

Original Paper

The Hopes of Lung Cancer Patients Receiving Chemotherapy

Hiroko OTA^{*1}, Isako UETA^{*2} and Miho ONO^{*3}*(Accepted June 19, 2020)*

Key words: hopes, lung cancer patients, chemotherapy

Abstract

The aim of this study is to clarify the hopes of lung cancer patients receiving chemotherapy in Japan from differences in hopes in accordance with the HHI score being high or low. Semi-structured interviews were conducted on 13 subjects. A qualitative inductive analysis on the hopes of lung cancer patients receiving chemotherapy was performed according to high and low Herth Hope Index-Japanese version groups and, as a result, the six hopes of "deciding," "believing," "savoring," "protecting," "being useful," and "building" were generated. The hopes that were seen only in the high HHI group were the two core categories of "deciding" and "building" and the <depending on others> of "believing," "being useful to peer patients" of "being useful," and [savoring the illness] of "savoring." The results suggest that, for lung cancer patients receiving chemotherapy to live with a positive attitude, there is needed nursing support that would enable the patients to have the hope "deciding" by which the patient, on the patient's own, decides the treatment method and the place of treatment and decides an environment where the patient can proactively participate in the treatment and can concentrate on the treatment, the hope "building" by which a human relationship with medical practitioners is built up in receiving treatment anew, etc.

1. Introduction

The prognosis for lung cancer is poor and especially with lung cancer subjects to chemotherapy, the circumstances are very harsh, with the five-year survival rate being 21.3% for stage III and 4.9% for stage IV (2008 to 2010 initial treatment cases)¹⁾. For lung cancer patients receiving chemotherapy, the life of carrying the risk of side effects and the uncertainty of illness is highly stressful for both mind and body. Moreover, since the circumstances are already such that removal of cancer is not possible, the patients are likely to be reminded of death and tend to lose the hope to live. For lung cancer patients to live with a positive attitude even under such circumstances, a psychosocial force (hope) that can give patients the strength to live with a positive attitude despite a terrible loss or extreme difficulties²⁾ is important. Herth developed the Herth Hope Index (HHI) and revealed that the hopes of patients with first recurrence of cancer can be enhanced³⁻⁴⁾. That is, even under any severe circumstances, people have the life force to live with a positive attitude and moreover, this force can be changed. According to Herth⁵⁾, differences in

^{*1} Department of Nursing, Faculty of Nursing,
Kawasaki University of Medical Welfare, Kurashiki, 701-0193, Japan
E-Mail: h-oota@mw.kawasaki-m.ac.jp

^{*2} Graduate School of Nursing, Tokushima Bunri University

^{*3} Graduate School of Health Sciences, Okayama University

religion, family, and role were found between patients of high hope levels and patients of low hope levels. Even in Japan, studies on elderly people⁶⁾ and patients with intractable disease⁷⁾ have revealed that there are differences in mental health between a group of high hope scores and a group of low hope scores. Thus, if there are differences in mental health according to hope being high or low, it can be anticipated that by clarifying these differences, clues for uplifting hope can be grasped. However, since it is yet to be clarified what sort of forces the hopes of lung cancer patients receiving chemotherapy are, this needs to be clarified first. Further, it is considered that between the hopes of an American and the hopes of a Japanese, there are differences in values based on culture backgrounds. Morita⁸⁾ noted that unlike in the USA, the elements of "Good Death" for the Japanese include such unique elements as "decision-making that can obtain consent," "not troubling others," "strengthening the relationship with family," etc. (p.13). This is considered to be due to differences in value based on cultural backgrounds between Americans and Japanese, and since there is a large proportion of elderly among lung cancer patients, it is considered that the elements unique to the Japanese are strongly reflected in the hopes that patients receiving chemotherapy have.

Given the above, this study aims to clarify the hopes of lung cancer patients receiving chemotherapy in Japan from differences in hopes in accordance with the HHI score being high or low.

2. Methods

2.1 Definition of terms

Herth expressed hope as a "life force" and defined that hope as that which "does not simply mean a wish but is a psychosocial force that can give patients the strength to live with a positive attitude despite a terrible loss or extreme difficulties"²⁾. In this study, with Herth's concept of hope as a theoretical base, hope is defined as "a psychosocial force that can give patients the strength to live with a positive attitude even under the progress of lung cancer where one tends to lose the wish to live."

2.2 Participants

The participants were 13 lung cancer patients satisfying the following six conditions. (1) Has been informed of the name of the disease. (2) Is receiving chemotherapy. (3) Has no cognitive impairment. (4) Has no physical problems for participating in the study. (5) Has a PS (performance status) of 0 to 1. (PS represents the level of limitations in people's daily activities and is indicated with numbers between zero and four. The bigger the number, the bigger the limitations.) (6) Has no impairment of mental function. In regard to the mental function, it was judged that a patient with a score of less than 5 points obtained using the "distress and impact thermometer"⁹⁾ has no impairment of mental function. (The "distress and impact thermometer" is a screening tool that shows the level of the adjustment disorder and depression of the patients with the scores between zero and ten. The higher the number, the more distressed and impacted the patient.)

2.3 Procedures

2.3.1 Data collection

The attending physician and head nurse introduced patients who satisfy all six conditions above. The researcher then explained the research purpose and ethical consideration both in writing and verbally. Before interviewing the subjects who provided consent, the authors had the subjects answer the Herth Hope Index-Japanese version¹⁰⁾ (hereinafter, HHI) to measure the hope levels. The HHI is a scale for measuring dynamic inner energy, which is a coping strategy that makes it possible to live with a positive attitude and enables people to continue to live, and is answered on a Likert scale of 1 to 4 and was used because of being used most frequently in clinical settings with cancer patients and other patients with serious ailments. The reliability and validity of this scale have been verified. HHI scale consists of 12 items, with the sum of each item being the final score. The score is between 12 and 48, with 48 having the highest energy level.

Also, the researcher conducted a 30 to 50 minute semi-structured interview method based on an interview guide in the setting where the subject's privacy was protected. As for the interview contents, the authors had the subjects talk about happenings and contents that the subjects deem to be a life force (hope) in receiving chemotherapy and specific contents that enable living with a positive attitude. The interviews

were recorded with permission. The research was conducted between March, 2015 to April, 2016.

2.3.2 Analysis

Verbatim records of the interviews were prepared. From among the records, sentences in which "life force: hope" was talked about were extracted, subject to qualitative inductive analysis, and categorized according to similarity of semantic content. Further, core categories expressing the life force were derived from the contents. Further, the core categories were classified into the two groups of high and low in accordance with the median of the HHI scale and compared. Throughout the entire process of the study, the authors held a research-oriented perspective in cancer nursing, received supervision of nursing researchers who are the practitioners of the qualitative research method, and made efforts to secure truthfulness.

2.4 Ethical considerations

This study was carried out upon being approved by the Ethical Review Board of the Kawasaki University of Medical Welfare (Approval No.: 14-020, 2000-1) and approvals of ethical review boards of institutions cooperating in this study. The subjects were provided with written and oral explanations on the aim of the study, the free will to participate in the study, that treatment and nursing would not be obstructed by one participating or not participating in the study, the freedom to interrupt, the avoidance of detriment, the confidentiality of personal information, the publication of results, etc., and consents were obtained by writing from the subjects.

3. Results

3.1 Summary of the subjects

Tables 1 and 2 show a summary of the subjects. All 13 subjects were male. The mean HHI score was 34.3 points, the median of the HHI scale was 35 points, the high HHI group of not less than 35 points was constituted of 8 subjects, and the low HHI group of not more than 34 points was constituted of 5 subjects.

Table 1 Patient background of the high HHI groups

ID	Age	Sex	The number of family members living together	Work	HHI	Type	Stage	P S	Months after diagnosis	The line when interviewing	The length of interview time (minutes)
A	60's first half	M	1	yes	40 (high)	adeno	IV	0	40	6	34
B	60's second half	M	1	yes	43 (high)	squamous cell	IV	1	71	6	37
C	60's first half	M	0	yes	37 (high)	large cell	ⅢB	0	38	5	51
D	70's first half	M	4	no	36 (high)	adeno	ⅢB	1	48	4	32
E	70's first half	M	1	no	40 (high)	adeno	ⅣA	0	7	3	41
F	60's first half	M	4	yes	40 (high)	small cell	ⅢB	0	36	2	38
G	50's second half	M	1	yes	37 (high)	adeno	ⅢA	0~1	12	3	57
H	60's second half	M	2	off	41 (high)	small cell	ⅢA	0	17	3	26
average	65.5y				34.3				25.2	3.8	40.6

Table 2 Patient background of the low HHI groups

ID	Age	Sex	The number of family members living together	Work	HHI	Type	Stage	P S	Months after diagnosis	The line when interviewing	The length of interview time (minutes)
I	70's second half	M	1	no	25 (low)	anaplastic	ⅢB	1	16	2	48
J	60's first half	M	1	no	32 (low)	squamous cell	ⅢA	1	20	2	51
K	60's first half	M	1	off	29 (low)	small cell	IV	1	5	2	41
L	60's second half	M	1	no	34 (low)	adeno	ⅢB	1	15	3	48
M	60's first half	M	4	no	27 (low)	small cell	ⅣA	1	3	2	24
average	66.2y				29.4				11.8	2.2	42.4

The average age was 65.5 years with the high HHI group and 66.2 years with the low group, and the mean post-treatment period was 33.6 months with the high group and 11.8 months with the low group.

3.2 The hopes of the high HHI group of lung cancer patients receiving chemotherapy

From 126 codes, 29 sub-categories and 13 categories were generated. Six core categories were then extracted (Table 3). The core categories are indicated within double quotation marks (" "), the categories are indicated within square brackets ([]), the sub-categories are indicated within angle brackets (< >), and the narratives of the subjects are indicated within single quotation marks (' ').

With the high HHI group, the six core categories of "deciding," "believing," "protecting," "being useful," "savoring," and "building" were extracted. Under "deciding," there were the two categories of [proactively participating in treatment] and [concentrating on treatment]. Under "believing," there were the two

Table 3 Hopes of the high HHI groups

Core category	Category	Sub-category
Deciding	Proactively participating in treatment	Determining the treatment method on one's own
		Choosing the hospital
	Concentrating on treatment	Concentrating on treatment
Believing	Believing people	Noticing the support by the family
		Depending on the family
		Noticing the support by others
	Being positive	Depending on others
		Leaving it up to the doctor
Protecting	Protecting oneself	Having a goal within reach
		Having a positive feeling
		Getting back one's normal self
	Protecting the family	Being neutral
		Managing the body condition
Being useful	Being useful to the family	Coping with side effects
		Caring about the family
	Being useful to others	Not saddening a loved one
		Staying alive for one's wife
		Fulfilling the role as a parent
Savoring	Savoring the present	Being useful to peer patients
		Contributing to medicine
	Savoring life	Thinking about the benefits of having become ill
		Savoring the illness
Building	Building a human relationship with the doctor	Enjoying spending time as husband and wife
		Remembering oneself when one was working
	Thanking the medical practitioners	Recalling memories
		Savoring the illness
	Building a human relationship with the doctor	Building a human relationship with the doctor
	Thanking the doctor	Thanking the doctor
	Thanking the nurse	Thanking the nurse

categories of [believing people] and [being positive]. Under "protecting," there were the two categories of [protecting oneself] and [protecting the family]. Under "being useful," the two categories of [being useful to the family] and [being useful to others] were seen. Under "savoring," the three categories of [savoring the present], [savoring life], and [savoring the illness] were seen. Under "building," the two categories of [building a human relationship with the doctor] and [thanking the medical practitioners] were seen.

3.2.1 *The hope "deciding" of the high HHI group*

The core category "deciding" was constituted of the two categories [proactively participating in treatment] and [concentrating on treatment], and of these, [proactively participating in treatment] was constituted of the two sub-categories of <determining the treatment method on one's own> upon researching and <choosing the hospital>.

Mr. C said: 'I was told that there aren't any more good medicines. Then I was asked what I would like to do. So, I checked the internet and saw that clinical trials were being performed here and so...'

Mr. F said: 'I told my doctor to please wait. Until I can dispose (of my cows) - because unless I do so, the ones taking care of me cannot tend (the cows). After arranging things for nearly one month and when things got arranged, I came here (to the hospital).'

That is, "deciding" is a force by which self-determinations on the treatment environment and the treatment method are made and an environment that would enable concentrating on the treatment is arranged on one's own. "Deciding" was seen only in the high HHI group.

3.2.2 *The hope "believing" of the high HHI group*

[Believing people] was constituted of the five sub-categories of <noticing the support by the family>, that is, the support provided by one's wife and/or child, <depending on the family>, <noticing the support by others>, that is, support provided by patients mutually and by others surrounding the patient, <depending on others> such as fellow workers, and <leaving it up to the doctor> in regard to treatment.

[Being positive] was constituted of the two sub-categories of <having a goal within reach>, such as the marriage of a child, the growth of a grandchild, a family trip, etc., and <having a positive feeling>, such as having the will not to lose to illness, coping with the treatment with a positive attitude, etc.

This hope core category was one by which medically difficult circumstances were faced through noticing and being able to depend nicely on the surrounding support by the family, friends, fellow workers, peer patients, etc., trusting and leaving the treatment up to the doctor, having a goal within reach as a goal for living, and having a positive feeling in confronting cancer.

Mr. G said: '(My son is) the type that says it's too wasteful to spend money on such a marriage ceremony. (Partially omitted) he says if I were to hold a marriage ceremony, then says I would hold it just with the family. (Partially omitted) he says I can go together to their honeymoon and play with their baby in the meantime.'

Mr. F said: 'Although until I made arrangements, I didn't tell everybody (the fellow workers), after I finished the arrangements, I told them myself that I had lung cancer and so I decided to do this (quit dairy farming). If I were to hide it, I would have to be overly mindful. (Partially omitted) that would be tiring for myself and my family and I thought it's easier to just tell everybody.'

Mr. B said: 'As my number one goal, I made my grandchild my goal. For the time being, I thought I must not die until my grandchild entered elementary school. I'll definitely live until my grandchild enters elementary school. Something like that. It's well, (partially omitted) like my cornerstone, I guess.'

The "believing" of the high HHI group is to live positively even under medically difficult circumstances, recognize the presence of the family and people besides the family that support oneself who receives the treatment, and be able to depend nicely on their presence. Only the high HHI group was able to depend nicely on others besides the family that support oneself.

3.2.3 *The hope "protecting" of the high HHI group*

[Protecting oneself] was constituted of the four sub-categories of <getting back one's normal self>, that is, for example, living as usual when at home and continuing with one's hobby, <being neutral>, that is,

living with cancer without excessive effort, thinking that whatever will be will be, etc., <managing the body condition>, that is, apprehending the doctor's explanations objectively, etc., and <coping with side effects>, that is, grasping the progress of side effects, receiving advice from the nurse, etc.

[Protecting the family] was constituted of the two sub-categories of <caring about the family>, that is, caring about the body condition of one's wife, caring about a son who is working, etc., and <not saddening a loved one>, that is, having the feeling of not losing to cancer so as not to sadden the family or friends.

Mr. B said: 'My hobby is fishing. So, I think that I've got to get better and definitely go fishing!'

Mr. B said: 'If I give up and die, my family will feel sad, and even with my friends, I think that I shouldn't make them feel sad so much.'

The "protecting" of the high HHI group is to improve the body condition of the patient receiving the chemotherapy and cope with side effects on the patient's own, be neutral in order to protect oneself from the illness called cancer, and get back oneself who is not caught up with illness. It is also to make efforts so as not to put one's loved family and friends in situations that are hard for both mind and body due to one having cancer.

3.2.4 *The hope "being useful" of the high HHI group*

[Being useful to the family] was constituted of the two sub-categories of <staying alive for one's wife> and <fulfilling the role as a parent> until a child achieves independence.

[Being useful to others] was constituted of the three sub-categories of <being useful to peer patients>, that is, wishing people of the same illness to have a positive attitude, giving financial advice, etc., <contributing to medicine> so as to have students learn, and <thinking about the benefits of having become ill> through cooperating with research.

Mr. F said: 'Since I've got a child, I thought I've got to live a little bit longer. (The child is) big, big. But I thought I better be around just a bit longer.'

Mr. C said: 'There are people who don't know about such things like the cost limit for medical treatment (partially omitted) when they became hospitalized. I hear of such cases from time to time. (Partially omitted) like people wondering what do because they got sick and because of that their family are having trouble and so on. (Partially omitted.) I should give various advice, shouldn't I?'

The "being useful" of the high HHI group is the hope not just of staying alive for one's wife or fulfilling the role as a parent that has become impeded by becoming ill but also of helping peer patients so as to have a positive attitude, raising future medical practitioners, and further finding meaning in having become ill. The sub-category <being useful to peer patients> of [being useful to others] of "being useful" was seen only in the high HHI group.

3.2.5 *The hope "savoring" of the high HHI group*

The category [savoring the present] constitutes of two sub-categories: <enjoying daily life> such as hobbies and eating out with grandchildren, and <enjoying spending time as husband and wife> by calling or eating with his wife.

[Savoring life] was constituted of the two sub-categories of <remembering oneself when one was working> and <recalling memories> of the precious past.

With [savoring the illness], even the decrease in muscular strength or the hair loss due to the trying side effects of chemotherapy were turned into a source of laughter.

Mr. E said: 'Everyday, (my wife) can visit. That's so good (laughter). I eat together (with my wife) for lunch. Because, now we are allowed to eat together for lunch. (Partially omitted) we exchange, share, and eat. It's so good (to eat together). It's definitely good (laughter).'

Mr. F said: 'I was allowed to do as I liked to some degree when I was young. Going here and there, even going to school outside my home prefecture. I was also overseas for one year. For practical training (on agriculture). Even though the practical training wasn't easy, I traveled through Europe, did many things, went skiing, and so forth.'

Mr. G said: 'At the company, even among baldies, there are many who made themselves as bald as an

egg. That (hair loss) is perfectly okay!

The "savoring" of the high HHI group is a force by which the time called the present is enjoyed with one's loved family even though one became ill, one's own life is carefully studied while recalling oneself when one was working or one's precious memories when one was young, and furthermore, even the fact of having got cancer or the trying side effects can be changed into a source of laughter. [Savoring the illness] was a hope that only the high HHI group had.

3.2.6 The hope "building" of the high HHI group

[Building a human relationship with the doctor] is to be able to enjoyably hold trivial conversations or talk about a hobby and other trivial, everyday things with the doctor.

[Thanking the medical practitioners] was constituted of the two sub-categories of <thanking the doctor> who provides sincere help and <thanking the nurse> who provides care.

Mr. G said: 'Last year, my doctor often humored me in conversations on fishing. (Partially omitted) so that even this year, I thought of going fishing tomorrow. I think I can hold on for just a bit more.'

Mr. G said: 'The doctors also often asked about my circumstances and told me that even if the cancer is cured, if I quit my work, I would face difficulties (partially omitted) and even though I may be thinking that it would be like a public office job (that would provide insurance for absence from work, etc.), it's not very likely that I would be provided with such (considerations for enabling me to continue working).'

The "building" of the high HHI group is to thank the medical practitioners, such as the doctors, nurses, etc., who seriously think about the patient him/herself in receiving treatment anew and be able to construct a human relationship with the doctors. "Building" was seen only in the high HHI group.

3.3 The hopes of the low HHI group

From 47 codes, 21 sub-categories and 8 categories were generated. Four core categories were then extracted (Table 4).

Table 4 Hopes of the low HHI groups

Core category	Category	Sub-category
Believing	Believing people	Noticing the support by the family
		Depending on the family
		Noticing the support by others
	Being positive	Leaving it up to the doctor
		Having a goal within reach
		Having a positive feeling
Protecting	Protecting oneself	Getting back one's normal self
		Being neutral
		Managing the body condition
	Protecting the family	Coping with side effects
		Protecting the land
		Caring about the family
Being useful	Being useful to the family	Not saddening a loved one
		Staying alive for one's wife
		Fulfilling the role as a parent
	Being useful to others	Contributing to medicine
		Thinking about the benefits of having become ill
Savoring	Savoring the present	Enjoying daily life
		Enjoying spending time as husband and wife
	Savoring life	Remembering oneself when one was working
		Recalling memories

The low HHI group had the four hopes of "believing," "protecting," "being useful," and "savoring." The two categories of [believing people] and [being positive] were seen under "believing," the two categories of [protecting oneself] and [protecting the family] were seen under "protecting," the two categories of [being useful to the family] and [being useful to others] were seen under "being useful," and the two categories of [savoring the present] and [savoring life] seen under "savoring."

The hope category seen only in the low HHI group was <protecting the land> under [protecting the family] of "protecting".

3.3.1 *The hope "believing" of the low HHI group*

[Believing people] was constituted of the four sub-categories of <noticing the support by the family>, that is, the support provided by one's wife or child or the support provided by a pet waiting for one, <depending on the family> by talking about one's death, <noticing the support by others>, such as the support provided by patients mutually or by colleagues or classmates, and <leaving it up to the doctor> in regard to treatment.

[Being positive] was constituted of the two sub-categories of <having a goal within reach>, such as the marriage of a child, the growth of a grandchild, work, etc., and <having a positive feeling>.

Mr. L said: 'I never thought that I was all alone, no. My children are so eager to show me their children and send a lot (of photos) (to my mobile). I also call my daughters and they also call often. And nowadays I use LINE and such.'

Mr. J said: 'It's not like there are so many kinds of anticancer drug medicines and it's like what will I do when in the end there is none left and there are no more medicines to be used (partially omitted) and that's why I'm participating with the thought that it would be nice even to have just one thing to rely on among such medicines. (Partially omitted) in my case, when I went to talk for the first time, I was given something like advice. That's why I thought it was good and, yes, I am participating (in the cancer seminar).'

With the "believing" of the low HHI group, the patients were able to notice the support provided by their families and others. However, although they were able to depend on their families, the patients of the low HHI group were not capable of <depending on others> besides the family as was observed in the high HHI group. They were confronting cancer with a positive feeling with a goal within reach, such as children, grandchildren, etc.

3.3.2 *The hope "protecting" of the low HHI group*

[Protecting oneself] was constituted of the four sub-categories of <getting back one's normal self> by living as usual when at home, <being neutral>, that is, not equating cancer to death but living to one's own life span, thinking that whatever will be will be, etc., <managing the body condition> by assessing one's body condition from symptoms, and <coping with side effects>, that is, discussing side effect symptoms with the doctor, etc.

[Protecting the family] was constituted of the three sub-categories of <caring about the family>, <not saddening a loved one>, and <protecting the land> inherited from ancestors. <Protecting the land> is a sub-category that was seen only in the low HHI group.

Mr. M said: 'Although there are people who are afraid that cancer equals death, I have no such thought at all. I think it's okay for me to live as long as I live.'

Mr. J said: 'Although ordinarily, if one had a girl and a boy, the boy would inherit the house (partially omitted), nowadays it's not so. Since there's nobody (who would inherit the paddy field), if one of us (husband and wife) dies, only one would be left. Also, there's no way for a grandchild to inherit the house. If I don't grow (rice), millet would grow and that would be a disaster!'

The "protecting" of the low HHI group is to improve the body condition of the patient receiving the chemotherapy and cope with side effects on the patient's own, be neutral in order to protect oneself from the illness called cancer, and get back oneself who is not caught up with illness. It is also to protect one's loved family and one's house that has been handed down even though one has cancer.

3.3.3 *The hope "being useful" of the low HHI group*

[Being useful to the family] was constituted of the two sub-categories of <staying alive for one's wife>

and <fulfilling the role as a parent>.

[Being useful to others] was constituted of the two sub-categories of <contributing to medicine> and <thinking about the benefits of having become ill>.

Mr. K said: 'Only one of my children has achieved independence, my second son has not quite, and I feel that I must handle matters until this is settled. As a parent, I do.'

Mr. L said: 'After entering this hospital and up to now, there's been lot of biological examinations. I've been asked if they can use this at school and I've told them that it's all right. (Partially omitted) if there's anything that can be used. Even when I was told about this (interview) or when I am examined, as long as it's being done, I don't think about hiding anything.'

The "being useful" of the low HHI group is not just to stay alive for one's wife or fulfill the role as a parent but also to contribute to medicine and further find meaning in having become ill.

3.3.4 *The hope "savoring" of the low HHI group*

[Savoring the present] was constituted of the two sub-categories of <enjoying daily life> and <enjoying spending time as husband and wife>.

[Savoring life] was constituted of the two sub-categories of <remembering oneself when one was working> and <recalling memories>.

Mr. L said: 'When I went on a trip (with a childhood friend) in X of this year, (partially omitted) he said let's stay in the same room. Because old stories would come up. Certainly. And then when I phoned another guy, several ended up coming to the same hotel.'

Mr. K said: 'I do recall work that I enjoyed in the past. Work during my active career. (Partially omitted) the contents of the work were indeed enjoyable. I recall them one after the other.'

The "savoring" of the low HHI group was to reflect on the time called the present and the past and carefully study one's own life up to now.

4. Discussion

4.1 *Characteristics of the life forces (hopes) of the high HHI group*

The hopes of the high HHI group were the six forces of "deciding," "believing," "protecting," "being useful," "savoring," and "building." The hopes seen only in the high HHI group were "deciding," the sub-category <depending on others> of [believing people] of "believing," the sub-category <being useful to peer patients> of [being useful to others] of "being useful," the category [savoring the illness] of "savoring," and "building."

"Deciding" is a hope seen only in the high HHI group. Whereas cancer encroaches on a human so as to make one realize the fact that one is a being destined to die (p.40)¹¹⁾, "deciding" is to be able to participate proactively in the treatment by deciding the treatment method and the place of treatment on one's own and adjust one's work to prepare, on one's own, an environment that would enable concentrating on the treatment. As to why "deciding" was seen only in the high HHI group, one factor is believed to be that the high HHI group is a group that is long in treatment period in comparison to the low HHI group and is also receiving fourth-line chemotherapy on the average. It is considered to be so because while receiving chemotherapy, there is a need to incorporate the treatment as a part of living and further to think about and sort out what is important for one's life. The patients were actually checking the internet to choose more specialized and effective treatments methods and hospitals carrying out such methods. They also quit their work so that they could concentrate on the treatment and prepared, on their own, an environment that would enable concentrating on the treatment. Although it may not be possible to control an actual malignant tumor, it is said that through understanding that decisions on eating habits, exercise habits, and treatment policy can be controlled on one's own, a patient can assimilate the traumatic reality of cancer into the patient's own world view or mental scheme (p.40)¹¹⁾, and it is thus considered that deciding, on one's own, the treatment method, the place of treatment, and the environment that enables treatment is the most important hope as a first step for incorporating the reality called cancer inside oneself. However, even though this "deciding" is seen only in the high HHI group, the reality called cancer cannot be incorporated

satisfactorily into oneself simply by the treatment period being long. Our results suggest that a key may lie in how "deciding" can be uplifted.

Secondly, the high HHI group had the hope "believing" by living positively even under medically difficult circumstances and noticing and being able to depend on those who support the one receiving the treatment. A lung cancer patient receiving chemotherapy needs to be treated as an in-patient or out-patient in order to receive treatment repeatedly, is subject to emergence of such trying side effects as loss of appetite, vomiting, myelosuppression, etc., and, on top of that, is heavily burdened psychologically for having to live with cancer. It is important to have a goal within reach of an everyday kind, to be positive, and to face up to treatment even under such circumstances. In particular, <depending on others> was seen only in the high HHI group. The patients of the high HHI group recognized that others besides their families who are those that support the patients, in other words, friends, colleagues, and peer patients provide support and were thereupon able to actually seek support and depend. The Japanese consider not troubling others as a virtue and although they can depend on the family, cannot depend nicely on others besides the family. However, a characteristic of the high HHI group is having the hope of being able to cope by depending nicely on others.

Further, the high HHI group had the hope [protecting oneself] of being capable of <being neutral> and <getting back one's normal self> so as not to be caught up with having cancer and <managing the body condition> and <coping with side effects> so as to be able to continue the chemotherapy. Further, the group had the hope [protecting the family] of making efforts to prevent the prolonging treatment from giving rise to physical and psychological burdens on the patients' families and others loved by the patients and thereby placing the patients' own suffering on the loved ones. It is said that most cancer survivors recovering their own QOL and the impacts of cancer also weaken with the elapse of time (p.21)¹¹⁾. Therefore, "protecting" was a hope necessary for recovering the everyday life before getting the cancer so as to be able to live without being caught up with the cancer as soon as possible and for being able to continue treatment without the patient and the family becoming saddled with pain.

The high HHI group had the hope [being useful to the family] by staying alive for one's wife so that she won't be left alone and fulfilling the role as a parent and the hope [being useful to others] that includes <being useful to peer patients> by providing support in regard to the care environment, financial problems, and psychological problems, etc., and cooperating with students and research for further advancement of today's medicine and cooperating with the fostering of students who are to shoulder the future of medicine. The core of the meaning of existence of a human that is an autonomous being as noted by Murata¹²⁾ lies in <freedom>, which enables self-determination of how one lives and decisions and in everyday life, and Murata states that this is embodied in autonomy, productivity, or being useful to others (p.9). The hope "being useful" was an important hope in terms of the meaning of a human that is an autonomous being.

The high HHI group had the hope [savoring the present], that is, savoring the present time of now through enjoying daily life just as when one did before becoming ill by continuing with one's hobby as much as possible, etc., even after becoming ill and especially through enjoying spending time as husband and wife as always, and the hope [savoring life] of cherishing one's memories of childhood and youthhood and thinking about oneself when one was working. Further, the high HHI group had the hope [savoring the illness] by which even the fact of getting cancer can be changed into and savored as a source of laughter as can be seen by a patient laughingly saying that: "everybody at the company is as bald as an egg" even in regard to the hair loss that is a side effect of chemotherapy. However, [savoring the illness] was a hope seen only in the high HHI group and is considered to be a hope acquired by the high HHI group while spending life under care for a longer time of elapse from the start of treatment in comparison to the low HHI group. Also, from a study by Ota et al, it is known that the high HHI group was capable of smooth conversion to a positive feeling¹³⁾ and it can be said that switching to a positive feeling is a key point.

Lastly, "building" is a hope seen only in the high HHI group. The high HHI group had the hope [building a human relationship with the doctor] of being able to build a good relationship of trust that enables one to

thank medical practitioners that one meets since becoming ill, that is, medical practitioners, such as doctors, nurses, etc., who provide treatment and care with cordiality and especially being able to build a relationship of trust that enables one to have conversations not just on the illness but on trivial everyday things like a hobby, etc. This hope by which a relationship is built with the doctors and the nurses who are the ones that have specialized knowledge and provide support while being closest to a patient when the patient receives the chemotherapy for lung cancer is important for the patient who is to live while carrying an entity that threatens the patient's own life. As Murata noted that whereas the manner of involvement under the concept of curing tends to take on a unidirectional, two-party structure, under the concept of caring, the involvement becomes mutually interactional (p.57-58)¹⁴⁾, it is considered that, for the patients of the high HHI group, "building" is a hope by which they were able to become the recipients of care.

4.2 Characteristics of the life forces (hopes) of the low HHI group

The hopes of the low HHI group were the four hopes of "believing," "protecting," "being useful," and "savoring."

As with the high HHI group, the low HHI group also had the hope "believing" by living positively even under medically difficult circumstances and believing and being able to depend on those who support the one receiving the treatment. However, with the low HHI group, whereas the support from others besides the family was being felt, <depending on others> nicely was not seen. The group did not have the hope by which one is made capable of <depending on others> nicely by telling not just the family but friends, colleagues, peer patients, etc., that one had lung cancer and asking for cooperation to be able to continue chemotherapy.

Also in regard to "protecting," the low HHI group had, as did the high HHI group, the hope [protecting oneself] of being capable of <being neutral> and <getting back one's normal self> so as not to be caught up with having cancer and <managing the body condition> and <coping with side effects> so as to be able to continue the chemotherapy and the hope [protecting the family] of caring about and not saddening one's loved family.

The sub-category <protecting the land> of [protecting the family] was seen only in the low HHI group. Because the number of subjects in this study was 13, this may not necessarily be a characteristic of the low HHI group. For the Japanese, the house and the land are important things that have been handed down from old. The subjects of this study are males of average age of 65 or older and it is considered that the hope <protecting the land> is a hope that is seen among traditional-type Japanese males. It is thought to be important that both protecting oneself and protecting the family should work together in a well-balanced manner.

As with the high HHI group, the low HHI group had the hope "being useful" that includes [being useful to the family] and [being useful to others] for contributing to students and future medicine and the hope "savoring" that includes [savoring the present], that is, savoring the present time of now and [savoring life] of the past. These are probably hopes that one has inherently and are related to the meaning of existence as a human that is an autonomous being. However, <being useful to peer patients> of [being useful to others] of "being useful" was not seen in the low HHI group. That the low HHI group is short in treatment period was also considered a factor for this.

4.3 Suggestions for nursing

The hopes of lung cancer patients receiving chemotherapy are believed to be hopes that the patients have fundamentally. However, the hopes "deciding," <being useful to peer patients> of [being useful to others] of "being useful," "building," and [savoring the illness] of "savoring" that were seen only in the high HHI group in this study are probably hopes that one came to have after getting cancer. As to how these hopes are uplifted is a key point of support for lung cancer patients receiving chemotherapy who must lead life under care under difficult circumstances.

"Deciding" is to decide, on one's own, the treatment method, the place of treatment, and the environment that enables treatment and for this, sufficient provision of information to the patients and support that

enables self-determinations that can obtain consent are necessary. In particular, it is important for self-determinations of Japanese that the patient's own and the family's consents are obtained. It is of importance to explain possible side-effects and how to cope with them, and to help them face their daily life including the support for their work-treatment balance.

"Building" is to build a good relationship with the medical practitioners that fight together in confronting the enemy called lung cancer. As Murata noted that when one is in suffering that is unavoidable as a human being, there is nothing that is of more salvation than the presence of a person who understands and sympathizes with the suffering (p.59)¹⁴⁾, it is believed important for a medical practitioner with specialized knowledge to understand the trying circumstances and stay close beside in spirit.

In leading the life of fighting illness, the high HHI group is capable of [savoring the illness] to such a degree as to change the occurrence of the trying side effects of chemotherapy into a source of laughter and capable of <being useful to peer patients> as ones fighting the same illness. These are believed to be relevant to the period in which one takes back oneself who can live without being caught up with just the fact of having cancer and can live as a cancer survivor. It takes some time as a cancer survivor to be able to savor the illness, it is also beneficial to provide opportunities for patients to meet, so that they can find peers in combatting cancer at an earlier stage.

In order to provide support so as to uplift hopes or enable the acquisition of hopes as quickly as possible, it is necessary to ascertain and approach which part of the hopes that the patients have potentially has been lowered.

However, the data on the hopes of this study are data on only male lung cancer patients and there may thus be aspects that cannot be seen or may be insufficient in regard to female lung cancer patients. There is a need for further collection and examination of data.

5. Conclusion

- 1) The six hopes of "deciding," "believing," "savoring," "protecting," "being useful," and "building" were generated.
- 2) The hopes seen only in the high HHI group were the two core categories of "deciding" and "building," <depending on others> of "believing," <being useful to peer patients> of "being useful," [savoring the illness] of "savoring."
- 3) The results suggest that for uplifting the hopes of lung cancer patients receiving chemotherapy, there is needed nursing support that would enable the patients to have the hope "deciding" by which the patient, on the patient's own, decides the treatment method and the place of treatment and decides an environment where the patient can proactively participate in the treatment and can concentrate on the treatment, the hope "building" by which a human relationship with medical practitioners is built up in receiving treatment anew, etc.

Acknowledgements

We would like to extend our sincere thanks to all patients who graciously cooperated in this study and to attending physicians and nurses who cooperated in this study.

References

1. Japanese Association of Clinical Cancer Centers : *All cancer cooperative member facilities survival cooperative survey*.
<http://www.zengankyo.ncc.go.jp/etc/seizonritsu/seizonritsu2010.html>, [2019]. (January 8, 2019)
2. Herth K : Abbreviated instrument to measure hope: Development and psychometric evaluation. *Journal of Advanced Nursing*, **17**(10), 1251-1259, 1992.
3. Herth K : Enhancing hope in people with a first recurrence of cancer. *Journal of Advanced Nursing*, **32**(6), 1431-1441, 2000.

4. Herth K : Development and implementation of a Hope Intervention Program. *Oncology Nursing Forum*, **28**(6), 1009-1016, 2001.
5. Herth K : The relationship between level of hope and level of coping response and other variables in patients with cancer. *Oncology Nursing Forum*, **16**(1), 67-72, 1989.
6. Ohashi A, Tsuneto S and Kashiwagi T : Hope: A review of the concept in psychology. *Bulletin of the Graduate School of Human Sciences Osaka University*, **29**, 101-124, 2003. (In Japanese with English abstract)
7. Hirano Y : Current difficulties, desires and their meanings in ventilator-dependent amyotrophic lateral sclerosis patients living at home in Japan: The relationship with Hope as an indicator of a will to live. *Japan Journal of Nursing Science*, **29**(4), 41-50, 2009. (In Japanese with English abstract)
8. Morita T : Concepts of "Good Death". In Tamura K, Kawa M and Morita T eds, *Guide to Spiritual Care in Nursing*, 2nd ed, Seikaisha, Tokyo, 11-19, 2017. (In Japanese, translated by the author of this article)
9. Akizuki N, Yamawaki S and Akechi T : Development of an impact thermometer for use in combination with the distress thermometer as a brief screening tool for adjustment disorders and/or major depression in cancer patients. *Journal of Pain and Symptom Management*, **29**(1), 91-99, 2005.
10. Yamaki C and Yamazaki Y : Preparation of Herth Hope Index Japanese version. *Research Report of Grant-in-Aid for Scientific Research (A) (1) from 2002 to 2004*, 2005.
11. Golant M and Taylor-Ford M : Post-traumatic stress in cancer survivors. In Miller KD ed, *Medical and Psychosocial Care of the Cancer Survivor*, Jones & Bartlett Learning, Boston, 31-42, 2010.
12. Murata H : Spiritual pain and spiritual care. In Tamura K, Kawa M and Morita T eds, *Guide to Spiritual Care in Nursing*, 2nd ed, Seikaisha, Tokyo, 1-11, 2017. (In Japanese, translated by the author of this article)
13. Ota H, Ono M, Ueta I and Namikawa K : Psychological support characteristics of Hope in patients with lung cancer receiving chemotherapy. *Journal of Nursing Care Research*, **18**(3), 1-11, 2019. (In Japanese with English abstract)
14. Murata H : *Philosophy of Care and Personal Assistance*. Revised and enlarged ed, Kawashima Shoten, Tokyo, 1998. (In Japanese, translated by the author of this article)

