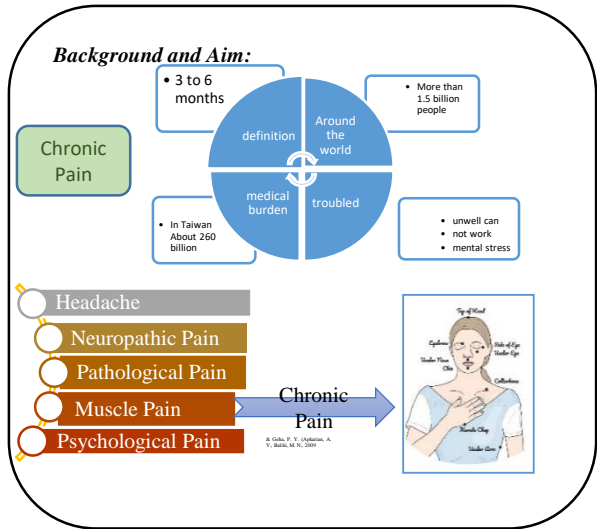


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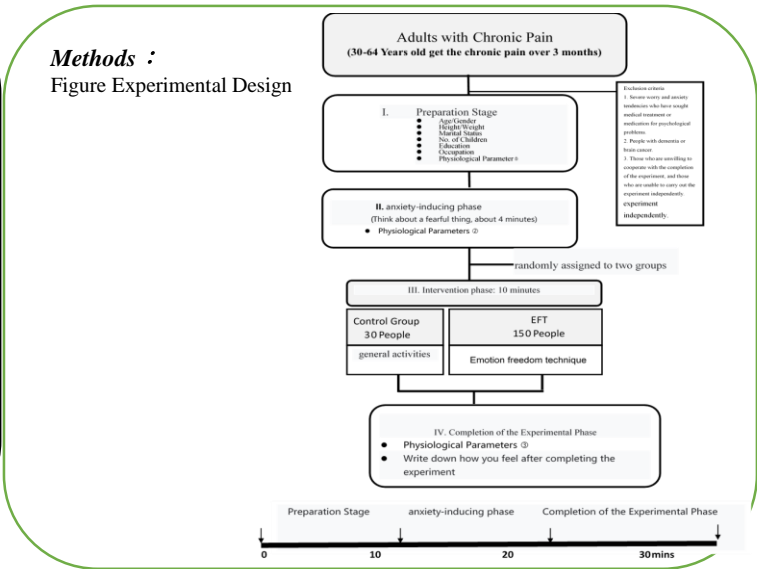
Potential Effects of Emotional Freedom Techniques on Ameliorating Physiological Responses and Reducing Anxiety in Adults with Chronic Pain

Chen-Yun, Chang, Yueh-Chiao Yeh*

Master’s Program in Natural Healing Sciences, Nanhua University, Chaayi, Taiwan.



Methods :
Figure Experimental Design



Results and Conclusion :

Table 1. Basic demographic statistics of the study participants(N=87)

Group Variable	Total (N=87)	Control (N=27)	EFT (N=60)	p-Value
Gender				
Female	69 (79.3)	19 (70.4)	50 (83.3)	0.137
Male	18 (20.7)	8 (29.6)	10 (16.7)	
Age(Year),mean(SD)	48.9 ±9.3	49.3 ± 9.0	48.7 ± 9.5	0.778
BMI(kg/m2),mean(SD)	23.2 ± 4.6	21.9 ± 5.3	23.8 ± 4.2	0.069
Marital Status				0.054
Single	24 (27.6)	12 (44.4)	12 (20.0)	
Married	57 (65.5)	13 (48.1)	44 (73.3)	
Divorced/widowed	6 (6.9)	2 (7.4)	4 (6.7)	
No. of Children				0.162
0	30 (34.5)	13 (48.1)	17 (28.3)	
1	12 (13.8)	4 (14.8)	8 (13.3)	
2	34 (39.1)	6 (22.2)	28 (46.7)	
>3	11 (12.6)	4 (14.7)	7 (11.7)	
Education Level				0.606
Primary	2 (2.3)	0 (0.0)	2 (3.3)	
Secondary	14 (16.1)	4 (14.8)	10 (16.7)	
High school	71 (81.6)	23 (85.2)	48 (80.0)	
College/University				0.800
Occupation				
No/Retired	18 (20.7)	5 (18.5)	13 (21.7)	
Technology Industry	45 (51.7)	13 (48.1)	32 (53.3)	
Service	20 (23.0)	7 (25.9)	13 (21.7)	0.170
Labor Industry	4 (4.6)	2 (7.4)	2 (3.3)	
Work (year)				
<1	2 (2.3)	2 (7.4)	0 (0.0)	
1-3	4 (4.6)	1 (3.7)	3 (5.0)	
4-5	5 (5.7)	0 (0.0)	5 (8.3)	
6-10	6 (6.9)	1 (3.7)	5 (8.3)	
>10	7 (8.0)	1 (3.7)	6 (10.0)	
11-20	20 (23.0)	8 (29.6)	12 (20.0)	0.124
>20	43 (49.4)	14 (51.9)	29 (48.3)	
Religion				
No	22 (25.3)	7 (25.9)	15 (25.0)	
Buddhism	28 (32.2)	13 (48.1)	15 (25.0)	0.124
Taoism	13 (14.9)	2 (7.4)	11 (18.3)	
Christian/Other	24 (27.6)	5 (18.5)	19 (31.7)	

Table 2. State-Trait Anxiety Inventory

Group Variable	Total (N=87)	control (N=27)	EFT (N=60)	f-Value	p-Value
S①	39.1 ± 9.6	38.6 ± 10.5	39.7 ± 9.0	0.008	0.927
S②	44.9 ± 12.8	49.4 ± 14.1	43.3 ± 11.4	4.131	0.045*
S③	34.2 ± 10.2	38.7 ± 13.9	32.5 ± 9.1	5.471	0.022*
S②-S①	5.79 ± 10.6	10.0 ± 11.1	3.8 ± 9.8	6.789	0.011*
S③-S②	-10.1 ± 10.6	-10.3 ± 10.7	-10.0 ± 10.6	0.013	0.908
S③-S①	-4.4 ± 8.9	-0.3 ± 7.1	-6.2 ± 9.0	9.033	0.003*

Table 3. Numeric Rating Scale (NRS)

Group Variable	Total (N=42)	control (N=9)	EFT (N=33)	f-Value	p-Value
Headache					
H ①	3.1 ± 2.0	3.3 ± 2.1	3.0 ± 2.0	0.189	0.666
H ②	3.1 ± 2.2	4.2 ± 2.5	2.8 ± 2.0	3.305	0.077
H ③	1.6 ± 1.9	3.3 ± 2.4	1.1 ± 1.4	12.412	0.001**
H ②-①	0.0 ± 2.2	-0.9 ± 2.1	-0.2 ± 2.2	1.957	0.169
H ③-②	-1.5 ± 1.7	0.9 ± 1.3	-1.6 ± 1.7	1.456	0.235
H ③-①	-1.5 ± 2.0	0.0 ± 1.7	-1.9 ± 1.9	7.261	0.010*
Muscle Pain					
M ①	4.1 ± 2.0	4.4 ± 2.1	4.1 ± 2.0	0.223	0.638
M ②	3.3 ± 2.2	3.3 ± 2.8	3.4 ± 2.1	0.027	0.871
M ③	1.5 ± 1.9	1.6 ± 2.4	1.5 ± 1.7	0.011	0.917
M ②-①	-0.8 ± 1.6	-1.0 ± 1.5	-0.7 ± 1.6	0.490	0.487
M ③-②	-1.8 ± 1.7	-1.6 ± 1.8	-1.9 ± 1.6	0.336	0.564
M ③-①	-2.3 ± 1.5	-2.6 ± 1.6	-2.5 ± 1.5	0.113	0.738
Chronic Pain					
C ①	3.2 ± 2.4	4.7 ± 3.1	2.8 ± 2.0	2.865	0.104
C ②	3.4 ± 2.6	5.2 ± 3.7	2.8 ± 2.0	4.234	0.051
C ③	1.6 ± 1.8	1. ± 82.2	1.5 ± 1.6	0.134	0.717
C ②-①	0.1 ± 1.6	0.5 ± 2.0	-0.1 ± 1.5	0.530	0.474
C ③-②	-1.8 ± 2.1	-3.3 ± 3.1	-1.3 ± 1.4	5.414	0.029*
C ③-①	-1.7 ± 2.3	-2.8 ± 3.8	-1.3 ± 1.5	2.139	0.157

Conclusion

In conclusion, the present study found that the EFT can effectively reduce anxiety level and ameliorate the neuropathic pain in adults with chronic pain. Further study on the long-term effects of EFT in improving the emotional well-being of adults are warranted.

Group Variable	Total (N=30)	control (N=11)	EFT (N=19)	f-Value	p-Value
Neuropathic Pain					
N ①	4.0 ± 2.2	5.1 ± 2.5	3.4 ± 1.8	4.966	0.035*
N ②	3.7 ± 2.7	6.1 ± 2.0	2.4 ± 2.0	23.851	0.000**
N ③	1.5 ± 1.8	2.8 ± 2.1	0.7 ± 0.9	12.785	0.001**
N ②-①	-0.3 ± 2.0	1.0 ± 1.5	-1.0 ± 1.8	9.289	0.005*
N ③-②	-2.2 ± 2.0	-3.3 ± 2.1	-1.6 ± 1.7	5.902	0.022*
N ③-①	-2.5 ± 2.2	-2.2 ± 3.1	-2.6 ± 1.6	0.128	0.723

Group Variable	Total (N=26)	control (N=7)	EFT (N=19)	f-Value	p-Value
Psychological Pain					
S ①	3.5 ± 2.5	5.3 ± 3.0	2.9 ± 2.0	2.865	0.104
S ②	2.9 ± 2.8	4.0 ± 3.9	2.5 ± 2.4	4.234	0.051
S ③	1.3 ± 2.1	2.7 ± 3.5	0.7 ± 1.1	0.134	0.717
S ②-①	-0.6 ± 1.9	-1.3 ± 1.7	-0.4 ± 2.0	0.530	0.474
S ③-②	-1.7 ± 2.0	-1.3 ± 1.9	-1.8 ± 2.1	5.414	0.029*
S ③-①	-1.4 ± 1.9	-1.4 ± 1.7	-1.4 ± 2.0	2.139	0.157

Table 4. Heart Rate Variability [HRV]

Group Variable	Total (N=87)	Control (N=27)	EFT (N=60)	f-Value	p-Value
LF/HF①	1.7 ± 1.4	1.7 ± 1.1	1.6 ± 1.6	0.006	0.937
LF/HF ②	1.7 ± 2.0	1.6 ± 0.9	1.8 ± 2.2	0.191	0.663
LF/HF ③	3.0 ± 11.6	2.4 ± 3.5	3.3 ± 13.7	0.095	0.758
LF/HF ②-①	0.4 ± 1.5	-0.11 ± 1.0	0.11 ± 1.7	0.384	0.537
LF/HF ③-②	1.3 ± 11.7	0.9 ± 3.5	1.5 ± 13.9	0.053	0.818
LF/HF ③-①	1.36 ± 11.6	0.7 ± 3.5	1.6 ± 13.8	0.101	0.752

Table 5. Blood pressure(BP)(Systolic and diastolic blood pressure)

Group Variable	Total (N=87)	Control (N=27)	EFT (N=60)	f-Value	p-Value
Systolic Pressure					
SP①	121.9 ± 22.2	117.4 ± 20.4	123.95 ± 22.8	1.614	0.207
SP②	111.5 ± 26.9	113.7 ± 26.8	110.50 ± 27.1	0.262	0.610
SP③	108.30 ± 27.3	114.6 ± 24.4	105.48 ± 28.3	2.075	0.153
SP ②-①	-10.4 ± 19.5	-3.7 ± 16.2	-13.5 ± 20.3	4.824	0.031*
SP ③-②	-3.2 ± 13.4	0.9 ± 9.5	-5.0 ± 14.5	3.678	0.058
SP ③-①	-13.6 ± 24.0	-2.9 ± 14.5	-18.5 ± 25.9	8.479	0.005*
Diastolic Pressure					
DP①	92.08 ± 22.0	86.63 ± 17.0	94.53 ± 23.7	2.437	0.122
DP②	83.62 ± 15.2	82.07 ± 15.8	84.32 ± 15.0	0.401	0.528
DP③	79.94 ± 13.1	81.15 ± 12.1	79.40 ± 13.6	0.327	0.569
DP ②-①	-8.5 ± 17.3	-4.6 ± 14.1	-10.2 ± 18.3	2.027	0.158
DP ③-②	-3.7 ± 11.9	-0.9 ± 8.0	-4.9 ± 13.2	2.115	0.150
DP ③-①	-12.1 ± 23.6	-5.5 ± 15.2	-15.1 ± 26.0	3.193	0.078
Heart Rate					
HR①	86.06 ± 21.6	80.78 ± 16.4	88.43 ± 23.3	2.377	0.127
HR②	76.06 ± 12.1	75.26 ± 13.1	76.42 ± 11.8	0.167	0.684
HR③	73.91 ± 10.9	75.96 ± 13.7	73.02 ± 9.5	1.316	0.255
HR ②-①	-10.0 ± 15.7	-5.5 ± 12.0	-12.0 ± 16.8	3.265	0.074
HR ③-②	-1.0 ± 12.8	-3.4 ± 12.9	-0.186 ± 12.9	0.186	0.668
HR ③-①	-13.0 ± 22.9	-7.6 ± 16.9	-15.4 ± 24.9	2.166	0.145