



Current situation and challenges in employment of Indonesian nursing/certified care worker candidates based on economic partnership agreement between Indonesia and Japan

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博 士 論 文

**Current situation and challenges in employment of Indonesian
nursing/certified care worker candidates based on economic
partnership agreement between Indonesia and Japan**
(経済連携協定に基づくインドネシア人看護師・介護士候補者の
就労の現状と課題)

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神戸大学大学院保健学研究科保健学専攻

金 川 真 理

**Current situation and challenges in employment of Indonesian nursing/certified
care worker candidates based on economic partnership agreement
between Indonesia and Japan**

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Abstract

This study investigated the current situation and activities at the workplace and readiness to pass the national board examination in Japanese after the work, and the changes in daily living and health condition among Indonesian nursing/certified care worker candidates before and after their work. Questionnaires which consisted of "daily living," "support system," "health condition," and the State Trait Anxiety Inventory were collected two times, before and after the work at the hospital/nursing home. Sixty-eight subjects participated in this study before the work (the survey 1) and fifty subjects in longitudinal survey of the same study participated six months after the work (the survey 2). Language difficulty of Indonesian nursing/certified care worker candidates was the highest concern in both the survey 1 and the survey 2. The mental health condition of nursing/certified care worker candidates worsened in the survey 2 compared to the survey 1. This was relevant to their backgrounds and feelings toward Japanese coworkers, or level of satisfaction with their work. It was suggested that they needed more support in Japanese language in both the survey 1 and the survey 2, while in the survey 2, nursing candidates needed opportunities for training as nurses.

Keywords: Foreign professional personnel, Nurses, Care worker, Economic partnership agreement, Migration, Indonesia

INTRODUCTION

The persistent shortage of nursing staff is reported in many industrialized countries^{1),2),3),4)}. The factors that are affecting the United States nursing shortage are the average age of registered nurses increasing, changing patient demographics, insufficient staffing raising stress level, and high nurse turnover and vacancy rates⁵⁻¹⁰⁾. It is estimated that 30,000 nurses and midwives educated in sub-Saharan Africa are now employed in seven Organisation for Economic Co-operation and Development (OECD) countries. The percentage of foreign-educated nurses working in nurse workforce of Australia, Canada, the United Kingdom, and the United States is currently reported to be between 5 and 10 percent¹¹⁾. On the other hand, in Asia, the Philippine is the leading primary source country in source of nurses employed overseas^{12),13),14),15)}. According to researchers of Taiwanese nurse in the United States, it is demonstrated that Taiwanese nurse had frustration in language and communication¹⁶⁾. Therefore, many researchers have demonstrated much concern with the increase of immigrant nurses in recent years.

In Japan, the birth rate has decreased in recent years, while life expectancy has increased. The percentage of the total population aged 65 or over in 2011 was 23.4%. As a result, there are increasing demands for nursing care. Furthermore, about 892,000 nurses worked at the hospitals in Japan (2009), about 125,000 nurses (2009) left off their work for pregnancy/childbirth or the burden of long working hours. The large number of trained nurses who are not working as nurses, which is estimated to be about 550,000¹⁷⁾. As a result, there is a severe shortage of nursing staff in Japan.

In 2008, to compensate for strengthening and promoting cooperation in the area of economic cooperation between the two countries, Japan started to accept nursing/certified care worker candidates (N/CCWCs) from abroad based on Economic Partnership Agreement (EPA) between Japan and various Southeast Asian countries. Furthermore, it may leads to response to the shortage of nursing human resources in the future. The status of residence of “Designated activities” is given to foreign N/CCWCs who come to Japan under the EPA.

N/CCWCs are working and training within the range of the permitted activities at the hospitals/nursing home.

N/CCWCs who came to Japan under the EPA must learn the Japanese language and work, adapting to Japanese life and culture. Furthermore, it is recommended that they pass the national board examination in Japanese during their stay for 3 or 4 years in Japan. On the other hand, nursing candidates (NCs) may have few chances to learn as nursing in Japan due to their working as nursing assistants. It was reported that nurses working in abroad work efforts during the first three to six months were quite dramatic: many feeling as if “running the hurdles,” or “standing at the roots of an insurmountable mountain”¹⁸⁾. Moreover, it was reported that participating foreign nurses experienced communication challenges, differences in nursing practices and cultural differences^{19),20)}.

However, little information is available regarding the current situation and challenges in employment of N/CCWCs who came to Japan under the EPA. Accordingly, the purpose of this study was to examine the current situation, and challenges in employment of Indonesian N/CCWCs based on EPA between Indonesia and Japan.

METHODS

Design

This study used a quantitative longitudinal survey to examine the current situation and challenges in employment of Indonesian N/CCWCs based on EPA between Indonesia and Japan.

Sample

The sample consisted of 208 Indonesian N/CCWCs based on EPA who came to Japan in 2008.

Data Collection Procedures

Data were collected two times, between November and December 2008 (survey 1) and again between July and September 2009 (survey 2). The survey 1 was conducted during

their six months of Japanese language training in some centers located before started to work as N/CCWCs in the hospital/nursing home. The survey 2 was conducted in six months after entering to the work at the hospital/nursing home. Sixty-eight subjects participated in the survey 1 and fifty subjects participated in the survey 2. Subjects were N/CCWCs. NCs have work experience more than 2 years as nurses in Indonesia and work as nursing assistants in Japan until they pass the national board examination in Japanese. Certified care worker candidates (CCWCs) do not have work experience as nurses in Indonesia and work as care worker assistants in Japan until they pass the national board examination in Japanese.

Immediately 208 Indonesian N/CCWCs came to Japan, they participated in the reception ceremony held the Indonesian Embassy. At the time, we explained research purpose and got informed consent from them to participate at this research project. We distributed self-administered questionnaires to all members of 208 Indonesian N/CCWCs. Questionnaires were primarily distributed and collected by post and in some cases by e-mail. Returned rates for the survey 1 and the survey 2 were 32.7% (68 participants of 208 subjects) and 24.0% (50 participants of 208 subjects), respectively. There are some differences in constitution of study population of participants between the survey 1 and the survey 2. We got the informed consent from each participant before we started this research.

Two questionnaires were developed for capturing the current situation of Indonesian N/CCWCs in the survey 1 and the survey 2. Each questionnaire consisted of "subject background," "concerns of daily living in Japan," "support system and Japanese speaking ability," "health conditions," and "State Trait Anxiety Inventory (STAI)," and "situation at the workplace". In the survey 2, questions about their "situation and activities at the workplace," and their "readiness to pass the national board examination in Japanese" were added. The questionnaires included multiple choice type and open ended questions. Questionnaires were delivered to the subjects in Indonesian language, however they could answer them either in Indonesian, English or Japanese language. Indonesian version of the

questionnaire was translated by an Indonesian post graduated nursing student studying in Japan who speaks well not only Indonesian but also Japanese.

The State Trait Anxiety Inventory (STAI) form Y was used to measure the level of anxiety. It consists of forty questions and is divided into state and trait anxiety subscales. State anxiety refers to elevated feelings of a threat that a person experiences in a current situation, whereas trait anxiety refers to relatively stable anxiety proneness. Questions 1-20 asked about "how do you feel right now, at this moment?" Questions 21-40 asked about "how do you feel in general." Each question needs a response range from "not at all" to "very much so". The range of scores is 20-80, the higher the score indicating greater anxiety²¹⁾. The median alpha reliability coefficients of STAI (form Y) was state anxiety ($\alpha=.92$) and trait anxiety ($\alpha=.90$)²¹⁾. The reliability of the Indonesian version of STAI was state anxiety ($\alpha=.88$) and trait anxiety ($\alpha=.75$)²²⁾.

Data Analysis

The data were analyzed using descriptive analysis, t-test, Chi-square test, Fisher's exact test, and one-way ANOVA with IBM SPSS Statistics 19. Significance was set at $p<.05$ and the confidence interval estimated to be at the 95% level.

Ethical Considerations

This study was approved by the ethics committee of Kobe University. Informed consent from the subjects was gathered before data collection was started.

RESULTS

Participant's background in the survey 1 and the survey 2 (Table 1)

The mean age was 27.0 ± 3.2 years before entering to the work (the survey 1) and 26.3 ± 3.0 years in six months after entering to the work (the survey 2). The rate of working as NC among participants the survey 1 was significantly higher than that among participants in the survey 2 (85.3% vs. 61.7%, $p<.05$, respectively). The rate of working in a private hospital in Indonesia among participants in the survey 1 was significantly higher than that

among participants in the survey 2 (78.1% vs. 50.0%, $p < .05$, respectively). In the reasons for working in Japan, participants in the survey 1 have a significantly higher rate of career development (83.8% vs. 64.0%, $p < .05$, respectively) and appreciation for profession (55.9 % vs. 0.0%, $p < .01$, respectively) than those in the survey 2. Participants in the survey 2 have a higher tendency of higher salary in the reasons for working in Japan than those in the survey 1 (69.6% vs. 60.3%, respectively).

Actual conditions of daily living, Support system and Japanese speaking ability (Table 2)

In concerns of daily living in Japan, participants in the survey 2 have a significantly higher rate of cost of living than those in the survey 1 (77.1% vs. 32.4%, $p < .01$, respectively). In addition, participants in the survey 2 have a higher tendency of culture and/or religion difficulties than those in the survey 1 (62.5% vs. 54.4%, respectively). Language difficulty was the highest concern in both the survey 1 and the survey 2 (92.6% vs. 81.3%, respectively).

In support to need for working in Japan, participants in the survey 1 have a significantly higher rate of health matters than those in the survey 2 (43.1% vs. 15.0%, $p < .05$, respectively). A significantly higher rate of participants in the survey 1 was Indonesian friend(s) to discuss problems with than that in the survey 2 (80.6% vs. 58.3%, $p < .05$, respectively), while a significantly higher rate of participants in the survey 2 was Japanese friend(s) to discuss with than that in the survey 1 (29.2% vs. 11.9%, $p < .05$, respectively).

In Japanese speaking ability, the rate of participants with bad Japanese speaking ability among participants in the survey 1 was significantly higher than that among participants in the survey 2 (61.4% vs. 29.8%, $p < .05$, respectively), while the rate of participants with common Japanese speaking ability among participants in the survey 2 was significantly higher than that among participants in the survey 1 (66.0% vs. 38.6%, $p < .05$, respectively).

Situation and Activities at the Workplace (Table 3)

The rate of working in a hospital among NCs was significantly higher than that among certified care worker candidates (CCWCs) (96.6% vs. 0.0%, $p < .01$, respectively). The rate of level of satisfaction with their work among CCWCs was higher than that among NCs (27.8% vs. 20.7%, respectively). NCs have a higher tendency on the awareness of severe work than those in CCWCs (50.0% vs. 29.4%, respectively). Both NCs and CCWCs have almost the same activities at work, such as those related to urine elimination (86.2% vs. 93.3%, respectively), nutrition (79.3% vs. 93.8%, respectively), and cleaning equipment (75.9% vs. 80.0%, respectively).

Both NCs and CCWCs have good impression of Japanese coworkers (67.9% vs. 50.0%, respectively). CCWCs have a higher tendency of difficulty in interacting with Japanese coworkers than those in NCs (87.5% vs. 69.0%, respectively).

Readiness to pass the national board examination in Japanese

CCWCs have a higher tendency to be motivated to pass the national board examination in Japanese than those in NCs (100% vs. 85.0%, respectively). In addition, CCWCs have a higher tendency to continue staying in Japan after passing the national board examination in Japanese than those in NCs (72.7% vs. 60.9%, respectively).

Health conditions and STAI scores (Table 4)

Participants in the survey 2 have a significantly lower rate of good physical health condition than those in the survey 1 (58.0% vs. 85.8%, $p < .05$, respectively). Participants in the survey 2 have a significantly lower rate of good psychological health condition than those in the survey 1 (34.7% vs. 69.1%, $p < .01$, respectively).

Participants in the survey 2 have a higher tendency of state anxiety in the STAI score than those in the survey 1 (41.4 ± 10.2 vs. 38.8 ± 7.2 , respectively). In addition, male

participants in both the survey 1 and the survey 2 have a higher tendency of state and trait anxiety in the STAI score than those in female participants. Participants under 24 years have a higher tendency of state anxiety in the STAI score than participants in aged 25-29 and aged 30 or more in the survey 2 (46.3 ± 11.8 vs. 40.2 ± 9.2 vs. 35.3 ± 5.8 , respectively). Participants under 24 years have a significantly higher rate of trait anxiety in the STAI score than participants in aged 25-29 and aged 30 or more in both the survey 1 and the survey 2 (41.4 ± 6.9 vs. 40.2 ± 7.1 vs. 34.7 ± 7.0 , 47.6 ± 8.5 vs. 41.9 ± 8.1 vs. 37.5 ± 8.6 , $p < .05$, respectively).

Relation between situation at the workplace and health conditions or STAI scores

(Table 5)

Participants in good physical health condition have a higher tendency of satisfaction with their work than participants in neutral and severe (81.8% vs. 18.2% vs. 0.0% , respectively). Participants in good psychological health condition have a significantly higher rate of satisfaction with their work than participants in neutral and severe (72.7% vs. 27.3% vs. 0.0% , $p < .05$, respectively).

The rate of state anxiety in the STAI score among participants who reported feeling “disappointed” in the level of satisfaction with their work was significantly higher than that among participants who reported feeling “neutral” and “satisfied” (49.3 ± 10.2 vs. 41.7 ± 8.2 vs. 34.0 ± 11.6 , $p < .05$, respectively). Participants who reported having a “poor” impression of Japanese coworkers have a higher tendency of state anxiety in the STAI score than those who reported having a “neutral” and “good” impression (51.0 ± 24.0 vs. 40.5 ± 13.7 vs. 39.2 ± 9.7 , respectively). Participants who reported having difficulties in interacting with Japanese coworkers have a higher tendency of state anxiety rate than those who had no difficulties (43.1 ± 9.4 vs. 34.8 ± 10.2 , respectively).

DISCUSSION

This is the first study to examine the current situation and their activities at the workplace and their readiness to pass the national board examination in Japanese in six months after entering to the work, and the changes in daily living conditions and health conditions among Indonesian N/CCWCs between before entering to the work and six months after it.

This study shows that N/CCWCs need support with Japanese language in both before entering to the work and six months after it. The rate of participants with bad Japanese speaking ability among participants before entering to the work was significantly higher than that among participants in six months after entering to the work. Participants in both before entering to the work and six months after it need much support for improving their Japanese speaking ability. Bachtiar and Ayu reported that the Indonesian nurses interviewed had studied basic Japanese for six months before they were stationed at a hospital or a nursing home, continued to do so after their placement at a hospital or a nursing home. Their language learning methods were dependent on the hospital and nursing home's management system²³⁾. Therefore, it is very important for them to have the intensive Japanese language training after start working. In addition, it is important that, before they start working, we explain the differences in nursing education system between Japan and Indonesia. Setyowati et al reported that 14 Indonesian nurses (12N/2CCWCs) working in Japan had language and communication barrier, and feeling loneliness²⁴⁾. Therefore, it is believed that they need a translator or someone who can speak Indonesian language and learn Japanese with a Japanese language teacher. N/CCWCs before entering to the work need to discuss problems with Indonesian friend(s) than those in six months after entering to the work. It is important that, before they start working, we prepare telephone and internet services as potential communication tools with their family and friends. We may explain the costs of living, differences in culture and/or religion supports from Japanese friend(s).

It should be noted that there are much difference of N/CCWCs each facility.

Furthermore, since NCs work as nursing assistants until they pass the national board examination in Japanese for nurses, they do not have their own tutor to learn nursing practices. Jennifer and Yu demonstrated that foreign nurses do not have much support from staff, colleagues or supervisors on the different nursing practices, as well as professional development and promotion²⁵⁾. In addition, there are many differences in nursing activities between Japan and Indonesia²³⁾. Christine, Colleen, and Annette demonstrated that, overseas nurses working in Western Australia described how the practice of nursing in Western Australia differed from the way which they practiced in their home country. Consequently, they felt disempowered and reported having to adjust their nursing to fit within the Western Australian healthcare setting²⁶⁾. Accordingly, we have to provide them with opportunities for nurse training, support from coworkers and supervisors, and understanding of the differences in nursing practices.

The data emerging from the present study suggests that both of the rates of physical and psychological health condition among participants in six months after entering to the work were worse than those among participants before entering to the work. Psychologically, it seems that if N/CCWCs are male, younger, have a poor impression of Japanese coworkers, or have difficulty interacting with Japanese coworkers, and also have a lower level of satisfaction, they needed more mental support. Ballestas and Maria reported that many Filipino candidates are generally happy to be in Japan. However, honestly answered that they were unhappy about career-wise²⁷⁾. Bachtiar and Ayu reported that if Indonesian nurses are unable to use their knowledge and skills as nurses due to their status as nursing candidate, “they end up feeling much self-pity”²⁵⁾. In addition, Hirano and Ayu reported that Indonesian nurse applicants wish to have a chance for career development and to brush up their own nursing skills as the purposes for visiting Japan²⁸⁾. Their situation and activities in their work are relevant to their mental state. Therefore, counseling services or physical and mental support after entering to the work is important for them. In the national board examination in Japanese for nurses, the passing rates were 1.2% (3 candidates out of 254

candidates), 4.0% (16 candidates out of 398 candidates), and 11.3% (47 candidates out of 415 candidates) in 2010, 2011 and 2012, respectively. In New Zealand, foreign nurses must achieve a score of 7 in all areas of the international English language testing or must achieve a B pass in all areas of the occupational English test²⁹⁾. In the United States, foreign nurses apply for a U.S. nursing license after successfully passing the national council licensure examination for registered nurses³⁰⁾. In Japan, although foreign nurses are not required to achieve a particular score on Japanese tests, they must pass the national board examination in Japanese for nurses. It should be pointed out that the Japanese language is typically more difficult in grammar and reading than English by N/CCWCs. The Japanese language has three different character sets (*hiragana*, *katakana*, and *kanji* [Chinese characters]). Hirano, Ogawa, and Ohno reported that most hospitals accepting foreign nurses want them to pass the national board examination in Japanese and work as nurses³¹⁾. Therefore, it is important to develop their acquirement of Japanese language for the national board examination in Japanese along with understanding of the differences in nursing care, medical systems, and culture between Japan and Indonesia. It is suggested that passing the national board examination in Japanese is not only important for making this agreement between Japan and Southeast Asia a win-win situation, but also important for improving the satisfaction of Japanese hospitals/ nursing homes for the elderly in their acceptance of foreign nurses³²⁾.

In this study, the collection rates of self-administered questionnaires were the low rate of 32.7% in the survey 1 and 24.0% in the survey 2. Therefore, there are limitations in the generalization of the results of this study. In the future, it is necessary to collect more data to gain deeper insights regarding the current situation, health conditions, and problems of Indonesian N/CCWCs.

CONCLUSIONS

The following were the main findings. Indonesian N/CCWCs needed daily living support in the survey 1. NCs worked as nursing assistants until they pass the national board

examination in Japanese for nurses. The mental health condition of Indonesian N/CCWCs was worse in the survey 2. This was relevant to their background, impression of Japanese coworkers, interactions with Japanese coworkers, and level of satisfaction with their work. This was relevant to their Japanese language ability, and the differences in nursing care, medical systems and culture between Japan and Indonesia. They needed support in discussing problems with Indonesian friend(s) in the survey 1. They needed support in Japanese language in both the survey 1 and the survey 2. On the other hand, they needed to discuss with Japanese friend(s) in the survey 2. Furthermore, NCs needed opportunities for training as nurses, support from coworkers and supervisors, and understanding of the differences in nursing practices between Japan and Indonesia in the survey 2. In the future, we should develop and perform their education program in order to improve these current situation and challenges.

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Table1

Subject background in the survey 1 and the survey 2

		The survey 1			The survey 2			<i>p</i>
Variables		<i>n</i>	<i>M</i> ± <i>SD</i>	Range	<i>n</i>	<i>M</i> ± <i>SD</i>	Range	
Age (years)		67	27.0± 3.2	21- 34	49	26.3± 3.0	22- 36	.22
Work experience (months)		64	52.3±39.3	0-180	37	46.7±31.3	2-124	.43

		The survey 1		The survey 2		<i>p</i>
Variables		<i>n/N</i>	(%)	<i>n/N</i>	(%)	
Gender	Female	43/68	(63.2)	24/46	(52.2)	.24
	Male	25/68	(36.8)	22/46	(47.8)	
Working in Japan	NC	58/68	(85.3)	29/47	(61.7)	.01
	CCWC	10/68	(14.7)	18/47	(38.3)	
Marital status	Single	51/61	(83.6)	39/49	(79.6)	.59
	Married	10/61	(16.4)	10/49	(20.4)	
Education	Nursing diploma	44/68	(64.7)	34/50	(68.0)	.71
	Bachelor degree in nursing	24/68	(35.3)	16/50	(32.0)	
Work experience in Indonesia	Private hospital	50/64	(78.1)	24/48	(50.0)	.01
	Public hospital	9/64	(14.1)	9/48	(18.8)	.50
	Health center	2/64	(3.1)	3/48	(6.3)	.37
	Other	8/64	(12.5)	16/48	(33.3)	.01
Work experience in other countries	Yes	6/62	(9.7)	4/46	(8.7)	.56
	No	56/62	(90.3)	42/46	(91.3)	
Reasons for working in Japan	Career development	57/68	(83.8)	32/50	(64.0)	.01
	Higher salary	41/68	(60.3)	32/50	(69.6)	.68
	Hope to continue education	39/68	(57.4)	22/50	(44.0)	.22
	Appreciation for profession	38/68	(55.9)	0/50	(0.0)	.00
	Support for family	34/68	(50.0)	20/50	(40.0)	.28
	More independent	23/68	(33.8)	18/50	(36.0)	.81
	Distance from hometown	2/68	(2.9)	2/50	(4.0)	.57

t-test, Chi-square test and Fisher's exact test

Note. NC = nursing candidate; CCWC = certified care worker candidate; Work experience in Indonesia and reasons for working in Japan (Multiple answers OK)

Table2

Concerns of daily living in Japan, Support system and Japanese speaking ability

Variables		The survey 1 n/N (%)	The survey 2 n/N (%)	p
Concerns of daily living in Japan				
	Language difficulty	63/68(92.6)	39/48(81.3)	.06
	Culture and/or religion difficulties	37/68(54.4)	30/48(62.5)	.39
	Foods and/or lifestyle difficulties	30/68(44.1)	22/48(45.8)	.86
	Cost of living	22/68(32.4)	37/48(77.1)	.00
	Nursing education system difficulty	30/68(44.1)	16/48(33.3)	.24
Support needed by N/CCWC in Japan				
	Health matters	22/51(43.1)	6/40(15.0)	.01
	Japanese language matters	19/51(37.3)	8/40(20.0)	.07
	Work matters	11/51(21.6)	3/40(7.5)	.07
	Daily living matters	10/51(19.6)	4/40(10.0)	.21
	Interaction matters	6/51(11.8)	3/40(7.5)	.38
	National board examination	4/51(7.8)	2/40(5.0)	.46
Persons to discuss problems with				
	Indonesian friend(s)	54/67(80.6)	28/48(58.3)	.01
	Family	26/67(38.8)	16/48(33.3)	.55
	Japanese friend(s)	8/67(11.9)	14/48(29.2)	.02
Japanese speaking ability				
	Good	0/57(0.0)	2/47(4.3)	.01
	Common	22/57(38.6)	31/47(66.0)	
	Bad	35/57(61.4)	14/47(29.8)	

t-test, Chi-square test and Fisher's exact test

Note. N/CCWC = nursing/ certified care worker candidate; Concerns of daily living in Japan, Support needed by N/CCWC in Japan, and Persons to discuss problems with (Multiple answers OK)

Table3

Situation and activities at the workplace in the survey 2

Variables		NCs n/N (%)	CCWCs n/N (%)		p
Location of work	Hospital	28/29(96.6)	0/16(0.0)	✓	.00
	Nursing home	1/29(3.4)	16/16(100.0)		
Department of work	Outpatient	0/27(0.0)	1/13(7.7)	✓	.33
	Inpatient ward	27/27(100.0)	12/13(92.3)		
Status of the night shift	Yes	5/27(18.5)	5/17(29.4)	✓	.32
	No	22/27(81.5)	12/17(70.6)		
Overtime work	Yes	4/27(14.8)	4/13(30.8)	✓	.22
	No	23/27(85.2)	9/13(69.2)		
Level of satisfaction with their work	Satisfied	6/29(20.7)	5/18(27.8)	✓	.65
	Neutral	17/29(58.6)	11/18(61.1)		
	Disappointed	6/29(20.7)	2/18(11.1)		
Level of work	Light	2/28(7.1)	3/17(17.6)	✓	.30
	Moderate	12/28(42.9)	9/17(52.9)		
	Severe	14/28(50.0)	5/17(29.4)		
Activity in the working	Urine elimination	25/29(86.2)	14/15(93.3)	✓	.44
	Nutrition	23/29(79.3)	15/16(93.8)	✓	.20
	Cleaning equipment	22/29(75.9)	12/15 (80.0)	✓	.54
	Fecal elimination	21/29(72.4)	11/14(78.6)	✓	.49
	Oxygen	3/29(10.3)	1/15(6.7)	✓	.58
Impression of Japanese coworker(s)	Good	19/28(67.9)	8/16(50.0)	✓	.13
	Neutral	9/28(32.1)	6/16(37.5)		
	Poor	0/28(0.0)	2/16(12.5)		
Difficulty in interacting with Japanese coworker(s)	Yes	20/29(69.0)	14/16(87.5)	✓	.28
	No	9/29 (31.0)	2/16(12.5)		

Chi-square test and Fisher's exact test

Note. NCs = nursing candidates; CCWCs = certified care worker candidates; Activity in the working (Multiple answers OK)

Table4
Health conditions and STAI scores

Variables		The survey 1			The survey 2				
		<i>n</i>	<i>M</i>	<i>±SD</i>	<i>p</i>	<i>n</i>	<i>M</i>	<i>±SD</i>	<i>p</i>
Physical health condition	Good	59/68	38.8	± 7.2	.01	29/50	41.4	±10.2	✓
	Neutral	9/68	39.2	± 7.2		18/50	42.2	± 9.0	✓
	Severe	0/68	40.8	± 6.9		3/50	43.0	± 8.5	✓
Psychological health condition	Good	47/68	40.8	± 6.9	.00	17/49	43.0	± 8.5	✓
	Neutral	21/68	37.7	± 7.2		24/49	41.4	±11.4	✓
	Severe	0/68	41.0	± 7.1		8/49	44.7	± 8.5	✓
Variables		<i>n</i>	<i>M</i>	<i>±SD</i>	<i>p</i>	<i>n</i>	<i>M</i>	<i>±SD</i>	<i>p</i>
STAI scores									
Total	State anxiety	67	38.8	± 7.2	.21	49	41.4	±10.2	✓
	Trait anxiety	67	39.2	± 7.2		49	42.2	± 9.0	✓
Gender	State anxiety				.17				.43
	Male	25	40.8	± 6.9		22	43.0	± 8.5	
	Female	42	37.7	± 7.2		23	41.4	±11.4	
	Trait anxiety				.28				.17
	Male	25	41.0	± 7.1		22	44.7	± 8.5	
	Female	42	38.1	± 7.2		23	41.3	± 8.8	
State anxiety of Age (years)	Under 24	14	38.2	± 7.7	.24	15	46.3	±11.8	.05
	25-29	35	40.4	± 7.0		27	40.2	± 9.2	
	Over 30	16	36.2	± 7.1		6	35.3	± 5.8	
Trait anxiety of Age (years)	Under 24	14	41.4	± 6.9	.03	14	47.6	± 8.5	.03
	25-29	36	40.2	± 7.1		25	41.9	± 8.1	
	Over 30	16	34.7	± 7.0		6	37.5	± 8.6	

Chi-square test, t-test, Fisher's exact test, and one-way ANOVA

Table5

Relation between situation at the workplace and health conditions or STAI scores

		Health conditions			<i>p</i>	
		Good <i>n/N (%)</i>	Neutral <i>n/N (%)</i>	Severe <i>n/N (%)</i>		
Physical health condition and level of satisfaction with their work	Satisfied	9/11(81.8)	2/11(18.2)	0/11(0.0)	.10	
	Neutral	16/31(51.6)	14/31(45.2)	1/31(3.2)		
	Disappointed	4/ 8(50.0)	2/ 8(25.0)	2/ 8(25.0)		
Psychological health condition and level of satisfaction with their work	Satisfied	8/11(72.7)	3/11(27.3)	0/11(0.0)	.03	
	Neutral	8/30(26.7)	17/30(56.7)	5/30(16.7)		
	Disappointed	1/ 8(12.5)	4/ 8(50.0)	3/ 8(37.5)		
Variables		State anxiety score		Trait anxiety score		<i>p</i>
		<i>n</i>	<i>M ±SD</i>	<i>n</i>	<i>M ±SD</i>	
Level of satisfaction with their work	Disappointed	8	49.3±10.2	5	44.4±11.5	.36
	Neutral	31	41.7± 8.2	32	43.1± 8.2	
	Satisfied	10	34.0±11.6	12	39.0±11.2	
Impression of Japanese coworker(s)	Poor	2	51.0±24.0	2	45.5±17.7	.76
	Neutral	16	40.5±13.7	15	42.6± 9.4	
	Good	30	39.2± 9.7	30	41.2± 8.6	
Difficulty in interacting with Japanese coworker(s)	Yes	35	43.1± 9.4	35	43.3± 8.5	.07
	No	12	34.8±10.2	12	37.8± 9.7	

Chi-square test, t-test, Fisher's exact test, and one-way ANOVA