

FOREWORD

Dementia is a rapidly growing public health problem affecting around 50 million people around the world. There are nearly 10 million new cases every year and this figure is set to triple by 2050. Dementia is a major cause of disability and dependency among older people and can devastate the lives of affected individuals, their carers and families. Additionally, the disease inflicts a heavy economic burden on societies as a whole, with the costs of caring for people with dementia estimated to rise to US\$ 2 trillion annually by 2030.

While there is no curative treatment for dementia, the proactive management of modifiable risk factors can delay or slow onset or progression of the disease. In May 2017, the World Health Assembly endorsed a *Global Action Plan on the Public Health Response to Dementia 2017-2025* urging Member States to develop, as soon as feasible, ambitious national responses to address this challenge. Dementia risk reduction is one of the seven action areas in the global action plan.

These new WHO guidelines provide the knowledge base for health care providers, governments, policy-makers and other stakeholders to reduce the risks of cognitive decline and dementia through a public health approach. As many of the risk factors for dementia are shared with those of non-communicable diseases, the key recommendations can be effectively integrated into programmes for tobacco cessation, cardiovascular disease risk reduction and nutrition.

I urge all stakeholders to make the best use of these recommendations to improve the lives of people with dementia, their carers and families.

Dr Ren Minghui

Assistant Director-General for Universal Health Coverage/ Communicable and Noncommunicable Diseases, World Health Organization

EXECUTIVE SUMMARY

INTRODUCTION

Dementia is a rapidly growing global public health problem. Worldwide, around 50 million people have dementia, with approximately 60% living in low- and middle-income countries (LMIC). Every year, there are nearly 10 million new cases. The total number of people with dementia is projected to reach 82 million in 2030 and 152 million in 2050. Dementia leads to increased costs for governments, communities, families and individuals, and to loss in productivity for economies. In 2015, the total global societal cost of dementia was estimated to be US\$ 818 billion, equivalent to 1.1% of global gross domestic product (GDP).

Crucially, while age is the strongest known risk factor for cognitive decline, dementia is not a natural or inevitable consequence of ageing. Several recent studies have shown a relationship between the development of cognitive impairment and dementia with lifestyle-related risk factors, such as physical inactivity, tobacco use, unhealthy diets and harmful use of alcohol. Certain medical conditions are associated with an increased risk of developing dementia, including hypertension, diabetes, hypercholesterolemia, obesity and depression. Other potentially modifiable risk factors include social isolation and cognitive inactivity. The existence of potentially modifiable risk factors means that prevention of dementia is possible through a public health approach, including the implementation of key interventions that delay or slow cognitive decline or dementia.

In May 2017, the Seventieth World Health Assembly endorsed the *Global action plan on the public health response to dementia 2017–2025* (WHO, 2017a). The action plan includes seven strategic action areas and

dementia risk reduction is one of them. The action plan calls upon the WHO Secretariat to strengthen, share and disseminate an evidence base to support policy interventions for reducing potentially modifiable risk factors for dementia. This involves providing a database of available evidence on the prevalence of those risk factors and the impact of reducing them; and supporting the formulation and implementation of evidence-based, multisectoral interventions for reducing the risk of dementia.

The risk reduction guidelines for cognitive decline and dementia are aligned with WHO's mandate to provide evidence-based guidance for a public health response to dementia.

GUIDELINE DEVELOPMENT METHODS

The process of development of these guidelines followed the *WHO handbook for guideline development* and involved:

- 1) recruitment of the guideline development group (GDG);
- 2) declaration of interest by GDG members and peer reviewers;
- 3) scoping review to formulate questions and select outcomes;
- 4) identification, appraisal and synthesis of available evidence;
- 5) formulation of recommendations with inputs from a wide range of stakeholders; and
- 6) preparation of documents and plans for dissemination.

The GDG, an international group of experts, provided input into the scope of the guidelines and assisted the steering group in developing the key questions. A total of 12 PICO (population, intervention, comparison and outcome) questions were developed.

To address the PICO questions, a series of searches for systematic reviews was conducted and Grading of Recommendations Assessment, Development and Evaluation (GRADE) evidence profiles prepared. During a meeting at WHO headquarters in Geneva, 2–3 July 2018, the GDG discussed the evidence, sought clarifications and interpreted the findings in order to develop recommendations. The GDG considered the balance of benefit and harm of each intervention; values and preferences; costs and resource use; and other relevant practical issues for providers in LMIC.

When making a strong recommendation, the GDG was confident that the desirable effects of the intervention outweigh any undesirable effects. When the GDG was uncertain about the balance between the desirable and undesirable effects, the GDG issued a conditional recommendation. **Strong recommendations** imply that most individuals would want the intervention and should receive it, while **conditional recommendations** imply that different choices may be appropriate for individual patients and they may require assistance at arriving at management decisions. The GDG members reached a unanimous agreement on all the recommendations and ratings.

SUMMARY OF RECOMMENDATIONS

Physical activity interventions

Physical activity should be recommended to adults with normal cognition to reduce the risk of cognitive decline.

Quality of evidence: moderate

Strength of the recommendation: strong

Physical activity may be recommended to adults with mild cognitive impairment to reduce the risk of cognitive decline.

Quality of evidence: low

Strength of the recommendation: conditional

Tobacco cessation interventions

Interventions for tobacco cessation should be offered to adults who use tobacco since they may reduce the risk of cognitive decline and dementia in addition to other health benefits.

Quality of evidence: low

Strength of the recommendation: strong

Nutritional interventions

The Mediterranean-like diet may be recommended to adults with normal cognition and mild cognitive impairment to reduce the risk of cognitive decline and/or dementia.

Quality of evidence: moderate

Strength of the recommendation: conditional

A healthy, balanced diet should be recommended to all adults based on WHO recommendations on healthy diet.

Quality of evidence: low to high (for different dietary components)

Strength of the recommendation: conditional

Vitamins B and E, polyunsaturated fatty acids and multi-complex supplementation should not be recommended to reduce the risk of cognitive decline and/or dementia.

Quality of evidence: moderate

Strength of the recommendation: strong

Interventions for alcohol use disorder

Interventions aimed at reducing or ceasing hazardous and harmful drinking should be offered to adults with normal cognition and mild cognitive impairment to reduce the risk of cognitive decline and/or dementia in addition to other health benefits.

Quality of evidence: moderate (for observational evidence)

Strength of the recommendation: conditional

Cognitive interventions

Cognitive training may be offered to older adults with normal cognition and with mild cognitive impairment to reduce the risk of cognitive decline and/or dementia.

Quality of evidence: very low to low

Strength of the recommendation: conditional

Social activity

There is insufficient evidence for social activity and reduction of risk of cognitive decline/dementia.

Social participation and social support are strongly connected to good health and well-being throughout life and social inclusion should be supported over the life-course.

Weight management

Interventions for mid-life overweight and/or obesity may be offered to reduce the risk of cognitive decline and/or dementia.

Quality of evidence: low to moderate

Strength of the recommendation: conditional

Management of hypertension

Management of hypertension should be offered to adults with hypertension according to existing WHO guidelines.

Quality of evidence: low to high (for different interventions)

Strength of the recommendation: strong

Management of hypertension may be offered to adults with hypertension to reduce the risk of cognitive decline and/or dementia.

Quality of evidence: very low (in relation to dementia outcomes)

Strength of the recommendation: conditional

Management of diabetes mellitus

The management of diabetes in the form of medications and/or lifestyle interventions should be offered to adults with diabetes according to existing WHO guidelines.

Quality of evidence: very low to moderate (for different interventions)

Strength of the recommendation: strong

The management of diabetes may be offered to adults with diabetes to reduce the risk of cognitive decline and/or dementia.

Quality of evidence: very low

Strength of the recommendation: conditional

Management of dyslipidaemia

Management of dyslipidaemia at mid-life may be offered to reduce the risk of cognitive decline and dementia.

Quality of evidence: low

Strength of the recommendation: conditional

Management of depression

There is currently insufficient evidence to recommend the use of antidepressant medicines for reducing the risk of cognitive decline and/or dementia.

The management of depression in the form of antidepressants and/or psychological interventions should be provided to adults with depression according to existing WHO mhGAP guidelines.

Management of hearing loss

There is insufficient evidence to recommend use of hearing aids to reduce the risk of cognitive decline and/or dementia.

Screening followed by provision of hearing aids should be offered to older people for timely identification and management of hearing loss as recommended in the WHO ICOPE guidelines.
