



# Investigation of Alexithymia among Women with and without Thyroid Cancer in Isfahan, Iran

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## Quantitative Study

### Abstract

**Background:** The current study aimed to investigate and compare alexithymia in women with thyroid cancer and women without thyroid cancer in Isfahan, Iran.

**Methods:** The study population included all patients with thyroid cancer and those without cancer who were referred to Sayedalshohda Hospital in the city of Isfahan. Through convenience sampling, 25 women with thyroid cancer and 25 women without thyroid cancer were selected. The tool used for data collection was the Toronto Alexithymia Scale (TAS-20) (Taylor, 1986). The collected data were analyzed both descriptively – computing the mean and standard deviation – and inferentially – computing analysis of covariance (ANCOVA) – to investigate alexithymia in women with and without thyroid cancer.

**Results:** The results showed a significant difference between the variables of alexithymia in the two groups ( $P > 0.05$ ).

**Conclusion:** Regarding the problems caused by cancer, it is suggested that there is a need for educating and giving consultations to patients with cancer in order for them to identify and express negative emotions, diminish their problems, and increase their ability to cope with thyroid cancer.

**Keywords:** Cancer, Thyroid cancer, Alexithymia

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### Introduction

Cancer is one of the most important health problems around the world (Newton, 2010). After cardiovascular diseases (CVDs) and accidents, cancer is the third leading cause of death in Iran. Cancer and various therapies to treat it considerably influence the lives of affected people and their families and cause dramatic changes in their personal life, daily

activities, occupation, communication, and family roles. These are accompanied by high levels of psychological stress (Reed, 2011). On the other hand, psychological stress has a profound effect on accelerating the progression and growth of various types of malignant tumors (Moreno-Smith, Lutgendorf, & Sood, 2010). Follicular cell-derived thyroid cancers – which include about 95% of all thyroid tumors – can be classified into papillary thyroid cancer (80%), follicular thyroid cancer (10-15%), poorly differentiated thyroid cancer (3-9%) and

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undifferentiated (anaplastic) thyroid cancer (1-2%) (Patel & Shaha, 2006). When informed of their disease, patients see themselves as near death, lose their hope for life, and experience depression, despair, hopelessness about the future, and anger and sadness to have this disease. These make them very vulnerable. Cancer patients may face a range of other psychological disorders that gives them a sense of insecurity; concern of no longer being attractive for their partner and problems in family relationships are some of these issues (Manganiello, Hoga, Reberte, Miranda, & Rocha, 2011). As the disease progresses, patients experience a variety of discomforts which are often manifested as anxiety, depression and frustration, fear of death in advanced stages of the disease, loneliness, alienation, depression and irritability, trauma, feeling of loss, failure, despair and helplessness, and meaninglessness and emptiness due to eminent death. Thus, cancer patients are faced with changes in quality of life (QOL) for various reasons including the physical and mental problems they bear (Hacalioglu, Ozer, Yilmaz, Erdem, & Erci, 2010).

Thyroid cancer is the commonest endocrine malignancy with an estimated prevalence of approximately 1-5% of all cancers in women and less than 2% in men. Although the risk of occurrence of this cancer is low, its prevalence is increasing (Kilfoy et al., 2009). Cancer begins when cells in the body begin to grow abnormally. Cells can become cancerous in almost every part of the body and spread to other areas of the body. Thyroid cancer is a cancer that begins in the thyroid gland. Heredity factors play a role in the occurrence of thyroid cancer, but its exact cause is unknown. Specific changes in the DNA of individuals can cause the incidence of cancer in thyroid cells. Most people who develop cancer experience a period of stress. In some patients, this stress is removed on its own and does not lead to long-term mental problems. This can be considered as a natural coping response. However, some patients experience more severe psychological

problems which reduce their QOL and their daily life (Alipour AliAkbari Dehkordi, & Sharifi-Saki, 2015).

Cancer treatment causes many psychological pressures, some of which reduce QOL and lead to anxiety or depression; for example, patients often experience more psychological complications, such as anger, anxiety, or worry, than physical complications such as hair loss and nausea. Chemotherapy complications cause many problems for patients, especially for women, to the extent that they affect the level of physical, psychological, and social functions of the patients and their avoidance to complete the course of treatment. Some patients even quit chemotherapy due to their psychological problems (White, 2001). Since stress and its coping strategies are among the factors that affect how one deals with the psychological side effects of cancer, and alexithymia is a personality trait which is very significant regarding its specific characteristics in the experience of stress and its way of dealing with it, the first factor in comparing women with thyroid cancer and those without this disease is alexithymia.

Alexithymia involves the inability to express emotions. Alexithymia, as a personality trait, means the lack of or a problem in identifying, describing, and engaging with one's and other's feelings (Paivio & McCulloch, 2004). Individuals with this trait have difficulty differentiating between true and original emotions and sensations or arousals related to fear such as chills or dried mouth (Williams and Wood, 2010). Others, even those who love them, often call them cold and soulless. Based on the level of their disorder, these people lack the ability to experience dreams, fantasize, and imagine. Instead, they rely heavily on logical reasoning and objective evidences in their way of thinking. Even in their dreams, they are very logical and realistic. Clinical experiences prove that they remember the structure of their dreams more than its events. They may show different emotional

states, for example, they are sometimes extremely restless and blame themselves or they burst into tears or become angry (Mac Laren, 2006). It is important to note that even when they are asked about their feelings in such conditions, they cannot express them or become confused (Williams & Wood, 2010). Denying feelings or keeping them secret will take a lot of energy. The mind and body are forced to act excessively to hide what is going on inside and to pretend that everything is all right. Women who bring their inner feelings to the surface and express them have little problems. However, internalized anger which is seen in women very often can cause depression. When we deny our feelings, blame ourselves, or justify others' bad behaviors, we turn our anger toward ourselves. One of the most common problems women have is that they do not become aware of their anger until they become so depressed, inactive, and abnormal that they find they are in trouble, but they cannot understand what the problem is and why it happened (Frankl, Kushner, & Winslade, 2006). Women have learned at some point in their lives to transform their excess anger into depression in order not to be rejected by those they need. Culturally, powerful men have clearly shown their dissatisfaction towards their subordinates – that is, women. Men have convinced women that expressing anger is inappropriate for them and this message has continued for generations. The consequences for women are that they believe expressing anger is unacceptable and others do not tolerate it. If a woman expresses her anger, she will be rejected or punished (Miller, 1991).

The concept of alexithymia is known to be one's relative inability to use words for understanding one's emotional states and that of others. Individuals suffering from alexithymia do not have the ability to use words for their emotion regulation and modification. Unfortunately, this feature has become widespread in the community. The main features of alexithymia are (Paivio & McCulloch, 2004):

1. Inability to recognize and describe one's emotions verbally
2. Extreme poverty in symbolic thinking which limits the expressing of feedbacks, feelings, tendencies, and drives
3. Inability to express emotions
4. Reduced recollection of dreams
5. Difficulty in distinguishing between emotional states and physical sensations
6. Strict and rigid gestures
7. Lack of facial expressions
8. Limited capacity for empathy and self-awareness

Alipour, AliAkbari Dehkordi, and Sharifi-Saki (2015) investigated the effectiveness of anger management skills training through cognitive-behavioral approach in reducing the aggression of women with breast cancer. Analysis of covariance (ANCOVA) showed that the mean score of the experimental group in aggression decreased in the treatment group after training. This difference was significant compared to the control group. It seems that cognitive-behavioral training has played an effective role in controlling the aggression of women with this disease through the cognitive changes it created.

Barghi Irani, Bakhti, Baghyan, & Karami (2014) conducted a study to investigate the relationship between five personality traits and alexithymia and mental health of patients with multiple sclerosis (MS). They claimed that components of personality and alexithymia are among the variables which affect the mental health of patients with MS. In their study, Hamzeh, Beirami, and Hashemi Nosratabadi (2011) reported that women with cancer received lower scores in extraversion test and experienced more negative emotions (anger, anxiety, and depression) in their life compared to healthy women. They also used more emotional-focused coping styles than problem-focused coping. In their retrospective study on the prevalence of depression in women with cancer over the past 20 years, Fann et al. (2008) have shown that the prevalence of depression is high in these patients. Augustine, Larsen, Walker, and Fisher (2008)

concluded that those who experience more negative emotions in life are more likely to get cancer if they are susceptible to the disease. Imai and Nakachi (2001) reported that emotionally unstable introverts have a healthier lifestyle than stable extraverts and their weaker immunological mechanisms make them susceptible to cancer. Watson, Pettingale, and Greer (1984) studied individuals with breast cancer. They reported that the participants in this group tended more to control their emotional responses, especially in the case of anger, in comparison with the participants in the control group. They also used repressive and inhibiting coping styles in response to stress. Their reported emotional states during the process showed that the cancer group experienced more anxiety and psychological disorders, but they tended not to show their reactions. Therefore, the aim of this study was to investigate alexithymia among women with thyroid cancer and those without it in the city of Isfahan, Iran. For this purpose, the following hypothesis has been developed:

There is a significant difference in terms of alexithymia between women with thyroid cancer and those without thyroid cancer in the city of Isfahan.

## Methods

### Research method, statistical society, and sampling

This study was a causal-comparative study in terms of structure. The data collected using the questionnaires were analyzed statistically. First, descriptive indexes of mean and standard deviation were presented. Then, according to the research

hypotheses, the results of ANCOVA were presented to compare the two groups of women in terms of alexithymia. The statistical population of this study consisted of all female patients with thyroid cancer in Isfahan city who were referred to the Seyedalshohada Hospital in Isfahan in a span of 6 months (May-March, 2016). Through convenience sampling, 50 participants (25 women with thyroid cancer and 25 healthy women) were selected.

### Measuring tool

**The Toronto Alexithymia Scale:** The Toronto Alexithymia Scale (TAS-20) was made by Taylor in 1986, and was revised in 1994 by Bagby, Parker, and Taylor. The questionnaire consists of 20 items scored based on a 5-point Likert scale (ranging from completely disagree to completely agree). This scale measures the three subscales of difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking, in addition to the overall construct of alexithymia. The validity of the Persian version of this scale was calculated using Cronbach's alpha; 0.74 for identifying feelings, 0.61 for describing feelings, and 0.51 for externally oriented thinking (Ghorbani, Bing, Watson, Davison, & Mack, 2002). The reliability of the questionnaire was also reported to be 0.27, calculated by replication in an Iranian sample (Mohammad, 2001).

## Results

To test the hypothesis, multivariate analysis of covariance (MANCOVA) was used. Table 1 shows the mean and standard deviation of alexithymia and its dimensions in the study groups.

**Table 1.** The mean score and standard deviation of alexithymia and its dimensions the two groups

Variables	Group	No	Mean $\pm$ SD
Alexithymia	Women with thyroid cancer	25	17.68 $\pm$ 7.56
	Women without thyroid cancer	25	15.76 $\pm$ 6.72
Externally oriented thinking	Women with thyroid cancer	25	12.48 $\pm$ 4.02
	Women without thyroid cancer	25	12.32 $\pm$ 3.79
Difficulty describing feelings	Women with thyroid cancer	25	19.72 $\pm$ 3.97
	Women without thyroid cancer	25	20.12 $\pm$ 3.62
Difficulty identifying feelings	Women with thyroid cancer	25	49.80 $\pm$ 12.17
	Women without thyroid cancer	25	48.16 $\pm$ 10.73

SD: Standard deviation

**Table 2.** The results of the Shapiro-Wilk test regarding the normality of alexithymia and its dimensions in the two groups

Variables	Group	Shapiro-Wilk test	df	P-value
Alexithymia	Women with thyroid cancer	0.940	25	0.149
	Women without thyroid cancer	0.916	25	0.082
Externally oriented thinking	Women with thyroid cancer	0.911	25	0.073
	Women without thyroid cancer	0.958	25	0.385
Difficulty describing feelings	Women with thyroid cancer	0.858	25	0.053
	Women without thyroid cancer	0.938	25	0.136
Difficulty identifying feelings	Women with thyroid cancer	0.954	25	0.301
	Women without thyroid cancer	0.959	25	0.399

df: degrees of freedom

The results presented in table 1 show that the mean score for externally orientated thinking and difficulty identifying emotions was higher among women with thyroid cancer than healthy women. Conversely, the mean for difficulty describing feelings in healthy participants was higher than that in the other group. The results also show that there was a significant difference between the mean of alexithymia and its dimensions in both women with thyroid cancer and healthy women.

To analyze the significance of this difference, MANCOVA was used. In order to study the normality of alexithymia data and its dimensions, the Shapiro-Wilk test was used. Levene's test was used to study the prediction of equality of variances. In order to evaluate the variance of dependent variables, the box test was used. The results are presented in tables 2, 3, and 4.

The results of the Shapiro-Wilk test in table 2 show that the score of alexithymia and its dimensions are normal in women with thyroid cancer and healthy women. This normality is assumed by ANCOVA. In order to study the homogeneity of covariance in alexithymia and its dimensions, Levene's test was used. Table 3 shows the results of this analysis. The assumption of the use of ANCOVA was observed.

The findings presented in table 3 show that there was no significant difference in alexithymia covariance and its dimensions between the two groups of women with

thyroid cancer and healthy women. This is the default usage of ANCOVA. In order to study the equality of covariance in alexithymia and its dimensions in the group of women with thyroid cancer and healthy women, the box test was used.

The results of Box test regarding the equality of covariance in the two groups (Box test = 22.616,  $F = 2.057$ ,  $df_1 = 10$ ,  $df_2 = 11015.139$  and  $P = 0.074$ ) show that the differences between the two groups in terms of alexithymia covariance and its dimensions were not significant. This default is also based on the use of ANCOVA.

Regarding confirmation of defaults, MANCOVA was used to compare the groups. Considering the approval of the assumptions, MANCOVA was used for the comparison of groups. Table 4 shows the results of MANCOVA.

As seen in table 4, the differences between the two groups in terms of alexithymia and its dimensions are significant. Moreover, Eta's coefficient shows that thyroid cancer is responsible for 41.5% of changes in alexithymia, 32.4% of changes in externally oriented thinking, 47.2% of the changes in difficulty describing feelings, and 42.5% of changes in difficulty identifying feelings. The test power for alexithymia, externally oriented thinking, difficulty describing feelings, and difficulty identifying feelings equals 0.965, 0.874, 0.988, and 0.971, respectively.

**Table 3.** The results of Levene’s test regarding the homogeneity of variances for alexithymia and its dimensions in the two groups

Source of variation	F	df1	df2	P-value
Alexithymia	0.238	1	48	0.628
Externally oriented thinking	0.786	1	48	0.380
Difficulty describing feelings	0.001	1	48	0.975
Difficulty identifying feelings	0.875	1	48	0.354

df: degrees of freedom

This shows that the sample size is suitable for these results. Therefore, we can say that there is a significant difference between

women with thyroid cancer and healthy women in Isfahan in terms of alexithymia and its dimensions.

**Table 4.** The results of multivariate analysis of covariance regarding the comparison of alexithymia and its dimensions in women with and without thyroid cancer

Source of variation	Variables	Sum of squares	df	Mean squares	F	P-value	Etha squared	Power of the test
Revised model	Alexithymia	467.338	4	116.834	2.581	0.023	0.487	0.833
	Externally oriented thinking	28.836	4	7.209	0.460	0.039	0.455	0.775
	Difficulty describing feelings	10.934	4	2.734	0.180	0.008	0.546	0.921
	Difficulty identifying feelings	701.503	4	175.376	1.396	< 0.001	0.852	1.00
Age	Alexithymia	419.870	1	419.870	6.277	0.004	0.171	0.846
	Externally oriented thinking	28.320	1	28.320	1.807	0.186	0.039	0.260
	Difficulty describing feelings	0.185	1	0.185	0.012	0.913	< 0.001	0.051
	Difficulty identifying feelings	633.485	1	663.485	5.281	0.026	0.015	0.614
Marital status	Alexithymia	145.096	1	145.096	3.206	0.080	0.067	0.418
	Externally oriented thinking	8.759	1	8.759	0.559	0.459	0.012	0.113
	Difficulty describing feelings	1.915	1	1.915	0.126	0.724	0.003	0.064
	Difficulty identifying feelings	197.688	1	197.688	1.574	0.216	0.034	0.233
Job	Alexithymia	127.206	1	17.206	0.380	0.541	0.008	0.093
	Externally oriented thinking	0.305	1	0.305	0.022	0.882	0	0.052
	Difficulty describing feelings	2.237	1	2.237	0.147	0.703	0.003	0.066
	Difficulty identifying feelings	10.268	1	10.268	0.082	0.776	0.002	0.059
Group	Alexithymia	13.630	1	13.630	0.308	0.001	0.415	0.965
	Externally oriented thinking	0.038	1	0.038	0.002	0.004	0.324	0.874
	Difficulty describing feelings	1.556	1	1.556	0.102	< 0.001	0.427	0.988
	Difficulty identifying feelings	4.254	1	4.254	0.034	0.001	0.425	0.971
Error	Alexithymia	2036.742	45	----	----	----	----	----
	Externally oriented thinking	705.164	45	----	----	----	----	----
	Difficulty describing feelings	684.746	45	----	----	----	----	----
	Difficulty identifying feelings	5653.477	45	----	----	----	----	----

df: degrees of freedom

## Discussion

The results show that the mean score of alexithymia, thinking with external orientation, and difficulty in identifying feelings in women suffering from cancer were higher than that in healthy women. However, the mean score for difficulty describing feelings was higher in women without thyroid cancer.

The results also show that the mean scores of alexithymia and its dimensions differed in the two groups. To examine significant differences, MANCOVA was used. To study the normality of scores of alexithymia data and its dimensions, the Shapiro-Wilk test was used. In addition, Levene's test was used to assess the equality of variances. In order to test the equality of variance of the dependent variable, the box test was used. These findings are in line with those of the study by Barghi Irani et al. (2014) and Hamzeh et al. (2011).

As previously stated, cancer is not only a medical problem, but also often affects the life of the patient in all its dimensions. Cancer is a crisis which deeply affects various aspects of the lives of the patients. Failure in health deeply affects patients. It is an individual, familial, and social problem which is accompanied with abundant stressors. Those suffering from cancer also experience some other problems including decreased communication with others, difficulty in decision-making in their life issues, and emotional and affect disorders. Patients often distinguish restoration of health periods as the most favorable incident in their life and relapse of cancer and recurrent treatments as the period of crisis. Alexithymia involves the inability to express emotions. This leads to physiological malfunctions in the body which consequently affect cancer progression. Psychological burdens are among the risk factors of thyroid cancer. Furthermore, the mentality of people about this disease increases anxiety and creates desperate periods that decrease patients' ability to fight cancer.

Frankl, Kushner, and Winslade (2006) have shown that internalized anger, which is often seen in women, causes depression. When we suppress our feelings and blame ourselves for others' wrong behavior, we point our anger toward ourselves. One of the most common problems I frequently hear from women is that they do not become aware of their own anger until they become so depressed, inactive, and abnormal that they find they are in trouble. Nevertheless, they cannot understand what the problem is or why it happened. At a point in their lifetime, women have learned to suppress their anger and become depressed in order not to be rejected by others. However, people are able to reach a helpful and reasonable analysis of their own emotions and feelings and decrease their psychological burdens by expressing their emotions.

Based on the findings of this study, it is suggested that there is a need for psychological and counseling services along with medical ones for those who suffer from cancer. Such interventions can help in identifying stresses and pathologies caused by stress, decreasing patients' problems, and increasing their ability to cope with cancer.

## Conflict of Interests

Authors have no conflict of interests.

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