The Nottingham consensus on dementia risk reduction policy: recommendations from a modified Delphi process

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From research to real-world benefits (273/300)

With advances in evidence on prevention over the last decade, reducing the prevalence of dementia has become a realistic possibility. This could improve countless lives and offer very substantial savings to health and social care. However, translating the growing body of evidence on dementia risk reduction into effective and equitable public health policy is a major challenge. Our work directly addressed this translational gap by convening a diverse, multidisciplinary panel of experts from across England - spanning lived experience, clinical practice, research, policy, and advocacy and developing 56 consensus-based recommendations for dementia prevention.

The recommendations provide a clear framework for policymakers to strengthen national dementia prevention efforts through evidence-informed action in four domains: public health messaging, individual-level interventions, population-level interventions and research commissioning. A central theme throughout is the need to embed equity considerations at every stage of policy design and delivery to ensure that prevention initiatives reduce, rather than reinforce, existing health inequalities. In practical terms, the recommendations can inform immediate steps such as improving the clarity and consistency of public health communication about dementia risk factors and integrating dementia prevention into existing health and social care pathways.

Achieving the full potential of this work will require coordinated cross-sector action, sustained investment in prevention research, and continued evaluation of outcomes. By fostering collaboration between researchers, policymakers, clinicians, and communities, these recommendations lay the groundwork for a coherent, equitable, and effective dementia prevention approach, that can deliver tangible benefits across communities. The implementation of these recommendations would be expected to reduce age-specific dementia incidence, leading to substantial increases in healthy life expectancy and reducing the enormous societal and economic burdens associated with dementia.

Abstract | Translation of evidence about dementia risk and its reduction into effective, equitable public health policy is a major challenge. To address this challenge, the National Institute for Health and Care Research Policy Research Unit in Dementia and Neurodegeneration at Queen Mary University of London (DeNPRU-QM) convened a multidisciplinary panel of 40 experts from across England with diverse lived, academic, clinical, policy and advocacy experience, at various career stages, and of diverse gender and ethnicity, to develop actionable policy recommendations for dementia risk reduction. Through a 2-day in-person workshop and a subsequent three-round modified Delphi survey, the panel evaluated and refined statements on dementia prevention. The panel achieved consensus on 56 recommendations in four domains: public health messaging, individual-level interventions, population-level interventions, and research commissioning. A key priority across all domains was the need to consider and address health inequalities so that prevention efforts do not exacerbate existing disparities. Our recommendations provide policymakers with a robust foundation for designing and implementing an evidence-based dementia prevention strategy in England and provide guidance that can inform approaches in other countries and contexts. By prioritizing clear communication, targeted intervention and sustained research investment, the recommendations can help to address structural inequities and advance dementia risk reduction. Ongoing cross-sector advocacy will be crucial to drive policy adoption and implementation.

Introduction

Dementia is a major public health challenge. The number of people living with dementia globally is projected to nearly triple by 2050 to an estimated 153 million[1]. Beyond the profound personal impact on individuals and their families, dementia has a major impact on health and social care systems and the wider economy, with global societal costs estimated at US$1.3 trillion in 2019[2]. These rising numbers and costs are driven by population growth and ageing.

In the absence of a cure or wide access to effective treatments, prevention is key to addressing this increasing impact of dementia[3]. Encouragingly, evidence from high-income countries, including the UK, suggests that age-specific dementia incidence has declined over the past 30 years[4–8], largely owing to public health and behavioural interventions (for example, measures to reduce smoking and improve cardiovascular health). Specific and general prevention strategies have strong potential, but realising their benefits requires co-ordinated efforts across health and social care systems, alongside engagement from other government sectors and key stakeholders. Translating the growing evidence base into effective and equitable policies presents a complex challenge.

A wealth of research into the epidemiology of dementia risk across the life course is available. The most prominent synthesis of this evidence is provided by the 2024 Lancet Commission on Dementia Prevention, Intervention and Care, which identified 14 potentially modifiable risk factors for which evidence supports a causal contribution at three approximate life stages: less education in early life; hearing loss, high levels of low-density lipoprotein cholesterol, depression, traumatic brain injury, physical inactivity, diabetes mellitus, smoking, hypertension, obesity and excessive alcohol consumption in mid-life; and social isolation, air pollution and visual loss in later life[9]. Accounting for their co-occurrence, these 14 factors are estimated to account for up to 45% of global dementia risk[9]. These findings underscore the value of prevention at multiple levels: supporting individuals to make healthier choices, investing in communities to create health-promoting environments, and implementing national-level, population-wide policies to lower dementia risk across the life course[10].

Public awareness of dementia risk factors remains low[11], and despite campaigns such as the Alzheimer's Research UK Brain Health Initiative[12], clear, life-course guidance on brain health is rare. Empirical evidence to inform effective messaging is also limited[13], and generating evidence that demonstrates effectiveness of dementia risk reduction strategies is challenging. Dementia risk accumulates over the life course, and many risk factors are present decades before the disease manifests. The long prodromal phase of dementia adds further complexity, making it

difficult to determine the extent to which reverse causation and residual confounding contribute to observed effects[14]. This complexity presents a challenge for policy makers because little direct evidence from dementia prevention trials is available. Current research often focuses on individual-level behavioural changes (for example, hearing aid use and blood pressure management), but demonstrating an effect on dementia incidence is challenging owing to the long follow-up time, low event rate and high participant numbers that are consequently required. The trials that do exist typically focus on intermediate outcomes, such as cognitive function, rather than direct reductions in dementia rates, presenting a barrier to translation into public health policy[15–18].

The need to consider wider (for example, social, economic and commercial) determinants of health in dementia in research and policy is increasingly recognized[19]. For example, education has been posited as a modifiable early-life risk factor for dementia, but its effects seem to be modulated by socioeconomic factors in adulthood[20,21]. Similarly, ethnicity and area-level deprivation are independent predictors of dementia risk, and their effects outweigh those of cardiometabolic risk factors in some regions[22–24]. Moreover, one study has shown that reductions in dementia incidence in the UK occurred exclusively in the wealthiest third of the population[8]. These findings highlight the importance of addressing structural and social inequities alongside individual-level risk factors to ensure dementia prevention policy is both equitable and effective in reducing disparities in brain health.

Translation of the expanding body of dementia prevention research into actionable policy recommendations is essential to support inclusive and globally effective prevention strategies. Acknowledging the complexity of this task, the National Institute for Health and Care Research (NIHR) Policy Research Unit in Dementia and Neurodegeneration at Queen Mary University of London (DeNPRU-QM), UK, convened a multidisciplinary group of experts from England to collaboratively develop and agree upon national policy recommendations through a workshop and modified Delphi survey. In this Consensus statement, we present the resulting outcomes and recommendations. Though these recommendations were developed in the context of England, we believe the recommendations are immediately relevant to the development of dementia prevention policy globally where public health infrastructure and disease prevention programmes are already established. In resource-scarce settings, the recommendations can be readily adapted and reprioritized according to local requirements.

Methods

We conducted a two-stage study that consisted of an in-person workshop held in Nottingham, UK, and an online survey (Figure 1). We used a modified Delphi technique to systematically gather anonymous, asynchronous and iterative input from a diverse range of experts. This consensus-based approach was selected over other methods[25] because it is a well-established strategy for integrating stakeholder perspectives in contexts when evidence is limited, insufficient or conflicting, and has been widely applied in healthcare and policy settings[26,27]. The study protocol was prospectively registered on the Open Science Framework[28], and reporting follows ACCORD guidelines (Supplementary methods)[29].

Steering committee and panel

The project was led by a five-member steering committee from DeNPRU-QM. The steering committee was co-chaired by C.R.M. (consultant neurologist and dementia research lead at the Centre for Preventive Neurology at Queen Mary University of London, UK), and H.D.-K. (postdoctoral researcher with expertise in dementia risk reduction research). Members were C.K. (DeNPRU-QM Operations Manager), S.Z. (early-career quantitative dementia researcher) and R.P. (carer for parents with dementia and co-chair of the DeNPRU-QM Patient and Public Engagement Group[30]).

Potential panellists were identified by the steering committee co-chairs through an iterative sampling approach to identify individuals in England with relevant expertise. Consistent with commonly accepted definitions of "expert" in Delphi studies[31], experts for the panel were defined as individuals with relevant expertise or lived experience in dementia prevention, policy, clinical practice, research or advocacy. Panellists were selected for their background in dementia prevention research, clinical practice in dementia, active roles in advocacy organizations, experience in dementia-related policy, and/or lived experience to achieve demographic, geographic and disciplinary diversity while including key stakeholder groups (people with lived experience, academic researchers, clinicians, policy experts, representatives from major dementia charities and lay experts) to ensure broad and balanced perspectives (Supplementary methods). Fifty-four potential panellists were invited via email (Supplementary methods) between April and September 2024 to take part in the workshop and survey.

Workshop and modified Delphi survey

We held a 2-day workshop at the University of Nottingham, UK, on 3 and 4 October 2024. The workshop comprised eight sessions of presentations on key topics, followed by group discussions to foster exchange of ideas and capture a wide range of perspectives (Supplementary methods). On the basis of the discussions, the

steering committee co-chairs drafted 52 initial statements that were presented in the final workshop session for panellists to propose edits or suggest additional statements. The refined statements served as the basis for the subsequent modified Delphi survey.

All panellists were invited to participate in the modified Delphi process, which comprised three rounds of online surveys conducted between October and December 2024, in which panellists were asked to rate their agreement with each statement on a five-point Likert scale (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree). Statements were refined iteratively by the steering committee after the workshop and each survey round (Supplementary methods).

Agreement and disagreement levels were determined for each statement, and consensus was defined as a supermajority threshold of ≥67% combined agreement (agree and strongly agree). Statements that reached consensus were graded further with a commonly used Delphi classification system[32,33] and assigned one of four grades: U (unanimous, 100% agreement), A (90–99% agreement), B (78–89% agreement), or C (67–77% agreement).

After each round, inductive content analysis of free-text responses was used to identify key themes and refine statements. Proposed revisions to statements were discussed among the steering group and changes were unanimously approved before incorporation into subsequent rounds. Statements with stable voting patterns and minimal suggestions for revision between rounds 1 and 2 were excluded from round 3.

Patient and public involvement and engagement

Patient and public involvement and engagement (PPIE) was embedded throughout the project, including presentation of insights from DeNPRU-QM Patient and Public Engagement Group focus groups (Supplementary methods), attendance of the workshop by PPIE panellists, and participation of PPIE panellists in the survey. PPIE participants were provided with an information pack, contributed to discussions and offered feedback on the statements generated for the modified. To support PPIE panellists in completing the online surveys, a key terms glossary was provided.

Ethics

Use of the Health Research Authority and UK Medical Research Council decision tool confirmed that ethics committee approval was not required for this project[34]. Panellists were informed of the purpose of the study, that participation was voluntary and they could withdraw at any time, and the survey responses were anonymous. Informed consent was indicated by participation in the workshop and accession to

round 1 of the survey. The study was conducted in accordance with the Declaration of Helsinki[35] and, where applicable, the International Conference on Harmonisation Good Clinical Practice Guidelines[36].

Results

Expert panel composition

Of the 54 experts invited, 41 (75%) agreed to participate in the workshop and/or online survey. Various reasons were given for non-participation (Supplementary table 1). The workshop was attended by all five steering committee members and 36 panellists (88%). Two panellists from the same advocacy organization submitted a joint response to the survey, reducing the total number of potential respondents to 40, of whom 38 (95%) completed all survey rounds. One panellist withdrew before the first survey round due to time constraints and one other did not respond to follow-up emails. Survey participants represented a range of demographic characteristics and expertise (Table 1, Supplementary box 1).

Consensus recommendations

On the basis of panellist feedback in the final workshop session, 17 statements were added to the 52 initially proposed by the steering committee co-chairs, resulting in a total of 69 statements. In round 1, 51 (74%) statements reached consensus and panellists provided 458 comments. In round 2, 75 statements were included, 60 (80%) reached consensus, and 360 comments were received. Before round 3, four statements that had reached the consensus threshold in round 2 were removed owing to redundancy upon unanimous agreement from the steering committee (Supplementary Table 2). In round 3, all 11 remaining statements (100%) reached consensus, and 155 comments were received.

Ultimately, the panel agreed on 56 recommendations for dementia prevention policy (Figure 2, Tables 2–5, Supplementary tables 3–6). The steering committee made minor edits (for example, grammatical adjustments) to these statements with no dissent from panellists during the final review (Supplementary table 7). Though most statements reached consensus after two or three rounds (Supplementary table 8), 19 remained unresolved (seven for public messaging, seven for individual-level interventions and five for research commissioning).

Public health messaging

Of the 33 proposed statements on public health messaging, 26 (79%) reached consensus, two with unanimous (grade U) consensus, eight with grade A, 11 with

grade B, and five with grade C (Table 2, Supplementary table 3). Panellists reached a strong consensus (grade A) that specific dementia risk factors should be prioritized in public health messaging (REC1.1). When asked whether each of the 14 risk factors identified by the Lancet Commission should be a focus of public health messaging, the panel reached grade B or C consensus that ten should (REC1.3.1 to REC1.3.10), whereas no consensus was reached for four (less education, air pollution, depression and traumatic brain injury). Panellists strongly agreed (grade A consensus) that messaging should focus on risk factors that are actionable at an individual level (REC1.2.1) and for which there is a high level of confidence – meaning strong, high-quality causal evidence – that interventions can reduce the risk and/or severity of dementia (REC1.2.3). A lower level of consensus (grade B) was reached on whether factors should be prioritized if they influence multiple risk areas or broader health outcomes (REC1.2.2). However, grouping risk factors into broad themes, such as physical health (REC1.12) was strongly supported (grade A) as a way to highlight their interconnectedness, encourage collective action and present recommendations in a more accessible and less overwhelming manner.

In terms of language, terminology that refers to a reduction in the risk of dementia (for example, "doing X could reduce the risk of dementia", REC1.7.3) was unanimously (grade U) preferred over alternatives such as "prevent" (no consensus) or "delay" (grade C, REC1.7.2), and the term "stop" (for example, "doing X to stop dementia") was strongly opposed (grade A against, REC1.7.1), reflecting the lack of evidence that dementia can be halted. In addition, unanimous consensus (grade U) was reached that the term "dementia" should be used in public messaging rather than specifying subtypes of dementia (for example, Alzheimer disease) to ensure clarity and accessibility (REC1.8). Though specific terms will differ with language and local contexts, the terms used would ideally reflect the same underlying principles – that the risk of dementia can be reduced but not eliminated, and that an umbrella term that includes all types of dementia is preferable to specific disease names.

While recognizing the need for short-term, pragmatic messaging decisions, panellists emphasized the importance of grounding public communication in an evolving evidence base (grade A, REC1.7). Strong agreement (grade A) was also achieved on the need for research into the effectiveness of messaging across socio-demographic groups (REC1.4) and key motivators of behaviour change (REC1.11).

Points that reached grade B consensus included the importance of balancing potential benefits and harms in messaging (REC1.5), cautious use of population attributable fractions owing to their complexity and risk of misinterpretation (REC1.6), and the need for balanced messaging to prevent stigma or blame (REC1.9). The need

to ensure that public communication conveys the structural actions being taken to address systemic risk factors (REC1.10) received grade C consensus.

Individual-level interventions

Sixteen statements on individual-level interventions were proposed, and consensus was achieved for nine (56%): three at grade A, five at grade B and one at grade C (Table 3, Supplementary table 4). During the workshop, three risk factors — social isolation, hypertension and hearing loss — were identified as priorities for evidence-based policy development owing to the strength of existing evidence and the amenability of these factors to an individual-level approach. Though consensus was reached for each of these factors across the survey rounds (REC2.3.1 to REC2.3.3), none achieved grade U or A consensus — social isolation and hypertension achieved grade B, whereas hearing loss achieved grade C. However, there was strong agreement (grade A) that risk factors should be prioritized according to the strength of epidemiological evidence (REC2.2.1). Panellists also agreed, albeit at a slightly lower level (grade B), that prioritization should account for the strength of evidence supporting a causal link between the risk factor and dementia (REC2.2.2) and whether addressing the risk factor adds value beyond existing public health programmes (REC2.2.3). No consensus was reached on the use of population attributable factors to guide risk factor selection for policy development.

Panellists highlighted the potential for individual-level interventions to inadvertently increase health inequities; for example, by reinforcing stigma around 'lifestyle' behaviours – such as exercise, diet and smoking – and by framing health outcomes as matters of personal responsibility. As a result, there was strong consensus (grade A) that interventions should be designed to promote health equity and reduce disparities (REC2.4). Furthermore, panellists strongly agreed (grade A) that outcomes in studies of risk factor modification should extend beyond cognitive scores to provide robust evidence for policymaking (REC2.1). Grade B consensus was reached that evidence is needed to assess the effectiveness of incorporating additional dementia prevention elements into routine health assessments, with the goal of encouraging risk reduction from midlife (REC2.5).

Population-level interventions

Nine statements addressing population-level interventions were proposed, and consensus was achieved for all (100%), including four grade A recommendations and five grade B recommendations (Table 4, Supplementary table 5). Panellists emphasized that dementia prevention should be a central component of cross-governmental strategies (including, for example, transport, environment and treasury

departments) for preventing ill health, integrating into existing non-communicable disease (NCD) prevention models. Strong support (grade A) was demonstrated for incorporating dementia into NCD frameworks that address alcohol use, tobacco use and sugar consumption (REC3.1.1 to REC3.1.3), and grade B consensus was achieved for incorporation into frameworks that address air pollution and occupational hearing damage (REC3.1.4 and REC3.1.5). Panellists also agreed (grade A consensus) on the need for systematic, high-quality data on dementia incidence to enable tracking of trends and evaluation of the impact of population-level interventions. Governments were identified as having a crucial role in ensuring that these data are collected and published to inform effective policy development (REC3.4).

Finally, echoing discussions about individual-level interventions, panellists agreed (grade B consensus) that health inequalities exist across dementia risk factors and that addressing these disparities is expected to reduce dementia risk among the most vulnerable groups (REC3.3). Grade B consensus was also reached on the point that reducing socioeconomic inequalities is important for reducing dementia risk (REC3.2). Additionally, panellists reached grade B consensus on the major public health value of identifying low-agency, scalable and equitable interventions for known dementia risk factors (REC3.5).

Research commissioning

Of 17 research commissioning statements, 12 (71%) reached consensus: four achieved grade U, six grade A, and two grade B (Table 5, Supplementary table 6). Unanimous support (grade U) was given for the funding of studies to evaluate the effectiveness of public messaging on dementia risk reduction across diverse population groups and life stages (REC4.2). A framework to guide such research that was proposed in round 1 of the survey received strong consensus. This framework includes assessment of whether messages are clear and understandable (grade U, REC4.3.1), perceived as actionable (grade A, REC4.3.2), relevant and meaningful (grade U, REC4.3.3) and trustworthy in both content and source (grade A, REC4.3.4).

Panellists also unanimously agreed (grade U consensus) on the need for robust national data systems to track dementia incidence, prevalence and other core outcomes (REC4.4). They also strongly advocated (grade A consensus) for embedding social care outcomes into these systems to fully capture the societal value of risk reduction (REC4.5). Grade B consensus was reached on the need for further research to confirm that dementia risk factors can be modified throughout the life course, with behaviour change research identified as especially valuable for informing policy and intervention design (REC4.1). Panellists stressed the importance of recognizing the size, scope and duration required for dementia prevention studies to have an

impact, particularly for midlife risk factors (grade A, REC4.9). Grade B consensus was also achieved for the statement that high-quality evidence from study designs other than randomized controlled trials (RCTs) could justify population-level interventions when RCTs are impractical (grade B, REC4.8).

Inclusivity emerged as a key theme for research commissioning, with panellists strongly advocating (grade A) for involvement of diverse stakeholders — particularly people at the highest risk of dementia — in research design. Ensuring equitable participation in the selection of core outcomes and intervention methods, as well as tailoring dissemination strategies to resonate with all populations, was viewed as essential for promoting health equity (REC4.6 and REC4.7).

Discussion

We brought together a diverse, multidisciplinary group of experts to bridge the translational gap between dementia risk research and public health policy for dementia prevention using a modified Delphi consensus approach. The process resulted in 56 policy recommendations that span public health messaging, individual-level and population-level interventions, and research commissioning, and this work established consensus on key issues in dementia prevention, producing actionable policy recommendations. The prioritization of practical, evidence-based approaches offers timely, actionable recommendations that could substantially strengthen national dementia prevention efforts without necessitating large-scale policy reforms. These recommendations also highlight crucial areas for future research and development, which is essential for continued progress.

Clear messaging to the public about reducing the risk of dementia should form part of a broader cross-government strategy for preventing ill-health. Currently, public understanding that the risk of dementia can be reduced remains very low compared with that for other noncommunicable diseases[11,37–39], and this limited awareness extends beyond the public to key policy decision-makers[40]. Consequently, both public engagement with risk reduction strategies and policymakers' ability to make informed, effective decisions on prevention are impaired. This disconnect illustrates the pressing need for a strategic shift in how dementia prevention is communicated, ensuring that messaging resonates with diverse target populations. Panellists reached consensus on core aspects of messaging, such as preferring the term "reduce" over "stop" or "prevent", and consistently highlighted the need for a more robust evidence base to identify the most clinically effective and cost-effective strategies. These findings align with existing research, which similarly calls for more comprehensive evaluation of various aspects of public health messaging and their impact on the uptake of prevention strategies[13]. Addressing these gaps is crucial to

advance dementia prevention while ensuring public health messaging does not exacerbate health inequities, particularly among minoritized groups. Though specific recommendations were informed by the local context, the underlying principles of clear, inclusive and faithful representation of evidence are applicable beyond England; adaptations can be made (for example, the exact terminology used) to suit other regional, cultural and linguistic context.

The dementia risk factors that should be prioritized for targeting with prevention strategies remain under debate, with unresolved questions surrounding the effectiveness of specific prevention methods[41] and the level of evidence required to inform policy[42]. Our findings echo this complexity, particularly in relation to individual-level interventions, for which 56% of statements did not reach consensus — the highest proportion among the four categories. Though panellists strongly agreed on the need to prioritize specific risk factors, no clear preference emerged with respect to which factors should take precedence. This lack of alignment might reflect the fact that the evidence base for individual-level interventions is large but still inconclusive, leading to uncertainty.

The combination of limited evidence and lack of alignment on the effectiveness of specific individual-level interventions underlines the need for further research, as well as work to understand why experts disagree and how the evidence base can be improved. The lack of clarity also complicates policymaking — without clear direction on which risk factors to prioritize, policymakers face challenges in selecting effective strategies. Nevertheless, panellists did agree on criteria for developing evidence-based policies for intervention to reduce dementia risk, providing a foundation for policy.

Statements related to population-level interventions received strong consensus, emphasizing the importance of structural approaches in reducing dementia risk. Though evidence is still evolving, policy strategies that target key risk factors have potential for long-term effects on dementia risk[43,44]. However, to effectively evaluate the impact of population-level interventions, high-quality, longitudinal, systematically collected data on dementia incidence, risk and protective factors, natural history and related outcomes would be needed. Panellists stressed the critical role of government health authorities and the importance of collaboration across government departments — for example, departments for transport, urban planning and treasury —in collecting and sharing these data to inform evidence-based decision-making in relation to all risk factors. Data collection must also be uniform and harmonized across regions to ensure a representative sample, as variations in practices between areas can exacerbate inequities. Additionally, panellists highlighted the need to integrate dementia prevention into existing

models for NCDs, particularly with respect to tobacco, alcohol and sugar, to further strengthen public health policy and position dementia as a preventable condition.

Addressing health inequalities was seen as a priority among panellists, emphasizing a need for prevention policies that address underlying determinants, such as societal inequalities. Targeting these root causes could help to prevent the emergence and persistence of multiple risk factors, with long-lasting benefits on many aspects of health and wellbeing beyond dementia risk. However, achieving these benefits requires a co-ordinated, cross-governmental strategy to prevent ill health, otherwise gaps in evidence and missed policy opportunities could have major effects on dementia incidence[45].

Throughout the consensus process, panellists identified the need for a stronger evidence base to support public health messaging and interventions as a key barrier to translating scientific findings into effective preventive policy. Though RCTs are typically considered the gold standard for producing evidence that interventions are effective, they are often challenging and/or impractical for assessment of interventions for dementia prevention. Panellists acknowledged the value of good-quality RCTs with appropriate outcome measures but agreed that when RCTs are impractical and population-level interventions are low-cost and feasible, alternative levels of evidence are acceptable. Evidence from studies other than RCTs, such as that from quasi experimental designs, can be rigorous and high-quality[46], and, given the potential for dementia prevention policy to positively affect health and care services, we cannot afford to wait for trials that might never materialize.

Strengths

A major strength of this work was the rigorous implementation of the modified Delphi methodology, including pre-registration and structured integration of anonymous feedback across three survey rounds. The increasing agreement between rounds highlights how feedback successfully refined statements and led to increasing consensus. Another core strength was the breadth and depth of expertise among the panel, which included leading dementia academics and clinicians, senior decision-makers from government, and representatives from leading third-sector organizations in England. This diversity ensured comprehensive evaluation of the complex, interdisciplinary issues that surround dementia prevention. Active PPIE engagement and inclusion of people with lived experience in the panel further enriched the insights, capturing a wide range of perspectives. As the first study of its kind in this space, these factors contributed to the robustness and relevance of the findings for real-world policy and practice.

Limitations

Though the modified Delphi method is a robust tool for assessing agreement and building consensus, it has inherent limitations. A key challenge is ensuring a truly representative expert panel. We achieved disciplinary, gender and ethnic diversity, but the panel predominantly comprised academics, which might have influenced the specificity of some recommendations and led to more detailed guidance for future research than for other areas. In line with the funding remit and focus on national policy that DeNPRU-QM has, all panellists were based in England, meaning the policy recommendations are shaped in part by the context in England. However, given the global public health impact of dementia and the novelty of the data, the policy recommendations are informative beyond England. Many could be applied to other high-income countries with comparable health systems (for example, Denmark and New Zealand) with minimal adaptation. The principles and findings are also likely to be generalizable to high-income countries that have different health systems (for example, USA and Australia) but face similar challenges related to dementia prevention, treatment and care. Dementia risk reduction is also an emerging priority in low-income and middle-income countries, where dementia incidence is increasing fastest[47], and the principles outlined here still hold in these locations. However, implementation will necessarily reflect local priorities, health system capacity and available resources[48]. For example, though public health messaging must always be tailored to local cultural and policy contexts, the principles of clarity, inclusivity and accuracy are universally relevant. Future research is needed to examine how cultural and social identities, including gender and ethnicity, influence the interpretation and uptake of prevention messages to ensure strategies are equitable and effective. Where policy recommendations were more closely linked to the policy and funding landscape in England, statements were refined for broader applicability (for example, recommending the integration of dementia prevention into routine health assessments rather than the NHS Health Check specifically). Together, these recommendations offer a robust foundation for countries to implement equitable, evidence-informed dementia prevention strategies while allowing flexibility for cultural and contextual adaptation.

We aimed to build on the work of the 2024 Lancet Commission on Dementia Prevention, Intervention and Care, which provided expert consensus on 14 major modifiable risk factors for dementia[9]. These risk factors had been assessed with valid methodology, are biologically plausible and precede dementia, the available evidence demonstrates dose-respondent associations of these factors with dementia risk that remain when measured a decade or more before onset, and interventions

that modify these factors have been shown to reduce dementia risk[9]. Other factors, such as diet and delirium, did not meet these criteria for inclusion in the Lancet Commission and were consequently not major discussion points during our workshop. Nevertheless, we recognize that other factors remain important, particularly diet given the strong evidence that links diet with health outcomes, such as diabetes and obesity, that are themselves associated with increased dementia risk. Consequently, we emphasize that additional factors are likely to be important for guiding future research and informing policy.

Finally, the 56 consensus recommendations are relatively broad and mostly outline a general approach rather than specific interventions that should be implemented. This limitation is a reflection of the limitations in the underlying evidence base and underscores the need for further research to strengthen the foundation for more targeted, actionable dementia prevention policies. Future work is needed to examine how these recommendations might be implemented through policy and legislation, how government structures and processes might facilitate or hinder their uptake, and how funding constraints and political commitment could affect implementation, recognizing that these factors will vary across different contexts.

Conclusions

In conclusion, our approach to dementia risk reduction policy has been guided by a diverse and multidisciplinary modified Delphi consensus process to ensure that the findings are relevant to key stakeholders, including governments, public health authorities and third sector organizations. The process resulted in 56 policy recommendations that provide a foundation for informed decision-making in dementia prevention, with implications for public health strategies and policy. Though ongoing evaluation and refinement will be needed, this work offers a clear pathway for developing targeted policies and interventions while underscoring the need for further research to strengthen the evidence base.

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Competing interests

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Author contributions

C.R.M. conceptualised the work. S.B., Y.B., C.Ca., C.Co., R.D., C.R.M., N.M., R.P., G.R., M.R., L.S. and J.S. secured funding. All authors contributed substantially to discussion and development of the content. H.D.-K. wrote the article. All authors reviewed and/or edited the manuscript before submission.

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Table 1 | Expert panel characteristics (n = 38)

Characteristic		***n***
n		38
Gender		
Women		21 (55%)
Men		17 (45%)
Ethnicity		
Asian – Chinese or Chinese British		1 (3%)
Asian – Indian or Indian British		2 (5%)
Asian – Pakistani or Pakistani British		1 (3%)
Mixed or multiple ethnic groups: White and Asian		2 (5%)
White		1 (3%)
White – British		28 (74%)
White – Other background		3 (8%)
Region of work		
East Midlands		5 (13%)
East of England		5 (13%)
London	Total	18 (47%)
	South East	2 (5%)
	South West	4 (11%)
West Midlands		1 (3%)
Yorkshire and The Humber		4 (11%)
Career stage		
Early-career professional		4 (11%)
Mid-career professional		9 (24%)
Senior professional		22 (58%)
PPI member		3 (8%)
Stakeholder group		
Academic (non-clinical)		8 (21%)
Arms-length body		1 (3%)

Clinical academic	20 (53%)
Dementia charity	2 (5%)
Government department	4 (11%)
PPI	3 (8%)

Percentages might not add up to 100% owing to rounding or panellists selecting more than one response (for example, working across multiple regions). PPI, patient and public involvement.

Table 2 | Consensus statements on public health messaging to reduce dementia risk

Recommendation			Grade[a]	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
REC1.1	Priority should be given to specific dementia risk factors to ensure that public health efforts focus on the areas with the greatest potential for reducing risk		A	0%	3%	3%	47%	47%
REC1.2	When prioritizing factors for public communication on dementia prevention, the following criteria should be considered:							
	REC1.2.1	Individual actionability (how feasible it is for individuals to act based on the information)	A	0%	3%	0%	47%	50%
	REC1.2.2	Impact on multiple outcomes (the extent to which the factor influences a range of health outcomes, such as multiple dementia risk factors and health beyond dementia risk (e.g. physical activity likely to impact positively on weight, blood pressure, diabetes mellitus and cholesterol))	B	0%	0%	11%	58%	32%
	REC1.2.3	A high level of confidence that intervening on the risk factor would have a beneficial effect in reducing dementia risk and/or severity	A	0%	3%	3%	42%	53%
REC1.3	Public health messaging should focus on specific dementia risk factors, including:							
	REC1.3.1	Physical inactivity	B	0%	3%	8%	37%	53%
	REC1.3.2	Social isolation	B	0%	8%	11%	37%	45%
	REC1.3.3	Obesity	B	0%	3%	11%	45%	42%
	REC1.3.4	Hypertension	B	0%	3%	8%	34%	55%
	REC1.3.5	Hearing loss	C	0%	11%	22%	38%	30%
	REC1.3.6	Low-density lipoprotein cholesterol	C	0%	8%	19%	38%	35%
	REC1.3.7	Diabetes mellitus	B	0%	8%	13%	42%	37%
	REC1.3.8	Smoking	B	0%	8%	11%	27%	54%
	REC1.3.9	Excessive alcohol consumption	C	0%	5%	8%	34%	53%
	REC1.3.10	Visual loss	C	0%	11%	22%	49%	19%
REC1.4	Testing different messaging strategies (e.g. language, mediums) across sociodemographic groups is essential for building an evidence base to support more effective, targeted communication in dementia prevention		A	0%	0%	3%	13%	84%
REC1.5	It is important to consider and balance the potential benefits and unintended harms of incorporating dementia prevention messaging into existing public health campaigns (e.g. unintentionally increasing health anxiety)		B	0%	5%	5%	54%	35%
REC1.6	In public communications, population attributable fractions should be used cautiously, given their complexity and the risk of misinterpretation or of overstatement of dementia risk reduction		B	0%	11%	0%	37%	53%
REC1.7	Testing various messaging strategies across sociodemographic groups is essential to determine the most effective and trustworthy methods for communicating actions related to dementia risk		A	0%	0%	5%	29%	66%
	REC1.7.1	Until an empirical evidence base is established, the following terms should be used in public communications about dementia: Stop (e.g. doing x to stop dementia	A (against)	29%	50%	11%	11%	0%
	REC1.7.2	Until an empirical evidence base is established, the following terms should be used in public communications about dementia: Delay (e.g. doing x to delay dementia)	B	0%	8%	11%	50%	32%
	REC1.7.3	Until an empirical evidence base is established, the following terms should be used in public communications about dementia: Reduce (e.g. doing x to reduce risk of dementia)	U	0%	0%	0%	53%	47%
REC1.8	The term "dementia" should be preferred over specific dementia subtypes in public communications about prevention (e.g.		U	0%	0%	0%	24%	76%

	"dementia prevention" vs "Alzheimer disease prevention"), unless there is a compelling reason to specify a subtype (e.g. when evidence specifically relates to a particular type of dementia)						
REC1.9	Public communication about dementia risk reduction should encourage positive actions that individuals and communities can take while clarifying that some risk factors are beyond personal control to prevent stigma or blame	B	0%	3%	8%	24%	66%
REC1.10	Consider specifying population-level interventions that have been introduced alongside calls for individual action to highlight the balance between structural and personal factors in reducing dementia risk	C	3%	5%	19%	42%	30%
REC1.11	It is important to gather evidence on effective motivators that encourage individuals to take proactive steps in addressing dementia risk, ensuring that any messages are both motivating and actionable	A	0%	0%	3%	37%	61%
REC1.12	In public communications, consider grouping dementia risk factors into common themes (e.g. physical health) to improve understanding of their interrelated nature and how risk factors can be addressed collectively	A	0%	3%	3%	47%	47%

Percentages might not add up to 100% owing to rounding. For percentages to one decimal place, see Supplementary table 7. [a]Grade is based on the percentage of combined agreement (strongly agree and agree); U denotes unanimous (100%) agreement A denotes 90–99% agreement; B denotes 78–89% agreement and C denotes 67–77% agreement. REC, recommendation.

Table 3| Consensus statements on individual-level interventions to reduce dementia risk

Recommendation			Grade[a]	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
REC2.1	There is a need to avoid relying solely on changes in cognitive scores when designing new studies for risk factor modification		A	0%	5%	0%	51%	43%
REC2.2	The development of evidence-based policies for dementia risk factor interventions should be based on:							
	REC2.2.1	Strength of epidemiological evidence	A	0%	0%	5%	35%	60%
	REC2.2.2	Confidence that the presence of the risk factor causes dementia	B	0%	3%	16%	47%	34%
	REC2.2.3	Potential added value beyond existing public health programmes (e.g. by adding risk factors, interventions or population coverage not already included)	B	0%	0%	11%	58%	32%
REC2.3	The development of evidence for certain risk factors, as outlined in REC2.2, should be prioritized for:							
	REC2.3.1	Social isolation	B	0%	3%	18%	50%	29%
	REC2.3.2	Hypertension (based on scope for added value over existing policy through tighter blood pressure control targets through starting at a younger age)	B	0%	3%	18%	47%	32%
	REC2.3.3	Hearing loss	C	0%	5%	22%	54%	19%
REC2.4	All interventions aimed at reducing dementia risk should be designed so they promote health equity		A	0%	3%	5%	18%	74%
REC2.5	Evidence is needed to assess the effectiveness of incorporating additional dementia prevention elements into routine health assessments with a view to encouraging risk reduction that begins in midlife		B	0%	0%	11%	46%	43%

Percentages might not add up to 100% owing to rounding. For percentages to one decimal place, see Supplementary Table 3. [a]Grade based on the percentage of combined agreement (strongly agree and agree); U denotes unanimous (100%) agreement, A denotes 90–99% agreement, B denotes 78–89% agreement and C denotes 67–77% agreement. REC, recommendation.

Table 4 | Consensus statements on population-level interventions to reduce dementia risk

Recommendation		Grade	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
REC3.1	Dementia prevention should be central to a cross-governmental strategy for preventing ill health and should be integrated into non-communicable disease prevention models for:						
	REC3.1.1 Alcohol	A	0%	0%	3%	46%	51%
	REC3.1.2 Tobacco	A	0%	0%	3%	46%	51%
	REC3.1.3 Sugar	A	0%	0%	9%	49%	43%
	REC3.1.4 Air pollution	B	0%	0%	11%	43%	46%
	REC3.1.5 Occupational hearing damage	B	0%	0%	21%	50%	29%
REC3.2	Evidence suggests that the highest projected dementia incidence rates are in more deprived groups, so reducing socioeconomic inequalities would be expected to help lower dementia risk	B	0%	3%	11%	27%	59%
REC3.3	Health inequalities exist for all dementia risk factors. Addressing these health inequalities would be expected to reduce dementia risk among the groups most at risk	B	0%	6%	8%	31%	56%
REC3.4	Collecting systematic, high-quality data on dementia incidence is essential for understanding trends in the population and measuring the impact of population-level interventions. Government agencies and health authorities have a crucial role in ensuring that this data is collected and published to inform policy	A	0%	0%	3%	22%	76%
REC3.5	There will be major public health value in identifying low-agency, scalable, and equitable interventions for known risk factors associated with dementia	B	0%	0%	11%	24%	66%

Percentages might not add up to 100% owing to rounding. For percentages to one decimal place, see Supplementary Table 3. [a]Grade based on the percentage of combined agreement (strongly agree and agree); U denotes unanimous (100%) agreement, A denotes 90–99% agreement, B denotes 78–89% agreement and C denotes 67–77% agreement. REC, recommendation.

Table 5 | Consensus statements on research commissioning to reduce dementia risk

Recommendation		Grade	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
REC4.1	Research on behaviour change would be valuable for informing policy and designing interventions for trials	B	3%	5%	5%	39%	47%
REC4.2	Research is needed to refine public messaging about dementia prevention across the life course and to effectively target different groups	U	0%	0%	0%	40%	61%
REC4.3	To assess the potential effectiveness of public messaging, the following framework should be applied to determine whether messaging is:						
	REC4.3.1 Clear and understandable	U	0%	0%	0%	35%	65%
	REC4.3.2 Perceived as actionable	A	0%	0%	3%	35%	62%
	REC4.3.3 Relevant and meaningful	U	0%	0%	0%	43%	57%
	REC4.3.4 Trustworthy in both content and source	A	0%	0%	5%	27%	68%
REC4.4	Harnessing national data infrastructure is essential for tracking dementia incidence, prevalence and outcomes	U	0%	0%	0%	21%	79%
REC4.5	Embedding social care outcomes within national data infrastructure is critical, as these outcomes are needed to fully capture the societal value of reducing dementia incidence	A	0%	0%	5%	22%	73%
REC4.6	Co-design interventions and core outcome measures with a diverse range of stakeholders to ensure they are acceptable and relevant to individuals who may develop dementia	A	0%	0%	5%	40%	55%
REC4.7	Dementia prevention research should address health inequalities by ensuring that those most at risk have the opportunity to participate and that research is designed and disseminated with inclusivity in mind	A	0%	3%	3%	26%	68%
REC4.8	When an RCT is impractical or when a population-level intervention can be implemented at low cost and with minimal burden, the intervention should be considered based on other types of evidence without the need for an RCT	B	0%	3%	14%	49%	35%
REC4.9	Research commissioning should consider the substantial size and duration required for effective dementia prevention studies addressing midlife risk factors	A	0%	0%	8%	33%	58%

Percentages might not add up to 100% owing to rounding. For percentages to one decimal place, see Supplementary Table 3. [a]Grade based on the percentage of combined agreement (strongly agree and agree); U denotes unanimous (100%) agreement, A denotes 90–99% agreement, B denotes 78–89% agreement and C denotes 67–77% agreement. RCT, randomized controlled trial; REC, recommendation.