Changes in Health-Related Quality of Life for Elderly People after Make-Up Therapy in a Nursing Care Prevention Class Vol 2: Comparison by Daily Make-Up Application

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ABSTRACT

The purpose of this study was to investigate the changes in health-related quality of life (HRQOL) before and after the intervention of make-up therapy on 122 elderly persons attending nursing care prevention classes. The SF-8™ (SF8 Health Survey), a HRQOL scale was used to conduct a questionnaire survey, before and 1 week after make-up therapy, on 8 domains of health: physical functioning, physical role, bodily pain, general health, vitality, social functioning, emotional role, and mental health. The number of valid responses was 80 (response rate, 65.6%), and comparisons were examined by Wilcoxon’s signed-rank test before and after the intervention. The results showed that the elderly group who regularly use make-up and those who do not regularly use make-up showed significantly higher “vitality” after make-up therapy. In addition, the summary score for mental health was higher in the elderly group who do not regularly use make-up, suggesting that make-up therapy can lead to a positive sense of mental health in elderly persons who do not regularly use make-up.

Keywords
Elderly people, Health-related quality of life, Make-up therapy, Nursing care prevention.

Introduction
The world's total population in 2020 was 7,794.8 million and is expected to reach 10,154.7 million by 2060 [1]. The percentage of people aged 65 years and over to the total population (the aging rate) has increase from 5.1% in 1950 to 9.3% in 2020 and then to 17.8% in 2060, indicating that the aging of the population will progress rapidly over the next half century [1]. Estimates of the future aging rate by region show that the aging of the population is expected to progress rapidly in developed regions, where the aging of the population has progressed to date, as well as in developing regions [1]. In Japan, as of October 1, 2020, the population was 125.71 million, of which 36.19 million were aged 65 years or over, accounting for 28.8% (the aging rate) [2]. With the arrival of a super-aging society unprecedented in history, preventive medicine, nursing care prevention, and the extension of healthy longevity are urgent issues [3]. As a countermeasure for an aging society, the necessity of promoting projects related to nursing care prevention and healthy longevity, including the enhancement of medical care and nursing care to allow people to lead healthy and rewarding daily lives with peace of mind, has been advocated [3]. Along with physical health, mental health is important for elderly persons to maintain the functions necessary to lead an active social life. In nursing care prevention classes, many programs have been developed to entertain elderly persons and activate their will to live through exercises, recreation, singing, painting, and other activities. In addition, it is important to go out and interact with others to enrich various lifestyles that correspond to individual needs.

However, in addition to the physical deterioration, that accompanies aging, the repeated experience of loss, such as retirement, withdrawal from family roles, and bereavement of close relatives
and acquaintances, often leads to a decrease in the range of activities and motivation. Therefore, make-up therapy is one of the ways to revitalize elderly persons. Make-up therapy is considered to have evolved from appearance care in the United States, to hide bruises and surgical scars on the face, at the time of World War II. In Japan, research on make-up therapy or medical cosmetic therapy has been conducted since 1990, with the expectation that make-up will bring about psychological and physiological therapeutic effects through psychological processes. Examining research reports on make-up therapy related to elderly persons, psychologically, their attitude towards aging and loneliness improved; and on the physical side, improvements in immunity such as increase in red blood cells, hemoglobin, and in NK cell activity were observed [4]. In addition, the effects of make-up on the oral and swallowing functions of elderly persons, it is believed that these functions are improved by increasing opportunities for active conversation and stimulating the peripheral nerves and cerebrum [5]. It is believed that improving the physical and mental functions of elderly persons through make-up therapy will lead to an improvement in QOL and extension of healthy life expectancy. The purpose of this study was to clarify the changes in HRQOL, before and one week after make-up therapy intervention, in elderly persons who regularly use make-up or not, and who attend nursing care prevention classes.

**Methods**

**Research Design**
Quantitative descriptive research design

**Research Subjects**
122 elderly persons aged 65 years and over attending nursing care prevention classes

**Research Period**
June 2019 - February 2020

**Content of the survey**
The survey was conducted using a questionnaire on the attributes and make-up habits of the participants (Survey Form ①) and a questionnaire on the evaluation scale (Survey Form ②).

**(Attributes of Participants) (Survey Form ①)**
Participants were asked to indicate their age, gender, family composition, and number of people living with them, and to answer the question “Do you normally use make-up?” Five answer options were given: “I have a daily skin care (skin toner, skin milk, etc.) and make-up routine,” “I have a daily skin care routine, but I only use make-up occasionally,” “I only have a skin care routine,” “I do nothing” and “Other.” The other question was open-ended, “What kind of person do you want to be?” Participants were able to answer freely.

**Evaluation Scale (Survey Form ②)**
For the assessment of HRQOL, the short version of the MOS 36-Item Short-Form Health Survey (SF-36™) known as the SF-8 Health Survey Acute Version (hereinafter referred to as SF-8™) was used [9]. The SF-8™ is a scale that measures QOL based on comprehensive health-related issues, with two summary scores for measuring health concepts (physical component summary score, mental component summary score) and eight subscales: 1) Physical functioning (PF); 2) Physical role (RP); 3) Bodily pain (BP); 4) General health (GH); and 5) Vitality (VT); 6) Social functioning (SF); 7) Emotional role (RE); and 8) Mental health (MH). For each question item, there were five-six response options, and responses to all questions were scored based on the national standard (mean, 50; standard deviation, 10).

**Data collection method**
After consent was obtained for participation in the survey, a questionnaire was carried out Prior to the make-up therapy using Survey Form ① and Survey Form ② (attributes and SF-8™), and the responses were collected. One week after the completion of the make-Up therapy, the patients were asked to complete the survey form ② (SF-8™) again, and a stamped return envelope with a guide indicating the expected posting date was provided.

**Analysis Method**
After descriptive statistics on the attributes of the subjects, the SF-8™ subscale scores and physical and mental summary scores were compared with the national standard deviation (50 ± 10) for each item. Moreover, in response to the question, “Do you normally use make-up?”, respondents who answered, “I have a daily skin care (skin toner, skin milk, etc.) and make-up routine” were classified as the “elderly group who regularly use make-up,” while those who answered, “I have a daily skin care routine, but I only use make-up occasionally,” “I only have a skin care routine,” “I do nothing,” and “Other” were classified as the “elderly group who do not regularly use make-up.” The results were compared using Wilcoxon’s signed-rank test to observe the changes in HRQOL before and after make-up therapy. SPSS 21.0J for Windows was used for the analysis, and statistical processing was performed at a significance level of 5%.

**Ethical considerations**
The Research Ethics Review Board of the affiliated facility of Osaka Shin-Ai College (approval number R18-10) approved this study. Before the nursing care prevention class session, the purpose of the research was explained both in writing and verbally. It was also explained that participation in the investigation and research was voluntary, that participation/non-participation would not result in disadvantages, that it was possible to withdraw participation at any point, that privacy protection was guaranteed, that the handling of the data was stringent, and that individuals would not be identifiable. Willingness to participate was thereafter confirmed in writing.

**Results**

**Attributes of the Subjects**
Ninety-four (77.0%) questionnaires were collected, and 80 (65.6%) valid responses were obtained. The ages of the subjects ranged from 65 to 92 years, with a mean age of 77.7 years (±7.89).
The mean number of people living with them was 1.78 (±0.87). In terms of family composition, 34 (42.5%) lived alone, 21 were married couples (26.3%), 2 or more persons lived in a household (28.8%), and 2 others (2.5%), with the largest being lived alone. In response to the question “Do you normally use make-up?”, half of the respondents answered “I have a daily skin care (skin toner, skin milk lotion, etc.) and make-up routine,” 25% answered “I have a daily skin care routine, but I only use make-up occasionally,” 11.3% answered “I only have a skin care routine,” 7.5% answered “I do nothing,” and 6.3% answered “Other”.

Comparison of HRQOL before and after make-up therapy in the “elderly group who regularly use make-up”.

Table 1 shows the comparison of the results before and after make-up therapy for the elderly group who regularly use make-up. A difference was not observed in the results before and after make-up therapy for the SF-8™ subscales “general health,” “physical functioning” “physical role,” “bodily pain,” “social functioning,” “emotional role,” and “mental health,” but for “vitality,” the participants felt more energetic following make-up therapy. In addition, changes were not seen, before and after make-up therapy, in the physical and mental summary scores.

Comparison of HRQOL before and after make-up therapy in the “elderly group who do not regularly use make-up”.

Table 2 shows the comparison of the results before and after make-up therapy for the elderly group who do not regularly use make-up. The results remained the same before and after make-up therapy for the SF-8™ subscales “general health,” “physical functioning,” “physical role,” “bodily pain,” “social functioning,” “emotional role,” and “mental health,” but for “vitality,” the participants felt more energetic after the make-up therapy. In addition, the before

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**p<0.05

Table 2 : Comparison of HRQOL before and after make-up therapy in the “elderly group who do not regularly use make-up (N=40)

|                                | Before Mean(SD) | After 1 week Mean (SD) | P-value |
| General health GH             | 50.52 (±5.99)  | 50.34 (±6.18)          | 0.65    |
| Physical functioning PF       | 44.28 (±8.53)  | 45.33 (±8.19)          | 0.42    |
| Role physical RP              | 45.64 (±9.17)  | 46.60 (±7.50)          | 0.48    |
| Bodily pain BP                | 47.99 (±8.72)  | 46.88 (±8.13)          | 0.19    |
| Vitality VT                   | 48.67 (±6.02)  | 51.51 (±5.34)**        | 0.00    |
| Social functioning SF         | 47.48 (±8.08)  | 47.87 (±7.00)          | 0.87    |
| Mental health MH              | 48.75 (±6.97)  | 51.60 (±4.75)          | 0.06    |
| Role emotional RE             | 48.36 (±6.11)  | 48.93 (±5.52)          | 0.46    |
| Physical component summary score PCS | 47.51 (±8.16)  | 47.26 (±7.81)          | 0.33    |
| Mental component summary score MCS | 47.16 (±5.44)  | 51.44 (±5.01)**        | 0.04    |

**p<0.05
and after physical summary scores were not significantly different, but the mental health summary scores were higher after make-up therapy.

Discussion
Make-up therapy is viewed as “a rehabilitative approach in which make-up is expected to have psychological, physiological, and social therapeutic benefits on the subject through psychological processes” [6]. This study clarified the changes in HRQOL before and 1 week after the make-up therapy intervention according to whether elderly persons attending nursing care prevention classes used make-up daily. For elderly persons, the decrease in the frequency of social activities and interaction due to retirement, for example, affects make-up habits [7], and the results of this study showed that only 50% use make-up more than usual. “Vitality” was significantly higher among the eight subscales in the comparison of HRQOL before and after the make-up therapy in the elderly group who regularly use make-up. Moreover, “vitality” was significantly higher in the comparison of HRQOL before and after the make-up therapy among elderly persons who do not regularly use make-up. The results of the previous version of this study also showed that there was a significant difference in “vitality” in the comparison of HRQOL before and after the make-up therapy intervention for elderly persons who participated in the nursing care prevention class [3]. The results of the present study revealed that the make-up therapy gives vitality to elderly persons regardless of whether they use make-up on a regular basis.

In the comparison of HRQOL before and after the make-up therapy, the physical and mental summary scores of the elderly group who regularly use make-up remained the same, but in the elderly group who did not regularly use make-up, there was a significant difference in the mental summary score, which indicates mental health. The elderly group who regularly use make-up felt less uncomfortable with the make-up therapy because make-up is a part of their daily lives. However, the elderly group who do not regularly use make-up were more likely to feel the visual effects of the make-up therapy because the changes before, during, and after the application of make-up were obvious. In addition, it can be inferred that the unusual usage of make-up led to positive mental health because one’s external appearance is connected to one’s internal perception, resulting in an elevated mood and emotional stability. The greatest feature of the make-up therapy is that the results are visible and immediate, which motivates elderly persons and has the advantage of effects being easily sustained [8]. In this context, it is important to understand the intentions, preferences, and the individuality of the person themselves in the make-up therapy program. In addition, since make-up activity requires planning such as what to prepare, and in which order to use certain cosmetics and how, it is said that higher brain functions by the frontal lobe are greatly involved [9]. Thus, it is expected to be used as training to prevent dementia.

Implementing make-up therapy in-group care increases awareness of other people and enhances social skills and sociability [8]. Elderly persons are often reluctant to interact in society because they lose confidence due to the deterioration of their physical functions. This study suggests that the implementation of make-up therapy in group care, called nursing care prevention class, provided an opportunity for them to maintain their social skills and gain confidence. In Japan, the aging rate in 2020 will be 28.8% [2], and as the population ages, there is an increased interest in preventive medicine and nursing care prevention. Furthermore, the results of this study revealed that the make-up therapy gives vitality and a sense of mental health to elderly persons who do not regularly use make-up. We believe that the make-up therapy can lead to the maintenance and improvement of QOL and ADL of elderly persons and contribute to the extension of healthy life expectancy.

Conclusion
In this study, the make-up therapy was conducted on 122 elderly persons attending nursing care prevention classes, and the changes were clarified in HRQOL before and after the intervention depending on whether they use make-up regularly or not. The results showed that the elderly group who regularly use make-up and the elderly group who do not regularly use make-up showed significantly higher “vitality” after make-up therapy. In addition, the summary score for mental health was significantly higher in the elderly group who do not regularly use make-up, suggesting that the make-up therapy can lead to a sense of mental health in elderly persons who do not regularly use make-up.

References

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