原 著 論 文

所沢市における通院治療中の中高年がんサバイバーの
QOLとその関連要因

易　肖和[1]，内田　和宏[1]，加瀬　裕子[2]，扇原　淳[2]

Assessing Quality of Life and Related Factors in Older Cancer Survivors: Findings from a City Survey in Japan

Xiaohe Yi [1]，Kazuhiro Uchida [1]，Hiroko Kase [2]，Atsushi Ogihara [2]

([1]Graduate School of Human Sciences, Waseda University
[2]Faculty of Human Sciences, Waseda University)

Abstract

We investigated the quality of life（QOL）of cancer survivors receiving outpatient treatment in Tokorozawa city, Japan. A secondary analysis was conducted based on cross-sectional data obtained from a survey conducted in 2013. In the survey, a self-administered questionnaire was mailed to 9,099 residents aged 40 and older in Tokorozawa city. Middle-aged and older residents（age above 45, n = 2,795）were included in this study. QOL of middle-aged and older adults with cancer（n = 104）was compared with that of residents without cancer（n = 2,691）. Demographic factors and neighborhood context were examined to see if they were related with survivors' QOL. Results indicated that there was no significant difference in social relationships and environment domains between cancer survivors and residents without cancer. However, factors such as perceived socio-economic position, satisfaction with neighborhood relations, as well as having hobbies were positively correlated with QOL scores. Neighborhood context predicted the level of QOL in the item of overall perception of QOL, as well as in the domains of physical health, social relationships, and environment. This study suggests that community activities and neighborhood relations play an important role in maintaining the QOL of cancer survivors.

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1 早稲田大学人間科学研究科（*Graduate School of Human Sciences, Waseda University*）
2 早稲田大学人間科学学術院（*Faculty of Human Sciences, Waseda University*）

1. Introduction

According to statistics released by Ministry of Health, Labor and Welfare, cancer has been the number 1 cause of deaths in Japan since 1981. In 2019, deaths caused by malignant neoplasms were more than 370,000, with death rates of 304.2 per 100,000 population (Ministry of Health, Labor and Welfare, n.d.). Based on incidence data obtained in 2015, 63.3% of Japanese males and 48.4% of Japanese females are predicted to be diagnosed with cancer during their lifetime, and 23.9% of Japanese males and 15.1% of Japanese females will die from cancer based on mortality data from 2018. At the same time, according to data from population-based registries, the 5-year relative survival rate for all male and female cancer patients diagnosed in 2009 ~ 2011 was 64.1%. While cancer of the stomach, colon and rectum showed slightly higher survival rates (67% ~ 72%) than that for all cancers, cancer of skin, breast, prostate and thyroid showed significantly higher survival rates (> 90%) (Foundation for Promotion of Cancer Research, 2020).

Advances in cancer treatment and survival rates have led to shorter hospital stays and an increasing number of survivors receiving long-term treatment in outpatient settings in Japan (Takayama et al., 2001; Katayama et al., 2020). For noninstitutionalized cancer survivors who are currently receiving cancer treatment, not only do they suffer from multiple physical symptoms, but they also may be faced with various psychosocial issues (Yamagishi et al., 2012; Buchhold et al., 2016). Thus, it is necessary for researchers to conduct investigative research among cancer survivors, such as life with cancer, and related factors affecting patients' quality of life (QOL).

The assessment of QOL in cancer survivors has become an essential part of a cancer treatment regimen, and can be of value for obtaining a comprehensive understanding of survivors' cancer experiences (Uramoto et al., 2007; Yoon et al., 2018). Although various studies in Japan targeted QOL in cancer patients receiving outpatient treatment, many of them focused on those receiving palliative care, or on advanced cancer patients (Yamagishi et al., 2012; Morita et al., 2014; Yamagishi et al., 2014; Mikan et al., 2016). Other such studies explored only one specific type of cancer, such as breast cancer, to elucidate the unique needs of those survivors (Takayama and Yamazaki, 2004; Miyashita et al., 2015).

Additionally, as shown in previous studies, QOL in cancer survivors receiving treatment in outpatient settings differs according to age. Costa-Requena & Gil reported older cancer patients scored significantly lower in physical functioning, physical role and vitality domain of QOL than younger patients (2009). Arraras et al. found that age was strongly related with satisfaction with care in cancer patients, with less satisfaction being reported for a younger age group, while an older age group showed more satisfaction (2013). Schmidt et al. indicated that older patients were more concerned about the loss of independence than younger patients (2016).

It has also been reported that cancer patients' QOL and health outcomes can be affected by various neighborhood conditions, such as a built-up environment, neighborhood socio-economic status, and neighborhood stress (Kent et al., 2013; Wu et al., 2018; Schootman et al., 2020).

This study aims to compare the level of QOL domains in middle-aged and older cancer outpatients living in Tokorozawa city, and people without cancer residing in the same area; and attempts are made to identify specific factors within the demographics and neighborhood context which may be associated with QOL in community-dwelling noninstitutionalized, middle-aged and older cancer survivors in Tokorozawa, Japan. By doing so, we expect to expand our understanding of the QOL as reported by cancer survivors.

2. Methods

2.1 Research design

This study was based on cross-sectional data collected from an investigative survey-study conducted in 2013 for a research project known as follows: Development of a Package of Dementia Support Programs based on Multi-

generational Approach (Kase, 2017). Briefly, the major concern of this research project is about how to make Tokorozawa a community where everyone can continue to reside. 9,099 men and women aged 40 and older living in Tokorozawa City, Saitama Prefecture, were randomly selected from the Basic Resident Register. A self-administered questionnaire was mailed to all participants, from August to September 2013. The questionnaire consisted of questions regarding participants' lifestyle habits, health conditions, social capital, as well as QOL. A total of 3,143 questionnaires were collected, with a response rate of 34.5%. In order to identify the factors linked with QOL in cancer survivors receiving outpatient treatment, we extracted items regarding cancer, QOL, and basic demographics, as well as neighborhood context from the research project.

2.2 Participants

According to Healthy Japan 21 (MHLW, 2000), based on different health issues people confronted with, middle-aged people are defined as those who age between 45 to 64 years old, and older people are defined as those who age 65 years and older. The sample we extracted consisted of people aged 45 and older with cancer (n = 104) and without cancer (n = 2691). All participants were living at their own homes, and were receiving outpatient treatment at the time of the survey. No exclusion was made based on cancer type, stage, or type of treatment.

2.3 Instruments

The following items were selected for analysis:
(1) Participants' basic demographics: age, gender, education, household income of previous year, employment, perceived socio-economic position, marital status, whether participants usually have meals alone, whether participants have hobbies;
(2) Items related to neighborhood conditions: number of neighbors participants can ask for advice, number of neighbors participants can exchange greetings with[1], whether participants are satisfied with neighborhood relations, whether participants have joined in local events or activities, whether participants are willing to join in such events in the future, whether participants are involved in local volunteer work; and
(3) Data collected by using the WHOQOL-BREF scale: Participants' QOL was measured using the WHOQOL-BREF scale developed by the WHOQOL group. The WHOQOL-BREF is based on a 24 facets four-domain structure: 'physical health', 'psychological', 'social relationships' and 'environment'. There are also two additional items that are examined separately: Question 1 asks about an individual's overall perception of quality of life; and Question 2 asks about an individual's overall perception of their health. Domain scores for the WHOQOL-BREF are calculated by taking the mean of all items included in each domain and multiplying by a factor of 4. Scores in all domains are scaled positively, with higher scores indicating higher quality of life (WHOQOL-BREF: introduction, administration, scoring and generic version of the assessment: field trial version, December 1996: 3, 8 and 10). The internal consistency of the scale, using Cronbach's alpha, was .924.

2.4 Ethical considerations

The Academic Research Ethical Review Committee of Waseda University reviewed and approved this research project (Application Number: 2013-095). A written informed consent was obtained from each participant along with the questionnaire. Participants were assured that no identifying information would be published, and that records of all questionnaires would be kept securely in a password-locked computer.

2.5 Data analysis

Basic demographic characteristics and neighborhood conditions of the participants were summarized by

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[1] The relationship between participants with their neighbors whom they can ask for advice from is closer than their relationship with neighbors whom they can exchange greetings with.

descriptive statistics. Differences in demographics, neighborhood context and QOL domains between cancer survivors and residents without cancer were analyzed through Student's t-test and Chi-squared test. The correlation between demographics, neighborhood context and cancer survivors' QOL scores were measured by Spearman's rank correlation coefficients. And those items proved correlated with QOL scores were further put into simple and multiple regression analyses, in order to assess to which degree the demographic characteristics and neighborhood context predict the QOL scores.

In the dataset, each variable has appeared missing values, and the highest percentage of missing values of a single item is nearly 10%. Patterns of missing values showed that they were not MCAR (missing completely at random). In order to minimize biased analyses, a Multiple Imputation (MI) based on the logistic regression model was used to create five imputed datasets of conceivable values. The original dataset was used in descriptive statistics of basic demographics and neighborhood context. Pooled results of the five imputed datasets were used to perform Student's t-test, correlation analysis and regression analysis. Missing values in WHOQOL-BREF scale were handled according to scoring procedure in the WHOQOL-BREF manual (1996). The significance level for these analyses was set at $p < .05$. All the aforementioned data analyses and MI procedures were performed using SPSS 26.0.

3. RESULTS

3.1 Participants' basic demographics and neighborhood context

Table 1 and Table 2 present participants' basic demographics and neighborhood conditions in this study. There were no significant differences between cancer survivors and residents without cancer regarding to education, household income of previous year, employment, perceived socio-economic position, marital status and whether they usually have meals alone. However, Table 1 showed that the average age of residents without cancer was significantly younger than cancer survivors, and the percentage of male cancer survivors was significantly higher than male residents without cancer. As for hobbies, the percentage of having a hobby in residents without cancer was significantly higher than cancer survivors (See Table 1).

Regarding neighborhood context, most of the items showed no significant difference between cancer survivors and residents without cancer, except for the willingness to join in local events or activities in the future. Residents without cancer showed a higher willingness to join than cancer survivors (See Table 2).

Table 1. Participants' demographic characteristics

	Cancer survivors		Residents without cancer			
	n=104	%/Mean(*SD*)	n=2691	%/Mean(*SD*)	*t*/χ2	*p*
Age	103	69.612(9.886)	2644	65.196(10.639)	-4.143***	.000
Middle-aged adults	30	29.1	1208	45.7		
Older adults	73	70.9	1436	54.3	10.984***	.001
Gender						
Men	60	58.3	1103	41.6		
Women	43	41.7	1547	58.4	11.238***	.001
Education						
Primary or junior school	15	14.6	346	13.1		
High school	45	43.7	1100	41.7		
Vocational school or junior college	12	11.7	499	18.9		
College or more	31	30.1	696	26.4	3.577	.311
Household income of previous year						
Less than 1.5 million JPY	11	10.9	298	11.7		
1.5~5 million JPY	55	54.5	1396	54.8		
5~8 million JPY	24	23.8	486	19.1		
More than 8 million JPY	11	10.9	368	14.4	2.022	.568
Employment						
Employed	38	36.9	1163	44.1		
Not employed	65	63.1	1472	55.9	2.112	.146
Perceived socio-economic position						
High	3	2.9	122	4.7		
Middle	78	75.7	1794	68.9		
Low	22	21.4	687	26.4	2.297	.317
Marital status						
Not married	4	3.9	128	4.9		
Married	86	83.5	2020	77.0		
Divorced/separated	4	3.9	150	5.7		
Widowed	9	8.7	324	12.4	2.392	.495
Whether you usually have meals alone						
Yes	23	23.7	481	19.6		
No	74	76.3	1967	80.4	.970	.325
Whether you have hobbies						
Yes	76	74.5	2268	85.4		
No	26	25.5	387	14.6	9.187**	.002

p < .05, **p* < .01, ***p* < .001.

Table 2. Participants' neighborhood conditions

	Cancer survivors		Residents without cancer			
	n=104	%	n=2691	%	χ2	p
Number of neighbors you can ask for advice						
No one	33	33.7	936	36.1		
1 person	12	12.2	289	11.2		
2~5 people	49	50.0	1222	47.2		
6~10 people	3	3.1	105	4.1		
More than 11 people	1	1.0	38	1.5	.779	.941
Number of neighbors you can exchange greetings with						
No one	5	4.8	102	3.9		
1 person	1	1.0	78	3.0		
2~5 people	46	44.2	1094	41.6		
6~10 people	29	27.9	714	27.2		
More than 11 people	23	22.1	639	24.3	1.992	.737
Whether you are satisfied with neighborhood relations						
Yes	80	80.0	2141	81.9		
No	20	20.0	473	18.1	.235	.628
Whether you have joined in local events or activities						
Yes	58	56.9	1593	60.2		
No	44	43.1	1052	39.8	.464	.496
Whether you are willing to join in local events or activities in the future						
Yes	41	42.3	1369	53.5		
No	56	57.7	1188	46.5	4.768*	.029
Whether you are involved in local volunteer work						
Yes	12	12.4	336	13.2		
No	85	87.6	2211	86.8	.055	.814

*p < .05, **p < .01, ***p < .001.

3.2 Participants' QOL

Table 3 demonstrates the QOL scores in 2 items and 4 domains. Although residents without cancer scored higher than cancer survivors in the two items: overall perception of QOL and overall perception of health, as well as in the two domains: physical health and psychological, there was no significant difference in domains of social relationships and environment.

3.3 Correlation between demographics and QOL in cancer survivors

The correlation between demographics and QOL scores in cancer survivors were measured by Spearman's correlation coefficients (See Table 4). Participants' age,

Table 3. Participants' QOL scores

	Cancer survivors		Residents without cancer			
	n = 104		n = 2691			
QOL items and domains	Mean	SD	Mean	SD	t	p
Overall perception of QOL	3.158	.655	3.311	.740	2.305*	.021
Overall perception of health	2.596	1.048	3.153	.914	5.342***	.000
Physical health	13.039	2.593	13.131	2.398	4.526***	.000
Psychological	13.067	2.711	13.646	2.554	2.262*	.024
Social relationships	12.878	2.299	13.184	2.341	1.309	.190
Environment	13.130	2.496	13.327	2.129	0.919	.358

*p < .05, **p < .01, ***p < .001.

education, employment as well as whether they live alone or not showed no significant correlation with any QOL item and domain scores. Gender (0 = female; 1 = male) was negatively correlated with the social relationships domain (r = -.221, p = .025). Previous year's household income was positively correlated with the psychological and environment domains (r = .232, p = .018; r = .251, p = .012). Whether participants usually have meals alone (0 = no; 1 = yes) was also negatively correlated with the overall perception of health item (r = -.265, p = .017). Perceived socio-economic position showed significant positive correlation with all QOL items and domains. Whether participants have a hobby (0 = no; 1 = yes) was also significantly correlated with all domains except for the overall perception of QOL item.

3.4 Correlation between neighborhood context and QOL in cancer survivors

Table 5 presents the Spearman's correlation coefficients of neighborhood conditions and QOL in cancer survivors. The numbers of neighbors that participants can exchange greetings with, whether participants have joined in local events or activities (0 = no; 1 = yes) as well as whether participants are involved in local voluntary work (0 = no; 1 = yes) showed no significant correlation with any QOL item and domain scores. The numbers of neighbors that participants can ask for advice was positively correlated with the social relationships domain (r = .242, p = .018). Whether participants are satisfied with neighborhood relations (0 = no; 1 = yes) was positive correlated with all of the 4 QOL domains except for the 2 items. Whether participants are willing to join in local events or activities in the future (0 = no; 1 = yes) showed significant positive correlation with the overall perception of health item and the social relationships domain (r = .214, p = .034; r = .297, p = .003).

3.5 Factors predicting QOL scores in cancer survivors

Items which were significantly correlated with QOL scores were further put into simple and multiple regression analyses, using forced entry method. Table 6 showed factors predicting each QOL item and domain of cancer survivors. Evidence for multicollinearity

Table 4. Spearman's correlation coefficients between demographics and QOL in cancer survivors

QOL items and domains	Age (year)		Gender (0 = female; 1 = male)		Education (year)		Household income of previous year (mean)		Employment (0 = not employed; 1 = employed)		Perceived socio-economic position (Higher score repesents higher position)		Whether you live alone (0 = no; 1 = yes)		Whether you usually have meals alone (0 = no; 1 = yes)		Whether you have hobbies (0 = no; 1 = yes)	
	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p	r	p
Overall perception of QOL	-.019	.853	-.013	.894	-.051	.618	.100	.340	-.033	.739	.324**	.001	.016	.881	-.158	.130	.091	.362
Overall perception of health	.059	.555	.053	.600	-.026	.794	.099	.332	-.003	.972	.212*	.032	-.136	.200	-.265*	.017	.202*	.031
Physical health	-.075	.463	-.009	.931	.009	.930	.137	.178	.018	.858	.291**	.003	-.067	.510	-.181	.073	.332***	.001
Psychological	-.089	.378	-.013	.897	.080	.427	.232*	.018	.033	.740	.352***	.000	-.094	.356	-.182	.080	.430***	.000
Social relationships	-.148	.141	-.221*	.025	.119	.237	.165	.106	-.105	.288	.289**	.003	-.204	.051	-.081	.455	.268**	.006
Environment	.017	.868	-.047	.642	.112	.262	.251*	.012	-.032	.750	.443***	.000	.035	.732	-.066	.526	.391***	.000

*p < .05, **p < .01, ***p < .001.

Table 5. Spearman's correlation coefficients between neighborhood context and QOL in cancer survivors

QOL items and domains	Number of neighbors you can ask for advice (mean)		Number of neighbors you can exchange greetings with (mean)		Whether you are satisfied with neighborhood relations (0 = no; 1 = yes)		Whether you have joined in local events or activities (0 = no; 1 = yes)		Whether you are willing to join in local events or activities in the future (0 = no; 1 = yes)		Whether you are involved in local volunteer work (0 = no; 1 = yes)	
	r	p	r	p	r	p	r	p	r	p	r	p
Overall perception of QOL	-.042	.691	.013	.900	.034	.744	.030	.762	.013	.899	.025	.809
Overall perception of health	.119	.242	-.092	.353	.091	.375	.120	.228	.214*	.034	.169	.100
Physical health	.070	.491	.011	.909	.307**	.002	.129	.197	.185	.086	.185	.076
Psychological	.072	.478	.078	.434	.246*	.017	.125	.208	.129	.227	.207	.053
Social relationships	.242*	.018	.182	.065	.357***	.000	.189	.054	.297**	.003	.071	.506
Environment	.130	.190	.106	.286	.285**	.004	.173	.081	.130	.230	.048	.639

*p < .05, **p < .01, ***p < .001.

Table 6. Simple and multiple regression of factors predicting QOL in cancer survivors

	Overall perception of QOL			Overall perception of health			Physical health			Psychological			Social relationships			Environment		
	B	β	p	B	β	p	B	β	p	B	β	p	B	β	p	B	β	p
Gender													-1.045	-.224*	.011			
Whether you have hobbies				.371	.154	.112	1.265	.213*	.028	1.818	.291**	.002	.478	.090	.328	1.212	.211*	.020
Whether you usually have meals alone				-.492	-.194*	.045												
Perceived socio-economic position	.131	.265**	.006	.084	.106	.275	.354	.181	.052	.560	.272**	.003	.336	.192*	.032	.689	.363***	.000
Number of neighbors you can ask for advice													.061	.050	.579			
Whether you are satisfied with neighborhood relations							1.686	.258**	.007	.761	.111	.231	1.798	.308**	.001	1.476	.233**	.009
Whether you are willing to join in local events or activities in the future				.491	.225*	.018							.842	.176*	.050			
F	7.723**			4.350**			7.819***			9.363***			6.534***			13.492***		
p	.006			.003			.000			.000			.000			.000		
R^2	.070			.149			.190			.219			.288			.288		

*$p < .05$, **$p < .01$, ***$p < .001$.

was absent because the variance inflation factor for independent variables in all models was less than 4.0. Perceived socio-economic position remained a significant variable that predicted the overall perception of QOL item (β = .265, p = .006), the psychological domain (β = .272, p = .003), the social relationships domain (β = .192, p = .032), as well as the environment domain (β = .363, p = .000). Among neighborhood context factors, whether participants are satisfied with neighborhood relationships stood as a significant variable that predicted the physical health domain (β = .258, p = .007), the social relationships domain (β = .308, p = .001) and the environment domain (β = .233, p = .009).

4. Discussion

Demographic charateristics showed that the average age of cancer survivors receiving outpatient treatment was older than residents without cancer. Especially, the percentage of older cancer survivors, is significantly higher than the percentage of older residents without cancer. Previous studies reported that aging was strongly connected with cancer, and with prolonged life expectancy and improved treatment outcomes, the estimated number of older adults with cancer would be increasing as well (Balducci & Beghe, 2001; Tas & Keskin, 2012). Many prior research also stated that older age tended to connect with poorer QOL (Costa-Requena & Gil, 2009; Arraras et al., 2013; Schmidt et al., 2016). However, this study showed that age was not correlated with QOL scores, which was inconsistent with previous reports. With greater life experience and other

commodities that comes along with aging, older adults have been found to cope with crisis competently and have better emotional well-being (Carstensen et al., 2011; Kahana et al., 2017), which could be the explanation of why age showed no significant correlation with QOL scores.

Cancer survivors scored significantly lower than residents without cancer in the items of overall perception of QOL and overall perception of health, as well as in the two domains of physical health and psychological. However, at the same time, there were no significant difference in the domains of social relationships and environment. The findings indicate that although middle-aged and older cancer survivors appear to be more vulnerable in physical and psychological function than those without cancer, it is possible for cancer survivors to prevent their social and environment QOL from declining. While concerns of how to prolong survival and maintain physical function remain the major apprehension of cancer survivors (Kirkhus et al., 2019), many of them may also find themselves confronted with various psychosocial concerns, such as fears and uncertainties (Holland & Zittoun, 1990; Merckaert et al., 2010). It was also stated that because older age was a time when many people are retired from work or considering retirement (Schootman et al., 2020), older adults tend to be less mobile and more reliant on local service or neighborhood support and contact (Kubzansky et al., 2005). Therefore, building a community where neighborhood support and contact can be easily acquired is prominent for community-dwelling middle-aged

and older cancer survivors to prevent their social and enviroment QOL level from declining.

Perceived socio-economic position remained a substantial variable predicting all 4 domains of QOL in cancer survivors, with higher perceived socio-economic position associating with higher QOL scores. Previous research also indicated that low socio-economic position was often associated with poor health-related outcomes as well as mortality (Hoffmann et al., 2019; Temam et al., 2019). Henriques et al. (2020) found that older people from a economically underprivileged socio-economic position tended to have poorer QOL, however, with social support from family or friends, level of QOL could be improved later in life.

Whether participants are satisfied with neighborhood relations and the willingness to join in local events and activities also remained significant variables predicting QOL domains such as physical health and social relationships, with people who are satisfied with neighborhood relations and willing to join in local events scoring higher in QOL. This result is consistent with prior literature showing neighborhood context associating with QOL and health outcomes. Tejeda et al. (2017) stated that perceived neighborhood social disorder was connected with negative psychological consequences of breast cancer survivors. Similar results were also affirmed by Wu et al. (2018) that neighborhood stress was associated with lower self-rated health level. Berkman et al. (2000) showed how social relationships at a community level or social participation, such as getting together with friends or participating in social roles, could provide a sense of value or attachment to the individual, which foster health behaviors like physical exercise or smoking cessation, as well as self-efficacy.

Having hobbies was as well proved possitively correlated with QOL, predicting the overall perception of health item, and the three domains of physical health, psychological and environment. Previous research showed similar findings. Tominaga et al. (1998) indicated that having hobbies was a significant predictor of cancer survival, with the number of hobbies increased, risk of death decreased. Kirshbaum & Donbavand (2014) identified participants' perceived enjoyable activities, such as making cupcakes, singing, or involving in voluntary work, could improve the management of illness related fatigue.

5. Limitations and implications

This study has several limitations that must be recognized. Because of the small sample size, it is difficult to generalize the results of this study. The nature of secondary analysis limits the available variables to the initial survey. Also, this is a cross-sectional study which does not follow up the potential changes in QOL levels in the course of time. Future qualitative and quantitative studies are needed to better identify the factors presented in Table 6, as well as to make causal relationship presumptions between factors and QOL outcomes.

Despite these inadequacies, this study showed the general QOL level of noninstitutionalized middle-aged and older cancer survivors receiving outpatient treatment in Tokorozawa City. We compared QOL scores of cancer survivors with those of residents without cancer, and examined factors linked with QOL of cancer surivors. The findings prove that involvement and engagement in neighborhood relations and activities play a vital role in maintaining QOL of cancer survivors receiving treatment in an outpatient setting. This indicates that there are potential opportunities for healthcare providers and community social workers to help survivors be better included in community social life, thus preventing them from feeling excluded and inferior. It is necessary to detect the factors associated with poor QOL among community-dwelling cancer survivors in order to help them access professional support smoothly. Further psychological intervention is needed to testify the factors associated with survivors' QOL presented in this study.

Acknowledgments

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要　旨

　本研究では、通院治療を受けているがんサバイバーの生活の質（QOL）に関連する要因を明らかにすることを目的として、2013年で実施した調査研究から得られた横断データに基づいて二次分析を行った。調査は、所沢市における40歳以上の男女9,099人を対象に、自記式調査票を用いた郵送調査です。中高年がんサバイバー（45歳以上、n ＝2,795）を抽出して本研究の分析対象とした。有効回答は2,795人であった。基本属性や近隣環境，QOLについて、がんサバイバー（n = 104）とがんを患っていない者（n = 2,691）を比較したところ，QOLにおける社会関係因子と環境因子には有意な差がみられなかった。また、がんサバイバー（n = 104）における基本属性や近隣環境とQOLの関連について分析したところ、社会経済的地位，近隣関係への満足度，趣味などの要因はQOLと正の相関がみられ、近隣環境はQOLにおける全体的健康感因子と身体的健康感因子，社会関係因子，環境因子に関連がみられた。本研究は，地域活動や近隣環境が，がんサバイバーのQOL維持に重要な役割を果たしていることが示唆された。

キーワード：QOL，がんサバイバー，近隣状況，中高年