

# Effects of Aging Simulation Program on Nurses' Attitudes and Willingness toward Elder Care

Chai-Yuan Lee<sup>1,4</sup>, Hui-Chuan Hsu<sup>2,3</sup>, Chiu-Hsiang Lee<sup>1,4</sup>

## Abstract

**Purpose:** Nursing professionals play an important role in elder care, and their attitudes toward the elderly may affect the quality of the provided care and its outcomes. The study accordingly aimed to evaluate the effectiveness of an aging simulation intervention program in improving nurses' attitudes and willingness toward elder care.

**Methods:** Participants were recruited from the nurses from a medical center ( $N=134$ ). All the participants wore a "senior simulator" suit to perform daily activities in this program. Data were collected before and 3 months after the intervention. Logistic regression analysis was then conducted.

**Results:** The participants developed more positive attitudes toward the elderly after the intervention. Nurses' willingness toward elder care increased from 67.8% to 78.4% ( $P=.000$ ). After adjusted for related factors of the sample characteristics, their attitudes toward the elderly did not significantly improved, but willingness toward elder care ( $OR=2.719$ ) were observed to report a significant correlation after the intervention. Nurses' willingness toward elder care appeared to be related to demographic variables before the intervention, the elder care frequency (regularly vs sometimes) ( $OR=0.115$ ) showed a significant correlation after the intervention.

**Conclusion:** Nurses' attitudes toward the elderly are not necessarily related to demographic variables. The aging simulation intervention program increases the willingness of nursing professionals toward elder care and should be incorporated in clinical nursing education for enhancing the overall quality of elderly care.

(*Taiwan Geriatr Gerontol* 2016; 11(2): 105-115)

**Key words:** attitudes, willingness to care, nursing professionals, aging simulation

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<sup>1</sup>Department of Nursing, Chung Shan Medical University Hospital; <sup>2</sup>Department of Health Care Administration & <sup>3</sup>Research Center of Health Policy and Management, Asia University; <sup>4</sup> School of Nursing, Chung Shan Medical University

Correspondence to: Chiu-Hsiang Lee

No. 110, Chien-Kuo N. Rd. Sec. 1, Taiching City 40201, Taiwan, ROC.

(Department of Nursing, Chung Shan Medical University Hospital)

Tel: (886) 4-24739595 ext. 34954

E-mail: csha528@csh.org.tw

## Introduction

With the global aging trend, nurses will face the challenge of caring for this elderly population [1]. Nursing professionals in elder care should not be affected by the stereotyping or biased attitudes toward aging. Thus, the attitudes and willingness toward elder care is an important issue in the quality of care. Past research has found that the attitudes toward elder care of the students in medicine, nursing, occupational therapy, physiotherapy, psychology and social work fields can be improved through interventions [2-5]. The attitudes toward the elderly would be more positive for the students in medical backgrounds by participating in intervention programs, and accordingly improved their sympathy for the elderly [2-4,6,7]. However, the effectiveness of educational intervention on health care professionals' attitudes toward the elderly and willingness to elder care is not yet confirmed [8-10]. Only a few studies about the relationship of attitudes to elderly and willingness to elder care for the clinical professionals were conducted [11-13]. The factors associated with nurses' attitudes and willingness toward elder care include age, educational level, socio-economic status, living with elderly, contacting experience with elderly, and relevant education [14-17]. However, the effectiveness of educational intervention programs to clinical professionals was little explored.

Taiwan's elderly population increases rapidly. The older populations aged 65 or older are projected to reach 14% by 2017. Thus, Taiwan is an aging society, projected to reach 41.4% by 2060 [18]. Health care for the elderly has become a major concern of society. In Taiwan, the aging simulation intervention program has been found to be effective in improving the attitudes toward the elderly for the college students [11] and for the nurses [12]. Although the attitudes toward the elderly may be improved, the willingness toward elder care of such educational program has not examined yet. In this study, an Aging Simulation Intervention Program was conducted on nurses in a medical center to investigate the attitudes toward elderly and the willingness to provide elder care before and after intervention.

## Methods

### 1. Study Design and Samples

The study was a quasi-experimental design. The participants were 152 clinical nurses working in a medical center in middle Taiwan. All the participants were invited to participate in the aging simulation intervention program. The participants were outfitted to simulate the aging experience by Senior Simulator, including a pair of sponge earplugs to simulate deteriorated hearing; a pair of specially designed glasses to simulate poor eyesight; three layers of gloves on one

hand to simulate decreased sensitivity and hand flexibility; a vest with two 3-pound sand bags in the front pockets to increase their weight and create spinal deformities; cotton cloth wrappers on elbow, knee, and ankle to simulate decreased flexibility of the joints' range of motions. The participants were dressed in the elderly attire and walked and climbed 10-15 minutes to simulate the activities of elderly people.

Data were collected before and 3 months after the intervention. In total, 134 participants completed the survey both before and after intervention (with completion rate of 88.2%). The protocol and informed consent form for this study were reviewed and approved by the Institutional Review Board of the medical center. All participants gave informed consent.

## 2. Measures

The dependent variable: the attitudes and willingness toward elder care ratio for before and after the aging simulation.

Attitudes Toward the Old People Scale [19] was used to measure the attitudes toward the elderly, including four dimensions: appearance and physical image, psychological and cognitive state, interpersonal relationships and social participation, work and economic security (Content validity index=.90; Cronbach's  $\alpha$ =.91). There were moderate correlations among the four dimensions ( $r$  ranged

from .43 to .62), and the four dimensions were highly correlated to the total score (ranged from .68 to .91). Each item was scored from 1 to 7. All the negative statements were reversed in scoring, and thus the higher score indicated more positive attitudes toward the elderly.

Related factors to the attitudes toward the elderly and the willingness of elder care included: sex (male/female), age (21-30 years old/ $\geq 31$  years old), marital status (with a spouse or not), educational level (college/university or higher), working years ( $\leq 10$  years/ $>10$  years), department (medical/surgical), living with elderly (yes/no), elder care frequency (regularly/often/sometimes), geriatrics/gerontology related education (yes/no), the aging simulation (before/after).

## 3. Analysis

Descriptive statistics, paired  $t$  test and logistic regression analysis were used. SPSS 12.0 for Windows was used for the analysis.

## Results

The sample characteristics are shown in Table 1. The willingness toward the elder care improved after an intervention program (from 67.8% increased to 78.4%,  $p=.000$ ). The attitudes toward the elderly before and after intervention were shown in Table 2. The respective score of four dimensions and the total score of the attitudes toward the elderly

are improved although not statistically significant.

Table 3 shows the association of related factors of the sample characteristics to the attitudes toward elderly and the willingness of elder care before and after the intervention program. After adjusted for related factors of the sample characteristics, the aging simulation had not a significant correlation with the attitudes toward elderly after intervention.

After adjusted for related factors of the sample characteristics, the willingness to care

for the elderly persons before intervention was still significantly related to the willingness after intervention ( $OR=2.719$ ,  $p=.046$ ). The other independent variables including education, service department, elder caring frequency, and related education were significant before the intervention. However, after the intervention, these characteristics or the experiences only elder care frequency (regularly vs sometimes) was significantly related to the willingness after intervention ( $OR=0.115$ ,  $p=.046$ ).

Table 1. Characteristics of Participants ( $N=134$ )

Variable	<i>N</i>	%
Age		
21-30	91	67.9
$\geq 31$	43	32.1
Sex		
Male	2	1.5
Female	132	98.5
Marital status		
Having a spouse	101	75.4
No spouse	33	24.6
Educational level		
College	12	9.0
University or higher	122	91.0
Years of Service		
$\leq 10$ years	109	81.3
$>10$ years	25	18.7
Department		
Medical	82	61.2
Surgical	52	38.8

Living with elderly			
Yes		25	18.7
No		109	81.3
Elder care frequency			
often		100	74.6
Regularly		26	19.4
Sometimes		8	6.0
Involved education			
Yes		74	55.2
No		60	44.8
Willingness to elder care (before intervention) <sup>s</sup>			
Yes		92	67.8
No		42	31.3
Willingness to elder care (after intervention) <sup>s</sup>			
Yes		105	78.4
No		29	21.6

<sup>s</sup>McNemar test was used to compare the willingness to elder care before and after intervention ( $P < 0.0001$ ).

Table 2. Attitudes toward the elderly before and after intervention program

Items	Before intervention				after intervention				<i>t</i>	<i>p</i>
	Mean	SD	minima	maxima	Mean	SD	minima	maxima		
Appearance and physical image (item 1-5)	4.13	.90	2.00	7.00	4.18	.90	1.60	6.60	-0.581	.562
Psychology and cognitive state (item 6-15)	4.15	.71	1.90	5.80	4.23	.66	2.20	6.30	1.000	.319
Interpersonal relationships and social participation (item 16-30)	4.29	.72	2.33	6.13	4.33	.57	2.73	6.07	-0.670	.197
Work and economic security (item 31-35)	4.15	.78	2.00	6.00	4.24	.70	2.20	6.60	-1.298	.197
Total	4.18	.61	2.48	5.61	4.27	.52	3.06	5.80	1.919	.057

Paired t test for before and after difference

Table 3. Logistic regression of attitudes and willingness toward elder care for before and after the aging simulation program ( $N=134$ )

	Attitudes toward the elderly		Willingness toward elder care	
	Exp ( <i>B</i> )	<i>p</i>	Exp ( <i>B</i> )	<i>p</i>
The aging simulation (before vs after)	.780	.633	2.719	.046
Age (<31 vs. $\geq 31$ years)	1.481	.560	.782	.741
Marital status (no spouse vs. Yes)	1.612	.410	.551	.354
Education level (College vs. university or higher)	.283	.068	.579	.464
Years of service ( $\leq 10$ years vs. >10 years)	.157	.071	.189	.137
Department (surgical vs. medical)	1.828	.234	2.514	.063
Living with elderly (no vs. yes)	.380	.127	.383	.133
Elder care frequency				
Regularly vs. often	1.212	.875	.253	.132
Regularly vs. sometimes	1.483	.582	.115	.046
Geriatrics/gerontology education (no vs. yes)	1.084	.883	1.316	.589
Constants	12.850	.016	2.623	.375

Note: The dependent variable was the attitudes or willingness toward elder care ratio for before and after the aging simulation, and was analyzed by “conditional logistic regression model”. Attitudes toward the elderly (score <4/ $\geq 4$ ); Willingness toward elder care (no/yes).

## Discussion

This study conducted an intervention education program about aging simulation on the nurses in a medical center and examined its effect on the attitudes toward the elderly and the willingness of elder care. After the intervention, the willingness toward elder care increased from 67.8% to 78.4%. The participants who had the more positive attitudes to the elderly in psychology and cognitive dimensions would be more willing to care for the elderly. Nurses' demographics and experiences did

not affect the attitudes toward the elderly after the intervention. The nurses who had more positive attitudes toward the elderly in the psychological and cognitive dimension were more willing to care for the elderly. The intervention eliminated the effects of demographics and experiences on the willingness of elder care except elder care frequency.

This study found that the attitudes toward the elderly have not significantly improved after the intervention. The findings in previous studies were consistent [3,8]. The geriatric medicine teaching

program did not significantly to affect attitude scores [10]. It is possible that the intervention and the duration of the interventions were different between studies. This study found that the willingness of elder care had increase after the intervention. The findings in previous studies were consistent [4,10]. However, the nurses who had more positive willingness of elder care, that the elder care frequency was regularly after the intervention. It is suggested that actual elderly care experience added in the aging program, should be incorporated into the continue education of nurses to improve their willingness of elder care.

Past research found that the socioeconomic status of nursing students may affect their attitudes toward elderly [7,14-17]. In our study, after the intervention, education level, department, and related education were no longer significant in the willingness of eldercare. However, this study found that the frequency (regularly vs sometimes) of elder care were significant in the willingness of eldercare. The willingness of care was related to personal care experiences and backgrounds, which may bring some kinds of stereotyping of older people. These findings show that the perceived images or the stereotype can be changed through an educational program.

There are some limitations of this study. First, the samples were only drawn from one medical center, and thus the result cannot be

generalized to other hospitals. Second, the study design was a quasi-experimental design, and there was no control group in the study, only the results before and after interventions could be compared. Third, the intervention was in a short time, and the lasting effect was only observed in a short period (3 months). The longer effect of the program was not examined.

Nurses are an integral part of elder care. The attitudes toward the older patients and their willingness to elder care may affect the quality of care. This study showed the nurse's willingness toward the elderly was not impacted by the nurse's experiences and background. The aging simulation intervention program effectively improved the nurse's willingness to provide care for elders. Such educational intervention is suggested to be added in the continue education of the clinical professionals, and hopefully the quality of elder care will be improved.

### **Acknowledgements**

The research was supported by grants from Chung Shan Medical University Hospital. This study had obtained approval of Research Ethics Committee of Chung Shan Medical University Hospital (CS10179). No potential conflicts of interest were disclosed.

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# 老人體驗於護理人員對老人態度及照顧意願之影響

李彩緣<sup>1,4</sup> 徐慧娟<sup>2,3</sup> 李秋香<sup>1,4</sup>

## 摘要

**背景：**護理專業角色於老人照護居重要地位，如何提升護理人員對老人態度可能影響照護品質與結果。

**目的：**本研究在探討某醫學中心護理人員於老人體驗介入後，對老人態度及照顧意願之影響成效。

**方法：**針對某醫學中心 134 位病房護理人員，提供護理人員「模擬高齡者體驗裝置(senior simulator)」體驗老人活動；以「對老人態度量表」進行前後測調查，後測於介入後三個月，以邏輯式迴歸分析進行資料分析。

**結果：**老人體驗介入後，對老人態度有正向提升，有意願照顧老人的比例由 67.8 提升為 78.4%。調整人口學變項因素分析發現，老人體驗介入後，對老人態度無顯著影響；於老人照顧意願方面，老人體驗介入後，有願意照顧是介入前的 2.719 倍，且於照顧頻率有統計上顯著差異，偶而照顧老人是常常照顧的 0.115 倍。

**結論：**研究結果顯示護理人員對老人之態度不受個人經驗或環境背景相關因素所影響，老人體驗介入能提升其對老人照顧意願。建議臨床安排老人相關在職教育時，能納入老人體驗課程，以提升護理人員對老人照護之的重視，進而提升老人照護品質。

(臺灣老年醫學暨老年學雜誌 2016 ; 11(2) : 105-115)

**關鍵詞：**態度、照顧意願、老人體驗、護理專業

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<sup>1</sup> 中山醫學大學附設醫院護理部、<sup>2</sup> 亞洲大學健康產業管理學系、<sup>3</sup> 衛生政策與管理研究中心、<sup>4</sup> 中山醫學大學護理系

通訊作者：李秋香

通訊處：台中市南區建國北路一段 110 號 (中山醫學大學附設醫院護理部)

電話：(886) 4-24739595 轉 34954

E-mail: csha528@csh.org.tw