Factors Influencing Intention to Engage in Long-term Care Services among Nursing Aide Trainees and the General Public

Ju-Chun Chien

Abstract—Rapid aging and depopulation could lead to serious problems, including workforce shortages and health expenditure costs. The current and predicted future LTC workforce shortages could be a real threat to Taiwan's society. By means of comparison of data from 144 nursing aide trainees and 727 general public, the main purpose of the present study was to determine whether there were any notable differences between the two groups toward engaging in LTC services. Moreover, this study focused on recognizing the attributes of the general public who had the willingness to take LTC jobs but continue to ride the fence. A self-developed questionnaire was designed based on Ajzen's Theory of Planned Behavior model. After conducting exploratory factor analysis (EFA) and reliability analysis, the questionnaire was a reliable and valid instrument for both nursing aide trainees and the general public. The main results were as follows: Firstly, nearly 70% of nursing aide trainees showed interest in LTC jobs. Most of them were middle-aged female (M = 46.85, SD = 9.31), had a high school diploma or lower, had unrelated work experience in healthcare, and were mostly unemployed. The most common reason for attending the LTC training program was to gain skills in a particular field. The second most common reason was to obtain the license. The third and fourth reasons were to be interested in caring for people and to increase income. The three major reasons that might push them to leave LTC jobs were physical exhaustion, payment is bad, and being looked down on. Secondly, the variables that best-predicted nursing aide trainees' intention to engage in LTC services were having personal willingness, perceived behavior control, with high school diploma or lower, and supported from family and friends. Finally, only 11.80% of the general public reported having interest in LTC jobs (the disapproval rating was 50% for the general public). In comparison to nursing aide trainees who showed interest in LTC settings, 64.8% of the new workforce for LTC among the general public was male and had an associate degree, 54.8% had relevant healthcare experience, 67.1% was currently employed, and they were younger (M = 32.19, SD = 13.19) and unmarried (66.3%). Furthermore, the most commonly reason for the new workforce to engage in LTC jobs were to gain skills in a particular field. The second priority was to be interested in caring for people. The third and fourth most reasons were to give back to society and to increase income, respectively. The top five most commonly reasons for the new workforce to quitting LTC jobs were listed as follows: physical exhaustion, being looked down on, excessive working hours, payment is bad, and excessive job stress.

Keywords—Long-term care services, nursing aide trainees, Taiwanese people, theory of planned behavior.

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I. INTRODUCTION

THE aging of the population in most developed and many developing countries had significant implications in the programming policy of social welfare and healthcare services. According to the Ministry of the Interior Taiwan R.O.C., Taiwan has officially become an "aged society" at the end of March in 2018 [1]. Furthermore, the Taiwanese people's 2017 average life expectancy was 80.4 years [2], which was the highest record ever reported. Meanwhile, the National Development Council estimated that Taiwan might become a super-aged society by 2026 [3], which meant that more than 20% of the Taiwanese population would be aged 65 or older. On the other hand, one of the articles pointed out that the mean duration of being bedridden could be 7.3 years for people in Taiwan [4]. Therefore, providing Taiwanese with high quality of LTC should be a vital concern for the government's social welfare policy.

Even though "aging in place" was a common preference among the elderly, "moving to care-facilities" might be their only option left. In fact, Taiwan's society has been experiencing critical LTC workforce shortages and high health expenditure growth in recent years [5]. In order to provide an approachable, affordable, and high quality LTC service system, the government implemented the Long-term Care Plan 1.0 (from 2007 to 2016) and the Long-term Care Plan 2.0 (2017 – 2026). Unfortunately, the outcome of the Long-term Care Plan 1.0 turned out to be a failure [6]. One of the main problems was the manpower shortage on front line in LTC. The main reasons for people to avoid taking this job were as follows: (1) personal characteristics [7], (2) the nature of the work [8], (3) working conditions [9], (4) social discrimination [10], and (5) training gap [11].

Faced with aged society, depopulation, and the changing nature of families, the urgent need was to increase available manpower for LTC services. Therefore, by adopting the framework of Theory of Planned Behavior (TPB) [12], the present study aimed at to develop a valid questionnaire in order to explor the discrepancies between the general public and nursing aide trainees on the issue of LTC service. Hopefully, the results could make some contribution to LTC service system in Taiwan and help the elderly in reaching a state of successful aging. Fig 1 is the research framework for the present study.

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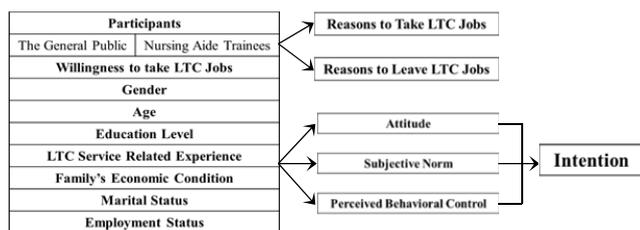International Journal of Psychological and Behavioral Sciences
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Fig. 1 Framework in this study

II. LITERATURE REVIEW

A. Nursing Aide Qualifications and Main Duties

According to the "regulations of qualifications and training for professionals of senior citizens' welfare service," an individual at least must complete a 90-hour care giver training course in order to be qualified for a LTC nursing aide [13]. Basically, LTC nursing aides performed duties such as feed, bathe, change diapers, dress, groom, or move patients. They also needed to observe patients to detect symptoms that might require medical attention. They could choose to work at hospitals, in residential cares, or in the homes of patients. In other words, the nursing aides were paraprofessionals [14].

The demographic profile of the LTC nursing aides revealed that they were mostly married middle-age women, with high school diploma or lower [15]. Even though the Ministry of Labor supported 50907 persons to complete care giver training courses (from 2011 to 2018), only 63.6% to 70.3% actually engaged in the business of LTC right after the training courses [16]. Therefore, to properly analyze the nursing aide trainees' intention to engage in LTC services could be a more practical approach to overcome the labor shortage on current LTC business. In addition, the present study also recruited participants from the general population in order to find out the characteristics of the potential LTC workforce.

B. High Turnover Rate among Nursing Aides

There were plenty of studies about factors that increased the high turnover rate of LTC nursing aides. Firstly, some individual characteristics could undermine nursing aides' retention intention, such as poor physical condition [17], lacking problem-solving skills [18], feeling LTC service as meaningless [19], and/or higher risk of infection [20]. Secondly, the nature of the work, such as highly repetitive tasks [21], work overload [22], stressful working environments [23], and/or long shifts [24], could increase nursing aides' turnover rate. Thirdly, the unhealthy working conditions, such as lower payment [25], less job security [26], lack of promotion [27], and/or negative work atmosphere [28], could force them to leave their current positions. Fourthly, social discrimination, such as being treated like a maid [29], being looked down on by people outside this region [30], and/or without the support of a family network [31], could discourage people to involve in LTC jobs. Lastly, the training gap, such as lacking the skills needed to perform LTC services [32] and/or insufficient training [33], could make people avoid taking on LTC tasks. However, the majority of research participants were mainly nursing aides, only a few focused on the nursing aide trainees, let alone in comparison with the general population.

The present study specifically focused on analyzing whether there is any significant difference between nursing aide trainees and the general public to state main reasons for retention and turnover.

C. Nursing Aides Retention Strategies

In order to reduce a high turnover rate and improve nursing aides' job satisfaction, the Ministry of Health and Welfare announced that the minimum wage went up to 200 NT dollars (≈ 6.30 USD) per hour by May 2018 [34]. Meanwhile, many researchers have done lots of work on offering strategies to improve employee retention [35] and/or providing broader solutions to currently unsolved LTC problems [36]. Some common strategies in LTC workforce retention were as follows. Firstly, it is better to identify person-job fit. Secondly, the government should consider developing pay grades and various certificate levels. Thirdly, it is necessary to help nursing aides build professional images. Fourthly, it is important to focus on creating a healthy LTC work environment. Lastly, there is a need to enhance the effectiveness of training course and provide follow-up support to maintain personal growth. Therefore, the present study embedded the retention strategies into 12 compelling reasons to take LTC jobs and to leave LTC jobs, respectively; and then asked nursing aide trainees and the general public to prioritize the top 3 most important reasons. Hopefully, the results could identify what worked, what worked the best, and what did not work at all.

D. TPB Model

In 1985, Ajzen further modified the Theory of Reasoned Action (TRA) by adding a new component, namely perceived behavioral control, and extended the structure of TRA into the TPB [37].

The main components of the TPB were behavioral intention, attitude, subjective norm, and perceived behavior control. In general, a specific behavior was determined by the individual's intention to engage in it and perceived behavior control over that behavior. Moreover, the behavioral intention was best predicted by attitude [38]. The subjective norm referred to the social pressures that one felt whether peers and people of importance thought he or she should engage in that behavior. The subjective norm was generally found to be a weak predictor of behavioral intention [37].

The TPB model was supported by many empirical studies [39], for example: health behavior, patient safety, health education, student retention, and consumer behavior. Therefore, this well-structured model could be a powerful framework for addressing the most influential factors associated with people's intention to engage in LTC services.

Taken together, the purposes of the present study were to: (1) Figure out two different types of participants' intention to engage in LTC services. (2) Examine two different types of participants' retention reasons and turnover reasons. (3) Examine factors that impact nursing aide trainees' intention to participate in LTC services. (4) Figure out the characteristics of the new LTC workforce and make comparison with the current

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nursing aide trainees. Hopefully, the results of this study could provide the Taiwanese population with good quality services to meet the care needs of the elderly.

III. METHODS

A. Participants

The population of the present study consisted of all Taiwanese aged 18 and above. The sample was recruited by means of convenience sampling. Data collection was started in November 2018 and completed in January 2019. A total of 884 participants were recruited and the total number of the valid participants was 871. Among them, a total of 727 participants were the general public and a total of 144 participants were the nursing aide trainees.

Descriptive statistics were used to describe the sample of the general public. There were more female (408, 56.10%) than male in this study and their mean age was 35.07 years (SD = 12.32). The majority of them obtained a bachelor's degree (363, 49.90%), were currently employed (561, 77.20%), and unmarried (405, 55.70%). Most of them had a common economic status (373, 51.3%). Their academic majors and/or employment experiences were healthcare-unrelated (589, 81%). About 50% of them (363, 49.90%) declared no willingness to engage in LTC practice. Only 11.8% of them indicated their willingness to engage in LTC practice ($n = 86$).

The descriptive statistics of the personal information for nursing aide trainees revealed that they were on their middle age (M = 46.41, SD = 9.85), mostly female (120, 83.30%) and married (74, 57.40%). The majority of them obtained a high school diploma (52, 36.10%), and were currently unemployed (95, 66%). Most of them had a common economic status (81, 56.3%). Their academic majors and/or employment experiences were healthcare-unrelated (90, 63.90%). Nearly 70% of them (99, 68.80%) showed their willingness to engage in LTC practice.

B. Instrument

In order to conduct an in-depth study of Taiwanese's intention to engage in LTC practice, a self-developed questionnaire was designed based on the TPB model. There were four components of the study: intention to engage in LTC practice, attitude towards LTC practice, subjective norm towards LTC practice, and perceived behavioral control in relation to LTC practice. Each component was measured on a 7-point Likert scale (1= strongly disagree, 7= strongly agree), with higher mean scores indicating higher levels of the characteristic.

The EFA, item analysis, and item-to-total correlations, were used to examine each component's construct validity. Cronbach's alpha coefficients were used to examine their reliability. The results demonstrated that this self-developed questionnaire was a rigorous and well-developed instrument for both nursing aide trainees and the general public. Table I illustrated summary of the validity and reliability of this questionnaire.

TABLE I
SUMMARY OF THE VALIDITY AND RELIABILITY FOR COMPONENTS OF THE TPB QUESTIONNAIRE

TPB component	#	# of Items to Delete	M_{item}	SD_{item}	Alpha	Total Variance Explained
For the general public ($n = 727$)						
Intention to engage in LTC practice	4	1	3.59	1.29	0.82	66.76%
Attitude	4	1	5.34	0.95	0.81	64.13%
Subjective norm	3	0	4.22	1.32	0.92	85.83%
Perceived behavioral control	7	3	4.39	1.02	0.85	53.64%
For the nursing aide trainees ($n = 144$)						
Intention to engage in LTC practice	4	1	5.38	1.10	0.85	69.57%
Attitude	4	1	6.05	0.68	0.76	69.30%
Subjective norm	3	0	5.09	1.16	0.86	78.15%
Perceived behavioral control	7	3	5.74	.69	0.85	67.06%
Person – job fit	4	–	5.56	.79	.83	52.74%
Skill proficiency	3	–	5.97	.74	.73	14.32%

IV. RESULTS AND DISCUSSION

One-way ANOVA was conducted to evaluate group differences (the general public vs. the nursing aide trainees) in "intention to engage in LTC practice," "attitude towards LTC practice," "subjective norm towards LTC practice," and "perceived behavioral control in relation to LTC practice", respectively. The results revealed that the nursing aide trainees had significantly higher intention, showed more positive attitude, felt higher support from friends and family, and exhibited greater self-efficacy to engage in LTC practice than the general public (Table II). The results also demonstrated that the TPB was a useful model in LTC research studies.

TABLE II
SUMMARY OF ANALYSIS AND INTERPRETATION OF ANOVA TEST RESULTS (GROUPS TO TPB COMPONENTS)

DV	IV	M_{item}	SD_{item}	N	F
Intention to engage in LTC practice	GP	3.59	1.29	727	241.36**
	NAT	5.38	1.10	144	NAT > GP
Attitude	GP	5.34	0.95	727	71.29**
	NAT	6.05	0.68	144	NAT > GP
Subjective norm	GP	4.22	1.32	727	54.47**
	NAT	5.09	1.16	144	NAT > GP
Perceived behavioral control	GP	4.39	1.02	727	228.26**
	NAT	5.74	0.69	144	NAT > GP

One-way ANOVA was conducted to evaluate different willingness to engage in LTC services (YES vs. UNDECIDED vs. NO) in "intention to engage in LTC practice," "attitude towards LTC practice," "subjective norm towards LTC practice," and "perceived behavioral control in relation to LTC practice", respectively. The results showed that people who had a willingness to engage in LTC practice exhibited the highest mean scores on the four components of the TPB. In addition, people with no interest in taking LTC jobs had the lowest mean scores on the four components of the TPB. In other words, TPB was an effective theoretical framework for detecting people's willingness to engage in LTC services (Table III).

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TABLE III
SUMMARY OF ANALYSIS AND INTERPRETATION OF ANOVA TEST RESULTS
(WILLINGNESS TO TPB COMPONENTS)

DV	IV	N	M_{item}	SD_{item}	F	Post Hoc
Intention	YES	185	5.36	1.09	244.51**	1 > 2 > 3
	UNDECIDED	318	3.95	1.01		
	NO	368	3.09	1.27		
Attitude	YES	185	5.86	0.95	26.49**	1 > 2 > 3
	UNDECIDED	318	5.46	0.83		
	NO	368	5.25	0.99		
Subjective	YES	185	5.24	1.09	83.36**	1 > 2 > 3
norm	UNDECIDED	318	4.48	1.14		
	NO	368	3.83	1.34		
Perceived	YES	185	5.57	0.87	144.89**	1 > 2 > 3
behavioral	UNDECIDED	318	4.64	0.87		
control	NO	368	4.11	1.05		

The main purpose of this section was to make comparisons between the general public who showed interest in LTC services ($n = 86$) and the nursing aide trainees who also wanted to seek for LTC jobs ($n = 99$). One-way ANOVA was conducted to evaluate group differences on the four components of the TPB and the participants' age, respectively. Furthermore, the independent chi-square test (two-way contingency table analysis) was used to determine if there was a significant relationship between the categorical variables. The results of the ANOVA indicated that except for the subjective norm, the nursing aide trainees were older, had significantly higher intention, showed more positive attitude, and exhibited greater self-efficacy to engage in LTC practice than the general public who were willing to engage in LTC practice (Table IV).

TABLE IV
SUMMARY OF ANALYSIS AND INTERPRETATION OF ANOVA TEST RESULTS
(WILLINGNESS GROUPS TO TPB COMPONENTS & AGE)

DV	IV	M_{item}	SD_{item}	N	F
Age	GP	32.19	13.19	86	77.80**
	NAT	46.85	9.31	99	NAT > GP
Intention to LTC	GP	4.79	1.11	86	56.72**
practice	NAT	5.85	0.80	99	NAT > GP
Attitude	GP	5.63	1.13	86	9.82**
	NAT	6.06	0.70	99	NAT > GP
Subjective norm	GP	5.16	1.18	86	0.88
	NAT	5.31	1.01	99	
Perceived behavioral	GP	5.20	0.98	86	34.17**
control	NAT	5.89	0.61	99	NAT > GP

The results of the independent chi-square test showed that the new workforce for LTC were younger male, more of them had junior college degrees, were currently employed, and had healthcare-related work experiences (Table V). In other words, in comparison to nursing aide trainees who showed interest in LTC settings, the new workforce were younger male, received higher education, had healthcare-related work experiences, and were currently employed.

As shown in Table VI, the general public's top three reasons to take LTC jobs were quite different from the rest. The top 3 most important reasons for the general public to jump into LTC jobs were: their families needed LTC, they would like to give

back to society, and they might try to gain skills in a particular field. The top 3 most important reasons for the general public who showed LTC preference were: they might plan to gain skills in a particular field, they were interested in caring for people and they would like to give back to society.

TABLE V
SUMMARY OF ANALYSIS AND INTERPRETATION OF INDEPENDENT CHI-SQUARE
TEST RESULTS (GROUPS TO CATEGORICAL VARIABLES)

		Willingness Groups		
		NAT	GP	Pearson
Variables		$n = 99$	$n = 86$	chi-square
Gender- Male	Observed	19	35	10.30**
	Expected	28.9	25.1	
	A.R.	-3.2	3.2	GP
Gender- Female	Observed	80	51	
	Expected	70.1	60.9	
	A.R.	3.2	-3.2	
Healthcare-related	Observed	42	51	5.24*
Experience	Expected	49.8	43.2	
YES	A.R.	-2.3	2.3	GP
Healthcare-related	Observed	57	35	
Experience	Expected	49.2	42.8	
NO	A.R.	2.3	-2.3	
Employment	Observed	26	53	23.53**
YES	Expected	42.3	36.7	
	A.R.	-4.9	4.9	GP
Employment	Observed	73	33	
NO	Expected	56.7	49.3	
	A.R.	4.9	-4.9	
Education Level	Observed	54	26	13.72**
High School D. or	Expected	42.8	37.2	
Below	A.R.	3.3	-3.3	
Education Level	Observed	19	35	GP
Junior College D.	Expected	28.9	25.1	
	A.R.	-3.2	3.2	
Education Level	Observed	26	25	
College Degree or	Expected	27.3	23.7	
Above	A.R.	-0.4	0.4	

TABLE VI
THE NUMBER OF REASONS FOR 4 GROUPS TO TAKE LTC JOBS

GP Total	NAT Total	GP LTC Preference	NAT LTC Preference	Reasons to take LTC Jobs
276*	104*	44*	69*	Gain skills in a particular field
147	73*	26	50*	Obtain the license
142	51*	33*	39*	Be interested in caring for people
272	51*	27	38	Increase income
385*	39	22	26	Family members need LTC
320*	33	33*	21	Give back to society
110	28	13	19	Job security
179	12	9	5	Government grants

Table VII listed the main reasons for the four groups to leave LTC jobs. For those who showed LTC preference groups, the top 4 reasons to quit the job were: physical exhaustion, being looked down on, payment is bad, and excessive working hours. Therefore, the most urgent need should be to provide guidance to help these people reduce injuries and/or to offer a more practical and convenient assistive device while performing job

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duties.

TABLE VII
THE NUMBER OF REASONS FOR 4 GROUPS TO LEAVE LTC JOBS

GP Total	NAT Total	GP LTC Preference	NAT LTC Preference	Reasons to leave LTC Jobs
219	93*	39*	69*	Physical exhaustion
314*	67*	30*	46*	payment is bad
241*	62*	33*	44*	Being looked down on
252*	36*	33*	24*	Excessive working hours
180	34	11	21	Better career opportunities
145	31	15	21	Families need a helping hand
252*	23	28	14	Excessive job stress
209	18	23	11	It's a hard job

A stepwise multiple regression analysis was applied to determine which variables were the best predictors of nursing aide trainees' intention to engage in LTC practice. The overall model was significant, $F(5, 138) = 45.43$, R = .79, adjusted R^2 = .61, p < .01. The five variables that best predicted "nursing aide trainees' intention to engage in LTC practice" were personal willingness ($\beta = 0.42$), perceived behavioral control ($\beta = 0.34$), received high school diploma or below ($\beta = 0.16$), supported from family and friends ($\beta = 0.15$), and were currently employed ($\beta = -0.13$), see Fig. 2.

Sources	Unstandardized Coefficients		Standardized Coefficients						
	B	Std. Error	β	t	F	R	R²	R_adj²	VIF
Model					45.43**	.79	.62	.61	
Constant	0.80	0.50		1.59					
Personal willingness	1.00	0.14	0.42	7.19**					1.26
Perceived Behavioral Control	0.54	0.10	0.34	5.67**					1.28
High School Degree or Below	0.36	0.12	0.16	3.00**					1.09
Supported from Family and Friends	0.14	0.06	0.15	2.50*					1.31
Currently Employed	-0.31	0.13	-0.13	-2.38*					1.13

Dependent Variable: Intention to engage in LTC practice ($n = 144$)

Fig. 2 Summary of stepwise multiple regression analysis of variables predicting intention to engage in LTC practice

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