Competency of Academic Nurse Educators

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Abstract

Background: In the face of a rapidly changing social environment and increasing demand for health care services, there is a global concern that academic nurse educators should have expert-level competencies and should improve the level of nursing education.
Objective: This study aimed to investigate the elements that constitute competency in academic nurse educators.
Methods: A cross-sectional self-completed online survey was conducted involving academic nurse educators working at universities in Japan. We invited 277 nursing universities to participate in the survey and to provide academic nurse educators with information about the research by contacting the dean of each university's nursing department. In total, 372 educators completed the survey (response rate 4.03%), and after excluding those with incomplete data, 367 were analyzed (valid response rate 3.97%). The data were analyzed by exploratory-factor analysis, with the least-squares method and promax rotation performed.
Results: An exploratory analysis yielded five competency factors: "facilitating active learning," "engaging in academic research activities," "participating in university management," "undertaking self-directed learning based on professional ethics," and "practicing education autonomously."
Conclusions: The competencies identified in the present study are essential for academic nurse educators, and the five factors are in accord with the findings of previous studies. Support systems for academic nursing educators should be established to improve their competencies comprehensively. However, further research is needed to develop the competencies of academic nurse educators into more comprehensive and sophisticated competencies.

Keywords

competency, academic nurse educator, higher education, nurse education, professional development

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Introduction

Competencies are skills, knowledge, behavior, and individual characteristics that are necessary for performing jobs (Spencer & Spencer, 1993). Within the health care context, "Professional competence is the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values and reflection in daily practice for the benefit of the individual and community being served" (Epstein & Hundert, 2002). Thus, competency is a broad concept comprising two components: visible characteristics, such as knowledge, skills, and attitude, and deeper characteristics that are not visible, such as personality traits, self-concept, and motive. This concept has been actively applied in human resource management, and has also been applied for decades in the training of registered nurses, the

professional development of nurse managers, and the education of nursing students.

Nurses with high-level professional knowledge and skills are needed, especially considering the complexity of disease patterns, the demand for health care professional personnel, and the globalization of health care

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services. Furthermore, academic nurse educators with expert-level competencies are needed, and the level of nursing education for training professional nursing personnel needs to be improved (Kuivila et al., 2020; Mikkonen et al., 2019; Takase et al., 2020).

Academic nurse educators should be highly competent in teaching, research, clinical practice, management, communication, and ethics (Mikkonen et al., 2018; Zlatanovic et al., 2017). They should be educators with multiple competencies that contribute to the cultivation of highly professional nurses (Jackson et al., 2011). Systematic literature reviews, other empirical studies, and national policies for academic nurse educators suggest that academic nurse educators be required to have the following competencies: academic and research competencies, nursing practice and knowledge, certain personal traits, a professional attitude, pedagogical competencies, relationships with students, and management skills (Australian Nurse Teachers' Society, 2010; Doi & Hosoda, 2017; Maruo et al., 2017; McAllister & Flynn, 2016; Mikkonen et al., 2020; National League for Nursing [NLN], 2013; Salminen et al., 2009, 2013). The nursing education system varies by country, and thus the required competencies of academic nurse educators and the education they receive also vary (Salminen et al., 2010). It seems unlikely that there will ever be a universally accepted definition of competency for academic nurse educators (Garside & Nhemachena, 2013; Zlatanovic et al., 2017). However, it is important to improve and make equal the quality of nursing education globally and to address disparities in nursing service quality at the international level.

Internationally, the core competencies of nurse educators are organized into eight domains: theories and principles of adult learning; curriculum and implementation; nursing practice; research and evidence; communication, collaboration, and partnership; ethical/legal principles and professionalism; monitoring and evaluation; and management, leadership, and advocacy (World Health Organization [WHO], 2016). Some of the skills and knowledge required to become an academic nurse educator described in the Nurse Educator Core Competencies (WHO, 2016) were found to be helpful for considering international standards. However, the Nurse Educator Core Competencies (WHO, 2016) has several limitations. First, the superordinate concepts of the proposed components of competency (i.e., the definition of Nurse Educator Core Competencies), are not clearly defined. Second, the surveys for developing those core competencies might be biased in terms of survey participants, and the validity of the content has not yet been empirically investigated. Finally, competencies such as individual traits and values were proposed only in the context of academic nurse educators.

The development of nursing competencies in undergraduate students does not merely involve acquiring nursing knowledge and skills, but also includes developing ethical sensitivity, interpersonal skills, reflection skills, and relevant personal traits (Ministry of Education, Culture, Sports, Science and Technology, 2017; Science Council of Japan, 2017). A systematic review of nursing student competencies identified the following competencies that all nursing students should attain: nursing care knowledge and skills, attitudes and values in clinical situations, critical thinking skills, ethical decision-making skills, and skills in communication and interpersonal relationships (Immonen, et al., 2019). To promote or enhance these competencies of nursing students, the competency of academic nurse educators needs to be comprehensive. Some indicators and assessment tools have been developed based on the above competencies for educating nursing students in Japan (Japan Association of Nursing Programs in Universities, 2011; Ministry of Health, Labour and Welfare, 2010) but have some drawbacks. In particular, these indicators and tools were designed for only younger faculty members and have not been examined empirically. Moreover, these indicators and tools include mainly the elements of clinical nursing practice or professional ethical sensitivity, not comprehensive indicators and tools.

Faculty members, regardless of their major, are required to have not only sufficient ability to perform their duties but also particular personal qualities. Ability is the capability to accomplish a goal, and personal quality is a characteristic and natural talent; these words are described in parallel. Competency is a comprehensive concept that encompasses ability and personal quality required for perform the specific duties and responsibilities (Epstein & Hundert, 2002; Spencer & Spencer, 1993). Therefore, this concept can be used in broader contexts and is applicable to the competency of academic nurse educators, which requires particular abilities and inherent qualities.

Based on those definitions of competency proposed by previous studies, the competency of academic nurse educators is defined here as "an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation such as serving as an academic nurse educator at a university." Here,'underlying characteristic' means values, beliefs, and behavior that are consistent across a wide variety of situations and job tasks over a long period.

The aim of this study was to investigate the factors that constitute competency in academic nurse educators at Japanese universities. Accordingly, items related to the competency of academic nurse educators were

selected and their importance and necessity were considered from the perspective of our definition of competency for academic nurse educators. Then, the individual aspects of each competency were further identified. By identifying the competency factors required of academic nurse educators, their knowledge and skills could be developed according to their situation, thereby improving the quality of nursing education.

Methods

Design and Participants

A cross-sectional survey design was implemented using an anonymous self-administered online survey system. Participants were academic nurse educators who were working at nursing universities and members of the Japan Association of Nursing Programs in Universities.

Procedures

The authors contacted the deans of 277 of 283 nursing universities that belonged to the Japan Association of Nursing Programs in Universities as of April 2019 to request their respective university's participation in the survey. The other six universities are affiliated with the authors' institutions and were excluded from the study so that they would not feel obliged to cooperate. The decision to inform the academic nurse educators at each university of this survey was left entirely to the dean. The academic nurse educators were provided information about the study on the survey website. All data were collected via the online survey system. There was a total of 9237 academic nurse educators at the 277 nursing universities. In total, 372 participants completed the survey (response rate 4.03%), and after excluding incomplete data, the data of 367 participants were analyzed (valid response rate 3.97%).

Variables

Competencies of Academic Nurse Educators. An original questionnaire consisting of 55 items concerning the competencies of nursing academic educators was developed for this study. First, relevant literature on the competencies of academic nurse educators was reviewed to generate an item pool comprising competencies of academic nurse educators. For the literature review, the databases of PubMed, the Cumulative Index of Nursing and Allied Health Literature, and the Japan Medical Abstracts Society were searched using the terms "nurse," "faculty," "educator," "education," and "competency." Inclusion criteria were studies published between 2007 and 2017, papers published in Japanese or English, and primary original empirical studies or literature reviews. Studies not targeting academic nurse educators at university were excluded.

To ensure that this research was not at odds with current policies in actual nursing education, we also reviewed the "Report on the further direction of attributes and abilities of nurse teachers and the education programs for them" (Ministry of Health, Labour and Welfare, 2010), "Report on educator training in nursing graduate schools for educational system enhancement" (Japan Association of Nursing Programs in Universities, 2013), "Nurse Educator Core Competencies" (WHO, 2016), and "The FD guideline for younger nurse educators" (Japan Association of Nursing Programs in Universities, 2011).

From our review and discussion, competency items were selected based on our abovementioned definition of competency for academic nurse educators. Finally, we agreed on 55 competency items for inclusion in the questionnaire. The questionnaire queried the extent to which each of the 55 competency items currently applied to the survey participant. All items were self-rated according to a four-point response Likert scale (1 = not applicable, 2 = slightly true, 3 = true, and 4 = always true).

Individual Attributes. Participants' demographic characteristics included sex, age, years of teaching experience, years of nursing experience, current academic position, academic position when they joined the education field, education level, nursing-related certification, department, and main affiliation (national, public, or private university).

Statistical Analyses

Descriptive statistics, such as frequency, percentage, mean, and standard deviations, were used to analyze all variables. Subsequently, ceiling and floor effects of the 55 competency items were assessed by calculating their mean and standard deviation. Exploratory factor analysis was then performed using the least-squares method with promax rotation to examine the factor structure of the competency of academic nurse educators. We extracted all factors with eigenvalues greater than 1.0 in which the constituent items had loadings above 0.35 in terms of their interpretablitiy (Howard, 2016). The internal consistencies of the extracted factors were evaluated using Cronbach's alpha.

SPSS Statistics 26.0 for Mac was used for all data analyses. Statistical significance was set at $p < 0.05$ (two-tailed).

Ethical Considerations

The study was approved by the Ethics Committee of the authors' institutions, and complied with the Declaration of Helsinki.

Results

Participant Characteristics

The participants' demographic characteristics were recorded (Tables 1 and 2). Most were Assistant Professors (34.6%), followed by Lecturers (26.2%). There was approximately the same number of participants working in adult nursing departments (adult nursing departments is that teach clinical nursing care to adults with a wide variety of medical conditions and illnesses, and for supporting their treatment, recovery, and well-being) (22.1%) as in the fundamental of nursing (fundamental of nursing is that teach fundamental or theoretical nursing principles and basic nursing skills) (21.3%). The mean number of teaching years (8.52 ± 6.58 years) was slightly lower than the mean number of nursing years (10.37 ± 7.11 years). More than half worked at private universities (56.1%).

Distribution of Competencies of Academic Nurse Educators

The mean, standard deviation, and median of each competency item was calculated (Table 3). The median of most items was 3 and the mean of all items was relatively high. Floor effects were not found, whereas ceiling effects were found on 13 items: "Understands how to contact and report in the job," "Understands their role

in the organization," "Cooperates and collaborates with university faculty colleagues," "Coordinates, cooperates, and collaborates with facilities for practical training," "Understands the relevance between the university's educational policy and clinical practice," "Understands how academic nurse educators and clinical nursing instructors cooperate and collaborate with one another," "Builds relationships with staff in facilities for practical nurse training," "Coordinates practical nurse training matters with facilities and clinical nursing instructors," "Provides effective advice on students' practical nurse training," "Adjusts the balance between students' right to learn and ethical consideration for patients," "Advocates for students undergoing practical nurse training," "Understands the position of the person in charge of the curriculum," and "Manages personal information appropriately."

Exploratory Analysis of Competencies of Academic Nurse Educators

After excluding 13 items with ceiling effects, exploratory factor analysis (least-squares method with promax rotation) was performed on 42 items (Kaiser-Meyer-Olkin test = 0.96, Bartlett's test = p < .001; Table 4). Thus,

Table 2. Participants' Age and Experience in Years.

	Mean	SD	Minimum	Maximum
Age	45.81	8.80	27	70
Years of teaching experience	8.52	6.58	0	31
Years of nursing experience	10.37	7.11	0	38

Table 1. Participants' Characteristics (N = 367).

	N	%		N	%
Sex			Education level		
Female	317	86.4	Vocational nursing school or junior nursing college	17	4.7
Male	50	13.6	Nursing university	15	4.1
Current position			University (excluding nursing university)	3	0.8
Professor	49	13.4	Master's degree	197	53.7
Associate professor	67	18.3	Doctoral degree	134	36.5
Lecturer	96	26.2	Other	1	0.3
Assistant professor	127	34.6	Department		
Teaching associate	28	7.6	Fundamental of nursing	78	21.3
Certification related to nursing (MA)			Adult nursing	81	22.1
Registered nurse	365	99.5	Gerontological nursing	39	10.6
Public health nurse	199	54.2	Home nursing	27	7.4
Licensed practical nurse	17	4.6	Child nursing	32	8.7
Main affiliation			Maternity nursing	44	12.0
National university	57	15.5	Mental health nursing	21	5.7
Public university	104	28.3	Community nursing	29	7.9
Private university	206	56.1	Other	16	4.4

Table 3. Distribution of Competencies of Academic Nurse Educators.

		Mean	SD	Median
1	Understands how to contact and report in the job	3.55	0.58	4
2	Understands their role in the organization	3.46	0.59	4
3	Plays their role actively in university management, such as in a committee	3.08	0.84	3
4	Establishes a network within and beyond the university, leading to problem solving	2.76	0.86	3
5	Has short- and long-term goals in their professional life	2.94	0.77	3
6	Cooperates and collaborates with university faculty colleagues	3.33	0.69	3
7	Coordinates, cooperates, and collaborates with facilities for practical training	3.42	0.63	3
8	Expresses themself in interpersonal relationships	3.14	0.69	3
9	Shows understanding of other persons in interpersonal relationships	3.37	0.59	3
10	Engages in self-improvement to enhance ethical sensitivity	3.29	0.63	3
11	Reflects on their own behavior in terms of professional ethics	3.34	0.60	3
12	Understands the relevance between the university's educational policy and clinical practice	3.33	0.68	3
13	Has nursing skills that are necessary for practical nurse training in clinical settings	3.28	0.69	3
14	Develops the necessary knowledge for education even though they are inexperience	3.20	0.69	3
15	Develops professional knowledge for education even in a non-specialty area	2.97	0.76	3
16	Understands the principle of facilities and fields for practical nurse training and the acceptance policy	3.31	0.66	3
17	Understands how academic nurse educators and clinical nursing instructors cooperate and collaborate with one another	3.45	0.62	4
18	Builds relationships with staff in facilities for practical nurse training	3.47	0.58	4
19	Coordinates practical nurse training matters with uncooperative staff	2.84	0.76	3
20	Coordinates practical nurse training matters with facilities and clinical nursing instructors	3.43	0.64	4
21	Facilitates fostering of students' motivation, personal traits, and initiative based on assessment of their learning situations	3.12	0.63	3
22	Assesses students' learning situations on campus objectively	3.13	0.69	3
23	Assesses students' learning situations during practical nurse training objectively	3.25	0.63	3
24	Assesses students' capacity development	3.01	0.72	3
25	Provides effective advice on students' practical nurse training	3.47	0.60	4
26	Adjusts the balance between students' right to learn and ethical consideration for patients	3.39	0.65	3
27	Advocates for students undergoing practical nurse training	3.48	0.61	4
28	Understands the position of the person in charge of the curriculum	3.39	0.68	3
29	Applies pedagogical skills based on understanding of the nursing education framework	2.91	0.74	3
30	Recognizes that educational strategies depend on educational goals	3.14	0.73	3
31	Understands educational principles and educational theory for planning curriculum	2.95	0.79	3
32	Studies the latest knowledge of health care and medical care systematically	2.92	0.75	3
33	Has a personality that inspires students	2.81	0.64	3
34	Is aware of human rights, ethics, and nursing values that respect diverse individualities	3.28	0.62	3
35	Designs curriculum according to needs of the times	2.59	0.89	3
36	Provides classes according to needs of the times	2.78	0.78	3
37	Implements education, conscious of not only their own specialty but also the relevance of their own specialty to all nursing specialties	2.85	0.75	3
38	Facilitates learning that fosters integration of teaching on campus and nursing practice in clinical settings	2.99	0.76	3
39	Teaches clinical nursing practice as a learning resource	3.04	0.76	3
40	Guides students according to their diversity	2.92	0.69	3
41	Provides students with mental and physical consultation	3.20	0.64	3
42	Supports communication among students	3.00	0.66	3
43	Demonstrates students' educational perspectives and basic educational knowledge	3.18	0.67	3
44	Provides appropriate education based on the latest medical knowledge and skills	2.97	0.69	3

Table 3. Continued.

		Mean	SD	Median
45	Manages personal information appropriately	3.60	0.54	4
46	Participates in organizational management proactively	2.81	0.84	3
47	Demonstrates leadership to achieve organizational goals	2.40	0.85	2
48	Uses the latest findings in their specialized area for education	2.91	0.81	3
49	Establishes their own research theme and prepares the field for research	3.06	0.86	3
50	Participates in collaborative research within and beyond the university and gains knowledge and skills for research	2.69	0.96	3
51	Participates in workshops or academic conferences and broadens their view of academic research	3.14	0.82	3
52	Actively applies for research grants on campus and competitive research funding	2.87	1.00	3
53	Ensures instructors consult academic research	2.95	0.97	3
54	Finds tasks in daily educational activities	3.15	0.74	3
55	Works on tasks of daily educational activities from a research perspective	2.78	0.88	3

this sample data were adequate for the use of factor analysis Then, 3 items with a factor loading of less than 0.35 were excluded, following which a second analysis was performed on 39 items. Five competency factors were extracted: "facilitating active learning," "engaging in academic research activities," "participating in university management," "undergoing self-directed learning based on professional ethics," and "practicing education autonomously." Cronbach's alpha for each factor was greater than 0.800.

Discussion

Turnover among nursing school faculty members in Japan is highly volatile and fluid. As a result, it would be unrealistic to expect a high survey recovery rate. As such, those who responded to this survey can be considered to have an extremely high level of interest in education, make this research data particularly valuable. The most significant competency factor of the academic nurse educators was "Facilitating active learning," which includes items such as teaching theoretical and clinical knowledge and skills to students, evaluating student learning, and being a role model. The main role and responsibility of academic nurse educators is teaching and facilitating learning, facilitating learner development, and supporting learners' continuous life-long learning (NLN, 2013; WHO, 2016). Other studies have suggested the following roles and competencies of academic nurse educators: teaching professional knowledge and skills, and providing an appropriate learning environment for supporting and enhancing learning among nursing students (McAllister & Flynn, 2016; Mikkonen et al., 2018; Töytäri et al., 2016). Approaches to fostering active learning in students have also been recommended for implementation in higher education (Sanaie et al.,

2019). The present study also suggested "facilitating active learning" as a critical competency for nursing education in universities. Some studies categorize the competency of support or facilitating learning, including teaching nursing knowledge and skills, into pedagogical skills and nursing practice (Guy et al., 2011; Salminen et al., 2013; Zlatanovic et al., 2017). The present study indicates that "facilitating active learning" is indeed a single factor, not two. Nursing competencies are based on the combination of theory and practice, so nursing education should bridge theory and practice, and create and apply clinical evidence-based knowledge. Thus, both practical nursing competency and pedagogical competency are closely connected and are nursing education functions that cannot be simply separated.

"Engaging in academic research activities," consisting of engagement in research or gathering information about research topics, is one of the most important jobs of academic nurse educators (Ramsburg & Childress, 2012). Educators in higher education generally require a master's or doctoral degree. Academic nurse educators should also undertake a master's or doctoral degree or develop advanced research skills (Logan et al., 2016; Paul, 2015) because their research knowledge and application would have a highly positive impact on nursing education (Koivula et al., 2011). In Japan, academic nurse educators under the age of 39 or younger were reported to spend only about 15% of their total work time on research activities (Japan Academy of Nursing Science, 2014). Few academic nurse educators have the support and resources for research capacity building or a work environment that promotes research activities (Fukahori et al., 2015, Shiga et al., 2020). Therefore, a strategy must be developed that allows academic nurse educators in Japan to more actively engage in research activities.

Table 4. Exploratory Factor Analysis of Competencies of Academic Nurse Educators (Least-Squares Method With Promax Rotation).

		Factors				
		1	2	3	4	5
Facilitating active learning (Cronbach's α = 0.916)						
23	Assesses students' learning situations during practical nurse training objectively	**0.969**	−0.016	−0.126	0.102	−0.202
22	Assesses students' learning situations on campus objectively	**0.831**	0.115	−0.174	0.087	−0.027
24	Assesses students to evaluate their capacity development	**0.828**	0.075	0.112	−0.022	−0.198
21	Facilitates fostering of students' motivation, personal traits, and initiative based on assessment of their learning situations	**0.770**	0.117	−0.053	0.087	−0.093
41	Provides students with mental and physical consultation	**0.662**	−0.090	0.110	−0.032	−0.075
43	Demonstrates students' educational perspectives and basic educational knowledge	**0.643**	−0.025	0.115	−0.072	0.083
40	Guides students according to their diversity	**0.580**	0.052	0.100	−0.001	0.099
42	Supports communication among students	**0.546**	−0.066	0.097	0.033	0.023
39	Teaches clinical nursing practice as a learning resource	**0.546**	−0.110	0.019	−0.095	0.334
19	Coordinates practical nurse training matters with uncooperative staff	**0.441**	−0.077	0.138	0.132	0.063
13	Has nursing skills that are necessary for practical nurse training in clinical settings	**0.398**	−0.092	−0.162	0.109	0.286
33	Has a personality that inspires students	**0.388**	−0.012	0.204	0.063	0.032
34	Is aware of human rights, ethics, and nursing values that respect diverse individualities	**0.370**	−0.043	−0.086	0.269	0.263
Engaging in academic research activities (Cronbach's α = 0.900)						
53	Ensures instructors consult academic research	−0.008	**0.894**	−0.267	0.016	−0.051
52	Actively applies for research grants on campus and competitive research funding	0.077	**0.819**	0.008	−0.124	−0.122
49	Establishes their own research theme and ensures the field for research	0.139	**0.796**	−0.012	−0.060	−0.129
51	Participates in workshops or academic conferences and broadens their view of academic research	−0.086	**0.772**	0.042	0.079	−0.022
50	Participates in collaborative research within and beyond the university and gains knowledge and skills for research	−0.140	**0.692**	0.195	0.023	−0.006
55	Works on tasks of daily educational activities from a research perspective	−0.045	**0.611**	0.129	−0.040	0.181
54	Finds tasks in daily educational activities	0.066	**0.477**	−0.126	0.101	0.329
48	Uses the latest findings in their specialized area for education	−0.036	**0.371**	0.214	−0.011	0.338
Participating in university management (Cronbach's α = 0.858)						
47	Demonstrates leadership to achieve organizational goals	0.005	0.022	**0.883**	0.060	−0.108
3	Plays their role actively in university management, such as in a committee	0.093	−0.142	**0.776**	0.077	−0.093
46	Participates in organizational management proactively	0.012	0.005	**0.693**	0.116	−0.021
4	Establishes a network within and beyond the university, leading to problem solving	−0.044	0.183	**0.654**	0.101	−0.172
35	Designs curriculum according to needs of the times	0.074	−0.008	**0.534**	−0.086	0.267
5	Has short- and long-term goals in their professional life	−0.106	0.336	**0.393**	0.229	−0.030
Undertaking self-directed learning based on professional ethics (Cronbach's α = 0.811)						
9	Shows understanding of other persons in interpersonal relationships	0.150	−0.039	0.176	**0.541**	0.033
11	Reflects on their own behavior in terms of professional ethics	0.164	−0.062	0.049	**0.524**	0.283
10	Engages in self-improvement to enhance ethical sensitivity	0.039	0.128	0.033	**0.476**	0.263
8	Expresses themself in interpersonal relationships	0.088	0.002	0.334	**0.474**	0.013
Practicing education autonomously (Cronbach's α = 0.886)						
15	Develops professional knowledge for education, even in a non-specialty area	−0.191	−0.149	−0.070	0.304	**0.801**

(continued)

Table 4. Continued.

		Factors				
		1	2	3	4	5
14	Develops the necessary knowledge for education despite inexperience	0.005	0.021	−0.291	0.264	**0.769**
38	Facilitates learning that fosters integration of teaching on campus and nursing practice in clinical settings	0.292	0.009	0.036	−0.063	**0.539**
37	Implements education, conscious of not only their own specialty but also the relevance of their own specialty to all nursing specialties	0.198	0.009	0.180	−0.044	**0.452**
36	Provides classes according to needs of the times	0.155	0.041	0.320	−0.148	**0.432**
32	Studies the latest knowledge of health care and medical care systematically	0.104	0.132	0.183	0.013	**0.388**
44	Provides appropriate education based on the latest medical knowledge and skills	0.337	0.107	−0.016	−0.025	**0.379**
29	Applies pedagogical skills based on the understanding of the nursing education framework	0.300	0.055	0.130	0.011	**0.350**
	Factor correlation matrix	1	2	3	4	5
	1	1	0.479	0.652	0.378	0.725
	2	0.479	1	0.668	0.180	0.590
	3	0.652	0.668	1	0.250	0.714
	4	0.378	0.180	0.250	1	0.266
	5	0.725	0.590	0.714	0.266	1

Bold values indicate factor loadings higher than 0.35.

"Participating in university management," including curriculum development and active participation in an organizational committee, ensures students' lives and learning are satisfactory and adequate. Organizational management competency has been the role of university educators so as to foster educational activity and increase the quality of education (Arimoto, 2007; Ishii, 2010; Nilson & Miller, 2009). Academic nurse educators should also be involved in management activities that create and improve nursing education programs that are highly professional and nurture the success of a positive learning environment (Guy et al., 2011; WHO, 2016; Zlatanovic et al., 2017). Therefore, academic nurse educators are expected to actively participate in organizational management and decision-making processes.

Academic educators put effort into self-development or critical self-reflection to improve themselves professionally in terms of ethics and offer effective education to students (Pedrosa-de-Jesus et al., 2016). Professional ethical competency among academic nurse educators should be enhanced by participating in ongoing professional self-development, engaging in continued learning, or self-reflecting on their own ethical sensitivity (Mikkonen et al., 2019; WHO, 2016). Thus, "undergoing self-directed learning based on professional ethics," consisting of academic nurse educators' self-reflection on their own professional behavior or interpersonal

relationships, was extracted as a competency factor in this study. The questionnaire items represent the competency of academic nurse educators' own career development in the long term, and they are considered to be engaging in self-directed learning as an academic nurse educator. In addition, the image of an ideal academic nurse educator based on the design of their career development might have a positive effect on their teaching or relationship with students. Therefore, such items are expected to become additional competencies in academic nurse educators.

"Practicing education autonomously," consisting of the provision of education with the latest knowledge or helping students to learn how to link theory to practice autonomously, is a high-need area for academic nurse educators, especially those in higher education. Academic nurse educators develop their abilities so that they can implement education flexibly, corresponding to continuous updating of their knowledge, skills, and technology related to the health sciences, changing social situations, working in a wide variety of care settings, or diversifying nursing students (Adelman-Mullally et al., 2013; Salminen et al., 2010). Academic nurse educators should promote the competency of "practicing education autonomously" to develop nursing personnel who are highly professional and meet the demand for complex health care needs. "Practicing education autonomously" showed moderate correlation

coefficients with "facilitating active learning" and "participating in university management." These three factors are in synergy with each other and produce a positive educational outcome. Having academic nursing educators actively "participating in university management" and "practicing education autonomously" would lead to the creation of a desirable educational environment and curriculum design based on traditional principles and the latest best evidence, thereby motivating nursing students to learn actively. To provide the best learning environment and program, academic nurse educators should conduct high-quality academic research with critical inquiry and link their research activities to their instruction. Moreover, academic nurse educators should be role models with a professional attitude and ethical sensitivity by showing enthusiasm for teaching nursing to inspire and motive nursing students.

This study proposed more specific competencies for academic nurse educators in terms of both domains and items. In particular, self-directed learning skills were extracted as the one of the competencies for academic nurse educator in this study, although the Nurse Educator Core Competencies (WHO, 2016) has not been clearly indicated. Having self-directed learning skills as adult learners is an important competency for academic educators (Lopes & Cunha, 2017; Morris, 2019). In contrast to the Nurse Educator Core Competencies (WHO, 2016), this study showed that both personal and professional individual traits and values were components constituting competency in academic nurse educators. Thus, the competencies of academic nurse educators identified by the current study would not only be readily observable professional knowledge and skills but also less obvious personal traits, values, and attitudes in a broader sense, as well as learner autonomy.

The competencies identified in this study are essential for academic nurse educators to provide sophisticated nursing education. Accordingly, academic nurse educators should be able to clearly recognize what they must do and what responsibilities they must accept. However, their individual competencies will depend on stage of their career as an academic nurse educator. Therefore, support systems, mentoring, faculty development programs, and e-learning for academic nurse educators in accordance with their academic positions should be established to comprehensively cultivate their competencies.

Limitations

The current study has several limitations. First, although the survey was aimed at all university academic nurse educators, the response rate was low. This may be due to our reliance on the deans of nursing universities to distribute the survey invitation letter to academic nurse educators. Therefore, some educators may not have received our invitation to participate and our results should be interpreted with caution. Additionally, the respondents were predominantly women, and so the results may be of limited generalizability. Second, this study was based solely on a self-reported questionnaire. Objective evaluation would be necessary to more accurately clarify the competency of academic nurse educators. Third, to develop the concept of competency for academic nurse educators so that it may be generalized regardless of country differences, research should be conducted globally and not limited to Japan. Fourth, the results of this study were based on an exploratory factor analysis and would benefit from a subsequent study with a larger sample size that would allow for a confirmatory factor analysis to be conducted.

Finally, the academic nurse educators surveyed in this study might have been highly motivated toward education and study in nursing. The responses of those who have lower motivation and/or interest in education and study in nursing are not fully reflected in our results. However, this study might describe the current status of academic nurse educators who are actively willing to improve not only the quality of nursing education, but also the competency of academic nurse educators. Therefore, the present study contributes to further investigation of competency of academic nurse educators.

Conclusion

This research identified not only readily observable competencies such professional knowledge and skills but also less obvious personal traits, values, and attitudes in a broader sense. Competency for academic nurse educators comprises five elements: "facilitating active learning," "engaging in academic research activities," "participating in university management," "undertaking self-directed learning based on professional ethics," and "practicing education autonomously." These are essential for academic nurse educators to provide high-quality nursing education. Academic nurse educators should clearly recognize what competencies they are expected to develop and a support system should be established to comprehensively cultivate these competencies. The cultivation of the competencies is the first step with further research needed to develop a tool to assess the nurse educator's competencies. This will ensure professional development of the educator and improve the education provided to future health care professionals.

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