The Effect of Perceived Satisfaction with Care-prevention Exercise Programs on Their Continuation of the Programs

Akemi Ota*, Masako Thompson** and Yoshio Nakamura***

*Department of Biomedical Engineering, Osaka Electro-Communication University 1130-70 Kiyotaki, Shijonawate, Osaka 575-0063 Japan  ota@isc.osakac.ac.jp
**Graduate School of Human Sciences, Waseda University 2-579-15 Mikajima, Tokorozawa, Saitama 359-1192 Japan
***Faculty of Sports Sciences, Waseda University 2-579-15 Mikajima, Tokorozawa, Saitama 359-1192 Japan
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The purpose of this study was to investigate the effect of perceived satisfaction with care-prevention exercise programs on the continuation of such programs. Thirty-two subjects out of 81 residents at an apartment home for seniors volunteered for this study as subjects. The subjects participated in either of two group exercise programs (GEP’s) or the fragility screening battery test (FST) held in the residence. In the GEP’s, the continuing participants showed significantly higher scores of satisfaction than the not-continuing participants ($F =8.15, p < 0.05$), while there was no significant difference in satisfaction of FST between continuing and not-continuing participants. These results suggest that perceived satisfaction is important for continuation with care-prevention exercise programs.

Keywords: care-prevention, exercise, continuation, service satisfaction

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program again must be high.

In this study, exercise programs aiming at care-prevention were undertaken for the residents of an apartment home for seniors. The purpose of this study was to explore how participants' satisfaction affected their continuous participation in the exercise programs.

2. Method

2.1. Subjects

The subjects were the residents of a lifelong-use type senior apartment home in Yokohama, Kanagawa. The apartment home is provided with a safeguard system for the transition to an allied nursing-care facility. The number of eligible residents was 81 (age 76.8 ± 5.6), 24 males and 57 females (males; age 78.0 ± 5.3, females; age 76.3 ± 5.7). Leaflets were delivered informing residents of the contents of the programs and profiles of instructors, and a notice was put on the bulletin board in the apartment home commons so that the residents could be aware of the exercise program. After that, a meeting was held to explain not only the contents of the program, but also the circumstances of this research study, which was to investigate the effects of care-prevention programs. In addition, potential constraints and risks associated with their participation as subjects were explained. The subjects, having fully understood the contents of the explanatory text, signed the consent form. This research was implemented with approval from the ethics committee of the Faculty of Sport Sciences, Waseda University.

2.2. Period

The program was held from May to July, 2005. The notification by leaflets was conducted from the first to the ninth of May, during which time the notice on the bulletin board was also available for all to read. Two kinds of exercises, "Functional stretch" and "Rakuraku exercise", were prepared as a classroom-type program and a "fragility screening battery test" as a measuring evaluation program. (The italicized words were the names originally given to these programs.) The exercises in the classroom-type program were provided once a month (6 times in total), and the measuring evaluation program once in May and July (twice in total). The programs were free of charge and no restriction was imposed on the number of times for participation.

2.3. Contents of the program

2.3.1. The classroom-type exercise program

2.3.1.1. "Functional stretch"

The "Functional stretch" was an exercise program designed by Ko (2005) in which muscles are stretched in various directions in accordance with the person's movement, and not in one direction statically. This stretching exercise has been held in fitness clubs targeting middle-aged and senior adults, and attracts a large turnout every time. In this study, stretching movements working mainly around the blade bones and hip joints were included in the program so that a wider range of movements could be gained around those bones and as a result, the exercise could give comfort around participants' shoulders and hips. Furthermore, greetings, communication, and muscle training for lower extremities using a ball were combined with "Functional Stretch," which constituted a 90-minute class.

2.3.1.2. "Rakuraku exercise"

The "Rakuraku exercise" was developed by Tompson, et al., (2005). People 'amusingly and easily' conduct "Rakuraku exercise" with music. By using well-known tunes such as a theme song of a comic, ‘Sazae-san’, or a popular song, ‘Sekai-ni-hitotsu-dake-no-hana’ ("a unique flower in the world"), that are familiar even to elderly people, participants either carrying instruments or with empty hands moved to the music. Rice paddles, pieces of tubular paper, towels and dumbbells were used as instruments. The rice paddles and tubular paper made sounds as the participants hit them together, which they found amusing. Stretching was added before and after this exercise to form a 90-minute class.

2.3.3. The measuring evaluation program

- "Fragility screening battery test"-

The "Fragility screening battery test" was established using a measuring program, which was designed by the Research Institute for Elderly Health of Waseda University. It is a simple fitness test consisting of items that measure the physical abilities of elderly people. The measured abilities were 5-m
walk, grasping, functional reach, balancing on one leg with eyes closed/opened, and bending forward with the long sitting position. The measurement results were evaluated with a five-level rating and immediately fed back to the participants.

2.4. Questionnaire technique

A questionnaire was used during the explanatory meeting for collecting the basic data of the participants such as their age and gender, and to ask them about their exercise experience, exercise self-efficacy and ‘expectations from the exercise program’. With regard to exercise experience, those who had previously experienced continuous exercise or kept up their own exercise regime were categorized as ‘with experience’, and those who had no experience of exercise were referred to as ‘without experience’. Exercise self-efficacy indicated anticipation in that a person who regularly exercised could continue to exercise even in adverse situations in exercise practice (Itano, et al., 2002). A scale developed by Oka (2003) was used to assess exercise self-efficacy. The scale consisted of five questions asking if the respondent was confident in carrying out exercise under such constraints as physical fatigue, psychological stress, limited time, a life far removed from daily life, and bad weather. The reliability and validity of the scale has already been proved. Regarding expectation for the exercise program, the participants selected up to five among the twelve items relating to ‘enjoyment’, ‘competent instructors’, ‘peers’, ‘acquisition of exercise method’, ‘acquisition of health information’, ‘physical improvement’, ‘simplicity’, ‘music’, ‘being economical’, ‘refreshment’, ‘physical healthiness’ and ‘others’. In the meantime, every time they took part in the program, the participants indicated their response to ten items among those twelve - except for ‘being economical’ and ‘others’ - by using options ranging from ‘strongly agree’, ‘agree’, ‘neither agree or disagree’, ‘disagree’ to ‘strongly disagree’, in order to evaluate the day’s program. The ‘strongly agree’ and ‘agree’ responses were sorted under the ‘satisfied’ category, and other responses into ‘unsatisfied’.

2.5. Verification model

The participants in these three programs were separated into two groups. One was a group for people who participated in the same program as the previous month (C group) and the other was for people who did not (N group). For each participant, the items offered for selection as ‘expectation for the exercise program’ in the preliminary survey were classified into two groups, those selected and unselected, in order to count the number of ‘satisfied’ and ‘unsatisfied’ responses. In each group, the number of ‘satisfied’ responses was divided by the total number of reference, in order to obtain ‘the satisfaction level’. Concerning the program evaluation of C and N groups, an χ² test was implemented with the numbers of ‘satisfied’/‘unsatisfied’ responses as the independent variables, and C group/N group as dependent variables.

3. Results

3.1. Basic data of the participants

Among all the 81 residents, the number of the participants in the explanatory meeting who responded to the preliminary survey was 27, comprising 11 males and 16 females (33.0% of all the residents; hereinafter percentage of all the residents). Thirty-two residents (39.5%), comprising 11 males and 21 females, participated at least once in the program including the explanatory meeting. Three females participated only in the meeting. There were no differences in gender and age between participants and non-participants of the program. With regard for each program, no differences were seen in age, gender, exercise self-efficacy and exercise experience (Table 1).

3.2. Transition of the number of participants

Figure 1 showed the transition of percentages in participation. Twenty-seven residents (33.1%) participated in the explanatory meeting and 25 (30.9%) in the "Fragility screening battery test" which was conducted in the same week as the meeting. The number of participants in the programs shifted between 14 (17.3%) and 6 (7.4%).

3.3. Program evaluation of C and N groups

The total number of participants in "Rakuraku exercise" was 9 in C group and 8 in N group, while the number in "Functional stretch" was 9 in C group and 6 in N group. These two programs
were provided as classroom-type exercises. In the "Fragility screening battery test", which is a measuring evaluation program, the total number of participants was 14 in C group and 17 in N group.

The evaluation of the program by C and N groups is indicated in Table 2. For the items in which they had expectations for the program, the percentage responding as ‘satisfied’ was higher in C group than in N group in the classroom-type-program. For the items in which they had low expectations for the program, there were no differences in the evaluation between C and N groups. Meanwhile, in the measuring evaluation program, regardless of whether they continuously participated in the program or whether those were the items in which participants had high expectations for the program, there were no differences in the evaluation.

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**Table 1** Profile of residents and program participants in the apartment home for seniors

<table>
<thead>
<tr>
<th></th>
<th>Number of people</th>
<th>Age</th>
<th>Exercise experience*</th>
<th>Self efficacy*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total (male/female)</td>
<td>76.8 ± 5.6</td>
<td>With/Without</td>
<td></td>
</tr>
<tr>
<td>All residents</td>
<td>81 (23/58)</td>
<td>76.8 ± 5.6</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Program participants</td>
<td>32 (11/21)</td>
<td>77.1 ± 5.0</td>
<td>20/6 (6)</td>
<td>12.2 ± 3.9</td>
</tr>
<tr>
<td>Program non-participants</td>
<td>49 (21/37)</td>
<td>76.6 ± 6.0</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Total number of those attending twice</th>
<th>77.0 ± 4.0</th>
<th>25 / 6 (4)</th>
<th>12.8 ± 3.5 (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fragility screening battery test</td>
<td>35 (14/21)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rakuraku exercise</td>
<td>30 (12/18)</td>
<td>77.6 ± 5.0</td>
<td>22 / 1 (7)</td>
<td>13.4 ± 3.1 (7)</td>
</tr>
<tr>
<td>Functional stretch</td>
<td>26 (10/15)</td>
<td>77.0 ± 2.9</td>
<td>19 / 1 (6)</td>
<td>14.2 ± 1.8 (6)</td>
</tr>
</tbody>
</table>

Regardless of participants/non-participants or the kind of programs, no differences were shown in gender, age, experience in exercise and self-efficacy.

* The number of those who do not know is shown in parentheses.

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**Figure 1** Transition of the number of participants

The percentage of participants in the programs exceeded 30% in the explanatory meeting and Fragility screening battery test. After the programs started, the percentage shifted between 7-17%.
This study aimed at investigating what kind of exercise programs elderly people residing in a lifelong-use senior apartment home were interested in and continuously participated in.

Parasuraman, et al., (1985) established the service quality model that listed the items needed to provide high-quality services. In the model, business managers perceived consumers’ expectations, converted them into service and provided the service to consumers. The service perceived by consumers was the perceived service (PS). Meanwhile, consumers had the expected service (ES) made up according to personal needs, past experiences, word of mouth and external information. The gap between PS and ES affected the quality of service. The service quality from the viewpoint of consumers was extracted from the model, indicating determinants of quality perception in service in Figure 2. According to Parasuraman, et al., the perceived quality of service comprised the gap between ES and PS. In the case that ES was higher than PS, consumers were unsatisfied with the service. Greater or equal ES compared to PS related to high consumer satisfaction.

In the case of this study, it was considered that the residents participating in the first program embraced certain expectations based on information in the leaflet, personal needs and their own experiences. Later on, having tried taking part in the programs, if the program met their expectations or beyond (high PS), they would probably participated again in the following program. However, in the case that their expectations, participation in the following exercise program was assumed to be less likely.

The percentage of residents who reacted to the programs including the explanatory meeting was 39.5 %, while that of the participants in the meeting and "Fragility screening battery test" held in the same week as the meeting was greater than 30 %, changed

<table>
<thead>
<tr>
<th>Classroom-type program</th>
<th>% of satisfaction (number of 'Satisfied' responses/number of 'Unsatisfied' responses)</th>
<th>F value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation of expected items</td>
<td>84.8 (56/10)</td>
<td>61.5 (32/20)</td>
</tr>
<tr>
<td>Evaluation of unexpected items</td>
<td>68.6 (72/33)</td>
<td>59.8 (49/33)</td>
</tr>
<tr>
<td>Measuring evaluation program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation of expected items</td>
<td>56.0 (28/22)</td>
<td>62.9 (39/23)</td>
</tr>
<tr>
<td>Evaluation of unexpected items</td>
<td>59.2 (45/31)</td>
<td>62.6 (57/34)</td>
</tr>
</tbody>
</table>

**; p < 0.01

Figure 2 Determinant of perceived service quality
ES: expected service, PS: perceived service
Parasuraman, et al., revised by author
by 7~18% thereafter (Figure 1). As mentioned before, all the activities from the notice to the actual exercise programs were carried out in the residential facility of the participants. Therefore, one of the factors that might prevent people from participating, i.e., the distance from the facility, could be ruled out. It was easily assumed that more people attended the program than those in the case in which the program was held in a different facility.

This study investigated the participants’ satisfaction with the programs by dividing the items into ‘those they had expected’ and ‘those they had not’, in C and N groups separately. In the classroom-type exercise program, satisfaction with the expected items in C group was higher than in N group (F = 8.15, p < 0.05). Apparently, this showed that satisfaction felt by people who attended the program affected continued participation. In addition, since satisfaction with the unexpected items showed no differences between C and N groups, it was considered that satisfaction with what they expected particularly had an impact on continued participation in the same program.

In the meantime, with regard to the measuring evaluation program, the satisfaction scores showed no differences regardless of continuous/ non-continuous participation and expected/unexpected items about the program. This study conducted a simple measurement of physical fitness as a measuring evaluation program. In the case of measurement, statements such as ‘the instructor was good’ or ‘I learned an exercise method’ were considered to be inappropriate for gaining high evaluation. In addition, some people presumably participated in the program because of such reasons as ‘I was not satisfied with the first program, but it would be ok to know my result two months from now.’ As said before, the programs in this study were offered from the first announcement to implementation in one single facility where the participants lived. Thus, possible reasons for participation might be ‘I am bored with everyday life’ or ‘the exercise is conducted within the apartment building’.

This study, by providing care-prevention exercise programs to the residents of a lifelong-use senior apartment home, investigated the their expectation for exercise programs and explored the relation between their satisfaction with the actual programs and continued participation. As a result of that, in the case of the classroom-type exercise programs, it was suggested that high satisfaction with the expected items led to continuous participation. Meanwhile, in the measuring evaluation program, factor other than satisfactions pointed out in this study as ‘the expectation about the exercise programs’ seemed to affect continued participation.

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References