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〔Report〕

Study on subjective sense of well-being in elderly people living alone in the northern Tohoku region

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Abstract

Elderly people are prone to impair the functions of daily living that require nursing care. If they are vulnerable to participate in society, there is a risk that living alone will become an unfeasible risk for them. To support elderly people living alone to participate in society, local governments have been taking initiatives to prevent them from becoming housebound, but that in these initiatives are limited. Along with local social welfare councils and welfare committees, student volunteers will contribute to effective community activities to maintain a healthy life expectancy for elderly people. We conducted a health education program and surveyed and analyzed the health status and subjective well-being of elderly people living alone in the study area. Regarding subjective health, 81.1% of participants were currently healthy, as the results suggested that participants were aware of a decline in their mental and physical functioning, were interested in healthcare and health. and as results, they were maintaining their living-alone lifestyle and think how to deal with health matters in their own way.

Key words：Elderly people living alone, Participation in society, Subjective sense of well-being, International Classification of Functioning, Health literacy

1. Introduction

In Japan, the percentage of elderly people living alone is increasing, and the percentage of the population aged 65 and over is 13.3% for men and 21.1% for women. It is estimated that more than 70% of households consist of only one person or a couple [1)]. Many elderly people living in local communities have underlying diseases and are at risk of developing diseases such as dementia or locomotor disability, leading them to require nursing care to prevent them from becoming housebound. In addition, since enthusiasm for participating in social activities with age tends to decrease, there is concern of a "frailty domino effect," in which social frailty triggers progression in frailty relating to various functions of daily life. In particular, elderly people living alone have fewer opportunities for social participation than those living with others, and they have a higher risk of suffering falls or developing dementia [2, 3)]. For this reason, it is important to support social participation for elderly people living alone and prevent them from becoming housebound.

Knowledge about and attitudes about health also have a large influence on functions of daily life. Health literacy (HL) is a cognitive and social skill described by the World Health Organization (WHO), as comprising the ability to select and use health information and the maintenance of motivation for healthy habits [4–7)]. HL is reported to be related to a decrease in physical abilities and to depressed states, and to affect the functions of daily life.

In recent years, the population of generations providing support for organizational social capital has been decreasing, and therefore the participation of elderly people in society is expected to prevent the need for nursing care and to maintain and improve health in these elderly people, as well as to serve as a pillar for promoting health in the community [8)]. We consider that it is necessary to find out about the living conditions of elderly people living alone and their attitudes towards living alone, and to develop effective methods for intervention and assessment to improve HL in a way that is compatible with the characteristics

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of these individuals, In this study, we investigated the participation status, happiness and behavior of elderly people living alone in the community, and we obtained suggestions for developing a health education program by student volunteers necessary for maintaining living functions.

2. Method

1) Participants

(1) The area surveyed was a core city in the Tohoku region (in where 32.3% of the population is elderly), and where initiatives are carried out to prevent elderly people living alone from becoming housebound, for example by the local council of social welfare [9]. In advance of recruiting participant for the survey of elderly people living alone, we explained the research overall at a periodically-held meeting of a community activities organization, to further understanding and knowledge of the research activities in the area. Next, we recruited survey participant by distributing pamphlets to recruit research participant, including the contact information of the researchers, together with the community circular. Participants were given self-administered questionnaires at the beginning of the health education session when they participated in the health education session, which were collected by having them leave the questionnaire at the end of the session [10, 11]. When Participants could not join to the session, the researchers visited at their homes and interviewed according to the survey guide.

(2) Design of research: Research by mixed method, fact-finding survey using questionnaires and qualitative survey by interview. The survey period was from August 2017 to March 2019.

2) Items surveyed

(1) Basic attributes: (gender/age bracket, Participation period), (2) Sense of well-being (4-point scale)/awareness of physical status, (3)Health literacy and objective health-related items: For example, asking if the subjects engaged in health actions and asked about their current body weight, blood pressure, and physical condition, (4) Reasons for participating in the health education session, (5)Attitude toward living alone: We collected the subjects' unguided speech as raw data using interview guides to meet the conditions, taking care not to interrupt the flow of the subjects' speech or insert leading questions. out of consideration for the subjects' level of fatigue, we allotted 30 to 60 minutes per interview, and with the subjects' permission, we took field notes and/or recorded the interviews using IC recorders. The subjects spoke freely in their own words about their current lifestyle, health, or lifestyle concerns [12, 13]. Field notes were taken to gather information about the activities of daily living and HL of the subjects, which were described with attention to context and expressions. For objectivity, both the researchers and student volunteers made records of the interviews.

3) Data management: the collected questionnaire papers were anonymized, data entry was performed, and the data were managed.

3. Analysis

Statistics were tabulated for all items, and the basic attributes and factors of the subjects were analyzed using the chi squared test or Fisher's exact test ($p < 0.05$). IBM SPSS Statistics version 20 (IBM SPSS Statistics for Windows, IBM Corp., Armonk, NY) was used for analysis. The interview data were categorized according to the content by guidance analysis based on the context and keywords. Text mining was also performed using KH Coder (Japanese version) [14, 15]. Frequent words were identified by calculating the Jaccard similarity coefficient to increase reliability and reasonableness. With reference to field notes and verbatim record, groups of frequent words and sentences were compared to find co-occurrence relationships and their meanings.

4. Ethical Consideration

Before the study, written informed consent including the objective, nature of this research, and that personal Information were fully protected, and we explained to the research subject that I could decline at any time through explanatory notes and writing. At the time of the research, oral and written explanations were given again, and the subjects could sign consent forms. Data analysis was performed on personal computers not connected to the internet, and paper media and IC recorder data were stored under conditions in lockable cabinets. The student volunteers had completed an e-learning course on research ethics from the Japan

Society for the Promotion of Science and received an explanation of this research and prior education about ethical considerations. This research was approved by the ethics committee of University of H (approval number 1538, date of approval: July 5, 2017).

5. Results

• 1) Actual conditions of the participants

(1) Basic attributes: The subjects of the analysis were 55 participants, the most common age bracket among the participants were 80 to 89 years old (52.7%), and the number of years of participating in luncheons ranged from 1 to 20 years (20.0% for ≥10 years). (2) Subjective sense of well-being/awareness of physical status: Regarding subjective sense of well-being, 45 participants (81.1%) responded that they were currently in good health. Chi-square test or Fisher's exact test showed no significant difference between groups. ($p < 0.05$) (Table 1) (3) HL and objective health-related items: nine participants (16.4%) did not know their own physical status, such as their blood pressure or body weight. Elderly people who answered that they "more frequently go out" and "have close friends" were more likely to feel happy to be living. (4) Reasons for participating in the health education session: 43 participants (76.8%) joined in the health education session at the invitation of social workers, and 19 participants (34.5%) joined with the expectation of meeting students and with the hope of obtaining health information and learning how to maintain or improve their health. (Fig. 1).

Table 1. Basic attributes of the residents who join the session

n=55

Item		Men	%	Women	%	Total	%	p
Age (years)	total	9	16.4	46	83.6	55		
	Under 80	2	22.2	22	47.8	24	43.6	
	≥80	5	55.6	24	52.2	29	52.7	-
	≥90	2	22.2	0		2	3.6	
Participation period (years)	Under 5	4	44.4	24	52.2	28	50.9	
	≥5	2	22.2	14	30.4	16	29.0	
	≥10	0		7	15.2	7	12.7	-
	≥15	2	22.2	1	2.2	3	5.5	
	≥20	1	11.2	0		1	18.2	
Sense of well-being	Very healthy	0		6	13.0	6	11.0	
	Fairly healthy	8	88.9	31	67.4	39	70.1	
	Not very healthy	1	11.1	9	19.6	10	18.2	-
	Unhealthy	0		0		0	0	
Awareness of physical status	Yes	8	88.9	38	82.6	46	83.6	-
	No	1	11.1	8	17.4	9	16.4	

$\chi 2$ tests (Yates' continuity correction)
Fisher's exact test; *$p < 0.05$

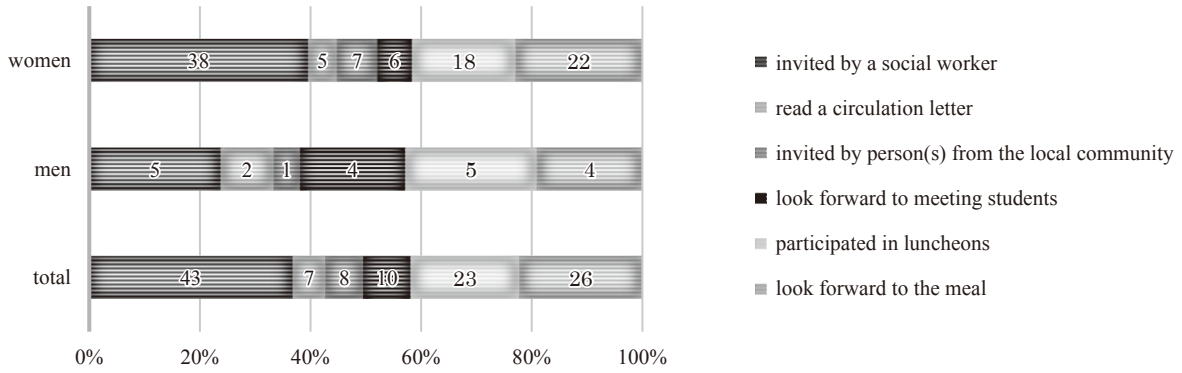

Fig. 1. Reasons for participating in the health education session.

2) Attitudes of non-participants about living alone

The subjects of the analysis were 7participants. In the 284 sentences found from the analyzed data, the total number of extracted words was 1,751, and the number of unique words was 798 (subjects A to G).

(1) Actual conditions of the residents who did not join the session (Table 2). (i) Activities of daily living and HL: for certain reasons, such as experiencing failure due to impairment of their own activities of daily living, the subjects were not overconfident about maintaining their health and visited the clinic where their regular physician worked or a trusted specialist hospital when necessary. One subject (Subject C) did not want to rely on medical care if possible because of her experience, using her television for reference instead. Another subject used a day service to take baths (Subject F). (ii) Attitudes about living alone: Restrictions on activities because of living alone caused anxiety or difficulties for some subjects when they went outside the home, such as to throw garbage away, go shopping in winter, or to clear snow. They were aware of their risk of falling, and when leaving the house when it was snowing, they called family members.

(2) Hopes and concerns about continuing with daily life

There were seven categories obtained from the relationships between words (Table 3). (i) About medical care and health: Words; *Relating to maintaining health and receiving healthcare, such as "physician, ask" and "drink/take, medicine."* (ii) About daily life: Words; *Relating to information exchange or interrelationships, such as "health, television, watch, person, talk and bath."* (iii) About mental and physical functions and activities: Words; *Relating to motor function and activities, etc*. (iv) About connections with the local community: Words; *Relating to relationships between residents, such as "person, neighborhood, and good."* (v) About connections with family: Words; *Relating to family relations, such as "daughter, son, go" and "nursing care and reside."* (vi) About the area: Words; *Relating to living in the regional organization, such as "house, come, husband, and familiar land."* (vii) About social participation and socializing: Words; *Relating to horizontal connections, such as "friend, talk, reside, and together."*

Discussion

In the present research, we attempted to understand the lifestyles and HL of subjects according to their thoughts about living alone. The present study results showed that the Sense of well-being of the elderly was "Very healthy" in 11.0% and "Fairly healthy" in 70.1%, for a total of 81.1%. The participants expected to obtain health information and learn how to maintain or improve their health. These results suggested that holding health education sessions is a social factor in HL improvement.

The results also suggested that it would enable elderly people; however, the residents who did not join the session told that they did not want to leave the house very often and that interacting with other people would be a burden. For those living alone, whose numbers will continue to increase in the future, to live in local

Table 2. Actual conditions of the residents who do not join the session

Subject	Age (yr)	i (yr)	Main physical symptoms	Social participation and Friendship (key word)
A	80	26	Thyroid function	Hot springs / telephone
B	80	23	Angina	Pool
C	65	32	High blood pressure	Visit Tea only Talking
D	80	30	Numbness in the lower limbs	Exchange of flowers
E	70	26	Numbness in the lower limbs	Pickles
F	80	31	Rheumatoid	Day service
G	90	22	Cervical numbness	Overnight

i: Residence years

Table 3. Hopes and concerns about continuing lifestyles

n = 7

Theme	Hopes discussed	Concerns discussed
1 Medical care and health	I take action early and visit a physician quickly. I take care of my health myself.	I don't want to depend on medicine or hospitals too much. Physicians and nurses are busy and don't listen.
2 Daily life	I like to be alone I get information from the TV or radio.	I feel lonely. I feel kind of lonely, like I've done everything I can.
3 Mental and physical function and activities	I've never had a serious illness. Since it's dangerous being on my own, I want to enjoy exercising.	If I fell down and was hospitalized, it'd be the end of everything. Because I'm on my own, I think, what if something happened?
4 Connections with the local community	I take part when necessary. As long as people say something to me, that's enough.	I've lived here a long time. but no-one visits any more. I try to make sure people don't feel uncomfortable.
5 Connections with family	I don't want to trouble my son or daughter. I want to live without relying on others too much.	I can't be of any use to my family. I want them to visit so I can see them from time to time.
6 The area	It's my home, so I want to stay here forever. I want to continue the relationships I've had up to now.	I can't work like I have before. Recently I don't know what they're doing.
7 Social participation and socializing	It's really fun having friends I've known for decades. While I'm healthy, I want to live by helping out others and being helped in return.	I don't take part because I don't want to go outside. I can't make new friends.

Table 4. Frequencies of words extracted from the subjects' unguided speech

Extracted words	Frequency	Extracted words	Frequency
Person (n)	93	Friend (n)	25
Husband (n)	68	Take bath (v)	24
Myself (n)	61	Make (v)	24
House (n)	58	Eat (v)	22
Go (v)	50	Live alone (v)	20
take medicine (v)	44	Son/Daughter (n)	16
Come (v)	42	Die (v)	16
Reside (v)	38	Good (a)	16
Now (n)	36	Television (n)	14
listen/ask (v)	32	Nursing care (n)	14
Physician (n)	31	Neighborhood (n)	13
Medicine (n)	30	Health (n)	10

Parts of speech of extracted words
n=noun, a=adjective, v=verb

communities as they wish, it is important not only for local organizations to conduct initiatives, but also to provide support to local residents in the form of HL education [16, 17]. Regarding the development of activities for elderly people living alone, we would like to develop a program based on the data from this study and the suggestions from the participants, with reference to the Long-term Care Prevention Manual that has been revised for the first time in 10 years [18]. in the future, we think that flexible approaches, such as those providing not only meeting-based health education but also a visit-based program, can increase the opportunities to achieve and improve functional HL and to maintain and increase activities of daily living.

Conclusion

In this research, we attempted to understand the lifestyles and HL of subjects according to their thoughts about living alone. The subjects chose to live in an area they were used to and wished to continue living there. We intend to continue surveying elderly people and develop a program for effective intervention and assessment to improve HL, support social participation

in a way that is suited to the characteristics of the people targeted, and provide strategies that contribute to supporting health, including preventing individuals from becoming homebound. However, the results of data categorization did not make full use of the context of the subjects' verbal comments. In addition, because the scope of this research was limited to women in one area, these results may not be representative of other areas. It will be necessary to refine the method of analysis and conduct continuous comparisons by surveying other groups, such as elderly men living alone or people with different lifestyles.

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Conflicts of Interest

There are no conflicts of interest to disclose.

Author's contribution

The research supervisor was Izumi Matsuo. Yoshiko Nishizawa considered the educational content. Yumiko Fukuoka was in charge of coordination with district activities and consideration of results, and Kenya Ishida was in charge of analysis of interview data.

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北東北地方のひとり暮らし高齢者の主観的健康感に関する調査

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要　旨

高齢者は日常生活機能が低下して要介護状態に陥りやすく、社会参加が困難なひとり暮らし高齢者は、独居生活を維持できなくなる恐れがある。地方自治体では、ひとり暮らし高齢者の社会参加を支援するため、閉じこもり予防事業に取り組んでいるものの、こうした取り組みへの参加者は限定的である。高齢者の健康寿命を維持するための効果的な地域活動に貢献するために、社会福祉協議会・民生委員と共に学生ボランティアによる健康教育プログラムを実施し、対象であるひとり暮らし高齢者の健康状態や主観的健康感を調査した。その結果、対象者の81.1％が健康を自覚すると同時に心身機能の低下を認識し、医療や健康に関心を持っていると回答し、ひとり暮らしやライフスタイルを維持し、自分らしい健康への対処を模索していることが示唆された。

キーワード：
ひとり暮らし高齢者　社会参加　主観的健康感　国際生活機能分類（ICF）　ヘルスリテラシー（HL）