

: , , , , , A

\*

1. (holistic) (Wells-Federman et al., 1995; Zeller et al., 1996). (aromatherapy)

(aroma essence oil) (stressor) 가 , 가 . 가 ( , , 1998; , , 1995; , 1999; Acoler et al., 1993; Green & Green, 1987), 가

가 가 가 . 가 (Pugh & Milligan, 1993), 1 가 4 (Troy & Dalgas-Pelish, 1997), 가 (Bourgoin et al.,

---

\*

1997), (Lawrence, 2) : (Gilbert, 1971) ,  
1994) (Gjerdingen & Froberg, 1991) Rhoten Fatigue Scale(1982)  
(Gardner & Campell, 3) (skin temperature) :  
1991) (Mead- 5-8  
Bennett, 1990). ( , 1999)  
(YSI Tele thermometer,  
Simpson electric Co., USA)  
가 가  
4) A(immunoglobulin A,  
IgA) : IgA  
IgA ( , 1999)  
, 1999) , IgA  
3cc  
1) 가 가  
2) 가 가  
3) 가 A  
1.  
3. 가 , , ,  
(essence oil) (spirit)  
가 1. , ,  
(Worwood, 1991).  
가 2. ,  
가 3. 180 가 , 가  
A 가 가  
16  
4. , 1  
Gattefosse가  
1) (aromatherapy massage) :  
(Worwood,  
1991) , , , , , ,  
(Bush Boake Allen., USA)  
20 100ml (Jjova oil, Bush (carrier oil)  
Boake Allen., USA) 2% 가 가  
, , , 가  
20 20 (snergy) 가  
가

(Worwood, 1991).

가

1%

2%

(Robins, 1999),

(touch)

가

가

2.

가

가

1964 Solomon

가

(Welsh,

1997).

1970

(Ader & Cohen, 1975),

가

(Ader, 1992).

(Worwood, 1991),

가

가

Burns Blamey

(1994) 585

10가

가

가

Tobin(1995)

(Cohen & Williamson, 1991).

가

Hudson(1996)

가(appraisal)

15

가 (Valdimarsdottir

& Stone, 1997).

Buckle (1993)

Wells-Federman (1995)

가

가

가 Selye

24

20

(nonspecific response)

가

가

Dunn, Sleep Collet(1995)

122

(cortisol),

(epinephrine),

(norepine-

phrine), (renin)

가

가

(Varrichio, 1985).

(Wells-Federman et al., 1995).

가

(NK cell cytotoxicity), T, B

IgA

IgA 가

가

(McClelland et al, 1985; Dillon et al, 1985; Rider et al., 1990).

Annie Groër(1991)

30

IgA

6

Dillon (1985)

IgA 가

(humorous)

IgA

IgA 가

가 ( , 1999).

(holistic)

3.

(Potempa et al., 1986),

가

(tirednes)

가 (Milligan et al., 1996).

(Rubin, 1975; Fawcett, 1981).

(Pugh & Milligan, 1993).

Troy Dalgas-Pelish(1997)

36	1
6	1

가

, Carty (1996)

1	4
1	75%

가

4

(readiness to work)

(Gjerdingen & Froberg, 1991),

(Mead-Bennett, 1990)

(Gardner & Campell, 1991).

1

가

(Milligan & Pugh, 1994; Bourgoin et al., 1997),

(Lawrence, 1994).

(Hart, 1978).

4.

, , , .

, 가 , , , . IgA 2

1

, , 가 가 .

가 .

가 , 가 2.

(stimuli) 2000 3 10 6 25

K K

1 3

(Wells-Federman et al, 1995).

가 ,

,

IgA , .

2 3

3cc ,

IgA 가 가 가

< 1 >

20

1.

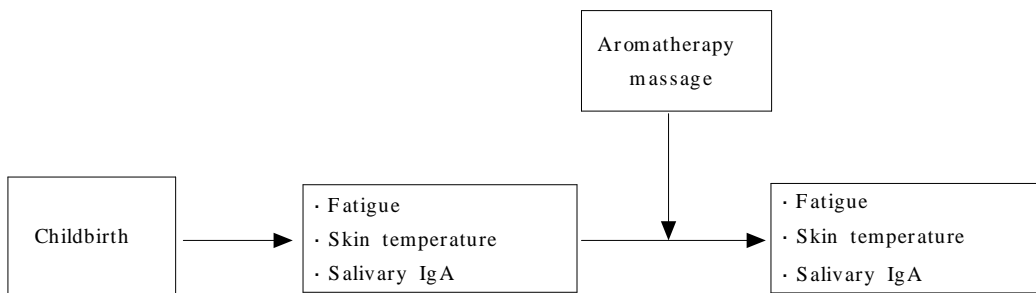


Fig 1. Conceptual framework for this study

3. (McClelland et al, 1985; Valdimarsdottir & Stone, 1997). -20

1) 가 S (Immunoturbidimetric assay) r = .98  
 Inc., USA) 20 (Bush Boake Allen (Immuniturbidimetric assay)  
 (Bush Boake Allen Inc., USA) 100ml IgA - r = .98  
 2% (effleurage), 4 .  
 (petrissage), (accupressure), (kneading) 20 20  
 (Bush SAS  
 Boake Allen Inc., USA) .  
 2 3 1)  
 2) test, t-test . 2)  
 3) 가 unpaired t-test .  
 2) : Rhoten Fatigue Scale(1982)  
 10cm 0 ' 1.  
 가 ' , 10 ' ,  
 . Rhoten Fatigue Scale  
 가  
 가  
 3 , , , , ,  
 ( , , 1996) 가  
 < 1>  
 (Gardner, 1991) .  
 : (YSI Tele-thermometer, 2 .  
 Simpson electric Co., USA)  
 가  
 (probe) , < 2>  
 가 30 가 3.6 , 3.55  
 , 31.52 ,  
 (monitoring) 가 가 31.6 가 .  
 IgA 9.35mg/dl,  
 24 26 9.15mg/dl  
 IgA : 1 가 .  
 , 2  
 1 1 3. 가  
 , 1 . 2  
 3 가 1) 1가  
 IgA 가 1 “

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

Variables	Experimental (N=20)		Control (N=20)		t	p	
	N, %	M, SD	N, %	M, SD			
Mother Age(year)	29	3.3	28.4	1.8	.713	.480	
Education	high school	11	55.0	10	50.0	.159	.924
	college	4	20.0	5	25.0		
	university	5	25.0	5	25.0		
Income(thousand won)	< 1,000	4	20.0	4	20.0	.178	.981
	1,000 to<1,500	8	40.0	7	35.0		
	1,500 to<2,000	4	20.0	5	25.0		
	2,000	4	20.0	4	20.0		
Occupation	Yes	3	15.0	2	10.0	.349	.555
	No	17	85.0	18	90.0		
Parity	nullipara	10	50.0	10	50.0	.000	1.0
	multipara	10	50.0	10	50.0		
Postdelivery day		10.1	3.9	8.2	4.2	.416	.680
Breastfeeding	Yes	8	40.0	8	40.0	.000	1.0
	No	12	60.0	12	60.0		
Baby Sex	male	11	55.0	9	45.0	.400	.527
	female	9	45.0	11	55.0		
Weight at birth(kg)		3.33	.43	3.34	.42	-.074	.940

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

	Experimental		Control		t	p
	M	SD	M	SD		
Fatigue(Score)	3.60	1.85	3.55	1.76	.087	.931
Skin temperature( )	31.52	4.20	31.60	3.95	-.582	.564
Salivary IgA(mg/dl)	9.35	3.94	9.15	3.95	.160	.873

가 : " < 3 > (p = .018). 가 1 .  
 3.6  
 1.3 (p = .000) 2) 2가  
 3.55 2.8 가 가 2 "  
 2.3 , 가 ." < 3 >  
 0.75 가 . 31.52

Table 3. Psychoneuroimmunological effect of aromatherapy massage

Variable	Group	Pretest		Posttest		t <sup>a</sup>	p	post-pre	t <sup>b</sup>	p
		M	SD	M	SD					
Fatigue (Score)	Exp.	3.60	1.85	1.30	1.86	-4.669	.000	-2.30	-2.484	.018
	Cont.	3.55	1.76	2.80	1.43	-1.958	.065	-.75		
Skin Temperature ( )	Exp.	31.52	4.20	32.17	4.65	8.937	.000	.65	5.702	.000
	Cont.	31.60	3.95	31.80	3.86	5.940	.000	.20		
Salivary IgA (mg/dl)	Exp.	9.35	3.94	45.55	9.96	17.231	.000	36.20	4.774	.000
	Cont.	9.15	3.95	29.60	12.06	8.040	.000	20.45		

t<sup>a</sup> : paired t-test t<sup>b</sup> : unpaired t-test

32.17 (p = .000) 가 가  
31.6 31.8 (p = .000). (Dunn, Sleep, & Collet, 1995)  
0.65 , Dunn  
0.2 가 2 (1995) 가 1%

3) 3가 2%  
가 3 “  
A 가 가 ”  
< 3> . IgA 가  
9.35mg/dl 45.55mg/dl 가  
(p = .000) 9.15mg/dl 29.6mg/dl , , 가  
가 (p = .000). IgA (drowsiness)  
36.2mg/dl, 가 (van  
20.45mg/dl 가 Toller, 1988).  
(p = .000). 가 3 ,

가  
(Worwood, 1991).

IgA , , 가  
IgA 가 가 가  
가 (synergy)  
3  
가 (Diego  
et al, 1998) 20 2  
10  
(Romine, Bush, & Geist, 1990)  
가  
가  
IgA 가 K 2000 3 10 6 25 K  
K  
가 20  
2%  
20 20



- , IgA .  
SPSS  
x<sup>2</sup> test  
t-test , 가  
unpaired t-test .  
가  
가 (t=-2.484, p=.018),  
가 (t=5.702, p=.000), IgA  
가 (t=4.774, p=.000). 가
- .  
.  
.  
.  
.  
가 .  
(1998). 가  
, \_\_\_\_\_,  
28(4), 980-991.  
, (1995). 가  
, \_\_\_\_\_,  
25(2), 316-329.  
, (1996). . \_\_\_\_  
, 26(4), 868-877.  
(1999). \_\_\_\_\_  
.  
.  
(1999). \_\_\_\_\_ : .
- Acoler, D., Modi, N., Giannakouloupoulos, X., Bond, C., Weg, W., Clow, A. & Glover, V. (1993). Changes in plasma cortisol and catecholamine concentrations in response to massage in preterm infants. Arch of Disease in Childhood, 68, 29-31.
- Ader, R. & Cohen, N. (1975). Behaviorally conditioned immunosuppression. Psychosomatic Medicine, 37, 333-340.
- Ader, R. (1992). On the clinical relevance of psychoneuroimmunology. Clinical Immunology and Immunopathology, 64, 6-8.
- Annie, C. L. & Groër, M. (1991). Childbirth stress : an immunologic study. J of Obstetric Gynecologic and Neonatal Nursing, 20, 391-397.
- Bourgoin, G. L., Lahaie, N. R., Rheaume, B. A., Berger, M. G., Dovigi, C. V., Picard, L. M. & Sahai, V. E. (1997). Factors influencing the duration of breastfeeding in the Sudbury Region. Canadian J of Public Health, 88(4), 238-241.
- Buckle, J. (1993). Aromatherapy : Does it matter which lavender essential oil is used?. Nursing Times, 89(20), 32-35.
- Burns, E., & Blamey, C. (1994). Using aromatherapy in childbirth. Nursing Times. 90(9), 54-60.
- Carty, E. M., Bradley, C. & Winslow, W.(1996). Women's perceptions of fatigue during pregnancy and postpartum. Clinical Nursing Research, 4(2), 57-62.
- Cohen, S. & Williamson, G. M. (1991). Stress and infectious disease in humans. Psychological Bulletin, 109, 5-24.
- Diego, M. A., Jones, N. A., Field, T., Hernandez-Reif, M., Schanberg, S., Kuhn, C., McAdam, V., Galamaga, R., & Galamaga, M.(1998). Aromatherapy positively affects mood, EEG patterns of alertness and math computations. Intern J Neuroscience, 96, 217-224.
- Dillon, K. M., Minchoff B., & Baker, K. H. (1985). Positive emotional states and enhancement of the immune system. International J of Psychiatry and Medicine, 15, 13-17.
- Dunn, C., Sleep, J. & Collett, D. (1995). Sensing an improvement : an experimental

- study to evaluate the use of aromatherapy, massage, and periods of rest in an intensive care unit. J of Advanced Nursing, 21, 34-40.
- Fawcett, J.(1981). Needs of cesarean birth parents. JOGNN, 10, 372-376.
- Gardner, D. L. (1991). Fatigue in postpartum women. Applied Nursing Research, 4(2), 57-62.
- Gardner, D. L. & Campell, B. (1991). Assessing postpartum fatigue. MCN, 16(5), 264-266.
- Gilbert, J. R. (1971). Highlights from a recent seminar on fatigue, Family Practice, 105(7), 309-310.
- Gjerdingen, D. K. & Froberg, D. G. (1991). Predictors of health in new mothers. Soc Sci Med, 33(12), 1399-1407.
- Green, R. G. & Green, M. L. (1987). Relaxation increases salivary immunoglobulin A. Psycholog Rep, 61, 623-629.
- Hart, L. K.(1978). Fatigue in the patient with multiple sclerosis. Research in nursing & Health, 1(4), 147-157.
- Hudson, R. (1996). The value of lavender for rest and activity in the elderly patient. Complementary Therapies in Medicine, 4(1), 52-57.
- Lawrence, R. A. (1994). Breastfeeding(4th ed), St, Louis; Mosby.
- McClelland, D. C., Ross, G. & Patel, V. (1985). The effect of an academic examination in salivary norepinephrine and immunoglobulin levels. J of Human Stress, 52-59.
- Mead-Bennett, E. (1990). The relationship of primigravida sleep experience and select moods on the first postpartum day. JOGNN, 19, 146-152.
- Milligan, R. & Pugh, L. C. (1994). Fatigue during the childbearing period in J. J., Fitzpatrick & J. S. Stevenson (Eds), Annual Review of Nursing Research (vol 12, 35-50), New York: Springer Publishing.
- Potempa, K., Lopez, M., Reid, C. & Lawson, L. (1986). Chronic fatigue. Image, 18(4), 165-169.
- Pugh, L. C. & Milligan, R. (1993). A framework for the study of childbearing fatigue. Adv Nurs Sci, 15(4), 60-70.
- Rhoten, D.(1982). Fatigue : Its physiological and psychological significances. Ergonomics, 11, 427-436.
- Rider, M. S., Achterberg, J., Lawlis, G. F., Goven, A., Toledo, R. & Butler, J. R. (1990). Effects of immune system imagery on secretory IgA. Biofeedback and Self-Regulation, 15(4), 317-333.
- Robins, J. L. W. (1999). The science and art of aromatherapy. J of Holistic Nursing, 17(1), 5-17.
- Romine, I. J., Bush, A. M., & Geist, C. R. (1999). Lavender aromatherapy in recovery from exercise. Perceptual and Motor Skills, 88, 756-758.
- Rubin, R. (1975). Maternity nursing stops too soon. Am J Nurs, 75(1), 1680-1684.
- Stein, M., Keller, S. & Schleifer, S. (1988). Immune system-relationship to anxiety disorders. Psychiatric Clinics of North America, 11(2), 349-360.
- Tobin, P. (1995). Aromatherapy and its application in the management of people with dementia. Lamp, 52(5), 34.
- Troy, N. W. & Dalgas-pelish, P. (1997). The natural evolution of postpartum fatigue among a group of primiparous women. Clin Nurs Res, 6(2) 126-141.
- Welsh, C. (1997). Touch with oils : A pertinent part of holistic hospice care. American J of Hospice and Palliative Care, 42-44.
- Worwood, V. A. (1991). The complete book of essential oils & aromatherapy. San Rafael, CA:New World Library.
- Valdimarsdoitter, H. B. & Stone, A. A. (1997). Psychosocial factors and secretory immunoglobulin A. Crit Rev Oral Biol Med, 8(4),

461-474.

- Van Toller, S. (1998). *Emotion and the brain*.  
In: van Toller, S. & Dodd, G. H.  
Perfumery: The psychology and biology and  
fragrance. London: Chapman & Hall.
- Varricchio, C. G. (1985). Selecting a tool for  
measuring fatigue. *Oncol Nursing Foru*,  
12(4), 124-127.
- Wells-Federman, C. V., Stuart, E. M., Deckro,  
J. P., Mandle, C. L., Baim, M. & Medich,  
C. (1995). The mind-body connections : The  
Psychophysiology of many traditional nursing  
intervention. *Clinical Nurse Specialist*, 9(1),  
59-66.
- Zeller, J. M. et al.,(1996). Psychoneuroimmu-  
-nology : an emerging framework for nursing  
research. *J of Advanced Nursing*, 23,  
657-664.

-Abstract-

Key concept : Aromatherapy massage,  
Psychoneuroimmunology  
Fatigue, Skin temperature,  
Salivary immunoglobulin A

### Psychoneuroimmunologic Effect of Aromatherapy massage

*Lee, Sung Hee\**

The purpose of this study was to explore the  
psychoneuroimmunologic effect of aromatherapy  
massage and to compare the effect with that of  
massage.

This study is designed as a nonequivalent  
control group pretest-posttest quasi-experimental  
study and each twenty postpartum mothers  
volunteered the experimental group and control  
group.

For experimental group, researcher used  
massage with 2% Jojova oil mixed with  
Lavender and Rosemary oil (Bush Boake Allen  
Inc., USA) for 20 minutes, whereas for control  
group Jojova oil was used as lubricant for  
massage.

Skin temperature was measured with YSI  
Tele-thermometer(Simpson electric Co., USA)  
and the concentration of IgA in salivary was  
analyzed by immunoturbidimetric assay(Cobas  
INTEGRA, Roche, Swiss) at pre and post test.  
Also at this time fatigue were measured by  
Rhoten Fatigue Scale through self-report.

The data were analyzed using SAS and  
hypothesis was tested with unpaired t-test. The  
results were as follows :

- 1) Score of fatigue decreased significantly  
after use of aromatherapy massage.
- 2) Skin temperature increased significantly  
after use of aromatherapy massage.
- 3) Concentration of salivary IgA increased  
significantly after use of aromatherapy  
massage.

In conclusion, from the standpoint of  
psychoneuroimmunologic view, the results  
suggest that aromatherapy massage have greater  
effect compared with massage and can be  
effective nursing intervention to enhance  
relaxation of mind and body in the postpartum  
mothers.

---

\* Department of Nursing, Sorabol College