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The word 'Human Services' is used when someone faces social challenges for 'help' or 'support' people.

'Human Services' is expanding rapidly its area such as field of social welfare, medical, nursing, clinical psychology related mental care, health promotion for aging society, assist family for infant and child care, special supporting education corresponding to vocational education, education support sector corresponding to era of lifelong learning and fluidization of employment corresponding to the area of career development.

Human Services area, if its research methods are scientific, is internationally accepted and greater development is expected by collaborative research which is performed by multinational and multi-profession.

This journal aims to contribute to the progress and development of Asian Human Services.

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ORIGINAL ARTICLE

Factors Related to Japanese Nurses' Tolerance Toward Indonesian Nurse Trainees

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ABSTRACT

Objectives: This study aimed to clarify factors related to Japanese nurses' tolerance toward Indonesian nurse trainees.

Methods: We conducted a self-administered questionnaire survey from May 21, 2015 to June 13, 2015 targeting Japanese nurses in a hospital accepting Indonesian nurse trainees.

Results: We received responses from 97 of the 109 participants (collection rate: 89%, valid response rate: 100%). "Length of education," "overseas travel experience," "number of countries traveled," "length of stay," and "foreign language learning experience" were significantly related to tolerance and this supported results from previous research targeting residents. Foreign language learning experience had a significantly greater influence on increasing tolerance compared to agreement with policies on introducing foreign nurses. These are important findings when considering future nurse education and smooth cooperation with foreign nurses.

Conclusion: Factors related to tolerance were length of education and experience with different cultures.

<Key-words>

Economic Partnership Agreement (EPA), foreign nurse, indonesian, nurse trainee, tolerance

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I. Background

Cross-border movement of nurses has increased sharply since the 1990s with economic globalization, declining birthrates, and aging populations in developed countries. According to an Organization for Economic Cooperation and Development (OECD) report, the average ratio of foreign-born nurses working in OECD countries rose from 11.0% in 2000 to 14.5% in 2010. The number of immigrant doctors and nurses in OECD countries increased 84% between 2000 and 2010 (OECD, 2015). Specifically, a marked tendency exists for moves from developing nations to industrialized nations (Yamamoto & Higuchi, 2015; WHO, 2006).

With the signing of the bilateral Economic Partnership Agreement (EPA), Japan also began accepting foreign nurse trainees from Indonesia in 2008, the Philippines in 2009, and Vietnam in 2014. One hospital facility in prefecture A began accepting Indonesian nurse trainees in 2009. Apart from the EPA, there are annually increasing numbers of foreign nurses who meet the fixed conditions outlined by the Ministry of Health, Labor, and Welfare, take the Japanese national nursing exam, and work in Japan (Bu & Aoyagi, 2015).

Although no research thus far exists on Japanese nurses working alongside foreign nurses in Japan, research on accepting foreign nurses has begun in Japan after the EPA signing. However, most of this research was on the original countries' nursing education and nursing systems, and were surveys of Japanese nurses and nursing students on the positives and negatives of accepting foreign nurses.

Writing about Japan's acceptance of foreigners, Kozakai states that although Japan welcomes information and concepts from different cultures, it also rejects the actual people who create and bring those things (Kozakai, 1996). Previous research has also shown that most nurses have negative feelings toward foreign nurses (Kawaguchi, 2009; Takahashi, 2014).

Considering Japan's declining birthrate, aging population, and nurse shortage, as well as the global trend of cross-border nurse expansion, it is predicted that opportunities to work alongside foreign nurses will increase in the future. Therefore, it is essential to work together to minimize friction between those from different cultural backgrounds. Yasuda reports that tolerance of people who are different is important in promoting cooperation, building trust, and generating smooth business conduct with foreigners when accepting foreign workers of different cultural backgrounds into the Japanese workplace (Yasuda, 2009). Tolerance among people in the accepting majority is thought to lead to intercultural adjustment for foreigners and understanding on both sides (Adachi, 2008).

The relationships between tolerance of foreigners and "age," "academic background," and "experience with foreigners and different cultures" have been widely reported within the domestic and foreign sociology and social psychology fields. Tolerance of foreigners is

generally greater the younger someone is (Tanabe, 2001; Matsumoto, 2004; Hirota, Machimura, Tajima et al., 2006; Mori, 2006; Ito, 2011; Nukaga, 2006; Ohtsuki, 2006; Mazumi, 2015; Bettelheim, 1949; Quillian, 1995), the longer the length of education (Tanabe, 2001; Ito, 2011; Nukaga, 2006; Ohtsuki, 2006; Mazumi, 2015; Bettelheim, 1949; Quillian, 1995; Morioka, 2000), and the more contact someone has with foreigners and different cultures (Tanabe, 2001; Matsumoto, 2004; Hirota, Machimura, Tajima et al., 2006; Mori, 2006; Ito, 2011; Nukaga, 2006; Mazumi, 2015; Ohtsuki, 2007; Hamada, 2008; Nagayoshi, 2008; Lee, 2009; Allport, 1954; Cook, 1978; Brown, 1995). Furthermore, women are more tolerant of people with different traits compared to men and have less resistance to cooperating with foreigners (Yasuda, 2009). However, in the nursing field, a lack of research exists regarding the tolerance of foreign nurses and the relationship with personal attributes that have been outlined in previous studies.

Psychology research on acceptance when a group takes in a new member suggests that the stronger the identification with the existing group, the greater the tolerance of the new member (Uemura, 2001). However, no research currently addresses this relationship in facilities accepting foreign nurses.

Policies on accepting foreign nurses require careful discussion as a nation, and future studies on policy evaluation and education content are needed. At the same time, however, in order for foreign nurses and Japanese nurses to work alongside each other while promoting mutual adaptation and understanding, Japanese nurses' tolerance of individual foreign nurses is a necessary requirement when considering future cooperation with foreign nurses.

Therefore, our study aim is to clarify the factors related to Japanese nurses' tolerance toward Indonesian nurse trainees.

In considering the impact of differences in countries' culture and religions on Japanese nurses' tolerance, we limited this study to Indonesian nurse trainees at one facility in order to eliminate the influence of accepting facilities' conditions and regional characteristics.

II. Operational Definitions of Terms

Tolerance: Showing an understanding of Indonesian nurse trainees; compromises on the receiving side; and recognizing, accepting, and affirming differences when one's facility accepts Indonesian nurse trainees.

Cooperation: Working together with Indonesian nurse trainees in the same ward.

Cooperation experience: Experience working together with Indonesian nurse trainees in the same ward.

Desire to cooperate: The desire to work together with Indonesian nurse trainees in the same ward.

New members: Indonesian nurse trainees who are newly arrived and able to communicate in Japanese.

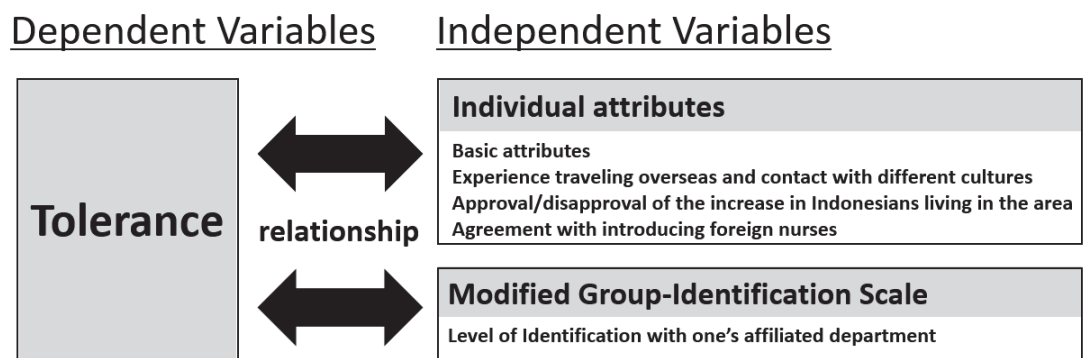
III. Methods

1. Research Design

The design was cross-sectional quantitative research using a self-administered questionnaire survey.

2. Conceptual Diagram

This study's conceptual diagram is shown in Figure 1. A relationship was assumed between the tolerance scale from previous research (see 3. Survey Content: (2) Tolerance for Indonesian Nurse Trainees among Japanese Nurses), and individual traits (see 3. Survey Content: (1) Participants' Individual Characteristics), and the tolerance scale and the modified version of the group identification scale (see 3. Survey Content: (3) Level of Identification with the Group).



<Figure 1> Concept Diagram

3. Survey Content

1) Participants' Individual Characteristics

For basic attributes, we asked about age, sex, occupation, nursing education institution from which the participant graduated, years of experience as a nurse, department, job title, years of experience working cooperatively, and the desire to cooperate. For experience traveling overseas and situations involving different cultures, we asked about experience traveling overseas; number of foreign friends, excluding Indonesian nurse trainees; appreciation for foreign culture; and academic background studying foreign languages outside of school education. Additionally, we surveyed approval or disapproval of the increase in Indonesian people living in the area and level of approval with the introduction of foreign nurses. Approval levels were divided into approval with Japanese policy and personal views, and we requested responses on a 5-point scale from 1

(Disapproval) to 5 (Approval).

2) Tolerance for Indonesian Nurse Trainees among Japanese Nurses

Japanese nurses' tolerance for Indonesian nurse trainees was measured using the "Tolerance for New Members Scale" (hereafter, tolerance scale). This scale, developed by Uemura (Uemura, 2001) scores how much one is able to accept a new colleague into one's group in interactive situations with others. It measures the receiving side's degree of tolerance for new members and whether differences exist between people who kindly accept new members into an organization or group and people who exclude new members and treat them as outcasts. It comprises 12 items on a 5-point scale; the higher the average score, the higher the level of tolerance. Its reliability was ensured in the previous study (Uemura, 2001).

Note that when we contacted the developers as to whether it was assumed that new members were foreigners and not Japanese, we found that since interpersonal attitudes and reactions were being measured, the scale can be used provided there is no language barrier that prevents someone from being approachable. The EPA nurse trainees visiting Japan received an intensive one-year Japanese language education that combined the time before and after they arrived in Japan, and they can hold daily conversations in Japanese. Therefore, we determined this scale could be used.

3) Level of Identification with the Group

The level of group identification was measured using the "Modified Version of the Group-Identification Scale." This scale is Uemura's modified version (Uemura, 2001) of the "Group-Identification Scale" developed by Karasawa (Karasawa, 1991). To measure the participants' identification with voluntary groups to which they actually belong, Uemura modified the item content deemed inappropriate and wrote instruction sentences. This modified version comprises 7 items on a 7-point scale; the higher the average score, the higher the identification with the group. Its reliability was also ensured in the previous study (Uemura, 2001).

In this study, groups to which the participants presently belong are defined as "affiliated facilities" in the instruction sentences, and responses were sought accordingly.

4. Survey Method

1) Target Facility and Participants

The target facility was one hospital facility, which accepts Indonesian nurse trainees. Participants were 109 Japanese nurses, licensed practical nurses, public health nurses, and midwives (hereafter, nursing staff) working at the facility.

The facility has 111 beds (105 general beds, 6 sub-acute-stage beds); there is a 7-to-1 patient-nurse ratio, and the nursing method is a combination of primary nursing and team nursing. Since 2009, two Indonesian nurse trainees have been accepted each year,

and, in May 2015, when we requested this questionnaire, the facility was in its sixth year of accepting Indonesian nurses.

2) Data Collection Methods

An overview was provided to the facility's nursing director, hospital president, and hospital director; we received written consent. Through the nursing director, we distributed research cooperation request documents to the research participants along with the self-administered questionnaire (hereafter, questionnaire). It was agreed that responses would be made by general mail and questionnaires would be posted.

3) Data Collection Period

May 21, 2015 to June 13, 2015

5. Analysis Methods

Univariate analysis was performed to establish the relationship between the tolerance scale measurement, which is the starting dependent variable, and each independent variable. During analysis, we performed a Shapiro-Wilk normality test, and the modified version of the group identity scale and tolerance scale had normal distribution; all others had non-normal distribution. For the normal-distribution tolerance scale, the high-score group was defined as the group with higher-than-average scores and the low-score group was defined as the group with lower-than-average scores. The Mann-Whitney U test was used to test for the difference in bivariate medians with non-normal distribution. For bivariate correlation analysis, Spearman rank correlation coefficient was used. For the association between the two groups of nominal scales, a chi-squared independence test was used.

Next, to examine the influence of factors associated with the tolerance scale, multivariate analysis was performed using variables found to be related in the univariate analysis as independent variables.

IBM SPSS Statistics 23 was used for all analysis. The significance level was 5% and the confidence interval was 95%.

6. Ethical Considerations

This study was performed after obtaining approval from the Saga University Faculty of Medicine Ethics Committee (Approval number: 27-8). It was explained in writing that participants could choose to participate, there were no disadvantages to refusing to participate, participation was anonymous and individuals would not be identified, and this study was not an evaluation of individual nurses or medical institutions. Mailing of the questionnaire was considered consent.

IV. Results

We received responses from 97 out of the 109 participants (response rate: 89.0%, valid response rate: 100%); 97 valid responses were used for analysis.

1. Overview of Participants

The participant characteristics are shown in Table 1.

1) Basic Attributes

Ages ranged from 20 to 63 years with a median of 35.0 years old; the interquartile range (IQR) was 27.0–44.5 years old. A total of 88.7% of the participants were female and 11.3% were male; 78.4% were nurses, 19.6% were licensed practical nurses, 2.1% were public health nurses working in medical examination departments, and 0% midwives. A total of 87.5% received their basic nursing education from a vocational college, 3.1% from a junior college, 0% from a university, and 9.4% from another institution. Regarding the length of basic nursing education, we found that 19.6% were licensed practical nurses with less than three years of education, and 80.4% were nurses and public health nurses with at least three or more years of education. Years of experience as a nurse ranged from 0 to 42 years, and the median was 10.5 years (IQR: 5.0–20.8 years). Regarding affiliated departments, 61.9% belonged to a hospital ward, and 38.1% belonged to a department other than a hospital ward (outpatient department, examination department, etc.). A total of 84.5% had the job title of general staff and 11.3% were in management. Years of experience working cooperatively ranged from 0 to 6 years, and the median was 2.0 years (IQR: 0.0–3.9 years). Meanwhile, 26.0% had no experience working cooperatively and 74.0% had experience working cooperatively (1 to 6 years); 19.4% had no desire to cooperate, and 80.6% had a desire to cooperate.

2) Overseas Travel Experience and Contact with Different Cultures

A total of 52.1% had no overseas travel experience; 47.9% did. Total number of countries visited (hereafter, total number of countries) ranged from 0 to 6 countries, and the median was 0.0 countries (IQR: 0.0–1.0 countries). The total number of days overseas (hereafter, length of stay) ranged from 0 to 391 days, and the median was 0.0 days (IQR: 0.0–5.0 days). The number of foreign friends, excluding Indonesian nurse trainees, ranged from 0 to 3 people, and the median was 0.0 people (IQR: 0.0 people). A total of 45.8% did not appreciate foreign cultures, such as foreign music and films; 54.2% did. Meanwhile, 89.6% had no academic background studying foreign languages outside of their school education; 10.4% did.

<Table 1> The participant characteristics

		Persons	%	Median (IQR)	range
Age	20s	33	34.0	35.0 (27.0~44.5)	20~63
	30s	30	30.9		
	40s	12	12.4		
	Over 50s	22	22.7		
Sex	male	11	11.3		
	female	86	88.7		
Occupation	nurse	76	78.4		
	licensed practical nurse	19	19.6		
	public health nurse	2	2.1		
	midwife	0	0.0		
Nursing education --Institution--	vocational college	84	87.5		
	junior college	3	3.1		
	university	0	0.0		
	another institution	9	9.4		
Nursing education --Length--	less than 3 years	19	19.6		
	at least 3 or more years	78	80.4		
Years of experience	0 year ---- 4 years	21	21.9	10.5 (5.0~20.8)	0~42
	5 years --- 9 years	20	20.8		
	10 years --- 19 years	29	30.2		
	20 years --- 29 years	16	16.7		
	more than --30 years	10	10.4		
Affiliated department	hospital ward	60	61.9		
	other than a hospital ward	37	38.1		
Job title	general staff	82	84.5		
	management staff	11	11.3		
	other	4	4.1		
Cooperation experience --Length--	0 year (no experience)	25	31.0	2.0 (0.0~3.9)	0~6
	1 year	6	6.0		
	2 years	12	15.5		
	3 years	19	22.6		
	4 years	7	7.1		
	5 years	14	16.7		
Cooperation experience	6 years	1	1.2		
	no experience	25	26.0		
Desire to cooperate	had experience	71	74.0		
	no desire	18	19.4		
Overseas travel experience	had a desire	75	80.6		
	no experience	50	52.1		
Total number of countries	had experience	46	47.9	0.0 (0.0~1.0)	0~6
	0 country	50	53.2		
	1 country	23	24.5		
	2 countries	11	11.7		
	3 countries	5	5.3		
	4 countries	3	3.2		
	5 countries	1	1.1		
Length of stay	6 countries	1	1.1	0.0 (0.0~5.0)	0~391
	0 day (no experience)	50	54.9		
	within 1 week	28	30.8		
	within 2 weeks	2	2.2		
	within 3 weeks	7	7.7		
	within 4 weeks	1	1.1		
The number of foreign friends	more than 4 weeks	3	3.3	0.0 (0.0)	0~3
	0 person	88	91.7		
	1 person	2	2.1		
	2 persons	2	2.1		
Appreciate foreign cultures	3 persons	4	4.2		
	not appreciate	44	45.8		
Studying foreign languages -- outside of school --	appreciate	52	54.2		
	didn't study	86	89.6		
	studied	10	10.4		

The increase of Indonesians living in the Area	disapproval	13	14.6		
	approval	76	85.4		
Approval levels for such Japanese policies	1.Disapproval	1	1.1	4.0	1~5
	2.Rather disapprove	6	6.3	(3.0~4.0)	
	3.Neither	40	42.1		
	4.Rather approve	35	36.8		
	5.Approval	13	13.7		
Approval levels as an individual opinion	1.Disapproval	0	0.0	4.0	2~5
	2. Rather disapprove	9	9.4	(3.0~4.0)	
	3.Neither	30	31.3		
	4.Rather approve	39	40.6		
	5.Approval	18	18.8		

3) Approval/Disapproval of the Increase of Indonesians Living in the Area

A total of 14.6% disapproved of the increase in Indonesians living in their residential area; 85.4% approved.

4) Level of Approval Toward Introducing Foreign Nurses

Approval levels for such Japanese policies ranged from 1 (Disapproval) to 5(Approval). The median was 4.0 (IQR: 3.0–4.0). Approval levels as an individual opinion ranged from 2 to 5; the median was also 4.0 (IQR: 3.0–4.0).

5) Modified Group-Identification Scale

The Mean \pm SD was 4.17 ± 0.87 .

6) Tolerance Scale

The Mean \pm SD was 3.56 ± 0.50 .

The average value based on analysis methods was 3.56, and people with a score below 3.56 were defined as the low-score group (hereafter, low group); those with a score above 3.56 were defined as the high-score group (hereafter, high group). A total of 52.7% were in the low group; 47.3% were in the high group.

2. Factors Related to Tolerance of Indonesian Nursing Trainees

First, we examined the following three items in terms of the relationship between the tolerance scale and each attribute. Next, we examined Item 4 regarding the relationship between the tolerance scale and the modified version of the group-identification scale. Last, we conducted multivariate analysis (Item 5) to examine the influence of factors related to the tolerance scale.

1) Relationship between Each Attribute and the Tolerance Scale

A chi-squared independence test was performed on the relationship between each attribute and the tolerance scale's high and low groups (Table 2).

For "length of education," the group with three or more years of basic nursing education (nurses and public health nurses) had a significantly higher frequency of

people in the tolerance scale's high group ($p = 0.040$, adjusted standardized residual +2.1) compared to the group with less than three years of basic nursing education (licensed practical nurses). Compared to the group with no experience traveling overseas, the group with experience traveling overseas had a significantly higher frequency of people in the tolerance scale's high group ($p = 0.022$, adjusted standardized residual +2.3). Compared to people with no foreign language study background, people with foreign language study background had a significantly higher frequency of people in the tolerance scale's high group ($p = 0.005$, adjusted standardized residual +2.8).

<Table 2> Relationship between Each Attribute and the Tolerance Scale

		Tolerance scale (persons)		p-value residual
		Low group	High group	
Sex	Male	8	3	n.s.
	Female	41	41	
Occupation	nurse	35	37	n.s.
	licensed practical nurse	14	5	
Nursing education --Length--	less than 3 years	14	5	.040 * +2.1
	at least 3 or more years	35	39	
Affiliated department	hospital ward	34	24	n.s.
	other than a hospital ward	15	20	
Job title	general staff	43	35	n.s.
	management staff	4	7	
Cooperation experience	no experience	12	12	n.s.
	had experience	36	32	
Desire to cooperate	no desire	11	7	n.s.
	had a desire	34	37	
Overseas travel experience	no experience	30	17	.022 * +2.3
	had experience	18	27	
Appreciate foreign cultures	not appreciate	26	15	n.s.
	appreciate	22	29	
Studying foreign languages -- outside of school --	didn't study	47	35	.005 ** +2.8
	studied	1	9	
The increase of Indonesians living in the Area	disapproval	7	5	n.s.
	approval	36	37	

2) Comparison of Median Values (IQR) of Each Attribute and Tolerance Scale

We performed a Mann-Whitney U test for the median values (IQR) of each attribute in the tolerance scale's low and high groups (Table 3).

The median values for the total number of countries visited were significantly higher ($p = 0.005$) in the tolerance scale's high group. The median values for the total length of stay were significantly higher ($p = 0.001$) in the tolerance scale's high group.

<Table 3> Comparison of Median Values (IQR) of Each Attribute and Tolerance Scale

	Tolerance scale	Median (IQR)	<i>p</i> -value
	Low group	High group	
Age	34.0 (25.0-44.0)	36.0 (27.3-50.0)	n.s
Nursing education --Length--	10.0 (3.0~18.8)	12.0 (7.0~22.0)	n.s
Cooperation experience --Length--	2.0 (0.0~4.8)	2.0 (0.0~3.5)	n.s
Total number of countries	0.0 (0.0~1.0)	1.0 (0.0~2.0)	.005 **
Length of stay	0.0 (0.0~3.0)	3.5 (0.0~12.0)	.001 **
The number of foreign friends	0.0 (0.0)	0.0 (0.0)	n.s.
Approval levels for such Japanese policies	3.0 (3.0~4.0)	4.0 (3.0~4.0)	n.s.
Approval levels as an individual opinion	3.5 (3.0~4.0)	4.0 (3.0~4.0)	n.s.

3) Correlation between Tolerance Scale and Each Attribute

We searched for the Spearman rank correlation coefficient of the correlation between the tolerance scale and each attribute (Table 4).

Here was a weak positive correlation between the total length of stay abroad and the average value on the tolerance scale ($p = 0.033$, $r = 0.23$).

<Table 4> Correlation between Tolerance Scale and Each Attribute

		Avg	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12
Age	<i>r</i>	.09	-.19	-.08	-.03	.07	.17	.11	.07	.08	-.02	.15	.09	.39
	<i>p</i>	.373	.068	.433	.791	.479	.107	.275	.518	.424	.871	.154	.411	.000 ***
Years of experience	<i>r</i>	.15	-.20	-.05	.01	.08	.26	.16	.12	.12	.04	.21	.05	.35
	<i>p</i>	.156	.051	.644	.929	.451	.011 *	.133	.257	.271	.711	.040 *	.618	.001 **
Cooperation experience --Length--	<i>r</i>	-.10	.17	-.05	-.12	.21	.01	-.22	-.10	-.15	-.09	-.12	-.02	-.06
	<i>p</i>	.361	.121	.630	.300	.060	.952	.049 *	.381	.178	.433	.297	.890	.605
Total number of countries	<i>r</i>	.17	.17	.10	.06	.02	-.01	.19	.11	-.07	.16	.06	-.04	.09
	<i>p</i>	.118	.107	.338	.555	.890	.895	.080	.306	.490	.127	.556	.705	.422
Length of stay	<i>r</i>	.23	.17	.16	.09	-.01	.06	.23	.15	-.02	.23	.10	-.00	.13
	<i>p</i>	.033 *	.106	.142	.394	.900	.592	.034 *	.161	.877	.034 *	.366	.976	.236
The number of foreign friends	<i>r</i>	.09	.14	.10	.07	-.05	-.00	.12	.06	.07	.14	-.00	.05	-.08
	<i>p</i>	.406	.191	.323	.482	.627	.968	.245	.603	.486	.177	.968	.654	.442
Approval levels for such Japanese policies	<i>r</i>	.16	.23	.01	.27	-.10	.14	-.03	.09	.22	.23	.18	-.06	.08
	<i>p</i>	.124	.032 *	.926	.010 **	.355	.203	.804	.398	.040 *	.026 *	.093	.603	.455
Approval levels as an individual opinion	<i>r</i>	.14	.20	.03	.16	-.13	.15	-.01	.07	.14	.30	.15	.07	.12
	<i>p</i>	.191	.052	.775	.132	.220	.150	.906	.529	.198	.004 **	.160	.513	.267

Spearman rank correlation coefficient * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Avg = average value on the Tolerance scale, T1~T12 = the question 1~12 of the Tolerance Scale

4) Correlation between the Tolerance Scale and the Modified Group-Identification Scale

We used the Spearman rank correlation coefficient for the correlation between the tolerance scale and the modified version of the group-identification scale (Table 5).

No significant correlation was observed between the average values on the tolerance scale and average values on the modified group-identification scale.

Looking at each question item on the tolerance scale, we found a weak correlation between Question 12 on the tolerance scale, “Encourage others to make Indonesian nurse trainees feel comfortable,” and average values on the modified group-identification scale ($p = 0.001$, $r = 0.34$).

<Table 5> Correlation Between the Tolerance Scale and
the Modified Group-Identification Scale

Modified version of the group-identification scale	Avg	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12
<i>r</i>	.09	-.08	-.01	-.03	-.10	.11	.02	.14	.08	.11	.19	.10	.34
<i>p</i>	.402	.473	.964	.788	.354	.281	.856	.196	.433	.305	.064	.343	.001**

Spearman rank correlation coefficient

** $p < 0.01$

5) Influence of Factors Related to the Tolerance Scale Measurements

Logistic regression analysis was performed by the likelihood ratio and variable increase method with the high-lows of the tolerance scale as dependent variables; the independent variables were factors confirmed as having a significant relationship through the univariate analysis (1–4 above; Table 6).

We looked at the scatterplot of variables beforehand and confirmed that there were no variables with a remarkably linear relationship. In the results from the model chi-squared test, $p < 0.01$ was significant and each variable was also significant with $p < 0.05$. Results from the Homser-Lemeshow test found that $p = 0.77$ was good, yet the discriminant predictive value of 54.7% was not very good. For the actual measured values, there were no outliers that exceeded the predicted value by ± 3 SD.

Factors that showed a significant positive relationship with the tolerance scale’s high group were, in descending order of influence, “academic background studying foreign languages,” “level of agreement with policies,” and “years of experience.”

<Table 6> Influence of Factors Related to the Tolerance Scale Measurements ($n=75$).

Independent variables	B	<i>p</i> - value	Odds Ratio	95% CI
Studying foreign languages -- outside of school --	2.45	.030	11.61	1.27 - 106.32
Approval levels for such Japanese policies	0.79	.024	2.19	1.11 - 4.34
Years of experience	0.05	.039	1.05	1.003 - 1.11
Constant	-3.91	.006	0.02	

Logistic regression analysis

model chi-squared test $p < 0.01$, Homser-Lemeshow test $p = 0.77$, discriminant predictive value = 54.7%

V. Discussion

Previous studies, which targeted residents of a particular area, found that people who are younger, have longer years of study, and have experience with foreigners and foreign culture are more tolerant of accepting foreigners and that women are more tolerant of heterogeneity in others and have little resistance to working cooperatively with foreigners (see I. Background).

In this study of nurses, we found that the more situations for contact with different cultures, such as “experience traveling overseas,” “total number of countries visited,” “total length of stay,” and “academic background studying foreign languages,” the higher the tolerance toward Indonesian nurse trainees. In the “contact hypothesis,” Allport argues that contact experiences with an outgroup, such as different races and ethnic groups, reduce prejudice against individuals from outgroups and promotes a positive attitude (Allport, 1954). In this study as well, it is possible that experience traveling overseas and contact with different cultures reduced prejudice against Indonesian nurse trainees and promoted tolerance. However, no relationship was confirmed between “number of foreign friends,” “sex,” and the tolerance scale measurement. This may be due to the fact that approximately 90% of the survey participants had no foreign friends and approximately 90% of the survey participants were female.

Regarding length of education, it was confirmed that the group with three or more years of basic nursing education (nurses and public health nurses) had a significantly higher tolerance compared to the group with less than three years of basic nursing education (licensed practical nurses). However, when making this interpretation, it is necessary to consider that no participants had a university education and approximately 90% of the participants graduated from a vocational college.

Although the previous study reported a relationship between age and group identification and tolerance (Uemura, 2001), this study did not find a relationship with these factors. However, if we look at Question 12, “Encourage others to make Indonesian nurse trainees feel comfortable,” we see a significant positive correlation to “age,” “years of experience,” and “group identification.” We found a different trend from previous studies in that as age increases, people encourage others to make Indonesian nurse trainees feel comfortable.” In previous studies, there were many surveys targeting residents; however, the nurses targeted in this study are part of a professional group that shares a common aim to provide nursing care to patients and their families. It can be assumed that this difference in the sense of purpose and cohesion influenced this study’s results.

In the logistic regression analysis, we found that an academic background studying foreign languages was more significantly related to tolerance compared to agreement with policies; therefore, studying a foreign language has a stronger influence than whether one agrees or disagrees with policies directly related to introducing foreign

nurses. Motivation and purpose for foreign language study was not surveyed in this study and therefore needs to be clarified in the future; however, we can assume that studying a foreign language has a positive effect.

Mizokami and Shibata state that language functions as an ideological practice that defines and shapes our thinking (Mizokami & Shibata, 2009). Moreover, foreign language study is not merely a simple practice of language skills, but is also an experience of the culture that exists behind the language, which promotes an understanding of others and subjective judgment unbound by conventional knowledge and prejudice that can help one adopt a positive attitude toward heterogeneous others (Mizokami & Shibata, 2009). These findings from previous research can be applied to the nurses in this study as well. Thus, length of education and experience with different cultures are important factors in Japanese nurses' tolerance toward Indonesian nurse trainees. These are important findings to consider for future nursing education and smooth cooperation with foreign nurses.

VI. Study Limitations and Future Research

This survey's participants were limited to nurses from one local hospital facility, where the total nursing staff is small and the hospital is in its sixth year of accepting Indonesian nurse trainees. Therefore, it is possible that the Japanese nurses' awareness may have been homogenized to some extent. Additionally, analyses could only be undertaken for 97 people; therefore, we should be cautious analyzing the results, as bias was seen in attributes, such as length of education and number of foreign friends.

In future studies, an expansion of the number of facilities and persons targeted for the survey is needed.

VII. Conclusion

We examined the factors related to Japanese nurses' tolerance for Indonesian nurse trainees and determined the following three points:

- (1) The longer the nurses' basic education, the higher tolerance they had for Indonesian nursing trainees.
- (2) The more overseas travel experience and situations the nurses had with different cultures, the higher tolerance they had for Indonesian nursing trainees.
- (3) An academic background studying foreign languages had a greater influence on high tolerance compared to approval level for policies.

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ORIGINAL ARTICLE

Seeking Asylum: The Benefits for Clients, Family Members and Care-givers of Using Music in Hospice Care

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ABSTRACT

The arts are becoming an increasingly important feature of care and their value in promoting increased levels of wellbeing is continually being experienced but not yet well understood. Similarly, the arts, and especially music appear to be able to bring increased levels of wellbeing to clients, family members and nursing staff, when used as an integral part of hospice, or end of life care. This article adopts an expanded definition of the word 'asylum' in order to assess the extent to which a series of musical concerts can contribute to the well being of all those involved in end of life care contexts.

The research involved carrying out observations and interviews with clients, care workers and family members who experienced a musical event. Interviews were carried out with individual participants before and after a one hour concert taking place within an open social space either within a hospice or a care facility. All concerts were given by one or two musicians with significant levels of experience of performing in such concerts. Observations of responses were also carried out during each of the concerts and notes were recorded accordingly. Ethical permission for the work was provided by the lead university. Results suggest that the concert experience provided significant levels of emotional support, was an ideal medium for promoting new and positive memories, and provided brief periods of respite for all those involved.

<Key-words>

music, psychology, hospice care, end of life care services

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I. Background

In a recent publication, Tia DeNora (2015) encourages us to consider the idea of ‘musical asylums’. The word ‘asylum’ has a number of socially and culturally constructed meanings. In the UK, historically the word asylum was frequently used to denote the hospital, the physical institution or the building in which people were placed when suffering from any form of mental illness. Currently, the word is usually reserved for those unfortunate peoples who, for a variety of reasons, are required to leave their usual home environment and move elsewhere, that is to seek ‘asylum’ in the first place of safety. We consider the term ‘asylum seeker’ to refer to an individual who has for example, left their home country to seek asylum in another, safe country. The Japanese term for asylum refers to a building, hospital or more recently, a department of psychiatry whilst the term for asylum seeker specifically denotes a political refugee. However, DeNora adopts and defines the term ‘asylum’ in a different way. Accordingly, she uses the word to denote not just a physical building, institution, country or place but also to represent a mental state or condition; a brief period in space - time that is free from distress and provides a place to enjoy a sense of “... *connection to others, to feel pleasure, perhaps to note the absence, or the temporary abatement of pain*”(p.1).

The Oxford English Dictionary defines the word ‘*hospice*’ as a home for the care of sick or dying people. Yet, at any one time, many of the individuals who are present in any hospice are neither sick, or dying. Some are nursing staff, carers and doctors, others carry out other vital service roles and some are family members wishing to spend time with their loved ones. In this article, we argue that all contexts of care can become ‘asylums’ by focussing equally on the physical and mental wellbeing but also by focussing equally on all those involved. Second, we will argue that the use of appropriate musical experiences, when included as an important component of palliative care, can make not only a significant contribution, but in some ways a unique contribution to hospice care by facilitating some brief moments of ‘asylum’ for all.

The role which music plays in dealing with illness is varied and culturally specific (see for example: Mills, 2012; Wolf, 2001) and in most cultures, music frequently plays a significant part in the rituals surrounding illness and death. Societies and cultures themselves, imbue all ‘musics’ with particular ‘values’ and strict rules often apply in terms of what types or styles of ‘musics’ are acceptable in particular social or cultural contexts. For many in the west, music associated with the end of life is often quiet, meditative and some would argue, full of sorrow, whereas other cultures employ joyful and celebratory musics. Individuals and institutions are not immune from such values and they contribute to many facets of our personality, including our musical identity.

The benefits of music on all those involved in the context of health care is well documented (Aldridge, 1996, 1999; Ito and Maruya, 2013; Nuki, 2009). For example, previous studies have frequently reported on the benefits to be gained from employing musical experiences in the management of pain and anxiety, (Krishnaswamy and Nair, 2016; Krout, 2001, 2003; Magill, 2001), the management of grief and depression (Periyakoil and Hallenbeck, 2002) and for decreasing the levels of anxiety and distress during medical treatments and therapies (Clarke et al., 2006; Whitehead-Pleaux, 2006).

More specifically, in terms of palliative and hospice related care, an increasing number of studies, largely grounded in music therapy approaches, have explored the use and benefits of music for those managing long term illness, (see for example Hilliard, 2001, 2003, 2006; Nitta and Kawabata, 2007), those facing terminal illness (Clements-Cortes, 2004; Horne-Thompson, 2007; Kitagawa, Kuwana and Okayasu, 2009; O'Kelly and Koffman, 2007) those people in care and nearing the end of life (Ricciarelli, 2015) and a relatively limited number of studies have explored the effects of musical experiences on care-givers following bereavement (O'Callaghan et al., 2012; Magill, 2009a), suggesting that engagements with music prior to bereavement can facilitate a number of important benefits following the death of a loved one. Knapp et al. (2009) for example, reported that parents were far more likely to report high levels of satisfaction with palliative care programmes following the inclusion of music therapy with terminally ill children.

Similarly, McFerran et al. (2010) reported decreased levels of loneliness and increased levels of emotional expression and willingness to talk amongst recently bereaved teenagers. Magill and Berenson (2007) reported on the benefits of musical experiences with family members of terminally ill people. Their findings suggested that the presence of music assisted in communication between family members and care givers, increased feelings of comfort – especially amongst children, and ‘played a memorable role’ in helping the family to prepare for a forthcoming death. Similarly, Magill (2009a, 2009b) reported on the benefits that musical events prior to bereavement can bring by providing caregivers and family members with positive memories of ‘joy and empowerment’, “rather than with memories of pain and distress” (p.97). Thus, there is a significant body of work suggesting that musical therapies can provide significant positive experiences and benefits for all those involved in hospice and palliative care for those living with long term illness.

It is important to note that whilst many of the benefits reported previously emerge from studies based in music therapy, the current research emerges from the discipline of music psychology. The substantive differences between the two approaches has been commented on previously (see Shibazaki and Marshall, 2016). In this respect, the musical experiences on which the current work is based and those employed in many of the previous studies are not immediately comparable. Most of the previous work has

involved therapy and therefore the musical experiences have been based on *making* music with *clients* and *others*; that is creating, performing, playing, singing and actively joining in. It is also important to note that therapeutic sessions often include the participant in some way having some control over the repertoire, the length of time that they engage with the therapist and these musical experiences often take place in smaller and more individual and personal contexts. In addition, music therapy programmes tend to take place over a prolonged period of time, and during this time, the therapist will become very much connected with not only their client but their family members. One could therefore argue that any emerging benefits are the results of this unique, and prolonged friendship and the deep level of social contact and interaction.

In contrast, the musical experiences in the current study consisted solely of concerts performed by either one or two professional musicians. The musicians came, performed to all who attended and left again with only a limited amount of social interaction. In this respect the main musical activity was therefore passive *listening* and when appropriate, singing and joining in with songs that were familiar. Participants had little or no control over the repertoire, the duration of the musical experience and in all cases the events were made available for all by taking place in communal spaces. It could therefore be argued that those studies reporting from the perspective of music therapy are more conducive to the expression of personal feelings or increased levels of emotion whereas in the current study, the whole context is more public. However, what then becomes interesting are those aspects which are reported as occurring within both contexts and those that do not. Thus, the aim of this study was to identify and to compare those benefits which individuals experienced in both types of musical experience.

Therefore, in order to achieve this aim, the current study had the following two research questions. Within the context of hospice and care for the terminally ill:

- i) To what extent can music concerts contribute to the creation of 'asylum' for the clients, the families, the nursing and care staff?
- ii) What similarities and commonalities exist between the benefits obtained through music therapy and those identified through engagement with music concerts?

Through engaging with these two questions, we expect to better understand how music can contribute to the creation of 'asylum', that is the creation of a brief period in space - time that is free from distress and full of enjoyment, for all those involved.

II. Method

Our current research focussed on the impact that musical experiences reportedly had on the clients, the care staff and the families of those in hospice care or individuals with terminal illness. In terms of hospice care, a total, 9 one hour music concerts took place in 2 institutions (in the greater London area, UK). All musical events were part of a regular day care programme. Clients mainly attended with one or two family members and all concerts took place with a central, communal space within the hospice. The study employed two forms of data collection, namely interviews and observations. Interviews were held with care and nursing staff (n=16), musicians (n=12), clients (n=6) and family members, (n=11). All interviews took place during or immediately after the musical events however, in 3 instances, telephone interviews were held with family members. In the case of the care facilities (n=3), musical concerts were provided according to the same criteria as the hospices. In one instance, the same musician was involved. Observations, focussing on events rather than just on fixed individuals, were carried out before, during and after the musical events. Observations were recorded in field notes. No personal information was collected and no identifying features were recorded.

All concerts were carried out by professional musicians with significant levels of experience of performing in the research contexts. In all cases, performances lasted for approximately one hour and were performed by either one or two professional musicians. No control was possible over the repertoire and therefore overall the concerts represented a variety and range of styles and instrumental combinations. However, all performers followed similar patterns of behaviour including engagement with individuals, asking for individual requests, performing small sections of songs to individual clients or family members and relating interesting stories.

Data collected from interviews were recorded accurately in field note books and analysis of the data followed standard procedures for qualitative data (Robson, 2011). Data from each of the four participant types (client, family member, musician and nursing/care staff) was first recorded onto one summative sheet per participant type. Data was then analysed through the six stage process of template analysis (Brooks, McClusky, Turley and King, 2015). Template analysis follows an iterative process in which initial coding of data is placed into clusters. These clusters are then used to develop an initial template through which all subsequent data can be thematised. The process also allows for the identification of integrative themes; that is, where a lateral relationship is identified between clusters. For example, in our data set, we identified 'Guilt' as an integrative theme across all participant types. One advantage of template analysis is that at stage 2 of the process: "*..... it is permissibleto start with some a priori themes, identified in advance as likely to be helpful and relevant to the analysis.*" (Brooks et al., 2015, p.203).

In view of this, our initial a priori themes were taken from the full definition of asylum, as set down by DeNora (2015), namely:

- Respite from distress
- Feeling in the flow of the moment
- Feeling creative
- Engaging in creative play
- Experiencing a sense of validation or a connection to others
- Feeling pleasure
- Noting the absence of pain.

Appropriate data was assigned first to one of our a priori categories with one further integrative category of 'Guilt'. Data from observations was used to provide additional evidence for the interviews, as and when appropriate.

III. Results

1. Respite from distress

In common with other studies (Krout, 2001; Warth et al., 2014) we witnessed numerous individuals becoming calmer and more relaxed. Observed indicators of decreased levels of distress included increased frequency of smiling, increased singing, relaxed facial expression, quiet, stillness, decreased agitation, increased musical activity or movement and becoming less demanding of staff and / or family members. Amongst the interview data, evidence included:

- | | |
|-------------------|---|
| <i>Client (2)</i> | <i>"Everyone here is wonderful – you could not find a better place to be but it is, what it is ! but last week I came to the hospice, this week I have been to a concert on a day out –</i> |
| <i>Family (5)</i> | <i>"It changes the place and we go home happy talking about the concert instead of talking about – you know what and how many more times we do this journey"</i> |
| <i>Staff (12)</i> | <i>"You get bad news about somebody you have become attached to but these (concerts) carry you through"</i> |

2. Feeling in the flow of the moment and feeling creative

Observations clearly showed almost all individuals 'feeling the flow of the moment'. As evidence for this we took instances where individuals ignored other distracting events taking place within close proximity, ceasing negative, distracting or anti social

behaviours (such as shouting / crying out, trying to leave or rocking), continuous periods of attention to the musician moving around the performance space.

As evidence for creative feelings and engaging in creative play we witnessed, responding musically (conducting /moving / tapping), singing in harmony with the performer, whistling counter melodies, improvising a short tune in between the lines of a song, and in two cases of individuals with significantly reduced movement, changing the pattern of breathing in time with the phrasing of the song.

- Client (6)* *"I sit and watch the clock but time seems to stand still when they are playing, you have no idea you have been here for over an hour"*
- Family (8)* *"He was always known for making up funny words to songs – ... and now he does that again – makes us laugh"*
- Staff (3)* *"Many of them find it hard to concentrate on other things but in the concerts, they just go with it – just sitting quiet listening with their eyes closed and they are still joining in"*
- Staff (14)* *"It's the one chance you get to see who they really are"*
- Musician (4)* *"We had one lady stood up and danced with us ... then afterwards she suddenly said – of dear, where is my walking frame ? – she was so 'into it'."*

3. Experiencing a sense of validation or a connection to others

Music binds people together and our appreciation of music helps us to express who we are as humans. As evidence of validation and connection, from our observations we would cite taking hold of hands, increased eye contact, demonstrating the need to hold hands, increased social interaction (smiling at people, initiating talk or contact), acknowledging the presence or movements of others and increased levels of talk.

- Client (4)* *"That song they sang – I knew it, and that style was always 'me' - True – I knew every word"*
- Client (3)* *"You just feel human again, part of the world, listening to music and just doing what everybody else does"*
- Family (1)* *"Those songs were just about 'us', we said we could almost remember where we were when we heard it first – it just takes us back"*
- Staff (6)* *"Did you see ? – he held her hand – they don't even know each other !"*

Two further issues of note. We noted that interviews carried out post concert contained significantly more use of the words 'us' and 'we'. Pre-concert interviews more often related to the individual. Partners and family members spoke about themselves or others whereas post – concert talk more frequently related to joint stories, joint memories and stories about each other.

Secondly, two musicians (2 and 6) both commented that during the actual concerts in the day care hospice groups they often found it difficult to identify the client and the family member as both tended behave in very similar ways; there sometimes being no clear indication as to who was ill.

4. Feeling pleasure

Evidence from observation notes relating to feeling a sense of pleasure included increased levels of smiling, singing or humming, increased levels of social interaction, expressions of joy, increased levels of social and musical behaviour. We also suggest that feelings of pleasure were also evidenced by increased periods of calm, silence and neutral facial expressions.

Evidence from interviews included:

Client (1) "I just find it so uplifting and we love every minute of it "

Family (7) "It's a real joy and we just look forward to coming – it really is the highlight of the week"

Staff (10) "We all get so much pleasure out of this, we all talk about it and we do our jobs better"

One further indication of pleasure related to memories and to the creation of new memories. Almost all participants in both the client and the family group spoke about memories and these could be placed into two categories. First, memories associated with a particular piece of music or a song. In such instances, the personal meaning of the music to the individual promoted increased levels of talk and pleasure through reminiscence. Examples included music played at weddings, or related to a parent or an association between the music and a place (e.g. a holiday destination). In the second category, participants referred to the music helping them to create new memories which they could treasure in the future. Examples of this were:

Client (6) "I would rather my grandchildren remembered me being happy and singing along with this than any other memory of me"

Family (4) "These are the moments I will treasure – this is who they are"

Staff (5) "I often remember them in the concerts and how they were - makes me smile and happy they could have this experience - it makes up for everything else they have to go through"

5. Noting the absence of pain.

There is a significant body of evidence to suggest that music can assist in controlling pain (Good et al., 2000; Kahar, 2011; Tabane et al., 2001; Vaajoki et al., 2012). However, neither interviews or observations are sufficiently sensitive instruments to provide evidence for the absence of pain. In addition, pain management is one of the key foci of hospice and care of the terminally ill and therefore this particular study had limited opportunities to explore this particular aspect. When asked about pain, clients and family members reported an absence of pain resulting from their medication and therefore could not comment further. However our observations show significant increases in levels of activity, mobility, calm, engagement and social interaction, an increased ability to focus and concentrate, along with a decrease in behaviours and facial expressions normally associated with pain (e.g. grimace, frowning). Interview data was also inconclusive but 3 staff members with substantial knowledge of individual clients (staff members 1, 9 and 11) did report that in their opinion and through their knowledge of their clients, concerts did improve overall levels of wellbeing as evidenced through increased levels of participation, increased facial 'colour', increased levels of eye contact and social interaction. Pain measures other than this are beyond the scope of this paper.

6. Integrative Theme: Guilt

The notion of feeling guilty appeared as an integrative theme across all participant types. Four clients in our study discussed feeling guilty when family members accompanied them to the hospice or visited them in the care facility. Comments included:

Client (5) "I have to come here but my wife does not and often she just has to sit here with me and you often just focus on why you have to be here – but the music makes such a real difference – it's real day out"

Client (2) "I feel I drag my daughter with me but with the concert, I don't feel quite so bad"

Clients appreciated family members being with them however, there was a sense that partners/ family members had 'better things to do' than to sit in a hospice or a nursing home. However, the presence of the concerts provided clients with a sense of 'giving back' something to their families.

Family members (3 and 6) reported similar feelings of guilt. Comments included, for example:

Family (3) "I always want to come but it is sometimes hard to fill the time, and you feel guilty – you feel you should appreciate this time more but in the concert, you can just appreciate being together"

Family (6) "You feel guilty because there is so little you can do, but this is something we can do together"

IV. Considerations and Conclusions

Collecting data at difficult moments in life is not easy but the current study suggests that musical concerts can achieve similar benefits to those obtained by other therapeutic programmes, although we have no evidence for how long these benefits continue. In common with studies by O'Callaghan and Magill (see also Kitagawa et al., 2009), we found evidence for increased pleasure, increased movement and engagement, increased social contact and improvement in overall levels of wellbeing in staff, clients and their families. We also found evidence for the role that musical events can play in both reminiscence and in creating new memories, supporting the findings of therapy work by authors such as Magill (2009b). In terms of our second research question, we found appropriate levels of evidence for each of the categories identified by DeNora, in her definition of asylum.

Of further interest is the fact that much of the musical repertoire that our participants experienced would not always be considered as being slow, meditative, sad, emotional or even spiritual, and not all the styles were classical, sedate and formal. Instead the musicians provided a wide range of instrumentation, musical style and repertoire of music that reflected the lives of the individuals, their histories and their memories; and it was the fact that the concerts reflected 'life in entirety' that pleased the most.

In conclusion, we argue that taken overall, musical concerts can be a major component in creating brief periods in space / time in which all concerned with hospice and end of life care can be free of distress and flourish in a musical asylum.

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ORIGINAL ARTICLE

**Partnership Working in the Long-term Care
System for Older People:
Cross-national Learning from England, the Netherlands and Taiwan**

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ABSTRACT

This paper based on qualitative cross-national research at national, municipal and local level in England, the Netherlands and Taiwan explores whether relevant actors were sharing the same goals, whether they communicated well with each other and whether they were working together with the service users. Through horizontal and vertical partnership analysis, the study found the care actors from top to bottom were not always sharing the same goals and priorities about how long-term care should be delivered. The split between health and social care in the care system has constituted a great challenge in working in partnership in English and Taiwanese practice. Whereas having a strong culture and ideology of solidarity and consultation embedded in the care system has helped the Dutch care actors to have a more equal working partnership. Most importantly, the involvement of all the care actors in policy and practice planning and decision-making is crucial if a better joint-working structure to fulfil the policy intention of providing a seamless long-term care service in practice is to be achieved.

< Key-words >

partnership, long-term care, older people, England, the Netherlands, Taiwan

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I. Background

Due to the complex care needs of older people and higher life expectancy, no one is any longer able to meet such demands alone. One way to strengthen the care support of older people is to improve partnership working within the care system. The aim of such an approach is to harness the energy, skills and resources of the key players who develop, implement or use long-term care services. This is especially important to fulfil the multiple care needs of the chronically ill (Bień et al., 2013; Leichsenrig, 2004).

Policy initiatives from all three long-term care systems researched here have reflected the intention to move from working in isolation to integration and joint-working. In England where there is strongly decentralised care responsibility and a privatised care market, partnership working has been a key component of the government's modernisation agenda in the last 40 years, particularly in the health field. The NHS Plan for England (DH, 2000) and Care Act 2014 require a 'duty of partnership' between the NHS, local authorities and local service providers. Equally, in the Netherlands, which has a strong state caring responsibility, social insurance funding system and predominately non-profit care market, the Exceptional Medical Expenses Act (AWBZ) (1968), the Social Support Act (WMO) (2007) and the Long-term Care Act (WLZ) (2015) regulate participation between clients, central government, regional care offices, local authorities and insurers. In Taiwan, where there is a strong familial society with a mixed non-profit and for-profit care market and the state responsibility is increasing, the National Health Promotion Plan and the Rehabilitative Care and Long-term Care Plan were implemented in 1991 (DH, 1997; Juan, 1999). These were reinforced in 1998 by Long-Term Care of Older People – a three year plan, to integrate and merge social, health and retirement military care into a holistic, long-term, care network (LTC Association, 2003). This was followed by the Long-term Care Service Act 2015 which should take effect from 2017 to further integrate scarce resources and to meet the increasing cost of care (Chou et al., 2014).

Although the care policies of the three countries have been actively developing partnership, joint working and service integration; four sets of questions have been raised about the potential extent of collaboration between relevant care actors in the long-term care systems. Firstly, there is an unequal power between the Department of Health and local government; and between local authority public services and voluntary and private organisations in England. As a result, in each case, the latter has the least power and incurs a larger burden of costs (Care Quality Commission, 2016; Means et al., 2002; Glendinning et al., 2001). Considerable interagency variations in the take-up of long-term care responsibilities in Taiwan seem to result, to some extent, in difficulties in policy-making and the organization and administration of aged care services (Lin et al.,

2013). Secondly, reluctance to fund shared and joint-service delivery - caused by different lines of accountability and lack of role clarity between each partner, such as the financial split between health and social care as well as between public, private and voluntary sectors in England and Taiwan - has hindered integrated care development and delivery in the countries studied. Thirdly, culture clashes can often be expected between people who come from different levels and organisations and who need to find ways of working together. Social- and health-care staff may have different perspectives on tackling joint issues, as seen in the English experience where the 'Berlin Wall' between health and social care professionals has been well documented (Hudson, 1999 and 2009; Balloch and Taylor, 2002; Mangan et al., 2015). In order to overcome this, the Care Act 2014 was introduced to further emphasise the importance of partnership working in the English care system. Fourthly, structural factors that cover different geographical areas and ICT systems, can make it difficult for parties or individuals to link with their opposite numbers (Cameron et al., 2014; Llucg and Abadie, 2013). Any of these barriers can contribute to distrust.

While the principle of partnership is now quite widely accepted nationally and internationally to reinforce the traditional value of service provision and help to keep 'quality in care' a unifying concept, there is too little acknowledgement of how the best examples can demonstrate a lasting impact on the life quality of older people who need care on a broad and multidimensional basis (Janse et al., 2016; Cameron et al., 2014; Kümpers et al., 2002). The value added by partners and the associated impact attributed to them need to be better measured (Glendinning, 2002; Newman et al., 2008). A degree of consensus between academics and policy makers exists on the key measurement criteria of successful partnership. Outcomes such as accessibility, acceptability, accountability, effectiveness, efficiency, equity, implementation and responsiveness appear to be common across studies (Petch et al., 2013; Dowling et al., 2004, Glendinning, 2003). However, there has been little cross-national and cross-level assessment. More evidence is required on the evaluation of different models and structures of partnerships, about the outcomes for different partners and stakeholders, including those directly involved (i.e. service users, carers, professionals and service providers) and those with a wider interest in the success of initiatives (i.e. civil servants at national level and local administrators). While there has been a number of practice-based studies, research tends to focus on a specific project (i.e. Janse et al., 2016; Kassianos et al., 2015) or a particular level of the care system or form of collaboration (i.e. Humphries, et al., 2016; Bennett et al., 2015; Stuart and Weinrich, 2001). I would argue, firstly, that we need to examine whether partnerships in practice fulfil policy intentions. Secondly, we need to ensure that contributions from all organisations range across specialisms and can be integrated to achieve a more coordinated service for users and better joint-working structures for care contributors. Holistic research is needed to gather an overview of partnership working in the whole care system.

This paper, therefore, outlines the approaches that each care system has adopted and the difficulties that they were facing. The article is structured as follows. First, the concept of partnership adopted in this study is defined. Second, the research data are described and the methodology explained. Third, the results are discussed and the conclusions set out.

The concept of partnership

Partnership is not an entirely new phenomenon (for English examples see: Balloch and Taylor, 2001; Leathard, 2003; for Dutch examples see Mur-Veeman et al., 2003 and 2008; for Taiwanese examples see Kuan, 2000; Lai, 2002). Nevertheless, some commentators have noted that there is no single definition or model of this particular concept (Wilson and Charlton, 1997; Balloch and Taylor, 2001; Glendinning, 2003). It is often associated with many other labels, such as collaboration, co-ordination, co-operation, joint working, interagency working and networking (for example Huxham, 1996; Powell and Exworthy, 2002). All of these terms are concerned with “relationships” between relevant authorities, organisations and participants in the care system. People involved in partnerships have been defined at different levels:

- (1) Macro-level: the financing and policy context of the care system within a national or state ministry or on a country level;
- (2) Meso-level: the organisational context of the local level; and
- (3) Micro-level: individual service users (Glendinning, 2003).

Collaborative activities can be divided into two levels:

- (1) Strategic level: at which strategic decision-making concerning resource allocation and investment is coordinated; and
- (2) Operational level: at which service delivery is coordinated across people and functions.

Ideally, there should be both a horizontal (i.e. strategic and operational level) and a vertical (i.e. between macro, meso and micro level) link of decision-making, resulting in actions to improve the quality of care (Challis, 1998; Leichsenring, 2004). In reality, this ideal is difficult to put into practice. Cross-national research on integration by Kümpers et al. (2002) and Leichsenring (2004) suggest that different macro-institutional frameworks, and, particularly, different funding sources can have a different impact on the possibility of integrated care development. The Dutch Bismarckian insurance-based system comprises a public-private dimension which includes short- and long-term care provision with elements of the public, self-regulatory and the market competition model (Hardy et al., 1999). The English situation is more formal and complex. Based on the

tax-funded Beveridge system, this includes national healthcare and social services which are predominantly publicly funded but delivered by a mix of statutory, voluntary and private agencies. In Taiwan, two national departments and two sets of agencies for social- and health-care, combined with an individual and family funded system, result in difficulties in the organisation and administration of care services (Lee, 2002). There are, however, cultural and historical factors involved. For instance, Dutch values of solidarity, equality and needs-led services promote a more negotiated and self-governing system with a client-centred approach (Ex et al., 2004). The English network can be conceived of as operating within a relatively more hierarchical model of governance (Kümpers et al., 2002). In Taiwan on the other hand, the predominant NGO welfare tradition is more focused on flexibility, co-ordination and networking between different types of providers (Kuan, 2000).

II. Data and Methodology

The substantial focus of the study was to explore what constitutes good partnership working in long-term care systems. Evidence of the capacity within each care system was sought to discover: why were some societies able to promote partnership more than others? What successes and difficulties did each society experience in promoting partnership in long-term care? And how can countries learn from one another in their search for solutions? This study attempts to address those questions by centring on the views and experiences of older people and radiating out to their carers, professionals, local administrators, service providers, civil servants and voluntary agency officials holding care provision responsibilities. To minimise variation in the comparative research, the service users were female, aged over 60, from the majority ethnic group, and receiving formal care support. Women were chosen partly because of their propensity to live longer than men and thus their increased likelihood of needing long-term care. To maximise the range of service users in this research, five in each country received community care; two in each country received nursing care; and two received residential care in England and Taiwan. Additionally, three (including the one resident in the care hotel) received residential care in the Netherlands. As a result, out of a total of 143 interviewees (48, 43 and 52 in England, the Netherlands and Taiwan respectively), 28 older people were involved in this study as Table 1 shows.

<Table 1> Numbers of interviewees in this research

Interviewees	Number of interviews			
	England	The Netherlands	Taiwan	Total
Service users	9	10	9	28
Informal carers	6	1	3	10
Formal carers	5	9	9	23
Assessors	11	8	11	30
Service providers	10	7	8	25
Local administrators	4	4	6	14
National civil servants and voluntary agency officials	3	4	6	13
Total	48	43	52	143

III. Findings

What this section hopes to achieve is to outline the approaches that each country has adopted and the difficulties that they are facing. Partnership in this study is used in the sense of “cooperation”, to see whether relevant actors were sharing the same goals, whether they communicated well with each other and whether they were working together with the service users. To begin with, within each country there must be shared understandings of goals and expectations of the priority of care for partnership to work. This section first explores these goals at the policy level and then moves on to examine partnership horizontally (strategically and operationally) and vertically. Through horizontal and vertical analysis, we will be able to see how and whether partnership in each country studied can achieve better joint-working structures to fulfil the policy intention of providing a seamless, long-term, care service.

Expectations and goals

Common goals of long-term care across relevant care actors are crucial in the context of working in partnership. Goals can be objective (e.g. working towards standards of quality, efficiency and effectiveness), or subjective (e.g. aims, motives and purposes). From the grass-roots level, we have already seen in Chen (2007, 2014) that many older people and their families in the three countries studied emphasised the importance of care provision to meet the care needs of older people. In England, the reliability of the care services is a serious concern.

According to many national participants (8/13) across the countries, looking after older people in their own home for as long as possible is an important policy goal. Whenever possible this has been reinforced by increasing service innovation - such as housing renovation in England and the Netherlands - and technological innovations such as alarm systems and computing systems, in England, Taiwan and especially in the Netherlands.

Although empowerment and a client-centred approach are also clear goals in the three countries studied, there are a number of other goals within England and Taiwan which undoubtedly exacerbate the vulnerability of some older people in long-term care. For example, two out of three national participants in England were clear that the goal of trying to guard the basic safety of older people competed with their independence.

We'd look to provide a safe system from the worst of abuses and exploitation but not a safe system that therefore removes all the independence. Actually, we all take risks, so it's about getting the balance right (Civil servant, Department of Health, England).

In Taiwan, one of the goals of the national government is to develop an economic-oriented, long-term care system. It means reducing the national unemployment rate through increasing employment in the care sectors. Nevertheless, many of the national participants interviewed in Taiwan (4/6) and all in the Netherlands but none in England acknowledged that 'normalisation' is one of the goals in the long-term care of older people. We have already seen that in the Netherlands and to some degree in Taiwan, older people are socially included and that the care they receive is imaginative in meeting individual needs (for further discussion, see Chen, 2009). One of the important issues raised was that, at the time that this study was undertaken, social care priorities in English national policy were subordinated to the needs of healthcare or care for children in need:

Sometimes the only way we can make our argument about older people and social care is to demonstrate how it benefits the NHS, it drives us potty (Civil servant, Department of Health, England).

One of the things that is happening more frequently now is that money is not ring-fencedYou will find most of the money disappears to children. It's the way the whole of the money is allocated to Social Services ...There is always a bigger budget going to the NHS. You're worried about how much of that is actually being spent on older people (Senior official in Age Concern, England).

Implementation of the goals of national policy, by and large, depends on co-operation between local authorities and service providers. Nearly all of the participants at the meso-level in all three countries addressed the importance of promoting improvements in community care services. There were, nonetheless, some differences. In England and the Netherlands, the interview data suggested service integration was an important goal. English local administrators were focused on service integration for older people with intensive care needs in the new type of care homes (e.g. extra care housing). However, Dutch local administrators were focused more on the social well-being of older people - whether they lived in their own homes or care homes. This was one of the reasons which stimulated joint working with wider local authority departments and relevant agencies in the Netherlands:

We have to focus on all the issues. We need to make a happy life for older people ... it's not only about the stones for the house, you have to organise healthcare, education and travelling so that they have some meaning in their day and that they are doing something. They may think they have care problems but they can still do something for the community. All support is about the social integration (Project manager of Housing Association, the Netherlands).

In Taiwan, most of the local administrator respondents (4 out of 6) stated that an important goal for the local authority was a need to expand accessibility to local services such as day care and home care. However, from the local administrators' perspective, there were difficulties in priorities between the national and local levels. Such difficulties were partly the result of difficulties in the implementation of community care and social care locally. In spite of community care and ageing in the person's own home being clearly stated as a policy goal in all three countries, the interviews with local administrators suggest in practice that their national governments had other priorities. The local administrators interviewed in all three countries thought healthcare were the principal priority on the national care agenda and there is a need for more social care support:

... most of the government's focus has been on hospitals and on waits for going into hospital and so on, so government can, in effect, set priorities and provide performance targets which may be against some of its other statements and some for the things that locally you want to develop (Service Director of Social Services, England).

... the government has other priorities than we would like them to have ... for instance, projects which are short-term, should be long-term but because they have other priorities... they are busy with care about illness (Senior official, CSO, the

Netherlands).

The rapid increase in various service resources and choices were positive signs in Taiwanese care development at the moment but that an important goal for the future would be the need to focus on the expansion of mental and social support if the quality of the care was to be improved (Local government administrator, Taiwan).

Furthermore, although nearly all of the Dutch interviewees from top to bottom were satisfied with current standards of long-term care based on older people receiving generous and consistent care support; they were, nevertheless, concerned at maintaining individual normalisation, autonomy and social inclusion. Staff shortages - which might adversely affect the future of staff quality - were also a problem mentioned by all of the Dutch participants. According to the interviewees, technological innovation was one way of filling the gap in future staff shortages. In addition, maintaining the stability of care staff was another way of preventing increasing care pressures on families.

There were differences in the expectations and goals among different sectors of service providers (e.g. statutory, private and voluntary sectors) in the countries, which may link with their funding resources and the welfare ideology in their country. All of the Dutch voluntary sector interviewees who rely on state funding thought the responsibility for care, regulating policy and funding, should be shared between central government, service providers and families, which reflects the strong Dutch solidarity tradition. In England, most of the providers (8 out of 10) who rely on government funding stated that national government should regulate the local authority's responsibility for assessment and accountability; service providers should provide care according to the outcome of the assessment; and families should take the majority of the responsibility before services came into place. In Taiwan, however, all of the service provider participants agreed that the responsibility for care should be divided between the government (providing carer training, policy regulation and subsidies); service providers (being responsible for providing the service); with decision-making remaining with the families who provided funding and support for older people. Moreover, all of the Taiwanese and Dutch private for-profit service providers interviewed whose funding source is not from the state emphasised that they did not want to have the state interfering in their care provision and wanted to have autonomy.

I think we will never get anything from the government, because we are private ... I prefer also not to get anything from the government, because then the government is in a position to make rules and protocol and things, and, that's what we really don't want. We want to care in our very own way (Home care manager, the Netherlands).

We would like the government to interfere less with what we do and to keep the market free. It is not appropriate for the government to aim for a free market but interfere with prices at the same time. You won't find it in other industries ... (Foreign care agency manager, Taiwan).

The assessors in all three countries interviewed shared similar views regarding their care systems. Firstly, they felt that governments should stop emphasising saving money but focus on improving the quality of care. The Dutch assessors thought there should be more investment in updating care services, for instance, providing smaller scale service units within an institutional setting. They also thought the Dutch government should consider increasing services for older people and put less expectation on the families because there would not be so many family members available for their older people in the future. English assessor participants would like the government to put much more investment into the improvement of service resources. Service criteria could then be more generous and support more older people who need care. Similar views were expressed by Taiwanese assessor interviewees who emphasised the need for the Taiwanese government to review their funding criteria and processes, so that older people could access funding and care support appropriately.

Secondly, there were concerns about service accessibility. The English assessors stated that problems were closely related to resources. The Dutch assessors interviewed felt there was a great need for government to de-centralise the assessment process, to allow professionals to perform their professional skills of personal contact and advising the older people. In Taiwan, it was felt that more information should be made available to the public to help older people and their families be aware of their rights, to know what was available for them; and to reduce the cultural barrier of reluctance in asking for help. Moreover, the Taiwanese National Health Insurance should not restrict the range of healthcare delivered to older people's own homes and communities.

Finally, but most importantly for most English and Dutch assessors in this study, it was felt that bureaucracy limited front-line interaction and prevented adequate partnership working take place:

...if you have social interaction then you have mutual benefits from the work you do it's all theory to say this is what professionals should do and put everything in boxes, ... but in practice you need to see each other, you need to meet each other, you need to make this whole thing work together (Assessor, social worker of Ms Bowman, the Netherlands).

Overall, this section has evidenced some similarities and differences of expectation and goals between different levels of the care actors in the three countries. The question raised here is that if actors in the long-term care system do not always have similar goals and expectations, how can they cooperate and deliver appropriate care services and support to promote successful ageing in long-term care.

Horizontal partnership

With the above expectations and goals from the various actors interviewed in mind, we now examine horizontal partnership across the board. Horizontal partnership can be divided into two levels:

- Firstly, partnership at the strategic level in which the emphasis is on how the policies, resources and investment decisions are made between national and local administrators and relevant actors.
- Secondly, partnership at the operational level which reflects on everyday life of caring for older people and how the care has been identified and provided in practice.

To examine the strengths and weaknesses of partnership in a whole system, the analytical framework used will follow the elements of: the balance of power and resources between actors, namely, fund sharing, joint service delivery and different working cultures.

Partnership at the strategic level

The process of policy-making and legislation in the area of long-term care is complex. One reason is because the long-term care of older people involves various issues such as housing, transportation, benefits, health and social care and no individual department can work alone. Moreover, all three countries have shared the similar challenge of government departments and NGOs at the central level working together with their different interests:

...Sometimes very difficult, because we often have a different agenda. Different ideas about how to arrange things ... (Civil servant, Ministry of Welfare and Sport, the Netherlands).

All those government departments are working with us on our Green Paper. I think its strength would be, overall, I think, you would probably get a shared view of the policy intentions for older people....and a shared understanding of what that would look like... [such as] independence, choice and control going across the government agenda. In terms of weakness, I think we probably still have too many different

initiatives going on at the same time, and there would have been quite a lot of mileage in working together (Civil servant, Department of Health, England).

There is some diversity between [authorities]. Each of them has their own database to store clients' information. Each of them has their own system to develop long-term care (Senior officials, Association of Welfare of Older People, Taiwan).

Conversely, there are different models and structures at the strategic level within the countries. This has resulted in different outcomes in policy-making and strategy. The Dutch strategic working framework was evidently involved with a wide range of care contributors from the system at both the national and local levels - not only central government but also insurance organisations, older people and service providers. At the national and local levels, the participants interviewed indicated there was frequent consultation and active participation in policy making. As a result, nearly all of the Dutch interviewees at national and local level stated that their work was based on shared policies/agreements:

... there is a lot of debate, a lot of contact... a lot of convincing them, they are convincing us, talking, debating and looking for solutions ... both parties are happy with ... At the moment when you make a deal, based on law, you have to do your part of the share of the deal (Civil servant, Ministry of Health, Welfare and Sport, the Netherlands).

However, historically, there has not been a strong partnership between central and local government in the Netherlands regarding the long-term care of older people. This was because care had been the main responsibility of central government until 2006. Nonetheless, the interview with a local policy officer did find that consultation had taken place between central and local government in the policy making process:

We have local government representatives who have lots of talks with central government about the new laws [WMO] and about how much money will come from the centre to us and what tasks we [local government] are able to provide locally. Everything will be done in the discussions and everyone has to agree with it (Local authority policy officer, the Netherlands).

This indicated that the Dutch strategy-making process reflected a balance of equal power and involvement within and between national and local actors, as well as clear macro-institutional responsibilities. Indeed, all of the Dutch participants involved with strategy stated that such joint work was effective in ensuring all the parties had an equal

say and that their views were taken into account in setting policy objectives and deciding the future financing of care. Nevertheless, the Dutch civil servant interviewed pointed out that a great deal of talking and negotiation could not be avoided in the policy-making process. The Dutch experience showed the significance of consultation in partnership working. Time and effort are crucial if a common goal is to be established between actors who have different care ideologies and organisational interests.

Consultation, negotiation and wider care actors' participations in policy-making were dominant themes in the Dutch interviews. There was some evidence of this in Taiwan but in England it was rarely mentioned. The English actors' framework at the strategic level reflected a hierarchical partnership. In England, local authorities and Primary Care Trusts created a local care strategy in line with national policy made by the Department of Health. According to a senior official at national level, policy-making sometimes had to be done without agreement between local and national levels. The funding split between the Department of Health and the local authority; and the different responsibilities of departments in local government (such as Social Services, Benefits and Transport) also showed some difficulties in partnership and service integration at the local strategic level. The Service Director of Social Services in England interviewed explained:

... different organisations ... have often got different boundaries and so they've got different sorts of governments and control so you can get people working well together but you can't guarantee it and sometimes authorities, well every organisation, will worry about their own budget, their own priorities rather than working together (Service Director of Social Service, England).

Similarly, an unequal budget restricted partnership working at the Taiwanese strategic level. However, unlike in England, where one department was responsible for the long-term care of older people at the national level, in Taiwan, national long-term care strategy was further complicated by the involvement of at least four national departments under Executive Yean. Different financial interests between the departments have caused difficulties in joint working at the strategic level within the Taiwanese central government. The Council for Economic Planning and Development was appointed to strengthen partnership at the national level. However, all of the civil servants interviewed found joint working between departments especially difficult as the Council did not have a leading role and financial resources were controlled by the Department of Social Affairs and the Department of Health. Nonetheless, there was some evidence of consultation between various departments at the central level in Taiwan:

We are consulting and keeping other departments informed of what we do at the central level through regular meetings but we do not interfere and pay respect to what other departments do... (Civil Servant, Council of Labour Affairs, Taiwan).

It is to be argued that the Taiwanese partnership model at the national level seems to provide each national department with autonomy and respect. However, such an arrangement could be seen as passive, restricting a closer working relationship within the Taiwanese national government. This could cause difficulties in making consistent national policy.

Furthermore, this study found the partnership between the central and local levels in Taiwan was probably poorer than in England due to a lack of clear central legislation and a shortage of funds and human resources locally:

There are difficulties in implementing policy at a local level. It is because funding and human resources come through either the Ministry of the Interior or local government itself, which leaves us with no power to negotiate or assist local government when they complain that they have not enough money or human resources to operate a policy (Civil servant, Council for Economic Planning and Development, Taiwan).

Partnership at the operational level

Partnership at the operational level involves older people, their assessors, their service providers and their formal and informal carers. This study found none of the local administrators in the three countries had a strong association with informal care at the local level, although a small degree of such partnerships was evident in the English interviews. This lack of evidence indicates that informal carers carry out a massive care responsibility but with no or limited participation and influence at the local level.

When it comes to working with other assessors, the Dutch and Taiwanese assessors interviewed had similar working environments and organisational structures. For instance, evidence of multi-disciplinary teamwork can be found in care settings in both countries. Most of the Dutch and Taiwanese assessors indicated that different professionals working in the same building and same organisation did encourage: (a) a more cooperative working relationship and (b) working towards the same goals and expectations. Conflict between those with different professional backgrounds was rarely mentioned in the interviews with assessors in the Netherlands and Taiwan. Furthermore, in Taiwan, there was some interaction between specialist professionals and service providers concerning their professional practices:

I also meet nutritionists from other care homes to share our working experience. *The Foundation of Long-term Care* also has regular conferences where we can meet professionals from other providers to share our experiences (Assessor nutritionist, Taiwan).

Professional partnership in England was more complicated than in the other two countries because the various assessors were spread throughout different funding bodies – the Primary Care Trust and local authority Social Services Departments. Much consultation and negotiation was required in the process of assessment and commissioning services. This caused operational difficulties in the English system from the point of view of the professionals. The government has introduced a Single Assessment Process to strengthen professional cooperation. However, the difficulties involved in staff working for different agencies and in different buildings – as well as having extensive differences in working culture - limited the possibility of good communication:

It's all very well people in high management talking to each other and making policies but it's people on the front line that actually bridge the gap between the service users and the organisation, and if you don't take all those people with you, with your policies, then, you're going to have a hard job creating the change that's needed ... but until we're actually based together in one office, I don't think we're sort of going to move the whole way ... the essence of our job is communication and yet our own department doesn't seem to understand how important communication is within the organisation ... things like email and that sort of thing, are good on one level but they can be abused because it's like a quick way of communicating something which actually should take a bit longer (Assessor social worker, England).

Furthermore, England was the only country in the three, where due to the professional care culture and status, almost none of the multi-disciplinary assessors and professionals worked in a care provision setting (e.g. homecare, care homes, day centre, etc.). This was probably one of the factors that restricted the quality of continuous care monitoring of individual care needs.

There was clear evidence of partnership between service providers and older people in Taiwan and the Netherlands, unlike England. Nearly half of the Dutch providers (3 out of 7) saw the relationship between service providers and clients as: (a) the clients having full autonomy in decision-making and (b) the providers having the role of offering professional advice and acting on what their clients wanted.

I stay informed. And every so often we have residents' consultation ... [we] explain what has been going on within the nursing home, what developments there are ... So you enter into discussion with the residents. Not so long ago, one of the residents came to me to complain that the toilet paper here was much too hard. You take that on board. You ask yourself what could be done about that. I suggested that when she goes to the toilet, she should ask the nurse to use a flannel instead of toilet paper, especially if they have had a bowel movement. So you encourage the residents to ask us if they have any problems (Nursing home manager, the Netherlands).

In the case of England, a few (2 out of 10) providers stated they had involved the client indirectly by sending out a service evaluation questionnaire or by carrying out a care review. This did not really engage older people as true partnership would do.

In Taiwan, the strong ideology of familial society influenced the familial partnership between older people and service providers:

We see our residents like families and we play the role of their children or grandchildren as well as their carers. We try to make them feel they are not alone in their later life ... (Nursing home manager, Taiwan).

Similarly, interviews show Taiwanese service providers working closely with the family. Most of the providers (7 out of 8) said they had regular contact and full involvement with the families in decision-making.

Some Dutch providers (3 out of 7) believed clients had a primary participant role and that their opinion should be more highly considered than their families' unless they were mentally incapable of making a decision. However, when they worked with families, their needs were considered. Some Dutch providers interacted well by consulting with the family and reacting to the result of the discussion immediately.

... I offer a listening ear ... And I listen straight away if possible, I don't tell them it will have to wait until tomorrow ... Because it's quite a tall order, having to leave your partner behind here and go into a home alone. You have to notice and appreciate that; it's not nothing (Nursing home manager, the Netherlands).

Half of the English respondents (5 out of 10) thought partnership between the providers and the families was good. However, some participants (4 out of 10) said that the interaction with the family occurred mainly when there was a concern about the older person. Participation was in the form of decision-making regarding the needs of the older people following such concerns. Even when participation took place in formal

decision-making, there was little evidence of continuing engagement and monitoring of older person's care unless there was a crisis.

While service integration and collaboration is on the top policy agenda in the three countries, nearly all of the service providers in England (9 out of 10) and most in the Netherlands (5 out of 7) stated they had little contact with other agencies in the provision of care. In contrast, the Taiwanese care system delivered much greater partnership between the providers and other agencies. Taiwanese providers worked jointly with other providers in sharing practical experiences and staff training resources. Similarly, the migrant carer agencies interviewed stated they had a mutual relationship with the carer agencies in the countries that provided the carers.

The relationship with our partner agencies in foreign countries is good. We rely on each other. We need them to provide and train the carers for us. They need us to import their carers to Taiwan. Normally, when we ask for one carer they would provide CVs of a few candidates for us to choose (Migrant carer agency manager, Taiwan).

Vertical partnership

We have demonstrated how in each country partnership has worked at strategic and operational levels horizontally. In this section, we will further examine how partnership works vertically i.e. between different levels.

Social- and health-care barriers in England and Taiwan

Until 2006, government responsibility for health and social care was centralised in a single department in the Netherlands. Although change is now taking place, at the time of my fieldwork, this was the case. Consequently, there were few problems. However, the partnership between Social and Health Departments had been problematic in both England and Taiwan. As a result, there were difficulties in strategic policy-making as well as the provision of care. Most of the interviewees from Social and Health Departments at the local level in both countries found that a number of operational difficulties were caused by national policy inconsistencies. In both countries, the national partnership strategy - because of different departmental interests - led to different priorities between social- and health-care:

Different organisations have often got different boundaries and they have got different sorts of governance. So, you can get people working well together for a bit, but you can't guarantee it and sometimes authorities, well every organisation, will worry about their own budget, their own priorities rather than working together (Service Director of Social Services, England).

There are operational difficulties and confusion across the departments between social- and health-care, which is related with there being no clear recognition between Social and Health Departments at the central level (Long-term care co-ordinator, Taiwan).

The dependency of older people in residential and nursing care was not clearly defined in any of the three countries (Chen, 2010). In the case of Taiwan, the mixture of residents within a care home was partly caused by ambiguous policies between social and health departments. Most Taiwanese interviewees at the local level across social- and health-care (5 out of 6) pointed out that an unclear responsibility boundary between the two had resulted in a duplication of services in practice:

The responsibility between social and health is ambiguous. Sometimes the services provided by both departments are duplicated. Although the Health Department is responsible for healthcare, it is very difficult to define what healthcare is and what social care is. All of the residential homes have fewer nurses in charge, but they also provide nursing care to some of the residents (Head of Social Affairs Bureau, Taiwan).

The barrier between Social and Health Departments also meant there was a barrier to sharing information and resources between assessors from different professional disciplines. Taiwanese local administrators pointed out that currently the primary connection between the two departments was simply through referring a case without further consultation. A lack of information sharing - as well as a lack of recognition of each other's professional expertise - restricted cooperation between them and prevented a holistic approach to the long-term care needs of older people:

There are operational difficulties and confusion across the local department between social- and health-care, which are related to there being no clear recognition between the two organisations at the central level. Each department has its own criteria and understanding of care. We only can refer the case but there is not much consultation. Our assessments are not recognised by the Social Department and they will carry out their own assessment after we refer a case to them (Long-term care co-ordinator, Local Department of Health, Taiwan).

Similar barriers between health and social care exist in England. According to most local administrators (3 out of 4), the difficulties of joint working were information sharing and the responsibility for, and understanding of, holistic caring:

... We do have a kind of protocol for working with them but at the moment we're having to revise that because of the Data Protection Act. They're saying there's a lot of information they can't give us – about individuals. All we can get now is sort of general information from them, if there's a problem in a home ... Health is a bit of a mystery in the way we work ... (Homecare contractor, England).

Decisions at strategic levels about how tasks should be allocated between health and social care actors may be the product of extensive consultation. Nevertheless, on the ground, these were still sometimes perceived as arbitrary by those who participated in this study. Such views were reflected in statements from a number of the English service providers (3 out of 10).

District nurses at the moment do things that homecare staff can't do, but sometimes they think we should be doing them. But, until it's been discussed and negotiated at higher level, our staff can't do it, you know, district nurses will go in and they used to give ear-drops which our staff couldn't do, but they used to say, oh, it's easy, just do it. Well, we couldn't (Homecare manager, England).

Furthermore, the unclear boundary between the two organisations not only affected care practice but also produced confusion and unrealistic expectations among the public:

I think people's perception of what Health should provide and what Social Care should provide is sometimes a bit unrealistic ... relatives with older people often think that somebody should pick this up and not the family ... they feel that their older people or older relatives need healthcare as opposed to social care (Long-term care co-ordinator, Primary Care Trust, England).

Nevertheless, England appears to be further ahead than Taiwan in improving its joint working between Social and Health Departments. Co-ordination has been stimulated by several national policies, such as the Single Assessment Act and the National Service Framework for Older People. These emphasised the importance of enforcing local joined-up services. Intermediate care was a prime example of service integration and joint funding between Social and Health. It provided short-term care or rehabilitation for older people who had just been discharged from hospital. The main aim was to help older people recover from their ill health in order to return home and prevent further hospitalisation. The English Service Director of Social Services said there had been intensive negotiation between healthcare and social care at the local level, in order to achieve the current level of cooperation. Furthermore, clear guidelines and protocols from the central level - to identify expectations and to help those at local level to know how things could work effectively to reach national targets - were in progress:

I do know we've had a new medication policy come out recently, it's still in draft form ... there has been a lot of discussion with the health side, over the last year or so, because of the problem that we have to call nurses in to do certain tasks, and I think it will get better (Homecare manager, England).

A policy of healthcare and social care integration has also been introduced at the local level in Taiwan. For example, the local area is required to have a local drop-in long-term care centre for Taiwanese older people where both health and social professionals work alongside each other to take referrals. However, in the Taiwanese local area studied, there were only staff from the local department of health. This was because there was, as yet, no general commitment or resources between the two local government departments:

Both departments need to set up a drop-in centre. However, the best for the public is a one-window access to meet their needs. The system has become more complicated... there is no general common agreement at the local level between Social Care and Health Departments. The Social Affairs Bureau was reluctant to have their staff based in the drop-in centre because they claimed they don't have staff available (Long-term care co-ordinator, Local Department of Health, Taiwan).

A lack of clear and consistent guidelines between social- and health-care was clearly evident in the restricted partnership working in the Taiwanese long-term care system. The Taiwanese local administrator from the Health Department further argued that partnership could not operate without either clear guidelines or a balance of power between the two government bodies at the local level.

Policy implementation

The case of Taiwan mentioned above has raised the issue of putting policy into practice which requires cooperation between central and local levels. Similar difficulties were also found in the other two countries studied. As mentioned earlier in the paper, much research into partnership has emphasised the importance of the power balance between actors. It can be argued that sometimes a hierarchical structure is unavoidable. This issue will be examined further by looking at how the actors at the strategic level work with those at the operational level to implement and improve long-term care.

None of the three countries has strong sanctions to insist either that service providers or local authorities provide appropriate care. Central government tends to use incentives and budget control to implement policies and to improve care services, but closing down poor-quality services was done reluctantly.

Both the Dutch and Taiwanese governments had adopted a “subsidy” approach in order to implement a policy or stimulate creative care services. In the Netherlands, for example, the subsidy was provided by central government to service providers. In Taiwan, local government and service providers received subsidies from central government to implement policies. The difference between the two is that the Dutch government provided a large, stable budget to service providers in combination with subsidies and law enforcement. In Taiwan, most of the funding consisted of subsidies to local authorities and service providers. One of the disadvantages of subsidies was their short-term nature. Some Dutch participants and most Taiwanese participants claimed the weakness of the grant was that most of the providers were not willing to continue the service once the financial support ended or were reluctant to co-operate when funding was not constant. The consequence was that some services were comparatively unstable, especially in Taiwan:

A lot of care providers say that when the subsidy is ended; they won't do it any more. That's a weakness of our system... We use a combination of law, of subsidies, of financial incentives and management by speech... we talk a lot in the Netherlands as you probably know. So often it's a combination of more implementation ... (Civil servant, Ministry of Health, Welfare and Sport, the Netherlands).

Central government is willing to invest a lot of money to support a subsidy project, but after the project ends it is the responsibility of the local government to arrange the services from their local budget. Most of the local authorities possibly do not want to carry out the project after the funding has ended from the central government ... it [is] simply because there is not enough money locally (Senior official in Disability Welfare Alliance, Taiwan).

Conversely, all English participants (3 out of 3) at the national level drew attention to the so-called “carrot and stick” approach whereby there was a small degree of subsidy to implement a policy and improve long-term care services. This was based on star-ratings of service providers and the local authority. The service provider that had been inspected and judged to be of a higher quality would have a higher star rating. Those rated as having poor care quality would receive advice from the inspection unit or be forced to close down the service. If a local authority received a high star rating it would have more funding through central government and more freedom and autonomy. For the lower star-rated local authority there was less central funding together with close monitoring by central government and quasi-independent inspection units, such as CSCI and the Social Care Institute of Residents (SCI). There was a divergence of views on English strategy between the senior official from Commission of Social Care Inspection

and the civil servants from the Department of Health. Nevertheless, the strategy has been in place for less than a decade and it remains to be seen which of these is the more accurate view.

... I just get very frustrated because it feels like all of that going on, it really feels very hard to get a real change often, in what the older person gets (Civil servant, Department of Health, England).

In spite of the debate mentioned above, it could be argued that it seems contradictory to promote partnership which includes a more equal balance of power on the one hand, with a punitive strategy which implies an unequal power balance on the other. The punitive strategy is probably the way forward to monitor and ensure the quality of care. However, a more equal partnership might be needed to emphasise joint-working to help those poor providers and professionals searching for ways of improving their care service delivery.

IV. Discussion and conclusions

Partnership across the long-term care system is one of the means whereby successful ageing of older people who need care support can be achieved. The study showed that coordination, integration and consultation were very important in implementing partnership. It found clear evidence of a cultural difference between the care systems, in which the Dutch benefited from closer joint-working with clear responsibilities between actors more than the other two countries. The English system reflected difficulties in the healthcare funding system and in partnership arrangements. The empirical findings confirmed that a 'Berlin Wall' (Hudson, 1999) separated two primary care systems (social- and health-care) in conflict with one another. However, examples of service integration, suggesting that partnership in the English care system was improving were well evidenced. Although in some ways the Taiwanese had a more private and family care system, this study provided some evidence to suggest that there was a sound partnership between the various actors. England was the only country which had a strong policy implementation mechanism in this field. In the Netherlands each actor had more or less equal power and autonomy.

For partnership to occur, some work has to be done to recognise that people have different priorities. Therefore, England and Taiwan could learn from the Netherlands institutionally and through policies to ensure relevant actors have similar goals. This would help to achieve successful ageing in long-term care. The unclear boundary between social- and health-care at the national level has brought about difficulties in policy implementation at the local level in England and, especially, in Taiwan. England has

shown some positive action in joint working to improve the situation. This might be a good example for Taiwan. The strong message from the local to the central level in both England and Taiwan was a need for consistent policy and guidelines as well as appropriate funding. The barriers to working in partnership between assessors were clearly demonstrated by English interviewees. From the Netherlands and Taiwan, we learnt that working in a multi-disciplinary team under organisations with the same funding, in the same buildings and working under the same agencies helped assessors from different professional backgrounds to share goals. English structures for assessors and professionals could take the Dutch and Taiwanese experience into account to extend such multi-disciplinary practice not only through the public funding mechanism but also in the care setting. The Dutch themselves have recently shifted some social care responsibility to the local authority. It could be argued that the Netherlands should learn from England and Taiwan that there are huge difficulties for local organisations to implement care when there is a shortage of resources or when there are many policies introduced by different authorities on different levels. This suggests a unified policy in social- and health-care is vital and that good partnerships across various actors are crucial.

As other research (such as Kümpers et al., 2002) has already shown, this study concluded that it was difficult to identify which model of partnership was more desirable than the others as each of them had their own strengths to meet their own care system requirements. Nonetheless, the lack of involvement of formal carers in decision-making had resulted in weaknesses in participation in all three countries.

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ORIGINAL ARTICLE

Online Portal 'Social Service Market': An Activation Strategy for the Social Service Market of Korea¹

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ABSTRACT

In Korea, social service has been introduced by the Korean government in the early 2000 as the last component of the nation's Social Security system. Despite the government's arduous efforts, the development of social service sector has been sluggish, and today the social service market lacks vitality. The primary cause of this problem is the government's control over social service prices; yet, the alteration of the price control policy cannot be a feasible solution to the problem. A 3-year-R&D project aiming at formulating a solution to the problem was proposed by the authors and approved by the Ministry of Health and Welfare. For the last two years, the authors have developed an online portal 'Social Service Market' and implemented various demonstration programs. By using the online portal, the authors have attempted to turn latent consumers and providers of social services into active participants of the social service market. So far, the attempt has been found successful; and the objectives and outcomes of the last years of project are discussed detail in this paper. During the remaining one year of the R&D project, the authors are to improve the online portal so that it serves the consumers and providers of social services as a limit free platform.

<Key-words>

social service, online portal, social service market, activation strategy

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I. Recent Developments of Social Service in Korea

Since the beginning of the 21C, Korea, like other welfare states, has faced the new social risks, namely: low birth rate, population aging, jobless growth and transition to knowledge-based socio-economic system (Yoon, et al., 2011). To address these risks, the Korean government began to pay a serious attention to social services in 2006 by forming a joint Task Force consisting of the Ministry of Strategy and Finance, the Ministry of Health and Welfare and the Presidential Advisory Committee. From the government's perspective, social service was viewed as a stone that could kill two birds: improving the quality of life of people and creating jobs (Yoo et. al., 2015).

Since 2006, the Korean government has introduced various policies to create social service industry. The first step was to expand the concept of social service. Before 2012, regarding the concept of social service, a wide range of definitions was being used (Yoon, 2010). The concept of social service became clearly and inclusively defined as the Framework of Social Security Act was amended in 2012. The new law defines social service as "a system that provides assistance to improve the quality of life of citizens, providing services in welfare, public health and medical aid, education, employment, housing, culture and environment for all citizens who need assistance from national and local government and private sector, guaranteeing the citizen's rights to maintain dignity of life through counseling, rehabilitation, caring, information, use of related institutions, skills development and social participation support" (Lee, 2013).

With this rather comprehensive definition including the concept of "life of dignity" (Nam, 2012), the government set a solid ground on which the provision of a wide range of services that enhance the quality of life not only of disadvantaged class but of all citizen became essential to complete the nation's social security system.

To expedite the growth of social service industry, the Korean government also introduced social service electronic voucher or e-voucher system in 2007. The e-voucher system allowed the government to monitor the provision and utilization of services at present time, and the reimbursement for service providers began to be processed electronically. Providing electronic voucher for those eligible for government funded social services, the e-voucher system expanded service options for the beneficiaries and brought market competition among social service providers (Ministry of Health and Welfare, 2012). Because of the e-vouchers, the service beneficiaries could use services of their choice, which created a social service market in which various social service providers compete to secure their consumers (Yang, 2015). The e-voucher system was applied only to 3 social services in 2007 (Kim, 2013a) and expanded by 2015 to entire services operated by the Ministry of Health and Welfare (Ministry of Health and Welfare, 2015).

In 2012, the Ministry of Health and Welfare changed from designated provider system to registered provider system to lower the barrier of entry for service providers.

Combined with the e-voucher system and other policies, this change has contributed to job creation and the growth of social service industry (Kang, 2012). As a result, between 2007 and 2015, the social service industry expanded significantly. For example, between 2007 and 2015, the budget for the social service programs of the Ministry of Health and Welfare, the most prominent social service providing ministry, increased by 755% from 187.4 billion to 1.41 trillion Won; the number of users increased by 327% from 358,000 to 1.166 million; and the number of providers also increased by 1,802% from 1,274 to 22,960 providers (Social Security Information Service, <http://www.socialservice.or.kr>). Based on such trend, it is predicted that social service market should continue to grow (Seo, 2013).

II. Problems in the Social Service Market: Lack of Vitality

Despite the expansions in the number of users and providers and in the size of program budget, the growth of the social service industry has been sluggish; and the social service market simply lacks vitality. The primary reason for this problem is the government's price control over social services (Yoo, 2014; Yoon, 2015). Currently, the prices of government funded social services are set by the government. Since the price is fixed, service providers rarely find incentives to produce a wide range of diverse services let alone costly but individualized high quality services. This causes more problems of the following nature.

First of all, in reality, the benefits of the government funded social services are available only for the poor, and the market has been forced to target only the economically disadvantaged class. The eligibility decision for the government funded social services is made based on means test result. The level of income standard of the means test is as high as 150% of the average household monthly income for some services, meaning that officially not only the low income class but also middle class are eligible for social services. In reality, however, the middle class rarely use social services. It is partly because the middle class has to make co-payment in order to use social services. But the main reason is that those services the middle and upper classes want to use are not available in the current market. Since the service prices are fixed, diverse and individualized high quality services that the middle and upper classes want to use are not produced. As a result, even today most of the social service programs of the Ministry of Health and Welfare (and other Ministries' programs as well) remain within the boundary of traditional social welfare services aiming at the economically disadvantaged people (Yoo, et. al., 2015). This works against the growth of social service industry.

Second, most social service providers remain in scale and lack professional expertise, which makes it more difficult for them as time passes to effectively respond people's diverse demand for social service (Choi, et al., 2014). The trend for social service demand, however, has changed. Today, the demand for diverse, high quality and time-consumption type services is increasing as a result of changes in consumption pattern and the expand

consumer rights (Choi, et al., 2014). Yet, the government's price control policy by nature has been forcing service providers to pay attention only to the quantity of services; service providers are forced to have adverse incentive not to improve the quality of services beyond a certain level (Yang, 2015) because producing quality services would lead them in the long run to be out of market under the current system. As a result, the content of most social service programs available now are limited to simple "care" services while people in fact demand a variety of services such as culture, leisure, public health, and healthcare, etc. (Park, et al., 2013).

Third, the social service needs of the middle class are not adequately addressed. Researches have shown that the middle class and the low income class have different service needs. The low-income class chooses social services primarily based on whether they could receive government financial support while the middle class chooses such social services to enhance and sustain their life as emotional/psychological support including counseling, healthcare and employment related support (Yoon, 2015). The needs for such services, however, are by and large neglected in the current market because as pointed out previously, social service programs are limited to low-cost simple care services.

In fact, the need for social services has been increasing sharply in Korea because in recent years the weight of life burden people felt have become heavier than ever before as Korea's economy has been falling into bottomless recession. Korea has recorded for the last 12 consecutive years the highest suicide rate in all age groups among OECD countries. One possible way of preventing the middle class from "crashing down" is to support them with proper social services to sustain their life. In this sense, vitalizing the current social service market to produce not only profitable services but also diverse and socially needed services is urgent.

III. Strategy to Address the Problems

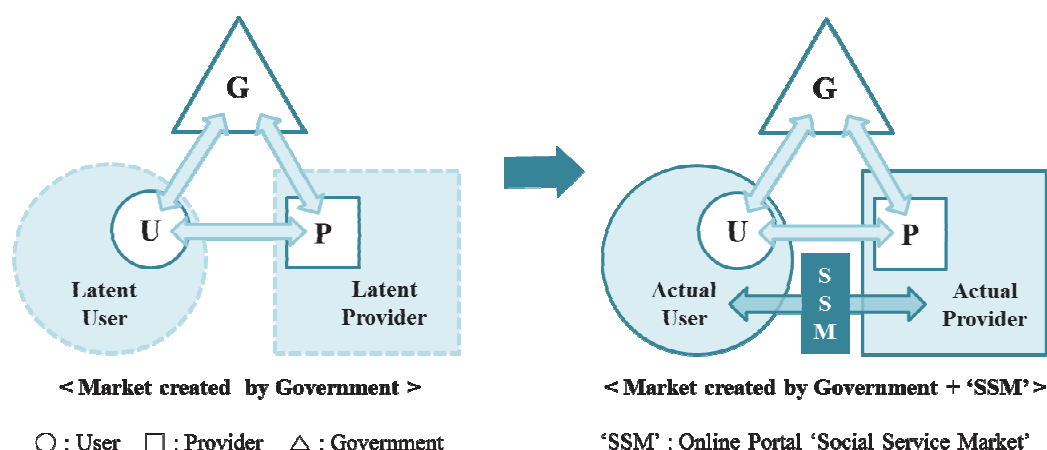
1. Online Portal: A Key Ingredient of Solution

In considering the nature of the problem that the social service market facing, the most effective solution to the problem is to abolish or relax the price control policy. From the government's point of view, however, this approach is not feasible at least for the time being because relaxing the control over the price of the government funded social services may well cause sharp increases in the program budget. Therefore, alternative approaches to activate the current social service market without incurring addition cost to the government must be designed.

For this purpose, a group of researchers including the authors of this paper (hereafter referred to as the researchers) have come up with an online-based approach depicted in <Figure 1>. As shown in <Figure 1>, the researchers propose to develop an online portal and use it as a platform where latent users of social services meet with latent providers,

and the actual transaction of social services can take place.

Under the current social service market created by the government, people who have needs for certain services that are not available in the market remain as latent users. And as long as the government enforces the control over service prices, even those service providers who are capable of producing such services also remain as latent providers. If the latent users and the latent providers, however, identify the existence of the need for certain services and the willingness to produce and sell such services at specific prices, then they could become actual users and actual providers.



<Figure 1> Online Portal:

Platform for Information Exchange and Social Service Transaction

The proposed online portal is a platform where consumers and service providers exchange information regarding service needs, quality of services, feedback from consumers etc. Also, the online portal is going to create a market for those services that are not produced in the current e-voucher social service market and, therefore, are not subject to the price control. In such a market, service providers may well find incentives to offer diverse social services targeting to latent consumers and induce more latent consumers to the market (Yoo, et al., 2015). Offering more diverse services will attract more consumers to the market, and the expansion of the market leads service providers to compete for better qualities services so as to satisfy the needs of the middle class consumers who remain as latent user under the current market.

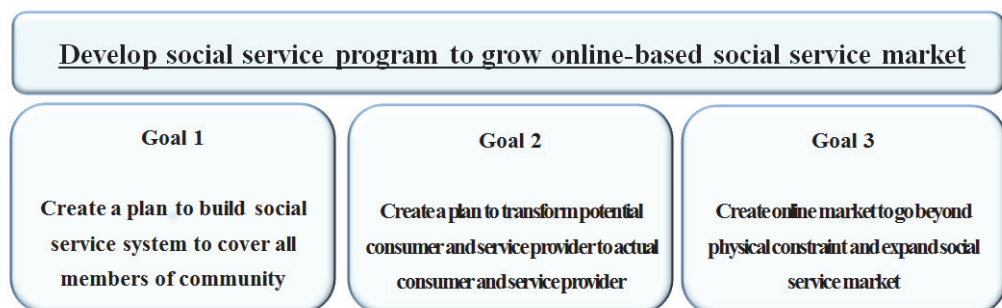
2. Social Service Market Activation: A Case of Online-Based Approach

In the followings section of this paper, an example of online-based activation strategy designed by the researcher is presented. Since 2014, the researchers have been conducting a 3-year-R&D project funded by the Ministry of Health and Welfare (MHW). The example strategy presented here is the preliminary results of the project. The MHW, in order to encourage researchers and social service professionals to do innovative

research and develop new, high value-added social services, began to provide R&D funding in 2010 (Kang, 2012).

Recognizing the importance of online platform as a tool for activating the social service market, the researchers proposed a R&D project to the Korea Health Industry Development Institute which manages the social service R&D of the MHW. The researchers' R&D project titled "Online-Based Social Service Program Development for Social Service Market Activation" was approved and started in September 2014. At present, the 2nd year study is in progress. The project is scheduled to end in August 2017.

In the project, in order to activate the social service market, the researchers have been focusing on three goals: 1) conducting a pilot program in which the researchers have explored the possibility of identifying a group of latent users with a need for specific social service and transforming them into actual users by providing the service they needed; 2) developing an online portal called 'Social Service Market'; and 3) creating an online-based limit free social service market that covers all members of society.



<Figure 2> Goals of the R&D Project

The project is composed of 3 years of study, and each year's study is interconnected to each other. The detail objectives and activities of each year are described in <Table 1>.

1) 1st year: identify latent consumers and providers by running a pilot program

The primary goal of the 1st project year was to identify latent consumers and provides of social services and to transform them into actual users and providers. For this goal, the researchers designed a demonstration program. First, the researchers focused on developing a set of service modules, and developed a total of 15 general service modules. Depending on the nature of needs and the characteristics of latent users, the researchers can design a best service program for latent users by combining the 15 modules.

The next step was to find latent consumers. The researchers targeted two groups of people; one was a group of middle income families with school age children. For the study, a total of 4 families were recruited. These families had difficulties in common in terms of parent-children relationship and spousal relationship. The other group was a group of

children and teachers from 4 different Local Children's Centers. The Local Children's Center provides after school services for low income family children. The researchers ran two camp programs, "Local Children's Center Jeju Island Camp" and "Jeju Island Family Healing Trip" one for each group. By running the two demonstration programs, the researchers intended to achieve two goals. One of them was to help program participants be aware that they had substantial needs for services. The other goal was to spread messages to service providers in the market that it was possible to combine existing social services such as tourism and family therapy and create a new high value-added service.

To evaluate the demonstration programs, need assessments and satisfaction surveys were conducted for the participants before and after the execution of the programs. In addition, a focus group interview was conducted for each group 3 months after the programs to investigate the effect of the demonstration programs on the participants. Study findings showed that the Jeju camp experience help the participants face up to the reality and understand that such services as individual/family counseling, stress management, emotional/psychological support, spousal relationship skill training, parental skill training might be useful for them.

Along with the demonstration programs, the researchers explored new financial resources for activating social service market. The researchers focused on the Corporate Social Responsibility (CSR) funds. For low income class (and even for middle income class as well), a wide range of quality social services meant nothing unless they had financial accessibility to them. Creating new service programs was one thing; enabling them to actually use those services was another. From the researchers' perspective, the CSR was viewed as the only solution. The researchers, therefore, have contacted a number of firms and businesses having CSR funds and explained them what their CSR funds could do for community. Many corporations have shown interest in the researchers' demonstration programs, and among them two decided to sponsor the two demonstration camp program.

In the course of working with CSR managers, it was discovered that there many corporations were willing to make contribution for community but most of their CSR managers had no or little CSR related experience or knowledge. To them, the demonstration program became a good example of how to do CSR. Having noticed this rather wide spread lack experience among CSR managers, the researchers created a webpage to advertise the R&D project and the demonstration projects, to provide examples and information on CSR, and to promote public awareness of the importance of social services.

<Table 1> Objectives and Tasks/Outcomes by Project Year

Year	Objectives	Tasks/Outcomes
Year 1	Conducting Social Service Needs Assessment (I)	Developed questionnaire to identify the needs of potential consumers and service providers Conducted social service needs assessment survey (N=300)
	Developing Project Website	Developed website to publicize(promote) demonstration program [www.essk.kr]
	Implementing Demonstration Program (I)	Identified target groups for demonstration program Developed 15 service modules Developed contents of demonstration program
		Implemented Demonstration (I) Wave 1 "Jeju Camp for Local Children's Center with EBS Sharing 0700" (8 teachers and 51 children from 3 local children's center participated)
		Implemented Demonstration (I) Wave 2 "Jeju Family Healing Trip" (Families of 4 staff members with social contribution responsibility in private corporations participated, N=15)
	Evaluating Effectiveness of Demonstration Program (I)	Conducted pre & post tests and focus group interviews (FGIs) Completed quantitative analysis of survey results Completed qualitative analysis of FGI results
	Developing Private Sector Resources	Mobilized financial support from 'Milal' Welfare Foundation for Demonstration Wave 1 (20 million KW) Recruited service providers to implement demonstration programs (Wave 1 & 2) Mobilized financial resources from private sector (10 counts) Conducted presentation to private organizations for promotion and publicity (4 times)
Year 2	Developing Web Portal	Signed MOU with DQM, Inc., a nonprofit organization to support portal development, and conducted training of research staff Developed a web portal and performed pilot testing (www.ssmarket.or.kr)
	Creating Web Portal Social Service Market	Collected information on social service providers Collected information on product quality and evaluation criteria Set up online payment system
		Conducted presentation to Local Social Service Support Agencies nationwide for web portal promotion and publicity (1 time)
	Conducting Social Service Needs Assessment (II)	Completed survey on social service public officials and social service workers in private sector (N=100)
	Implementing Demonstration Program (II)	Implemented Demonstration (II) (Wave 1 Healing Program for Public Employees, Wave 2 Family Relationship Enhancement, Wave 3 Policemen Refresh Trip with Tourbaksa, Corp.) Built network between potential service users and corporations with interest in social contribution (10 counts)
	Conducting Education & Training of Social Service Providers	Conducted training to potential service providers (i.e., young entrepreneurs starting social service ventures, N=20)
	Evaluating Effectiveness of Demonstration Program (II)	Conducted user satisfaction survey

Year 3	Testing & Improving	Run operational tests of web portal in collaboration with private sector organizations (e.g., collaboration with Microsoft Korea being planned)
	Operation of Web Portal	Upgrade web portal, develop additional functions and solutions to expand capacity
		Conduct survey to assess user satisfaction and collect feedback for website improvement
	Creating Web Portal-Based	Conduct presentation on web portal "Social Service Market" to web portal members Expand membership base
	Social Service Market	to social service providers recognized in each service category, corporate CSR staff, SIGs Build database on social contribution
	Conducting Training of	Conduct education and training to social service program facilitators
	Social Service Providers	
	Developing TQM	Develop criteria to evaluate quality of service products and providers
	Management System	Develop procedures to evaluate quality of services
	Conducting Surveys on	Conduct pre & post tests on participants of various demonstration programs
	Project Participants	Conduct satisfaction survey on collaborating/supporting/sponsoring organizations

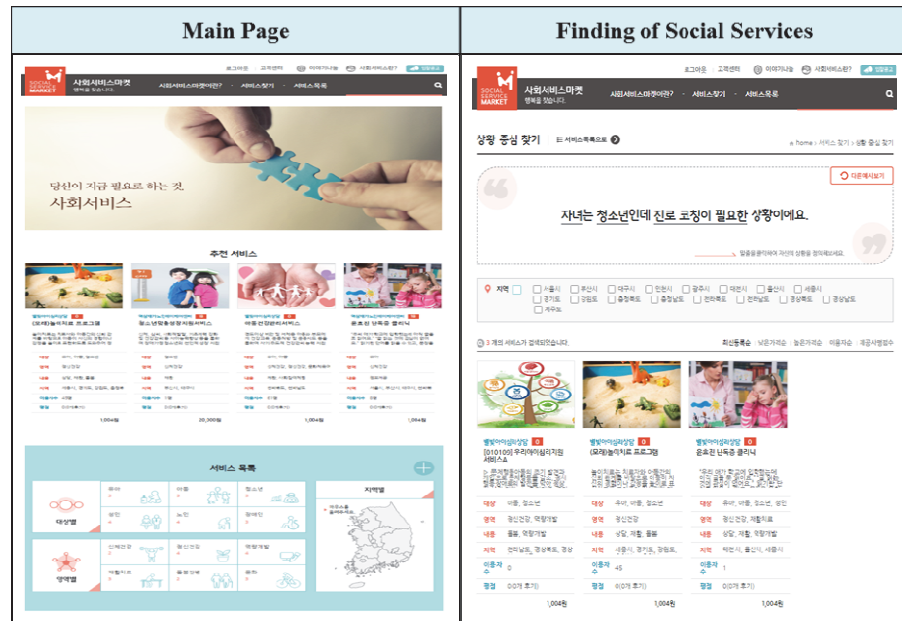
2) 2nd year: develop online portal 'Social Service Market'

In the 2nd year, the researchers with a talent donation from an IT company called DQM developed a web portal "Social Service Market" shown in <Figure 3>. DQM was a small-sized but very active in taking pro bono role for nonprofit organizations and had much previous experience in designing online markets. The company provided vital technical support for the researchers.

Social Service Market (SSM, hereafter) serves as a limit free platform, that is, users of SSM can have access to it anytime anywhere. SSM allows current and latent consumers to search for services, find detail information such as customers' review on services/providers, send signals to service providers regarding their service needs, and purchase services. SSM also allows service providers to advertise their products and companies and to access to customers' feedback and their service need, which might lead them to new products.

SSM was designed to serve 4 different user groups: consumer groups, service provider group, CSR manager group, and SIA group (SIA group is also known as CSR related consultant group). Preliminary research on these groups revealed that the 4 groups had very different primary interests in SSM. In designing SSM, therefore, the researchers have attempted to take such differences into account.

The 1st year's the demonstration programs were modified and expanded for general applications. To find other latent consumer groups, need assessment surveys were conducted on emotional-labor workers including private sector social service professionals (e.g., social workers, nurses, professional care givers) and public employees (e.g., police officers, firefighters and local government employees) for assessing their need for social services. Survey results showed that they had various service needs especially for psychological and emotional support.



<Figure 3> Social Service Market

Three demonstration programs were conducted for three groups of latent consumers: public employee group, single-parent family group, and police officers and their family group. Together with the 1st year's demonstration programs, these three trials provided strong evidences that it was possible to turn latent social service consumers into active consumers as long as service providers tried to design new service programs that satisfy latent consumers' need.

Finding private sector resources was continued in in the 2nd year. By the end of the 2nd project year, a total of 10 CSR funds have been connected to needy groups. The range of private sector resources, however, was widened; the researchers have focused not only on searching CSR funds but also on training service providers. The aims of service provider training were to advertise SSM, change service providers' perspective, and update them with future changes in social service market. The result of a satisfaction survey on the participants showed that the training programs was successful in that many participants found the program as an opportunity to understand a new promising social service market.

3) 3rd year: complete SSM and evaluate the effect of demonstration programs and SSM

The 3rd project year has just begun in September 2016. The main tasks of the 3rd year are: 1) to make SSM be utilized as much as possible; 2) to evaluate the effect of SSM and the demonstration programs; and 3) to develop quality evaluation criteria for social services transacted via SSM as well as service providers.

For the first task, a series of information sessions will be held for various consumer groups, service providers, CSR companies, CSR consultants and local authorizes. As of September 2016, several companies including Microsoft Korea have already expressed

deep interests in SSM and pledged technical as well as substantial support for SSM.

To evaluate SSM and demonstration programs, before and after surveys, consumer satisfaction surveys and focus group interviews will be conducted for service users, demonstration program participants and their families and CSR companies sponsored the demonstration programs. The more SSM is to be utilized, the more service-related data are to be accumulated. Such data enable the researchers to develop service quality and provider quality evaluation criteria in the future.

IV. Summary and Conclusion

In Korea, social service, along with social insurance and public assistance, has become one of the main pillars of the social security system. Despite a series of policies effort of the government, the development of social service industry has been sluggish, and social service market has been losing vitality. Price control over social services by the government is the primary cause of the problem. But the problem has not been addressed because inflating the budget for social service programs is not politically feasible. Facing the new social risks, the middle class also has needs for social services. However, their needs have been by and large neglected in the current social service market created by the government funds.

Having recognized this easy-to-explain but hard-to-solve problem, the researchers proposed and have conducted a 3-year-R&D project to formulate a solution to the problem. The researchers have attempted to activate social service market by creating an online portal 'Social Service Market' and turning latent consumers and providers of social services into actual participants in social service market.

Throughout the last two years, the researchers have achieved many encouraging outcomes. The problem solving approach proposed by the researchers has been proved successful in that many latent consumers have realized that social services would help them improve the quality of their lives; and in that consumers, service providers and CSR companies have expressed deep interests in Social Service Market.

The R&D project is still in progress. During the remaining one year of the project, the researchers need to improve SSM so that it serves as an effective platform that enables consumers and providers of social services to exchange information and make service transaction in a limit free environment. Evaluating the effect of SSM is another challenging task the researchers are facing.

The researchers are sure that improved accessibility to information and convenient service transaction between consumers and providers lay a foundation for a virtuous cycle in which consumers' active search for social services will signal service providers to produce new and better services that satisfy the needs of consumers, which in turn draws more consumers' attention to SSM and provides strong incentives for latent service providers to start social service businesses.

The final outcome of this R&D project is to set such a virtuous cycle into effect by using SSM and ultimately transform the social service market into the one shown in <Figure 4>. And yet, successful activation of social service market depends not only on SSM but also on many other factors, many of which are beyond the realm of social policy. Many things, therefore, remain to be seen.



<Figure 4> New Social Service Market Structure

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ORIGINAL ARTICLE

A Study on the Family Service Provision System in Korea

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ABSTRACT

The purpose of this study was to examine social services for the family, with the specific focus on the service provision system. To do so, we first comparatively analyzed the provision system of family social services with that of general social services. Since service provision structures or types may vary according to the provision environment, the comparative analyses were also conducted based on the regional characteristics, such as big city, small/mid-sized city, and rural areas. The results suggest that family social services differ from general social services in terms of provision subsystems and their relationships. In addition, the regional differences were found in the characteristics of service provision system as a whole. These results may serve as useful basic information for the future development of family social service policies or programs more suitable to the specific regional characteristics.

<Key-words>

family social services, provision system, big city, small/mid-sized city, rural area

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I. Background

Social services are socially-provided services for promoting the welfare of individuals and the society as a whole. The ultimate goal of providing social services is to improve the quality of life of all members of the society. Social services often cover public administration (general administration, environment, security), social welfare (childcare, child/disabled/senior protection), public health (nursing), education (after-school activities, special education), and culture (cultural facilities such as libraries/museums/art museums). Social services also refer to national or regional services, for which the individual and the nation are jointly responsible and that are assumed to require a collective response (Ministry of Health and Welfare, 2016).

This study focuses specifically on family social services. Family social services do not target a specific individual, such as the child, senior, or person with a disability, but rather consider an entire family as a single unit. The complex issues in contemporary society generally come from the problems of the entire family, not just those of a specific individual. Therefore, the social policy that addresses those social problems should consider and involve the entire family, rather than operate on the level of an individual.

Nevertheless, most social services so far have focused on the problems of individuals. Thus, many social services have only limited and temporary effects on solving social problems and cannot provide a meaningful societal impact. We must find the clues to solve many social problems by focusing on the family as the major and fundamental cause of such problems. From this perspective, it can be said that developing family social services is a meaningful and effective policy task (Kim & Woo, 2013; Park, 2009).

Meanwhile, unlike cash payments that can be standardized, social services need to be designed to corresponding to the local (regional) conditions, as well as residents' preference and demands. The understanding of current features of social service provision for the residents in different regions might provide useful policy implications for the future social service policy (Hong, 2014). Therefore, this study focused the regional differences in terms of social service provision, with the specific focus on family social services.

II. Research Overview

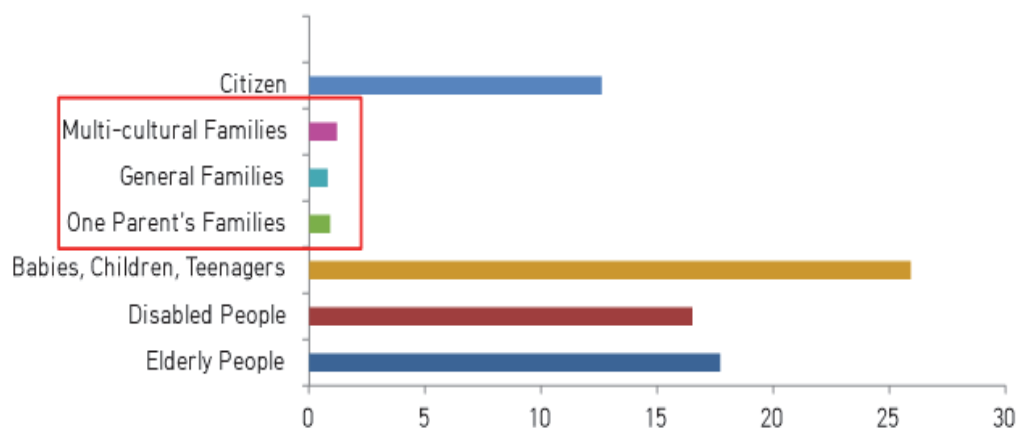
The purpose of this study was to understand the characteristics of social service provision system for the family. The demand for family social services is constantly increasing; however, appropriate provision systems that can respond to this demand have not yet been constructed. In this study, we compared the comprehensive characteristics of family social service provision agencies with those of general social service agencies. Also, we tried to comparatively analyze two service provision systems (family and social) according to regional differences, such as big city, small/mid-sized city, and rural area.

The data used in this study come from the 2013 Social Service Demand-Supply Survey (Korea Institute for Health and Social Affairs, KIHASA). Social service provision systems include three major subsystems, namely, service provision agency, service user, and public sector. Service provision agencies included in this study were those providing services for parent-child relationships, multi-cultural family members, family counseling (parent counseling, couples counseling, etc.), families in crisis, and parent education.

III. Results

1. Family Social Service Provision

As shown in Figure 1, the proportion of service agencies for families is extremely low. Social services for the elderly amount to 18% of the entire amount of provided social services, while services for infants, children and adolescents account for over 25%. Meanwhile, services for multi-cultural families account only for 1% and other services for families are below that proportion.

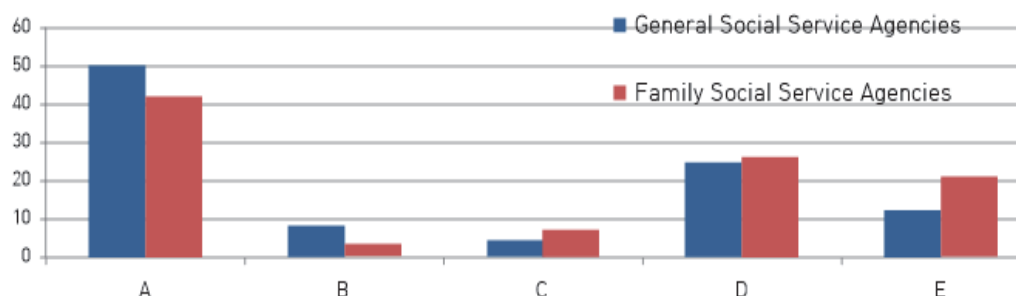


<Figure 1> Family Social Services and Others (%)

2. Family Social Service Agency vs. General Social Service Agency

1) Characteristics of Agencies

(1) General Characteristics of Businesses

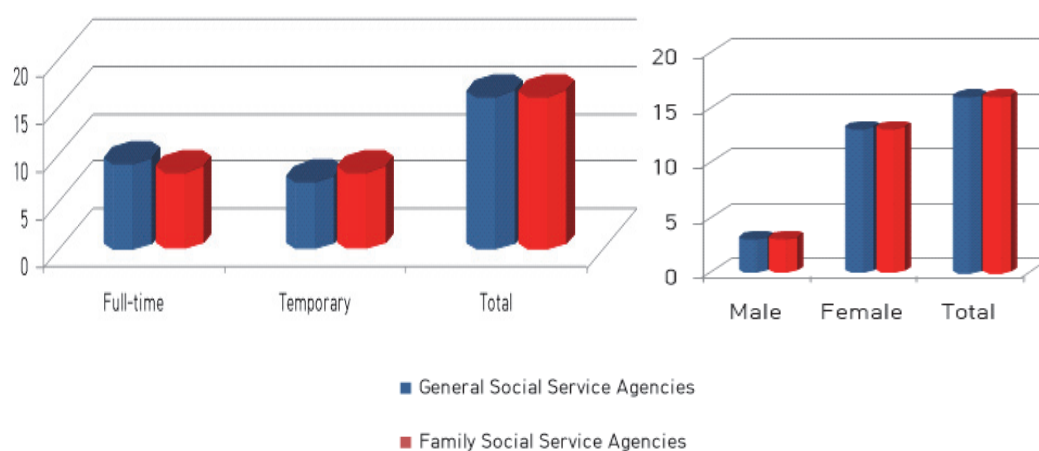


A: Private Business, B: Company, C: Public Sector, D: Corporate Body Except Private Business, E: Nonprofit Organizations

<Figure 2> Characteristics of Service Agencies (%)

Private business represents the highest proportion of both general social service agencies and family social service agencies. The ratio of company among general social service agencies was approximately 8%; however, only 3% of family social service agencies are company. The ratio of national and local governmental organizations(public) shows a relatively large difference between general social service agencies and family social service agencies. Specifically, 4% of general social service agencies are public organizations, while approximately 7% of family social service organizations are public. Nonprofit organizations account for 10% among general social service agencies, while this number is twice as high, 20%, among family social service agencies. Therefore, it can be concluded that nonprofit characteristics are stronger in family social service agencies than in general social service agencies.

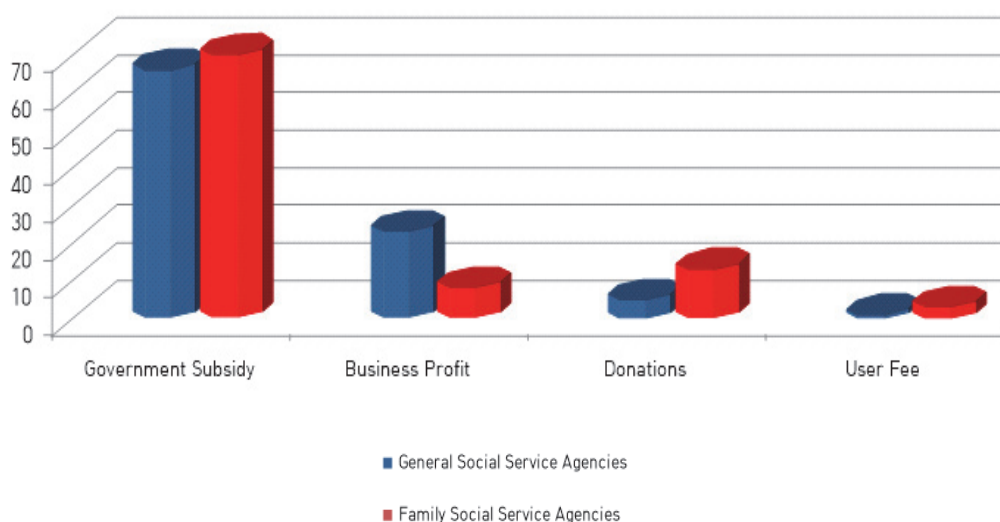
(2) Employment Status and Gender of Employees



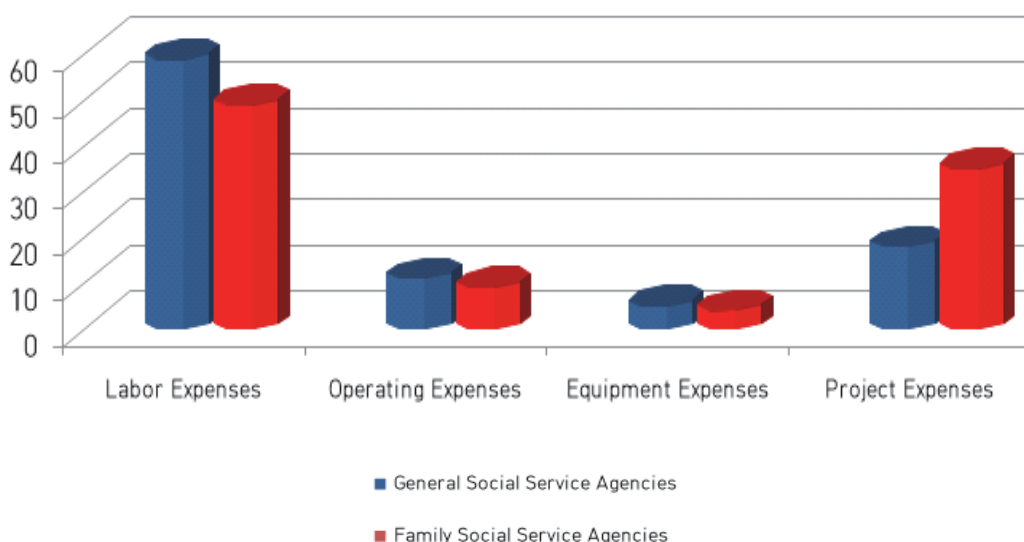
<Figure 3> Employment Status and Gender

Almost no difference in the gender of employees was observed between general social service agencies and family social service agencies. However, employment status was somewhat different. The ratio of full-time employees of family social service agencies was lower than that of general social service agencies. By contrast, the ratio of temporary employees of family social service agencies was higher than that of general social service agencies.

(3) Financial Status



<Figure 4> Total Annual Profit (%)



<Figure 5> Total Annual Expense (%)

Figure 4 and 5 shows the difference in the proportion of total annual profit and expense between general social service agencies and family social service agencies. Government

subsidy income did not vary considerably, though business income accounted for a substantially smaller part of the total among family social service agencies, while donations represented a much larger part. In terms of expenses, labor expenses in family social service agencies were over 10% lower than among general social service agencies. However, the proportion of business expenses among total expenses was much higher in family social service agencies. This difference can be interpreted in relation to agencies' operating type. As mentioned above, the proportion of nonprofit agencies was higher among family social service agencies than among general social service agencies and this is closely related to the fact that the proportion of government subsidy and donations was higher while business income was lower.

(4) Competition Level among Agencies

<Table 1> Average Number of Competitive Agencies

	General Social Service Agencies	Family Social Service Agencies
Having Competitive Agency (%)	2559(75.4)	161(76.3)
Average Number [SD]	17.1[36.4]	8.6[26.0]

The results of analyzing whether or not competing agencies that provide the same services exists demonstrated almost no difference between general social service agencies and family social service agencies. However, there was a remarkable difference in the number of competing agencies: an average of 17 competing agencies among general social service agencies, but only 9 among family social service agencies.

2) Service User Characteristics

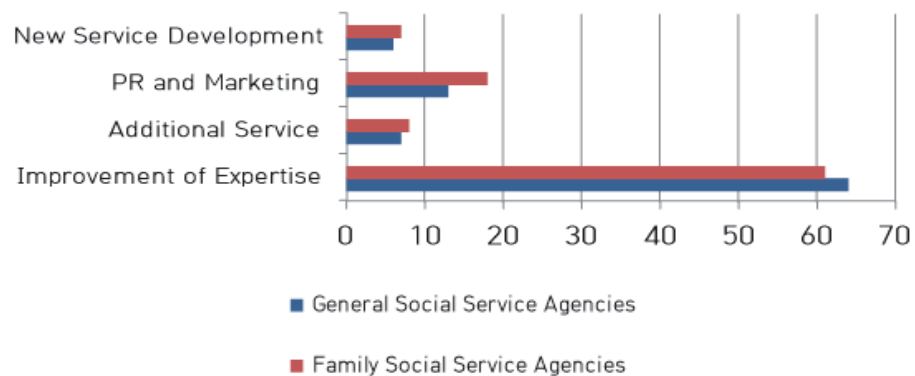
(1) Characteristics of Service Users

<Table 2> Number and Type of Service Users and Waiting List

	Annual Users [SD]	Cost Bearing Types				Number of Waiting Lists [SD]
	Annual Users [SD]	Free Service Users	Deductible Cost Paying User	Full Cost Paying Users	Total (%)	Number of Waiting Lists [SD]
General Service Agencies	10607.3 [28716.8]	44.7 [43.4]	25.7 [36.6]	29.6 [41.8]	100	3.6 [22.1]
Family Social Service Agencies	22203.8 [43200.5]	55.3 [42.7]	21.0 [31.5]	23.7 [37.0]	100	7.2 [26.8]

There are around 10,600 annual users of general social service agencies and approximately 22,200 annual users of family social service agencies, i.e. a much higher number. In terms of users by cost-bearing type, there were more free service users in both general and family social service agencies. The average number of people on waiting lists per month was 3.6 in general social service agencies and 7.2 in family social service agencies.

(2) Agencies' Major Activities Procuring Service

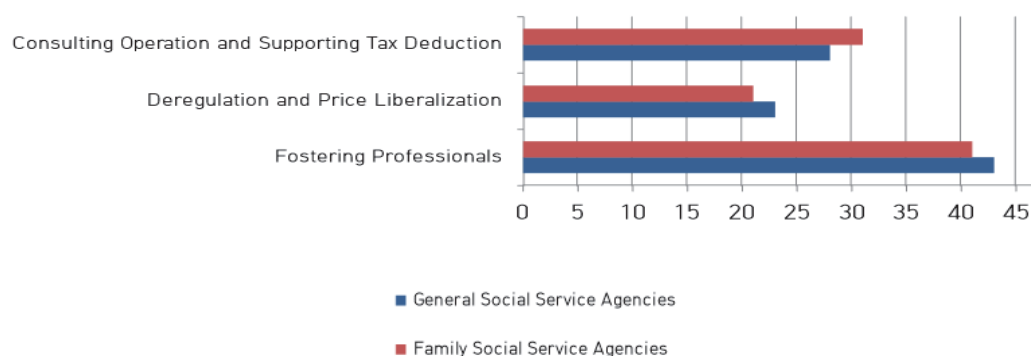


<Figure 6> Agencies' Activities for Procuring Service (%)

Both general and family social services focused on improving service quality and enhancing agencies' expertise. While the overall proportion of responses was similar, PR and marketing activities accounted for 13% among general social service agencies, while the same activities accounted for 18% among family social service agencies, which is rather high.

3) Public Sector

(1) Agencies' Request for Public Sector



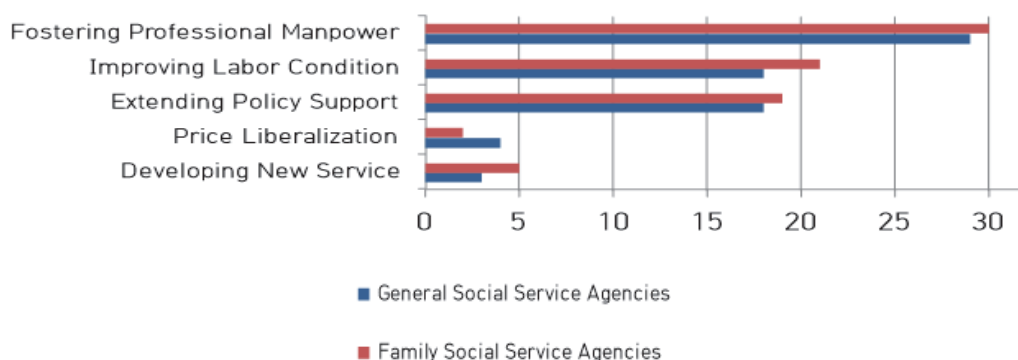
<Figure 7> Agencies' Request for Public Sector (%)

The need to foster professionals accounted for the highest proportion of political support required to develop the social service industry, followed by operation consulting

and taxation system support, deregulation, and price liberalization. Although not substantially different, the responses that operation consulting or taxation system support were required were higher among family social service agencies than among general social service agencies, while deregulation or price liberalization and fostering professionals were relatively less frequent responses among family social service agencies.

(2) Agencies' Requirement for Social Policy I:

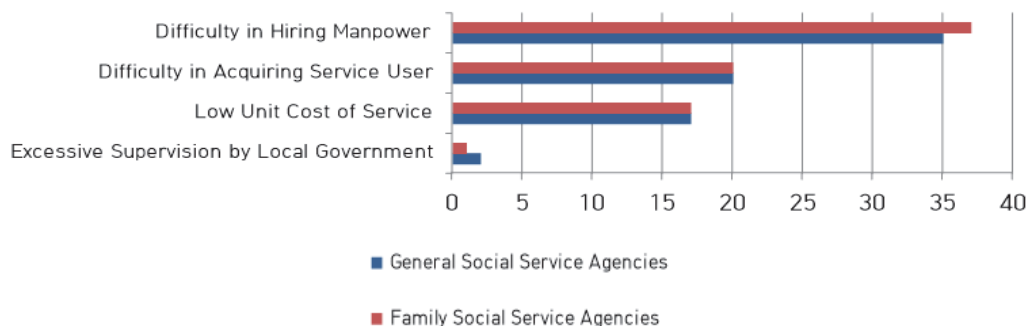
Increasing the Competition Level



<Figure 8> Agencies' Requirement for Increasing Competitiveness (%)

(3) Agencies' Requirement for Social Policy II:

Obstacles to Increase the Level of Social Service Industry



<Figure 9> Agencies' Obstacles to Increase Competition Level (%)

Fostering professional manpower accounted for the biggest proportion among requirements for the social service industry to become competitive among both family social service agencies and general social service agencies, followed by improved labor conditions for manpower and extended support by relevant ministries. Meanwhile, 4% of general social service agencies responded that price liberalization of social services was needed the most, while only 2% of family social service agencies responded the same way. Only 3% of general social service agencies and 5% of family social service agencies responded that the development of new service types is needed. As compared to general

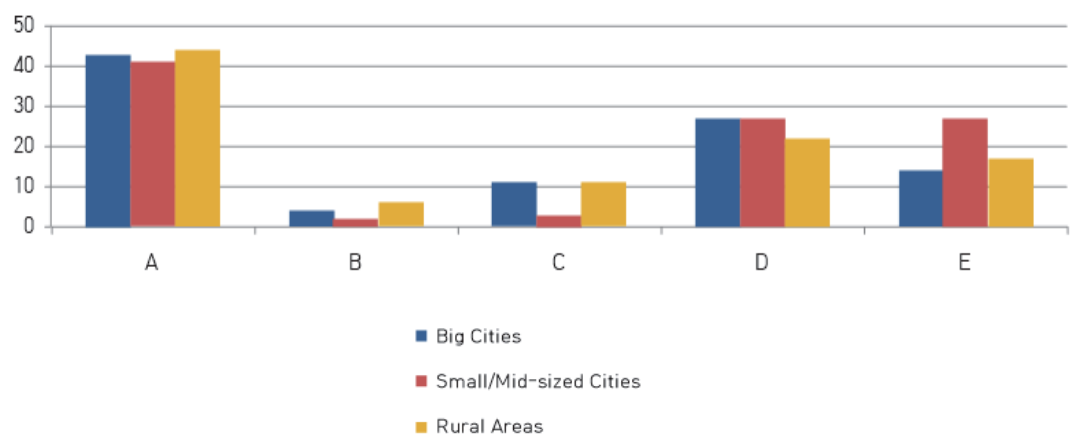
social service agencies, family social service agencies were more interested in the development of new service types than service cost issues.

Difficulty in hiring manpower accounted for the highest proportion of obstacles to the development of the social service industry among both general social service agencies and family social service agencies. In particular, family social service agencies more frequently responded that the difficulty of hiring was an obstacle in developing the social service industry.

3. Family Social Service by Region: Big city, Small/mid-sized City, Rural Area

1) Characteristics of Agencies

(1) General Characteristics of Businesses

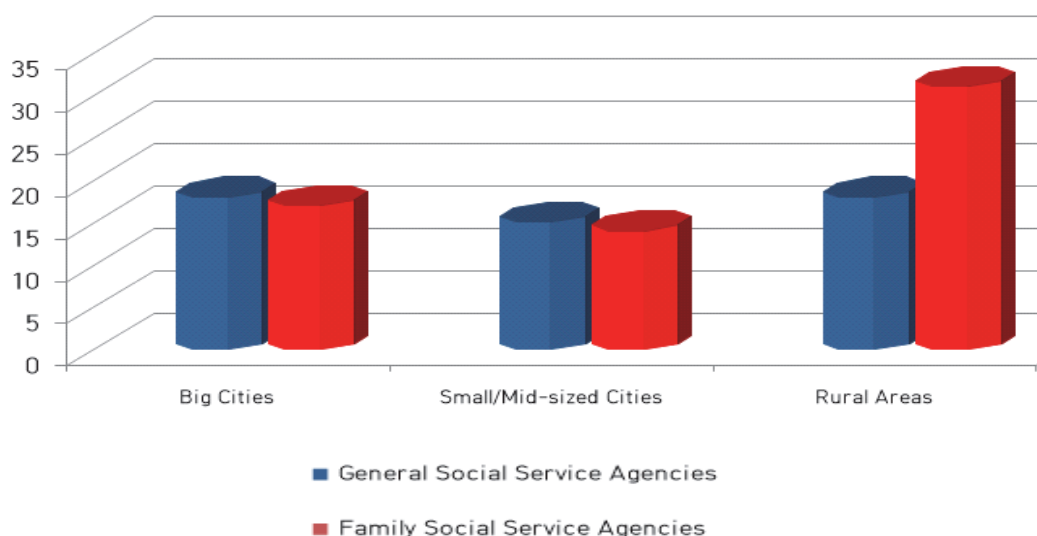


A: Private Business, B: Company, C: Public Sector, D: Corporate Body Except Private Business, E: Nonprofit Organizations

<Figure 10> Characteristics of Service Agencies (%)

Private businesses were overall the most common type of agency by region; however, regional deviation was greater in national government, local government(public), and nonprofit organizations. In big cities and rural areas, the ratio of national and local governments(public) exceeded 10%, but this dropped to below 5% in small/mid-sized cities. On the other hand, the ratio of nonprofit organizations was over 25% in small/mid-sized cities, which was higher than 13% found in big cities and 16% in rural areas. The operating type of family social service agencies was somewhat correlated to their regions.

(2) Employment Type



<Figure 11> Average Monthly Number of Employees

The number of employees in general social service agencies and family social service agencies by region varied significantly in rural areas. Specifically, whereas the average number of employees was 17 in general social service agencies, it was twice as high at 30 in family social service agencies. This is because family social services were more likely to be provided by large facilities in rural areas.

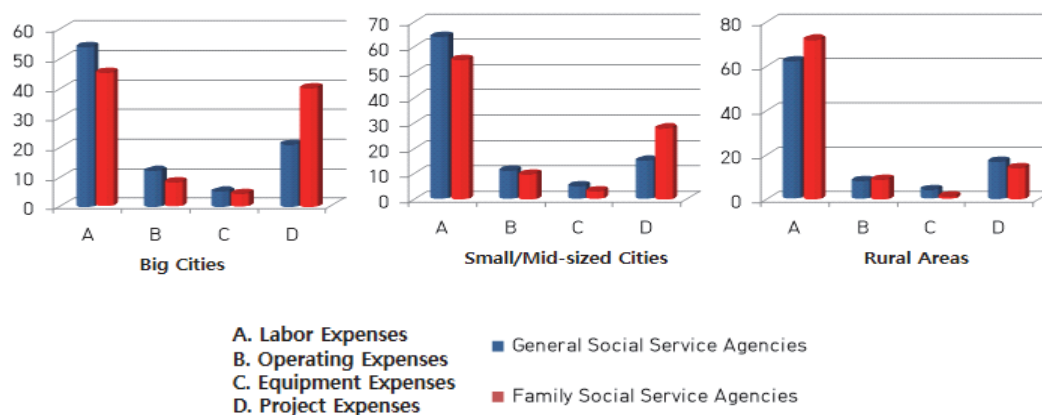
(3) Financial Status



<Figure 12> Total Annual Profit (%)

As can be seen in Figure 12, government subsidies for family social service agencies in small/mid-sized cities exceeded 80%. Family social service agencies had lower business profit as compared to general social service agencies, especially in small/mid-sized cities and rural areas where business profit amounted to less than 10% of total income. The

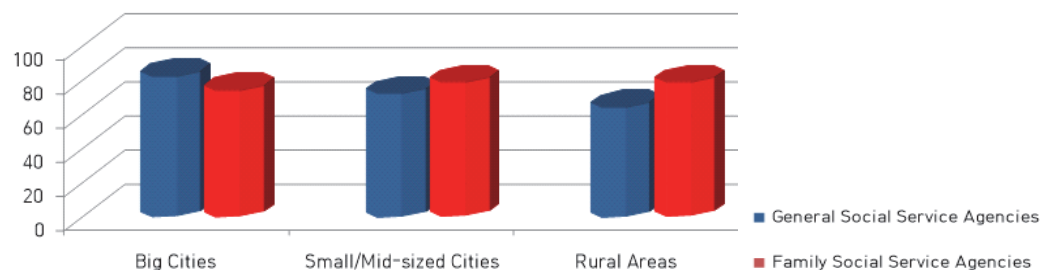
ratio of donations was higher among family social service agencies, reaching 20% in rural areas.



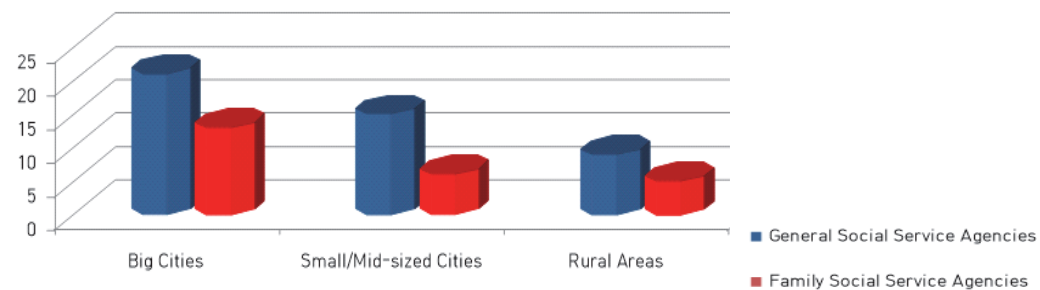
<Figure 13> Total Annual Expenses (%)

In big cities, the proportion of project expenses in family social service agencies was as high as 40%. In rural area, the proportion of labor expense reached 70%. The figure for small/mid-sized cities was between those two.

(4) Competition Level among Agencies



<Figure 14> Having Competitive Agency (%)



<Figure 15> Number of the Competitive Agencies

Overall, competition level among agencies was stronger in big cities; however, there were more competing family social service agencies than general social service agencies in rural areas. The number of competitors was greater among general social service agencies than among family social service agencies in all regions; the deviation was the greatest among small/mid-sized companies.

2) Service User Characteristics

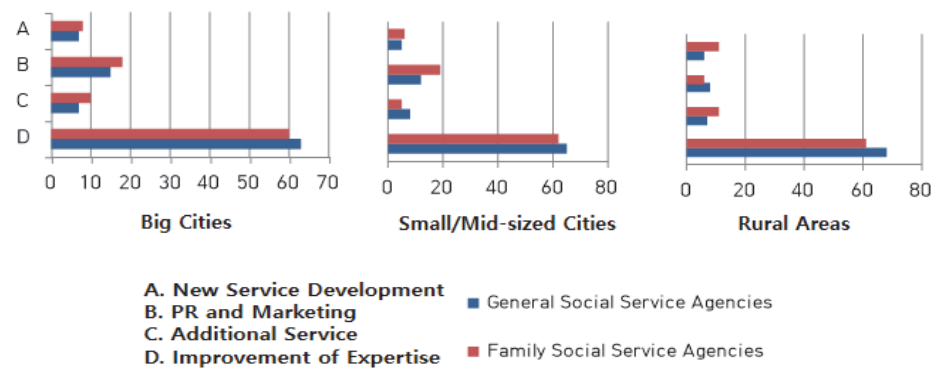
(1) Characteristics of Service Users

<Table 3> Number and Type of Service Users and Waiting List

		Annual Users [SD]	Cost Bearing Types				Number of Waiting Lists [SD]
		Annual Users [SD]	Free Service Users	Deductible Cost Paying User	Full Cost Paying Users	Total (%)	Number of Waiting Lists [SD]
Big	General	12673.9 [32942.8]	41.1 [42.7]	24.3 [35.6]	34.6 [43.4]	100	3.7 [24.7]
Big	Family	28984.1 [53514.8]	54.0 [42.9]	19.6 [32.1]	26.3 [39.8]	100	6.6 [20.5]
Small/Mid	General	9113.9 [25148.4]	45.0 [43.9]	26.8 [37.6]	28.2 [41.1]	100	3.7 [21.1]
Small/Mid	Family	17254.4 [31637.7]	51.3 [43.1]	23.4 [32.0]	25.3 [36.3]	100	7.3 [33.4]
Rural Areas	General	8244.2 [22692.5]	61.0 [40.9]	27.0 [35.7]	12.0 [30.1]	100	3.2 [12.0]
Rural Areas	Family	10718.9 [26631.2]	86.2 [24.0]	13.8 [24.0]	0.0 [0.1]	100	10.6 [12.5]

In big cities, the number of annual users was only approximately 13,000 for general social service agencies and almost twice as high, 29,000, for family social service agencies. Both the number of annual users decreased from big cities > small/mid-sized cities > rural areas for general and family social service agencies. There were more than twice as many people on waiting lists per month in family social services. For rural areas in particular, the number of people on waiting lists for general social service agencies was 3, whereas the corresponding number was 11 for family social service agencies.

(2) Agencies' Major Activities to Procuring Users

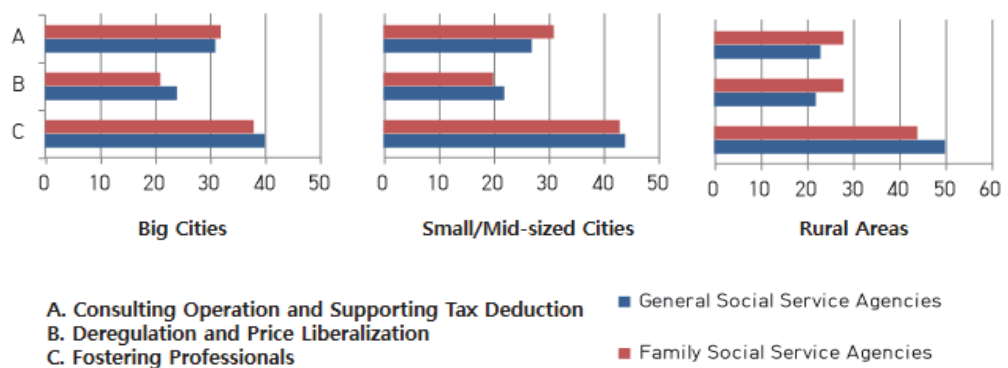


<Figure 16> Agencies' Activities for Securing Service Users (%)

Overall, 7% of general social service agencies in big cities responded that they were focusing on providing additional services and lowering prices; however, 10% of family social service agencies gave the same response, which implies that family social service agencies focus more on additional services or costs. In small/mid-sized cities, the gap between general and family social service agencies' provision of additional services, PR and marketing activities was considerable. Specifically, 8% of general social service agencies responded that they focus on these, while only 5% of family social service agencies gave the same response. Furthermore, 12% of general social service agencies responded that they engage in PR and marketing activities, whereas 20% of family social service agencies gave this response; thus, a great difference in these responses was observed. Overall, in rural areas, there were great differences in all items. In particular, the proportion of general social service agencies developing new services was 6%, while the corresponding proportion for family social service agencies was approximately twice as high, 11%.

3) Public Sector

(1) Agencies' Request for Public Sector

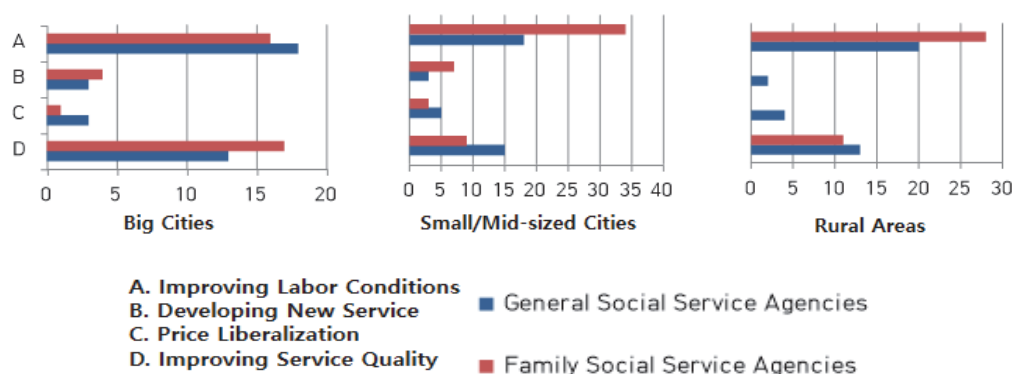


<Figure 17> Agencies' Request for the Public Sector (%)

The regional gap between general and family social service agencies was not so wide in big cities and small/mid-sized cities, but there was a considerable gap in rural areas. General social service agencies' demand for deregulation and price liberalization was higher in big cities and small/mid-sized cities; at the same time, this demand was higher among family social service agencies in rural areas.

(2) Agencies' Requirement for Social Policy I:

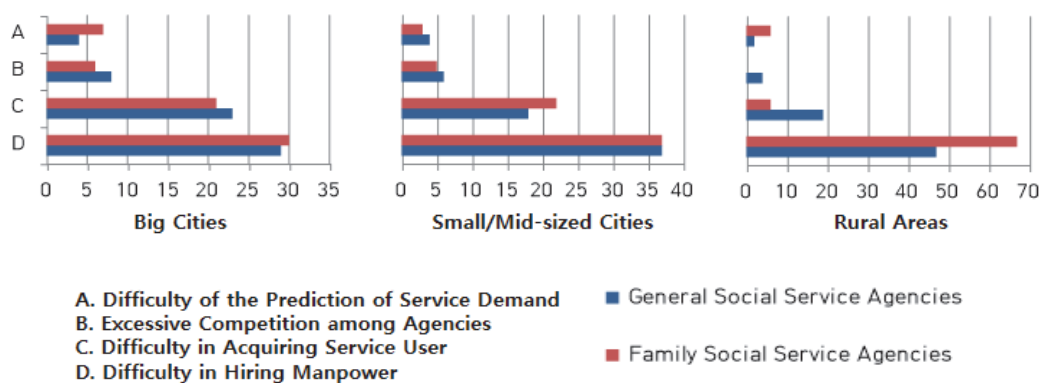
Increasing the Competition Level



<Figure 18> Agencies' Requirement for Increasing Competitiveness (%)

(3) Agencies' Requirement for Social Policy II:

Obstacles to Increase the Level of Social Service Industry



<Figure 19> Agencies' Obstacles to Increase Competition Level (%)

As a requirement for the social service industry to be competitive, improvement of labor conditions was more readily recognized among family social service agencies in small/mid-sized cities and rural areas than among those in big cities. Among the responses regarding obstacles to overcome for competitive social service industry, a relatively high proportion of family social service agencies in big cities responded with the prediction of service demand. In rural areas, they reported more difficulties in hiring manpower than in big cities or small/mid-sized cities, but perceived fewer difficulties in

procuring service users. In rural areas as well, family social service agencies faced a greater difficulty than general social service agencies in predicting service demand.

IV. Conclusion

The results of the analysis of family social service provision system lead to the following conclusions. Firstly, as compared to general social service agencies, family social service agencies show remarkable differences in operation type, total annual income, and expenses. More organizations were nonprofit, such as national and local government organizations and corporate body except company. This shows nonprofit organizations' tendency to provide additional services for families while conducting various other service programs. Moreover, as compared to general social service agencies, the proportion of business income was low and the proportion of support funds was high among family social service agencies. Family social service agencies' total business expenses were twice as high as those of general social service agencies. Furthermore, when comparing the total expense amount between the two agency types, a lower labor cost relative to business expenses among family social service agencies implies that family social service agencies tend to use existing manpower to carry out family social service business.

Secondly, the numbers of competing agencies was lower and the average number of people on waiting lists was higher among family social service agencies. Overall, there were only half as many competing family social service agencies as compared to general agencies, but their average number of people on waiting lists was twice as high as that of general agencies. This shows the necessity for a more extension of family social service provision.

The results of the comparative analysis of family social service provision systems by region, such as big cities, small/mid-sized cities, and rural areas, lead to the following conclusions. Firstly, the proportion of national and local government as a service provider was particularly higher for family social service agencies in rural areas; the average number of employees was significantly higher in rural areas as well. The overall proportion of nonprofit organizations, including national and local governments, was higher among family social service agencies, especially in rural areas where the national or local governments actually become principal agents. The number of social service agencies in rural areas was small and family social services were also offered in larger facilities with more employees.

Secondly, political support for the development of agencies varied between general and family social service agencies by region. In small/mid-sized cities and rural areas, family social service agencies required more government operation consulting and tax support. Therefore, we can infer that family social service agencies in small/mid-sized cities or rural areas experience more difficulties in business operating than the agencies in big

cities. In particular, they commonly request operation consulting and tax support. The public sector should pay attention to this finding and should provide consulting support on overall operation, such as designing of social service design, procurement of users, and provision method to the organizations.

Thirdly, regional differences were observed in obstacles to the development of the social service industry. In small/mid-sized cities, family social service agencies faced more difficulties in procuring service users than general social service agencies, and rural areas faced difficulties in hiring manpower. Rural areas mostly consist of agricultural and fishing areas, so that it may be difficult to hire manpower in view of their geographical position and accessibility.

We analyzed social service provision systems in general and performed a comparative analysis of provision characteristics of family social service agencies. In general, there were substantially fewer family social services offered in rural areas than in big cities or small/mid-sized cities, which results in a much higher number of people on waiting lists. A more concrete and realistic plan must be devised to determine how to reduce this regional gap.

One alternative way to expand social services for families is community service investment(CSI), which presupposes local development and provision. At present, services designed for families in community service investment businesses represent a very small proportion of all services (Ministry of Health and Welfare, 2016). Therefore, in the future, relevant policies should be elaborated for family social services to meet regional demand.

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ORIGINAL ARTICLE

Actual Situation of the Strengths of Elderly Community Residents Living Alone

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ABSTRACT

This study examined factors contributing to the strengths of elderly community residents living alone, and appropriate methods to support them to continue their independent lives while making the most of such strengths. A self-administered questionnaire survey was conducted involving 825 single-person household elderly and 600 elderly individuals living with other people in A City, and 757 that obtained an effective answer was analyzed. In the study involving elderly community residents living alone, although the proportion of those perceiving a decline in their physical functions and requiring assistance based on the Long-term Care Insurance System was high, the rate of independence in 2 IADL items ('managing savings/deposits' and 'preparing meals') was higher than other households. Moreover, a high proportion of the respondents regarded 'paying attention to health in daily life' and 'actively speaking to others' as their strengths. It was not a standpoint as weak up to now existence as for single elderly-person households who tended to be caught, and the necessity of the setting of a place that was able to be active of single elderly-person households voluntary standpoint elderly of 'conversations with friends', 'Health', and 'Meals' in the key word was suggested.

<Key-words>

elderly community residents living, single elderly-person households, strengths

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I. Background

In Japan, the number of elderly individuals aged 65 or over and population aging rate were the highest ever in 2014, at 33 million and 26.0%, respectively. When focusing on the proportions of different family structures with or without family members aged 65 or over in 2013, households with grandparents decreased from 50% in 1980 to 13.2%, while the proportion of couple households was the highest, at 31.1%, followed by single-person households, at 25.6%. In short, couple and single elderly-person households together accounted for more than 50%. (Cabinet Office, 20015a). The family structure has markedly changed since World War II, and a rapid increase in the number of single elderly-person households is expected as a social challenge in Japan.

National measures and social approaches for single elderly-person households were initiated in the 1970's. Since that time, the solitary elderly have been examined in a number of studies. Not only does the term 'single elderly-person households' refer to a living style, but it also creates a negative impression associated with the difficulty in obtaining support from other family members living in distant areas, in addition to the greater need for assistance compared with other households. Therefore, as a supportive measure for them, attention has been paid to their weak points to identify targets for support and challenges to providing it. On the other hand, the results of multiple studies revealed that the solitary elderly's mental and physical health conditions tend to be favorable despite their age, although they are anxious about their future (Murata, Oyama, Murata et al. , 2008; Sato, Tozawa, 2003). This indicates that they are able to continue their daily lives based on their own intentions, and their levels of independence are high. Thus, it may be more appropriate to focus on their positive aspects, such as strengths and life-fulfillment, and develop methods to support their daily lives while making the most of such strengths, rather than regarding them as fragile. It has been reported that the elderly tend to face difficult situations, leading to a loss of opportunity for life-fulfillment, but new fulfilling activities or targets enable them to restore their ability to fulfill their lives (Nomura, 2005). In line with this, the development of support systems that help them find such activities or targets may be essential.

Therefore, this study examined factors contributing to the strengths of elderly community residents living alone, and appropriate methods to support them to continue their independent lives while making the most of such strengths. As outcomes, the study aimed to provide basic data for the development of business activities focusing on the positive aspects of single elderly-person households, whose number is expected to increase in the future, and contribute to their activation, as well as the realization of a society making the most of the elderly's abilities.

II. Definition of term

Based on findings of previous studies, 'the elderly's strengths' as the core concept of the study were defined as their abilities to maintain and continue their daily lives using their experience-based knowledge as a basis for their self-confidence. Similarly, 'life-fulfillment' was defined as joy and pleasure that support the elderly's motivation to live.

III. Methods

1. Study Design

Cross-sectional study

2. Object region

It is located in the plains part, it is enclosed by mountains, and A city is located in a rich natural environment. It is located from Tokyo to 100km sphere, the national road and the private railway road run, and the built-up area is formed. The population is 49,787 people as of 2015, and the population is almost level-offs compared with 2010. A total number of households in 2015 is 6,549 families, and the rate of aging is 29.6%. It increases by 4.4% compared with the rate of aging in 2010, and aging is an advanced region every year.

3. Research subjects

The object was assumed 825 single-person household elderly who lived in A city and 600 non-single-person household elderly, and assumed to be the one that it was able to answer the survey form by the principle itself. 825 single-person household elderly rode the meal delivery business to the single-person household elderly who was the business to A city social welfare conference together, and distributed the survey from to all numbers of single-person household elderly whom the welfare commissioner understood through the meal delivery. 600 non-single person household elderly did the random sampling with the list of names by which A city excluded the elderly in the single-person household from the basic resident register, and mailed the survey from A city to the object person.

4. Methods of data collection and study items

1) Methods of data collection

A self-administered questionnaire survey

2) Period

January 2016 — March 2016.

3) Study items

(1) attribute

Age, Sex, Long-term care insurance, Marriage, Children, Family composition

(2) Self-rated health

Four present conditions were evaluated by the method.

(3) Evaluation of life function

Based on “questionnaire of comprehensive geriatric assessment in community-dwelling older adults” (Okura, Tuji & Tsunoda, 2011), the researchers determined 19 domains of evaluation of life function. This is composed of 2 physical functions items, 2 mental functions items, 2 cognitive function items, 2 lifestyles items, 3 social participation items, 3 home environments items, 2 social status items, and 3 IADL items. And furthermore, this scale of preceding study has been confirmed reliability and validity.

(4) Domains of strength

The researcher determined 8 domains of strength, conducted a pre-test. Daily life-related functions consisted of physical and psychological functions, family environments, social involvement, and social status.

(5) Domains of life-fulfillment

In previous studies, the following activities and targets were regarded as fulfilling: jobs, hobbies, the family, friends, social activities, and religions. Based on these, the researchers determined 8 domains of life-fulfillment.

5. Analysis

After calculating descriptive statistics for each domain, A t-test was conducted to examine the relationship between the elderly's positive attitudes and age, and chi-square tests were conducted to analyze the relationships between their attitudes and other items. Moreover, the association between the family structure and results representing daily life functions was examined. As questions regarding such functions were answered, adopting 3 different 4-point scales, responses were divided into 2 groups in each case for analysis using the chi-square test: 1) <Favorable> and <Generally favorable> vs. <Unfavorable> and other choices: favorable and unfavorable groups, respectively; 2) <Always> and <Sometimes> vs. <Never> and other choices: always/sometimes and rarely/never groups, respectively; and 3) <Able to do it at all times> and <Able to do it on some occasions> vs. <Unable to do it> and other choices: able and unable groups, respectively. Regarding strengths and life-fulfillment, the associations were examined based on the family structure using the chi-square test. Statistical analysis software SPSS Ver.23.0 was used for the analysis.

6. Ethical considerations

It did by using the explanation book, it had the reply of the schedule, and it was assumed that it agreed as the answer to the main enumeration was based on the free will, did not have the disadvantage even if the answer to the investigation was refused, and the answer was unsigned and privacy was strictly defended. Moreover, it explained a research program and ethical consideration to the welfare commissioner who cooperated in the survey of the single-person household beforehand by the document and oral, and cooperation in the research was strictly defended. The present study was conducted in collaboration with City A with the approval of the ethics committee of Juntendo University Faculty of Health Science and Nursing (approval number:27-08).

IV. Results

1. Characteristics Baseline

Among the 1,425 questionnaire sheets distributed to single elderly-person households, 826 were returned (response rate: 58.0%). Excluding 18 responses with unclear attributes and 51 containing inaccurate information regarding the living style despite the distribution based on the family structure, 757 (valid response rate: 91.6%) were analyzed.

In the breakdown according to the family composition, it was 450(valid response rate 89.1%), and the number of valid responses of non-single-person household elderly was 307(valid response rate 95.6%) in the number of valid responses of single-person household elderly. The mean age was 76.8 ± 6.8 years old as a whole as for the attribute, the single-person household elderly was 79.3 ± 5.7 years old, and non-single-person household elderly was 73.3 ± 6.6 years old. The difference of a significant age was admitted by the verification result of the difference of the mean age in each family composition and ($p < .001$) and "Single-person household elderly" were higher than "Non-single-person household elderly" in the significance the mean ages. Single-person household elderly's 109 men (24.2%) were high, and as for the sexuality, the woman was high and woman's ratio was high in the significance with 341 people (75.8%) ($p < .001$) (Table 1).

<Table 1> Characteristics Baseline

Items	Contents	Almost		Single-person		Non-single-person		p
		n	(%)	n	(%)	n	(%)	
		mean±SD		mean±SD		mean±SD		
Age		757		450		307		<.001
		76.8±6.79		79.3±5.7		73.3±6.6		
Sex	Male	757		450		307		<.001
	Female	263	(34.7)	109	(24.2)	154	(50.2)	
Long-term care insurance		494	(65.3)	341	(75.8)	153	(49.8)	<.001
		713		418		295		
	No	598	(83.9)	323	(77.3)	275	(93.2)	
	Yes	115	(16.1)	95	(22.7)	20	(6.8)	
nursing care level	Assisted service	90		77		13		.011
	Primary nursing care	72	(20.0)	65	(84.4)	7	(53.8)	
		18	(80.0)	12	(15.6)	6	(46.2)	
Marriage		671		387		284		<.001
	Single	67	(10.0)	66	(17.1)	1	(0.4)	
	Married	604	(90.0)	321	(82.9)	283	(99.6)	
		661		364		297		
Children	No children	96	(14.5)	78	(21.4)	18	(6.1)	<.001
	Had children	565	(85.5)	286	(78.6)	279	(93.9)	

2. Relation to evaluation concerning vital function according to family composition

A high proportion of single elderly-person households responded <Unfavorable> to the questions: 'the health condition' and 'fitness' in the domain of physical functions ($p < .001$). The proportions of those who responded <Always/Sometimes> to 'depression/pleasure' in the domain of mental functions, and 'forgetfulness' in that of cognitive functions were high ($p < .01$). On the other hand, there were no significant differences between single elderly-person and other households in responses regarding 'proactive problem management' or 'memory and calculation'. In the domain of lifestyles, the proportions of those who responded <Rarely/Never> to 'determining meal times' ($p < .001$) and <Unable> to 'sleeping well' ($p < .01$) were high. In the domain of social participation, the proportions of those who responded <Unable> to 'providing cooperation in the event of a disaster' and <Rarely/Never> to 'being useful to others' were high ($p < .001$), but there were no significant differences between single elderly-person and other households in responses regarding 'the frequency of going out'. In the domain of home environments, the proportions of those who responded <Rarely/Never> to 'providing consultation for other family members or friends' ($p < .01$), <Unfavorable> to 'relationships with other family members or relatives' ($p < .001$), and <Rarely/Never> to 'the presence of care-givers' ($p < .001$) were high. In the domain of the social status, the proportions of those who responded <Unfavorable> to 'the financial situation in comparison with others of the same age group' ($p < .001$) and <Rarely/Never> to 'being satisfied with your own academic background' ($p < .01$) were high. Lastly, in the domain of IADL, the proportions of those who responded <Always/Sometimes> to 'managing savings/deposits' and 'preparing meals by yourself' were high ($p < .001$), while there were no significant differences between single elderly-person and other households in responses regarding 'going out using public transport systems' (Table 2).

<Table 2> Relation to evaluation concerning vital function according to family composition

Items		Single-person		Non-single-person		p
		N	(%)	N	(%)	
<Physical functions>						
The health condition		444		306		
	Favorable	303	(68.2)	253	(82.7)	<.001
	Unfavorable	141	(31.8)	53	(17.3)	
Fitness		445		306		
	Favorable	262	(58.9)	233	(76.1)	<.001
	Unfavorable	183	(41.1)	73	(23.9)	
<Mental functions>						
Depression/pleasure		445		305		
	Always/Sometimes	197	(44.3)	101	(33.1)	.001
	Never	248	(55.7)	204	(66.9)	
Proactive problem management		446		148		
	Able to do it	352	(78.9)	244	(79.5)	.464
	Unable ti do it	94	(21.7)	63	(20.5)	
<Cognitive functions>						
Memory and calculation		445		305		
	Favorable	336	(75.5)	246	(80.7)	.057
	Unfavorable	109	(24.5)	59	(19.3)	
Forgetfulness		447		302		
	Always/Sometimes	235	(52.6)	128	(42.0)	.003
	Never	212	(47.4)	177	(58.0)	
<Lifestyles>						
Determining meal times		443		304		
	Always/Sometimes	390	(88.0)	291	(95.7)	<.001
	Rarely/Never	53	(12.0)	13	(4.3)	
Sleeping well		440		302		
	Able	315	(71.6)	245	(81.1)	.002
	Unable	125	(28.4)	57	(18.9)	
<Social participation>						
The frequency of going out		440		303		
	Always/Sometimes	393	(89.3)	276	(91.1)	.253
	Never	47	(10.7)	27	(8.9)	
Providing cooperation in the event of a disaster		438		302		
	Able	306	(69.9)	262	(86.8)	<.001
	Unable	132	(30.1)	40	(13.2)	
Being useful to others		430		302		
	Always/Sometimes	259	(60.2)	255	(84.4)	<.001
	Rarely/Never	171	(39.8)	47	(15.6)	
<Home environments>						
Providing consultation for other family members or friends		438		295		
	Always/Sometimes	305	(69.6)	235	(79.7)	.002
	Rarely/Never	133	(30.4)	60	(20.3)	
Relationships with other family members or relatives		428		304		
	Favorable	375	(87.6)	291	(95.7)	<.001
	Unfavorable	53	(12.4)	13	(4.3)	
The presence of care-givers		435		300		
	Always/Sometimes	251	(57.7)	279	(93.0)	<.001
	Rarely/Never	184	(42.3)	21	(7.0)	
<Social status>						
The financial situation in comparison with others of the same age group		439		302		
	Favorable	272	(62.0)	240	(79.5)	<.001
	Unfavorable	167	(38.0)	62	(20.5)	
Being satisfied with your own academic background		428		302		
	Always/Sometimes	253	(59.1)	201	(66.6)	.024
	Rarely/Never	175	(40.9)	101	(33.4)	
<IADL>						
Going out using public transport systems		445		306		
	Always/Sometimes	378	(84.9)	271	(88.6)	.094
	Rarely/Never	67	(15.1)	35	(11.4)	
Managing savings/deposits		447		305		
	Always/Sometimes	416	(93.1)	237	(77.7)	<.001
	Rarely/Never	31	(6.9)	68	(22.3)	
Preparing meals by yourself		450		307		
	Always/Sometimes	427	(94.9)	208	(67.8)	<.001
	Rarely/Never	23	(5.1)	99	(32.2)	

3. Association between the family structure and the 8 domains of strengths

On simple tabulation to examine the association of strengths, the most frequent strength of single elderly-person households was 'paying attention to health in daily life' (82.8%), followed by 'actively speaking to others, such as greeting' (81.7%) and 'being able to access places independently' (79.9%). In the case of other households, 'being able to access places independently' (80.5%) was the most frequent strength, followed by 'communicating with friends/acquaintances/colleagues' (79.5%) and 'actively speaking to others' (77.2%). On examining the association between the family structure and strengths, significant differences were observed between single elderly-person and other households in responses regarding 'paying attention to health in daily life' ($p < .01$) (Table 3).

<Table 3> Association between the family structure and the 8 domains of strength

Strength	Single-person		Non-single-person		<i>p</i>
	N	(%)	N	(%)	
Not depending on others	337	(76.1)	213	(70.5)	.091
Paying attention to health in daily life	367	(82.8)	230	(76.2)	.025
Being interested in society	200	(45.1)	163	(54.0)	.018
Asking other people to do what the elderly cannot themselves	216	(48.8)	134	(44.4)	.239
Being able to access places independently	354	(79.9)	243	(80.5)	.852
Actively speaking to others, such as greeting	362	(81.7)	233	(77.2)	.127
Being financially independent	136	(69.3)	230	(76.2)	.040
Communicating with friends/acquaintances/colleagues	327	(73.8)	240	(79.5)	.076

4. Association between the family structure and the 8 domains of life-fulfillment

On simple tabulation to examine the association of life-fulfillment, the most frequent fulfilling activity for single elderly-person households was 'watching television or videos' (63.4%), followed by 'conversations with friends' (61.7%) and 'hobbies and pastimes (without profits)' (54.2%). 'Watching television or videos' (66.7%) was also the most frequent fulfilling activity for other households, but it was followed by 'observing the growth of children and grandchildren' (65.0%) and 'communication with other family members' (58.0%). In short, significant differences were observed between single elderly-person and other households in responses regarding 'conversations with friends' ($p < .001$) (Table 4).

<Table 4> Association between the family structure and the 8 domains of life-fulfillment

Life-fulfillment	Single-person		Non-single-person		<i>p</i>
	N	(%)	N	(%)	
Jobs (profits)	43	(10.4)	94	(31.3)	<.001
Hobbies and pastimes (without profits)	225	(54.2)	157	(52.3)	.618
Communication with other family members	62	(14.9)	174	(58.0)	<.001
Observing the growth of children and grandchildren	149	(35.9)	195	(65.0)	<.001
Conversations with friends	256	(61.7)	150	(50.0)	.002
Social activities	61	(14.7)	71	(23.7)	.002
Religions	27	(6.5)	11	(3.7)	.095
Watching television or videos	263	(63.4)	200	(66.7)	.363

V. Discussion

For the single-person household elderly who resided from the result of the attribute in the region, the mean age was 79.3 ± 5.7 years old, and the age was the old ages compared with non-single-person household elderly. Moreover, there were a lot of unmarried persons, and were a lot of one where the child did not exist. Nobody was able to rely on easy and near oneself it was guessed to the single-person household elderly who resided from these results in the region to live by my power though it was an old age.

In previous studies, 2 categories: <do not want to be cared for by others> and <do not want others to intervene>, were commonly extracted from elderly males living alone in urban and rural areas, reflecting their proactive attitude toward solitary life, and such a tendency toward autonomy was regarded as their strength (Kono, Tadaka, Okamoto, et al. 2009). In the present study involving elderly community residents living alone, although the proportion of those perceiving a decline in their physical functions and requiring assistance based on the Long-term Care Insurance System was high, the rate of independence in 2 IADL items ('managing savings/deposits' and 'preparing meals') was higher than other households. Based on this, the ability to continuously lead an independent life even in situations requiring assistance may be the solitary elderly's strength, contributing to their sense of self-worth. Furthermore, as some of the respondents also regarded 'paying attention to health in daily life' as their strength, they may have regarded health as indispensable for solitary life, reflecting their recognition of the self-responsibility for health as a basis for an independent life. Omori reported that 'the maintenance of pride' contributes to the health of the elderly living in rural areas or their ability to continuously lead a daily life (Omori, 2004), indicating the necessity of redefining them as more active and independent, rather than passive and fragile, individuals, and making environmental arrangements for them to play more important roles. In the present study, a high proportion of the respondents regarded 'paying attention to health in daily life' and 'actively speaking to others' as their strengths. Regarding life-fulfillment, the proportion of those who regarded 'conversations with friends' as a fulfilling activity was high. Considering that the majority of them were able to prepare meals by themselves as an IADL, as previously mentioned, the following paragraph discusses appropriate environmental arrangements for the solitary elderly, focusing on 'communication with others', 'health', and 'meals' as keywords.

First, to make the most of the solitary elderly's ability to actively communicate with others as their strength, various approaches, such as making environmental arrangements for them to participate in activities, are currently being provided in municipalities, with the aim of promoting the prevention of care dependency in the elderly, and realizing a society that allows social participation throughout life. The results of the present study confirmed the usefulness of making such arrangements to make the most of the solitary elderly's strength. However, at present, the dissemination

of such activities among community residents remains insufficient. Inviting elderly residents living alone to them is particularly difficult (Takeuchi, 2006a). Takeuchi noted that 'invitation', 'environmental arrangements', and 'activities' are important points (Takeuchi, 2006b). As a large number of the respondents regarded 'actively speaking to others' and 'being able to access places independently' as their strengths, and 'conversations with friends' as a fulfilling activity for them, it may be necessary to create environments and opportunities for the solitary elderly to enjoy daily conversations with neighbors, and make friends in locations that are familiar to them (such as supermarkets and clinics), rather than special settings.

As for the other strengths, 'health' and 'meals', it may be effective to create opportunities for communication with others through diet. Takemi noted a tendency of the solitary elderly, who frequently and actively communicate with others through diet, to develop healthy dietary patterns, resulting in a favorable health condition and productive life, emphasizing the necessity of focusing on the process of developing such dietary patterns and attitudes, rather than simply examining their consequences or the contents of meals (Takemi, Adachi, 1988). At this point, in order to make the most of the solitary elderly's strengths, it may be effective to provide them with opportunities to share their daily activities and knowledge, such as preparing healthy meals for others, in addition to making arrangements for them to gather and eat together.

As future perspectives, approaches for the reconstruction of social environments for the solitary elderly to play central roles may be needed in the domain of home environments, in which single elderly-person compared with other households showed significantly lower scores.

VI. Limitations and Avenues of Future Research

There is the limit of this research by the object person, and the deviation in the result is in the questionnaire survey the limit in one region because it doesn't obtain the answer of the weaker elderly because it targeted the one that it is possible to answer voluntarily and is a possibility of causing it. Moreover, because the distribution method was different in the single elderly -person households and non- single elderly -person households, the bias to the result is incontrovertible though there was no difference in the recovery factor. Being clarify about a concrete strategy that makes the best use of the strengths so that the person who cannot answer the enlargement and the questionnaire survey in the object region may also target, and the single elderly -person households may continue the self-supporting life in the future is necessary. Moreover, two scales of that were used this time strengths and life-fulfillment, to generalize because it is not one that is fully discussed about the reliability and validity there is a limit. The future, and sufficient consideration in these measures, it is a challenge to a measure obtained by consensus.

VII. Conclusion

The following facts were clarified as a result of this survey.

In the study involving elderly community residents living alone, although the proportion of those perceiving a decline in their physical functions and requiring assistance based on the Long-term Care Insurance System was high, the rate of independence in 2 IADL items was higher than other households. Moreover, in the present study, a high proportion of the respondents regarded 'paying attention to health in daily life' and 'actively speaking to others' as their strengths. The necessity of redefining them as more active and independent, rather than passive and fragile, individuals, and making environmental arrangements for them to play more important roles.

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REVIEW ARTICLE

Effects of Cardiac Rehabilitation on Executive Function in Sedentary Older Adults: A Systematic Review

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ABSTRACT

Cardiac rehabilitation(CR) can help improve cognitive function in sedentary older adults. However, there is no systematic review about effects of CR on cognitive function in these older adults. We have performed a systematic review to assess the validity of the current data, including recent randomized controlled trial(RCT) and prospective studies that the effect of CR on cognition in older adults. All studies were searched on the PubMed and Cochrane Library from January 1, 2000 to September 30, 2016. Seven hundred sixty-eight studies were identified using the database as described in the Methods section. After removal of duplicates and determined whether it met inclusion criteria, 68 full-text studies were assessed for eligibility. Sixty-one studies were excluded, leaving 7 studies that were eligible for review. A total of 7 studies were included in the analysis. Only two studies were RCT. The majority (n=5) were categorized as prospective studies. a meta-analysis of two studies demonstrated that improved executive function in sedentary older adults after CR sessions when compared to controls. In conclusion, our meta-analysis showed that CR improved executive function in sedentary older adults.

<Key-words>

cardiac rehabilitation, physical exercise, executive function, cognitive function

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I. Background

Much in the decline can be attributed to effective management of risk factors associated with the disease (Anazodo, Shoemaker, Suskin, et al., 2013). However, cardiovascular disease (CVD) still remains the leading cause of non-communicable disease deaths in 2012 and was responsible for 17.5 million deaths, or 46% of non-communicable disease deaths. Of these deaths, an estimated 7.4 million were due to heart attacks (ischaemic heart disease) and 6.7 million were due to strokes (WHO, 2014).

One growing concern is the potential link between cardiovascular disease risk factors and neurological impairment in older adults (Anazodo, Shoemaker, Suskin, et al., 2013). A number of studies have demonstrated that risk factors for CVD are associated with accelerated brain decay and alterations to the natural age-related decline in cerebrovascular functions (Friedman, Tang, de Haas, et al., 2014; de Toledo Ferraz Alves, Ferreira, & Busatto, 2010).

Interestingly, when older adults with CVD performed aerobic exercise training, typically included in cardiac rehabilitation (CR) program, improved coronary flow, lower the risk of myocardial reinfarction, lower mortality rates, and improve overall cardiac function (Shephard & Balady, 1999). CR can also help improve cognitive function in sedentary older adults. Observational studies have demonstrated that physical activity is associated with a slowing in age-related decline of cognition and reduction in cognitive impairment (Weuve, Kan, Manson, et al., 2004; Abbott, White, Ross, et al., 2004).

However, the effect of exercise on cognitive function remains controversial. One RCT reported that moderate-intensity physical activity program focused on walking strength, flexibility, and balance training compared with a health education program did not result in improvements in global or domain-specific cognitive function (Sink, Espeland, Castro, et al., 2015). Furthermore, according to a recent Cochrane review, revealed that there was no clear evidence of benefit from exercise on cognitive functioning in people with dementia (Forbes, Forbes, Blake, et al., 2015). However, this review included various types of exercise intervention such as walking, catching, throwing, kicking balls, leg weight exercise, parachute reaches, passing a bean bag, playing volleyball, and dance. Higher-intensity aerobic training programmes, supplemented by resistance training, have been recommended and deemed safe for CR patients by many authorities (Price, Gordon, Bird, et al., 2016). Exercise prescription for aerobic and resistance training that is based on evaluation findings, risk stratification, patient and program goals and resources. Aerobic exercise as CR program is consisted of walking, treadmill, cycling, rowing, stair climbing, arm ergometry, and others. On the other hand, resistance exercise as CR program is consisted of elastic bands, cuff/hand weights, dumbbells, free weights, wall pulleys, or weight machines (Balady, Ades, Comoss, et al., 2000).

Although the documentation of neuropsychological changes in patients who are affected by exercise has not been recognized, CR programs combining aerobic and

resistance training together, may be more beneficial for cognitive function than aerobic exercise or resistance training alone (Schopfer & Forman, 2016). However, there is no systematic review about effects of CR on cognitive function in sedentary older adults.

In this study, we have performed a systematic review to assess the validity of the current data, including recent RCT and prospective studies that provide a broad-based view of the effect of CR on cognition in older adults.

II. Methods

1. Data searches and sources

All studies were searched on the PubMed and Cochrane Library from January 1, 2000 to September 20, 2016. We used Medical Subject Headings (MeSH) terms to find studies of CR including: cardiac rehabilitation/aerobic exercise/physical fitness. To reduce our findings to studies that measured cognitive function and CR, we searched using the following MeSH terms: (cognition*, cardiovascular diseases/rehabilitation*) (cognition disorders/rehabilitation*, cardiovascular diseases*), and (cognition/physiology*, cardiovascular diseases*). To further reduce our findings to studies that focused on human subjects, we searched using the MeSH terms: clinical trials*, and humans*.

2. Inclusions criteria

1) Type of studies

We included in our analysis only those studies that met the following criteria: 1) they addressed randomized clinical trials (RCT), case-control surveys or prospective study; 2) the reported data were suitable for analysis; 3) they were published in English.

2) Type of participants

We included only participants met the following criteria: 1) they were 50 years or older; 2) they have attended at least one CR program of walking, treadmill, cycling, rowing, stair climbing, arm ergometry, and others; 3) they diagnosed with New York Heart Association (NYHA) heart failure class II, III, or IV; 4) they had an myocardial infarction (MI), had undergone revascularization (coronary artery bypass grafting [CABG] or percutaneous coronary intervention [PCI]), or had angina pectoris or coronary artery disease [CAD] defined by angiography; 5) they reported 1 or more of the cognitive outcomes: global cognitive function, memory, language, executive function and so on.

3. Exclusions criteria

Studies were excluded if they were: 1) non-intervention studies; 2) review studies; 3) animal studies; 4) abstracts; 5) participants had a history or current diagnosis of a significant neurological disorder (dementia, stroke, or Parkinson's disease), head injury, severe psychiatric disorder, or substance abuse/dependence.

4. Interventions

CR is a comprehensive secondary prevention program that has evolved as a standardized component of the cardiovascular armamentarium (Schopfer & Forman, 2016). In this study, CR program was considered to be any aerobic exercise of any intensity, duration, or frequency that aimed to improve cognitive function.

5. Outcome measures

All selected studies should be assessed cognitive function. There were no limitations to the measurements taken as long as quantitative and objective measures of cognition (e.g., global cognitive function, memory, language, or executive function) were recorded.

6. Risk of bias

Risk of bias of included RCT studies was assessed using the Cochrane Collaboration's core risk of bias items (Higgins & Green, 2011). Studies reporting significant effects of CR programs on cognitive functions are more likely to be published as compared to studies in which no significant results were found. However, it is unlikely that this publication bias would affect our results since we focused on cognitive function as the main outcome of cardiac rehabilitation.

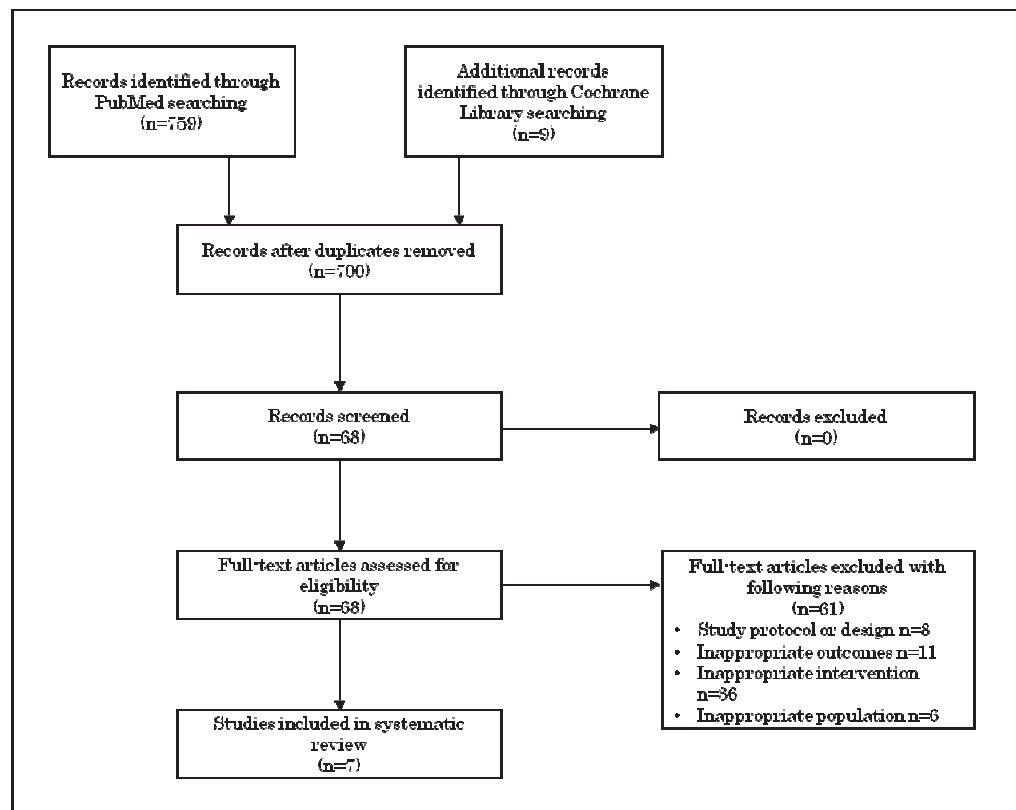
7. Data analysis

Mean scores and standardized deviations were extracted from the reviewed studies. Standardized mean difference (SMD) was calculated for proportions (fixed-effect model) (Vogels, Scheltens, Schroeder-Tanka, et al., 2007). Calculations were performed using a fixed effects model. One comparison was made: cardiac rehabilitation versus control group. An α value of 0.05 was considered statistically significant. All analyses were conducted using Review Manager version 5.3.

III. Results

1. Description of studies

Seven hundred sixty-eight studies were identified using the database as described in the Methods section. After removal of duplicates and determined whether it met inclusion criteria, 68 full-text studies were assessed for eligibility. Sixty-one studies were excluded, leaving 7 studies that were eligible for review (Figure 1).



<Figure 1> Flowchart of study selection process

2. Characteristics of included studies

Characteristics of the studies that were included in the review are summarized in table 1 and table 2. A total of 7 studies were included in the analysis. Only two studies were RCT. The majority (n=5) were categorized as prospective studies. The median follow-up of 12 weeks, with 1 study reporting at least 2 weeks of follow-up, and 6 reporting follow-up of 12 weeks or more. The median age of participants across studies was 66.8 years. Most studies were small in sample size (median n=49; range 18 to 80). Most studies were conducted in a supervised hospital/university-based setting. Six studies were comprehensive CR, and 1 study included both CR and music intervention. The trail making test (TMT) A and B, which measures attention, perceptual speed, cognitive flexibility and visual memory was used in six studies. In two RCTs, participant groups were sedentary or had lightly active lifestyle with no cognitive impairment. In five prospective studies, all patient groups had CVD, heart failure(HF), coronary artery disease(CAD), or coronary heart disease(CHD) (table 1). All RCTs reported cognition was improved by performed CR. In 5 prospective studies, although these were conducted pre-post comparison in only intervention group, 3 studies were significantly improved global cognition, attention, executive function, and verbal fluency (table 2).

<Table 1> Design, methods, interventions and assessment, and outcome measures in included

Source and study design	Participants	Intervention	measurements
Randomized controlled trial(n=2)			
Iuliano et al (2015)	Eighty participants, 32 males and 48 females, aged 66.96 ± 11.73 , volunteered for this study. Inclusion criteria was sedentary or they had lightly active lifestyle. The participants were randomly divided into the four following groups: Resistance group(n=20), Cardiovascular group(n=20), Postural group(n=20), Control group(n=20).	All exercise types were conducted in a local gym, 3 times per week for 12 weeks. Each session lasted 30 minutes. Resistance group performed high intensity strength training involving six muscle groups: shoulders, arms, chest, abdomen, back and legs. Cardiovascular group performed high intensity cardiovascular training on ergometer machines, including treadmills, cyclo-ergometers and step-ergometers. Postural group performed low intensity training based on postural and balance exercises. Control group did not perform any type of training.	<ul style="list-style-type: none"> • Attentive matrices test(Attentive test) • Raven's progressive matrices tests(Raven test) • Stroop color word interference test(Stroop test) • Trail making test A and B • Drawing copy test
Vaughan et al (2014)	Forty-nine women aged 65 to 75 years, with no cognitive impairment. Inclusion criteria was they were doing <60min of formal exercise each week. The participants were randomly divided into the two groups: an intervention group(n=25) or a control group(n=23).	Exercise was conducted in a university campus and community-based halls. Intervention group attended a 60-min class, twice a week for 16 weeks. Each session included cardiovascular(aerobic), strength(resistance) and motor fitness(balance, co-ordination, flexibility and agility) training and a formal warm-up and cool-down routine. The control group was asked to continue with usual activities.	<ul style="list-style-type: none"> • The California older adult stroop test (COAST) • The controlled oral word association test (COWAT) • The letter-number sequencing(LNS) test • Trail making test A and B(TMT)
Prospective study(n=5)			
Alosco et al (2014)	Fifty two patients with HF completed a 12-week phase II CR program, 12-month follow-up(mean age=66.7 ± 7.8 years).	The majority of exercise sessions were conducted at hospital. The phase II CR program: 12 weeks with three exercise/education sessions per week. Each session consists of 1 hour of exercise and 1 half an hour of education. The session consisted of warm-up, cool down, stretching, and a 40-minute aerobic exercise such as rowers, treadmills, stationary cycles, elliptical trainers, stationary steppers, and arm exercises.	<ul style="list-style-type: none"> • The mini mental state examination(MMSE) • Trail making test A and B, Digit symbol coding • The California verbal earning test-second edition(CVLT-II) • The Boston naming test, the animal fluency test

Stanek et al (2011)	Fifty-one older adults with CVD: myocardial infarction, cardiac surgery, HF, CAD, and/or hypertension(mean age=67.8±9.1years).	Exercise was conducted in a hospital. Electrocardiogram-monitored exercise and education program is up to 12 weeks, with three sessions per week. Each CR session consists of 1 hour of exercise and 30 minutes of education. Individualized plans consist of warm-up, cooldown, stretching, and a 40-minute aerobic exercise including rowers, treadmills, stationary cycles, elliptical trainers, stationary steppers, and arm exercises.	<ul style="list-style-type: none"> Modified MMSE(3MS) Trail making test, Letter-number sequencing (LNS) subtest of Wechsler adult intelligence scale-III Hopkins verbal learning test-revised learning, delayed recall, and recognition discrimination(HVLT-R), Brief visual memory test-revised learning, delayed recall, and recognition discrimination(BVMT-R) Boston naming test-short form(BNT-15), Animal naming
Carles et al (2007)	Twenty-four male patients with CAD(n=12) or HF(n=12) who participated in a CR program(mean age=51.6 ±6.5years).	Patients underwent a standard CR program, including a 10-minute warm-up period followed by 35 minutes of exercise on a treadmill, a stair machine, and a leg ergometer, at an intensity ranging from 70% to 80% of heart rate reserve. Exercise was performed 5 times a week for 2 weeks and the program included 14.6±3.0 training sessions.	<ul style="list-style-type: none"> Exclusively cognitive solicitation (COG): mental arithmetic test, trail making test, memory test A tracking task (TRAC) with a mouse on a computer screen
Gunstad et al (2005)	A total of 18 persons with CHD(13 males, and 5 females, mean age=68.1±7.7years)	Exercise was conducted in a hospital. All participants received standard care as part of a phase II CR program. Exercise training began with 10- 50 15-minute intervals of activity, with a gradual increase to 30 to 45 minutes of continuous aerobic exercise 3 times per week for 75 minutes for 12 weeks.	<ul style="list-style-type: none"> Trail making test A Grooved pegboard Category fluency Digit symbol-coding The Beck depression inventory Animal naming
Emery et al (2003)	Thirty-three men and women (mean age=62.6±10.5 years) with CAD.	Exercise was conducted in a university center. During the one of the exercise sessions, participants listened to a taped musical selection through earphones attached to a personal cassette recorder. Each participant completed both 12-week exercise sessions, with the order of conditions determined by random assignment. Exercise sessions consisted of 10 minutes of gradual increase in slope and speed of the treadmill until reaching the equivalent of 85% of VO ₂ max.	<ul style="list-style-type: none"> The verbal fluency test

Abbreviation: heart failure; HF, cardiovascular disease; CVD, coronary artery disease; CAD, coronary heart disease; CHD.

<Table 2> Results of included studies

Source and study design	Results
Randomized controlled trial (n=2)	
Iuliano et al (2015)	Significant differences were found among the four groups in the cognitive scores: Attentive test target ($p=0.048$), Raven test score ($p=0.018$), Raven test time ($p=0.045$) and Drawing copy test time ($p=0.037$). No significant differences in the scores of the other cognitive variables or in the interaction Time \times Groups were found.
Vaughan et al (2014)	The neurocognitive performance scores showed between group differences for TMT A and B tests($p<0.05$), COAST word($p<0.05$), Interference and Total and the COWAT($p<0.01$).
Prospective study(n=5)	
Alosco et al (2014)	Repeated measures analyses showed a significant time effect for both attention/executive function and memory($p<0.05$). Attention/executive function performance increased from baseline to 12 weeks and these gains remained up to 12 months; memory was unchanged from baseline to 12 weeks, but then improved between the 12-week and 12-month time points.
Stanek et al (2011)	Repeated measures ANOVA showed improvements in global cognition, attention-executive-psychomotor function, and memory. Improvement in METs was related to improved verbal recall.
Carles et al (2007)	A significant effect was found for COG and TRAC at rest($p<0.05$). During exercise, COG score significantly improved but TRAC score remained unchanged after training.
Gunstad et al (2005)	Posttests revealed significant improvement on Trail making test A($P=0.03$) and Digit symbol-coding($p=0.03$). No change from baseline to follow-up emerged for Grooved Pegboard($P=0.10$) or Animal naming($p=0.47$) performance.
Emery et al (2003)	Analysis of verbal fluency scores revealed a significant time \times condition interaction($F(1,30)=4.92$, $p=0.03$). The music condition was associated with significant improvements in verbal fluency, but the no-music control condition was not associated with cognitive change.

3. Risk of bias

The overall risk of bias across domains was judged to be low or unclear. In the sequence generation, a random number list and an independent randomization service were reported. In the allocation concealment and blinding of participants, personnel and outcome assessors, 1 study was assessed separately high risk of bias. In the incomplete outcome data, 1 study did not address missing outcome data. In the selective outcome reporting, both studies were assessed low risk of bias. In the other sources of bias, we could not figure out whether an important risk of bias exists or not.

<Table 3> The risk of bias of included RCT studies

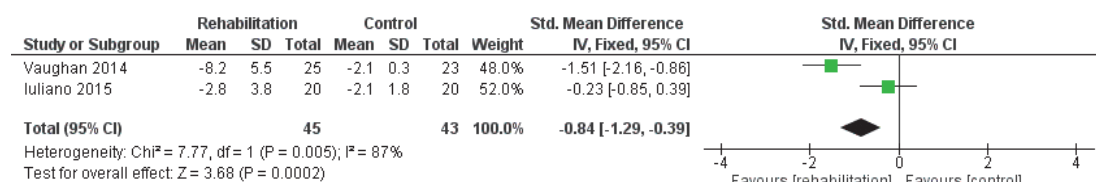
	Sequence generation	Allocation concealment	Blinding of participants, personnel and outcome assessors	Incomplete outcome data	Selective outcome reporting	Other sources of bias
Iuliano et al(2015)	Low	High	Low	Unclear	Low	Unclear
Vaughan et al(2014)	Low	Low	High	Low	Low	Unclear

Low; Low risk of bias, Unclear; uncertain risk of bias, High; High risk of bias

4. Outcomes of included studies

1) Trail making test A

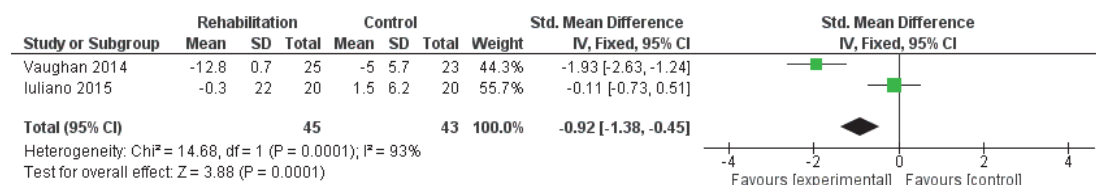
Both RCT studies assessed trail making test A as an outcome. The meta-analyses showed a significant improvement in trail making test A of -0.84 (95% confidence interval (CI):-1.29, -0.39, n=88) for participants in the rehabilitation group compared with controls.



<Figure 2> Trail making test A (TMTA) scores

2) Trail making test B

Both RCT studies assessed trail making test B as an outcome. The meta-analyses showed a significant improvement in trail making test B of -0.92(95% confidence interval (CI):-1.38, -0.45, n=88) for participants in the rehabilitation group compared with controls.



<Figure 3> Trail making test B (TMTB) scores

IV. Considerations and Conclusions

We conducted an updated systematic review and meta-analysis of CR on cognitive function in older adults. In the present review, a meta-analysis of two studies demonstrated that improved executive function in sedentary older adults after CR sessions when compared to controls.

CR is a multidimensional treatment designed to promote and facilitate physical activity and a healthful lifestyle in the context of known CVD, with tremendous relevance for older populations (Balady, Williams, Ades, et al., 2007). However, to date, no meta-analysis examined in effect of CR in older adults. This review is important because it analyzes CR as a potential modality in sedentary older adults.

Our meta-analysis showed 14.4% improvement in TMTA in the rehabilitation group. The mean TMTA in the two studies analyzed was 38.3 at baseline and 32.8 at the end of

the CR. In regard to TMTB, our meta-analysis showed 16.2% improvements in the rehabilitation group. The mean TMTB in the two studies analyzed was 71.4 at baseline and 59.9 at the end of the CR. The magnitude of change is similar to a previous analysis that evaluated the effect of different modalities of exercise in older adults (Vaucher, Herzig, Cardoso, et al., 2014).

CR is shown to be effective in the executive function of older adults. Recent meta-analysis examined the potential moderating effect of aerobic fitness on exercise-induced benefits on executive function. Ludyga and his colleagues reported that aerobic fitness is suggested to have an impact on executive function in older adults compared to other age groups (Ludyga, Gerber, Brand, et al., 2016). However, in this review, 3 of 9 studies were RCTs in older adults (6 studies were crossover studies (Córdova, Silva, Moraes, et al., 2009; Netz, Tomer, Axelrad, et al., 2007; Wang, Shih, Pesce, et al., 2015), the exercise duration was short range from 20 min to 35 min per session. One of these reports was concluded acute exercise does not broadly affect the entire family of executive functions, or its effect on a specific aspect of executive function may be task-dependent (Wang, Shih, Pesce, et al., 2015). Our results are very similar to previous study, one RCT was reported no significant improvement in cognitive function except for attentive and analytic tasks. Nevertheless, our meta-analyses showed a significant improvement in executive function.

Recent meta-analysis revealed that there was no clear evidence of benefit from exercise on cognitive functioning in dementia. The estimated standardized mean difference between exercise and control groups was 0.43(95% CI: -0.05 to 0.92, P value 0.08; 9 studies, 409 participants). There was very substantial heterogeneity in this analysis (I^2 value 80%), most of which they were unable to explain, and the quality of this evidence as very low (Forbes, Forbes, Blake, et al., 2015). In our results, there was significant improvement in executive function although we detected significant heterogeneities in both scales (TMTA: I^2 value 87%, TMTB: I^2 value 93%). It is possible that the physical exercise consisted of cardiac rehabilitation such as treadmills and cycle ergometer, and cognitive impairment was relatively higher than dementia patients. On the other hand, another recent RCT was reported that a 6-month lower limb aerobic exercise with a multicomponent cognitive intervention was associated with better cognitive function compared with only a multicomponent cognitive intervention. Aerobic exercise may enhance supportive care in individuals with moderate to severe cognitive impairment (Kim, Han, Min, et al., 2016).

Our review has several limitations. First, our search strategy only found two RCTs with small samples. Second, different variables may influence the effects of CR such as sex and culture. Nevertheless, CR appears to be an interesting means and deserves further investigation with better-controlled RCT. Third, it remains unclear how other exercise intensities influence executive control and if those effects are further moderated by the subjects' characteristics. Future meta-analyses are encouraged to address this

issue and are expected to benefit from a higher availability of effect sizes for exercise-induced changes in executive control after mild, moderate, and vigorous aerobic exercise. However, this requires an increase of the number of studies investigating possible benefits of different exercise modalities on executive function (Córdova, Silva, Moraes, et al., 2016).

In conclusion, considering the available data, our meta-analysis showed that CR improved executive function in sedentary older adults. However, our sample size was too small with only two RCTs. Future trials need to pay increased attention to recruitment of not only healthy older adults but also patients who are more representative of the broader CVD population.

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REVIEW ARTICLE

Effects of Cardiac Rehabilitation on Health-Related Quality of Life in patients with Cardiovascular Disease: A Systematic Review

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ABSTRACT

The effective cardiac rehabilitation (CR) in patients with cardiovascular disease (CVD) remains controversial. We performed a meta-analysis to examine the effects of CR on health-related quality of life (HRQOL) in patients with CVD. We searched MEDLINE, PubMed, The Scientific Electronic Library Online, Google Scholar (from the earliest date available to September 2016) for randomized controlled trials (RCTs) examining the effects of CR versus control on quality-of-life (HRQOL) in CVD. Mean differences (MDs) and 95% confidence intervals (CIs) were calculated, and heterogeneity was assessed using the I² test. Six studies met the selection criteria (total 482: 261 CR and 221 control patients). The results suggested that CR compared with control had a positive impact on HRQOL. Global HRQOL Physical Component Summary (SF-PCS) standardized mean differences (4.77, 95%CI 2.32 to 7.22, $p=0.0001$) and Mental Component Summary (SF-MCS) score 2.65 (95%CI -3.96 to 9.27, $n=294$, $p=0.43$) improved in the CR group compared to the control group. Our results suggest that CR compared with control had a positive impact on HRQOL. CR enhances HRQOL in patients with CVD. Larger RCTs are required to further investigate the effects of CR in patients with CVD.

<Key-words>

cardiac rehabilitation, mental health, health-related quality of life, cardiovascular disease

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I. Background

Cardiovascular disease(CVD) still remains the most prevalent chronic disease in individuals, and the debilitating effects of the disease are evident by the high rate of hospitalization among patient (Mendis, Puska & Norrving; WHO,2011). Patients with CVD have a high mortality risk and a serious impairment in all generic and disease-specific domains of health-related quality of life (HRQoL). (Piepoli, Conraads, Corrà, et al., 2001; Chen & Li, 2013; Flynn KE, Pina & Whellan et al. 2009; Issa, Hoeks, & Scholte op Reimer, et al., 2010; Edelmann, Gelbrich & Düngen, et al., 2011). Patient with CVD performed aerobic exercise training, typically included in cardiac rehabilitation(CR)program, improved lower the risk of myocardial reinfarction, lower mortality rates, and improve cardiac function (Shephard & Balady, 1999).

Cardiac rehabilitation (CR) is suggested to improve exercise capacity, prognosis, health-related quality of life (HRQoL) and functional modifications of the heart in patients with cardiovascular disease (CVD) (Iqbal J, Francis L, Reid J, Murray, et al. 2010; Issa, Hoeks & Scholte op Reimer, et al., 2010; Schopfer DW, Forman DE., 2016; Davies EJ, Moxham T, Rees K, et al., 2010). According to Japanese Circulation Society (2014), studies of cardiac rehabilitation in patients with CVD have been conducted mainly performing programs combining several exercise trainings. Exercise training is also strongly recommended to improve the QOL in patients with CVD (Piepoli, Conraads & Corrà, et al., 2001; van Tol, Huijsmans & Kroon, et al., 2006; Schopfer & Forman 2016). Several reviews that focused on patient with CVD showed that exercise training can increase HRQoL (van Tol, Huijsmans & Kroon, 2006; Chen & Li., 2013; Parmenter, Dieberg & Phipps, et al., 2015; Davies, Moxham & Rees, et al., 2010). However, these review studies focused on HRQoL patient with each disease separately, such as Chronic Heart Failure, Heart Failure, and Peripheral Artery Disease. There is still no systematic review about effects of CR in patients with a wide range of CVD.

Therefore, we therefore sought to conduct an updated systematic review, while also undertaking appropriate meta-analysis, with a particular focus on quality of life outcomes. The aim of present study was to systematically review the effects of CR on HRQoL in patients with CVD.

II. Methods

1. Search strategy

Studies on the effects of cardiac rehabilitation in patients with cardiovascular disease published between January 2012 and September 2016 were independently identified by two researchers, using the following electronic database MEDLINE, PubMed, The Scientific Electronic Library Online and Google Scholar The search strategy, formulated in MEDLINE, was adapted for another electronic database. The keywords and Medical

Sub Headings were as follows: Cardiac rehabilitation, cardiovascular disease(CVD), exercise, Health-related Quality of Life (HRQoL), Depression, Anxiety, Randomized, clinical Trial. Two reviewers independently scanned all the titles, abstracts and full-texts.

2. Inclusion and exclusion criteria

Inclusion criteria were as follows: 1) RCTs (randomized controlled trials), 2) included patients with CVD (diagnosis based on cardiac rehabilitation 2012 [Kwan & Balady, 2012]), 3) received an exercise program or cardiac rehabilitation, 4) evaluated outcome measure in HRQoL (the generic and disease-specific HRQoL questionnaires).

Exclusion criteria were as follows: 1) not RCTs 2) Animal studies and review paper, 3) Studies that did not have any of the desired outcome, 4) participants without diagnosed cardiovascular disease (based on cardiac rehabilitation 2012).

3. Risk of bias of included studies

The risk of bias of included RCT studies was assessed independently by two authors using the Cochrane Collaboration's Risk of bias tool (Higgins & Green, 2011). The following criteria were assessed: sequence generation, Allocation concealment, blinding of participants, personnel and outcome assessors, incomplete outcome data, selective outcome reporting, other sources of bias.

4. Data statistical analysis

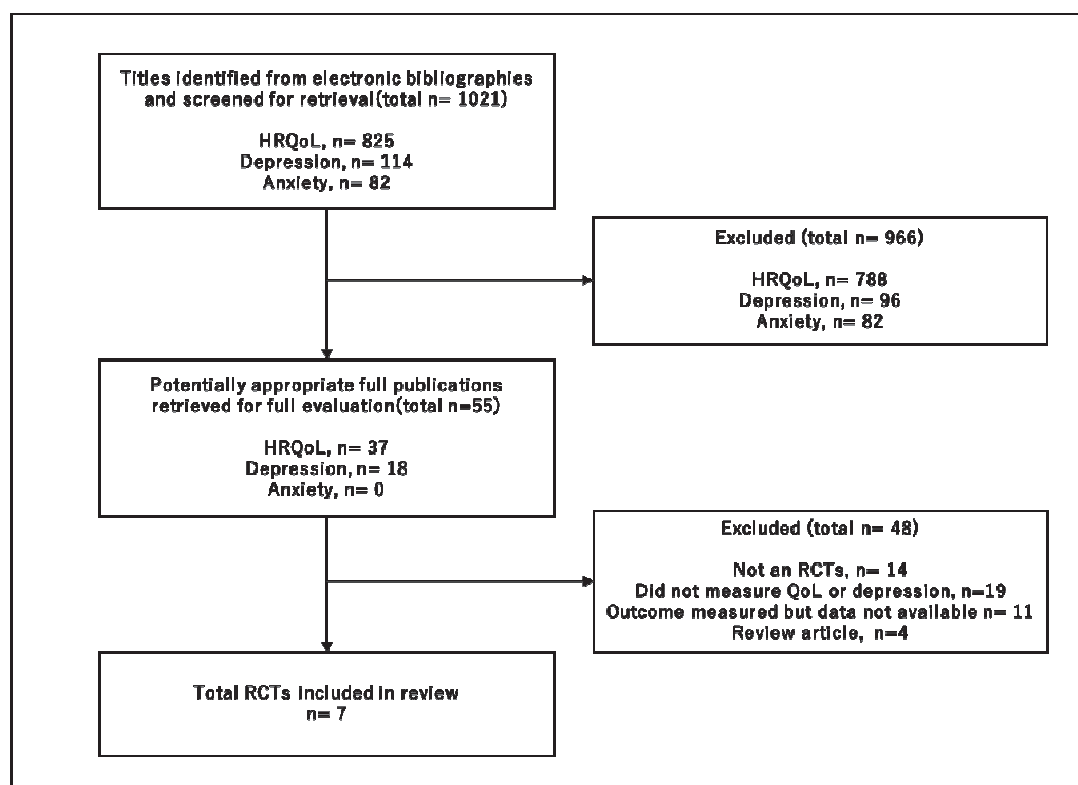
The outcome measures were changes in three items of the SF-12, 36 (Physical component Summary; PCS, Mental Component Summary; MCS, 8 subcomponents; Physical Function; PF, Role Physical; RP, General Health; GH, Body Pain; BP, Vitality; VT, Social Function; SF, Role Emotional; RE, Mental Health; MH) and Minnesota Living with Heart Failure; MLHFQ. The mean difference (MD) was calculated for the outcome measures by subtracting the baseline from post-intervention values.

Meta-analyses were completed for continuous data by using the change in mean (SD) of outcome. Change in post-intervention mean was calculated by subtracting the baseline from post-intervention. Results were required as 95% confidence intervals (CIs) for pre-post intervention change for each group. A fixed-effects meta-analysis was used except when statistical heterogeneity was identified when the more conservative random-effects model was used. All analysis was performed using Review Manager Software (version 5.0; Cochrane Collaboration, oxford, UK).

III. Results

1. Identification and selection of studies

Our initial search identified manuscripts; examination of the latest editions of relevant journals yielded a further Titles. After a review of the titles and abstracts of these, 55 papers were assessed. In total, 48 papers were excluded: 14 with not RCTs, 19 with did not measure QoL or depression, 11 with outcome measured but data not available, 4 with review article. Therefore, the total number of included trials was 7 (Figure 1). 7 trials were included that measured QoL or depression.



<Figure 1> Search and selection process for studies.

2. Trials included

Table 1 shows the characteristics of the seven included trial. All trials included a total 554 patients, 294 patients in the exercise group and 260 patients in the control group. Recruited subjects were patients with CVD, which were contributed by the Cardiac rehabilitation2012(Diabetes Mellitus, Heart Failure(HF), Heart Failure with Preserved Ejection Fraction(HF/pEF), Pulmonary Arterial Hypertension, Congenital Heart Disease(CHD), Peripheral Arterial Disease(PAD)) (Kwan & Balady, 2012).

In the seven trials, Three trials in patients with HF (Aksoy, Findikoglu & Ardic , et al.,2015; Borland, Rosenkvist & Cider,2014; Chrysohoou, Angelis & Tsitsinakis,2015), Two trials in patients with HF/pEF (Fu, Yang & Wang, et al.,2016; Nolte,

Herrmann-Lingen & Wachter, et al., 2015), One trial in patients with CHD (Dulfer, Duppen & Kuipers, et al., 2014), One trial in patients with PAD (McDermott, Liu & Guralnik, et al., 2013).

In the seven trials, five trials used aerobic training (Aksoy, Findikoglu & Ardic, et al., 2015; Borland, Rosenkvist & Cider, 2014; Chrysohoou, Angelis & Tsitsinakakis, 2015; Dulfer, Duppen & Kuipers, et al., 2014; Fu, Yang & Wang, et al., 2016), one trials used walking exercise (McDermott, Liu & Guralnik, et al., 2013) and one trials used endurance/resistance exercise (Nolte, Herrmann-Lingen & Wachter, et al., 2015). Exercise training ranged widely across the studies: duration, 20-60min per session, frequency, two to five sessions per week, duration, 10 weeks to 24 weeks: intensity, heart rate 50-75% of peak oxygen uptake (VO₂), 40-70% of maximal heart rate reserve or Borg scale of between 11 and 14.

In the seven trials, seven trials measured HRQoL using SF-12, 36 or MLHFQ (Aksoy, Findikoglu & Ardic, et al., 2015; Borland, Rosenkvist & Cider, 2014; Chrysohoou, Angelis & Tsitsinakakis, 2015; Dulfer, Duppen & Kuipers, et al., 2014; Fu, Yang & Wang, et al., 2016; McDermott, Liu & Guralnik, et al., 2013; Nolte, Herrmann-Lingen & Wachter, et al., 2015). Two trials measured depression using ZDRS or PHQ-9 (Chrysohoou, Angelis & Tsitsinakakis, 2015; Nolte, Herrmann-Lingen & Wachter, et al., 2015).

<Table 1> Summary of trial characteristics

Study	Characteristics of patients	Training features	Outcome	Result
Aksoy et al (2015)	Sample size: 30 (EG:15, CG:15) Age: 63.7(8.8) Male: 13/13 CVD: HF	Modality: 35min, 3 times a week, aerobic exercise Intensity: heart rate 50-75% of peak oxygen uptake (VO ₂) Follow-up: 10-weeks	SF-36(8 items) LVD-36	SF-36; VT, MH ↑
Borland et al (2014)	Sample size: 48 (EG:25, CG:23) Age: 71(8) Male: 20/18 CVD: HF	Modality: 60min, 2 times a week, group-based aerobic exercise Intensity: Borg scale of 11 to 12 Follow-up: 12-weeks	SF-36(PCS, MCS)	SF-36; PCS ↑
Chrysohoou et al (2015)	Sample size: 72 (EG:33, CG:39) Age: 63(9) Male: 29/28 CVD: HF	Modality: 45min, 3 times a week, interval aerobic exercise Intensity: high-intensity Follow-up: 12-week	MLHFQ(Total score) ZDRS	MLHFQ Total score ↑
Dulfer et al (2014)	Sample size: 91 (EG:54, CG:37) Age: 15 Male: 39/26 CVD: CHD	Modality: 60min, 3 times a week, aerobic exercise Intensity: 60-70% of maximal heart rate reserve Follow-up: 12-week	SF-36(8 items) TACQOL	TACQOL; SF ↑

Fu et al (2015)	Sample size:59 (EG:30, CG:29) Age:59.3(14) Male:20/18 CVD: HF/pEF	Modality: 30min, 3 times a week, interval aerobic exercise Intensity: 40-70% of maximal heart rate reserve Follow-up:12-weeks	SF-36(PCS, MCS) MLHFQ(Total score)	
Mcdermott et al (2016)	Sample size:194 (EG:97, CG:97) Age:71(9.5) Male:49/48 CVD: PAD	Modality: 50 min 5 times a week, walking exercise Intensity: Borg scale of 12 to 14 Follow-up:24-weeks	SF-12(PCS, MCS)	
Nolte et al (2014)	Sample size:60 (EG:40, CG:20) Age:65(7) CVD: HF/pEF	Modality: 20-40min, 2 times a week, endurance/resistance exercise Intensity: heart rate 50-60% of peak oxygen uptake(VO ₂) Follow-up:12-weeks	SF-36(8 items, PCS, MCS) MLHFQ(Total score) PHQ-9(Total score)	SF-36; PF, GH, PCS ↑ MLHFQ; Total Score ↑

Heart Failure; HF, Congenital Heart Disease; CHD, Heart Failure with Preserved Ejection Fraction; HF/pEF, Peripheral Arterial Disease; PAD, Left Ventricular Dysfunction-36; LVD-36, The Short Form-36 Health Survey Questionnaire; SF-36, Physical Component Score; PCS, Mental Health; MH, Mental Component Score; MCS, Physical Functioning; PF, General Health; GH, Vitality; VT, The TNO/AZL Child Quality of Life Questionnaire; TACQOL, Minnesota Living with Heart Failure questionnaire; MLHFQ, Social Functioning; SF, Patient Health Questionnaire depression scale; PHQ-9, Zung depression rating scale; ZDRS.

3. Risk of bias

Table 2 shows the risk of bias assessment. In the sequence generation, 5 studies included the use of randomization such as computer of randomly permuted block method. In the allocation concealment, 5 studies adequately concealed allocation. In the blinding of participants, personnel and outcome assessor, 3 studies published descriptions of concealment procedures judged to be adequate. In the incomplete outcome data, 5 studies adequately addressed missing outcome data. In the selective outcome reporting, 5 studies were free of suggestion of selective outcome reporting. Finally, in the other sources of bias, 5 studies were apparently free of other bias.

<Table 2> The risk of bias assessment

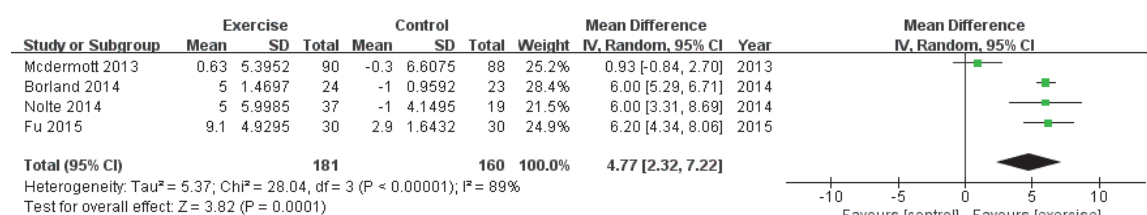
	Sequence generation	Allocation concealment	Blinding of participants, personnel and outcome assessors	Incomplete outcome data	Selective outcome reporting	Other sources of bias
Aksoy et al (2015)	Low	Low	Unclear	Low	Low	Low
Borland et al (2014)	Unclear	Low	High	Unclear	High	High
Chrysohoou et al (2015)	Low	Low	Low	Low	Low	Low
Dulfer et al (2014)	Low	Low	Low	Low	Low	Low
Fu et al (2015)	Unclear	High	Unclear	Low	Low	Low
Mcdermott et al.(2016)	Low	Low	Low	Low	Low	Low
Nolte et al (2014)	Low	High	Unclear	Unclear	High	Unclear

Abbreviations: Low=low risk of bias; High=high risk of bias; Unclear=uncertain risk of bias

4. Meta-analysis results

1) Health Related Quality of Life (HRQoL)-PCS

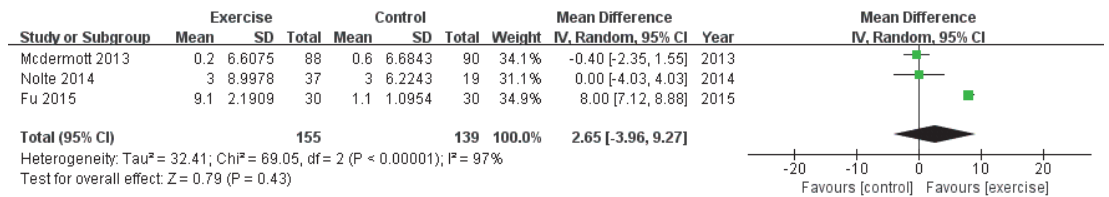
SF-PCS data were available four studies (Figure 2). Overall, a significant improvement was observed in exercise participants versus controls: Mean Difference (MD) 4.77 (95%CI 2.32 to 7.22, n=341, p=0.0001). We detected significant heterogeneity within this group (I²=89%, p<0.000001).



<Figure 2> Mean difference in SF-PCS scores: exercise versus control.

2) Health Related Quality of Life (HRQoL)-MCS

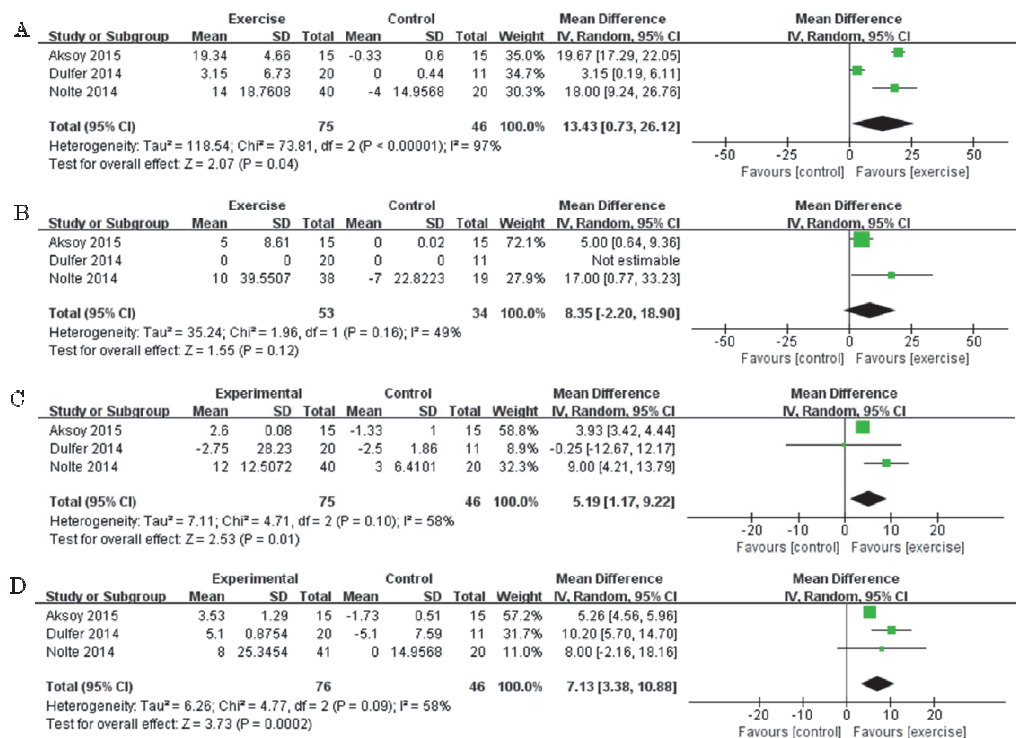
SF-MCS data were available three studies (Figure 3). Overall, a no significant improvement was observed in exercise participants versus controls: Mean Difference (MD) 2.65 (95%CI -3.96 to 9.27, n=294, p=0.43). We detected significant heterogeneity within this group (I²=97%, p<0.00001).



<Figure 3> Mean difference in SF-MCS scores: exercise versus control.

3) Health Related Quality of Life (HRQoL)- PCS sub component

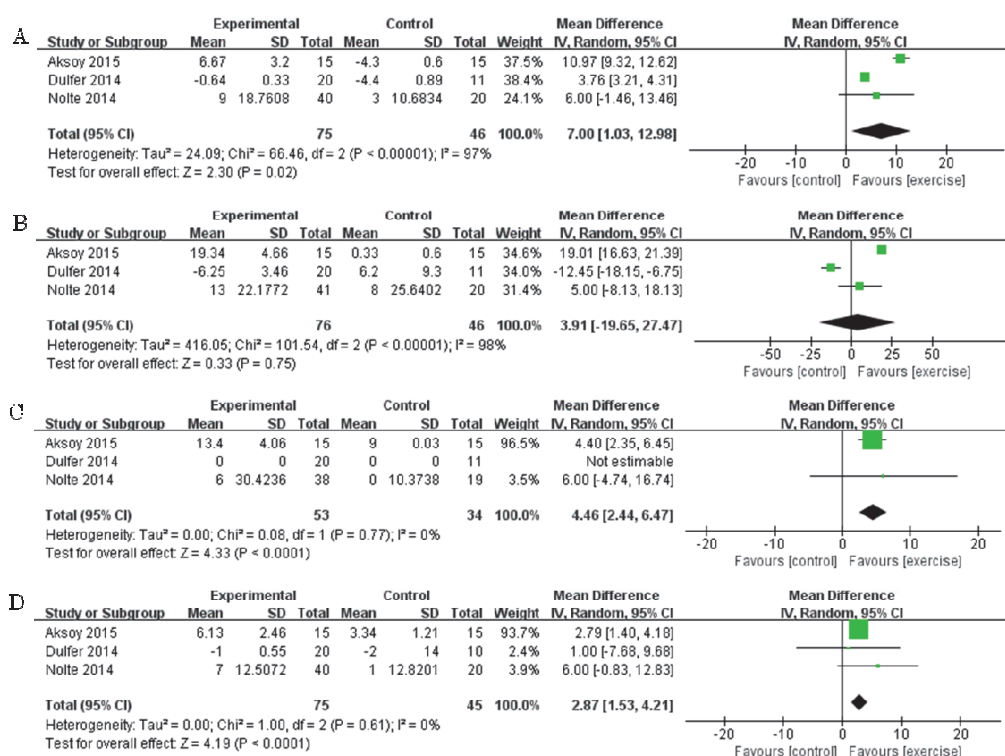
SF-PF, RP, GH, BP data were available three studies (Figure 4). Overall of PF, a significant improvement was observed in exercise participants versus controls: Mean Difference (MD) 13.43 (95%CI 0.73 to 26.12, $n=121$, $p=0.04$, $I^2=97\%$, Figure 4A). Overall of RP, no significant improvement was observed in exercise participants versus controls: Mean Difference (MD) 8.35 (95%CI -2.20 to 18.90, $n=87$, $p=0.12$, $I^2=49\%$, Figure 4B). Overall of GH, a significant improvement was observed in exercise participants versus controls: Mean Difference (MD) 5.19 (95%CI 1.17 to 9.22, $n=91$, $p=0.01$, $I^2=58\%$, Figure 4C). Overall of BP, a significant improvement was observed in exercise participants versus controls: Mean Difference (MD) 7.13 (95%CI 3.38 to 10.88, $n=122$, $p=0.0002$, $I^2=58\%$, Figure 4D).



<Figure 4> Mean difference in PF (A), RP (B), GH (C), BP (D) scores:
exercise versus control.

4) Health Related Quality of Life (HRQoL)- MCS sub component

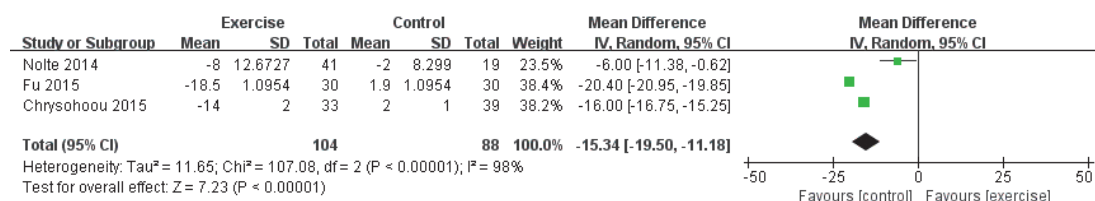
SF-VT, SF, RE, MH data was available three studies (Figure 5). Overall of VT, a significant improvement was observed in exercise participants versus controls: Mean Difference (MD) 7.00 (95%CI 1.03 to 12.98, $n=121$, $p=0.02$, $I^2=97\%$, Figure 5A). Overall of SF, no significant improvement was observed in exercise participants versus controls: Mean Difference (MD) 3.91 (95%CI -19.65 to 27.47, $n=122$, $p=0.75$, $I^2=98\%$, Figure 5B). Overall of RE, a significant improvement was observed in exercise participants versus controls: Mean Difference (MD) 4.46 (95%CI 2.44 to 6.47, $n=87$, $p<0.0001$, $I^2=0\%$, Figure 5C). Overall of MH, a significant improvement was observed in exercise participants versus controls: Mean Difference (MD) 2.87 (95%CI 1.53 to 4.21, $n=120$, $p<0.0001$, $I^2=0\%$, Figure 5D).



<Figure 5> Mean difference in VT (A), SF (B), RE(C), MH (D) scores:
exercise versus control.

5) Health Related Quality of Life (HRQoL)- MLHFQ total score.

Three studies assessed MLHFQ total score. Overall, a significant improvement was observed in exercise participants versus controls: Mean Difference (MD) -15.33 (95%CI -19.50 to -11.18, $n=192$, $p<0.00001$). We detected significant heterogeneity within this group ($I^2=98\%$, $p<0.00001$).



<Figure 6> Mean difference in MLHFQ total scores: exercise versus control.

6) Heterogeneity

The Cochrane I² scores from analyses in Figures 5C and 5D showed zero heterogeneity. Analysis in Figures 2-4, 5A, 5B and 6 exhibited low to high evidence of between-study heterogeneity, ranging from 49% to 98%.

IV. Discussion

In the present systematic review, a meta-analysis of six studies demonstrated augmentations in HRQoL in Patients with CVD after CR when compared to controls. Our results suggest that CR compared with control had a positive impact on HRQoL. This review is important because it analyzes HRQoL as a potential modality in CR.

The SF-36 is commonly used in the assessment of the HRQoL in patients with cardiovascular disease. The PCS and MCS were used to assess global components of HRQoL [Ware, Kosinski & Keller.,1996]. 4 of 6 studies were reported the effect of CR on SF-PCS, MCS score in CVD. Our meta-analysis showed 11.0% improvement in SF-PCS in the CR group. The mean SF-PCS in the four studies analyzed was 41.47 at baseline and 46.12 at the end of the intervention. SF-MCS is not improvement in CR group. According to JCS, successful results of the improvement in MCS performed CR for at least 16weeks [Japanese Circulation Society; JCS,2014]. However, our results in CR intervention of five studies were reported the 10-12 weeks. 3 of 6 studies were reported the effect of CR on SF-8 subcomponent. SF-MCS is not significant, but CT, RE, MH of SF-MCS sub component is significant. We meta-analysis showed 5.0 % of SF-GH (64.31 and 67.51), 4.8% of SF-BP (80.89 and 84.73), 4.85% of SF-VT (66.33 and 69.55), 8.0% of SF-RE (80.73 and 87.20), 6.1% of SF-MH (74.64 and 79.02) improvements in the CR group. The magnitude of change is similar to a previous meta-analysis that evaluated the effect of different modalities of exercise in patients with CVD [Parmenter, Dieberg & Phipps, et al. 2015; Gomes-Neto, Rodrigues-Jr, & Silva-Jr, et al., 2014].

3 of 6 studies showed the effect of CR on MLHFQ total score. In those using the MLHFQ total score, exercise groups were on average 10 points higher than control groups. These results are similar to recent meta-analysis [Davies, Moxham & Rees, et al,2010].

Analyses in Figures 5C and 5D showed zero heterogeneity, suggesting the analyses of SF-RE and MH were appropriate. Analyses in Figures 2-4, 5A, 5B and 6 exhibited

moderate to high evidence of between-study heterogeneity, suggesting results of data pooling of, SF Physical and Mental Components and MLHFQ must be interpreted with caution.

Our review is limited, our search strategy only found six RCTs with small samples and short period of intervention. However, HRQoL appears to be an interesting assessment of CR and deserves further investigation with better-controlled RCTs. Future CR trials should include more severe CVD patients, and need larger and long enough periods to assess clinical HRQoL outcomes for generalizability.

In conclusion, our meta-analysis demonstrated improvement on HRQOL in patients with CVD by performing CR. Our results suggest that SF-PCS had a positive impact compared with control group. The effects of CR on HRQoL in patient with CVD still needed to be determined.

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SHORT PAPER

**The Verification of Reliability and Validity of
the SNEAT Based on the Data
from Kagoshima Prefecture:
A Study on the Standardization of the SNEAT**

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ABSTRACT

The Special Needs Education Assessment Tool (SNEAT) were verified of reliability and validity. However, the reliability and validity has been verified is only Okinawa and Miyagi Prefecture, the national data has not been analyzed. Therefore, this study aimed to verify the reliability and construct validity of SNEAT in Kagoshima Prefecture as part of the national survey. SNEAT using 32 children collected from the classes on Jiritsu-Katusdo (independent activity) for children with disabilities in Kagoshima Prefecture between October and November 2015. Survey data were collected in a longitudinal prospective cohort study. The reliability of SNEAT was verified via the internal consistency method; the coefficient of Cronbach's α were over 0.7. The validity of SNEAT was also verified via the latent growth curve model. SNEAT is valid based on its goodness-of-fit values obtained using the latent growth curve model. These results indicate that SNEAT has high reliability and construct validity in Kagoshima Prefecture.

< Key-words >

Special Needs Education Assessment Tool (SNEAT), reliability, validity, latent growth curve model

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I. Introduction

The SNEAT (Special Needs Education Assessment Tool) is a tool to evaluate the performance of special needs education. The SNEAT was developed and its reliability and validity were verified (Han, Kohara & Kohzuki., 2015; Kohara, Kwon, & Han, et al., 2015). The SNEAT that combined HRQOL with Jiritsu-Katusdo (independent activity) that is the part of the special needs education has attracted the attention as the new tool that enables to evaluate the performance of special needs education.

However, the reliability and validity of the SNEAT have been verified with the data from Okinawa and Miyagi Prefecture, which have the necessity to collect and analyze the nationwide data for the standardization of the SNEAT brought up.

Therefore, this study aimed to report the results of the research that was conducted for Kagoshima Prefecture as the part of the standardization of SNEAT.

II. Subjects and Methods

1. Subjects and Procedures

This study was based on the method of previous studies (Kohara, Han, Kwon, et al., 2015; Han, Kohara & Kohzuki., 2016). After obtaining the school officials' consent to participate in the research in the meeting, packages containing the official document to formally request the cooperation for this study and the SNEAT manual were sent to all the participating schools. The SNEAT questionnaire sets were distributed to the 32 classes on Jiritsu-Katusdo in the 1 special needs schools in Kagoshima Prefecture. The class on Jiritsu-Katusdo was conducted once a week (four times) for one month, between October and November 2015, using SNEAT. The questionnaires were completed after the class on the independent activity; the four surveys were named as Time 1, Time 2, Time 3 and Time 4. The class participants (i.e., the teachers and students) and the class contents were the same for all the classes.

SNEAT is a tool for evaluating the educational outcome of the classes on independent activities of daily living for children with disabilities (Han, Kohara & Kohzuki., 2014). The SNEAT questionnaire has a total of 11 items in three domains (bodily pain, mental health, and social functioning) and enables the teachers to evaluate the educational outcome of their students (Han, Kohara & Kohzuki., 2014). For each item, the evaluators are asked to indicate the extent of their agreement or disagreement using a 5-point scale, where; 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; and 5 = strongly agree.

In addition, the face sheet was added to record the contents of the class and the information on the students, such as their grade level (elementary, middle, or high school), gender, and type of disability (intellectual disability, physical disability, health impairment, developmental disability, multiple disabilities). Items for recording the information on the teachers who are the evaluators of the classes were also added, such

as their age, gender, length of teaching at a special support school, and possession of a special teaching certificate.

2. Statistics analysis

To analyze the obtained data, one-way repeated-measures ANOVA (matched design) was used. To analyze the changes of the scores, one one-way ANOVA with repeated-measures was conducted. One-way ANOVA was also conducted for the comparison of the scores of each domain. The items in each domain of SNEAT are listed in descending order of difficulty, and as such, the scores of the items in each domain are ranked in the descending orders of Q1 to Q4, Q5 to Q8, and Q9 to Q11. SPSS ver.23.0 was used for statistical analysis.

Reliability of SNEAT was estimated using the internal consistency method. The internal consistency of SNEAT was assessed with Cronbach's α . A minimum Cronbach's α coefficient of 0.7 was considered satisfactory for group-level comparisons (Cronbach, 1951).

For this study, the latent growth curve model, and structural equation modeling (SEM), among the methods of construct validity, were utilized, and longitudinal data were employed to verify the validity of SNEAT. The latent growth curve model can be used to analyze the repeated-measures data, which is different from general path analysis (Kano & Miura, 2002). In the latent growth curve model, unlike in general path analysis, path coefficients are not the subjects of the data analysis because all the path coefficients from the observed to the latent variables are fixed parameters (Toyoda, 2007).

The model fitness was assessed with the following fit indices: comparative fit index (CFI) and root mean square error of approximation (RMSEA). When conducting analysis via structural equation modeling (SEM), the researchers themselves are to choose the fit index that they would use, based on their judgment. A model is considered acceptable, when two or more fit indices are met including RMSEA (Steiger, 1998). For adequately fitting models, these fit indices should meet the following criteria: CFI > 0.90 (Han, Yajima, Lee, et al., 2005) and RMSEA < 0.1 (Koshio, 2004). In this research, maximum likelihood estimation was used for the parameter estimation. Amos ver.23.0 was employed for statistical analysis.

III. Results

1. Subject Characteristics

As the classes are usually conducted on a one-to-one basis, 32 children and 32 teachers (evaluators) participated in such classes using SNEAT. The characteristics of the participants in the said classes using SNEAT are shown in Table 1.

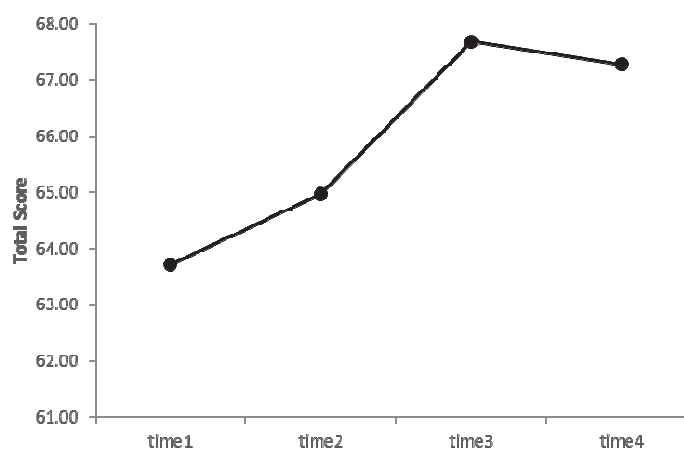
<Table 1> Characteristics of the participants in the class of students with disabilities

Characteristic			Mean±SD or n (%)
Children n = 32	Grade	Elementary school	9 (28.1)
		Middle school	11 (34.4)
		High school	12 (37.5)
	Sex	Male	15 (46.9)
		Female	17 (53.1)
	Types of disabilities	Intellectual disability	0 (0.0)
		Physical disability	9 (28.1)
		Health impairment	0 (0.0)
		Development disability	0 (0.0)
		Multiple disabilities	23 (71.9)
Teachers n = 32	Age		38.6±9.7
	Average length of teaching		14.6±9.9
	Average length of teaching for special needs education		12.0±10.4
	Sex	Male	11 (32.4)
		Female	21 (61.8)
	Special teaching certificate	With the certificate	24 (75.0)
		Without the certificate	8 (25.0)

2. The Changes and Comparisons of Total Score, Scores of Domains and Scores of Items

1) Total Score

The total scores changed from 63.72 in the Time1 to 64.97 in the Time2, 67.68 in the Time3, and 67.29 in the Time4. In the results of the analysis through one-way repeated-measures ANOVA, there were not significant differences among the first, second, third, and fourth classes (Figure 1).

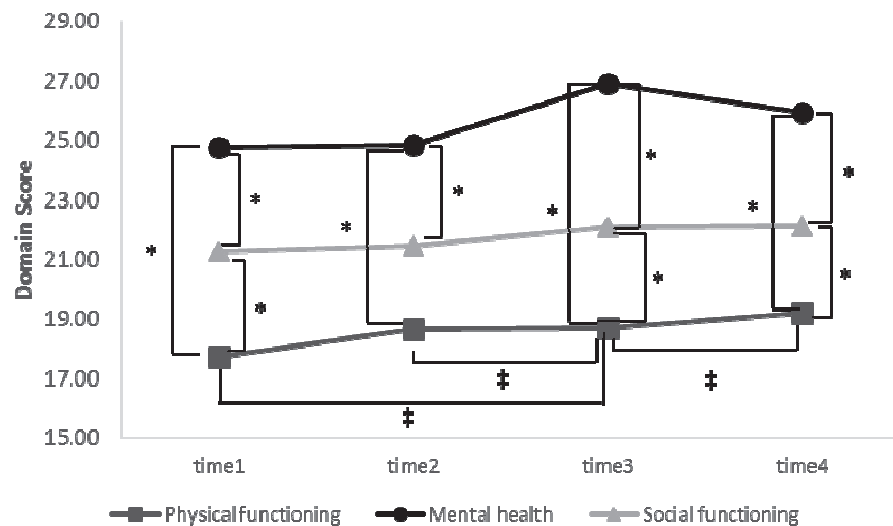


<Figure 1> Changes of the total scores in Kagoshima.

One-way repeated ANOVA was used, $p = n.s.$, $n = 32$

2) Domain Score

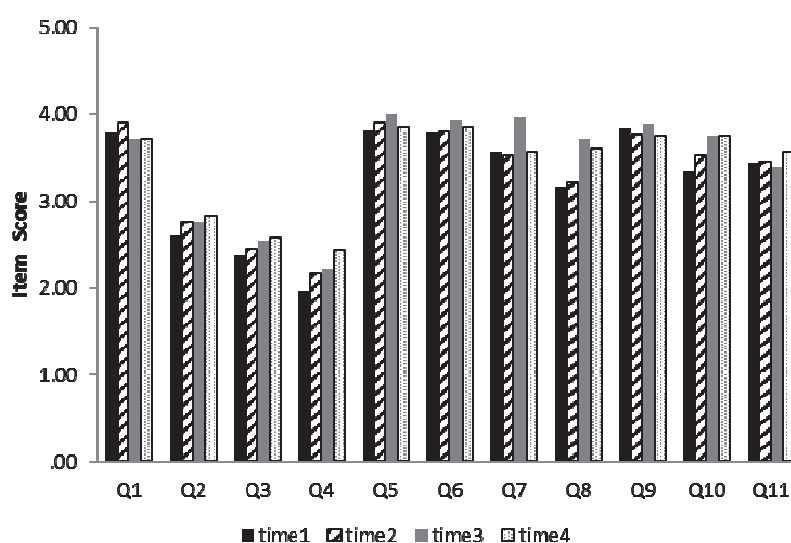
The average scores of the domain of physical functioning were 18.04 ± 5.27 in the Time1, 18.86 ± 4.94 in the Time2, 18.71 ± 5.35 in the Time3, and 19.21 ± 5.40 in the Time4. The average scores of the domain of mental health were 25.57 ± 6.35 in the Time1, 25.14 ± 5.58 in the Time2, 26.89 ± 5.32 in the Time3, and 25.93 ± 7.10 in the Time4, and those of the domain of social functioning were 21.43 ± 4.38 in the Time1, 21.50 ± 4.61 in the Time2, 22.07 ± 4.94 in the Time3, and 22.14 ± 5.10 in the Time4. In the results of the analysis through one-way repeated-measures ANOVA, there were significant differences ($p < 0.05$) among the Time1 to Time3, Time2 to Time3, and Time3 to Time4 in the domain of physical functioning. And in the results of the analysis of one-way ANOVA, there were significant differences ($p < 0.05$) among the domain of physical functioning, mental health and social functioning (Figure 2).



<Figure 2> Changes of the scores of each domain, one-way ANOVA was used, $*p < 0.05$, one-way repeated ANOVA was used, $\ddagger p < 0.05$, $n = 32$.

3) Item Score

The scores of the items decreased, with the scores of the items within each domain decreasing from Q1 to Q4, from Q5 to Q8, and from Q9 to Q11. The items of each domain of SNEAT are listed in descending order of difficulty. As such, the hypothesis was verified because the scores of each domain were ranked in the descending orders of Q1 to Q4, Q5 to Q8, and Q9 to Q11 (Figure 3).



<Figure 3> Changes of each domain in Kagoshima. n = 32

3. Reliability of the SNEAT

The internal consistency reliability (Cronbach's α coefficient) ranged from 0.78 to 0.80 for all the domains, and the internal consistency reliability of all the items was 0.89 (Table 2).

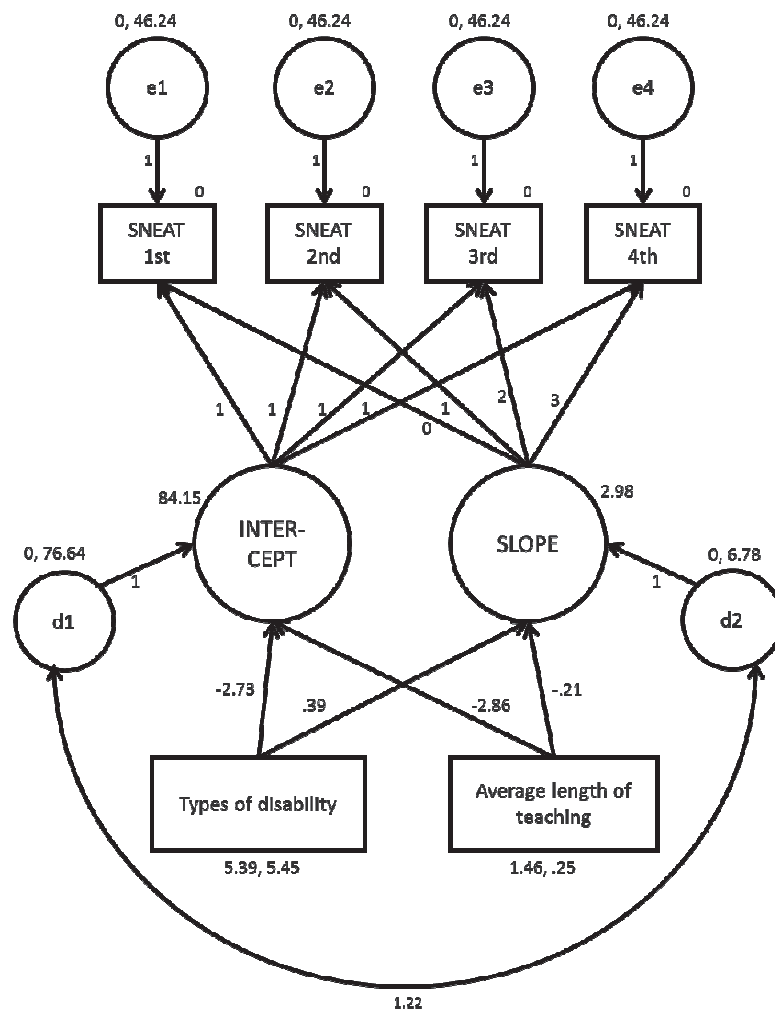
<Table 2> SNEAT scale scores and Reliability Score.

Constructs	Mean	SD	Cronbach's alpha if item deleted	Cronbach's alpha
Physical function				0.78
Q1	3.71	0.66	0.15	
Q2	5.50	1.69	0.68	
Q3	5.07	2.14	0.80	
Q4	4.43	1.99	0.78	
Mental health				0.78
Q5	4.00	0.90	0.61	
Q6	7.86	1.88	0.65	
Q7	7.93	1.11	0.63	
Q8	3.13	1.92	0.60	
Social functioning				0.80
Q9	7.79	1.75	0.61	
Q10	7.50	1.77	0.81	
Q11	6.79	2.27	0.82	
All item				0.89

Q1 - Q11, (1 = minimum, 5 = maximum) $\alpha > 0.70$, n = 32.

4. Validity of the SNEAT

As for the analysis via the latent growth curve model, SNEAT showed a high level of fitness: $\chi^2 = 13.63$; $DF = 13$; $p = 0.400$; $CFI = 0.992$; $TLI = 0.990$; and $RMSEA = 0.042$. The validity was verified because the values of CFI, TLI and RMSEA were within the goodness-of-fit range. As for the factors affecting the SNEAT scores, two factors were clearly identified: the average length of teaching and the type of disability of the student. This means that these two variables affect the evaluation of the outcome of special needs education (Figure 4).



<Figure 4> Latent curve analysis of SNEAT in Kaghosima

χ^2 , DF, P, CFI; comparative fit index; RMSEA; root mean square error of approximation.
 $n = 32$, $\chi^2 = 13.63$, $DF = 13$, $p = 0.400$, $CFI = 0.992$, $TLI = 0.990$, $RMSEA = 0.042$.

IV. Discussion

In this study, the data from the research on Kagoshima Prefecture were analyzed as the part of the nationwide research for the standardization of the SNEAT.

The results of the research in Kagoshima Prefecture indicate that SNEAT has high reliability and construct. This result was consistent with previous studies in Okinawa and Miyagi Prefecture (Kohara, Han, Kwon, et al., 2015; Han, Kohara & Kohzuki., 2016).

As for the types of disabilities of the respondents, the proportion of students with multiple disabilities in the Kagoshima Prefecture accounted for the biggest part of all the respondents, which was not same state with the precedent study in Okinawa and Miyagi Prefecture. The proportion of evaluators with teaching license in Kagoshima was similar with that of Okinawa Prefecture. The total score and the scores of domains tended to be higher as the number of classes increased in Okinawa and Miyagi Prefecture, but the total score decreased in the time4 in Kagoshima Prefecture. The differences in the results of this study need to be studied more. It was confirmed that the scores of items of each domains also tended to rank in the same order with the level of difficulty of items of each domain, which is the same results of precedent studies

In the results of the validity via Latent growth curve modeling, it was confirmed that the two explanatory variables such as the average length of teaching and the type of disability of the student. affected the SNEAT scores. In the precedent study in Okinawa Prefecture, it was found that the four explanatory variables such as the period of teaching in special support schools, whether to have special teaching certificate, school grades and the types of disabilities affected the SNEAT scores and the goodness of fit of the model was excellent Kohara, Han, Kwon, et al., 2015). And, the precedent study in Miyagi Prefecture, it was found that two factors were clearly identified: the teacher's possession of a special teaching certificate and the type of disability of the student. (Han, Kohara & Kohzuki., 2016)

The results of the research in Kagoshima Prefecture were reported through this article. For the standardization of the SNEAT, the collection and analysis of data need to be conducted via the nationwide research. And the differences from the regions need to be studied more.

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