



Original Article

Effects of Foot Reflexzone Massage on State-Anxiety and Discomfort in Ovarian Cancer Patients Receiving Chemotherapy

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Abstract

Purpose: This study was conducted to investigate the effects of foot reflexzone massage on state - anxiety and discomfort of ovarian cancer patients receiving chemotherapy. **Method:** A quasi experimental design with a non equivalent control group and non synchronized design was used. The experiment was conducted from October 1, 2003 to September 30, 2004. The subjects consisted of 40 patients admitted to C University Hospital. Twenty subjects were assigned to the experimental group and received foot reflexzone massage everyday for 3 days. The other 20 subjects were in the control group and received routine care. Foot reflexzone massage was done on both feet of the subjects for 30 minutes for 3 days using standard protocol. The 'State-Anxiety Inventory'

developed by Spielberger was used to measure the degree of state-anxiety. Discomfort was assessed using the 'Symptom Distress Scale' of McCorkle and Young. Data was analyzed by a SAS program using t-test, Wilcoxon signed rank sum test and Wilcoxon rank sum test. **Results:** State-anxiety and discomfort of subjects receiving foot reflexzone massage were significantly lower than those of the control group. **Conclusion:** These findings indicate that foot reflexzone massage could be an effective nursing intervention for relieving state-anxiety and discomfort in ovarian cancer patients.

Key words : Foot reflexzone massage, Anxiety, Discomfort, Ovarian cancer

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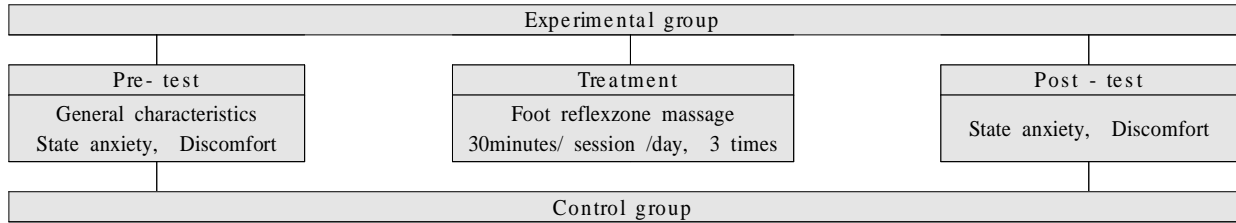
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<Figure 1> Research design

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<Table 1> General characteristics between the experimental and control group

Characteristics	Exp. f(%)	Cont. f(%)	x ² / Z	p
Marital status*				
Married	16(80.0)	18(90.0)		0.6614
Unmarried	4(20.0)	2(10.0)		
Age(years)*				
20 39	4(20.0)	3(15.0)		0.3211
40 49	6(30.0)	2(10.0)		
50 59	8(40.0)	10(50.0)		
≥60	2(10.0)	5(25.0)		
Education				
≤Middle school	7(35.0)	9(45.0)	3.22	0.2004
High school	5(25.0)	8(40.0)		
≥College	8(40.0)	3(15.0)		
Religion*				
Christianity	11(55.0)	7(35.0)	1.79	0.6770
Catholic	3(15.0)	5(25.0)		
Buddhism	2(10.0)	2(10.0)		
Other	4(20.0)	6(30.0)		
Job*				
Yes	2(10.0)	2(10.0)		1.0000
No	18(10.0)	18(90.0)		
Income(10,000won)				
≤100	5(25.0)	10(50.0)	2.92	0.2326
101 200	9(45.0)	7(35.0)		
≥201	6(30.0)	3(15.0)		
Stage*				
, ,	6(30.0)	3(15.0)		0.2560
, ,	14(70.0)	17(85.0)		
Drug*				
Combined therapy	1(5.0)	3(15.0)		0.6050
Single therapy.	19(95.0)	17(85.0)		
† Illness duration(months)**	23.30 ± 27.62	22.20 ± 20.22	0.22	0.8283
† Chemotherapy cycle**	8.20 ± 4.77	13.25 ± 11.11	1.41	0.1582

Exp. : Experimental group(n=20) Cont. : Control group (n=20)
 * : Fisher's exact test ** : Wilcoxon rank sum test † : Mean±SD

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(Park, Kim & Sue, 2001)

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<Table 2> Anxiety and discomfort between the experimental and control groups before treatment

	Exp.		Cont.		t	p
	Mean	± SD	Mean	±SD		
Anxiety	45.45	± 9.68	42.55	± 9.89	- 0.94	0.3254
Discomfort	42.45	± 10.71	40.20	± 11.19	- 0.69	0.4898

Exp. : Experimental group(n=20) Cont. : Control group(n=20)

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 (State-Anxiety inventory) 가
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 45.45
 2003 10 1 2004 9 30 39.90 5.55 (p=0.0226),
 20 42.45 46.20 3.65 가 (p=0.0336),
 (p=0.0018)
 20 <Table 3>.
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 45.45 37.39

<Table 3> Changes of state anxiety(score) between the experimental and control groups

Group	Before	After	ta	p	Difference	tb	p
	Mean±SD	Mean±SD			(After- Before)		
	Mean±SD	Mean±SD			Mean±SD		
Exp.	45.45±9.68	39.90±10.42	- 2.48	0.0226	- 5.55±10.00	3.35	0.0018
Cont.	42.55±9.89	46.20± 8.29	2.29	0.0336	3.65± 7.13		

Exp. : Experimental group (n=20) Cont. : Conrtol group (n=20)
 ta : Paired t-test within group tb : unpaired t-test between groups

5.15 (P=0.0123), 40.20 , , ,
 45.80 5.60 가 (P=0.0136), <Table 5>.
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<Table 4> Changes of discomfort (score) between the experimental and control group

Group	Before	After	t	p	Difference	Z	p
	Mean±SD	Mean±SD			(After- Before)		
Exp.	45.45 ± 10.71	37.39 ± 10.74	- 2.65	0.0123	- 5.15 ± 8.70	3.48	0.0005
Cont.	40.20 ± 11.19	45.80 ± 9.27	2.46	0.0136	5.60 ± 10.01		

Exp. : Experimental group(n=20) Cont. : Control group (n=20)
 t : Wilcoxon signed rank test within group Z : Wilcoxon rank sum test between groups

<Table 5> Changes of discomfort score of items between the experimental and control groups

Items	Group	Before	After	ta	p	Difference	tb	p
		Mean±SD	Mean±SD			(After- Before)		
Nausea	Exp.	2.45±1.00	2.60±0.82	0.55	0.5906	0.15	0.59	0.4921
	Cont.	2.20±1.15	2.60±1.05	1.17	0.1036	0.40		
Unhappy feeling	Exp.	2.35±1.09	1.95±0.94	-1.63	0.1189	-0.40	2.48	0.0178
	Cont.	2.05±1.10	2.45±1.15	1.90	0.0724	0.40		
Anorexia	Exp.	2.70±1.26	2.45±1.23	-0.60	0.5549	-0.25	2.35	0.0242
	Cont.	1.95±0.94	2.95±1.28	3.01	0.0072	1.00		
Sleep disorder	Exp.	2.45±0.94	1.85±0.99	-2.11	0.0486	-0.60	1.87	0.1027
	Cont.	2.10±1.12	2.20±1.20	0.33	0.7481	0.10		
Pain	Exp.	2.20±0.95	2.40±1.14	0.85	0.4077	0.20	0.34	0.7391
	Cont.	2.30±1.26	2.65±1.46	0.92	0.3672	0.35		
Impaired mobility	Exp.	1.55±0.83	1.30±0.57	-1.75	0.0961	-0.25	1.06	0.2979
	Cont.	2.00±1.26	2.05±1.28	0.20	0.8409	0.05		
Fatigue	Exp.	3.05±1.10	2.50±1.05	-2.07	0.0528	-0.55	1.83	0.0749
	Cont.	2.40±1.19	2.55±1.23	0.55	0.5906	0.15		
Diarrhea/ Constipation	Exp.	1.95±1.39	2.10±1.45	0.90	0.3793	0.15	0.22	0.8296
	Cont.	2.85±1.50	3.10±1.29	0.58	0.5664	0.25		
Concentration difficulty	Exp.	2.30±0.98	2.30±0.92	0.00	1.0000	0.00	-0.15	0.8952
	Cont.	3.10±1.12	3.05±1.00	0.18	0.8582	-0.05		
Appearance change	Exp.	3.65±1.04	3.55±1.15	-0.52	0.6058	-0.10	0.34	0.7343
	Cont.	3.60±1.31	3.65±1.39	0.13	0.9003	0.05		
Dyspnea	Exp.	2.15±1.35	1.75±1.16	-1.80	0.0880	-0.40	1.53	0.1344
	Cont.	1.60±1.14	1.70±0.86	0.42	0.6810	0.10		
Vomiting	Exp.	2.70±1.38	2.05±0.94	-2.37	0.0284	-0.65	3.10	0.0037
	Cont.	2.20±1.36	3.05±1.47	2.13	0.0465	0.85		
Indigestion	Exp.	2.95±0.83	1.55±0.76	-7.63	0.0001	-1.40	6.15	0.0001
	Cont.	1.50±0.69	1.80±1.15	1.45	0.1625	0.30		
Coughing	Exp.	1.10±0.31	1.15±0.37	0.57	0.5770	0.05	0.86	0.3990
	Cont.	1.45±0.83	1.70±1.08	1.16	0.2617	0.25		
Chilling	Exp.	2.20±1.32	2.05±1.05	-0.62	0.5454	-0.15	1.75	0.0903
	Cont.	2.10±1.55	2.85±1.60	1.66	0.1137	0.75		
Dizziness	Exp.	2.25±1.48	2.05±0.94	-0.81	0.4283	-0.20	1.40	0.1702
	Cont.	2.45±1.43	2.85±1.50	1.14	0.2685	0.40		
Fever	Exp.	2.35±1.46	1.90±1.07	-1.58	0.1313	-0.45	1.42	0.1651
	Cont.	1.95±1.43	2.15±1.39	0.56	0.5848	0.20		
Dysuria	Exp.	2.10±1.12	1.80±0.95	-1.03	0.3157	-0.30	0.81	0.4236
	Cont.	2.40±1.47	2.45±1.57	0.16	0.8775	0.05		

Exp. : Experimental group (n=20) Cont. : Control group (n=20)
 ta : Paired t-test within group tb : unpaired t-test between groups

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SAS t-test, Wilcoxon signed
 rank sum test Wilcoxon rank sum test

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