Original Article

Effects of Maternal Massage to Newborn on Stress, Immune Function and Self- confidence of Mothers during the Postpartum Period*

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Abstract

Purpose: To investigate the effect of infant massage on stress, immune function and self-confidence in postpartum mothers. **Method:** From September, 2003 to February, 2004, 65 women who had delivered babies and were enrolled in the postpartum clinic were assigned to the experimental group or control group. In the experimental group, infant massage was given for 20 minute sessions twice a day from 4 days to 14 days after delivery. The instruments were Parental Stress Index, serum cortisol levels, WBCs, lymphocytes, and Self Confidence Scale. **Results:** Stress scores, WBCs and lymphocytes showed significant differences by the time, but there weren't significant differences according to the group and interactions between the group and the time. Cortisol and self-confidence scores showed significant differences by the time and the group. **Conclusions:** Applying massage to their newborn baby influenced cortisol levels of postpartum mothers. Therefore stress, cortisol, and immune functions in postpartum mothers should be generally screened and follow up studies are needed for the effective application of massage in postpartum mothers.

Key words : Massage, Stress, Immune function, Self confidence

(Kiecolt-Glasser, Malarkey, & Cacippo, 1994)

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(Lee, 1998; Miller & Holditch-Davis,

(Lee, 1998), 1992),

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(Lee, 1992; Park, 1991).

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(Annie & Groër,

1991). ,

(Kwon & Yi, 2000)

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(Byun & Jang, 1998;

Kim et al., 1998). ,

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(Field • ( )

et al., 1986), 1990 ( ) .

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, (Byun & Jang, 1998) • .

(Hulme, Waterman, & Hiller, 1999) , • .

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(Byun & Jang, 1998; Field, Grizzle, Scafidi, Abrams, &

Richardson, 1996) , **1.**

(Acoler et al., 1993; Field et al., 1996; Lee,

2000) . ,

(Choi & Kim, 2002; Kang, 1998), .

(Lee, 1998; Miller & Holditch-Davis, 1992), .

(Kim, 2002; Lee, 1999).

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(Field et al., 1996).   ,
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Pearlin   Schooler(1978)
(Parental Stress Index)   .
7   4
(: 1   ~28).
Cronbach's   α   .84
Cronbach's α   .87   .
(2)   (Cortisol).
5ml   10
, Coat-A-Cortisol Kit(Diagnost

Products Co, U.S.A.)   Y-counter COBRA5010 Quantum
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(1)
3ml   EDTA
(Counter STKR, U.S.A.)
.   30   10   .
(2)
3ml   EDTA
(Counter STKR, U.S.A.)
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Pharis(1978)   (Self
Confidence Scale)   (Lee, 1992)
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13   13
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Cronbach's   α   0.86
Cronbach's α   0.91   .

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x^2-test   t-test   <Table 1>. ,

< Table 1> Homogeneity test for independent variables between experimental and control group   (N= 65)

Characteristics		Exp.(n= 30) f(%)	Cont.(n= 35) f(%)	Total f(%)	x^2	p
Age(years)	≤25	1(3.3)	1(2.9)	2(3.1)	5.73	.73
	26~30	7(23.4)	17(48.5)	24(36.9)		
	31~35	18(60.0)	16(45.7)	34(52.3)		
	≥35	4(13.3)	1(2.9)	5(7.7)		
Educational	≤ high school	8(26.7)	14(40.0)	22(33.9)	1.85	.40
status	≤ college	7(23.3)	9(25.7)	16(24.6)		
	> college	15(50.0)	12(34.3)	27(41.5)		
Income	≤ 200	8(34.8)	13(46.4)	21(41.2)	0.71	.70
(10,000won/month)	≤ 300	10(43.5)	10(35.7)	20(39.2)		
	≤ 400	5(21.7)	5(17.9)	10(19.6)		
Type of residence	Own	21(70.0)	23(65.7)	44(67.7)	0.14	.71
	Lent	9(30.0)	12(34.3)	21(35.3)		
Job of mother	Have	11(36.7)	11(31.4)	22(33.8)	0.20	.66
	Non	19(63.3)	24(68.6)	43(66.2)		
Job of husband	Officer	19(13.4)	24(17.1)	43(15.4)	1.30	.72
	Business	6(3.3)	3(0.0)	9(1.5)		
	Professional	4(3.3)	4(2.9)	8(3.1)		
	Others	1(80.0)	4(80.0)	5(80.0)		
Family type	Parent in law	4(13.4)	6(17.1)	10(15.4)	1.33	.72
(live with)	Brother	1(3.3)	0(0.0)	1(1.5)		
	Parent	1(3.3)	1(2.9)	2(3.1)		
	Others	24(80.0)	28(80.0)	52(80.0)		
No. of child	1	12(40.0)	19(54.3)	31(47.7)	2.48	.29
	≥2	18(60.0)	16(45.7)	34(52.3)		
Education about	Have	10(33.3)	10(28.6)	20(30.8)	0.17	.68
delivery and child care	Non	20(66.7)	25(71.4)	45(69.2)		
Experience of abortion	Have	9(30.0)	6(17.1)	15(23.1)	1.50	.22
	Non	21(70.0)	29(82.9)	50(76.9)		
Feeding type	Breast	20(66.7)	28(80.0)	48(73.8)	1.50	.47
	Bottle	4(13.3)	3(8.6)	7(10.8)		
	Mixed	6(20.0)	4(11.4)	10(15.4)		
House work division	Yes	15(50.0)	19(54.3)	34(52.3)	0.12	.73
	No	15(50.0)	16(45.7)	31(47.7)		
Burden of child care	Have	12(52.2)	7(26.9)	19(38.8)	3.28	.07
	Non	11(47.8)	19(73.1)	30(61.2)		
Content of	High	23(76.7)	23(65.7)	46(70.8)	4.89	.18
marriage	Midium	6(20.0)	12(34.3)	18(27.7)		
	Low	1(3.3)	0(0.0)	1(1.5)		

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

Characteristics	Exp. (n= 30) mean± SD	Cont. (n= 35) mean± SD	Total mean± SD	t	p
Stress score	13.5±3.9	13.1±3.5	13.3±3.7	0.40	.69
Cortisol	15.0±4.6	13.2±4.3	14.1±4.5	1.58	.12
WBC	8.06±2.1	8.08±2.1	8.07±2.1	0.44	.97
Lymphocyte	21.2±6.2	22.5±6.4	21.9±6.3	0.85	.39
Self confidence	32.0±7.2	26.6±8.0	30.6±7.7	1.25	.22

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<Table 2>.

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13.5±3.9
12.9±4.0 , 13.1±3.5 12.1±3.6

(F=1.77, p= .08), (F=0.40,
p= .69).

(F=0.16, p= .69)<Table 3>.

< Table 3> Stress scores between experimental and control group

Group	Before mean± SD	After mean± SD	Source	F	p
Exp.(n=30)	13.5±3.9	12.9±4.0	group	0.40	.69
Cont.(n=35)	13.1±3.5	12.1±3.6	time	1.77	.08
			G*T	0.16	.69

Exp. : Experimental group   Cont. : Control group

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15.0±4.6ug/dl, 13.2±4.8ug/dl 7.8±
2.9ug/dl, 8.9±3.4ug/dl
(F=10.8, p= .00),
(F=2.77, p= .01).
(p= .01)<Table 4>.

< Table 4> Cortisol scores between experimental and control group (/dl)

Group	Before mean± SD	After mean± SD	Source	F	p
Exp.(n=30)	15.0±4.6	7.8±2.9	group	2.77	.01
Cont.(n=35)	13.2±4.8	8.9±3.4	time	10.8	.00
			G*T	7.65	.01

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8.1±2.1% 6.8±1.7%
, 8.1±2.1% 6.9±1.4%

(F=5.77, p= .00), (F=0.15, p=
.88).
(F=0.02, p= .88). (Lymphocyte)
21.2±6.2% 28.8±8.3% ,
22.5±6.4% 30.3±6.7%
(F=8.80, p= .00),
(F=0.10, p= .91).
(F=0.01, p= .92)<Table 5>.

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(F=9.37, p= .00). ,
32.0±7.2 31.6±5.5
, 29.5±

< Table 5> WBC and Lymphocyte between experimental and control group (%)

Variables	Group	Before mean± SD	After mean± SD	Source	F	p
WBC	Exp.	8.0±2.1	6.7±1.7	group	0.15	.88
	Cont.	8.0±2.1	6.9±1.4	time	5.77	.00
				G*T	0.02	.88
lymphocyte	Exp.	21.2±6.2	28.8±8.3	group	0.10	.91
	Cont.	22.5±6.4	30.3±6.4	time	8.80	.00
				G*T	0.01	.92

8.0   32.2±6.7   .

(F=3.06, p= .00),

(P=2.79, p= .01)<Table 6>.

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8.0%, 8.0% ,   6.7%, 6.9%

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21.2%, 22.5%   28.8%, 30.3%

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Strohmeier, Stegmüller Halberstadt(1998)

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10.1%   9.7% ,

18.3% 20.4% ,

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< Table 6> Self- confidence score between experimental
and control group

Group	Before mean± SD	After mean± SD	Source	F	p
Exp.(n=30)	32.0±7.2	31.6±5.5	group	3.06	.00
Cont.(n=35)	29.5±8.0	32.2±6.7	time	2.79	.01
			G*T	9.37	.00

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13.5   12.9 ,   13.1

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32.0   31.6

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(Choi & Kim, 2002),

(Byun & Jang, 1998).

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(Choi & Kim, 2002; Lee,

1999).

(Annie & Groër, 1991).

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(Kiecolt-Glasser et al., 1994; Kim, Suh, & Lee, 1988),

1999).

(Bartrop, Luckhurst,

& Lazerus, 1977).

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(Rogers, Bubey, & Reich, 1979),   T

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(Kim et al., 1988).   -   -

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15.0μg/dl, 13.2μg   (Park, 1991).

/dl   7.8μg/dl, 8.9μg/dl

(Oh, 2001; Walker, Vrain, &

Thompson, 1986).

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(Seo, 2000)   (Lee, 1990)   ,

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measures ANOVA   .

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Jang, 1998; Choi & Kim, 2002; Field et al., 1996; Kang,
1998; Lee, 1998; Lee, 2000),   .

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(Byun & Jang, 1998),

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