

# Comparison of Dementia Knowledge and Contributing Factors between Indonesian Workers in Rural and Urban Areas

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## ABSTRACT

In Indonesia, the number of patients with dementia has been considered relatively small, but it may increase due to future ageing. There is a lack of care services for dementia sufferers, limited access to medical institutions that can diagnose and treat it, and a lack of sufficient information on dementia for citizens. Because of this, most elderly Indonesians stay with their families at home. The purpose of this study is to compare the knowledge about dementia between Indonesian workers in rural and urban areas, as well as to determine the factors contributing to their knowledge. This is a cross-sectional study with online questionnaires used to obtain demographic data and information about the number, physical condition, and dementia symptoms of elderly people and their family members. The knowledge on dementia held by workers in communities was measured by the Dementia Knowledge Assessment Scale (DKAS). Data were collected online using the snowball technique, through a survey shared on social media, from 7–10 July 2020. The inclusion criteria specified respondents who were above 40 years with family members who were 60 years and over (elderly). A total of 1147 respondents completed the survey; however, only 944 (82.3%) worked, while 632 (79.4%) and 312 (88.9%) lived in urban and rural areas, respectively. Only those who reported being workers were included in this research. Of the respondents, 32.6% worked as private employees and worked more than eight hours per day (69.6%). More than 80% of study participants worked outside their home. Approximately 70% of respondents had received information about dementia in print media, electronic media, posters, or from conferences, seminars, and workshops. Likewise, the value of DKAS for respondents who lived in urban areas (74.4%) was better than those who lived in rural areas (65.4%). The t-test analysis results showed that there were several significant differences between respondents that lived in urban and rural areas, such as occupation type, educational background, working hours, information about dementia, number of elderlies as family members, physical condition of elderly members, and support for elderly members. However, there were no significant differences for dementia knowledge and perception, age of respondents, age of elderly family members, or live together with elderly between respondents who lived in urban and rural areas. The logistic regression model identified the factors that influenced knowledge about dementia among rural participants, with those who were aged 45–49 years, female, and university graduates reporting the highest knowledge. Being female, a civil employee, an entrepreneur, and a university graduate predicted more knowledge among workers in urban areas.

**Keywords:** Dementia, Elderly, Rural, Urban, Perception, Workers, Indonesia

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## INTRODUCTION

The population of older people has increased significantly all over the world. In nearly five decades, the percentage of older Indonesian people has doubled (1971–2019), reaching 9.6% (25 million). Of all the elderly in Indonesia, those classified as young elderly (60–69 years) comprised most of the elderly population at 63.82%, followed by middle elderly (70–79 years) at 27.68% and older elderly (80+ years) at 8.5%. (Badan Pusat Statistik, 2018)

Today, with the increasing ageing population in all parts of the world, the number of newly diagnosed dementia cases is over 9.9 million each year worldwide, equating to one new case every 3.2 seconds (World Health Organization, 2019). Approximately 58% of dementia patients live in low- and middle-income countries, and this percentage is expected to rise to 68% by 2050 (Alzheimer Association, 2020). In Indonesia, the number of people with dementia is estimated to increase from 960,000 in 2013 to 1.89 million in 2030 and 3.98 million in 2050 (Alzheimer's Disease International, 2016).

Dementia is commonly defined as a chronic disease characterised by a progressive and irreversible decline in

cognitive functions and mainly affects older people, particularly those aged over 65 years (World Health Organization, 2018). It has also been recognised as a rapidly growing public health problem affecting millions of people around the world. There are nearly 10 million new cases every year, and this number is predicted to increase threefold by 2050 (Alzheimer Association, 2020). Alzheimer's disease (AD) is the most common type of dementia suffered by 60%–80% of total dementia cases.

In Indonesia, the number of patients with dementia was thought to be relatively low, but it may increase due to future ageing. There is a lack of care services, limited access to medical institutions that can diagnose and treat, and a lack of sufficient information on dementia for citizens. Almost 80% of the public are concerned about developing dementia at some point, and 1 in 4 people think that there is nothing we can do to prevent it (World Alzheimer Report, 2019).

The WHO plan states that dementia is a public health priority, and 75% of countries will have developed or updated national policies, strategies, plans or frameworks for dementia, either stand-alone or integrated into other

policies or plans by 2025. In addition, all of countries will have at least one functioning public awareness campaign on dementia to foster a dementia-inclusive society by 2025. (World Alzheimer Report, 2019).

The elderly in Indonesia have various additional needs in terms of health and assistance. Indonesian elderly, who are often described as 'old before rich', will increase their dependence on the productive age population, namely their families. The percentage of households inhabited by elderly people in 2019 also experienced an increase of 27.88% (Badan Pusat Statistik, 2018). With this increase and its resulting implications, including dementia problems, family and the elderly are required to get extra income to help meet these needs, including providing care for elderly family members who have dementia. Therefore, the purpose of this study is to compare the knowledge about dementia among Indonesian workers in rural and urban areas as well as to determine the factors contributing to their knowledge.

## METHODS

This cross-sectional study was conducted with online questionnaires, which were used to obtain demographic data and information about the number, physical condition, and dementia symptoms of their elderly family members. The knowledge on dementia held by workers in communities was measured on the Dementia Knowledge Assessment Scale (DKAS).

The DKAS measures knowledge about dementia. It consists of four domains: causes and characteristics, communication and behaviour, care consideration, and risk factors and health promotion. This study utilises the final version of the 25-item DKAS, which provides a reliable and valid scale of dementia knowledge across a range of domains relevant to clinicians, educators, caregivers, and students (Annear *et al.*, 2015).

The Indonesian language version of the DKAS was used to identify the level of knowledge of dementia. The DKAS comprises statements about the syndrome that are factually correct or incorrect. These were developed on the basis of a literature review and an international Delphi study with dementia experts (Annear *et al.*, 2015). Respondents answered on a modified Likert scale with five response options: false, probably false, probably true, true, and I don't know.

The measurement of physical condition is related to ADL (activities of daily living) and whether an elderly person can do them by themselves or not. The questionnaire asks: "Does the elderly person mentioned above need assistance or supervision in their daily activities?" and includes activities such as eating, changing clothes, changing places, and going to the toilet. Dementia was measured by 10 symptoms of Alzheimer's disease, namely decreased memory, confusion, difficulty carrying out common tasks, difficulty with daily routines, changing personality/behaviour, inability to follow instructions, problems with language/communication, deteriorating visual and spatial ability, loss of motivation/initiative, and loss of normal sleep patterns (Alzheimer Indonesia, 2019). Data were collected online using the snowball technique, which was shared on social media, from 7–10 July 2020. The inclusion criteria for respondents were that they were above 40 years of age, with family members who were 60 years and over (elderly). A total of 1157 respondents filled in the questionnaire. After cleaning and editing, there were 10 responses that were not eligible, leaving 1147.

However, only 944 (82.3%) respondents were working, and this data was kept for inclusion in this paper.

This study was approved by the Ethical Committee of Institutional Research Bureau University of Respati Indonesia with ethical approval number: 009/SK.KEPK/UNR/III/2020. Study participants gave informed consent before completing the questionnaire, and the survey was conducted anonymously to protect the respondents' privacy.

## RESULTS

Of the total respondents, 632 (66.9%) lived in urban areas and 312 (33.1%) in rural areas. The age group was mostly 40–44 years old (35.7%), with a range of 40–59. The most common educational background was university at 77.2%. Of the respondents, 32.6% worked in private companies, and they worked more than eight hours per day (69.6%). More than 80% of study participants worked outside their homes. Approximately 70% of respondents had received information about dementia in print media, electronic media, posters, or from conferences, seminars, or workshops. The DKAS score, indicating knowledge of dementia, was higher for respondents who lived in urban areas (74.4%) than for those who lived in rural areas (65.4%).

58.7% of respondents had family members belonging to the elderly group, and 33.4% of them indicated that they lived together. The number of elderly family members was most often one person (41.6%), followed by more than three people (40.6%). The elderly family members were mostly grandparents of respondents in both rural and urban areas, for 71.8% of respondents. The physical condition of the elderly who live together has been declined, although most of them are in the mild category. A total of 73.8% of respondents supported their elderly relatives in daily activities. If the respondent worked, then other family members helped care for them, such as brothers, sisters, spouses, children, or caregivers.

The bivariate t-test analysis results showed that there were several significant differences between respondents who lived in urban and rural areas. For instance, those within occupations, particularly as private employees, tended to live more in urban than in rural areas with a p-value of 0.047 (0.053 – 0.978).

Furthermore, the working hours were also significantly different; respondents worked less than or equal to eight hours per day in urban areas with a p-value of 0.001 (1.857–3.594); (1.632–3.968) had significant differences from employees in rural areas. Similarly, the educational background in urban areas was significantly different compared to those in rural areas, at a p-value of 0.046 (0.149–0.983) for university graduates and 0.031 (0.127–0.903) for senior high school backgrounds.

In terms of knowledge related to dementia, a significant difference was found amongst respondents living in urban areas because they are more exposed to information than those living in rural areas, with a p-value of 0.005 (1.145–2.06). However, the number of elderlies in the family was higher in urban areas than in rural areas, and it was found to be significantly different, with p value 0.024 (0.394–0.935) for two elderly members and 0.028 (0.044–0.835) for three elderly members.

Elderly family members comprising mothers in urban and rural areas had a significant difference at p value 0.023 (0.445–0.927). In terms of physical condition, most of the elderly could still carry out activities independently, although some needed assistance. However, there was a

significant difference in both respondent groups, particularly in the physical condition of the grandfather as a family member, at  $p$  value 0.008 (2.08 – 122.05), but the significant difference was found on how to support the spouse as an elderly member with  $p$  value of 0.016 (1.270–2.412).

In terms of dementia knowledge by DKAS result, there was no significant difference between respondents who lived in urban and rural areas. Furthermore, there was no significant difference regarding age of respondents, age of elderly member, and stay with the elderly.

The logistic regression model identified the factors that influenced knowledge about dementia among rural and urban workers. We found that ages (45–49 years old)  $aOR = 2.626$ ; (95% CI 1.29–6.705), female gender  $aOR=2.370$ ; (95% CI 1.412–3.980), and graduation from university  $aOR = 3.214$ ; (95% CI 1.664–6.209) significantly predicted higher the knowledge about dementia among rural workers. While for the urban worker, the model showed that being female  $aOR = 1.684$  (95%CI; 1.187 – 2.389), working as civil employee  $OR=0.413$ ; (95%CI; 0.252–0.676), working as private employee  $aOR=0.417$  (95%CI 0.259 – 0.670), working as entrepreneur  $aOR=0.365$  (95%CI;119–0.670) and graduating from university  $aOR=2.295$  (95%CI 1.465 – 3.595) that predicted higher the knowledge about dementia.

## DISCUSSION

This study sought to identify the factors that influence knowledge about dementia among workers living in rural and urban areas. We found that the knowledge of rural workers was influenced by age, gender, and educational background, while that of urban workers was influenced by gender, occupation, and educational background. Interestingly, having elderly family members with the need for support for activities of daily living and having elderly family members with dementia symptoms were not significantly associated with people's knowledge about dementia.

This study identified a significant association between gender and knowledge about dementia in both rural and urban workers. Female respondents were likely to have better knowledge about dementia compared to their male counterparts. This finding is in line with a previous study conducted by Mulyani, Artanti, and Saifullah (2019), who found that women were likely to have a better understanding of dementia than men. In Indonesian culture, women are likely to have greater responsibilities in doing domestic work, such as taking care of the elderly, and they have a more caring nature than men.

The elderly in Indonesia mostly live with their families rather than nursing homes, which is important in Islamic rule, as the majority religion in Indonesia. They can spend time with their children and spouses, which in turn improves their quality of life and wellbeing compared to living in nursing homes. Women are the major providers of long-term care for the elderly in Indonesia (Kemenkes, 2017). Although based on this finding, their scores in knowledge about dementia were still limited, as a family caregiver, it is reasonable to assume that women are more likely to seek information about how to provide good care to their elderly. To contrast this with a country with more liberal gender roles, a study conducted by Glynn *et al.* (2017) found that there was a significant difference in knowledge about dementia between men and women.

Traditionally, women have a greater responsibility in serving the family, especially taking care of elderly parents,

compared to men. This situation may enhance the traditional value of women as natural caregivers (Sharma *et al.*, 2016). This experience may influence their knowledge about care considerations for the elderly with dementia. Taking care of people with dementia can be challenging yet rewarding and requires a good understanding of how to provide appropriate support.

This study also found that age was significantly associated with knowledge about dementia among rural workers. The findings showed that younger study participants (those aged 45–50) were likely to have better knowledge of causes and characteristics and communication behaviours compared to those who were older (55–59 years old). This finding is in line with the study conducted by Arai *et al.* among the Japanese community, those aged 40 and over were likely to have better knowledge about dementia than younger people (Arai, Arai, Zarit, & Steven, 2008). Another study conducted by Mulyani *et al.* (2019) showed that age strongly correlated with knowledge and attitude about dementia in the Indonesian community. This finding assumes that the age group of 45–49 is categorised as the initial age of someone entering the pre-elderly age (Badan Pusat Statistik, 2018). At this stage, a person has begun to reach maturity and prepare to enter middle old age. Therefore, there is a tendency for this age group had more knowledge related to ageing, including dementia issues, although they still did not have appropriate knowledge in care and consideration and risk and health promotion.

Occupation is another sociodemographic factor that shows a significant association with knowledge about dementia. Occupational background indirectly describes social status, which correlates with educational attainment and capital income (Connelly *et al.*, 2016). In this study, we categorised the type of occupation from unemployed at the lowest level to professional as the highest level of social status. This finding showed that those who had better social status were more likely to have better understanding in all subscales of dementia knowledge. Inversely, those with lower occupational levels (unemployed, private employees, and entrepreneurs) were likely to have lower knowledge about dementia. Those with professional occupations were likely to have better knowledge about dementia in all subscales. This finding can be explained by professional workers achieving higher levels of education that may influence their knowledge and their willingness to gain information compared to the lower occupation groups. The term professional refers to anyone who earns their living from performing an activity that requires a certain level of education, skill, or training (CFI Education Inc., 2020). There is typically a required standard of competency, knowledge, or education that must be demonstrated (often in the form of an exam or credential), as well as adhering to codes of conduct and ethical standards. This occupation group consists of teachers, doctors/surgeons/dentists, accountants, lawyers, engineers, architects, artists/authors, designers, chemists, editors, scientists, registered nurses, etc.

A study conducted by Smith *et al.* (2014) among the Australian community showed that knowledge about dementia risk reduction was influenced by socioeconomic status (Smith *et al.*, 2014). Sufficient educational background greatly influences understanding of the risks and health promotion efforts for dementia. The results of this study showed a variety of knowledge based on participants' occupations. This is in agreement with the

literature that found that public awareness about dementia is quite low among the general public (Glynn et al. 2017), who were often confused about the relationship between dementia and ageing.

The World Health Organization has called for greater dementia awareness and education in response to increasing global prevalence (World Health Organization, 2018). Target populations for education include health service workers, aged care staff, family caregivers, general practitioners, students, and the general population. Measures of dementia knowledge are useful for evaluating baseline understanding and determining the efficacy of education.

The Indonesian government launched the National Strategic and Policy for Management of Alzheimer's and Other Dementia Disease Towards Healthy and Productive Older Persons in 2005, and the strategy is mainly focused on management and prevention (Alzheimer's Disease International, 2016). Public education should stress a healthy lifestyle programme, and none of the strategic is address to public awareness about dementia, such as causes and characteristics, communication and behaviour, care consideration and the risk and health promotion to prevent dementia.

#### CONCLUSION

The research showed that the characteristics of those living in urban and rural areas had significant differences in terms of occupation type, work duration, and knowledge about dementia. Meanwhile, the number of elderly families is mostly owned by urban respondents, but the dementia knowledge by DKAS result, there is no significant difference between respondents who live in urban and rural areas. Besides that, there was no significant difference in the ages of respondents, ages of elderly family members, and stay with the elderly between workers in rural and urban areas.

These results could provide input to strengthen the capacity to respond to dementia, especially among working citizens. They could inform evaluation of the current state of Indonesia, where the economy is revitalizing, and the rate of ageing is remarkable, leading to the development of policy and guidelines on how to care for family members with dementia without disturbing work activities.

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