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1. (Lederman, R. P., Lederman, E., Work, & McCann, 1978) (Fox, 1979; Lederman, E., Lederman, R. P., Work, & McCann, 1981; Lederman et al, 1985).

(Simkin, 1992).

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(Areskog, Uddenberg, & Kjessler, 1983; Crowe & Baeyer, 1989; Waldenström, Borg, Olsson, Sköld, & Wall, 1996; Marut & Mercer, 1979)

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(Areskog et al., 1983; Norr, Block, Charles, Meyering, & Meyers, 1977).

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(Lederman, R. P., Lederman, E., Work, & McCann, 1985), (Lederman, R. P., Lederman, E., Work, & McCann, 1978) (Fox, 1979; Lederman, E., Lederman, R. P., Work, & McCann, 1981; Lederman et al, 1985).

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(Geden, Beck, Brouder, Glaister, & Pohlman, 1985; Patton, English, & Hambleton, 1985; Sturrock & Johnson, 1990).

가 (Bernat, Wooldridge, Marecki, & Snell, 1992),

(Rosen, 1991).

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10% (Gagnon & Waghorn, 1996; McNiven & Hodnett, 1992)

(Tarkka & Paunonen, 1996b) (, 1995; Evans & Jeffrey, 1995)

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(Gagnon, Waghorn, & Covell, 1997; Hodnett & Osborn, 1989b; Hofmeyr, Nikodem, Wolman, Chalmers, & Kraner, 1991; Kennell, Klaus, McGrath, Robertson, Hinkley, 1991; Klaus, Kennell, Robertson, & Sosa, 1986; Langer, Campero, Gracia, & Reynoso, 1998; Sosa, Kennell, Klaus, & Robertson, 1980; Wang, Mao, & Quian, 1997),

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(1988; Bryanton, Fraser-Davey & Sullivan, 1994) (Mackey & Stepan, 1994), (Bratanton et al., 1994) . Hodnett(1996)

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가 (Monitrice)(Hodnett, & Osborn, 1989a), (Doula)(Klaus et al., 1986; Rosen, 1991; Sosa et al., 1980; Watson, 1992; Zhang, Bernasko, Leyvovich, Fahs & Hatch, 1996) 1.

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(Klaus, M. H., Kennell, & Klaus, P. H., 1993; Lieberman, 1992; Perez & Snedeker, 1990; Simkin, Whalley, & Keppler, 1991; Simkin, 1989) K

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(Klaus et al., 1993) ②

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<Table 1> Homogeneity test for characteristics of subjects between the experimental and control groups

Characteristics	Exp. N(%)	Cont. N(%)	total N(%)	χ^2	P
Education					
high school	17(41.5%)	18(43.9%)	35(42.7%)	0.05	0.82
university	24(58.5%)	23(56.1%)	47(57.3%)		
Gravidity					
1	26(63.4%)	23(56.1%)	49(59.7%)	1.18	0.55
2	12(29.3%)	12(29.3%)	24(29.3%)		
3 & more	3(7.3%)	6(14.6%)	9(11.0%)		

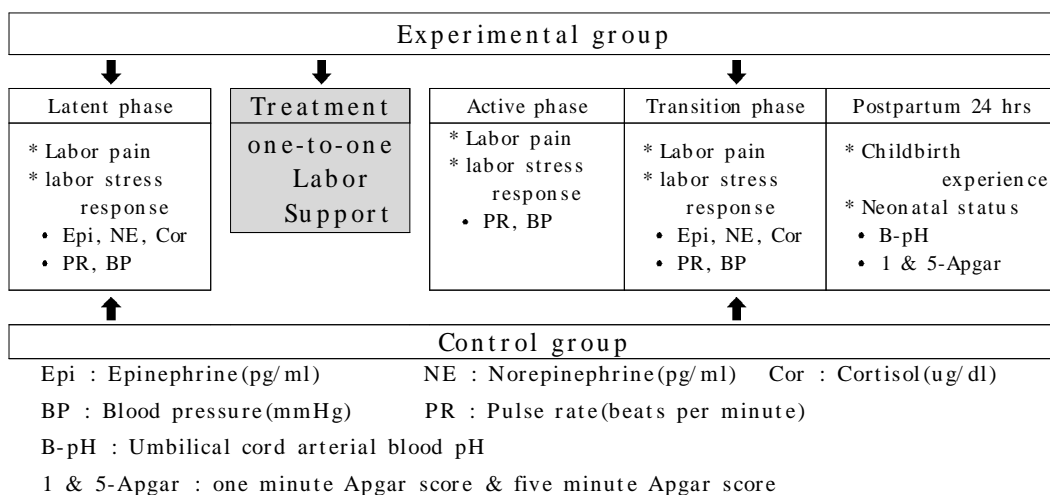
Exp. : Experimental group Cont. : Control group

<Table 2> Homogeneity test for variables related to labor pain and labor experience between the experimental and control groups

Characteristics	Exp.	Cont.	t	P
	Mean ±SD	Mean ±SD		
Status anxiety	44.8± 9.18	39.1± 5.89	3.349	0.001
Pain threshold	179.0±18.28	171.5±22.20	1.684	0.096
Pain tolerance	269.5±15.32	261.5±23.51	1.837	0.071
Self efficacy	167.2±28.54	157.9±27.81	1.489	0.140

Exp. : Experimental group Cont. : Control group

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<Fig 1> Research Design

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가 t - test 가 < 3>. (ANCOVA) 2. 1) 18.28±13.73 pg/ml 가 (t = 58.20±34.35 pg/ml 가 (t = 7.02, P = .000), 12.12±9.57 pg/ml 가 (t = 72.28±67.31 pg/ml 가 (t = 6.44, P = .000). (F = 6.05, P = .016), 39.92±36.43 pg/ml, 60.16±59.79 pg/ml가 가 , < 4>. 2.68±1.66 , 69.50 pg/ml 127.55±82.58 pg/ml 가 (t = 5.54, P = .000), 6.41±1.83 7.94±1.44 가 가 (t = 5.34, P = .000). (F = 213.81, P = .000), 48.21±34.40 pg/ml 92.77±74.27 pg/ml 가 (t = 5.34, P = .000). , 2.97±1.37 , 가 (t = 5.34, P = .000). 7.35±1.40 8.55±0.90 34.47±39.86 가 (F = 291.99, P = .000)< 3>. pg/ml, 44.56±53.48 pg/ml가 가 , < 4>. , 가 45.33±14.78 (t = 2.624, P = .010) (t = 2.287, ug/dl 67.82±15.58 ug/dl P = .025) 가 (t = 12.00, P = .000), 32.39±7.50 ug/dl 50.76±10.16 ug/dl 가 (t = 14.52, P = .000). 가 , (F = 8.01, 22.49±12.00 ug/dl, 18.37 P = .006) (F = 5.36, P = .023) ±8.10 ug/dl가 가 ,

<Table 3> Comparison of labor pain by delivery phase between the experimental and control groups

Variables Group	Before Tx.		After Tx.		Source	F	P
	L-P.	A-P.	T-P.	T-P.			
	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD			
Labor pain					Group	6.05	0.016
Exp.	2.68±1.66	6.41±1.83*††	7.94±1.44*†		Phase	498.40	0.000
Cont.	2.97±1.37	7.35±1.40	8.55±0.90		G * P	1.71	0.184

* : differs significantly from the control group(P<0.05) by t test

† : differs significantly from the control group(P<0.05)

by ANCOVA(Covariate - Status Anxiety)

†† : differs significantly from the control group(P<0.01)

by ANCOVA(Covariate - Status Anxiety)

L-P. : Latent phase A-P. : Active phase T-P. : Transition phase

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

<Table 4> Comparison of maternal plasma epinephrine, norepinephrine and serum cortisol between the experimental and control groups

Variables	Before Tx.	After Tx.	tw	P	Difference (After-Before)	tb	P
	Mean ±SD	Mean ±SD					
Epi(pg/ml)							
Exp.	18.28 ± 13.73	58.20 ± 34.35	7.02	0.000	39.92 ± 36.43		
Cont.	12.12 ± 9.57	72.28 ± 67.31	6.44	0.000	60.16 ± 59.79	1.852	0.069
NE(pg/ml)							
Exp.	93.08 ± 69.50	127.55 ± 82.58	5.54	0.000	34.47 ± 39.86		
Cont.	48.21 ± 34.40	92.77 ± 74.27	5.34	0.000	44.56 ± 53.48	0.968	0.336
Cor(ug/dl)							
Exp.	45.33 ± 14.78	67.82 ± 15.58	12.00	0.000	22.49 ± 12.00		
Cont.	32.39 ± 7.50	50.76 ± 10.16	14.52	0.000	18.37 ± 8.10	1.824	0.072

tw : paired t-test within groups

tb : unpaired t-test between groups

Epi(pg/ml) : Epinephrine(pg/ml)

NE(pg/ml) : Norepinephrine(pg/ml)

Cor(ug/dl) : Cortisol(ug/dl)

Exp. : Experimental group

Cont. : Control group

< 4> 가 (F = 9.34, P = .000)(F = 4.65, P = .012) < 5> .
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 13.89, P = .000), (F = 23.01, P = .000),
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<Table 5> Comparison of pulse rate, systolic blood pressure and diastolic blood pressure between the experimental and control groups

Variables	Before Tx.		After Tx.		Source	F	P
	L-P.	A-P.	T-P.				
	Mean ±SD	Mean ±SD	Mean ±SD				
PR(bpm)					Group	1.33	0.252
Exp.	79.6 ± 5.32	82.2 ± 5.83	84.6 ± 6.92		Phase	13.89	0.000
Cont.	80.0 ± 4.46	81.2 ± 4.29	82.1 ± 4.78		G * P	2.32	0.101
SBP(mmHg)					Group	0.15	0.696
Exp.	117.1 ± 8.73	118.1 ± 11.23	122.0 ± 7.15		Phase	23.01	0.000
Cont.	113.9 ± 8.91	120.5 ± 8.05	120.7 ± 8.18		G * P	5.30	0.006
DBP(mmHg)					Group	0.65	0.422
Exp.	74.2 ± 8.36	75.6 ± 10.26	79.3 ± 6.85		Phase	14.35	0.000
Cont.	74.6 ± 7.11	78.1 ± 6.41	79.5 ± 6.31		G * P	0.83	0.438

L-P. : Latent phase A-P. : Active phase T-P. : Transition phase

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

SBP(mmHg) : Systolic blood pressure(mmHg)

DBP(mmHg) : Diastolic blood pressure(mmHg)

G * P : Group * Phase

Exp. : Experimental group

Cont. : Control group

<Table 6> Comparison of perceived childbirth experience between the experimental and control groups

Variables	Exp.	Cont.	tb	P	F(SA)	P
	Mean ±SD	Mean ±SD				
Childbirth experience	92.0±10.73	85.8±8.93	2.865	0.005	12.50	0.001

tb : unpaired t-test between groups F(SA) : ANCOVA by Covariate(Status Anxiety)
 Exp. : Experimental group Cont. : Control group

<Table 7> Comparison of umbilical cord arterial blood pH and neonatal Apgar score between experimental and control groups

Variables	Exp.	Cont.	tb	P	F(SA)	P
	Mean ±SD	Mean ±SD				
B-pH	7.297±0.083	7.247±0.075	2.519	0.014	5.98	0.017
1-Apgar	8.15 ±0.65	8.12 ±0.56	0.182	0.856	0.02	0.898
5-Apgar	9.20 ±0.46	9.12 ±0.40	0.770	0.444	0.51	0.479

tb : unpaired t-test between groups F(SA) : ANCOVA by Covariate(Status Anxiety)
 B-pH : Umbilical cord arterial blood pH 5-Apgar : five minute Apgar score
 1-Apgar : one minute Apgar score Cont. : Control group
 Exp. : Experimental group

가 , 1) 가 (F = 6.86, P = .002)(F = 26.82, pH P = .000)< 5>. 7.297±0.083 pH 7.247±0.075 (t = 2.519, P = .014)< 7>.

가 , 2) 가 가 1 가 (F = 14.35, P = .000), 8.15±0.65, 8.12±0.56 가 , < 5>. 5 가 9.20± 가 (F = 5.31, P = .007)(F = 14.48, P = .000)< 5>. 0.46, 9.12±0.40 가 < 7>.

3. 가 92.0±10.73 가 85.8±8.93 (t = 2.865, P = .005), 1984), 가 (, 가 가 (, 2000). , 가 가 가 가 , 가 가 (, 1998).

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가 (Tarkka & Paunonen, 1996a).

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가 (Sosa et al., 1980; Klaus et al., 1986; Hofmeyr et al., 1991).

Hofmeyr (1991)

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(McCaffery, 1981; , 1993).

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- Abstract -

Key concept : One-to-one labor support, Labor pain, Labor stress response, Childbirth experience, Neonatal status

Effects of one-to-one Labor Support on Labor Pain, Labor Stress Response, Childbirth Experience and Neonatal Status for Primipara*

*Hur, Myung-Haeng***

This study was designed to investigate the effect of one-to-one labor support on labor pain, labor stress response, childbirth experience and neonatal status for primipara by a quasi experiment (nonequivalent control group pretest-posttest design), from April 30, 1999 to February 20, 2000.

The subjects of this experiment consisted of eighty two primipara with single gestation, full term, uncomplicated pregnancies. Forty one were in the experimental group and forty one in the control group. Their mean age was 25.95 years, their mean gestation period was 39.9 weeks.

A caring package of one-to-one labor support had three components. Physical support consisted of massage, back pressure, touch. Emotional support was provided by a continuous nurse's presence, acceptance and encouragement. Informational support involved teaching breathing skills, relaxation skills and knowledge about the labor process.

Data assessed labor pain, pulse rate and

blood pressure to measure labor stress response. Also, in measuring the value of labor stress response, plasma epinephrine, plasma norepinephrine and serum cortisol were measured. In the 24 hours after birth, the data for the postpartum mother's childbirth experiences was collected. Umbilical cord arterial blood pH, one minute and five minute Apgar score were measured after birth.

Data was analyzed by t-test, χ^2 -test, repeated measures ANOVA, ANCOVA with SAS Program.

The results were as follows;

1. Labor pain was significantly low in the experimental group(P=.016).
2. No significant group effects were found, but significant time effects were found for plasma epinephrine, norepinephrine, serum cortisol, pulse rate and blood pressure.
3. The childbirth experience of the experimental group was significantly more positive than the control group (P = .005).
4. The umbilical cord arterial blood pH of the experimental group was significantly higher than the control group(P=.014). There was no significant difference between the two groups in neonatal one minute and five minute Apgar scores.

In conclusion, these findings indicate that one-to-one labor support could be effective in decreasing labor pain, and increasing positive childbirth experiences, also increasing the neonatal umbilical cord arterial blood pH for primipara. So, one-to-one labor support could be applied as an effective nursing treatment for primipara.

* A Dissertation for the degree of Doctor of Nursing Science(Catholic Univ, 2000, Aug)

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