

## ORIGINAL ARTICLE

## Factors Associated With Probable Dementia Among Older People in Bau District, Sarawak

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## ABSTRACT

**Introduction:** Dementia is a significant public health concern that affects older people and is a major cause of morbidity and mortality. A wide range of risk factors was associated with dementia. This study aims to determine the prevalence of probable dementia and its determinants among older people in Bau District, Sarawak. **Methods:** A cross-sectional study was conducted in Bau District among older residents. A multi-stage sampling was used. This research applied a structured questionnaire covering sociodemographics, mental health, behaviours, and medical conditions. The Elderly Cognitive Assessment Questionnaire (ECAQ) was used to measure the probable dementia. Data were collected through researcher-administered interviews. SPSS version 27 was used for data entry and analysis, including descriptive statistics, Chi-Square tests, and binary logistic regression to identify predictors of probable dementia. **Results:** 382 respondents completed the questionnaires, with an 86.2% response rate. Probable dementia prevalence was 15.4%, with significant associations found for age, gender, marital status, education, occupation, alcohol use, physical activity, gambling, and depression. Binary logistic regression analysis identified older age (OR=27.676, 95% CI=8.250, 92.841;  $p < .001$ ), lack of formal education (OR=25.204, 95% CI=4.490, 141.499;  $p < .001$ ), and the presence of depression (OR=3.189, 95% CI=1.451, 7.101;  $p = .004$ ) as significant predictors of probable dementia. **Conclusion:** This research identified probable dementia prevalence and associated factors among older adults in Bau District, Sarawak, providing insights for targeted health interventions. Further studies should explore detection strategies and prevention across diverse rural and urban populations.

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## INTRODUCTION

Dementia is a significant public health concern that affects older people and is a major cause of morbidity and mortality (1). It is a broad term encompassing a range of cognitive impairments, such as diminished cognitive abilities, memory deficits, compromised decision-making skills, and reduced attention span. It does not refer to a specific disease but rather denotes a general deterioration in cognitive functioning (2). According to the World Health Organization (WHO), there are over 55 million dementia cases worldwide, with 10 million new cases each year. From 2030 to 2050, cases are predicted to rise from 78 million to 139 million due to population growth and ageing (3). The prevalence of dementia varies worldwide, with higher prevalence in low- to middle-income countries associated with rapid ageing (4). The variation in the global prevalence of dementia can be attributed to differences in sociodemographic background, study tools, and narrated definitions. It was

reported that the prevalence of dementia in Northern Portugal was 1.3%, at which screening was done using the Mini-Mental State Examination (MMSE) and the Montreal Cognitive Assessment (MoCA) (5). In Australia, a self-reported study was conducted, and it was reported that the prevalence of dementia among those aged 65 and older was 5.3% (6). However, MMSE and MoCA may have limitations when used among older people living in Bau, Sarawak, due to potential cultural and linguistic differences and variations in education levels. Age, gender, and family history of dementia are considered non-modifiable risk factors for the development of dementia (7). It was reported that the modifiable risk factors associated with dementia were educational attainment, hearing loss, traumatic brain injury (TBI), hypertension, excessive alcohol use, and obesity (8). Additionally, in the later stages of life, several modifiable risk factors were discovered, including smoking, depression, social isolation, physical inactivity, diabetes, and air pollution. The presence of depression was found to be significantly associated with a 2.5-fold greater risk of developing dementia (9). Most worldwide studies have been centred on documenting the prevalence of dementia, while a limited number of studies have specifically examined the prevalence

of probable dementia. The diagnosis of probable dementia is established when the patient fulfils the criteria for dementia, characterised by the progressive development of symptoms spanning from months to years, accompanied by apparent cognitive deterioration as observed by healthcare professionals (10). Lack of probable dementia detection leads to missed opportunities to treat patients, improve their quality of life (e.g., with medications and referrals), reduce patient and family burden, and reduce hospitalisation, institutionalisation, and healthcare costs (10).

A nationwide survey was conducted among older Malaysian people using the Identification and Intervention for Dementia in Elderly Africans (IDEA) Cognitive Screen, and the study reported that the prevalence of probable dementia was 8.5% (11). The IDEA Cognitive Screen, designed for low-literacy African populations, may be applicable in Bau District but requires cultural and linguistic adaptation and local validation. The finding was similar to the Malaysian NHMS 2018, which used a similar IDEA Cognitive Screen tool and reported that the overall prevalence of probable dementia was 8.5% (12). In another study conducted involving all states in Malaysia, the prevalence of dementia was 14.3%, further supported by another systemic review (13, 14). The study used the Geriatric Mental State (GMS) B3 survey alongside AGE-CAT software, which integrates a questionnaire, interviews, and computer-based diagnosis. While GMS-AGE-CAT is a comprehensive tool, its applicability in Bau District may be limited without cultural and linguistic adaptation. In Sarawak, a study done among older Melanau people in Mukah representing the Indigenous population showed that the prevalence of probable dementia and dementia were 27.3% and 10.5%, respectively (15). In that study, dementia assessment was conducted using the Elderly Cognitive Assessment Questionnaire (ECAQ), which was appropriate for older individuals with lower literacy levels. Those who screened positive for probable dementia underwent further evaluation by a psychiatrist to confirm the diagnosis. In a study conducted among older adults in Kuching, Sarawak, the prevalence of probable dementia was 40.0% when assessed using the Elderly Dementia Questionnaire (EDQ) (16). The EDQ showed a sensitivity of 71.2% and a relatively low specificity of 59.5%, which may have contributed to an overestimation of probable dementia prevalence among older adults in Kuching. However, this was a validation study with a limited sample size, therefore, it was not designed to provide an accurate prevalence estimate.

These previous studies on dementia among older populations in Sarawak have provided valuable insights into its prevalence and associated factors. However, these studies were conducted in different regions with distinct socio-cultural and environmental contexts. While the study conducted in Mukah among Melanau older adults shares notable similarities with this

research, key differences were considered. The Bidayuh and Melanau are indigenous groups in Sarawak, Malaysia, with distinct linguistic, cultural, and historical backgrounds. The Bidayuh, primarily found in Kuching and Serian, speak the Bidayuh languages (multiple dialects), whereas the Melanau, residing in Mukah and Dalat, are coastal dwellers who speak the Melanau language (17, 18). Furthermore, national estimates may not accurately reflect the situation in specific rural or indigenous communities like Bau. Bau District, with its unique demographic composition, has not been specifically studied in this regard. Given potential variations in genetic predisposition, lifestyle factors, healthcare access, and cultural perceptions of aging and cognitive decline, a localized assessment is necessary. By replicating the previous studies in Bau District, we aim to better understand dementia prevalence in this population, identify region-specific risk factors, and inform locally relevant public health strategies to enhance dementia care and prevention efforts.

Early clinical identification of dementia is challenging in the primary care setting due to the limited accessible options. Hence, using dementia screening methods to detect probable dementia at an earlier stage is advantageous for prompt intervention and subsequent development of rehabilitation strategies (1). A study was conducted to investigate the health disparities that exist in rural Malaysia. The difficult geographical features and rural landscape of East Malaysia were reported to be the challenges in developing medical infrastructure. Additionally, hospitals were distant from rural residences, and service quality impeded access to healthcare in rural areas (19). Low economic status, high healthcare costs, a lack of advanced equipment in rural hospitals, insufficient physicians, other medical staff shortages, and inadequate home care in rural areas all contribute to older people's limited access to good health. As a result, the increased problems they face in rural areas may raise the likelihood of cognitive decline progressing to probable dementia.

The primary objective of this study was to determine the prevalence and factors associated with probable dementia among older Dayak people in Bau District, Sarawak. The specific objective was to determine the relationships between the respondent's sociodemographic background, behavioural risks, medical-related risks, and probable dementia. This study also aimed to increase awareness of probable dementia and its causes among the Bau District communities. Implementing effective risk management strategies could help delay the onset of dementia.

## METHODS

### Setting, study populations and sample size

In this research, a cross-sectional study design was employed. This study utilised a questionnaire-based