

# Research Paper:

## Relationship Between Self-Efficacy and Self-Esteem in Patients With Cancer



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## ABSTRACT

**Background:** Given the negative impact of cancer on the quality of life, low self-efficacy and self-esteem are common in the patients suffering from cancer. This study aims to determine the relationship between self-efficacy and self-esteem in these patients.

**Methods:** This study was descriptive and cross-sectional and was conducted in Ayatollah Khansari Hospital in Arak. The obtained data were collected from 160 eligible patients diagnosed with cancer using Coopersmith self-esteem inventory and the strategies used by people to promote health and then analyzed in SPSS V. 20.

**Results:** Spearman correlation showed a significant relationship between the subscales and the total score of self-efficacy and self-esteem score ( $P < 0.05$ ). Also, linear regression analysis revealed that self-efficacy could significantly predict self-esteem ( $P < 0.05$ ).

**Conclusion:** Self-efficacy had a direct relationship with self-esteem. By improving self-efficacy, self-esteem will increase and lead to more self-care compliance and initiative in cancer patients.

## 1. Background

Cancer has become a major public health problem worldwide and is the second leading cause of death in the United States (Siegel, Miller & Jemal 2016). With continued development in cancer diagnosis and treatment, patients now have blessed with early diagnosis resulting in effective treatment plans and better outcomes, sustained periods of remission, and prolonged life. However, evidence has shown problems with psycho-

logical adjustment and worsening of Quality of Life (QoL) in these patients (Mishra et al. 2017). Increase in the survival rate of patients with cancer accompanies with distress symptoms such as fatigue, pain, anxiety, depression, loss of control, helplessness, severe emotional distress, decreased self-esteem and cognitive problems in daily activities (Holland & Alici 2010; López, López Roig & Pařtor 2007).

Given that cancer is a chronic disease with potential acute complications, the patients experience different medical interventions specific to their diagnoses. For example, some

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individuals may experience surgical intervention, chemotherapy, or radiotherapy throughout the course of their illness. Even though these treatments are effective and pertinent to their diagnosis and overall outcome, complications may arise that could be life-threatening. The nature of cancer is pathologically vigorous. Patients may encounter a variety of problems that could potentially interfere with their natural process of life and harms their self-efficacy and self-esteem. Therefore, efforts to restore the physical and mental health of these patients are of great value (Awick et al. 2017).

Self-efficacy is considered as one of the major components towards developing a successful self-management practice throughout a chronic disease. Research has shown that self-efficacy beliefs affect many aspects of personal performance (Maddux 2016). An individual's confidence, or belief in his strength, is a prerequisite for performing any task as it influences the maintenance of healthy behaviors (Gallagher et al. 2008). Those who have higher levels of self-efficacy express better physical and mental health than those who possess less. Appreciation of personal values may awaken the patient of his current health status while supporting the treatment protocol.

Self-efficacy signifies self-confidence in his abilities across a wide range of demanding situations and reflects a person's general problem-solving ability (van de Wiel, Geerts & Hoekstra Weebers 2008). A positive perception of self-worth can help cancer patients engage in coping with burden and stress of the disease (Chirico et al. 2017). Previous studies have shown significant associations between higher self-efficacy and physical health (Schwarzer 1993), better mental and physical health-related quality of life (Robb et al. 2013), increased physical functioning (Phillips & McAuley 2014), and increased QoL in patients with cancer (Haugland et al. 2016).

The current cancer treatment methods could harm patient's self-esteem and exerts negative pressure on his body image (Kim et al. 2012). For example, self-esteem often declines following a cancer-related diagnosis. Due to the national stigma associated with the term of cancer, the public tends to view cancer unappealing. This may partly be due to the physical changes from surgery and chemotherapy including scarring, hair loss, and cachexia or weight loss. However, the ideation behind shaping self-esteem in a positive manner has been identified as an important factor influencing health-related QoL and well-being, allowing survivors to thrive after diagnosis and treatment (Koch et al. 2017).

Numerous studies have indicated that diagnosis of cancer may harm self-efficacy and self-esteem. However, the relationship between self-esteem and self-efficacy in cancer

patients has not been clearly explored. The primary focus of this study was determining the interrelation of these variables. The correlation between these variables could benefit the treatment and outcomes of cancer patients during their rehabilitative process.

## 2. Materials and Methods

### Study design and sample

In 2015, we conducted a descriptive, cross-sectional study on 160 cancer patients referring to the Hematology or Oncology departments of Ayatollah Khansari Hospital in Arak, Iran. The samples were selected by convenience sampling method. Patients with different types of cancer that met the inclusion criteria were selected. The inclusion criteria comprised patients' literacy, aged 30-60 years, at least 6 months past their cancer diagnosis, no history of underlying mental illness, seizure, or heart disease, and a stage of cancer greater than or equal to two. The sample size based on 5% type I error and the 80% power was estimated by previous study (Qian & Yuan 2012).

### Study measures

Self-efficacy was measured by a standard questionnaire of Strategies Used by People to Promote Health (SUPPH). Validity and reliability of this tool have been confirmed in various studies (Eller et al. 2016; Qian & Yuan 2012), including Iran; so that its internal consistency has been reported by calculating Cronbach  $\alpha$  as 0.94 (Fini, Adib-Hajbaghery & Khachian 2011). The 29-item questionnaire is scored by Likert type scale ranging from 5 "full confidence" to 1 "very little confidence". The test has three subscales of "breakdown of adaptability", "stress reduction", and "decision making" of self-efficacy. The total score of this questionnaire would be 145 points, while gaining higher scores indicate higher self-efficacy.

A standard tool of measurement designed specifically by Cooper Smith was applied to distinguish adult attitudes towards oneself in order to comprehend an individualistic approach to a patient's personal view of his self-esteem (Boyes et al 2017; Matthews, Grunfeld & Turner 2017). The method of scoring for the Coopersmith Self-Esteem Inventory (CSEI) is 0 or 1; so that 0 means that the answer is wrong and 1 refers to the correct answer.

The overall self-esteem score is obtained by summing scores of four subscales of "general", "family", "social", and "occupational or educational" domain. The maximum score on general domain is equal to 26, and in each of the three other domains is equal to 8. The maximum total self-

esteem score is 50. Validity and reliability of CSEI have been confirmed in previous studies ( $r=92\%$ ) (Hemati et al. 2017). In addition, Delaram et al. estimated the reliability of this tool as 93% (Delaram et al. 2012). The questionnaires were delivered to the patients at the time of discharge. The collected data were analyzed using Spearman correlation, and regression in SPSS V. 20.

### 3. Results

Most of the samples were male (51.3%) and the majority of them (73.7%) were older than 50 years. Table 1 presents the demographic data of the participants. Based on the Kol-

mogorov–Smirnov test, the self-efficacy and self-esteem score had nonparametric distributions ( $P=0.005$ ,  $P=0.008$ , respectively). The relationships between demographic variables with self-efficacy and self-esteem were analyzed using the Chi-square test (Table 2). The intensity of the relationship was determined by Cramer's V test.

According to Spearman correlation test there was a significant relationship between the total score of self-efficacy and an individual's cancer stage ( $r=-0.282$ ,  $P=0.000$ ) and also between self-esteem and an individual's cancer stage ( $r=-0.213$ ,  $P=0.007$ ). The relationship between patient's age, self-efficacy, and self-esteem score was measured us-

**Table 1.** Demographic characteristics of the study subjects

Variable	No. (%)	
Sex	Male	82 (51.3)
	Female	78 (48.7)
Age range (y)	30 - 40	10 (6.3)
	41 - 50	32 (20)
	51 - 60	118 (73.7)
Marital status	Single	2 (1.3)
	Married	148 (92.5)
	Widow	10 (6.2)
Occupation	Unemployed	6 (3.8)
	Retired	12 (7.5)
	Employed	94 (58.7)
	Housewife	48 (30)
Education	Elementary	44 (27.5)
	Secondary school	68 (42.5)
	Diploma	30 (18.8)
	Academic degree	18 (11.2)
Location	Urban	120 (75)
	Rural	40 (25)
Cancer	Liver and pancreas	10 (6.3)
	Respiratory system	16 (10)
	Digestive system	32 (20)
	Urinary and genital system	14 (8.7)
	Breast	30 (18.8)
	Lymphoma	40 (25)
	Brain	18 (11.2)
Cancer stage	II	92 (57.5)
	III	68 (42.5)
Treatment	Chemotherapy	48 (30)
	Radiotherapy	4 (2.5)
	Surgery	4 (2.5)
	Hybrid	104 (65)

**Table 2.** Pearson correlation between self-esteem and self-efficacy subscales

Self-Efficacy	Coping		Reduction of Stress		Decision Making		Total Score	
	Statistics	P	R	P	R	P	R	P
General self-esteem	< 0.001	0.566	< 0.001	0.623	< 0.001	0.452	< 0.001	0.761
Social self-esteem	< 0.001	0.509	< 0.001	0.476	< 0.001	0.586	< 0.001	0.679
Family self-esteem	< 0.001	0.559	< 0.001	0.348	< 0.001	0.587	< 0.001	0.662
Job self-esteem	< 0.001	0.490	< 0.001	0.445	< 0.001	0.548	< 0.001	0.645
Total score	< 0.001	0.622	< 0.001	0.599	< 0.001	0.591	< 0.001	0.816

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ing the Spearman test, which was respectively ( $r=-0.307$ ,  $P=0.000$ ), ( $r=-0.262$ ,  $P=0.001$ ).

The Spearman correlation illustrated a significant relationship between self-esteem and self-efficacy ( $r=0.816$ ,  $P<0.05$ ) (Figure 1). Also according to Spearman correlation test, there was a significant relationship between the subscales of self-efficacy and self-esteem (Table 2). Regression analysis showed that self-efficacy and its subscales have the ability to predict self-esteem (Table 3).

#### 4. Discussion

In many studies, the relationship between self-efficacy and various variables have been investigated, but there are few studies on the relationship between self-efficacy and self-esteem. For example, one study found a significant relationship between self-efficacy and academic performance (Lane, Lane & Kyprianou 2004). The relationship between self-efficacy and quality of life has also been identified in some studies (Kiaei et al. 2016; Mudrak et al. 2016; Yeung & Lu 2014). In another study, the positive effect of self-efficacy on postsurgical complications in lung cancer was addressed (Hoffman et al. 2017). Increasing self-efficacy in the caregivers of hospitalized cancer patients has been proven to reduce cancer symptoms as well as caregivers' stress for their practice (Hendrix et al. 2016).

In a recent study, evidence indicates a significant relationship between self-efficacy and marital/employment status resulted more social interaction between family and co-workers. This result was also reported by Akin study (Akin & Guner 2017).

Many studies have also been done about the impact of self-esteem on various variables. The positive impact of self-esteem on the QoL of children with malocclusion and orthodontics has been investigated (Clijmans et al. 2015; Dimberg et al. 2016). Also, self-esteem has increased resilience towards family dysfunction (Fontaine et al. 2017).

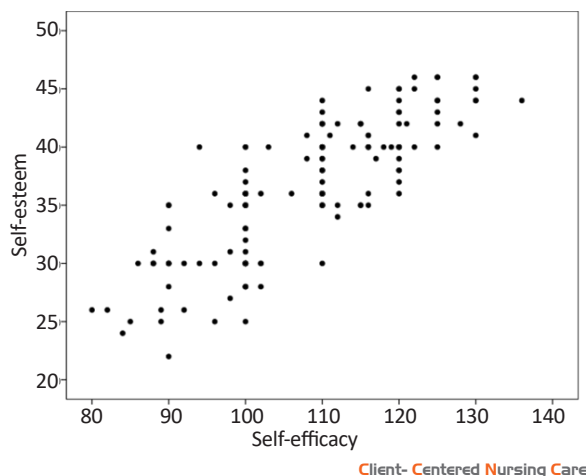
Even a meta-analysis study showed that an increase in self-esteem can reduce depression symptoms (Sowislo & Orth 2013). It has been shown that self-esteem is associated with a better state of mind/behavior and physical activity among breast cancer survivors (Karamouzis et al. 2016). Furthermore, a study based on subjects with cervical cancer demonstrate that survivors with low self-esteem and social support tend to have a lower QoL than those with low self-esteem and a higher social support system (Li et al. 2015).

Another study reports a reduction of self-esteem among cancer patients when they are experiencing episodes of severe pain, higher levels of depression, increased feelings of hopelessness, and active suicidal ideation (Ozdemiroglu

**Table 3.** Self-efficacy and its subscales regression models for predicting total self-esteem score

Self-Efficacy Domains	Total Self-Esteem Score				
	R <sup>2</sup>	F	B	β	P
Coping	0.387	99.77	0.394	0.622	< 0.001
Reduction of stress	0.358	88.23	0.670	0.599	< 0.001
Decision making	0.349	84.81	1.72	0.591	< 0.001
Total score of self-efficacy	0.666	314.71	0.387	0.816	< 0.001

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**Figure 1.** Scatter graph of correlation between self-esteem and self-efficacy

et al. 2017). All of these studies have focused on the importance of self-esteem in patients. Thus when self-esteem plays such an important role for cancer patients, it is advisable to examine the potential factors that could alter it.

Numerous studies have not been completed or even initiated to discuss the relationship between self-efficacy and self-esteem, particularly in cancer patients. In accordance with an alternative study, it has been shown that increasing self-esteem in a scientific and/or academic environment may increase self-efficacy and academic achievement of professors (Orczyk 1990). A study also found that parents' level of self-efficacy could provide a major impact on their children's self-esteem (Choe 2009). All of these articles and studies can relate to the results found within this research.

### Clinical implications

One of the most important goals of clinical care in chronic diseases such as cancer is to provide a safe, calm, and comfortable atmosphere for the patients while embracing and exploiting positive self-esteem and self-efficacy practice in them. The findings of this study indicate a direct relationship between self-efficacy and self-esteem. In retrospect, if health care personnel were to combine their efforts towards increasing self-efficacy in their patients by reinforcing autonomy, open communication techniques, and support, self-esteem would gradually escalate over time. Also by increasing the self-efficacy of patients, their quality of life will improve as well, which is the ultimate goal of health care system.

Self-efficacy has a direct relationship with self-esteem. According to the results of this study, self-esteem has the ability to increase in correlation with rising self-efficacy levels. This in turn leads to increased QoL and treatment efficiency in patients with cancer. According to the study results, it is suggested that the relationship between self-efficacy and self-esteem with other symptoms and complications of cancer, such as fatigue, pain, nausea, stress, anxiety, depression, etc. be examined.

Our study limitations consisted of failure to mental health evaluation and its effects on cancer, considering drug and alcohol abuse, and finally comparing patient's compliance and cooperative behavior with those being non-compliant and unwilling throughout the study until completion. In future studies it is suggested that other factors that affect self-efficacy of patients be addressed. Also, the effect size of different factors could be considered.

### Ethical Considerations

#### Compliance with ethical guidelines

This study was approved with the research code of 2223 from Arak Medical University Research Council and the Code of Ethics in Medical Research, IR.ARAKMU.REC.1394.79. In addition to obtaining written consent, this study attempted to observe the provisions of ethical codes related to research and in particular respect for the freedom of individuals to refuse to continue studying and confidentiality of all personal information.

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#### Conflict of interest

The authors declared no conflict of interest.

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