

ORIGINAL RESEARCH

KNOWLEDGE AND ATTITUDES TOWARD PEOPLE WITH DEMENTIA AMONG NURSING STUDENTS IN YOGYAKARTA, INDONESIA

Salsabilla Rohadatul 'Aisy Sunaryo¹, Azam David Saifullah^{2*}, Sri Mulyani²

¹School of Nursing, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

²Department of Mental Health and Community Nursing, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

Corresponding author:

Ns. Azam David Saifullah, S.Kep., M.Sc.
Gedung Ismangoen, FK-KMK UGM, Jl. Farmako, Sekip Utara, Yogyakarta, Indonesia 55281
Phone: (+62274) 545674
Email: azam.david.s@ugm.ac.id

Article Info:

Received: 15 August 2020
Revised: 14 September 2020 & 8 November 2020
Accepted: 12 November 2020

DOI:

<https://doi.org/10.33546/bnj.1178>

Abstract

Background: Nursing students are prepared to deliver care for vulnerable people, including people with dementia. Nursing students tend to have lower levels of knowledge and attitudes toward dementia compared to registered nurses. While there is less evidence that discussed this topic in the Indonesian nursing student's context, it will be necessary to identify an aspect related to knowledge and attitude among students to be considered for improvement in the future.

Objective: This study aimed to identify the knowledge and attitudes toward dementia among nursing students in Indonesia.

Method: This study was a quantitative study with a cross-sectional design. There were 334 nursing students recruited using a total sampling method at Universitas Gadjah Mada, Yogyakarta. Data were collected using the Dementia Knowledge Assessment Scale (DKAS) and Dementia Attitude Scale (DAS). Spearman Rank, Mann Whitney Unpaired, Kruskal-Wallis test, Pearson Correlation, Unpaired *t*-test, and Unpaired ANOVA were used for data analysis according to the type and the distribution of the data.

Results: The median of the DKAS was 24 (min - max = 7 - 40), and the mean of DAS was 99.60 (*SD* = 10.25). The variables that were statistically significant correlated to knowledge of dementia were age ($r = .332, p < .001$), class standing ($H = 72.253, p < .001$), and experience in taking care of people with dementia ($U = 3314, p = .047$). Meanwhile, only the age of the students was found to have a statistically significant correlation with attitudes toward dementia ($r = .158, p = .004$).

Conclusion: In general, among the nursing students, knowledge toward dementia was relatively low, while the attitudes toward dementia were relatively high compared to other research. Age, class standing, and experience in taking care of people with dementia had significant correlations to the knowledge score of the students. Lastly, age also had a significant correlation with the attitude score of the students.

KEYWORDS

attitudes; dementia; knowledge; nursing students

BACKGROUND

The number of people with dementia (PWD) around the world has reached around 50 million people, with 4% of them resided in the Asia Pacific region and is likely to increase every year ([Prince et al., 2015](#); [World Health Organization, 2017](#)). Furthermore, 1.2 million PWD is estimated to live in Indonesia ([Republika Online, 2017](#)). The increasing number of PWD tends to negatively impact the physical, emotional, social, and economic conditions of the caregivers ([Mccurry et al., 2009](#); [Prince et al., 2015](#); [Shanahan et al., 2013](#)). The negative impacts may be caused by the progressive decline in the cognitive function of the PWD, which will interfere with their daily activities ([Tarawneh & Holtzman, 2012](#)). The negative impacts also worsen because of the perceived information that the signs and symptoms of

dementia are often considered to be common among elder people ([Alzheimer Association, 2019](#); [National Health Service, 2017](#)). However, when the signs and symptoms worsened, and PWD becomes aggressive, PWD received rather negative attitudes from people around them ([Dementia Australia, 2017](#); [Nolan et al., 2006](#)).

Those negative attitudes are also well known as stigma toward PWD. This stigma may change when people gain a better understanding of dementia. Then, it may change the perceived attitude toward PWD. Based on previous studies, knowledge, and attitudes of nurses toward PWD are higher than that of nursing students ([Blaser & Berset, 2019](#); [Scerri & Scerri, 2013](#); [Smyth et al., 2013](#)). Some identified factors that may affect the knowledge toward dementia were age, the professional status of the health workers, caring experience, professional, caring

experience, and dementia care training obtained (Blaser & Berset, 2019; Scerri & Scerri, 2013; Smyth et al., 2013). Meanwhile, some identified factors that may influence the level of attitude toward people with dementia were care setting, the experience of caregiving for people with dementia, clinical explanation of dementia, class standing, and age (Blaser & Berset, 2019; Scerri & Scerri, 2013; Smyth et al., 2013).

Compared to professional nurses, nursing students tend to have lower levels of knowledge about and attitudes toward people with dementia (Blaser & Berset, 2019). A high level of knowledge and attitudes have many benefits. There are many research on the knowledge and attitudes of nursing students toward PWD in many parts of the worlds such as in the United Kingdom (Scerri & Scerri, 2013), the United States (Kimzey et al., 2016), India (Poreddi et al., 2015), and even at Malaysia (Ahmad Basri et al., 2017). Nevertheless, based on the evidence discovered by the authors, there are only a few researches that mainly look at the knowledge and attitudes of the nursing students toward PWD in Indonesia. Providing stronger evidence on knowledge and attitudes of the nursing students toward PWD in Indonesia may bring more ideas in evaluating nursing education in Indonesia, especially in dementia care. Hence, this study is conducted to identify the knowledge and attitudes of nursing students toward PWD in Indonesia.

METHODS

Study Design

This study was a quantitative research with a cross-sectional design that aimed to identify the knowledge and attitudes of nursing students toward people with dementia and its related factors at Universitas Gadjah Mada, Yogyakarta, Indonesia.

Samples

The total sampling of 334 nursing students was applied in this study. The inclusion criteria of the sample were active students at Universitas Gadjah Mada, who was taking a bachelor's degree in nursing and were voluntarily willing to participate. Meanwhile, students who could not participate during the data collection period or were taking an academic leave were excluded.

Instruments

This research consisted of three instruments: demographic data questionnaire, Dementia Knowledge Assessment Scale (DKAS), and Dementia Attitudes Scale (DAS). The authors of both instruments supported the use of DKAS and DAS instruments.

The Indonesian version of the DKAS and the DAS was adapted using the Brislin model for instrument translation (Beaton et al., 2000). Both English versions of the instruments were translated into the Indonesian language by two sworn translators independently. Expert panel involving three experts with at least a Master's degree education background in elderly care were invited as the expert panel. This expert panel, resulting in the relevancy of the overall questionnaire (S-CVI) score for both questionnaires. The translation process was continued by the backward translation of both questionnaires to English. The previous expert panel was invited once again to conclude the Indonesian version of the questionnaires' wording. The field test and

face validity test of the questionnaires were done before use in the actual study.

The DKAS was employed to measure student's knowledge about PWD. The DKAS was developed by Annear et al. (2015). The DKAS has 25 statement items with four domains: 1) causes and characteristics, 2) communication and behavior, 3) care considerations, and 4) risks and health promotion. DKAS scores range from 0 to 50. The questionnaire's translation resulted in a valid questionnaire with the S-CVI of the Indonesian version of DKAS of 1.00. The DKAS had acceptable reliability with Cronbach's alpha of .674 (Ursachi et al., 2015).

Meanwhile, the DAS was used to measure the attitudes of students toward people with dementia. The DAS was developed by O'connor and Mcfadden (2010). The DAS has 20 Likert-scale items that range from "strongly agree" to "strongly disagree" and has two factors labeled with "dementia knowledge" and "social comfort" (O'connor & Mcfadden, 2010). The questionnaire's translation resulted in a valid questionnaire with the S-CVI of the Indonesian version of DKAS of .99. The DAS had acceptable reliability with a Cronbach's alpha of .754.

Ethical Consideration

This study runs under a project that looks for knowledge and attitudes of the students toward a vulnerable population, in which people with dementia are part of that population. The cross-sectional approach for all the data collection was under one study protocol. This study protocol was reviewed and approved by the Ethics Committee of Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada on 24 May 2019 with the approval reference number KE/FK/0563/EC/2019. Participants were given participants' information and consent forms before the data collection. Following the ethic in research, participants were also allowed to withdraw from data collection without any force.

Data Collection

Data were collected after permission from the School of Nursing and ethical clearance were obtained. This research used primary data, and the data collection was around August 2019. The data collected were demographic data, DKAS, and DAS, as mentioned in the instruments section. Preparation of the data collection, including the questionnaire packages, briefing of the enumerators, and informing each class representative upon this data collection procedure. There were two enumerators on the data collection of this study. They were in their fourth year of bachelor's in nursing and a part of a bigger scheme of this research, as mentioned in the ethics document. Four class representatives were informed on the brief of the research and data collection procedures. Class representatives were informing the class about the data collection procedure, and along with the class, the date and time of data collection were made. On the date, the researchers and enumerators distributed the questionnaire packages to the participants, checked the completion of the questionnaire, and delivered research souvenirs as a token of appreciation.

Data Analysis

The data analysis was performed after inputting and checking the data distribution. After the distribution of the data was checked, it was found that the distribution of the DKAS score (knowledge of dementia)

was not normally distributed ($p < .050$), while the DAS score (attitudes toward dementia) was normally distributed ($p > .050$). Thus, different sets of central tendency data followed the data distribution of each score. The central tendency of the DKAS score was noted as median, minimum, and maximum score, while the DAS score was noted as the mean and standard deviation of the score. Thus, non-parametric bivariate tests, namely the Spearman's rank correlation coefficient, the Mann-Whitney test, and the Kruskal-Wallis test, were used. Meanwhile, the respondents' attitudes with socio-demographic data were tested by parametric statistical tests in the form of the Pearson correlation coefficient, t -test, and one-way ANOVA.

RESULTS

Characteristics of Respondents

Most of the respondents in this study were 19 and 20 years old (25.1 and 25.7%), and the majority of the respondents were females (98.2%). The percentage of each class standing did not differ significantly. Most respondents did not have any family history of dementia (86.2%), did not have any experience of caring for PWD (91.6%), had never interacted with people with dementia (65.6%). Furthermore, most respondents obtained information about dementia via the Internet (61.1%) (Table 1).

Table 1 Characteristics of Respondents ($N = 334$)

Characteristics	Frequency (n)	Percentage (%)
Age		
17	19	5.7
18	65	19.5
19	84	25.1
20	86	25.7
21	71	21.3
22	9	2.7
Sex		
Female	310	98.2
Male	24	7.2
Class standing		
First-year	100	29.9
Second-year	82	24.6
Third-year	68	20.4
Fourth-year	84	25.1
Family history of dementia		
Yes	46	13.8
No	288	86.2
Experience in caring for PWD		
Yes	28	8.4
No	306	91.6

Table 1 (Cont.)

Experience in interacting with PWD		
Yes	115	34.4
No	219	65.6
Sources of Information about dementia		
Printed media	14	4.2
The Internet	204	61.1
Family/Relative(s)	14	4.2
Friend(s)	1	3.9
Healthcare professional(s)	89	26.6

Knowledge About and Attitudes Toward Dementia

Due to the different distribution of DKAS and DAS scores, central tendency and statistical test results followed the data distribution of each instrument. The DKAS score in this study was not normally distributed, while the DAS score was normally distributed. From Table 2, it informs us that the central tendency of the knowledge was relatively in the middle while the DKAS score median was 24.00 (min-max = 7-40). Meanwhile, the attitude of the students toward PWD was relatively high, with the mean of the DAS was 99.60 ($SD \pm 10.25$) (see Table 2). The lowest score of the DKAS score was 76, and the highest score was 136.

Table 2 The Central Tendency of Knowledge and Attitude Variables ($N = 334$)

Variable(s)	Mean	SD	Median	Min-max
Overall score of DKAS	-	-	24.00	7 - 40
Causes and characteristics			5.00	0 - 13
Communication and behavior			5.00	0 - 10
Care considerations			7.00	1 - 12
Risk and health promotion			6.00	0 - 12
Overall score of DAS	99.60	10.25	-	-
Comfort	45.16	7.00		
Knowledge	54.55	5.19		

Looking at the DKAS items, especially in the cause and characteristic domain that consisted of items number 1, 2, 3, 4, 5, 6, and 7, item number 6 was the item with the lowest percentage of correct answers (Table 3). In the communication and behavior domain that consisted of items number 14, 15, 16, 17, 18, and 19, item number 15 and 16 were items with the lowest percentage of correct answers. All items in the care and considerations domain had a higher rate of correct answers than any other items in other domains (20, 21, 22, 23, 24, and 25). In the risk factor and health promotion domain that consisted of items number 8, 9, 10, 11, 12, and 13, item number 13 was the only item with the least correct answers in this domain (Table 3).

Table 3 Percentage of Correct Answers on DKAS ($N = 334$)

Item Number	Item	Percentage (%)
20	"People experiencing dementia do not generally have problems making decisions."	63.17%
11	"Exercise is generally beneficial for people experiencing dementia."	61.07%
5	"Planning for the end of life care is generally not necessary following a diagnosis of dementia."	60.17%
25	"Daily care for a person with advanced dementia is effective when it focuses on providing comfort."	60.17%
14	"It is impossible to communicate with a person who has advanced dementia."	55.08%
9	"Maintaining a healthy lifestyle does not reduce the risk of developing the most common forms of dementia."	52.39%
23	"People experiencing dementia often have difficulty learning new skills."	51.19%
12	"Having high blood pressure increases a person's risk of developing dementia."	49.40%
2	"Alzheimer's disease is the most common form of dementia."	48.80%
4	"Dementia does not result from physical changes in the brain."	36.22%

Table 3 (Cont.)

22	"People with advanced dementia may have difficulty speaking."	33.23%
18	"Uncharacteristic behaviors in a person experiencing dementia are generally a response to unmet needs."	31.43%
24	"Difficulty eating and drinking generally occurs in the later stages of dementia."	30.29%
21	"Movement is generally affected in the later stages of dementia."	25.44%
1	"Dementia is a normal part of the aging process."	25.14%
17	"People experiencing advanced dementia often communicate through body language."	19.46%
19	"Medications are the most effective way of treating behavioral symptoms of dementia. "	17.66%
10	"Symptoms of depression can be mistaken for symptoms of dementia."	16.76%
3	"People can recover from the most common forms of dementia."	15.56%
8	"Early diagnosis of dementia does not generally improve quality of life for people experiencing the condition."	14.97%
7	"Most forms of dementia do not generally shorten a person's life."	5.68%
16	"It is important to correct a person with dementia when they are confused."	5.38%
6	"Blood vessel disease (vascular dementia) is the most common form of dementia."	3.89%
15	"A person experiencing advanced dementia will not generally respond to changes in their physical environment."	3.89%
13	"The sudden onset of cognitive problems is characteristic of common forms of dementia."	2.39%

Furthermore, the student's attitude toward dementia represented by the DAS score had a mean of 99.60, SD = 10.25. The lowest score was 76, and the highest score was 136 (Table 2). In the comfort factor, item

number 8 was the item with the lowest mean. In the knowledge factor, item number 20 was the item with the lowest mean (Table 4).

Table 4 Mean of Answers on the DAS (*N* = 334)

Items	Mean (SD)
1. "It is rewarding to work with people who have ADRD."	3.72 (1.19)
2. "I am afraid of people with ADRD."	5.46 (1.20)
3. "People with ADRD can be creative."	4.87 (1.23)
4. "I feel confident around people with ADRD."	4.22 (1.23)
5. "I am comfortable touching people with ADRD."	4.86 (1.22)
6. "I feel uncomfortable being around people with ADRD."	5.17 (1.25)
7. "Every person with ADRD has different needs."	5.74 (0.97)
8. "I am not very familiar with ADRD."	3.49 (1.51)
9. "I would avoid an agitated person with ADRD."	5.08 (1.24)
10. "People with ADRD like having familiar things nearby."	5.41 (1.02)
11. "It is important to know the history of people with ADRD."	5.91 (0.96)
12. "It is possible to enjoy interacting with people with ADRD."	5.46 (1.03)
13. "I feel relaxed around people with ADRD."	4.82 (1.10)
14. "People with ADRD can enjoy life."	5.71 (1.05)
15. "People with ADRD can feel when others are kind to them."	5.93 (0.88)
16. "I feel frustrated because I do not know how to help people with ADRD."	4.04 (1.38)
17. "I cannot imagine taking care of someone with ADRD."	4.32 (1.35)
18. "I admire the coping skills of people with ADRD."	5.43 (1.22)
19. "We can do a lot now to improve the lives of people with ADRD."	5.52 (1.01)
19. "Difficult behaviors may be a form of communication for people with ADRD."	4.45 (1.28)

ADRD: Alzheimer's Disease and Related Disorder

Table 5 Relationship Between Knowledge About PWD and Respondent's Socio-Demographics Variables (*N* = 334)

Variable(s)	Mean (SD)	Score of Statistical Test	df	p-value
Age	19.40 (1.30)	.332	-	< .001*
Class standing		72.253	3	< .001*
First-year	98.97 (9.93)			
Second-year	98.46 (9.81)			
Third-year	100.13 (8.14)			
Fourth-year	101.04 (12.35)			
Family history of dementia		5665	-	.114
Yes	101.93 (11.67)			
No	99.23 (9.98)			
Experience in caring for PWD		3314	-	.047*
Yes	102.00 (11.29)			
No	99.38 (10.14)			
Experience in interacting with PWD		12587.5	-	.995
Yes	101.07 (10.81)			
No	98.83 (9.88)			

*significance at $p < .05$

Student's Knowledge and Attitudes Toward PWD and Their Relationship with Socio-demographic Variables

Table 5 shows that the age variable had a statistically significant relationship and showed a weak positive correlation ($r = .332, p < .001$). Class standing of the students and experience of caregiving for people with dementia had statistically significant differences in scores ($H = 72.253, p < .001$; $U = 3314, p = .047$). Family history of dementia did not have a statistically significant difference in scores ($U = 5665, p = .114$).

The statistical test analysis result of this study in **Table 6** shows that the knowledge about dementia measured by DKAS had a statistically

significant relationship with the age variable ($r = .158, p = .004$). Class standing, family history of dementia, and experience of caregiving for PWD did not have statistically significant differences in scores ($F = 1.07, p = .361$; $t = 1.66, p = .97$; $t = 1.29, p = .197$).

Relationship Between Student's Knowledge and Attitudes Toward PWD

Based on a statistical analysis using Spearman's rank correlation coefficient, there was a significant relationship between the score for knowledge about dementia and the score for attitude toward dementia ($p = .001$). The Spearman's rank correlation coefficient was .29, which indicated a relatively weak positive correlation.

Table 6 Relationship between Attitude toward People with Dementia and Respondents Socio-Demographics Variables ($N = 334$)

Variable(s)	Mean (SD)	Score of Statistical Test	df	p-value
Age	19.40 (1.30)	.158		.009*
Class standing		1.07	3	.361
First-year	98.97 (9.93)			
Second-year	98.46 (9.81)			
Third-year	100.13 (8.14)			
Fourth-year	101.04 (12.35)			
Family history of dementia		1.66	332	.97
Yes	101.93 (11.67)			
No	99.23 (9.98)			
Experience in caring for PWD		1.29	332	.197
Yes	102.00 (11.29)			
No	99.38 (10.14)			
Experience in interacting with PWD		1.90	332	.058
Yes	101.07 (10.81)			
No	98.83 (9.88)			

*significance at $p < .05$

DISCUSSION

Participant's Characteristic in Conjunction with the Overall Results

Participants in this study were relatively younger as they were in an undergraduate program in nursing. This research results were in line with the results of a previous study that most respondents were in the age range of 19 - 22 years ([Anissa et al., 2018](#)). Thus, this study's result might not only apply in a relatively young age population but also affect the overall results of the statistical test analysis of this study due to relatively homogeneous participants.

Moreover, most of the respondents had neither a family history of dementia (86.2%) or caregiving experience for people with dementia (91.6%), which might be implicitly attributed to their knowledge and attitude toward dementia. As mentioned by [Scerri and Scerri \(2013\)](#) and [Shin et al. \(2015\)](#), students had a somewhat lower score in knowledge and attitude toward dementia as most students might not have yet learned about the elderly, especially dementia, or interacting closely with them.

Most students obtained dementia-related material from the Internet (61.1%), which might differ from a previous study by [Shin et al. \(2015\)](#), which mentioned that most respondents obtained information about dementia from broadcasts and teaching staff. This might be due to differences in the number of respondents and research locations. [Shin et al. \(2015\)](#) conducted a study in Korea with 148 respondents, in which 42.6% of the respondents had received dementia-related

learning, and 55.6% of the respondents had been exposed to dementia-related learning for two hours or more. Meanwhile, in our study, only fourth-year students had already obtained a course on dementia-related topics on the elderly in their third year.

Knowledge of the Nursing Students Toward Dementia

The median of scores for nursing students' knowledge was 24 (min-max = 7 - 40), which was relatively lower than the average. However, a similar result that was mentioned by [Bentley et al. \(2018\)](#) which used the 27-item DKAS, resulted in a maximum value of 54, and the median of scores for knowledge was 39 (min-max = 31-51). A relatively low score of knowledge might be due to the sample chosen in this research were nursing students. In contrast, the sample in the study conducted by [Bentley et al. \(2018\)](#) was doctors who had experience with dementia in a hospital. Also, most doctors have professionally provided dementia care for PWD.

Furthermore, among four domains, communication and behavior domains had the shortest score range and more false answers in two of six items. Similar results were also shown in a previous study that these domains had items with the lowest score of incorrect answers ([Schelp et al., 2008](#)). It indicated that most respondents had the assumption that people who have severe dementia would not respond to changes in their physical environment. The person with severe dementia still has awareness about themselves ([Krishnamoorthy & Anderson, 2011](#)). A person who has Alzheimer's cannot recognize a familiar person, place, or item, which can pose a difficult situation for caregivers ([Alzheimer Association, 2015](#)). Students also might not know what to do when

they meet PWD in a realistic care setting ([Alzheimer Australia Vic, 2010](#)). This result also implies that early exposure to PWD among nursing students may facilitate them to be more informed about PWD in general.

The Attitude of the Nursing Students Toward Dementia

In this study, the average score obtained was 99.60 ($SD = 10.25$). Based on the range of DAS scores (20 - 140), the average score of the DAS was relatively high. This result supports a previous study that also mentioned that nursing students had a rather high attitude toward people with dementia ([Poreddi et al., 2015](#)). As nursing students were the main subject of both researches, a different result might occur in different majors. The curriculum of nurse education might affect them to be more empathetic toward others. [Notoatmodjo \(2012\)](#) explained that attitude might be formed in multifactorial ways through personal experience, significant others, media, educational institution, and even religion. Rather similar result was also shown in [Poreddi et al. \(2015\)](#) ($Mean = 45.16, SD = 7.00; Mean = 45.5, SD = 9.49$). This result indicated that nursing students had a positive attitude toward dementia as they felt rather comfortable being around PWD ([Poreddi et al., 2015](#)).

Related Factors of Nursing Student's Knowledge and Attitude Toward Dementia

Knowledge toward dementia was statistically significant related to age ($r = .332, p < .001$), class standing ($t = 7.04, p < .001$), and experience in caring for PWD ($t = 0.58, p = .56$). This result strengthens the previous study from [Scerri and Scerri \(2013\)](#). However, [Shin et al. \(2015\)](#) mentioned no statistically significant difference in knowledge of the students who had a family history and those who did not have. This result might suggest further investigation upon correlation among academic year, and different majors of the students on knowledge toward dementia.

Meanwhile, the attitudes toward dementia among students were statistically related to the student's age only. This result was similar to the research conducted by [Scerri and Scerri \(2013\)](#) in which there was a significant relationship between age and attitude scores ($p < .001$). This was also consistent with the research of [Mulyani et al. \(2019\)](#) which found that age also had a significant relationship with attitude scores ($r = .182, p = .010$). The variable of class standing, family history of dementia, and experience of caring for PWD did not have significant differences in knowledge scores. Based on the experience of caring for PWD, there was no significant difference between the average attitude scores of respondents who had the experience in caring for PWD and those who did not have. This result was in accordance with the research of [Kimzey et al. \(2016\)](#), which discovered that there was no significant difference in attitude scores between students who had the experience of caring for PWD and those who did not have ($p = .202$).

Correlation between Knowledge and Attitude Toward Dementia Among Nursing Students

Among nursing students, knowledge and attitude toward dementia were statistically significantly related. Furthermore, Spearman's rank correlation coefficient was .29 with $p = .001$, which indicated a significant relationship between the scores for knowledge about dementia and the scores for attitude toward dementia. This result was in line with the research conducted by [Scerri and Scerri \(2013\)](#), which

discovered a significant relationship between total scores of knowledge and attitude ($r = .114, p = .018$). However, the correlation coefficient score indicated a weak positive correlation. This result might suggest that to improve attitude, we might consider improving the knowledge, and vice versa ([Dahlan, 2014; Uligraff, 2019](#)).

Study Limitations and Recommendations

This study was conducted using the cross-sectional design on a rather specific subject; generalization to other populations might not be applied. Further investigations may include a broader range of communities such as age, major of the students, occupation, institution, or area. Educational institutions may add a dementia care course to their nursing education curriculum, including lectures or workshops with experts, people with dementia, and healthcare service providers or in the form of dementia care skills training. Future research may be expected to involve health workers, especially nurses, as respondents of the study. Future researchers may also use the Indonesian version of DKAS and DAS to maintain validity in measuring knowledge and attitudes toward dementia in general and is relatively reliable.

CONCLUSION

Nursing students' knowledge of dementia measured using DKAS had a median score of 24.00 (min-max = 7-40). In addition, the average total score for attitudes of nursing students was 99.60 ($SD \pm 10.25$), which was relatively high. Based on the result of the statistical test, there was a significant relationship between age, class standing, and the experience of caring for PWD with student's knowledge of dementia. However, there was no significant difference between the student's knowledge scores based on a family history of dementia. There was a significant relationship between student's age and scores for attitude. However, there were no significant differences between the average scores of student's attitudes according to class standing, family history of dementia, and experience of caring for PWD. There was a significant relationship between scores of knowledge about dementia and scores of attitudes toward dementia.

Declaration of Conflicting Interest

There was no conflict of interest regarding the publication of this study.

Funding

This research was supported by the Faculty of Medicine, Public Health, and Nursing of Universitas Gadjah Mada under the 2019 research grant scheme for research collaboration between lecturer and student.

Acknowledgments

The research team received much support from the panel of experts and the evaluation panel for this study, which cannot be possibly mentioned one by one.

Author Contribution

SRAS was in charge of developing the research proposal, performing data collection, data management and analysis, and drafting the manuscript. ADS, Head of the research group, supervised the proposal development, ethical approval process, questionnaire validation process, data collection, data management and analysis, and completed the manuscript. SM supervised data analysis, the person in charge of the expert panel, and developed the manuscript.

Author Biographies

Salsabilla Rohadatul 'Aisy Sunaryo is an undergraduate student of the Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia.

Ns. Azam David Saifullah, S.Kep., M.Sc is A Lecturer, Department of Mental Health and Community Nursing, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia. ORCID iD: <https://orcid.org/0000-0002-3180-4293>

Sri Mulyani, S.Kep., Ns., MNg is A Lecturer, Department of Mental Health and Community Nursing, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia. ORCID iD: <https://orcid.org/0000-0002-1280-1564>

References

- Ahmad Basri, M. A. F., Subramaniam, P., Ghazali, S. E., & Singh, D. K. A. (2017). A review of knowledge and attitudes towards dementia among college and university students. *Journal of Clinical & Diagnostic Research*, 11(11). <https://doi.org/10.7860/jcdr/2017/29739.10865>
- Alzheimer Association. (2015). *Behaviors: How to respond when dementia causes unpredictable behaviors*. Retrieved from https://www.alz.org/national/documents/brochure_behaviors.pdf
- Alzheimer Association. (2019). Alzheimer's stages & symptoms. Retrieved from <https://www.alz.org/alzheimers-dementia/stages>
- Alzheimer Australia vic. (2010). *Perceptions of dementia in ethnic communities*. Retrieved from <https://www.dementia.org.au/sites/default/files/20101201-Nat-CALD-Perceptions-of-dementia-in-ethnic-communities-Oct08.pdf>
- Anissa, L. M., Suryani, S., & Mirwanti, R. (2018). Tingkat kecemasan mahasiswa keperawatan dalam menghadapi ujian berbasis computer based test [The level of anxiety among nursing students on computer-based test]. *MEDISAINS*, 16(2), 67-75. <https://doi.org/10.30595/medisains.v16i2.2522>
- Annear, M. J., Toye, C. M., Eccleston, C. E., McInerney, F. J., Elliott, K. E. J., Tranter, B. K., . . . Robinson, A. L. (2015). Dementia knowledge assessment scale: Development and preliminary psychometric properties. *Journal of the American Geriatrics Society*, 63(11), 2375-2381. <https://doi.org/10.1111/jgs.13707>
- Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*, 25(24), 3186-3191. <https://doi.org/10.1097/00007632-200012150-00014>
- Bentley, M., Kerr, R., & Ginger, M. (2018). *Dementia Care Training and Education Program (DCTEP) project*. Retrieved from Hobart: <https://gptt.com.au/wp-content/uploads/GPTT-DCTEP-Project-Report.pdf>
- Blaser, R., & Berset, J. (2019). Setting matters: Associations of nurses' attitudes towards people with dementia. *Nursing Open*, 6(1), 155-161. <https://doi.org/10.1002/nop2.198>
- Dahlan, M. S. (2014). *Statistik untuk kedokteran dan kesehatan [Statistic for medicine and health]*. Jakarta, Indonesia: Penerbit Salemba.
- Dementia Australia. (2017). People with dementia and carers feel socially disconnected, survey finds. Retrieved from <https://www.dementia.org.au/media-releases/2017/people-with-dementia-and-carers-feel-socially-disconnected-survey-finds>
- Kimzey, M., Mastel-Smith, B., & Alfred, D. (2016). The impact of educational experiences on nursing students' knowledge and attitudes toward people with Alzheimer's disease: A mixed method study. *Nurse Education Today*, 46, 57-63. <https://doi.org/10.1016/j.nedt.2016.08.031>
- Krishnamoorthy, A., & Anderson, D. (2011). Managing challenging behaviour in older adults with dementia. *Progress in Neurology and Psychiatry*, 15(3), 20-26. <https://doi.org/10.1002/pnp.199>
- McCurry, S. M., Gibbons, L. E., Logsdon, R. G., Vitiello, M. V., & Teri, L. (2009). Insomnia in caregivers of persons with dementia: Who is at risk and what can be done about it? *Sleep Medicine Clinics*, 4(4), 519-526. <https://doi.org/10.1016/j.jsmc.2009.07.005>
- Mulyani, S., Artanti, E., & Saifullah, A. (2019). Knowledge and attitudes towards people with dementia among general population in Yogyakarta. *Advances in Health Sciences Research*, 15, 230-235. <https://doi.org/10.2991/icosihsn-19.2019.50>
- National Health Service. (2017). About dementia. Retrieved from <https://www.nhs.uk/conditions/dementia/about/>
- Nolan, L., McCarron, M., McCallion, P., & Murphy-Lawless, J. (2006). *Perceptions of stigma in dementia: An exploratory study*. Ireland: Alzheimer Society of Ireland.
- Notoatmodjo, P. D. S. (2012). *Metodologi penelitian kesehatan [Health research methodology]*. Jakarta, Indonesia: Rineka Cipta.
- O'Connor, M. L., & McFadden, S. H. (2010). Development and psychometric validation of the dementia attitudes scale. *International Journal of Alzheimer's Disease*, 2010. <https://doi.org/10.4061/2010/454218>
- Poreddi, V., Carpenter, B. D., Gandhi, S., Chandra, R., & GandhiSuresh BadaMath, S. (2015). Knowledge and attitudes of undergraduate nursing students toward dementia: An Indian perspective. *Investigación y educación en enfermería*, 33(3), 519-528. <https://doi.org/10.17533/udea.ice.v33n3a16>
- Prince, M., Guerchet, M., & Prina, M. (2015). *The epidemiology and impact of dementia: Current state and future trends* (Vol. 1). Geneva: World Health Organization.
- Republika Online. (2017). 1,2 juta orang indonesia diperkirakan idap demensia [1.2 million Indonesian is estimated affected with dementia]. Retrieved from <https://www.republika.co.id/berita/nasional/umum/17/10/01/ox47v5409-12-juta-orang-indonesia-diperkirakan-idap-demensia>
- Scerri, A., & Scerri, C. (2013). Nursing students' knowledge and attitudes towards dementia—a questionnaire survey. *Nurse Education Today*, 33(9), 962-968. <https://doi.org/10.1016/j.nedt.2012.11.001>
- Schelp, A. O., Nieri, A. B., Hamamoto Filho, P. T., Bales, A. M., & Mendes-Chiloff, C. L. (2008). Public awareness of dementia: A study in Botucatu, a medium-sized city in the State of São Paulo, Brazil. *Dementia & Neuropsychologia*, 2(3), 192-196. <https://doi.org/10.1590/s1980-57642009dn20300005>
- Shanahan, N., Orrell, M., Schepers, A. K., & Spector, A. (2013). The development and evaluation of the DK-20: A knowledge of dementia measure. *International Psychogeriatrics*, 25(11), 1899-1907. <https://doi.org/10.1017/s1041610213001142>
- Shin, J. H., Seo, H.-J., Kim, K. H., Kim, K.-H., & Lee, Y. (2015). Knowledge about dementia in South Korean nursing students: A cross-sectional survey. *BMC Nursing*, 14(1), 67. <https://doi.org/10.1186/s12912-015-0116-4>
- Smyth, W., Fielding, E., Beattie, E., Gardner, A., Moyle, W., Franklin, S., . . . MacAndrew, M. (2013). A survey-based study of knowledge of Alzheimer's disease among health care staff. *BMC Geriatrics*, 13(1), 2. <https://doi.org/10.1186/1471-2318-13-2>
- Tarawneh, R., & Holtzman, D. M. (2012). The clinical problem of symptomatic Alzheimer disease and mild cognitive impairment. *Cold Spring Harbor Perspectives in Medicine*, 2(5), a006148. <https://doi.org/10.1101/cshperspect.a006148>
- Uligraff, D. K. (2019). Utilizing poetry to enhance student nurses' reflective skills: A literature review. *Belitung Nursing Journal*, 5(1), 3-8. <https://doi.org/10.33546/bnj.631>
- Ursachi, G., Horodnic, I. A., & Zait, A. (2015). How reliable are measurement scales? External factors with indirect influence on reliability estimators. *Procedia Economics and Finance*, 20, 679-686. [https://doi.org/10.1016/s2212-5671\(15\)00123-9](https://doi.org/10.1016/s2212-5671(15)00123-9)
- World Health Organization. (2017). Dementia. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/dementia>

Cite this article as: Sunaryo, S. R. A., Saifullah, A. D., & Mulyani, S. (2020). Knowledge and attitudes toward people with dementia among nursing students in Yogyakarta, Indonesia. *Belitung Nursing Journal*, 6(6), 196-202. <https://doi.org/10.33546/bnj.1178>