Detection of Suspected Dementia and Risk Factors Among Older Adults in Maldives

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Dementia is a neurodegenerative condition affecting the brain, resulting in symptoms such as memory loss, difficulty with thinking, problem solving and language to the extent that it interferes with daily life. Dementia is associated with earlier mortality, the seventh leading cause of death globally and the main cause of dependence and disability among older people.[1]

Maldives is a South Asian island country located in the Indian Ocean, where dementia is a national concern due to a high prevalence of risk factors, as well as a projected increase in older people and people with dementia. The 2022 census counted a population of 515,132 people, with 20,850 (4.0%) people aged 65 years and older. However, the proportion of older people is rapidly increasing in the Maldives, projected to exceed seven percent by 2030 and fourteen percent by 2054.[2] The first STEPwise approach to non-communicable disease risk factor surveillance (STEPS) survey in 2010 found a high prevalence of non-communicable diseases (NCD) and risk factors for dementia: hypertension (32.9%), hypercholesterolaemia (54.9%), overweight (65.5%), central obesity (54.1%) and smoking (9.9%).[3] The Global Burden of Disease study estimated that the number of people with dementia in the Maldives will increase by 554%, from 1703 people in 2019 to 11,135 people in 2050.[4] Thus, proactive measures are required to raise awareness of dementia to enable an early diagnosis and promote risk reduction measures; in addition to establishing comprehensive health and social infrastructure for diagnosis, management and support for people with dementia.

Dementia prevention involves primary prevention to prevent people with normal cognitive function from developing dementia, secondary prevention focusing on early detection and treatment of dementia, and tertiary prevention for managing and slowing the progression of dementia.[5] A study on brain health from Belgium found that among adults aged 40 to 75 years, 65% of the participants were not aware of opportunities for dementia risk reduction, 54% felt they did not have the necessary knowledge to make brain behavioural changes, and 89% indicated they want more information on improving brain health.[6] For the Maldives, while there is no information available regarding public knowledge on dementia, a public awareness campaign on brain health to improve awareness of risk factors and practices to reduce dementia risk, with opportunistic case-finding to allow early diagnosis was required.

In Kenya, a community-based approach involved utilising community health workers to ask basic questions on risk factors and administer basic cognitive testing to screen older adults for dementia.[7] In Brunei, dementia screening as part of a dementia awareness programme in 2023 involved administering a survey of dementia risk factors, possible symptoms of dementia and the Mini-COG as a screening tool. This was followed by providing information on early warning signs of dementia and risk reduction measures for people aged 50 years and older. Participants with identified risk factors, symptoms or issues identified from the Mini-COG were advised to see their primary care doctor regarding these concerns.[8] A similar community screening and awareness programme is proposed for the detection of suspected dementia and risk factors among older adults in Maldives. The Mini-COG has been shown to have a high sensitivity for detecting mild cognitive impairment compared to dementia screening tools and has been used for dementia screening in non-English settings.[9]

The main challenge is the Maldives has a very geographically dispersed population. Its' small land area of 298 square kilometres is scattered across 90000 square kilometres and 1190 islands, of which 198 are inhabited. Islands are grouped into atolls, where reefs of several islands enclose a ring-like lagoon; the 26 natural atolls are divided into 20 administrative atolls. Dementia screening is planned for four cities of Maldives; Male, Addu, Fuvahmulah and Kulhudhuffushi city. City Councils and regional hospitals were invited partners for the awareness programme and information regarding planned screening times will be shared a month prior. The screening tool and Mini-COG will be administered in-person by trained volunteers, who will be able to explain the relevance of the participant responses, advise whether the responses requiring seeking medical attention, dementia prevention measures and answer frequently asked questions regarding dementia.[10] Volunteers will be selected based on their experience in community health or services, elderly care or social work, as well as recommendations from engaged partners and stakeholders. The volunteer training is planned as a Train-the-Trainers workshop, after which they are expected to screen at least 15 participants to demonstrate their capabilities. Given the geographical challenges, contact person from the council or hospital in each city will keep a record of certified screeners to ensure the sustainability of future interval screening.

Participants are residents of the cities, targeting older people aged 60 years or older, or aged 50 years and older with NCDs or risk factors for developing dementia (including but not limited to cardiac disease, diabetes mellitus, renal impairment and previous stroke). For those outside the target demographics, they will still be allowed to complete the screening tool, receive information pamphlets, and attend awareness talks, but will be excluded from analysis. The questionnaires will be administered in English or Dhivehi by the volunteers. A copy of the questionnaire is available as an Appendix.

There are several unique considerations in implementing this dementia screening approach in the Maldives. These include the country's distinctive linguistic profile and archipelagic geography. To ensure cultural and linguistic relevance, the screening tool and instructions were provided in both the local language (Dhivehi) and English. Local volunteers familiar with Maldivian older adults were trained to conduct screening, while city councils and hospitals were engaged to support participant recruitment and implementation. The initial phase focuses on four urban centres due to feasibility, existing infrastructure and stakeholder readiness. However, a phased plan is developed to expand screening to remote islands via atoll-level health facilities. While the Mini-COG has not been formally validated in the Maldives, forward and back translation by bilingual experts, along with piloting for comprehension and cultural appropriateness ensured conceptual accuracy. Outcome metrics include number of individuals screened and the proportion referred for further assessment. Programme evaluation will consider process indicators such as volunteer training completion and screening uptake, short-term outcomes such as improvement in dementia knowledge scores, and medium-term outcomes including referral completion and follow-up. To support sustainability, records of certified volunteers are maintained by local councils or hospitals. These volunteers may be mobilised for future dementia awareness and screening events. It is anticipated this initiative will be repeated at regular intervals as part of broader health promotion and public education efforts in the Maldives.

It is hoped that this community programme will screen older people and those with risk factors for dementia to identify the prevalence of self- reported risk factors and potential symptoms of dementia, as well as provide information to raise awareness about dementia symptoms, risk factors and risk reduction approaches in the Maldives. It is expected that this approach can be adapted to other localities, given the expected increase in dementia prevalence and a need to prepare for this health challenge globally.

Disclosure

The authors declared no conflicts of interest.

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