

ORIGINAL RESEARCH

FRAILTY CHECKUP SUPPORTERS' INTENTIONS TO PARTICIPATE IN HUMAN-RESOURCE DEVELOPMENT AND TRAINING ACTIVITIES

M. FUJISAKI-SUEDA-SAKAI¹, K. TAKAHASHI¹, Y. YOSHIKAWA², K. IJIMA¹

1. Institute of Gerontology, The University of Tokyo, Bunkyo-ku, Tokyo, Japan; 2. School of Nursing, Tokyo Women's Medical University, Shinjuku-ku, Tokyo, Japan. Corresponding author: Mahiro Fujisaki-Sueda-Sakai, Institute of Gerontology, The University of Tokyo, Project Assistant Professor, 7-3-1, Hongo, Bunkyo-ku, Tokyo 113-8656, Japan, fujisam@iog.u-toko.ac.jp, Phone/Fax: +81-3-5841-1662

Abstract: *Background:* Frailty prevention is one of social prescriptions for an aging society. That requires community level intervention. *Objectives:* This study examined frailty checkup supporters' (FCSs') intentions to engage in human-resource development and training activities (i.e., leadership activities) and related factors. *Design:* Cross-sectional study. *Setting:* Three municipalities in suburban area, Eastern Japan. *Participants:* Forty-five of 59 FCSs completed anonymous self-administered questionnaires. *Measurements:* Questionnaire sought information regarding their sociodemographic data, their perceptions and experiences of FCS activities, and their intentions to participate in human-resource development and training activities. Participants were divided into a high intention (HI) and low intention group (LI). The two groups were compared using quantitative and qualitative data. *Results:* Eleven FCSs reported intending to engage in leader-related activities. Factors associated with FCSs' intentions were finding FCS activities rewarding and the willingness to continue performing FCS activities. The participants who changed their daily activities ($p = .041$) and perceptions regarding contributing to the community ($p = .018$) showed significantly higher intention than LI participants. Free description about the changes in perceptions and lifestyles as a consequence of participating in FCS activities were analyzed qualitatively. FCSs who changed their daily activities and perspectives about contributing to the community described positive changes in both the groups. Meanwhile, FCSs who did not change their daily activities and perspectives about contributing to the community described their reason only in the LI group. *Conclusions:* The results might encourage FCSs to participate in training and guidance activities, as they have positive experiences and receive recognition obtained through participation in such activities.

Key words: Community residents, frailty prevention, intention, mixed methodology.

J Frailty Aging 2019;in press
Published online February 14, 2020, <http://dx.doi.org/10.14283/jfa.2020.6>

Introduction

The “frailty checkups” was developed based on the evidence of the Kashiwa cohort study, which was conducted in Kashiwa city, Chiba prefecture, Japan and the participants were randomly selected elderly aged 65 years and over who were not eligible for long-term care (1). Before elderly people become dependent on care, they should learn to recognize their level of frailty and should actively implement their own preventive measures. It is for this reason that “frailty checkups” have been implemented in several areas in Japan, which are conducted by “frailty checkup supporters” (FCSs).

FCSs are all community residents and providing their efforts on a volunteer basis. Previous studies focusing on community interventions have highlighted the importance of community residents engaging in informal assistance-related activities (2) showed that community residents more effectively provide health education to fellow community members, and encourage community residents to change and improve their mindsets and actions. This effort can create ripple effects among the recipients' family members and acquaintances (2). Moreover, it is important, in regard to community interventions, that community residents are proactive in terms of doing, managing, and continuing community-based activities (3). Therefore, there

might be several advantages to FCSs performing FC activities from the viewpoint of healthy and economic measures in a community.

Cultivating human resources among community residents is an essential element of promoting and sustaining regional activities, and such recruitment requires leaders (4) (5). According to the theory of planned behavior (6), the participation of FCSs in human-resource development and training activities in order to become leaders, is reinforced by an intention or decision to perform the behavior. Presuppositions of intention or decision are attitude, perceived norms, and personal agency. This study referred to these relationships based on the theory of planned behavior. Attitude refers to a person's action or discourse shaped by their experiences. A perceived norm is a principle of “right action” binding the members of a group and serving to guide, control, or regulate appropriate and acceptable behavior. Personal agency consists of perceived control and self-efficacy as well as an enhanced level of confidence, so that a person intends or decides to perform the behavior.

Considering this, the aim of this study was to identify factors relevant to FCSs' intentions to participate in human-resource development and training activities, which are leadership roles. Through this examination, we hoped to obtain information

Received July 2, 2019

Accepted for publication September 25, 2019

FRAILITY CHECKUP SUPPORTERS' INTENTIONS

Table 1
 Characteristics of study participants and a comparison of municipality (n = 45)

Variables	Total (n=45)		A City (n = 16)		B City (n = 17)		C City (n = 12)		P-value
	n(%) Mean ±SD	Min- Max	n(%) Mean ±SD	Min- Max	n(%) Mean ±SD	Min- Max	n(%) Mean ±SD	Min- Max	
<i>Socio-demographic variables</i>									
Age	69.19 ± 5.39	56- 80	68.82 ± 3.81	63- 75	69.93 ± 4.96	59- 77	68.73 ± 7.94	56- 80	.808 ^a
Sex									
male	20 (44.4)		11 (64.7)		5 (31.3)		4 (33.3)		.103 ^b
female	25 (55.6)		6 (35.3)		11 (68.8)		8 (66.7)		
<i>Participation of activities in a community</i>									
Number of participating activities	5.00 ±1.36	1- 7	4.60 ±1.50	1- 7	5.13 ± 1.51	2- 7	5.00 ± 1.36	4- 6	.337 ^a
1) Senior Citizen clubs									
Not participate	28 (62.2)		13 (76.5)		10 (62.5)		5 (41.7)		.075 ^c
Participate	13 (28.9)		2 (11.8)		5 (31.3)		6 (50.0)		
2) Health and sports circles									
Not participate	8 (17.8)		3 (17.6)		3 (18.8)		2 (16.7)		.975 ^c
Participate	35 (77.8)		12 (70.6)		13 (81.3)		10 (83.3)		
3) Learning and education circles									
Not participate	7 (15.6)		3 (17.6)		2 (12.5)		2 (16.7)		.886 ^c
Participate	35 (77.8)		12 (70.6)		13 (81.3)		10 (83.3)		.496 ^c
4) Hobby circle									
Not participate	8 (17.8)		4 (23.5)		3 (18.8)		1 (8.3)		
Participate	36 (80.0)		12 (70.6)		13 (81.3)		11 (91.7)		.410 ^c
5) Neighborhood association									
Not participate	7 (15.6)		4 (23.5)		2 (12.5)		1 (8.3)		
Participate	35 (77.8)		11 (64.7)		13 (81.3)		11 (91.7)		.158 ^c
6) Volunteer organization									
Not participate	4 (8.9)		3 (17.6)		1 (6.3)		1 (8.3)		
Participate	39 (86.7)		13 (76.5)		15 (93.8)		11 (91.7)		.613 ^b
7) Income job									
Not participate	20 (44.4)		6 (35.3)		7 (43.8)		7 (58.3)		
Participate	23 (51.1)		9 (52.9)		9 (56.3)		5 (41.7)		
FC participation	5.84 ± 6.24	0- 36	8.31 ± 8.57	2- 36	4.63 ±4.54	0- 20	4.04 ± 2.85	2- 12	.131 ^a
FCSs' intention									
Low intention	34 (75.6)		13 (76.5)		12 (75.0)		9 (75.0)		.994 ^c
High intention	11 (24.4)		4 (23.5)		4 (25.0)		3 (25.0)		

n = 45. Missing data were not included; a. One-way ANOVA, b. χ^2 test, c. Fisher's exact test; Abbreviations: SD means standard deviation. FC means Frailty Checkup. FCS means Frailty Checkup Supporters.

regarding the sustainability of frailty checkups.

Methods

Study design & data collection

This study employed sequential explanation design in mixed methodology (7). After describing FCS's socio-demographic characteristics and the factors related to their intention to become a leader quantitatively, the contents of factors related to the dependent variable were identified qualitatively. This study was conducted in three cities located in the metropolitan area: A City, B City, and C City. All participating FCSs received a three-hour lecture in which the concepts of and preventive measures for frailty and sarcopenia were introduced by the researchers. Then, the FCSs received approximately three hours of training so that they could perform frailty checkups independently in their communities. In December 2015, the questionnaires were distributed by each city office. The respondents completed the questionnaires and mailed them directly to the researchers.

Measures

Dependent variable

The intention to participate in human-resource development and train in activities to prevent frailty was set as the dependent variable according to the theory of planned behavior (6). The authors originally developed this item to answer the question easily and avoid ambiguity of expression (i.e., only "leader") because most FCSs were of advanced age. In the questionnaire, we asked "Do you intend to participate in human-resource development and training activities in order to become a leader among FCSs?" The participants responded to this question using a five-point Likert-scale: "strongly agree," "agree," "neither agree nor disagree," "disagree," or "strongly disagree." FCSs' intention as a dependent variable was divided into two groups: those who responded "strongly agree" or "agree" were allotted to the high intention (HI) group, and the other FCSs were allotted to the low intention (LI) group.

Table 2
Relationship between characteristics and FCS's intention (n = 45)

Variables	FCSs' intention				
	Total (n=45)		Low intention (n = 34)	High intention (n = 11)	P-value
	n (%) Mean ± SD	Min- Max	n (%) Mean ± SD	n (%) Mean ± SD	
Age	69.19 ± 5.39	56- 80	69.61 ± 4.29	67.80 ± 8.22	.518 ^a
Sex					
male	20 (44.4)		14 (0.4)	6 (0.5)	.500 ^b
female	25 (55.6)		20 (0.6)	5 (0.5)	
<i>Participation of activities in a community</i>					
Number of participating activities	5.00 ± 1.36	1- 7	4.90 ± 1.47	5.30 ± 0.95	.429 ^a
1) Senior Citizen clubs					
Not participate	28 (62.2)		20 (64.5)	8 (80.0)	.458 ^b
Participate	13 (28.9)		11 (35.5)	2 (20.0)	
2) Health and sports circles					
Not participate	8 (17.8)		6 (18.8)	2 (18.2)	1.000 ^b
Participate	35 (77.8)		26 (81.3)	9 (81.8)	
3) Learning and education circles					
Not participate	7 (15.6)		6 (18.8)	1 (10.0)	1.000 ^b
Participate	35 (77.8)		26 (81.3)	9 (90.0)	
4) Hobby circle					
Not participate	8 (17.8)		8 (24.2)	0 (0.0)	.170 ^b
Participate	36 (80.0)		25 (75.8)	11 (100.0)	
5) Neighborhood association					
Not participate	7 (15.6)		5 (15.6)	2 (20.0)	1.000 ^b
Participate	35 (77.8)		27 (84.4)	8 (80.0)	
6) Volunteer organization					
Not participate	4 (8.9)		4 (12.5)	0 (0.0)	.558 ^b
Participate	39 (86.7)		28 (87.5)	11 (100.0)	
7) Income job					
Not participate	20 (44.4)		16 (50.0)	4 (0.4)	.434 ^c
Participate	23 (51.1)		16 (50.0)	7 (0.6)	

n = 45. Missing data were not included; a. unpaired t-test, b. fisher's exact test, c. chi-square test; Abbreviations: SD means standard deviation. FCS means Frailty Checkup Supporters.

Independent variables

The factors influencing intention to participate in human-resource development and training activities were operationally classified into two: individual and social environmental factors. Information on age and gender were collected as socio-demographic characteristics. The social environmental factors comprised seven items relating to participation in community organization activities: 1) senior citizen clubs, 2) health and sports groups, 3) learning and education groups, 4) hobby groups, 5) neighborhood associations, 6) volunteer organizations, and 7) job income.

Further, the participants were asked six items regarding their recognition and experiences about performing FCS activities: 1) "Do you find FCS activities rewarding?" 2) "Do you wish to continue performing FCS activities?" (these two items were scored using a five-point Likert-scale, with the options being "strongly agree," "agree," "neither agree nor disagree," "disagree," and "strongly disagree"). 3) "Have you become newly aware of your own health status and social activities by performing FCS activities?" 4) "Have you changed your daily activities as a result of performing FCS activities?"

5) "Have you changed how you interact with your family and acquaintances as a result of performing FCS activities?" 6) "Have you changed your mind regarding contributing to the community through FCS activities?" (these latter four items were answered either "yes" or "no"). Further, to obtain quantitative results (i.e., in regard to questions four and six, which concerned recognition and experience), we allowed participants to freely describe how their FCS-related activities, recognitions, and experiences had encouraged them to change their lifestyles. These variables are program specific and originally developed. The authors considered that their FCS-related activities, recognitions, and experiences also influenced FCSs' attitudes, perceived norms, and personal control in order to reinforce the FCSs' intentions (6).

Data analysis

Quantitative data analysis

Descriptive statistics were calculated. To describe the differences between the HI group and LI group of intentions to participate in both human-resource development and training

FRAILTY CHECKUP SUPPORTERS' INTENTIONS

Table 3

FCS's experience and FCS's intention of participation human resource development and training activities (n=45)

FCS's experience variables	FCSs' intention				P-value
	Total (n=45)		Low intention (n = 34)	High intention (n = 11)	
	n (%) Mean ± SD	Min- Max	n (%) Mean ± SD	n (%) Mean ± SD	
How many times did you participate Frailty check-up as a FCS?	5.84 ± 6.24	0- 36	5.03 ± 4.25	8.18 ± 9.98	.151 ^a
Do you find activities as a FCS rewarding?					
Strongly agree	16 (35.6)		10 (29.4)	6 (54.5)	.243 ^b
Agree	26 (57.8)		21 (61.8)	5 (45.5)	
Nonetheless	3 (6.7)		3 (8.8)	0 (0.0)	
Disagree	0 (0.0)		0 (0.0)	0 (0.0)	
Strongly disagree	0 (0.0)		0 (0.0)	0 (0.0)	
Do you want to continue the FCS's activity?					
Strongly agree	16 (35.6)		9 (26.5)	7 (63.6)	.131 ^b
Agree	24 (53.3)		20 (58.8)	4 (36.4)	
Nonetheless	4 (8.9)		4 (11.8)	0 (0.0)	
Disagree	0 (0.0)		0 (0.0)	0 (0.0)	
Strongly disagree	1 (2.2)		1 (2.9)	0 (0.0)	
Do you newly aware of own's health status and social activity through the FCS's activity?					
Yes	41 (91.1)		31 (93.9)	10 (90.9)	1.000 ^c
No	3 (6.7)		2 (6.1)	1 (9.1)	
Do you change your daily activity through the FCS's activity					
Yes	30 (66.7)		21 (63.6)	9 (100.0)	.041 ^c
No	12 (26.7)		12 (36.4)	0 (0.0)	
Do you change how to come in contact with your family and acquaintance around you through the FCS's activity?					
Yes	29 (64.4)		21 (63.6)	8 (72.7)	.722 ^c
No	15 (33.3)		12 (36.4)	3 (27.3)	
Do you change your mind of contributing to the community through the FCS's activity?					
Yes	29 (64.4)		18 (60.0)	11 (100.0)	.018 ^c
No	12 (26.7)		12 (40.0)	0 (0.0)	

n = 45. Missing data were not included; a. unpaired t-test, b. chi square test, c) fisher's exact test; Abbreviation: FCS means Frailty Checkup Supporter

activities, the socio-demographic variables, and variables concerning perceptions and experiences of FCS activities were examined for each group by using unpaired t-tests for continuous variables and χ^2 test or fisher's exact test for categorical variables. P values < 0.05 were considered to be statistically significant. Quantitative data were analyzed using SPSS Statistics 23.0 (SPSS Inc., Chicago, IL, USA).

Qualitative data analysis

Further, to interpret the quantitative results, we used the participants' free descriptions of how their perceptions and lifestyles had changed through participating in FCS activities. For qualitative analysis, we applied a content-analysis method

(8) and entered participants' descriptions and other quantitative data electronically in a Microsoft Excel worksheet. All data were coded once, focusing on FCSs' concrete and experienced changes, and coded data were categorized and named using similar descriptions. Finally, the findings of the qualitative results were presented to and discussed with the other researchers to enhance validity of the data analysis.

Ethical considerations

This study was reviewed and approved by the Ethics Committee at The University of Tokyo (Approval number: 15-104) before it was initiated. The respondents were informed that their participation was voluntary, that they were free to

withdraw, and that their answers would be confidential. We regarded the return of the questionnaire as indicative of the participant's consent.

Results

Response rate and participants' characteristics

Of the 59 FCSs approached, 48 returned questionnaires (response rate: 81.4%). Of these 48, 3 who did not answer the questions regarding the dependent variable were withdrawn from analysis. Consequently, the valid response rate was 76.3% (Figure 1). The characteristics of the study participants are shown in Table 1. As for socio-demographic variables, participation in community activities, and number of FCS participants, there were no significant differences among municipalities; similarly, a significant difference in the proportion of HI participants was not observed among municipalities.

Of the 45 valid responses, 11 FCSs (22.9%) reported willingness to participate in such activities; in addition, 34 FCSs (77.1%) replied that they did not intend to participate in human-resource development or training activities.

Relationship between FCSs' characteristics and intentions

Table 2 and Table 3 show the results of the bivariate analyses. Socio-demographic characteristics and participation in community activities were found not to be significantly different between the LI and HI group. Meanwhile, the number of participants who reported a change in their daily activities ($p = 0.041$) and who changed their minds about contributing to the community through the FCSs' activities ($p = 0.018$) were significantly more in the HI than the LI group. Changes in FCSs' daily activities and perspectives of contributing to the community

Free description about the changes in perceptions and lifestyles as a consequence of participating in FCS activities were analyzed qualitatively. FCSs who changed their daily activities and perspectives about contributing to the community described positive changes in both the groups. Meanwhile, FCSs who did not change their daily activities and perspectives about contributing to the community described their reason only in the LI group. The quantitative analysis results detailed below adhere to the following rules: each category is shown using alphanumeric characters, each subcategory is shown using italics, and a description (i.e., a code) is presented in bold letters at the end of the sentence (city, group).

Positive changes in daily activities:

FCSs in both HI and LI group became engaging in activities of frailty prevention and developed positive thinking to encourage their participation in new activities. And also, FCSs expanded not only frailty checkup activities but also community organization activities.

Since participating in FCS activities, I have begun to do squats in addition to walking every day so as to strengthen

muscles, a weakness in which could cause walking difficulties in the future (B, LI)

As I do not worry much about anything; well, I spend less time feeling nervous, I have begun to think about what I should and could do for the community (C, HI)

I have become a leader of a senior club certified by my municipality (A, HI)

Positive change in mind regarding contributing to the community

FCSs in both groups sought to contribute to improving community health by providing frailty checkups for community residents. FCSs in LI group promoted and developed other community activities.

I have always wanted to contribute to the community, and I now believe I can make a significant contribution to community health (A, LI)

By performing frailty checkups on as many community residents as possible, I hope to contribute to improving the health of elderly people through frailty prevention (C, HI)

I successfully affiliated frailty checkups with the other four group activities provided by community residents in my area (B, HI)

No change in daily activities and in mind regarding contributing to the community only in LI group

Representative descriptions are shown as below;

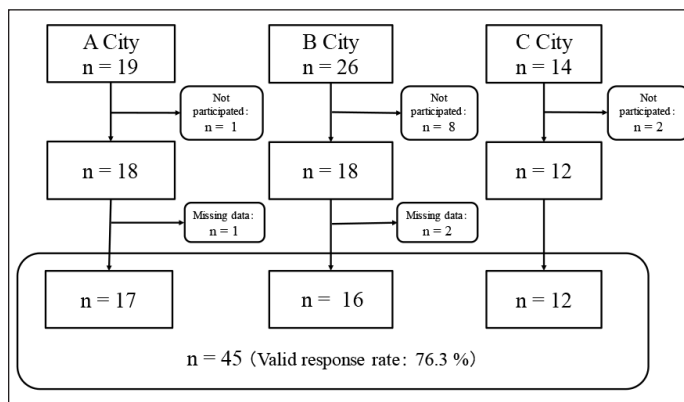
I did not change through the FCSs' activities, I'm just continuing to be conscious (B, LI)

I don't know if I can say change (A, LI)

I have no capacity to begin any more activities in the community (C, LI)

Figure 1

Flow chart of study participants



Discussion

Factors associated with FCSs' intentions

FCSs' intentions to become leaders among them were determined to be associated with factors identified through the results of a quantitative and qualitative data analysis. FCSs who changed their daily activities and their perceptions regarding

FRAILTY CHECKUP SUPPORTERS' INTENTIONS

contributing to the community showed a significantly higher intention to become leaders than those who did not make such changes. The results of the qualitative analysis showed that the FCSs who changed benefitted from FCS activities. For example, FCSs showed improved attention to their own health. As mentioned above, a previous study regarding positive psychology revealed that successful experiences and positive feedback broaden one's mind and activities (9). Referring to the theory of planned behavior (6), such positive mental traits (i.e., perceived control and self-efficacy) might have enhanced the FCSs' intentions to become leaders. Furthermore, several FCSs changed their minds regarding contributing to the community as a result of performing the FCS activities. The quantitative results showed no significant differences regarding the number of participating activities between the HI and LI groups; however, an FCS in the LI group described that he had no capacity to begin any more activities in the community which was why he did not change his mind of contributing to the community. FCSs who changed realized that they would like to contribute to frailty prevention in order to improve community health. This change in mindset might have also increased FCSs' intention to become leaders.

Implications for future practice

From a sustainability viewpoint, the authors would like to make some suggestions regarding frailty checkups and other health-related programs or volunteer activities provided by community residents or municipalities, because maintaining such programs is an important aspect of community-based activities. Frailty checkups encourage participants to recognize their own frailty status and provide suggestions regarding preventing frailty, focusing on the three domains of nutrition, physical activity, and social participation. The qualitative analysis in this study showed that when FCSs conduct frailty checkups, the FCSs also obtain opportunities to consider their own frailty and prevention. Thus, such programs can provide useful information for all concerned.

Limitations

While the valid response rate was 81.4%, the generalizability of this study's findings is questionable, as it was not only conducted in three municipalities but also specific program, "frailty checkup". Further, the respondents may have been a biased population interested in community-based activities, because some of them reported being engaged in two or more additional community activities (i.e., not as an FCSs). As this study was cross-sectional and did not sufficiently consider potential factors, causality cannot be inferred in any of our results. Additionally, frailty checkups are not provided by the

same individuals each time; thus, there is a need for cooperation and consideration of group dynamics. Since each FCS might have different motivations to participate in FCS activities, future research is needed to examine the relationship among FCSs' motivation, activity contents, and their desire to continue as FCSs. Continuation of FCS activity should be assessed longitudinally in the future.

Conclusions

This study examined FCSs' intentions to participate in human-resource development and training activities (i.e., assume leadership roles), and also examined factors related to their intentions. Consequently, FCSs who experienced positive changes in their daily activities and their willingness to contribute to the community, indicated an intention to become a leader. The results of this study might encourage FCSs to participate in training and guidance activities, as they have positive experiences and receive recognition that can be obtained through participation in such activities.

Funding: This work was supported by Health and Labour Sciences Research Grants for Research (No. 16H06763).

Acknowledgements: The authors would like to thank all of the study participants, cooperative municipalities, and excellence of frailty prevention research team members. This work was supported by Health and Labour Sciences Research Grants for Research (No. 16H06763).

Conflict of interest: None declared by the Authors.

Ethical standards: The procedures of this study followed the ethical standards of the responsible committee on human experimentation and the Helsinki Declaration as revised in 2000.

References

1. Ishii S, Tanaka T, Shibasaki K, et al. Development of a simple screening test for sarcopenia in older adults. *Geriatr Gerontol Int* 2014;14(S1):93-101.
2. Johnson HH, Glascoff MA, Lovelace K, Bibeau DL, Tyler ET. Assessment of public health educator practice: health educator responsibilities. *Health Promot Pract* 2005;6(1):89-96.
3. Witten K, Blakely T, Bagheri N, et al. Neighborhood built environment and transport and leisure physical activity: findings using objective exposure and outcome measures in New Zealand. *Environ Health Perspect* 2012;120(7):971-977.
4. Gerteis M, Winston J, Stanton F, et al. *Reinventing aging: baby boomers and civic engagement*. Cambridge, Mass: Harvard School of Public Health-MetLife Foundation Initiative on Retirement and Civic Engagement 2004.
5. Martinson M, Minkler M. Civic engagement and older adults: a critical perspective. *Gerontologist* 2006;46(3):318-324.
6. Ajzen I. The theory of planned behaviour: reactions and reflections. *Psychol Health* 2011;26:1113-1127.
7. Ivankova NV, Creswell JW, Stick SL. Using mixed-methods sequential explanatory design: From theory to practice. *Field methods* 2006;18(1):3-20.
8. Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res* 2005;15(9):1277-1288.
9. Fredrickson BL. The role of positive emotions in positive psychology. The broaden-and-build theory of positive emotions. *Am Psychol* 2001;56(3):218-226.