identify additional guidelines. A detailed description of the search is provided in Supplementary Material 1.

Inclusion criteria

We included guidelines if they were in English and referred specifically to clinical practices for healthcare professionals for primary prevention of dementia. We included all currently available guidelines, regardless of year of publication, unless they had been superseded or withdrawn. We excluded news articles, academic journal articles, textbooks, encyclopedia entries, and material from commercial enterprises. We excluded guidelines only for genetic testing, secondary prevention (detecting cognitive decline early and slowing further decline) or tertiary prevention (improving quality of life and reducing dementia symptoms once diagnosed). We excluded guidelines only for healthcare professionals working in settings other than primary care (e.g., psychologists, neurologists, psychiatrists, geriatricians), but we did include guidelines even if PCPs were not mentioned explicitly. Training courses and webinars were also excluded because these were not freely and immediately accessible to all PCPs. We excluded global and national action plans and quality standards because these were high-level documents not intended to provide clinical guidance. We also excluded guidelines for the management of individual risk factors for noncommunicable diseases (e.g., hypertension, physical inactivity), even if DRR was part of the rationale for their management, because these were not intended to provide a complete guide to DRR clinical practices.

One researcher (KG) identified potentially relevant guidelines. Eligibility of provisionally included guidelines was discussed between the co-authors and decided by consensus. Included guidelines were imported into the Dedoose Computer-Assisted Qualitative Data Analysis Software (https://www.dedoose.com, accessed 28 July 2021).

Data analysis

We used a directed content analysis method to analyze the included guidelines [41]. Content analysis is a versatile method that enables themes and patterns to be identified through systematic classification and coding of text-based data [41]. The data extraction, interpretation and discussion of findings were directed by the Action-Actor-Context-Target-Time (AACTT) framework [42]. The AACTT framework can be used to specify the behavior of healthcare providers that implementation efforts seek to embed. The framework has previously been used in reviewing guidelines for managing deteriorating patients in UK hospital settings [43] and practice standards for Australian pharmacists [44].

We developed a coding manual from the AACTT framework to enable data extraction and to examine behavioral specificity of the included documents. The coding manual is provided in Supplementary Material 2 and a detailed description of the content analysis method is provided in Supplementary Material 3.

RESULTS

Included guidelines

The first aim of this review was to identify English-language clinical guidelines for DRR in primary care. In total, 18 guidelines were included in the review. Fourteen guidelines were identified from the web engine search, two guidelines were identified from the academic database search, and two guidelines were identified from the lateral search strategy. Most excluded guidelines did not pertain to DRR or to primary care.

Table 1 lists the 18 included guidelines by publication year, organization, and country. The oldest guideline was from 2005; the most recent was from a few months prior to the search. There was one global guideline, five from Australia, five from England, three from the US, and one each from Canada, Italy, Scotland, and New Zealand. Guidelines were prepared by professional bodies, peak consumer bodies, research centers, executive public bodies of government departments, and non-profit organizations. Eight guidelines explicitly stated that they were prepared by, or in consultation with, people working in primary care [36, 45–51]. Input from consumers or consumer bodies (e.g., Kidney Health Australia, the Italian Association for Alzheimer's Disease) was explicit in nine guidelines [36, 38, 48–54]. A description of the guidelines and the organizations that produced them is available in Supplementary Material 4.

The second aim of this review was to synthesize the guidelines into actionable behaviors for PCPs. The synthesis of guidelines below is based on complete agreement between coders following consensus discussions and revision of the coding manual [58]. Table 2 summarizes recommendations from the guidelines according to the AACTT framework.

Actions

In terms of actions, the guidelines recommended six distinct but related bundles of actions for DRR. These were to 1) invite patients to discuss DRR, 2) identify patients with risk factors for dementia, 3) discuss DRR, 4) manage dementia risk factors, 5) signpost to additional support, and 6) follow up.

For the "invite" action, three guidelines recommended inviting patients to discuss DRR. One guideline recommended "encourage[ing] individuals and family members to discuss their concerns and questions regarding cognitive health" [39] while another guideline, specifically for Aboriginal and Torres Strait Islander patients, mentioned encouraging annual health checks [46]. Public Health England recommended "promoting uptake of the NHS Health Check for 40-74-year-olds" [56]. While guidelines for NHS Health Checks did not mention invitation [37, 49], all eligible adults are supposed to receive an invitation letter from their GP every five years [59].

For the "identify" action, eleven guidelines called for identification of patients with risk factors for dementia [36, 38, 39, 45–47, 50–52, 55, 57]. Four guidelines specified that identification involved direct

Table 1
Included guidelines

	Title	Publication year	Organization	Country
1	Primary prevention recommendations to reduce the risk of cognitive decline [51]	2022	UsAgainstAlzheimer's	USA
2	A Primary Care Agenda for Brain Health: A Scientific Statement from the American Heart Association [45]	2021	American Heart Association (AHA)	USA
3	Promoting Excellence 2021: A framework for all health and social services staff working with people with dementia, their families and carers [54]	2021	NHS Education for Scotland (NES) and the Scottish Social Services Council (SSSC)	Scotland
4	Best-practice guide to cognitive impairment and dementia care for Aboriginal and Torres Strait Islander people attending primary care [46]	2020	Royal Australian College of General Practitioners (RACGP)	Australia
5	Age-related cognitive decline: prevention and future planning [55]	2020	Best Practice Advocacy Centre New Zealand (bpacnz)	New Zealand
6	Recommendations of the 5th Canadian Consensus Conference on the diagnosis and treatment of dementia [47]	2020	Canadian Consensus Conference on the diagnosis and treatment of dementia (CCCDTD)	Canada
7	Risk reduction of cognitive decline and dementia: WHO Guidelines [2]	2019	World Health Organization (WHO)	Global
8	NHS Health Check Best practice guidance [37]	2019	Public Health England (PHE)	England
9	People with Dementia: A Care Guide for General Practice [52]	2019	Cognitive Decline Partnership Centre (CDPC)	Australia
10	National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people [48]	2018	Royal Australian College of General Practitioners (RACGP)	Australia
11	NHS Health Check Dementia Training [49]	2018	National Health Service (NHS) England	England
12	Dementia: Applying all our health [56]	2018	Public Health England (PHE)	England
13	Guidelines for preventive activities in general practice (the Red Book) [50]	2016	Royal Australian College of General Practitioners (RACGP)	Australia
14	Dementia, disability and frailty in later life – mid-life approaches to delay or prevent onset [36]	2015	National Institute for Health and Care Excellence (NICE)	England
15	Cognitive aging: Progress in understanding and opportunities for Action [39]	2015	Institute of Medicine (IoM)	USA
16	Dementia Risk Reduction: A Practical Guide for General Practitioners [57]	2010	Alzheimer's Australia	Australia
17	Dementia: A NICE-SCIE Guideline on supporting people with dementia and their carers in health and social care [38]	2007	National Collaborating Centre for Mental Health (NCCMH)	England
18	Guidelines for the Treatment of Alzheimer's Disease from the Italian Association of Psychogeriatrics [53]	2005	Italian Association of Psychogeriatrics (AIP)	Italy

measurement of biomedical risk factors (e.g., obesity, blood pressure, hearing) and asking patients about the quantity and frequency of relevant lifestyle behaviors (e.g., smoking, physical activity, sleep) [47, 51, 52, 57]. Identification could involve new risk assessments or auditing medical records to identify patients with previously documented risks [50]. As the American Heart Association [45] and UsAgainstAlzheimers [51] pointed out, clinical guidelines for identifying many of the risk factors for dementia already exist, with screening generally expected to occur every 1–5 years beginning in early adulthood. Only one guideline recommended using a specific dementia risk assessment tool to identify patients with risk factors for dementia [50]. In the general practice context, the Australian National University Alzheimer's Disease Risk Index is intended to be completed by patients to record their current risk profile for discussion with their PCP at their next medical appointment [60].

For the "discuss" action, all but two guidelines [38, 53] recommended providing some form of DRR education [36, 37, 39, 46, 49, 51, 54–57] and/or advice [2, 36, 39, 45, 47, 48, 50–52, 57]. Four guidelines recommended tailoring the general education

Table 2
Summary of recommendations from included guidelines, according to the AACTT framework

Components of the AACTT Framework	Recommendations from included guidelines
Action	• Invite [39, 46, 56]
	• Identify [36, 38, 39, 45–47, 50–52, 55, 57]
	• Discuss [2, 36, 37, 39, 45–52, 54–57]
	• Manage [2, 36, 38, 45, 47, 50–53, 55–57]
	• Signpost [36, 39, 49, 51, 54, 57]
	• Follow up [48, 50, 51, 57]
Actor	• General Practitioner [36, 38, 53, 57]
	• General Practice Nurse [2, 36, 38, 46, 48]
	• Primary care clinicians [51]
	• Other general practice staff [56]
	• General practice team [46, 50]
	• Providers of NHS Health Checks [46, 50]
Context	• Integrated with messaging about cardiovascular health [2, 36, 37, 49, 51, 52, 55–57]
	• Patient-initiated [55]
	• Change in life circumstances [36, 51, 55, 57]
	• Change in health status [55]
Target	• Midlife [36]
	• Older age [50]
	• Midlife and older age [2, 37, 38, 49, 51, 52, 56]
	• All ages [39, 47]
	• Patients with risk factors [36, 47, 48, 50, 57]
	• Patients with concerns about dementia risk [47, 57]
Time	• Opportunistically [36, 39, 48, 51, 56, 57]
	• Formal health assessment [36, 37, 39, 46, 49, 56]
	• Enough time in the consultation [49, 51]
	• Incrementally across encounters [48, 50]

to the patient's personal circumstances and making the advice brief, non-judgmental and evidence-based [46, 48, 50, 51]. Three guidelines recommended using relevant written material to support the verbal discussion [49, 51, 57]. Three guidelines were explicit about content to omit from the discussion, such as advice to take multi-vitamins to reduce dementia risk [2, 51, 55].

For the "manage" action, six guidelines [37, 39, 46, 48, 49, 54] did not explicitly recommend management of dementia risk factors, although guidelines for Aboriginal and Torres Strait Islander patients [46, 48] did link to the companion guidelines for preventive activities with the general population, in which management is recommended [50]. The remaining twelve guidelines recommended assisting the patient to reduce dementia risk through various management strategies, including encouragement [51, 55–57], negotiation of goals [50, 51], identifying and addressing personal barriers to behavior change [36, 51], motivational interviewing [2, 50], behavior prescriptions (e.g., physical activity prescription [51, 52, 57]), pharmacotherapy [50–52, 57], and offering interventions [2] or referral to services [2, 45, 51, 52, 55, 57]. One guideline recommended, broadly, that risk factors should be "reviewed and, if appropriate, treated" [38]. Guidelines recommending the management of risk factors typically suggested that healthcare professionals follow existing clinical guidelines for individual risk factors [2, 45, 51–53, 57]. Four guidelines were explicit about management that was not appropriate specifically for DRR, such as hormone replacement therapy [38, 52], antidepressant medicines [2], or treatment of sleep disorders [47].

For the "signpost" action, five guidelines recommended signposting patients to support services, with varying emphasis [36, 39, 49, 51, 57]. The Institute of Medicine recommended "making sure patients and families know about … useful and evidence-based community and patient resources" [39]. The National Institute for Health and Care Excellence recommended directing patients where to go for further help, giving stop smoking services as an example [36]. The NHS Health Check specifically signposts patients to the Alzheimer's Society and the 'Reducing your risk of dementia' booklet from Alzheimer's Research UK, as well as to local healthy lifestyle services available for the person's level of risk [49]. Guidelines from Alzheimer's Australia [57] and UsAgainstAlzheimer's [51] include a list of resources for patients in sections under each risk factor. For the Alzheimer's Australia guidelines, published in 2010, some of these resources are no longer available.

Finally, for the "follow up" action, four guidelines (three from Australia) explicitly recommended following up after some or all preceding actions. Although not in the sections specifically on DRR, introductions to the two included guidelines from the Royal Australian College of General Practitioners recommended being proactive in following up patients who are most at risk and arranging regular follow-up visits to monitor maintenance and prevent relapse [50], pointing out that healthcare providers should always plan to follow up patients who have had a preventive health assessment [48]. Guidelines from Alzheimer's Australia [57] and UsAgainstAlzheimer's [51] recommended follow-up to monitor progress, encourage maintenance, revise goals, and offer guidance or additional resources as needed. Guidelines that did not explicitly mention follow-up may have implied it in their recommendation to adhere to existing clinical guidelines for the management of risk factors. For example, arranging follow-up is a key component of managing smoking, nutrition, alcohol, and physical activity risk factors in complementary clinical guidelines from the Royal Australian College of General Practitioners [29].

Actors

The previous section of the results synthesized the actions contained within the included guidelines. This section synthesizes guidance on actors, which refers to the individuals, or groups of individuals, who are responsible for performing actions. Two guidelines did not mention actors at all [52, 55]. Nine guidelines [2, 36, 38, 39, 45, 47, 48, 54, 56] referred to health workers using an umbrella term (e.g., "healthcare providers" [48] or "frontline health and care professionals" [56]). Four guidelines explicitly mentioned General Practitioners (GPs) as actors in reducing dementia risk [36, 38, 53, 57]; nurses were explicitly mentioned in six guidelines [2, 36, 38, 46, 48, 53]. One guideline was intended for "primary care clinicians and general neurologists" [51]. Only one guideline specifically pointed to team leaders, managers and staff holding senior or strategic roles as actors in DRR [56]. Two guidelines referred to teams of primary care workers (e.g., "GPs and their teams" [50] or "the whole primary care team" [46]). Some guidelines referred to healthcare professionals already trained and designated to fulfil particular roles within primary care, such as providers of NHS services and NHS Health Checks [36, 37, 49] having completed dementia training to help "build their confidence and expertise in raising and talking about dementia" [49].

Context

In the AACTT framework, context refers to the physical, emotional, organizational, or social setting in which an actor performs an action. As per our inclusion criteria, all guidelines were appropriate for the physical context of a general practice or primary care clinic. Guidelines specifically for dementia risk during NHS Health Checks did not address additional contextual factors [37, 49]; they recommended DRR actions be included in all health checks, regardless of context. However, some other guidelines suggested appropriate contexts for opportunistic DRR in the primary care setting. For example, ten guidelines recommended integrating DRR actions into a broader conversation about the benefits of good cardiovascular health [2, 36, 37, 49, 51, 52, 55–57].

Other appropriate contexts could be created by the patient directly, by their life circumstances, or by their health status. For example, a patient could directly ask for health advice [55]. Alternatively, patients might be experiencing a change in life circumstances (e.g., bereavement, children moving out of home, retirement, starting to care for older relatives or grandchildren, or menopause [36, 51, 55, 57]), during which "people may consider adopting new healthy behaviors, or may be at risk of adopting unhealthy ones" [36]. DRR might also be appropriate in the context of managing a long-term condition (such as depression or diabetes), following a significant medical event (such as discharge from hospital), or initiating or renewing a long-term medicine [55].

Target

Target refers to the individual or group of individuals with whom an actor performs an action. We limited our review to guidelines appropriate for patients in primary care settings. Only one guideline [39] recommended targeting all patients in these settings. All other guidelines specified narrower targets for DRR, either in terms of patient age, presence of risk factors, or specific DRR actions.

For age, some guidelines targeted patients spanning midlife and late life [37, 38, 49, 51, 52], or across the life course [45, 47]. Other guidelines specified midlife for all actions [36] or for discussion and/or management of specific risk factors [2]. One guideline alternated between targeting patients of all ages and middle-aged adults [56]. Guidelines from New Zealand did not limit DRR to midlife but acknowledged that "younger people are frequently disinterested in talking about [brain health] and older people often avoid the subject" [55]. In contrast to midlife targeting, guidelines for preventive care from the Royal Australian College of General Practitioners positioned guidance on dementia prevention in its section on preventive activities in older people, aged 65 years and over [50]. Only four guidelines specifically defined midlife as bounded by an upper age of 64 years, but they were divided as to whether to include [36, 37, 49] or exclude [50] patients aged 40–44 years.

For risk factors, five guidelines recommended targeting DRR towards patients with one or more relevant risk factors [36, 47, 48, 50, 51]. Two guidelines recommended proactively targeting high risk individuals, but opportunistically targeting all patients [50, 57]. Discussion of DRR is included in the NHS Health Check regardless of the presence of risk factors [39, 49].

Sometimes, the target changed depending on the action or the context. For example, discussion of DRR was often targeted at all patients but management of risk factors was only targeted at patients with relevant risk factors [2, 45, 47, 49, 51]. In the guidelines from Alzheimer's Australia, management of some risk factors was only targeted at patients who were concerned about their risk of developing dementia [57].

Time

In the AACTT Framework, time refers to the period, duration, and frequency for DRR (e.g., at annual review, every patient encounter, or incrementally over the next six months). Two guidelines pointed specifically to opportunistic DRR [48, 51, 57], while three others considered DRR only as a component of a formal health check [37, 46, 49]. Three guidelines recommended both formal health checks and opportunistic timing for DRR [36, 39, 56]. For example, the National Institute for Health and Care Excellence recommended DRR "at every appropriate opportunity" and "whenever the opportunity arises" [36], and Public Health England guidance was for DRR "as part of [health and care professionals'] daily contact with individuals. Every contact counts . . . " [56]. However, both these guidelines from England also acknowledged that dementia prevention advice should be embedded in all NHS Health Checks [36, 56]. Similarly, guidance on timing from the Institute of Medicine was to promote cognitive health both in regular medical visits (i.e., opportunistically) and the Medicare Annual Wellness Visit (i.e., during a formal health check) [39].

Guidelines for the NHS Health Check recommended allowing enough time to talk about DRR, stating that "when it is rushed, it makes the service user feel like it is a tick box exercise" [49]. Guidelines from UsAgainstAlzheimer's encouraged clinicians to "address all components for which they can make the time" [51]. NICE was the only organization to provide guidance on duration, stating that "brief advice" (which, according to the glossary definition, incorporates identification, discussion, management, and signposting actions,) could take "from 30 seconds to a couple of minutes to deliver" [36].

Only two guidelines, both from the Royal Australian College of General Practitioners, included guidance on whether actions should be completed in one encounter or over several encounters. The recommended use of a dementia risk assessment tool for patients to complete between appointments implied an incremental approach [50], and the same guideline acknowledged that management of certain risk factors (such as obesity and physical inactivity) may take six to eight sessions. The guideline for Aboriginal and Torres Strait Islander patients was explicit that "a preventive assessment may be undertaken in a single session between client and health provider . . . or be delivered incrementally over a number of sessions" [48]. While not explicit within the guidelines [37, 49], the NHS Health Check (incorporating DRR actions) is intended to be completed within a single 20-to-30-minute encounter [61].

Specificity of synthesized guidelines

The final aim of this review was to appraise the synthesized guidelines for specificity. Only four guidelines included guidance on all five components of the AACTT framework [36, 49, 51, 57]. Lack of specificity across the 18 guidelines is highlighted according to the AACTT framework, below.

None of the guidelines included all six actions. As Table 2 shows, discussion was the most commonly recommended action, mentioned by all but two guidelines [38, 53]. Identification and management were also commonly recommended, in 11 and 12 guidelines, respectively. In contrast, invitation was included in only three of the 18 guidelines, signposting was recommended in five guidelines and follow up was explicit in four guidelines. It was unclear whether all actions were considered essential or if there were contexts, targets and/or times for which some actions were optional.

Many actions were not clearly specified in terms that could be observed or measured. For example, it was unclear whether inviting patients to discuss DRR involved information being available on the practice website or in practice newsletters, in on-hold telephone messaging, in patient waiting areas, and/or in letters inviting patients to a formal health check. It was also unclear whether PCPs should follow up all actions (e.g., discussion, signposting) or only the management of risk factors.

With regards to language, four guidelines were explicit about mentioning dementia or cognitive aging in discussions, even providing suggested phrasing [39, 49, 55, 56]. Most guidelines, however, recommended providing advice on reducing risk factors for dementia (e.g., “advise increase in cognitively engaging activities” [52]) but did not specify whether the discussion should include making the patient aware that (part of) the rationale for the advice was to reduce dementia risk [36, 45, 48, 50, 52, 54]. It would technically be possible to follow five of the included guidelines without ever mentioning dementia to patients [38, 45, 52–54]. It is unclear whether this was an oversight in the guidelines or a deliberate measure to allow flexibility according to patients’ health literacy (e.g., their understanding of the term ‘dementia’) and cultural backgrounds (e.g., stigma associated with the term ‘dementia’). For example, guidance from New Zealand pointed out that *mate wareware* (meaning becoming forgetful and unwell) was identified as a preferred Te Reo Māori term for dementia in interviews of 223 *kaumātua* (Māori elders) from across Aotearoa New Zealand [55].

There is significant overlap in the risk factors for dementia and other noncommunicable diseases, and many of these should be managed in the course of other clinical activities [2]. However, there was limited emphasis in the included guidelines on risk factors with less overlap and with weaker evidence that targeted interventions are effective in reducing dementia risk (such as depression, low education, and low social contact) [2]. For example, only eight of the 18 included guidelines recommended discussing social and/or mental activity [47–52, 56, 57], and only two of these addressed the management of low social and mental activity [51, 57]. Specifically, the guideline from Alzheimer’s Australia recommended encouraging patients to be socially and mentally active, assisting them to find activities they will enjoy, planning how they will increase their level of social and mental activity, and arranging referral to appropriate services [57]. Guidelines from UsAgainstAlzheimer’s similarly recommended assessing and encouraging social activity and cognitive stimulation, listing nonfiction reading and participation in cooking, hobbies, and gardening as examples [51]. UsAgainstAlzheimer’s conceded that such recommendations “have not yet received widespread testing or validation for routine use in primary-care settings” but argued that “emerging evidence shows that the benefit of addressing these topics outweighs the cost”. This contradicts WHO guidelines which concluded “there is insufficient evidence for social activity and reduction of risk of cognitive decline/dementia” [2].

The identification of six discrete bundles of actions for DRR in primary care means actions can theoretically be performed by different actors, leading to potential role confusion in implementation [42]. Previous research has identified ineffective communication, particularly between GPs and General Practice Nurses (GPNs), as a potential barrier to DRR in clinical practice [62]. In terms of actors, none of the included guidelines specified how the various actions should be allocated to GPs, GPNs, and other practice staff in primary care. It is unclear whether this was an oversight in the guidelines or another deliberate measure to allow flexibility, in this instance according to staff availability and remuneration structures. However, there is guidance in Australia (unrelated to dementia) in which key preventive care actions are allocated to specific actors of the General Practice team [29]. Broadly, GPs are responsible for the central actions of identification, discussion, and management whereas GPNs assist with identification and discussion and are responsible for some signposting and follow-up. Practice Managers or senior receptionists are responsible for peripheral actions of invitation and some signposting. Similar specificity in allocating DRR actions to actors was lacking in the included guidelines.

With regard to context, previous research has identified that the prioritization of a patient’s presenting concerns above DRR is a potential barrier to implementation [62]. However, none of the guidelines for opportunistic promotion of DRR provided recommendations on balancing DRR with management of the patient’s reason for presentation. For example, it was not clear whether DRR should only be mentioned opportunistically when it tied into the patient’s reason for presentation. It was similarly unclear whether DRR should be broached at all if patients were preoccupied with other concerns or if addressing their reason for presentation left little time for DRR. There was a lack of consideration of treatment burden for patients already receiving care for an existing condition. In contexts such these, it may be appropriate to invite future discussion of DRR but postpone subsequent actions for another encounter, but this was not addressed in the included guidelines. There was also an absence of guidance on including family and kinship group members in any DRR actions.

Taken together, there was some contradiction in the included guidelines regarding which patients to target. Guidelines varied as to the appropriate age of targets and whether they should have risk factors for dementia or concerns about developing dementia.

Guidance on whether to opt for opportunistic DRR or a formal health check was lacking, or whether both approaches should cooccur (e.g., whether patients should opportunistically be invited to make an appointment for a formal health check). The frequency of the opportunistic approach (e.g., every encounter, during "World Alzheimer Month", annually, as a once-off) was unclear. The four guidelines recommending "follow up" as a DRR action were not explicit about follow-up intervals [48, 50, 51, 57]. Only one guideline indicated the amount of time to allow for DRR actions [19].

DISCUSSION

This scoping review aimed to identify, synthesize, and appraise specificity of existing clinical guidelines for DRR in primary care. We identified 18 guidelines, and our synthesis and appraisal suggest there are a variety of possible approaches to promoting DRR in primary care. This is not necessarily a shortcoming of existing guidelines; it is important for broad-reaching clinical guidelines to allow PCPs enough flexibility to personalize their practice according to their interests, skills, resources, and presenting individuals. However, in their current form, the included guidelines for promoting DRR did not specify behaviors clearly enough for PCPs to know what they need to do differently. The poor specification of actors, context, and time in particular echoes findings from recent reviews of guidelines for managing deteriorating patients [43] and practice standards for pharmacists [44]. As in an earlier review of dementia risk reduction guidelines [35], there was a tendency for guidelines to focus on risk factors that were common to other noncommunicable diseases, thereby overlooking risk factors such as low mental and social activity. Three included guidelines were over 10 years old and were either lacking in detail [38, 53] or referred to resources that were no longer available [57].

The most comprehensive approach to implementing the guidelines would be for all practitioners working in primary care to target all adult patients, in all contexts, both opportunistically and during formal health checks, and 1) invite patients to discuss DRR, 2) identify patients with risk factors for dementia, 3) discuss DRR, 4) manage dementia risk factors, 5) signpost to additional support, and 6) follow up. However, this approach is unlikely to be clinically appropriate or represent the best use of available resources. It also disregards variations in patients' health literacy and cultural backgrounds. While there was specific guidance in Australia for Aboriginal and Torres Strait Islander patients [46, 48], the only specific recommendation was to invite Aboriginal and Torres Strait Islander patients to attend a health check. The ways in which DRR should be personalized to individual patients or subgroups of patients is not clear in existing guidelines.

An alternative approach to implementing the guidelines is for a single primary care team (or a reasonably homogenous network of teams) to develop a local protocol that is consistent with the published guidelines, only more specific. Primary care teams could decide together which of the DRR actions to implement and then specify the actions for their own practice in terms that can be observed or measured. They could then delegate actions to available actors and, drawing on suggestions in existing guidelines, decide specifically which patients will be targeted, when, and under what circumstances. Ideally, these decisions would consider resource availability as well as preferences of the primary care team and the patients accessing the service(s), and decisions would be informed by evidence underpinning existing guidelines (where such evidence is still current) [40] and integrated with existing protocols for delivering preventive care. Instead of relying on existing guidelines alone, this alternative approach in which existing guidelines are adapted into more explicit local protocols might better meet the needs of practitioners and patients and support the promotion of DRR in primary care [23, 40].

There were several strengths to our review. The most notable was the search strategy which relied on web search engines as well as academic databases. The bulk of included guidelines were identified through the web engine searches, highlighting the risk of relying only on academic databases to identify clinical guidelines. We identified the same eligible guidelines described in previous reviews [32, 35], strengthening confidence in our search strategy. However, some included guidelines were not intuitively titled or indexed clearly on their parent websites. For example, the titles of three included guidelines implied care for people *with* dementia, rather than risk reduction [38, 52, 53] and one of these guidelines was indexed on the parent website under "care service pathways" rather than "clinical guidelines for dementia" [52]. The additional guidelines we identified through lateral search strategies were likely missed in the initial search because their titles and parent websites did not use terms included in our categories for guideline [55] or dementia [37]. It is possible that other eligible guidelines were missed for similar reasons. For example, we did not identify clinical guidelines from Scotland or Ireland, although our search strategy did identify (and exclude) national action plans for dementia from these countries. Additionally, we did not identify clinical guidelines from non-English speaking nations, which may be due to our exclusion of guidelines in languages other than English.

A second strength of this review was its expanded scope, relative to earlier reviews, in considering guidelines from multiple countries [32, 35]. However, the generalizability of the synthesized recommendations across different health systems is unclear. In particular, the appropriate actors and contexts for promoting DRR will depend on the nature of the health system and primary care setup. Other than one global guideline, included guidelines came from only seven countries (Australia, England, the US, Canada, Italy, Scotland, and New Zealand). Primary health systems in these and other countries differ in terms of availability of universal health coverage, out-of-hours care, affordable formal health checks in middle age, and community supports for lifestyle changes, all of which could affect implementation of the various DRR actions. Of course, individual primary care practices within countries can also vary along these dimensions. These differences mean it is important to investigate local contextual influences on implementation to determine which actions, actors, target, context, and timings for promoting DRR are appropriate.

Our search strategy identified guidelines for comprehensive preventive care in Australia [48, 50] and for periodic health checks in the UK [8]. Guidelines about preventive care or health checks in other countries might include activities related to reducing dementia risk, but they were not identified as part of this review. Future research could examine whether, and which, DRR activities are explicit within broader guidance about prevention in primary care in various countries.

While we included guidelines for comprehensive preventive care [48, 50], we excluded guidelines for the management of individual risk factors (e.g., hypertension, physical inactivity). We checked several prominent guidelines for the management of lifestyle risk factors such as smoking, nutrition, alcohol, and physical activity and found they did not mention dementia risk reduction [29–31], other than singular, broad statements of benefit such as "physical activity can lower the risk of Alzheimer's disease" [30]. Based on this, we considered it unlikely that identified guidelines for individual risk factors contained recommendations for DRR actions in primary care settings.

While we did not calculate interrater reliability, all guidelines were coded independently by two coders and consensus discussions were held addressing all 180 coding decisions (10 codes across 18 guidelines). This process meant that the coding manual presented in Supplementary Material 2 is not an idiosyncratic, opaque system of interpretation devised by a single researcher but rather a transparent and coherent system agreed upon by all co-authors [58].

A limitation of this review is that most guidelines predated the COVID-19 pandemic, and it is unclear which recommendations remain current. It is possible that different people should now be targeted for DRR, due to experiencing either long-term effects of COVID-19 [63], the disruption to essential services (e.g., screening and management of cardiovascular risk factors [64]) or the emergence or exacerbation of dementia risk factors (e.g., low social contact, depression [65]). Additionally, there is evidence that the COVID-19 pandemic has caused shifting emphasis on, and governance of, health promotion. For example, in England in 2021, the health improvement functions of Public Health England and NHS England were taken over by the Office for Health Improvement and Disparities (a new unit within in the British Department of Health and Social Care), which focuses on reducing the burden of preventable illness and disease on society and the healthcare system. Whether the existing guidelines from Public Health England and NHS England included in this review will soon be superseded is unclear.

In sum, the scoping review synthesized existing knowledge about how PCPs can approach DRR, presenting suggestions with limited specificity across key behaviors, stakeholders, contexts, and timing. According to the Knowledge-to-Action Framework for guiding implementation, the results of this review represent second-generation knowledge [23]. It is recommended that primary care teams seeking to implement the results of this review develop third-generation knowledge in the form of local guidelines, making explicit decisions about who should perform which DRR actions as well as which patients to target, when, and under what circumstances. While the results of the review represent a good starting point, adapting them into local, more specific guidelines should facilitate the process of implementing DRR actions in primary care settings.

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SUPPLEMENTARY MATERIAL

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