



## Relationships among Information Needs, Information Received, Self-Care Behaviors and Quality Of Life in Well-differentiated Thyroid Cancer Patients Treated with Radioactive Iodine at Radiotherapy Ward 5A of Srinagarind Hospital, KhonKean University

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**Background and Objectives:** Thyroid cancer is a global public health problem. Well-differentiated thyroid cancer is the most common type of thyroid cancer that shows excellent prognosis. However, the perspective of patients toward this disease may lead to inadequate self-care that affects the quality of life of the patients. This study aimed to understand patients' information needs including their perspectives after receiving information that may lead to improved self-care behavior and quality of life. The results may help to develop guidelines for providing advice to patients and their families for improvement of information needs, information received, self-care behaviors, and quality of life.

**Method:** A random sample by purposive sampling of 159 well-differentiated thyroid cancer patients treated with radioactive iodine (<sup>131</sup>I) at radiotherapy ward 5A Srinagarind hospital, Khon Kean University. Data collection included; 1) personal demographic questionnaire, 2) information needs and information received questionnaire, 3) self-care behavior questionnaire, and 4) Functional Assessment of

Quality of Life-Thyroid Form (QOL-TV Thai version). Data were analyzed by descriptive statistics and Spearman rank correlation coefficient.

**Result:** The results reported high level of information needs and low level of information received. Most of the participants reported a moderate level of self-care behavior and had a bad level of quality of life. There was no statistically significant relationship of information received with information needs, self-care behaviors with information received, and quality of life. Significant relationship between information needs and self-care behaviors was found ( $r = -0.2156$ ;  $p\text{-value} = 0.006$ )

**Conclusion:** These results may guide the development of nursing care education programs that suitable for patients' need, easy for patients received leading to appropriate self-care behaviors and good quality of life of well-differentiated thyroid cancer patients.

**Keyword:** thyroid cancer patients, radioactive iodine (<sup>131</sup>I) treatment, information needs, information received, self-care behaviors, quality of life

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### Introduction

Thyroid cancer is a global public health problem. Well-differentiated thyroid cancer is the most common type of thyroid cancer that shows excellent prognosis. The majority of malignant patients with over 90% of the cases are well-differentiated thyroid cancer

patients<sup>1</sup>. Well-differentiated thyroid cancer is the most common type of thyroid cancer that shows excellent prognosis. However, high-dose radioactive iodine (<sup>131</sup>I) treatment in these patients who may suffer from the disease itself and hypothyroidism status including the side effect from the radioactive iodine therapy such as



radiation induced thyroiditis and radiation induced sialadenitis. The well-differentiated thyroid cancer patients is treated by total thyroidectomy following by high-dose radioactive iodine in intermediate and high risk of recurrent patients. Isolated admission for three days is need for radiation safety reasons such as exposure of radiation to people, contamination radiation waste such as saliva, sweat, vomit, urine and feces and secretions from the radioactive patients. Strongly patients' instruction is important to reduce exposure, radiation waste and prevent its contamination. Therefore, patient's advice is important in both disease perspective and instruction for radiation safety. From the former study found that the adequate information meets the needs of a patient affects the decision in their treatment and reducing anxiety increasing satisfaction for the medical service. Accurate information, adequate and reasonable will give benefits to patients and their families to facing the illness leading to smooth the treatment.

However, demand data (information-needs) of cancer patients' perspective is controversial. The patients receive insufficient data on their demand<sup>2</sup>. Receiving adequate knowledge from nurses to patients about treatment and side effects results patient self-care behavior improvement<sup>3</sup> and also reduces the severity of symptoms / discomfort which minimizing interference with daily life<sup>4</sup>, and affecting the quality of the patient's life. The previous research studying the information needs of cancer patients in hematologic malignancies receiving found that the information was not provided adequately and appropriately (unmet needs), increased mental and emotional stress, such as anxiety and depression<sup>5</sup>. As the research team involved in the health care of cancer patients, is interesting to study these issues., this study aim to improve the nursing care education program to promote the self-care behavior and the quality of life of well-differentiated thyroid cancer patients.

## Method

This was a descriptive correlation study and purposive sampling was done in well-differentiated thyroid cancer patients treated with radioactive iodine at radiotherapy Ward 5A of Srinagarind Hospital, Khon Kean University. A total of 159 patients were included

randomly in this study by the following inclusion criteria;

- 1) Age of 18years or over
- 2) Able to understand written Thai
- 3) Thyroid cancer patients treated with radioactive iodine (<sup>131</sup>I)
- 4) Previous experience of radioactive iodine (<sup>131</sup>I)
- 5) Performance status (KPS)  $\geq 80$

**The Exclusion criteria were;**

- 1) Having mental illness, diagnosed by a physician.
- 2) Brain metastasis

**The data was collected using questionnaire as follows;**

- 1) Personal demographic questionnaire of 14 items,
- 2) Information needs questionnaire of 15 items for summation of 45 scores (Before I-131, Between I-131, After I-131) Likert scale ranging (Scale 0-3) from strongly disagree to strongly agree. Interpreting:  $\geq 80$  % (>36 Score) = needs more information, 60-80 % (27-36 Score) = needs little information.

- 3) Information received questionnaire of 15 items for summation of 45 scores (Before I-131, Between I-131, After I-131, Discharge) Likert scale ranging (Scale 0-3) from strongly disagree to strongly agree. Interpreting:  $\geq 80$  % (>36 Score) = needs more information, 60-80 % (27-36 Score) = needs little information.

- 4) Self-care behavior questionnaire of 20 item for summation of 80 score (Before I-131, Between I-131, After I-131) Likert scale ranging (Scale 1-4) from strongly disagree to strongly agree. Interpreting:  $\geq 80$  percent (> 64 Score) = good, 60-80 % (48-64 Score) = moderate, < 60 % (<48 Score) = bad

- 5) Functional Assessment of Quality of Life-Thyroid Form (QOL-TV Thai version) of 56 items for summation of 330 scores (Physical, Psychological, Social, Spiritual) Likert scale ranging (Scale 0-10) from strongly disagree to strongly agree. Interpreting  $\geq 80$  % (199 – 330 Score) = good, 60-80% (133– 198 Score) = moderate, <60% (33 – 132 Score) = bad.

The inter-item reliability using Chronbach's Alpha > 0.7 suggest internal consistency of the measurement. Data were analyzed using descriptive statistics and Spearman rank correlation coefficient.

This research was approved by Khon Kean University Ethics Committee in Human Research, (No. HE581202)





## Results

Demographic data are presented in Table 1. A total of 159 well-differentiated thyroid cancer patients treated with radioactive iodine (127 females and 32 males) were included in this study. The average age of the study population was 45.24 years (range 19 to 63 years). The majority of population were females (79.87%), and married marital status (76.73%). The main occupation is agriculture (42.14%), education level was low (less than 12 years in school) in 48.43 %, and low income with the majority of cases having income about 5,000 - 9,999 with average income  $15,389.94 \pm 7,084.62$  Thai Baht per month. In the aspect of severity of the disease; the majority of the cases were admitted for the second session of radioactive iodine with 150 mCi of  $^{131}\text{I}$ . There were only 8 patients (5.03%) with low-risk of recurrence who were treated with 100 mCi of  $^{131}\text{I}$  as shown in Table 1.

The subjects reported a high level of information needs with a low level of information received. Most participants reported a moderate level of self-care behavior and had a bad poor level of quality of life as presented in Table 2.

There was no statistically significant relationship between information receives with information needs, Self-care behaviors with information receives, and quality of life. Significant relationship between information needs and Self-care behaviors was found in thyroid cancer who are on radioactive iodine ( $^{131}\text{I}$ ) treatment ( $r = -0.2156$ ;  $p = 0.006$ ) as presented in Table 3.

## Discussion

The subjects reported a high level of information needs with a low level of information received. Most participants reported a moderate level of self-care behavior and had very poor level of quality of life.

The results show no statistically significant relationship between of information received with information needs, self-care behaviors with information received, and quality of life. However, a strong significant relationship between information needs and self-care behaviors was strongly found ( $p=0.0067$ ).

As regards patients' information needs and received, these study findings revealed high level of information need does not match the low level of information received. In the perspective of the cancer disease which is the life-threatening disease will leading to anxiety and fear for the patients. The cancer treatment is also a difficult and potentially distressing experience. During the course of treatment, patients may experience physical and psychological symptoms; disruption of normal activities, including work and social activities; and significant financial burden. This research consistently

**Table 1** Demographic characteristics of the studied population (n=159)

Characteristic	Number	Percent
<b>1. Gender</b>		
Female	127	79.87
Male	32	20.13
<b>2. Age (year)</b>	45.24 $\pm$ 11.46	Min=19, Max=63
<b>3. Marital Status</b>		
Married	122	76.73
Divorced/Separated	25	15.72
Widowed	12	7.55
<b>4. Occupation</b>		
Farmer	67	42.14
Employees	43	27.04
Housekeeper	19	11.95
Merchant	8	5.03
Civil servants	13	8.18
Student	9	5.66
<b>5. Income (Bath per month)</b>		
< 5,000	12	7.55
5,000 - 9,999	100	62.89
$\geq 10,000$	47	29.56
	15,389.94 $\pm$ 7,084.62	Min=3000, Max=27,500
<b>6. Education</b>		
Less Than 12 Years	77	48.43
High School Graduate	35	22.01
Some College	26	16.35
College Graduate	21	13.21
<b>7. Number of administration</b>		
Second( $^{131}\text{I}$ )	116	72.96
Third( $^{131}\text{I}$ )	34	21.38
Four ( $^{131}\text{I}$ )	9	5.66
<b>8. Dose intake(mci)</b>		
100 mci	8	5.03
150 mci	137	86.16
200 mci	14	8.81

**Table2** Information needs, information received, self-care behaviors, and quality of life among the study sample.

Variable	Mean	SD	Min	Max	Result
Information needs	36.01	4.37	13	40	high level
Information received	33.27	4.19	11	38	low level
Self-care Behaviors	57.84	8.21	48	78	moderate level
QOL-TV	103.30	11.47	69	119	bad poor level

**Table3** Mean, Standard deviation, Coefficient of Determination and inter correlations for thyroid cancer who are on radioactive iodine (<sup>131</sup>I) treatment predictor variables.

Variable	Mean	SD	Information needs	Information receives	Self-care Behaviors	QOL-TV
Information needs	36.01	4.37	1.00			
Information receives	33.27	4.19	-0.1065 0.1817	1.00		
Self-care Behaviors	57.84	8.21	-0.2156 0.0067*	-0.0548 0.4952	1.00	
QOL-TV	103.3	11.47	0.0051 0.9491	0.0824 0.3017	-0.0629 0.4341	1.00

\* p &lt; .05

has shown that most patients with cancer want information about treatment in high level. However, the patients' information received still shows low level. There are many factors in our institute that may lead the in-adequate patient information received such as

1. No previous data indicates the aspect of education information that the patients really want to know
2. Group education style in the 4-6 patients in the same time.
3. Low level of education in the main population in this study.
4. Dialect language in the main north-eastern region may cause miscommunication.
5. Information media is only group talking.

However, our study revealed no statistic significant correlation between the information needs and received. This may represent that the quality of our patients' education program is moderate and transferring some level of information for some of the patients' information need.

**In relation to self-care behavior and quality of life,** there is strong significant correlation between the patients' information need and self-care behavior in this study (p-value 0.0067). This maybe indicates that the high level of information needs leading to the strong

pursuit of self-knowledge and results in the moderate level of self-care behavior in the end. If we can provide the information to the patients that matches their needs, it will lead to improve self-care behavior from moderate to high level and improve quality of life from poor to excellence in the future.

The result from this study strongly supports our nurse team to improve the patient's education program such as;

1. Survey the patients' information need before give them education.
2. The patterns of education giving; group and individual.
3. Improve the information media; VDO and patients' advice book.
4. After give the patients information; better to re-check them with the pre- and post-test

For the future, it showed be studied about the aspect of the patient perception; what they want to know, how much information receive they get and what is the suitable education program for this group of patients.

### Conclusion

This study indicated that the well-differentiated thyroid cancer patient's at radiotherapy ward 5A Srinagarind hospital still receiving inadequate





information based on their needs. There is significant correlation between information needs leading to self-care behaviors and the quality of life.

These results were guided to develop the nursing care education programs that suitable for patient's need, easy for patients received leading to appropriate self-care behaviors and quality of life of well-differentiated thyroid cancer patients.

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