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1. (Choi, 1993).

가

가

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가
MacDonald (1998) Lewis (1995)

(Bai & Suh, 1989; Choi, 1993).

가

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가

(essence

oil)

(Lewis & Robinson, 1992).

가

가

가

가 (Choi, 1993). ,

, , ,

(Worwood, 1991).

(Lee, 2000a,

2000b), (Lee, 2000c),
(Dunn, Sleep & Collet, 1995),
1995)

(Tobin,

가

*

2001 4 16

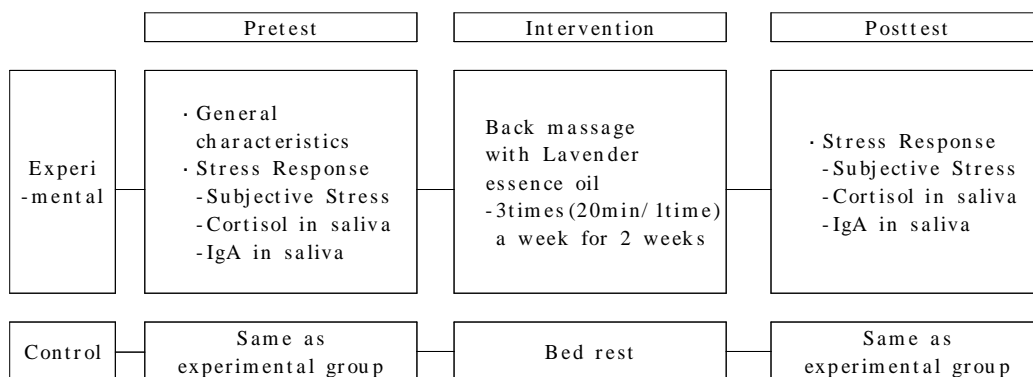
2001 5 9

2001 10 9

(Ha, 1998). 가 . Burns

Blamey(1994) 585 10가 가 15

(Worwood, 1991). Lewis(1995) , Hudson(1996) 20 12 가 MacDonalld(1998) Lee(1999) 1% 3 5 20 1 15 1 2 , 가 , IgA 가 가 20 2% 20 2. IgA 가가 (Lee, 2000a). (Synder, 1992). 가 1. 가 가 가 가 IgA (Worwood, 1991). 가 IgA <Figure 1>. 2. 2001 1 8 1 22 T K P S 40 가 1) , (Lavender) 가 , 2) , IgA 가



<Figure 1> Study design

가 (Reed & Held, 1988)

3

6

1 3 2

3cc, 2, 3

2%

12 5

42

2

40

20

P S T K

20

가

3.

1)

(JMC INC., U.S.A) 20

(JMC INC., U.S.A)

3 (3

100ml 2%

20 1 3 2

3 2

6 1

가

(Bauer & Dracup, 1987)

3 3

가

(,)

2 3cm 3 4

Cobas INTEGRA(Roche, Swiss) 200ul Cobas INTEGRA(Roche, Swiss) IgA

가 8 9.14 45.64mg/dl

가

2)

(1) Cline (1992) 4.

0(SPSS 8.0

), 100()

10cm 1)

mm 가 2) X^2

가 test t-test

(2) 3)

1 ANCOVA

, 15 Pearson Correlation

2 Coefficient

1, 1

가

(Valdimarsdottir & Stone, 1997).

-20 1.

가 ice jel S

cortisol

Gamma counter(Hewlett packard, USA)

125 I Radioimmunoassay

가

(radioactive tracer) (standard

sample)

20 가 가

59 0.76 1.18 27.2 , 26.1

μ g/ dl 0.49 5.6 4.5

1.12 μ g/ dl 3.9 , 2.3

8.2 , 8.4

(3) IgA

IgA (Immunoturbidimetric assay)

2.

voltax mixer micro sample cup

micro centrifuge 11,000 rpm

<Table 1> Homogeneity test of general characteristics between experimental and control group

Variables		Experimental		Control		X ² / t	p
		(n = 20)		(n = 20)			
		n (%) / M ± SD		n (%) / M ± SD			
Education	College	13 (65)		15 (75)		3.743	.154
	University	7 (35)		3 (15)			
	Graduate school			2 (10)			
Marital status	Married	6 (30)		4 (20)		.533	.358
	Single	14 (70)		16 (80)			
Unit	MICU	12 (60)		10 (50)		.404	.376
	SICU	8 (40)		10 (50)			
Religion	Protestant	4 (20)		3 (15)		5.053	.168
	Catholic	5 (25)		2 (10)			
	Buddism	10 (50)		9 (45)			
	none	1 (5)		6 (30)			
Age		27.2	4.1	26.1	3.6	.859	.396
Clinical experience(year)		5.6	4.0	4.5	4.0	.866	.392
ICU experience(year)		3.9	5.2	2.3	3.0	1.225	.396
Night shift (days/ month)		8.2	2.9	8.4	3.0	-.27	.788

<Table 2> Homogeneity test of dependent variables between experimental and control group

	Experimental		Control		t	p
	M	SD	M	SD		
Subjective Stress(Score)	7.70	.47	7.60	.59	.588	.56
Cortisol(ug/ dl)	9.650E-02	5.402E-02	9.300E-02	5.172E-02	.209	.835
IgA(mg/ dl)	7.30	3.08	7.15	2.29	.159	.875

, 가

<Table 2>

7.7 , 7.6 , (F = 31.83, p = .000), 가 1
 0.0965ug/ dl, <Table 3>
 0.093ug/ dl 가 2.
 IgA 7.3mg/ dl,
 7.15mg/ dl 가 .
 0.0965ug/ dl, 가 0.125ug/ dl
 3. 가 , 0.093ug/ dl 가
 0.0945g/ dl .
 가 1. , 가
 (F = 3.202, p = .082), 가 2
 7.7 , 가 5.3 <Table 3>
 , 7.6 , 가 3.
 가 7.65 . A 가 .

<Table 3> Effects of back massage with 1% Lavender essence oil on the stress response of ICU nurses

Variables	Group	Pretest		Posttest		Difference	F	p
		M	SD	M	SD			
Subjective Stress(Score)	Exp.	7.70	.47	5.30	1.95	-2.40	31.830	.000
	Cont.	7.60	.59	7.65	.76	.05		
Cortisol(ug/ dl)	Exp.	9.650E-02	5.402E-02	.125	5.717E-02	3.200E-02	3.202	.082
	Cont.	9.300E-02	5.172E-02	9.450E-02	5.286E-02	0.200E-02		
IgA(mg/ dl)	Exp.	7.30	3.08	32.0	14.08	24.70	63.859	.000
	Cont.	7.15	2.29	8.45	3.50	1.30		

IgA 7.3mg/ dl, 가 32mg/ dl
 , IgA
 , IgA 7.15mg/ dl 가
 8.45mg/ dl . IgA 가
 , 가 IgA
 (F = 63.859, 가
 p = .000), 가 3 <Table 3>
 , , ,
 가 4.
 , , (Tobin,
 A 가 1995) 28 20
 2 , , ,
 가 가
 , IgA (Buckle, 1993)
 Pearson <Table 4>
 IgA (Dunn et al,
 (r = -.668, p = .000). 1995)
 1% 20 30
 (r = -.187, p = .248), IgA
 (r = .194, p = .229). 가 4 (Kirshbaum, 1996)
 .

<Table 4> Pearson correlation coefficient between subjective stress scores, cortisol level and IgA level in saliva

	Subjective stress r (p)	Cortisol r (p)
Cortisol	-.187 (.248)	
IgA	-.668 (.000)	.194 (.229)

1 3 (Lee, 2000b)
 .
 , , ,
 , 가
 ,
 가 가
 (Dunn et al, 1995)
 .
 가 50 20
 가 가

(Green & Green, 1987) , .

가

가 (Kim & Lee, 1998) .

1998) . Cho(1998) IgA 가

5 가 50 20

15 IgA 가가

가 (Green & Green, 1987), 3

. IgA 가

가 (Lee, 1999)

가 IgA 가

(Mandel & Wotman, 1976) 가 가 (Lee, 2000c) .

(Vining, , IgA

McGimley & Symons, 1983) IgA

가

Kim(1998) 가 IgA 가

(Lee, 1999) 20

가 Burton, Hinton, Neilson IgA (Green & Beastall(1996) Green, 1987) .

(1987) Green Green (Dorian, Keystone, Garfinkel, & Brownen, 1981)

IgA 가 가

가

가

Kim(1998) Green Green

(1987) 6 8 , 7

8

2001 1 8 2001 1

22 T K

20 P S

(Valdimarsdottir & Stone, 1997). 20 .

1 3 2 2% ,

12 5 , , 20 ,

가 , IgA

SPSS ,

가 가 Pearson

가
 (F = 31.83,
 p = .000), IgA (F = 63.859,
 p = .000), 가
 (F = 3.202, p = .082).
 IgA
 (r = -.668, p = .000).

IgA 가

1.

2.

가

가

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- Abstract -

Effects of Back Massage with Lavender Essence Oil on the Stress Response of the ICU Nurses

*Lee, Sung-Hee **

Purpose: This quasi-experimental study was to explore the effects of back massage with Lavender essence oil on the stress response of the ICU nurses.

Method: Twenty nurses were selected as an experimental group and twenty nurses were in the control group.

Lavender essence oil mixed with Jojoba carrier oil was used to massage the neck, shoulder, back, and low back. Massage was done three times a week for 20 minutes for 2 weeks by the massage therapist. The stress response was measured with a subjective stress score, Cortisol and IgA level in saliva. The cortisol level in saliva was analyzed by a radioimmunoassay before and after back massage. The level of IgA in saliva was

analyzed by an immunoturbidimeter assay and subjective stress scores was measured by Visual Analogue Scale. The data was analyzed using SPSS 8.0 and the hypotheses were tested by ANCOVA and the Pearson coefficient correlation.

Result: 1) Score of subjective stress decreased significantly after the use of back massage with Lavender essence oil. 2) Level of Cortisol in saliva did not change significantly after the use of back massage with Lavender essence oil. 3) Level of IgA in saliva increased significantly after the use of back massage with Lavender essence oil. 4) After the use of back massage with Lavender essence oil, there was significant negative correlation between subjective stress and level of IgA in saliva.

Conclusion: Back massage with Lavender essence oil is an effective intervention to reduce the stress response in the ICU nurses.

Key words : Lavender essence oil, Back massage, Subjective stress, Salivary Cortisol, Salivary immunoglobulin A

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