The effect of a Nursing Presence program on reducing stress in older adults in two Korean nursing homes

AUTHORS

Gyeong-Ju An
Assistant professor, Department of Nursing, College of Medicine, Catholic University of Daegu, South Korea.

Kae-Hwa Jo
Associate professor, Department of Nursing, College of Medicine, Catholic University of Daegu, South Korea.
jokw@cu.ac.kr

KEY WORDS

nursing presence, older adult, stress, coping, cortisol

ABSTRACT

Objective
The purpose of this study was to determine the effect of a Nursing Presence (NP) program on stress in older adults in two Korean nursing homes.

Design
The design was quasi-experimental study.

Setting
This study was undertaken in two nursing homes in Daegu, South Korea.

Subjects
The subjects were 39 older female adults 68 to 87 years of age selected by purposive sampling and divided into two groups: experimental and control.

Intervention
The NP program consisted of three stages: introduction, operation and termination. The NP program was applied 8 times over 4 weeks to the experimental group. The time required for each stage was 25~30 minutes. In the control group, care was provided according to the usual routine.

Main outcome measures
Measures were stress levels and problem focused coping as psychological variables and cortisol levels as a physiological variable.

Results
Stress, problem focused coping, and cortisol levels after application of the NP program were significantly improved in the experimental group compared to the control group.

Conclusions
The results of this study suggest that the use of a Nursing Presence program can be considered an effective intervention for reducing stress and improving problem focused coping in older adult nursing home patients.

INTRODUCTION

In Korea currently, 9.1% of the total population is over the age of 65 years and this is predicted to increase to 14.3% by 2018 (Korean Ministry of Health and Welfare 2005).

Chronic disease, losing one's partner, conflicts with children and economic problems have been identified as predictors of stress for older people in Korea (Park 2004). In addition, the ageing process negatively affects the physical function of older people and exacerbates stress because of an insufficient coping ability (Waern et al 2003). This stress is regarded as one of the main causes of suicide and depression in older people (Lee et al 2004). According to the Korean Bureau of Statistics (2005) suicide incidence in older adults in Korea increased three fold compared to 1996.

In Korean culture, moving to a nursing home where the older person no longer lives with their family and has to depend on people who are not family is a significant life crisis. According to Lim's study (2002), stress in older people in nursing homes in Korea was higher than that of older people who lived at home.

Lazarus and Folkman (1984) in their cognitive appraisal model of stress suggest that people react differently in similar situations where one person's response to an appraisal of the situation might be a stress response and the other might not. They maintain that how people cope with stress is the important factor. Therefore a focus on improving the way older people cope with stress is necessary in order to reduce the stress in their lives. Choi and Yang (2004) argue that the ageing process limits the ability of older people to cope with stress and that consequently their levels of stress are greater than in any other age group. Additionally, Snyder (1992) suggests that the most reasonable approach to reduce stress in older people is not only to identify the cause of stress but also to acquire and adapt new methods and knowledge to overcome stress (Snyder 1992).

The presence of nurses is an essential component of caring and is a basic concept in all nursing interventions (Tavernier 2006). The therapeutic interaction of individual nursing interventions using professional knowledge and skill promotes healing (Jo 1999). Rankin and DeLashmutt (2006) maintain that nursing presence as a nursing intervention helps improve not only physical function but also mental health.

This study aimed to verify, by measuring stress, coping ability and cortisol levels, the effect of a Nursing Presence (NP) program in reducing stress levels in older people who were resident in two nursing homes. It was anticipated that the NP program would increase the older person's coping ability against stress and reduce stress and cortisol levels.

METHOD

Design

This research was a quasi-experimental study. This design was used to identify the effect of a NP program intervention over 4 weeks on the stress levels of older people who were resident in two nursing homes in South Korea.

Sample

The sample consisted of 39 females between the ages of 68 to 87 years of age who lived in two nursing homes located in Daegu, South Korea. The selection criteria excluded subjects with depression and dementia using Geriatric Depression Scale and Short Portable Mental Status Questionnaire (SPMSQ).

The anticipated sample size was 21 persons in both experimental group and control group based on Cohen's sampling formula which suggested a minimum sample of 20 persons (power of $1\text{-}\beta = 0.70$ in $a = 0.05$). During data collection, one person from the control group and two people from the experimental group were excluded because of deteriorating health, leaving the final sample with 19 older people in the experimental group and 20 older people in control group.

Data collection

Data was collected from February to May 2007. Participation in the study was voluntary. The written consent of participants was obtained after explanation of the purpose of the study. The security of the data and the anonymity of participants were maintained. A questionnaire was used to collect data about demographic characteristics, stress levels and coping ability. Additionally, a saliva sample was collected to measure cortisol levels. The NP program was conducted by the researcher who was trained in the *Nurse Presence Training Program* in Korea. Ethics approval was obtained following review of the study proposal by the Institutional Review Board of the Catholic Medical Center in Daegu, South Korea.

Nursing Presence program

The Nursing Presence (NP) program is based on the philosophy that physical 'being there' and mental 'being with' is essential for nurses to satisfy the health needs of care recipients and is a nursing intervention which encourages an individual's capacity to overcome the pain and distress derived from the disease or ageing process (Gardner 1985). The NP program, after analyzing the concept of 'presence' (Jo and Kim, 1999), was developed by Jo (1999) with two psychologists, adding therapeutic empathy and listening skill with the attributes of concentration, openness, attention and caring which are basic element of 'presence' outlined by Snyder (1992). The NP program was run over a four week period twice a week (eight interventions in total).

Table 1: Elements of the Nursing Presence program

Stages	Purpose	Contents
First stage Introduction (3-5 minutes)	Forming rapport Meeting and setting atmosphere	• Meeting/environmental management - Introduction and greeting - Identify physical status and environment • Encourage formation of an personal relationship
Second stage Operation (15-20 minutes)	Openness Openness to identify and understand research subjects	• Concern - Identify general information - Share here and now in common • Empathy - Accept the emotion of feeling as it is that the research subject expresses
	Attention Open each experience, identify and search silent messages	• Identify active nursing problems - Use empathy and active listening courteously • Identify hidden nursing problems - Identify nonverbal communication messages
	Caring Solve problems in reality by expending the consciousness of subjects	• Search the direction of action of research subjects - After assessing thought, feeling, physiological reaction and acting reaction, act pointing to a realistic target • Reinforce the establishment of human relationships • Promote physical health and wellbeing
Third stage Termination (3-5 minutes)	Self evaluation Finish	• Make evaluation for problem solutions • Rearrange the plan for the unsolved problems • Lead to change in thoughts and action

Instruments

Stress

Kang (2000) developed a 22 item stress scale with 5 points on a Likert scale. It consists of 9 items about family stress, 5 items about economic stress, 3 items about health stress, 3 items about residential stress, and 2 items about the stress from the feeling of loss. Kang (2000) reported alpha coefficients of 0.87, identified as Cronbach's α=0.83 in this study.

Coping

Yang and Jung (2003) developed coping scales by revising Lazarus and Folkman's *Ways of Coping* (1984). Baek and Kwon (2005) revised Yang and June's scale with 30 items, however this was reduced to 22 items for this study to adapt it for older people: 11 items of problem focused coping and 11 items of emotion focused coping to adapt it to older people. The reliability of the original study was Cronbach's α=0.78 and in this study was Cronbach's α=0.79.

Cortisol

A research assistant collected 2cc of saliva in a conical tube after irrigating the mouths of subjects 15 minutes before collection. The saliva tube was kept at freezing and measured by Seoul Clinical Laboratory. The method of measurement was Solid-Phase Radio Immunoassay with Coat-A-Count Cortisol (Maker: DPC, USA).

Data analysis

Data collected was analyzed using SPSS for Windows 11.5 software. Chi-square test and t-test analysis were used. Statistical significance was accepted at a p value less than 0.05.

Findings

General characteristics of the subjects

There was no significant difference in the general characteristics of the two groups as shown table 2.

Table 2: General characteristics and homogeneity of subjects

Characteristics		Control (n=20)	Experimental (n=19)	x^2 or t	p (p=< 0.05)
Age (years)		77.75 ± 4.89	80.89 ± 6.65	1.686	0.100
Educational level	Uneducated	8	12	4.889	0.299
	Elementary school	5	5		
	Middle school	0	0		
	Above high school	7	2		
Previous occupation	Farming	4	7	3.279	0.512
	Business	6	5		
	Housewife	5	4		
	Others	5	3		
Monthly income		60,000 ± 55,842	25,000 ± 69,141	1.743	0.090
Age of loss husband (years)		53.62 ± 13.55	46.43 ± 11.36	1.625	0.115
Frequency of correspondence with family	once a week	2	1	4.882	0.300
	1-2 times a month	10	4		
	1-2 times in 6 months	4	8		
	once a year	2	4		
	no contact	2	2		
Diseases	Hypertension	15	14	2.368	0.668
	Arthritis	6	5		
	Diabetes	5	6		
	Heart diseases	3	4		
	Herniated intervertebral diseases	2	1		
	Others	5	3		

Changes in variables before and after the NP program

As shown in table 3, homogeneity between the two groups was identified in pretest.

After the NP program, stress appeared to be significantly lowered (36.57 ± 5.21) in the experimental group compared to the control group (45.05 ± 11.37) (p=0.005). Family stress and economic stress was significantly lower in the experimental group (p=0.026, p=0.017) however there was no significant differences in stress related to health, residence or from feelings of loss.

There was a significant difference in problem focused coping (p=0.001), whereas there was no significant difference in emotion focused coping.

Cortisol appeared to be significantly lower in the experimental group (0.19 ± 0.06ug/dL) than in the control group (0.34 ± 0.27ug/dL) (p=0.042).

Table 3: Effect of NP program on psychological and physiological variables

Variables		Control (n=20)	Experimental (n=19)	t	p *p<0.05
Stress	pretest	48.35±14.59	49.68±11.82	0.313	0.755
	post test	45.05±11.37	36.57±5.21	2.964	*0.005
Family stress	pretest	19.10±7.57	18.52±7.21	0.242	0.810
	post test	18.45±6.68	13.94±5.35	2.313	*0.026
Economic stress	pretest	10.85±5.77	10.68±5.74	0.090	0.929
	post test	10.05±6.00	6.36±2.33	2.498	*0.017
Health stress	pretest	10.45±3.06	8.89±1.91	1.888	0.067
	post test	10.00±2.71	10.05±4.16	0.047	0.963
Residential stress	pretest	3.95±1.31	3.78±1.54	0.349	0.729
	post test	3.95±2.06	4.00±1.24	0.091	0.928
Stress from feeling of loss	pretest	4.25±2.44	4.26±2.02	0.018	0.986
	post test	3.70±2.31	2.89±1.82	1.201	0.237
Coping problem focused	pretest	18.95±5.23	20.84±6.91	0.967	0.340
	post test	23.60±3.58	26.89±6.14	2.057	*0.047
Coping emotion focused	pretest	24.25±4.10	26.57±3.45	1.913	0.064
	post test	24.55±3.63	26.15±6.66	0.942	0.352
Cortisol (ug/dL)	pretest	0.17±0.17	0.23±0.11	1.424	0.163
	post test	0.34±0.27	0.19±0.06	2.119	*0.042

DISCUSSION

Stress is thought to be a cause of physical and mental disease besides having negative effects in daily life. Previous studies have demonstrated significant differences in the stress levels of older people related to gender, age, presence of a spouse, religion, education, money, health status and leisure activity (Baek and Kwon 2005; Choi and Yang 2004; Lee et al 2004; Shin and Kim 2003; Lim 2002; Seo et al 2001; Yoon and Kim 1994). In this study, there were no significant differences in these stress factors between the two groups, that is, the groups were homogenous in these variables that can influence stress levels.

In this study, pretest stress levels were 49.68 in the experimental group which was higher than the stress levels shown in Kim's study (37.98) (2006) which, using the same instrument, investigated 154 older people who lived at home. After application of the NP program, the post test stress levels in the experimental group in this study were significantly decreased (36.57).

The pretest family stress levels (18.52) in the experimental group were higher than those in Kim's

study (17.57) (2006). According to Gwon and Cho (2000), communication frequency with children has an influence on the stress levels of older people. In this study, the frequency of correspondence with family was a mean 69.6 days which could account for the higher pretest family stress levels in the experimental group. After application of the NP program, family stress levels were significantly reduced (13.94). This is thought to be due to the effect of the caring and attention attribute included in the NP program which made the subjects feel they were protected and supported.

The pretest economic stress in the experimental group (10.68) was as similar to that in Kim's study (10.66) (2006). After the application of the NP program, the post test economic stress levels were significantly lower (6.36). In this study, although there was no change in economic income, it can be inferred that subjective satisfaction about economic state became higher after the NP program. It is considered that NP program promoted economic satisfaction through a focus on the positive aspects of a person's situation.

The pretest health stress (8.89) was higher than that in Kim's study (8.41) (2006). This is possible because the older people who participated in this study were older people who chronic diseases (as shown in table 2) and who could no longer care for themselves. Lim (2002) in comparing health perceptions of older people who lived at home with those who were resident in a nursing home found that less people at home considered themselves not healthy (63.3%) compared to 86.6% of older people resident in a nursing home. However in this study, health stress was not decreased after application of the NP program, in contrast to the theory that the NP program has physical and mental effects.

In this study, residential stress was lower (3.78) than in Kim's study (4.82) (2006). A possible reason is because the nursing home in this study was a place with modern equipment and satisfaction with the general environment was high. The NP program had no significant impact on residential stress.

Stress from feelings of loss were lower (4.26) than in Kim's study (4.86) (2006). This is possibly because one of the reasons for entering a nursing home is the death of a spouse so these older people had already undergone this loss.

The cortisol levels in this study were significantly lower after application of the NP program. This coincides with the study of Kim et al (2006) who found that the cortisol levels in hospice patients became significantly lower after horticultural therapy. Because cortisol is a stress hormone, direct changes in the sympathetic nervous system can be measured. In this study cortisol levels decreased after application of the NP program, so it can be inferred that the NP program is a useful treatment to reduce stress reaction.

Coping can be described as problem focused coping and emotion focused coping (Lazarus and Folkman 1984). Problem focused coping is when an attempt is made to regulate or change the source of the stress. Emotion focused coping is when the individual tries to regulate their own level of suffering. In Korea, it has been found that young adults use problem focused coping more actively (Yang and Jung 2003) in contrast to older people who use emotion focused coping more (Cho 2005). In this study, pretest demonstrated that both groups used emotion focused coping (24.25, 26.57) more than the problem focused coping (18.95, 20.84).

As problem focused coping in the experimental group was significantly increased after application of the NP program (26.89), it can be inferred that the NP program promotes the problem focused coping strategies. Lazarus and Folkman (1984) found that people tend to use problem focused coping in a situation that they assess to be changeable and use emotion focused coping in situations they assess to be unchangeable. According to a study by Cho (2005), using problem focused coping reduces psychological symptoms more effectively than using the emotion focused coping. The NP program is thought to assist in reducing the stress by promoting the problem focused coping behaviours.

LIMITATIONS

Several limitations should be considered when interpreting the findings of this study. Because of small sample size and convenient sampling method, the subjects may not be truly representative of nursing home residents generally. As the study was based in South Korea, cultural factors may have influenced the outcomes of the study.

CONCLUSION

This study found that the NP program could decrease stress in older residents in a nursing home by promoting problem focused coping, however more research about the effectiveness of the NP program on other age groups under stress are needed. The NP program supports recognition of the importance of developing individualised nursing intervention which consider personal characteristics based on humanistic existentialism.

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