



Original Article

Interrelationship among the health-related and subjective quality of life, daily life activities, instrumental activities of daily living of community-dwelling elderly females in orthopedic outpatients

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Abstract. [Purpose] This study aimed to examine the health-related and subjective quality of life of community-dwelling elderly females in orthopedic outpatients, and also examined how such quality of life correlate with their daily life activities and instrumental activities of daily living. [Subjects and Methods] Subjects were 27 community-dwelling elderly females in orthopedic outpatients (mean age: 76.3 ± 7.4 years). Their health-related quality of life and subjective quality of life, life-space assessment, frenchay activities index were researched. [Results] For the relationships between the total subjective quality of life scores and health-related quality of life scores, significant positive correlations were observed for body pain, general health, vitality, social functions and mental health. The correlations were not statistically significant between the subjective quality of life scores and the life-space assessment and frenchay activities index scores. The correlations were statistically significant between some health-related quality of life scores and the life-space assessment and frenchay activities index scores. [Conclusion] The results suggest that supporting community-dwelling elderly females in orthopedic outpatients to improve their sense of physical and mental well-being, and prevent and reduce their depression and physical pain, is required in order to improve their QOL.

Key words: Health-related QOL, Subjective QOL, Community-dwelling elderly females in orthopedic outpatients

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INTRODUCTION

With Japan's elderly population, as is widely known, increasing every year, society requires that elderly people maintain good health and lead independent and active retired lives. For this, accurately assessing elderly people's quality of life (QOL) is important¹⁾. Elderly people's QOL has been conventionally studied with two approaches. One is health-related QOL assessing elderly people's health and environmental conditions; the other is subjective QOL assessing elderly people's subjective feelings of satisfaction and happiness. Although both approaches examine elderly people's QOL, a single approach is insufficient for fully assessing elderly people's QOL. Using both approaches simultaneously to examine elderly people's QOL is important^{1,2)}. Although some studies report elderly people's QOL assessed with only one approach³⁾, studies

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reporting QOL assessed with both approaches are rare²).

We have been primarily surveying the physical conditions and QOL of community-dwelling elderly females in orthopedic outpatients dwelling in their communities, and analyzing and examining the QOL of such females and the factors affecting their QOL⁴. In this article, we examined the health-related and subjective QOL of community-dwelling elderly females in orthopedic outpatients, and also examined how such QOL correlate with their daily life activities and instrumental activities of daily living (IADL).

SUBJECTS AND METHODS

Subjects were 27 community-dwelling elderly females in orthopedic outpatients (community-dwelling elderly females) (mean age: 76.3 ± 7.4 years). The subjects were interviewed by asking questions on their health-related QOL and subjective feelings of happiness, daily life activities, IADL. According to the ethical considerations of the study, the subjects were given a written explanation of the purposes of the study stating that could drop out at any time, even in the middle of an interview, that their data would be treated with anonymity to prevent personal identification, and that no information obtained would be disclosed to any third parties. Patient consent was obtained thereafter.

The MOS 36-Item Short-Form Health Survey (SF-36, Japanese version 1.2⁵) was used for health-related QOL assessment. This measure is a comprehensive health-related scale and is commonly used for assessment with subjective outcome measures. The subscales consist of 8 sections: Physical Function (PF), Role Physical (RP), Body Pain (BP), General Health (GH), Vitality (VT), Social Function (SF), Role Emotional (RE), and Mental Health (MH). There are 36 questions. The raw score for each subscale can be from 0 to 100 points; higher scores indicate higher QOL. Nationwide standard scores are available by gender and age, and can be easily compared with the scores of the subject group, which is an advantage of this measure.

The Life Satisfaction Index K (LSIK)⁶ was used to assess the subjects' QOL. The LSIK was developed based on analyses of existing scales for measuring elderly people's subjective feeling of happiness. The LSIK is a self-administered questionnaire. Respondents choose one answer from several options, which have different scores. The LSIK consists of 9 questions. For choosing a positive option, 1 point is given, and no points are given for choosing other options. Points earned for the 9 questions are added together. The perfect total score is 9.

The subjects' daily life activities were evaluated by using the Japanese version of Life-Space Assessment (LSA)⁷. The LSA questionnaire assesses whether respondents conducted any activities in each living space, the frequency of such activities if they did, and how independent they were in order to comprehend their physical activities in terms of daily life activities. The perfect score is 120, indicating the maximum level of daily life activities, physical activities, and independence.

The Frenchay Activities Index (FAI)⁸ was used to assess the subjects' IADL. The FAI is a questionnaire consisting of 15 items relating to daily practical activities and social life, and used to measure the IADL abilities. For each item, assessment is made on a scale of 0 to 3. The maximum possible score is 45 points. Higher scores indicate higher IADL abilities, meaning that the patient can perform practical daily life movements more independently.

Spearman's rank method was used to analyze the correlations between the SF-36 scores and the LSIK, LSA and FAI scores. We used StatSoft's STATISTICA to conduct a statistical analysis at a 5% level of significance.

RESULTS

The average total LSIK score was 5.3 ± 2.2 . The average of their SF-36 score was lower in seven subscales, excluding RE, and was particularly lower for the PF, RP and BP subscales than the deviation score of 50 of the nationwide standard scores for the same age group (Table 1).

For the relationships between the total LSIK and SF-36 scores, the BP, GH, VT, SF and MH subscales for SF-36 were

Table 1. Comparison between disabled elderly women's SF-36 and the national standard deviation value (50)

Deviation value SF-36	Mean \pm SD
Physical function	37.4 ± 14.9
Role physical	42.9 ± 16.3
Body pain	42.6 ± 9.5
General health	48.8 ± 8.8
Vitality	49.7 ± 11.2
Social function	48.3 ± 13.2
Role emotional	50.6 ± 10.2
Mental health	48.7 ± 12.8

Table 2. Correlation coefficient of disabled elderly women's SF-36 and LSIK, LSA, FAI

SF-36	LSIK	LSA	FAI
Physical function	0.21	0.50**	0.46*
Role physical	0.16	0.06	0.21
Body pain	0.51**	0.11	0.25
General health	0.64**	0.27	0.12
Vitality	0.65**	0.32	0.53**
Social function	0.35	0.23	0.35
Role emotional	0.12	0.25	0.29
Mental health	0.62**	0.32	0.31

** $p < 0.01$, * $p < 0.05$

significantly high when the LSIK score was high ($p < 0.05$ to $p < 0.01$). The correlations were not statistically significant between the LSIK scores and the LSA and FAI scores. As for the correlations between the SF-36 and LSA scores, the LSA score was significantly high when the PF subscale of the SF-36 was high ($r = 0.50$, $p < 0.01$). As for the correlations between SF-36 and FAI scores, the PF ($r = 0.46$, $p < 0.05$) and VT ($r = 0.53$, $p < 0.01$) subscales of the SF-36 were significantly high when the FAI score was high (Table 2).

DISCUSSION

According to Demura et al.¹⁾ and Taniguchi et al.²⁾, elderly people's QOL has been conventionally studied from two approaches. One is health-related QOL assessing elderly people's health and environmental conditions; the other is subjective QOL assessing elderly people's subjective feelings of satisfaction and happiness. Although both approaches are useful for examining elderly people's QOL, they reported that a single approach is insufficient for fully assessing elderly people's QOL. Through simultaneously assessing the QOL of elderly females with musculoskeletal disorders dwelling in their communities with both approaches, we thought we would be able to more accurately examine such female's QOL. In this study, we analyzed and examined such female's health-related and subjective QOL, and the relationship between them.

Reporting the average LSIK scores by gender and age group, Koyano et al.⁶⁾ reported that the average score for general elderly females aged 75 to 79 years was 4.4 ± 2.2 . According to our results, the subjective feelings of happiness score of the community-dwelling elderly females was 5.3 ± 2.2 , which was slightly higher than the general elderly female's score. This indicated that the community-dwelling elderly females maintained their satisfaction in terms of their daily life. The average of their SF-36 score was lower in seven subscales, excluding RE, and was particularly lower for the PF, RP and BP subscales than the deviation score of 50 of the nationwide standard scores for the same age group. The physical and other activities of the community-dwelling elderly females are more restricted than those of females in general of the same age group. If pain occurs or worsens, such restrictions become even harsher. The community-dwelling elderly females were carrying out the activities of daily life to the extent possible.

Concerning the relationships between subjective and health-related QOL, Demura et al.¹⁾ reported that subjective QOL was closely related to personal and environmental conditions measured by health-related QOL. Changes in such conditions affected and changed subjective QOL. For the relationships between the total LSIK and SF-36 scores of the community-dwelling elderly females in our study, significant positive correlations were observed for BP, GH, VT, SF and MH. Their LSIK scores were affected by the BP, GH, VT, SF and MH subscales of SF-36. When these scores were low, the LSIK score was also significantly low. A low BP score means that the subject experienced excruciating pain in the past month, making it very difficult for her to perform her usual work and activities. When a person is restricted from performing her usual work or activities due to excruciating pain, has physical problems, is exhausted, is unable to mentally interact with friends or neighbors and is depressed⁹⁾, then her subjective QOL decreases. Therefore, the results of this study suggest that, in order for community-dwelling elderly females to maintain good subjective and health-related QOL, controlling their pain is important so that excruciating pain does not restrict their activities. They also need to maintain good health, feel happy and comfortable, and have more opportunities for social interaction.

The correlations were not statistically significant between the LSIK scores and the LSA and FAI scores, indicating that physical activities and instrumental ADL do not directly affect the subjective QOL. As for the correlations between the SF-36 and LSA and FAI, the health-related QOL scores relating to physical function are higher when the LSA is high. The health-related QOL scores relating to vitality are higher when the FAI independence is high. Raguso et al.¹⁰⁾ reported that the decrease in physical function due to aging can be prevented by maintaining high levels of daily physical activities. The results of this study suggest that, in order to improve the health-related QOL of community-dwelling elderly females, improving their physical functions, maintaining high levels of daily life activities, and having them perform practical daily life activities independently are important.

These results suggest that assessing the QOL of community-dwelling elderly females with both health-related and subjective QOL approaches is important. The results also suggest that, in order to improve the QOL of community-dwelling elderly females dwelling in their communities, supporting them to improve their sense of physical and mental well-being, and prevent and reduce their depression and physical pain, is required.

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