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Yoo(1999) 가

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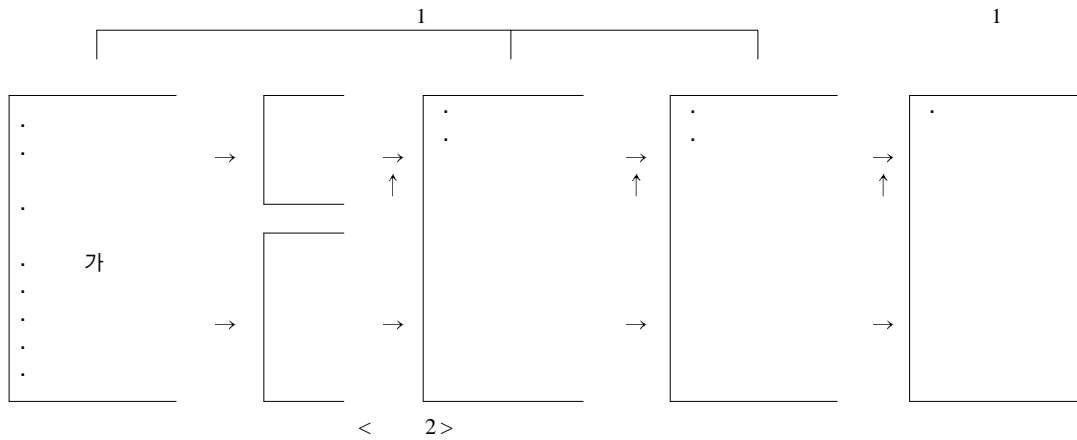
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6. SPSS Program 가 <Table 1>. 1) t-test 2) 가 2) 가 1 가 2가 가, 가 (Repeated Measure ANCOVA), t-test, (Simple ANCOVA) 가 <Table 1>. 3가 2. 가 1) 1 가 1 가 “ 가 ” 1 가 2 가 (1) 1 가 “ 가 ”

<Table 1> Homogeneity test for characteristics

Characteristics	Exp.(N=28) n (%)	Cont.(N=29) n (%)	$\chi^2$	or	t	p
Age(years)*	28.07( 2.89)	28.48(3.34)			- .496	.622
Education						
High school	11(39.3)	16(55.2)	1.442			.230
University & above	17(60.7)	13(44.8)				
Religion						
Yes	16(75.1)	14(48.3)	.449			.503
No	12(42.9)	15(51.7)				
Occupation						
Yes	4(14.3)	5(17.2)	.940			.760
No	24(85.7)	24(82.8)				
Gravidity(times)						
1	25(89.3)	28(96.6)	1.153			.283
2	3(10.7)	1( 3.4)				
Pain threshold(mmHg)*	162.07(27.54)	167.75(28.39)			- .767	.446
Pain tolerance(mmHg)*	210.80(21.20)	215.34(27.35)			- .699	.488
PR(bpm)*	82.39(15.67)	88.04( 7.15)			-1.650	.105
RR(tpm)*	19.89(11.56)	18.00( 2.38)			.803	.426
SBP(mmHg)*	119.46( 8.85)	124.40( 9.16)			-1.993	.052
DBP(mmHg)*	77.14( 7.12)	79.60( 8.40)			-1.510	2.550
Status anxiety*	33.50( 5.77)	50.96( 7.38)			-9.926	.000**

\*Mean(SD) \*\*p < .05

Exp.: Experimental Group Cont.: Control Group PR(bpm): Pulse rate(beat per minute)  
 RR(tpm): Respiration rate(times per minute) SBP(mmHg): Systolic blood pressure (mmHg)  
 DBP(mmHg): Diastolic blood pressure(mmHg)

&lt;Table 2&gt; Comparison on subjective labor pain

Variables Group	L-P Mean(SD)	A-P Mean(SD)	T-P Mean(SD)	Source	F	p
Subjective Labor Pain						
Exp.(N=28)	6.50(1.31)*	8.21( .73)**†	9.25( .75)**	Group	3.562	.065
Cont.(N=29)	7.76(1.76)	9.80( .50)	9.80( .64)	Phase	3.840	.028
				G * P	.370	.693

\*: differs significantly from the control grup (p< .05) by t-test

\*\* : differs significantly from the control grup(p< .01) by t-test

† : differs significantly from the control grup (p< .005) by ANCOVA(Covarite-Status Anxiety)

L-P: Latent Phase A-P: Active Phase T-P: Transition Phase

Exp: Experimental Group Cont: Control Group G \* P: Group \* Phase

(F = .370, p = .693), 가 p = .003<Table 2>. (2) 2 가  
 (F = 3.840, p = .028), “  
 가 (F = 3.562, p = .065) 1 가 가 ”  
 <Table 2>.  
 (t = -2.563, p = .013), (F = .112, p = .894), 가  
 (t = -9.684, p = .000), (t = -2.866, p = .006) (F = 2.349, p = .106),  
 (F = 12.299, p = .001). 2 가 <Table 3>.  
 (F = 9.568,

&lt;Table 3&gt; Comparison on objective labor pain

Variables	L-P Mean(SD)	A-P Mean(SD)	T-P Mean(SD)	Source	F	p
Objective Labor Pain						
Perspiration				Group	3.907	.054
Exp.(N=28)	1.21( .41)	2.28( .46)	2.85( .93)	Phase	.321	.727
Cont.(N=29)	2.16(1.06)	3.52( .96)	4.16( .94)	G*P	.407	.668
Facial Expression				Group	9.394	.004
Exp(N=28)	1.57( .79)	3.00( .47)	3.35( .55)	Phase	3.016	.058
Cont.(N=29)	2.28( .97)	3.84( .47)	4.24( .59)	G*P	.544	.584
Body Positon				Group	7.448	.009
Exp.(N=28)	1.17( .39)	2.57( .57)	3.10( .91)	Phase	2.642	.081
Cont.(N=29)	2.08( .75)	3.56( .65)	4.44( .96)	G*P	.256	.775
Voice				Group	2.706	.106
Exp.(N=28)	1.07( .37)	2.07( .85)	2.71(1.01)	Phase	1.504	.232
Cont.(N=29)	1.92( .75)	3.44( .71)	4.52( .87)	G*P	.858	.430
Total				Group	12.299	.001
Exp.(N=28)	1.25(.34)**†	2.48(.32)**†	3.00(.62)**†	Phase	2.349	.106
Cont.(N=29)	2.11(.75)	3.59(.49)	4.34(.66)	G*P	.112	.894

\*\*p< .000(t-test), † p< .05(ANCOVA; Covarite-Status Anxiety)

† † p< .005(ANCOVA; Covarite-Status Anxiety)

L-P: Latent Phase A-P: Active Phase T-P: Transition Phase

Exp.: Experimental Group, Cont.: Control Group G \* P: Group \* Phase

(F=4.550, p=.038),  
 (F=13.812, p=.001), (F=5.941, p=.018)  
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 (F=.172,  
 p=.843),  
 (F=.281, p=.756)  
 (F=1.393, p=.244) 1 가  
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 p=.539),  
 (F=.423, p=.657),  
 (F=1.712, p=.197) 2 가  
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 (F=.089, p=.915),  
 가 (F=.466, p=.630),  
 (F=7.547, p=.008),  
 가  
 (F=.748, p=.479),  
 가 (F=.709, p=.497),  
 가 (F=3.780, p=.057) 3 가  
 <Table 4>

<Table 4> Comparison on physiologic response

Variables	Group	L-P Mean(SD)	A-P Mean(SD)	T-P Mean(SD)	Source	F	p
PR(bpm)							
Exp.(N=28)		82.39(15.67)	86.10(14.40)	88.50(15.59)	Group	1.393	.244
Cont.(N=29)		88.04( 7.15)	90.36( 8.64)	94.16( 6.75)	Phase G * P	.281 .172	.756 .843
RR(tpm)							
Exp.(N=28)		19.89(11.56)	22.10(11.65)	24.07(12.88)	Group	1.712	.197
Cont.(N=29)		18.00( 2.38)	20.40( 2.82)	21.36( 2.99)	Phase G * P	.423 .626	.657 .539
SBP(mmHg)							
Exp.(N=28)		119.46( 8.85)	122.71( 6.35)**†	128.92( 6.28)**†	Group	7.547	.008
Cont.(N=29)		124.40( 9.16)	130.40( 8.40)	134.20( 4.93)	Phase G * P	.466 .089	.630 .915
DBP(mmHg)							
Exp.(N=28)		77.14( 7.12)	79.64( 6.37)*†	83.92( 7.85)*	Group	3.780	.057
Cont.(N=29)		79.60( 8.40)	85.00( 8.41)	89.60( 8.88)	Phase G * P	.709 .748	.497 .479

\*: differs significantly from the control grup (p<.05) by t-test

\*\*: differs significantly from the control grup(p<.005) by t-test

† : differs significantly from the control grup (p<.05) by ANCOVA(Covarite-Status Anxiety)

L-P: Latent Phase A-P : Active Phase T-P: Transition Phase

Exp.: Experimental Group Cont.: Control Group G \* P: Group \* Phase

PR(bpm): Pulse rate(beat per minute)

RR(tpm): Respiration rate(times per minute)

SBP(mmHg): Systolic blood pressure (mmHg)

DBP(mmHg): Diastolic blood pressure(mmHg)

<Table 5> Comparison on status anxiety

Variables	Exp.(n=28) Mean(SD)	Cont.(n=29) Mean(SD)	F	p
Status Anxiety				
Before Massage(L-P) within 1 hour	33.50(5.77)	50.96(7.38)	11.787	.001
After Delivery	28.60(4.66)	44.44(9.11)		

L-P: Latent Phase  
 Exp.: Experimental Group  
 Cont.: Control Group

(F = 5.554, p = .022) , (F = 6.269, p = .016) Kim Yoo 가 .  
 (F = 4.508, p = .039) , Hur  
 <Table 4> (2000)  
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 (F = 11.787, p = .001) 3가 <Table 5> 가 1 , Kim Yoo(1999)  
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 (Sandorff, 1980),  
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(Simple Factorial ANCOVA)

References

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Cho, K. S. (1999). The Efecct of a hand massage program on anxiety and immune functiom in clients with cataract surgery under local anesthesia. *J Korean Acad Nurs*, 29(1), 97-105.

Choi, Y. S. (1983). *An experimental study of the effects of childbirth preparation on labor pain*. Unpublished doctoral dissertation, Yonsei University of Korea, Seoul.

Cline, M. E., Herman, J., Shaw, E. R., & Morton, R. D. (1992). Standardization of the visual analogue scale. *Nurs Res*, 41,

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- 378-380.
- Field, T. (1997). *Asia-Pacific Infant Care Franchise Regional "Touch" Training Program Paper* presented at the meeting of the Manila, Philippines.
- Field, T. M., Schanberg, S. M., & Scafidi, F. (1986). Tactile/kinesthetic stimulation effects on preterm neonates. *Pediatrics*, 77(5), 654-658.
- Gagnon, A. J., Waghorn., K. W., & Covell, C. (1997). A randomized trial of one-to-one nurse support of women in labor. *Birth*, 24(2), 71-77.
- Groer, M., Boynton, M., Mozingo, J., & Dopplian, P. (1994). Measures of salivary secretory immunoglobulin A and State anxiety immunoglobulin A and State anxiety following a nursing back rub. *Applied Nurs Res*, 7(1), 2-6.
- Hofmeyr, G. J., Nikodom, V. C., Wolman, W., Chalmers, B. E., & Kramer, T. (1991). Companionship to modify the clinical birth environment; Effect on progress and perceptions of labour, and breastfeeding. *British J Obstet & Gynecol*, 98, 756-764.
- Hur, M., H. (2000). *Effect of one-to-one labor support on labor pain, labor stress response, childbirth experience and neonatal status for primipara*. Unpublished doctoral dissertation, Catholic University of Korea, Seoul.
- Hur, M., H. (2001). Effect of doula-type-delivery nursing care on plasma  $\beta$ -endorphin, serum cortisol related to deliver stress during labor, and postpartum status anxiety of primipara. *Korean J Women Health Nurs*, 7(1), 67-79.
- Kim, G. J., & Yoo, E. K. (1999). A Study on the effect of doula's roles including therapeutic touch on labor and delivery process. *Korean J Women Health Nurs*, 5(2), 224-236.
- Kim, H., S. (1999). *The effect of caring touch on stress and immune response of patients undergoing open heart surgery*. Unpublished doctoral dissertation, Kyung Hee University of Korea, Seoul.
- Kim, J., T. & Shin D., K. (1978). A Study Based on the Standardization of the STAI for Korea. *J Newest Med*, 21(11) 65-75.
- Klaus, M. H., Kennell, J. H., & Klaus, P. H. (1993). *Mothering the mother-How a doula can help you have a shorter, easier, and healthier birth*. Massachusetts; Addison-Wesley publishing company.
- Lederman, R. P., Lederman, E., Work, B. A., & McCann, D. S. (1978). The relationship of maternal anxiety, plasma catecholamines, and plasma cortisol to progress in labor. *Am J Obstet & Gynecol*, 132(5), 495-500.
- Lederman, R. P., Lederman, E., Work, B., & McCann, D. S. (1985). Anxiety and epinephrine in multiparous women in labor; Relationship to duration of labor and fetal heart rate pattern. *J Obstet & Gynecol*, 153(8), 870-877.
- Lederman, R. P. (1995). Relation of anxiety, stress, and psychosocial development to reproductive health. *Behav Med*, 21, 101-112
- Lee, M. J (1992). *A study of variation on the levels of prolactin and cortisol in maternal plasm related to delivery type*. Unpublished master dissertation, Ewha Womans University of Korea, Seoul.
- McCaffery, M., & Beebe, A. (1989). *Pain: Clinical manual for nursing practice*. St. Louis: C. V. Mosby.
- McLachlan, E. (1974). Recognizing pain. *Am J Nursing*, 74(3), 496-498.
- Meehan, T. C. (1998). Therapeutic touch as a nursing intervention. *J Advan Nurs*, 28(1), 117-125.
- Melzack, R. Taenzer, P., & Kinch R. A. (1981). Labor pain: Nature of the experience and

the role of prepared childbirth training. *Pain* 1(Suppl.), 271.

Nolan, M. (1995). Supporting women labor; the doula's role [Comments] [Abstract]. *Modern Midwife*, 5(3), 4.

Sandorff, R. (1980). A skeptics guide to therapeutic touch. *Nurs Res*, 43(1), 24-30.

Simkin, P. (1995). Reducing pain and enhancing progress in labor guide to nonpharmacologic methods for maternity caregivers. *Birth*, 22(3), 161-171.

Spielberger, C. D. (1970) *Anxiety as an emotional state : Current trend in theory and research Vol. 1*, New York : Academic press, 23-49

Zwelling, E. (1996). Childbirth education in the 1990s and beyond. *J Obstet Gynecol, & Neonat Nurs*, 25(5), 425-432.

- Abstract -

## Effects of Full Body Massage on Labor Pain and Delivery Stress Reaction for Primipara during Labor

Lee, Kun Ja<sup>1)</sup> · Chang, Chun ja<sup>1)</sup>  
Jo, Hyun Sook<sup>1)</sup>

**Purpose:** This study was to test the effects of a full body massage on labor pain and delivery stress reaction for primipara during labor.

**Method:** This study employed a quasi-experimental method (nonequivalent control group, pre-post test design). The subjects of this study were 57 primipara hospitalized at the U OB & GYN hospital in Incheon from November 1, 2001 to July 31, 2002. 28 women were assigned to

the experimental group and 29 to the control group. The experimental group was given 20 minutes full body massage for each of three delivery phases. The control group was given conventional delivery care. The levels of labor pain were measured by the Visual Analogue Scale and the expression scores of the labor pain and the levels of delivery stress reaction were measured by pulse rate, respiration rate, and blood pressure, and State-Anxiety Scale. Data were analyzed using the repeated measures analysis of covariance (ANCOVA), t-test, <sup>2</sup>-test, simple ANCOVA with SPSS program.

**Result:** There was no interaction effect between time and group ( $F = .370$ ,  $p = .693$ ), but significant time effects were found for subjective labor pain ( $F = 3.840$ ,  $p = .028$ ). There was no interaction effect between time and group ( $F = .112$ ,  $p = .894$ ), but significant group effects were found for objective labor pain ( $F = 12.299$ ,  $p = .001$ ). There was no interaction effect between time and group for PR ( $F = .172$ ,  $p = .843$ ), RR ( $F = .626$ ,  $p = .539$ ), SBP ( $F = .089$ ,  $p = .915$ ), DBP ( $F = .748$ ,  $p = .479$ ), but significant group effects were found for SBP ( $F = 7.547$ ,  $p = .008$ ). The level of status anxiety of the experimental group was significantly lower than the control group ( $F = 11.787$ ,  $p = .001$ ).

**Conclusion:** This study showed that the full body massage has partially positive effect on labor pain and delivery stress reaction. Therefore this study suggested that the full body massage might be used clinically to help primipara during labor.

Key words : Full body massage, Labor pain, Delivery stress reaction

1) Professor, Department of Nursing, Gachongil College