



Original article

Dementia knowledge and attitudes of nursing undergraduate students—association between lifestyle background and practical training experience—

Hirohito Nanbu¹, Kouhei Hayashi¹, Fumiya Tanji², Yuki Tsuruta¹, Kazuki Awaji³, and Noriko Nakai⁴

¹Wakayama Faculty of Nursing, Tokyo Healthcare University, Japan

²Akita University Graduate School of Health Sciences, Japan

³Hiraka General Hospital, Japan

⁴Wakayama City Hall, Health Bureau, Health and Medical Department, Comprehensive Support Section, Japan

Abstract

Objective: To clarify the association between dementia knowledge and attitudes, lifestyle backgrounds, and practical training experiences of nursing students, and examine the basic nursing education for dementia.

Participants and Methods: A total of 412 first-to-fourth-year students at Nursing College A participated in the study. A cross-sectional survey was conducted regarding knowledge (15 questions) and attitudes (15 questions) related to dementia.

Results: Consent was obtained from 158 individuals (The response rate was 38.3%). Significant items regarding dementia attitudes and cohabitation experiences were identified. Additionally, significant items regarding attitude toward dementia and care providing experiences were identified.

Conclusion: Associations among attitude toward dementia, cohabitation experiences, and care providing experiences were determined. Knowledge and attitudes regarding dementia improved with practical training experience.

Key words: nursing college student, dementia, knowledge and attitudes, lifestyle background, practical training experience

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Introduction

Japan has entered the era of a super-aging society. In 2021, the total senior population (65 years old and above) of Japan was 29.1% (36.4 million people)¹⁾ and individuals with dementia accounted for approximately 6 million (approximately one in six individuals among the senior population has dementia). The senior population of Japan is predicted to reach 39.9%²⁾ by 2060. Owing to rapid aging and family structure changes, the ideal form of support for seniors

with dementia will become an issue in future. Therefore, a community-based integrated care system is required to provide housing, medical care, long-term care, prevention, and lifestyle support in an integrated manner. In this context, the nursing profession is expected to play a key role in community-based comprehensive care^{3, 4)}.

The state of care is expected to undergo drastic changes in hospitals providing nursing care centered on the medical model, and at facilities offering nursing care for patients recuperating at home based on the lifestyle model. The numbers of individuals requiring support or long-term care and persons with dementia have been increasing. Accordingly, issues related to the education and human resource development of nursing professionals responsible for comprehensive community care have been raised^{5–9)}.

As learning progresses, nursing undergraduate students' feelings of affirmation regarding their impressions of dementia, methods for responding to people with dementia, and ideal forms of support in the community increase, with issues such as the understanding of dementia and the ideal form of care being indicated^{10, 11)}. However, to date, few stud-

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Correspondence: Hirohito Nanbu, Wakayama Faculty of Nursing, Tokyo Healthcare University, 3 Higashisakanouecho, Wakayama-shi, Wakayama 640-8538, Japan

E-mail: h-nanbu@thcu.ac.jp

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ies have examined the influence of nursing students' daily life experiences, such as the experience of cohabiting with a person with dementia, and knowledge and attitudes toward dementia based on practical training experiences.

We explored knowledge and attitudes regarding dementia among nursing undergraduate students who will play the role of future nurses in a super-aging society. Particularly, the purpose was to clarify the association between lifestyle backgrounds and practical training experience, and examine basic nursing education related to dementia.

Subjects and Methods

Study design

This was a cross-sectional study.

Survey period

The study was conducted from November 8, 2022 to March 31, 2023.

Participants

The participants included 412 first-to-fourth-year students at Nursing College A ("students"). All subjects provided informed consent for participation after receiving an explanation via a research explanatory leaflet.

Survey methods

Both written and oral explanations were provided to the subjects. Smartphones were used to access Microsoft forms for inputting the questionnaire, and students whose consent was obtained through this input were included in this study.

Survey contents

Variables of individual characteristics

We obtained the following responses regarding attributes of the research subjects: (1) sex (male, female), (2) school year (1, 2, 3, 4), (3) place of birth (in Prefecture A, outside Prefecture A), (4) residence type (living alone, commuting to school from home, other), (5) experience cohabiting with person with dementia (currently cohabiting, previously cohabited, no cohabitation experience), and (6) training experience (have experience in charge of or providing care, have seen training before, no previous practical training involvement, no previous involvement in daily life).

Dementia basic knowledge and attitudes

For basic knowledge and attitudes about dementia, we used the "Dementia attitudes and knowledge scale"¹²⁾ and each item was rated on a 4-point Likert scale (4; strongly agree, 3; somewhat agree, 2; somewhat disagree, 1; strongly disagree).

Analysis procedures

The analysis procedures involved simple tabulation, after which the cohabitation experience and care experience in the "Attitudes about dementia and knowledge scale" were examined using Fisher's exact test. The reliability of the measurement scale was examined based on Cronbach's α reliability coefficient, focusing on internal consistency. The above analyses employed SPSS 28.0, with a difference with a probability of significance less than 5% viewed as significant.

Results

Subject attributes

The attributes of the participants are presented in Table 1. By sex, there were 24 males (15.2%) and 134 females (84.8%). By school year, there were 40 second-year students (25.3%) and 59 fourth-year students (37.3%). By experience cohabiting with a person with dementia, 145 subjects responded, "no cohabitation experience" (91.8%). By training experience, 66 participants responded, "experience in charge or providing care" (41.8%).

Table 1 Target attributes (n=158)

Item	n	%
Sex		
Male	24	15.2
Female	134	84.8
School year		
1	27	17.1
2	40	25.3
3	32	20.3
4	59	37.3
Birthplace		
In Prefecture A	150	94.9
Outside Prefecture A	8	5.1
Residence type		
Living alone	23	14.6
Commuting to school from home	130	82.3
Other	5	3.1
Experience of cohabiting with person with dementia		
Currently cohabiting	3	1.9
Previously cohabited	10	6.3
No cohabitation experience	145	91.8
Experience in practical training		
Have experience in charge or providing care	66	41.8
Other (have seen training before/no previous practical training involvement/no previous involvement in daily life)	92	58.2

Simple tabulation.

Association between dementia knowledge, attitudes scale, and cohabitation experience as well as care experience

The association between dementia knowledge and cohabitation experience is presented in Table 2. There was no significant difference; however, Item 9 showed a high percentage of responses for “strongly agree” and “somewhat agree”.

The association between dementia knowledge and care experience is presented in Table 3. There was no significant difference; however, Item 11 showed a high percentage of responses for “strongly agree” and “somewhat agree”.

The association between attitudes about dementia and cohabitation experience is presented in Table 4; Items 4 and 7 had significant differences.

The association between attitudes about dementia and care providing experience is presented in Table 5; Item 8 had a significant difference.

Discussion

The results revealed that subjects' knowledge, attitudes, and perspectives regarding dementia were associated with individual lifestyle backgrounds and practical training experience. The region where the participants reside has among the highest aging rates in Japan. Innovations that utilize regional characteristics and incorporate them into basic nursing education are required in the future to promote the development of nurses.

Harada *et al.*¹³ argued that “ageism, that is, discrimination, toward seniors is higher with less knowledge about aging”. This indicates that less knowledge about dementia results in stronger negative attitudes toward people with dementia. It has also been reported that university students have a negative view of dementia¹⁴. However, medical professionals possessing accurate knowledge related to dementia could improve the quality of life of the patients^{15–17}. In basic nursing education, “knowing a person” implies understanding the person's mind and body, having the ability to imagine society and culture, and learning what is necessary for living. In a progressively super-aging society with increasing number of seniors with dementia, it will be crucial to develop education that enables a more nuanced appreciation of these issues.

Lifestyle experiences play a key role in fostering understanding and empathy toward seniors with dementia and their families. The results revealed that subjects who had experience of involvement with seniors with dementia and their families tended to have more positive attitudes toward them than the participants who did not. These findings were consistent with a report indicating that having a positive impression toward seniors with dementia is associated with understanding the symptoms and reactions induced

by dementia and interacting with them with a positive feeling¹⁸. Miura *et al.*¹⁹ stated the need for the incorporation of activities by dementia supporters and caravan mates²⁰ as well as the fostering of a positive impression/attitude toward seniors with dementia. Additionally, Kurokawa *et al.*²¹ examined reports on multidisciplinary dementia education and stated the following regarding the implicit perception of occupational therapy students toward patients with dementia: “there is a need to start education with the premise that there are already negative perceptions of dementia patients”. However, it has also been reported that “physical therapy students' dementia knowledge significantly improved in their fourth year, and there were no significant changes in attitude”²². Furthermore, “social worker students had a negative impression of seniors with dementia, suggesting that these impressions are different from individual lifestyle experiences, and their impressions are broadening through professional learning”²³. Moreover, the current status was such that the various professions that provide support related to dementia are examining ways to interact with the disease and specific coping methods from various perspectives. The need for educational support for nursing care for patients with severe dementia^{24–26} has been demonstrated. However, it is noteworthy regarding basic nursing education that, in promoting the establishment of a comprehensive community care system, students are expected to view the needs of seniors with dementia and their families from multiple perspectives and provide support from the perspectives of self-, mutual, and public assistance. Therefore, it is necessary to not only improve dementia knowledge and attitudes, but also promote collaboration among different professions.

We surveyed nursing students' knowledge and attitudes regarding dementia, and clarified their associations. The results indicated that both knowledge and attitudes regarding dementia improved with training. Subjects' lifestyle experiences tended to indicate positive attitudes toward seniors with dementia and their families, suggesting that training and lifestyle experiences are significant for improving dementia knowledge and attitudes. Particularly, in promoting the establishment of a comprehensive community care system, it is significant for students to view the needs of seniors with dementia and their families from multiple perspectives. Additionally, it is crucial to deepen relationships with them through practical training and community activities.

A limitation of this study is that it targeted students from a single institution and single department. More detailed examinations will be required in the future, such as comparison with students from other departments and clarifying the association between the frequency and extent of interaction with people with dementia. Additionally, it is necessary to show the actual changes in knowledge and attitudes as well as in lifestyle after graduation.

Table 2 Association between dementia knowledge and cohabitation experience (n=158)

Item	Currently cohabiting / previously cohabited n=13		No cohabitation experience n=145		P-value
	n	%	n	%	
1. Appearance of symptoms that involve loss of sense of date, time, and place					
Strongly agree/somewhat agree	12	92.3	141	97.2	0.353
Somewhat disagree/strongly disagree	1	7.7	4	2.8	
2. Dementia is caused by various diseases					
Strongly agree/somewhat agree	11	84.6	118	81.4	1.000
Somewhat disagree/strongly disagree	2	15.4	27	18.6	
3. Dementia is the result of aging of the brain, so everyone gets it as they get older					
Strongly agree/somewhat agree	3	23.1	76	52.4	0.079
Somewhat disagree/strongly disagree	10	76.9	69	47.6	
4. For dementia, recent memories are relatively better preserved than older memories					
Strongly agree/somewhat agree	2	15.4	26	17.9	1.000
Somewhat disagree/strongly disagree	11	84.6	119	82.1	
5. People with dementia feel confused when being rushed or warned					
Strongly agree/somewhat agree	12	92.3	140	96.6	0.408
Somewhat disagree/strongly disagree	1	7.7	5	3.4	
6. There are drugs that can slow the progression of dementia symptoms					
Strongly agree/somewhat agree	11	84.6	116	80.0	1.000
Somewhat disagree/strongly disagree	2	15.4	29	20.0	
7. Depression in people with dementia indicates that they are more likely to lose themselves					
Strongly agree/somewhat agree	12	92.3	134	92.4	1.000
Somewhat disagree/strongly disagree	1	7.7	11	7.6	
8. Feeling anxious in unfamiliar locations can lead to wandering					
Strongly agree/somewhat agree	12	92.3	137	94.5	0.548
Somewhat disagree/strongly disagree	1	7.7	8	5.5	
9. Creating a familiar environment is effective in eliminating anxiety and confusion					
Strongly agree/somewhat agree	11	84.6	142	97.9	0.054
Somewhat disagree/strongly disagree	2	15.4	3	2.1	
10. Symptoms can worsen or improve depending on how the caregiver is involved					
Strongly agree/somewhat agree	11	84.6	140	96.6	0.104
Somewhat disagree/strongly disagree	2	15.4	5	3.4	
11. Persuading, scolding, or correcting people with dementia tends to lead to aggressive behavior					
Strongly agree/somewhat agree	10	76.9	136	93.8	0.062
Somewhat disagree/strongly disagree	3	23.1	9	6.2	
12. It is effective to deny and correct hallucinations and delusions					
Strongly agree/somewhat agree	3	23.1	33	22.8	1.000
Somewhat disagree/strongly disagree	10	76.9	112	77.2	
13. People with dementia who have delusions about property theft often target those close to them					
Strongly agree/somewhat agree	11	84.6	122	84.1	1.000
Somewhat disagree/strongly disagree	2	15.4	23	15.9	

Fisher's exact test (two-sided).

Table 3 Association between dementia knowledge and care experience (n=158)

Item	In charge / care provided n=66		Other (have seen training before / no previous training involvement / no previous involvement in daily life) n=92		P-value
	n	%	n	%	
	1. Appearance of symptoms that involve loss of sense of date, time, and place				
Strongly agree/somewhat agree	65	98.5	88	95.7	0.401
Somewhat disagree/strongly disagree	1	1.5	4	4.3	
2. Dementia is caused by various diseases					
Strongly agree/somewhat agree	52	78.8	77	83.7	0.533
Somewhat disagree/strongly disagree	14	21.2	15	16.3	
3. Dementia is the result of aging of the brain, so everyone gets it as they get older					
Strongly agree/somewhat agree	36	54.5	43	46.7	0.420
Somewhat disagree/strongly disagree	30	45.5	49	53.3	
4. For dementia, recent memories are relatively better preserved than older memories					
Strongly agree/somewhat agree	12	18.2	16	17.4	1.000
Somewhat disagree/strongly disagree	54	81.8	76	82.6	
5. People with dementia feel confused when being rushed or warned					
Strongly agree/somewhat agree	64	97.0	88	95.7	1.000
Somewhat disagree/strongly disagree	2	3.0	4	4.3	
6. There are drugs that can slow the progression of dementia symptoms					
Strongly agree/somewhat agree	53	80.3	74	80.4	1.000
Somewhat disagree/strongly disagree	13	19.7	18	19.6	
7. Depression in people with dementia indicates that they are more likely to lose themselves					
Strongly agree/somewhat agree	60	90.9	86	93.5	0.558
Somewhat disagree/strongly disagree	6	9.1	6	6.5	
8. Feeling anxious in unfamiliar locations can lead to wandering					
Strongly agree/somewhat agree	63	95.5	86	93.5	0.736
Somewhat disagree/strongly disagree	3	4.5	6	6.5	
9. Creating a familiar environment is effective in eliminating anxiety and confusion					
Strongly agree/somewhat agree	65	98.5	88	95.7	0.401
Somewhat disagree/strongly disagree	1	1.5	4	4.3	
10. Symptoms can worsen or improve depending on the involvement of the caregiver					
Strongly agree/somewhat agree	64	97.0	87	94.6	0.700
Somewhat disagree/strongly disagree	2	3.0	5	5.4	
11. Persuading, scolding, or correcting people with dementia tends to lead to aggressive behavior					
Strongly agree/somewhat agree	58	87.9	88	95.7	0.125
Somewhat disagree/strongly disagree	8	12.1	4	4.3	
12. It is effective to deny and correct hallucinations and delusions					
Strongly agree/somewhat agree	14	21.2	22	23.9	0.848
Somewhat disagree/strongly disagree	52	78.8	70	76.1	
13. People with dementia who have delusions about property theft often target close to them					
Strongly agree/somewhat agree	56	84.8	77	83.7	1.000
Somewhat disagree/strongly disagree	10	15.2	15	16.3	

Fisher's exact test (two-sided).

Table 4 Association between attitudes about dementia and cohabitation experience (n=158)

Item	Currently cohabiting / previously cohabited n=13		No cohabitation experience n=145		P-value
	n	%	n	%	
1. People with dementia also have the ability to get along with surrounding people					
Strongly agree/somewhat agree	11	84.6	123	84.8	1.000
Somewhat disagree/strongly disagree	2	15.4	22	15.2	
2. It is good to have more opportunities to interact with people with dementia in daily life					
Strongly agree/somewhat agree	10	76.9	125	86.2	0.406
Somewhat disagree/strongly disagree	3	23.1	20	13.8	
3. If a person with dementia is in trouble, then I lend a helping hand without hesitation					
Strongly agree/somewhat agree	12	92.3	128	88.3	1.000
Somewhat disagree/strongly disagree	1	7.7	17	11.7	
4. People with dementia should also participate in community activities					
Strongly agree/somewhat agree	10	76.9	139	95.9	0.028
Somewhat disagree/strongly disagree	3	23.1	6	4.1	
5. People with dementia often cause trouble to surrounding people					
Strongly agree/somewhat agree	11	84.6	106	73.1	0.517
Somewhat disagree/strongly disagree	2	15.4	39	26.9	
6. People with dementia have different emotions than us					
Strongly agree/somewhat agree	4	30.8	48	33.1	1.000
Somewhat disagree/strongly disagree	9	69.2	97	66.9	
7. It is possible to share joy and fun with people with dementia					
Strongly agree/somewhat agree	10	76.9	137	94.5	0.049
Somewhat disagree/strongly disagree	3	23.1	8	5.5	
8. I can talk to people with dementia without hesitation					
Strongly agree/somewhat agree	9	69.2	103	71.0	1.000
Somewhat disagree/strongly disagree	4	30.8	42	29.0	
9. I become concerned about public appearances and what others think when a family member has developed dementia					
Strongly agree/somewhat agree	4	30.8	76	52.4	0.157
Somewhat disagree/strongly disagree	9	69.2	69	47.6	
10. It becomes difficult to socialize with neighbors if a family member develops dementia					
Strongly agree/somewhat agree	4	30.8	64	44.1	0.397
Somewhat disagree/strongly disagree	9	69.2	81	55.9	
11. I do not mind even if a person with dementia moves in next door to my house					
Strongly agree/somewhat agree	10	76.9	113	77.9	1.000
Somewhat disagree/strongly disagree	3	23.1	32	22.1	
12. I cannot understand the behavior of people with dementia					
Strongly agree/somewhat agree	5	38.5	45	31.0	0.551
Somewhat disagree/strongly disagree	8	61.5	100	69.0	
13. We cannot know people with dementia do what and when					
Strongly agree/somewhat agree	10	76.9	100	69.0	0.756
Somewhat disagree/strongly disagree	3	23.1	45	31.0	
14. I do not want to interact with people with dementia as much as possible					
Strongly agree/somewhat agree	0	0.0	33	22.8	0.072
Somewhat disagree/strongly disagree	13	100.0	112	77.2	
15. People with dementia feel anxious because of their forgetfulness					
Strongly agree/somewhat agree	11	84.6	131	90.3	0.624
Somewhat disagree/strongly disagree	2	15.4	14	9.7	

Fisher's exact test (two-sided).

Table 5 Association between attitudes about dementia and care experience (n=158)

Item	In charge / care provided n=66		Other (have seen training before / no previous training involvement / no previous involvement in daily life) n=92		P-value
	n	%	n	%	
	1. People with dementia also have the ability to get along with surrounding people				
Strongly agree/somewhat agree	59	89.4	75	81.5	0.187
Somewhat disagree/strongly disagree	7	10.6	17	18.5	
2. It is good to have more opportunities to interact with people with dementia in daily life					
Strongly agree/somewhat agree	60	90.9	75	81.5	0.114
Somewhat disagree/strongly disagree	6	9.1	17	18.5	
3. If a person with dementia is in trouble, then I lend a helping hand without hesitation					
Strongly agree / somewhat agree	59	89.4	81	88.0	1.000
Somewhat disagree/strongly disagree	7	10.6	11	12.0	
4. People with dementia should also participate in community activities					
Strongly agree/somewhat agree	62	93.9	87	94.6	1.000
Somewhat disagree/strongly disagree	4	6.1	5	5.4	
5. People with dementia often cause trouble to surrounding people					
Strongly agree/somewhat agree	50	75.8	67	72.8	0.716
Somewhat disagree/strongly disagree	16	24.2	25	27.2	
6. People with dementia have different emotions than us					
Strongly agree/somewhat agree	24	36.4	28	30.4	0.494
Somewhat disagree/strongly disagree	42	63.6	64	69.6	
7. It is possible to share joy and fun with people with dementia					
Strongly agree/somewhat agree	63	95.5	84	91.3	0.362
Somewhat disagree/strongly disagree	3	4.5	8	8.7	
8. I can talk to people with dementia without hesitation					
Strongly agree/somewhat agree	53	80.3	59	64.1	0.033
Somewhat disagree/strongly disagree	13	19.7	33	35.9	
9. I become concerned about public appearances and what others think when a family member has developed dementia					
Strongly agree/somewhat agree	34	51.5	46	50.0	0.873
Somewhat disagree/strongly disagree	32	48.5	46	50.0	
10. It becomes difficult to socialize with neighbors if a family member develops dementia					
Strongly agree/somewhat agree	28	42.4	40	43.5	1.000
Somewhat disagree/strongly disagree	38	57.6	52	56.5	
11. I do not mind even if a person with dementia moves in next door to my house					
Strongly agree/somewhat agree	54	81.8	69	75.0	0.338
Somewhat disagree/strongly disagree	12	18.2	23	25.0	
12. I cannot understand the behavior of people with dementia					
Strongly agree/somewhat agree	19	28.8	31	33.7	0.604
Somewhat disagree /strongly disagree	47	71.2	61	66.3	
13. We cannot know people with dementia do what and when					
Strongly agree/somewhat agree	43	65.2	67	72.8	0.381
Somewhat disagree/strongly disagree	23	34.8	25	27.2	
14. I do not want to interact with people with dementia as much as possible					
Strongly agree/somewhat agree	12	18.2	21	22.8	0.554
Somewhat disagree/strongly disagree	54	81.8	71	77.2	
15. People with dementia feel anxious because of their forgetfulness					
Strongly agree/somewhat agree	59	89.4	83	90.2	1.000
Somewhat disagree/strongly disagree	7	10.6	9	9.8	

Fisher's exact test (two-sided).

Conclusion

Students with relevant lifestyle and practical training experience regarding people with dementia had better knowledge and attitudes on those topics. In basic nursing education, it is crucial to provide the students multiple opportunities to directly interact with people with dementia and their families during lectures, exercises, and practical training. This would significantly enhance students' knowledge regarding dementia.

Additionally, the results suggest collaboration among multiple professions to understand the needs of seniors with dementia and their families. It is also advisable to seek educational methods that facilitate support for people with dementia.

Conflict of interest: None.

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Ethical considerations: The protocol of this survey obtained the approval of the research ethics committee in-

volving human subjects of the Tokyo Healthcare University (approval number, Kyo 022-03C-R1). The target students were requested to confirm their cooperation in writing, and consent was obtained via input in Microsoft forms for inputting the questionnaire.

Consent for publication: All the participants provided informed consent for the publication of their anonymized information.

Data availability statement: Owing to the nature of this research, the data obtained during this study cannot be openly shared.

Author contributions: All authors made significant contributions to this research. HN contributed to the drafting of the manuscript and study design. KH contributed to data collection. FT enhanced the analysis and coherence of the argument. YT and KA improved the objectivity of the discussion. NN reported the analysis results to the nursing education supervisors at the health nurse conference to implement them in nursing education. All members contributed to the review of the final manuscript.

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