

Effect of Aromatherapy on Elderly

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Abstract. Increasing depression tendency of the elderly is closely connected with secondary health problems, so psychological and physical changes of aging are needed as intervention for positive effects. After running aromatherapy massage and regular oil massage, we attempt to validate the effects on stress and depression and to contribute to the development of nursing intervention. Subjects are 32 institutionalized elders receiving aromatherapy massage and regular oil massage. Data analysis was performed using SPSS19.0 program, paired t-test, and independent t-test. The research showed that there was no significant difference in stress and depression level before and after intervention. Cortisol levels decreased in both aromatherapy and oil massage groups, becoming the basis for Elderly Stress Management Intervention.

Keywords: aromatherapy, hand-massage, depression, stress, elderly.

1 Purpose of study

With the increase of chronic diseases and activity limitations of the elderly as well as demographic and social environmental changes, increase in the elderly population leads to increased facility entrance. As a result, the increase in residential facilities makes the elderly experience difficulties in coping with psychological changes for their new environment. In other words, elders experience degradation in physical, psychological, and social functions along with aging, which result in stress from psychological tension and succumbing to environmental changes and are expressed in physical symptoms. Depression is especially shown as a physical and psychological influence, and the number of elderly patients with depression increases more in the latter part of senior (75 years old and over) than in former part of senior (65 -74 years old) according to the Medical Expenses Analysis of Health Insurance from the Department of Health and Human Services (2011). Depression increases

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rapidly with aging, and an aggressive treatment was proposed. Although depression increases with aging due to negative perception about oneself, such as increase in physical illness and antecedent including the lack of self-care and social alienation, unless this is not a reaction by natural tendencies, parts of this can possibly be converted into positive thoughts through internal/external interventions. However, in the cases of elderly who lack self-coping mechanisms because depressive tendencies affect one's psychological and physical health, an algorithm is formed in which secondary health problems occur. In other words, the environmental change of a residential facility can be sufficient significant psychological stimulation factors to an elderly person that the environment of the foreign facilities can be perceived as a life crisis, as this change can bring about a sense of individual alienation and loss. To prevent the absence of psychological coping mechanisms of elders from becoming connected with physiological health problems, easily approachable interventions that can have positive effects on the psychological and physical changes are deemed warranted. As such, the researchers of this study attempted to mitigate the emotional stability of elders in facilities and the degree of depression associated with aging, by performing aromatherapy hand massage and regular oil massage on institutionalized elders, and to contribute to the development of nursing intervention for the institutionalized elderly. The specific objectives of this study were as follows: First, it identified the effects on cortisol as stress indicators by performing aromatherapy hand massage on the institutionalized elderly. Second, it identified the effects on serotonin as the depression indicators by performing aromatherapy hand massage.

2 Method of study

This is a similar experimental study based on non-equal control group before-and-after design. The subjects were divided into aromatherapy hand massage group and ordinary oils hand group, and the intervention was carried out. There were some possibilities of contamination with ordinary oil massage group by the effects on the oil of aromatherapy group as experimental treatment or the problems of diffusion from intervention, so subjects were selected at different layers. Initially, 40 patients were selected as the subjects of this study but unsuitable participants were excluded, so there were experimental group of 16 patients and control group of 16 patients. Thus a total of 32 selected patients residing in B welfare facilities in the city of K were selected for the study, and 10-minute aromatherapy hand massages were performed for two weeks for a total of 10 times on both hands using a modified M-technique. The selection criteria for the subjects were elders over the age of 60 who lived in an elderly facility, understood the study purpose and agreed to participate in it, were able to communicate, had no issues with auditory and olfactory functions, and did not have allergic reactions to aromatic smells. For the ethical considerations of participants, this study was conducted

cted after gaining an approval through Life Ethics Deliberation Committee at K University (IRB No 2011-3). Data were collected from September 2011 to November 2011, and cortisol test was performed to determine their stress level and the serotonin test was performed to determine their degree of depression. The researchers completed the process of aromatherapy experts and massages were performed after obtaining informed consent from the research participants. Blood tests were carried out by nurses before and after the massage time. For the aromatherapy test group, diluted essential oil comprised of 5 part lavender, mandarin 4, and marjoram 1 was diluted to 2% with almond oil, and jojoba oil was used for the regular oil test group. Data analysis was performed using SPSS19.0 program; the difference verification within the two groups was analyzed by paired t-test and the difference verification between the two groups was analyzed using independent t-test.

3 Results of study

In the homogeneity test for the general characteristics of two groups, sex and age were found to be homogenous. In pre cortisol levels, there was no significant difference between aromatherapy hand massage group and ordinary oils hand group ($p > .05$) as both groups were homogeneous, and in pre serotonin levels there was no significant difference between the two groups ($p > .05$) either, showing that the two groups were homogenous. Moreover, serotonin levels between the two groups showed no significant statistical difference ($t = -1.167$, $p = .252$), and cortisol levels between the two groups showed no significant statistical difference ($t = -.461$, $p = .648$).

In the cortisol levels of two groups, aromatherapy hand massage group decreased from an average of $9.11(\pm 2.08)$ in pre intervention to an average of $8.92(\pm 2.26)$ in post intervention ($t = -.369$, $p = .717$); ordinary oil hand massage group decreased from an average of $11.31(\pm 2.67)$ in pre intervention to an average of $9.83(\pm 2.16)$ in post intervention ($t = -1.628$, $p = .124$); and cortisol levels between the two groups showed no significant statistical difference ($t = -1.167$, $p = .252$). (Table 1)

Table 1. Cortisol levels between 2 groups

(N=32)

Group	Pre-intervention	Post-intervention	t_1	P_1	Differences	t_2	P_2
	The mean (SD)	The mean (SD)			The mean (SD)		
Aromatherapy massage group	9.11 (± 2.08)	8.92 (± 2.26)	-.369	.717	-.188 (± 2.03)	-1.167	.252
Ordinary oil massage group	11.31 (± 2.67)	9.83 (± 2.16)	-1.628	.124	-1.48 (± 3.623)		

t₁ = paired t-test
 t₂ = independent t-test

The serotonin levels decreased from an average of 119.84(±72.71) in pre intervention to an average of 78.15(±56.10) in post intervention (t= 2.717, p = .016) for aromatherapy hand massage group, decreased from an average of 111.28(±67.13) in pre intervention to an average of 88.53(±70.58) in post intervention (t= -1.981, p = .066) for ordinary oil hand massage group; however, the serotonin levels between the two groups showed no significant statistical difference (t= -.461, p = .648). (Table 2)

Table 2. Serotonin levels between 2 groups (N=32)

Group	Pre-intervention	Post-intervention	t ₁	P ₁	Differences	t ₂	P ₂
	The mean (SD)	The mean (SD)			The mean (SD)		
Aromatherapy massage group	119.84 (±72.71)	78.15 (±56.10)	- 2.717	.016	-41.69 (±61.39)	- .461	.648
Ordinary oil massage group	111.28 (±67.13)	88.53 (±70.58)	- 1.981	.066	-22.75 (±45.94)		

t₁ = paired t-test
 t₂ = independent t-test

4 Conclusion

This is a similar experimental study, and the subjects are institutionalized elders residing in welfare facilities in the city of K who were selected to measure stress and depression level. This study showed there was no significant difference in stress and depression before and after intervention. However, in the case of serotonin as indicators of depression, there was no significant difference in ordinary oil hand massage group (p = .066), while there was some significant difference in aromatherapy hand massage group. Thus, the method of using aroma oil is considered to have a meaningful result in alleviating depression with aging. Therefore, the ongoing research is required to be reflected as the basis of health care interventions for elderly with complex diseases.

References

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