

Effectiveness Of Cosmetic Therapy On Self-Esteem And Depression For Older Adult Residents In Long-Term Care Institutions

T.T. Li¹, T.W. Chien², Y.T. Liao³

¹ Tsai-Ting Li/ Msn, Rn, Head Nurse/ Yi-Xing Elderly Long-Term Care Center, Taipei City, Republic Of China (Taiwan)

² Tsui-Wei Chien/ Ph.D, Rn, Assistant Professor/ School Of Nursing, National Taipei University Of Nursing And Health Sciences, Republic Of China (Taiwan)

³ Yi-Ting Liao/ Msn, Rn, Department Of Nursing, Linkuo Chang Gung Memorial Hospital, Taoyuan, Republic Of China (Taiwan)

Abstract

Background: Older adults experience significant impacts on their physiological and psychological well-being due to deteriorating physical health, interrupted social lives, changes in appearance, and declining cognitive functions, leading to low self-esteem and depression, especially those who live in long-term care institutions. This study aimed to investigate the effectiveness of interventional cosmetic therapy on the self-esteem and depression of older adult residents in long-term care institutions.

Materials and Methods: A quasi-experimental research design was adopted to enroll older adult residents from eight long-term care institutions in northern Taiwan. The experimental group (n=35) underwent cosmetic therapy once per week for six consecutive weeks, with each session lasting 60 min, while the control group (n=35) was allowed to keep the same lifestyle as usual. The participants were assessed using the Rosenberg Self-Esteem Scale (RSES) and the Geriatric Depression Scale Short Form (GDS-SF) before the first week of the intervention and after the sixth week of intervention. The statistical data were processed and analyzed using IBM SPSS Statistics 22.0. Data analysis included descriptive statistics, independent samples t-test, paired t-test, χ^2 test, one-way analysis of covariance, and the Johnson-Neyman technique.

Results: Both self-esteem and depression improved significantly in the experimental group ($p < 0.001$) after cosmetic therapy, whereas the control group showed a significant decrease in self-esteem and a significant increase in depression ($p < 0.001$).

Conclusions: Cosmetic therapy can improve self-esteem and depression, thereby warranting its application in more long-term care institutions to improve the self-esteem and depression of older adult residents.

Key Word: Cosmetic Therapy, Self-Esteem, Depression, Long-Term Care Institutions, Older Adult Residents.

Date of submission: 04-04-2024

Date of acceptance: 14-04-2024

I. Introduction

When aging, older adults experience physical functional limitations, chronic diseases, and psychosocial changes, which may result in their loss of self-care ability; the older adult will have a higher desire to move into a care institution if their family members cannot care for them¹. In addition to facing institutionalized care and lifestyle changes, the institutionalized older adult residents also need to adapt to stress due to home-to-institution relocation. The more stressful the transition, the worse the adaptation to institutionalized living, and the more likely psychological problems such as low self-esteem and depression occur, causing the older adult to suffer from physical and mental deterioration, social function decline, and even increased morbidity or mortality^{1,2,3}.

Studies have shown that interventions such as art therapy, horticultural therapy, and reminiscence therapy can improve the self-esteem and depression of older adult residents in long-term care institutions^{4,5,6,7,8}. However, some argue that one of the factors affecting the psychological health of older adults is age-related changes to their appearance, which negatively impacts interpersonal relationships and life satisfaction and also causes psychological problems such as low self-esteem and geriatric depression, seriously affecting the health of the older adult^{1,9}. Although female older adults accept their aging appearance, they are still dissatisfied with at least one part of their bodies. At the same time, cosmetic therapy can improve psychological problems caused by the physical alteration of the body by making their appearance more appealing and maintaining a better self-image so that the older adult with depression or dementia can activate positive emotions and reduce depression tendencies^{10,11,12,13,14,15,16,17,18}. Therefore, some studies propose that cosmetic therapy be applied in long-term care

institutions and the older adult population and suggest that the effectiveness of cosmetic therapy for self-esteem and depression be explored in-depth^{19,20,21}.

As shown above, cosmetic therapy is effective in reducing depression tendencies and activating positive emotions in older adults. However, there is a lack of research on the effectiveness of interventional cosmetic therapy for the self-esteem and depression of older adult residents in long-term care institutions. Therefore, this study provided interventional cosmetic therapy for older adult residents in selected long-term care institutions to explore the effectiveness of this therapy for self-esteem and depression in this population.

II. Material And Methods

Study Design and Setting

This study adopted a quasi-experimental research design at eight long-term care institutions in the north Taipei area of Taiwan. The experimental group received six weeks of cosmetic therapy, while the control group maintained their original daily routine in long-term care institutions.

Study Duration: December 2021 to February 2022.

Sample size calculation:

This study utilized G* power version 3.1.9.7. The type I error probability (α) was set to 0.05, and the statistical power (power) was set to 0.80, employing repeated measures analysis of variance (ANOVA) with an effect size of 0.30 for sample size estimation. The correlation among repeated measures was specified as 0.5.²² The total sample size was 68 participants. Due to the intervention period lasting six weeks and to account for potential attrition leading to inadequate sample size, an additional 20% was added. The anticipated total enrollment was 82 participants, with 41 participants in the experimental and control groups.

Study participant's inclusion criteria:

1. being 65 years and older;
2. having lived for at least three months in a long-term care (maintenance-oriented) institution;
3. being able to communicate in both spoken and written Taiwanese or Mandarin;
4. having a total score of 24 or higher on the Mini-mental State Examination (MMSE);
5. having a score of 4 or higher on left-hand or right-hand muscle strength;
6. One or both hands can perform maintenance and cosmetic procedures.

Exclusion criteria:

1. under 65 years of age;
2. those who had lived in long-term care (maintenance-oriented) institution for less than three months;
3. those who were unable to communicate in both spoken and written Mandarin or Taiwanese;
4. those who had a prior history of cosmetic therapy;
5. those who had been diagnosed with mental illness (except depression), dementia, or delirium;
6. those who were currently receiving depression treatment;
7. those unable to perform maintenance and cosmetic procedures even with assistance.

Data collection tools

The structural questionnaire comprised demographic information and clinical characteristics, the Rosenberg Self-Esteem Scale, and the Geriatric Depression Scale-Short Form (GDS-SF).

Demographic information and clinical characteristics included data on age, sex, marital status, education level, economic conditions, religious beliefs, activities of daily living, duration of institutional residence, and number of chronic illnesses.

The Rosenberg Self-Esteem Scale, a significant tool in our study, was developed by Rosenberg²³ in 1965 and translated into Chinese by Yeung²⁴. It measures an individual's overall self-esteem through ten self-acceptance, self-esteem, and self-evaluation questions, with five positive and five negative graded statements. Each question is scored on a 4-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree). The total score ranges from 10 to 40, with a lower total score indicating lower self-esteem and a higher total score indicating a higher level of self-esteem. The Cronbach's α for this scale is 0.76^{23,24}.

The Geriatric Depression Scale-Short Form (GDS-SF), a key component of our study, was developed by Yesavage and Sheikh in 1986²⁵. It is a simplified version of the Geriatric Depression Scale (GDS), covering emotional, cognitive, and behavioral symptoms. Each question is scored 1 or 0, corresponding to "yes" or "no" answers, with the total score ranging from 0 to 15. A total score of less than 5 indicates no depression, 5 to 9 indicates mild depression, and greater than or equal to 10 indicates moderate to severe depression. Therefore, a higher total score indicates a higher degree of depression.

Intervention protocol

The control group was given conventional care, while the experimental group was given a 60-minute session of cosmetic therapy once a week for six consecutive weeks.

1. The first session comprised a 10-minute warm-up activity, and a 5-minute video watching to learn more about the practice of cosmetic therapy and promote the participants' interest in the topic, and then by an approximately 45-minute process in which a skin test was first performed to avoid skin allergy or discomfort during the cosmetic procedure. Then, participants were guided to perform skin care and cosmetic procedures.
2. The second to sixth sessions were tailored to individual needs. They started with a 10-minute body stretching activity, followed by a 50-minute process. Female participants were guided to apply cosmetic lotion and emulsion with cosmetic cotton and use compact cosmetic powder, eyebrow pencil, and lipstick (or lip balm) to complete a week-specific thematic activity and hair blowout. In contrast, males were guided to perform a week-specific thematic activity and hair blowout. Throughout, participants were encouraged to appreciate their dressing-up process in the mirror.

Data analysis

Statistical analysis was performed using the IBM SPSS Statistics software (version 22.0), and the significance level of all the hypothesis tests was set at 0.05. The homogeneity between the experimental and control groups was evaluated using the Chi-square test and independent-samples t-test. The effectiveness of the interventional cosmetic therapy was assessed using the one-way analysis of covariance (ANCOVA). If the assumption of homogeneity of regression slopes across groups were not met, the Johnson-Neyman technique would be used instead of ANCOVA to analyze the effectiveness.

Ethical considerations

The study obtained approval from the Institutional Review Board (IRB) and was registered on Clinical Trials.gov. Then, before enrolment, the research subjects were provided with an explanation of the study's objectives and procedures, and written consent was obtained.

III. Results

Seventy-two older adult residents participated from December 1, 2021, to February 14, 2022. During the study period, one participant in the experimental group dropped out due to concerns about the COVID-19 pandemic, and one participant in the control group withdrew due to hospitalization. Thus, 70 older adult residents (35 in the experimental group and 35 in the control group) completed the study and were included in the subsequent analyses for an attrition rate of 2.78%.

Table 1 shows the demographic and clinical characteristics of the experimental and control groups. A total of 70 residents with a mean age of 80.21 ± 9.56 years were included, of which the majority were female, widowed, and had elementary school education, with a generally good or above economic status, had religious belief, and severe functional dependency in the activities of daily living (ADL). The mean length of institutional residence was 2.55 ± 3.13 years, and the mean number of chronic diseases per resident was 2.44 ± 1.03 . The 70 residents were equally allocated to an experimental group ($n=35$) and a control group ($n=35$). There were no significant inter-group differences in the demographic and disease characteristics ($p < 0.05$), as confirmed by the independent-sample *t*-test and chi-square test, indicating homogeneity between the two groups.

Effectiveness of Cosmetic Therapy on Self-Esteem and Depression for Older Adult Residents

Table 2 compares the between-group differences before and after interventional cosmetic therapy. The results of the independent-samples *t*-test showed no significant differences between the experimental and control groups regarding pre-test self-esteem ($t = -1.955, p = .057$) or depression ($t = 1.057, p = .294$), thus confirming the homogeneity of the two outcome measures between the two groups. However, in the post-test, between-group differences were statistically significant for self-esteem ($t = 12.81, p < .001$) and depression ($t = 5.769, p < .001$). Within-group differences before and after interventional cosmetic therapy were compared between the two groups. The results of the paired *t*-test showed that for the experimental group, statistically significant differences were found after six weeks of cosmetic therapy concerning self-esteem ($t = -7.720, p < .001$) and depression ($t = 6.863, p < .001$); for the control group, were statistically significant for self-esteem ($t = 5.564, p < .001$), and depression ($t = -2.867, p = .007$).

Table 3 presents the homogeneity test for the One-way ANCOVA regression coefficients of the experimental and control groups. One-way ANCOVA was utilized to assess the impact of interventional cosmetic therapy on the self-esteem and depression of older adult residents in long-term care institutions. The findings indicated no significant differences in the pre-test scores for self-esteem ($F = .525, p = .471$) between the two groups but significant differences in the pre-test depression scores ($F = 10.095, p = .002$). This led to the application of the Johnson-Neyman technique, a crucial tool in our analysis.

Table 4 displays a One-way analysis of the covariance of self-esteem in experimental and control groups. After eliminating the effects of pre-test scores, the mean post-test scores for self-esteem ($F = 181.664, p < .001$) of the experimental group were significantly higher than those of the control group, affirming the positive impact of cosmetic therapy on self-esteem.

Table 5 shows the statistical results of depression using the Johnson-Neyman technique, which indicated that the pre-test scores ranged from 1 to 14, with the post-test scores of depression being significantly higher in the control group than in the examinational group.

In summary, cosmetic therapy could effectively enhance the self-esteem and reduce depression of older adult residents in long-term care institutions.

Table 1. Demographic and Clinical Characteristics of the Experimental and Control Groups ($N = 70$)

Variables	Overall ($N = 70$) n (%)	Experimental ($n = 35$) n (%)	Control ($n = 35$) n (%)	Between-group homogeneity	
				t/χ^2	p
Age (years)($M\pm SD$)	80.21±9.56	79.66±10.06	80.77±9.15	-0.485 ^b	0.629
Sex				0.245 ^a	0.621
Male	24 (34.3 %)	12 (34.3 %)	12 (34.3 %)		
Female	46 (65.7 %)	23 (65.7 %)	23 (65.7 %)		
Marital Status				2.014 ^a	0.569
Married	20 (28.6 %)	11 (31.4 %)	9 (25.7 %)		
Unmarried	8 (11.4 %)	5 (14.3 %)	3 (8.6 %)		
Widowed	35 (50.0 %)	17 (48.6 %)	18 (51.4 %)		
Divorced	7 (10.0 %)	2 (5.7 %)	5 (14.3 %)		
Education level				6.513 ^a	0.368
Illiterate	18 (25.7 %)	10 (28.6 %)	8 (22.9 %)		
Elementary school	22 (31.4 %)	8 (22.9 %)	14 (40.0 %)		
Junior high school	7 (10.0 %)	4 (11.4 %)	3 (8.6 %)		
Senior high school (vocational)	10 (14.3 %)	6 (17.1 %)	4 (11.4 %)		
University or above	13 (18.5 %)	7 (20.0 %)	6 (17.2 %)		
Economic conditions				2.619 ^a	0.454
Quite poor	2 (2.9 %)	3 (8.6 %)	0 (00.0 %)		
Slightly poor	10 (14.3 %)	4 (11.4 %)	6 (17.1 %)		
Generally good or above	58 (82.8 %)	28 (80.0 %)	29 (82.9 %)		
Religious beliefs					
No	12 (17.1 %)	5 (14.3 %)	7 (20.0%)		
Yes	58 (82.9 %)	30 (85.7 %)	28 (80.0 %)		
Activities of daily living (ADL) ($M\pm SD$)	62.36±27.49	56.86±29.01	67.86±25.10	-1.697 ^b	0.094
0 – 20	1 (1.4 %)	1 (2.9 %)	0 (00.0 %)		
21 – 60	32 (45.7 %)	20 (57.1 %)	12 (34.3 %)		
61 – 90	23 (32.9 %)	8 (22.9 %)	15 (42.9 %)		
91 – 99	7 (10.0 %)	4 (11.4 %)	3 (8.6 %)		
100	7 (10.0 %)	2 (5.7 %)	5 (14.3 %)		
Duration of institutional residence ($M\pm SD$)	2.55±3.13	2.76±3.90	2.34±2.13	0.567 ^b	0.573
Number of chronic diseases ($M\pm SD$)	2.44±1.03	2.49±1.10	2.40±0.98	0.346 ^b	0.731

Note: ^a = chi-square test; ^b = independent sample t-test; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 2. Comparison of Pre-and Post-test Scores of the Experimental and Control Groups (N = 70)

Variables	Experimental (n = 35)			Control (n = 35)				
	M±SD	t	p	M±SD	t	p	t	p
Self-esteem		-7.720 ^a	<.001 ^{***}		5.564 ^a	<.001 ^{***}		
Pre-test	22.94±6.12			25.11±2.40			-1.955 ^b	.057 ^b
Post-test	30.86±3.18			22.74±1.98			12.81 ^b	<.001 ^{b***}
Depression		6.863 ^a	<.001 ^{***}		-2.867 ^a	.007 ^{***}		
Pre-test	8.77±4.02			7.77±3.90			1.057 ^b	.294 ^b
Post-test	5.11±2.35			8.54±2.62			5.769 ^b	<.001 ^{b***}

Note: ^a = paired t-test; ^b = independent sample t-test; *p < .05, **p < .01, ***p < .001

Table 3. Summary of the Homogeneity Test for the One-Way ANCOVA Regression Coefficients of the Experimental and Control Groups (N = 70)

Variables	SS	df	MS	f	p
Self-esteem					
Regression coefficient homogeneity (group*pre-test score)	3.460	1	3.460	.525	.471
Error	434.670	66	6.586		
Total	438.130	67			
Depression					
Regression coefficient homogeneity (group*pre-test score)	20.702	1	20.702	10.095	.002 ^{**}
Error	135.352	66	2.051		
Total	156.054	67			

*p < .05, **p < .01, ***p < .001

Table 4. One-Way Analysis of Covariance of Self-Esteem in Experimental and Control Group

Variables	SS	df	MS	f	p
Self-esteem					
Inter-group	1187.945	1	1187.945	181.664	<.001 ^{***}
Intra-group	438.129	67	6.539		
Total	1626.074	68			

*p<.05, **p<.01, ***p<.001

Table 5. Statistical Results of Depression using the Johnson-Neyman Technique

Group	SSw(x)	SSw(y)	CPwj	df	SSw'(y)	df	bwj	awj
Experimental	548.17	187.54	198.91	34	115.36	33	0.36	1.93
Control	516.17	232.68	331.34	34	19.98	33	0.64	3.55
	1064.34	420.22	530.25	68	135.35	66		

IV. Discussion

This study investigated the effectiveness of cosmetic therapy on the self-esteem and depression of older adult residents in long-term care institutions. A quasi-experimental research design with purposive sampling, the study considered the constraints posed by the COVID-19 pandemic and the necessity to adhere to Taiwan's long-term care institutions' pandemic prevention protocols. Participants were selected to reflect the gender distribution typically observed in such institutions, with females comprising the majority, aligning with the demographic trend where women constitute 55.6% of the total occupancy rate in Taiwan's long-term care institutions^{26,27,28}. This gender skew towards females may be attributed to the higher representation of women among the older population residing in such institutions, indicating a predisposition for female residents to engage in cosmetic therapy. Future research endeavors should strive for greater inclusion of male participants.

Since the prominent residents of long-term care institutions are those with limited physical functions and unable to perform self-care^{2, 26}, the majority of the participants who scored low on the activities of daily living (ADL) were severely functionally dependent. However, as observed in the course of cosmetic therapy, older adult residents who are cognitively normal but disabled may still participate in the cosmetic therapy interventions as long as they have normal motor function in one or both hands, even though they are severely functionally dependent as shown by their ADL and inability to ambulate independently.

Effectiveness of interventional cosmetic therapy for the self-esteem and depression of older adult residents in long-term care institutions

Both groups had low self-esteem on average, and there was a sizeable intra-group variation in self-esteem, which ranged from low to high levels, a finding similar to those reported for other countries²⁹. In this study, participants had mild to moderate depression. According to a survey conducted in Taiwan, it was found that 14.5% of older adults aged 65 and above who lived in long-term care institutions were depressed²⁸. It indicates that older adults living in such facilities are more susceptible to developing depression. As people grow older and move from their familiar homes to institutional care, they face the challenge of adapting to new living habits, environments, and changes in surroundings. This transition can be challenging during the current COVID-19 pandemic, which has led many older adults to feel helpless, lonely, and depressed. Therefore, in addition to providing daily care, the staff of long-term care institutions should pay attention to emotional changes in older adult residents.

Cosmetic therapy can improve psychological problems caused by the physical alteration of the body by making the appearance more appealing and maintaining a better self-image. In this study, the interventional group changed from low self-esteem to high self-esteem after six weeks of cosmetic therapy, while the control group remained at low self-esteem after six weeks of conventional care; the interventional cosmetic therapy effectively improved the depression of older adult residents, whether they were mildly depressed or moderately to severely depressed. These observations were similar to those in other cosmetic therapy-related studies^{13,14}. However, the control group showed significantly lower post-test self-esteem and significantly higher post-test depression compared to the pre-test results. It may be because one month after the start of the study on the cosmetic therapy intervention, the Ministry of Health and Welfare announced that visitors would be prohibited from entering long-term care institutions from January 8, 2022, due to the rise of the COVID-19 pandemic in Taiwan, thus preventing older adult residents from meeting and being accompanied by family members as well as reducing interaction with other residents. It is plausible that the intervention of conventional care impacted the post-test self-esteem and depression scores of the control group. This finding is in line with previous reports that indicate long-term care institution residents are at risk of developing depression due to the absence of family companionship^{30,31}.

In this study, post-tests of self-esteem and depression in the experimental and control groups were conducted when visitors were not allowed to visit long-term care institutions. Therefore, compared to conventional care, cosmetic therapy was effective in improving the self-esteem and depression of older adult residents and avoiding pandemic-induced psychological problems. Moreover, studies in other countries have shown that cosmetic therapy can promote interpersonal and social functions through learning process¹⁴. Therefore, it is recommended that long-term care institutions use cosmetic therapy to improve the self-esteem and depression of older adult residents. Notably, although most participants in this study were severely functionally dependent on ADL, they were still allowed to participate in cosmetic therapy if one or both hands functioned generally in the cosmetic maintenance steps because individuals who could perform activities without external assistance would have higher self-esteem²⁹.

V. Conclusion

Our findings show that a six-week cosmetic therapy program could effectively improve the self-esteem and depression of older adult residents in long-term care institutions. According to participants in this study, they are severely dependent on their daily living activities, but they can also participate in cosmetic therapy activities to improve depression and self-esteem. Therefore, the results of the present study may provide a reference for future practitioners in long-term care institutions to design activities for older adult residents severely functionally dependent on ADL to improve their self-esteem and depression further. Given the lack of research on the effectiveness of cosmetic therapy on the self-esteem and depression of older adult residents in long-term care institutions, this study may provide support for future cosmetic therapy studies.

Acknowledgments

We thank all the older adult participants in the study, the personnel in charge of the eight long-term care institutions, the nurse practitioners, the caregivers, and the social workers for their cooperation, and Shiseido Taiwan for its assistance with cosmetic supplies.

Conflict Of Interest Declaration

The authors affirm that they are not associated with any organization or entity with financial interests in the subject matter or materials discussed in this manuscript.

References

- [1]. Wu CS, Rong JR. Relocation experiences of the elderly to a long-term care facility in Taiwan: a qualitative study. *BMC Geriatr*. 2020; 20(1):280.
- [2]. Huang HT, Chuang YH, Hsueh YH, Lin PC, Lee BO, Chen CH. Depression in older residents with stroke living in long-term care institutions. *J Nurs Res*. 2014; 22(2):111-118.
- [3]. Tosangwan S, Clissett P, Blake H. Predictors of depressive symptoms in older adults living in care homes in Thailand. *Arch Psychiatr Nurs*. 2018; 32(1):51-56.
- [4]. Yao CT, Yang YP, Chen YC. Positive effects of art therapy on depression and self-esteem of older adults in nursing homes. *Soc Work Health Care*. 2019; 58(3):324-338.
- [5]. Chu HY, Chen MF, Tsai CC, Chan HS, Wu TL. Efficacy of a horticultural activity program for reducing depression and loneliness in older residents of nursing homes in Taiwan. *Geriatr Nurs*. 2019; 40(4):386-391.
- [6]. Lin Y, Lin R, Liu W, Wu W. Effectiveness of horticultural therapy on physical functioning and psychological health outcomes for older adults: A systematic review and meta-analysis. *J Clin Nurs*. 2022; 31(15-16):2087-2099.
- [7]. Liu SJ, Lin CJ, Chen YM, Huang XY. The effects of reminiscence group therapy on self-esteem, depression, loneliness and life satisfaction of elderly people living alone. Mid-Taiwan. *J Med*. 2007; 12:133-142.
- [8]. Meléndez Moral JC, Fortuna Terrero FB, Sales Galán A, Mayordomo Rodríguez T. Effect of integrative reminiscence therapy on depression, well-being integrity, self-esteem, and life satisfaction in older adults. *J Posit Psychol*. 2015; 10(3):240-247.
- [9]. Gupta MA, Gilchrist BA. Psychosocial aspects of aging skin. *Dermatol Clin*. 2005; 23(4):643-648.
- [10]. Baek KJ. the perception of makeup for the elderly and the makeup behavior of new seniors. *J Consum Behav*. 2019; 19(1):1-11.
- [11]. Cameron E, Ward P, Mandville-Anstey SA, Coombs A. The female aging body: a systematic review of female perspectives on aging, health, and body image. *J Women Aging*. 2018; 31(2):3-17.
- [12]. Graham JA, Jouhar AJ. Cosmetics considered in the context of physical attractiveness: a review. *Int J Cosmet Sci*. 1980; 2:77-101.
- [13]. Hayakawa Y, Shoji I, Kumon H, Tokita M, Kamata K, Arao T. Feasibility and effectiveness of a cosmetic intervention program for institutionalized older women in Japan. *Prev Med Rep*. 2016; 4:242-247.
- [14]. Hisashi K, Takashi I, Rika O, Yoichi S, Hirohiko H, Shuichi O. The effectiveness of beauty care on self-rated health among community-dwelling older people. *Nihon Ronen Igakkai Zasshi*. 2016; 53:123-132.
- [15]. Ikeuchi M, Saruwatari K, Takada Y, et al. Evaluating "cosmetic therapy" by using near-infrared spectroscopy. *World J Neurosci*. 2014; 4(2):194-201.
- [16]. Kosmala A, Wilk I, Kassolik K. Influence of makeup on the well-being and self-esteem of women. *Piel Zdr Publ*. 2019; 9(3):215-220.
- [17]. Liechty T. Yes, I worry about my weight...but for the most part I'm content with my body: older women's body dissatisfaction alongside contentment. *J Women Aging*. 2012; 24(1):70-88.
- [18]. Machida A, Shirato M, Tanida M, Kanemaru C, Nagai S, Sakatani K. Effects of cosmetic therapy on cognitive function in elderly women evaluated by time- resolved spectroscopy study. *Adv Exp Med Biol*. 2016; 876:289-295.
- [19]. Baek KJ. the perception of makeup for the elderly and the makeup behavior of new seniors. *J Consum Behav*. 2019; 19(1):1-11.
- [20]. Kim JS, Min KJ. The effect of make-up education on elderly women's life satisfaction. *J Korea Academia-Industrial Soc*. 2011; 12(4): 1749-1755.
- [21]. Richard A, Harbeck N, Wuerstlein R, Wilhelm FH. Recover your smile: effects of a beauty care intervention on depressive symptoms, quality of life, and self-esteem in patients with early breast cancer. *Psycho-Oncol*. 2019; 28:401-407.
- [22]. Cohen, J. *Statistical Power Analysis For The Behavioral Sciences*. New York: Academic Press; 2013.
- [23]. Rosenberg M. *Society and the adolescent self-image*. Princeton: Princeton University Press; 1965.
- [24]. Yeung KC. *The Dynamics of Interparental Conflict and Adolescent's Behavior Problem* [dissertation]. Hong Kong: University of Hong Kong; 1998.
- [25]. Yesavage, JA, Sheikh, JI. 9/Geriatric Depression Scale (GDS). *Clin Gerontol*. 1986; 5(1-2):165-173.
- [26]. Hu SH, Chuang YH, Ting YF, Lin KY, Hsieh CJ. Prevalence of depressive symptoms in older nursing home residents with intact cognitive function in Taiwan. *Res Nurs Health*. 2018; 41(3):292-300.
- [27]. Tiong WW, Yap P, Koh GCH, Fong NP, Luo N. Prevalence and risk factors of depression in the elderly nursing home residents in Singapore. *Aging Ment Health*. 2013; 17(6):724-731.
- [28]. Ministry of Health and Welfare, Taiwan, R. O. C. (2022). Survey On Report of Taiwan Longitudinal Study on Aging. Available At <https://www.hpa.gov.tw/Pages/Detail.aspx?nodeid=242&pid=1282>
- [29]. Guerrero-Martelo M, Galvan G, Vasquez F, Lazaro G, Morales D. Relationship between self-esteem and functional autonomy in elderly adults in vulnerable conditions. *Psicogente*. 2015; 18(34):303-310.
- [30]. Hayakawa Y, Shoji I, Kumon H, Tokita M, Kamata K, Arao T. Feasibility and effectiveness of a cosmetic intervention program for institutionalized older women in Japan. *Prev Med Rep*. 2016; 4:242-247.
- [31]. Melrose S. Relocation stress in long term care: how staff can help. *Can Nurs Home*. 2013; 24(1):16-19.