# RESEARCH ARTICLE

# Positive Impact of Social Media Use on Depression in Cancer Patients

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## Abstract

**Objective:** The focus of attention was the prevalence of depression among cancer patients using social networks. An attempt was made to determine if social media could help cancer patients overcome their stress and depression, causes of serious emotional and mental problems for them and their families. **Methods:** To ascertain the prevalence of depression among cancer patients with reference to use of social networks, 316 cancer patients in the Association of Cancer Patients and cancer-related centers in Tehran at 2015 were evaluated. Depression was measured using the Beck Depression Inventory. Data were analyzed by the Chi-square test with SPSS software. **Results:** Using the Beck criteria, 61% (N=192) of patients were depressed. Interestingly, a significant difference was observed between depression in users and non-users of social networks (p=0.001), 33.9% and 66.1% being affected, respectively. **Conclusion:** These results verified a high incidence of depression in cancer patients, but a beneficial effect of social network use. Therefore access to social networks should be promoted for prevention and amelioration of depression. Moreover, it is recommended that particular attention be paid to the patient sex and educational level in designing counseling and psychological skill training programs.

**Keywords:** Social media- neoplasms- depression- anxiety

## Introduction

Depression is one of the most common psychiatric diseases characterized by the presence of low mood or loss of interest. It is one of the most common symptoms afflicting cancer patients, and many types of cancer are among the chronic diseases that increase the risk of depression. Various studies have found that different types of cancer are well-known risk factors for depression (Breitbart et al., 2000; Tsai et al., 2007; Khan et al., 2016). Depression is a risk factor for reduced survival amongst cancer patients, and it is an influential element in the refusal of treatment among such patients (Rajabizadeh et al., 2005). The prevalence of depression showed that the rates are high. A recent meta-analysis indicates the prevalence of any depression disorder in patients with cancer was 21%. (Mitchell et al., 2011) The idea that there is a causal link between psychological factors such as depression and the onset of cancer has had a relatively long history, but some studies do not approve this idea. Schraub et al., (2009) Before the widespread acceptance of the Internet as a source for health information, people were receiving them from sources such as doctors, family members, and the mass media. Since 2000, people have become dependent on the Internet search engines, because

these engines have allowed access to web pages all over the world. Using search engines is still a current method to find health information.(McMullan, 2006; Iverson et al., 2008) What is more, static websites with merely informative function in comparison to interactive internet sites, somehow called social media which interactive communication is possible, have attracted more attention as a source of health information. The emergence and development of social media have turned the Internet from a static source of health information into a more dynamic source of health communication. The term social media is a broad one that encompasses a vast array of online resources. The main categories include social networking, blogging, microblogging, social news, social bookmarking, and media sharing. (Perdue, 2010) The social media can help develop effective health communications. Since they allow health messages and information to be transmitted immediately, they have a unique potential for communication. Additionally, Health data and information gathered from social networks can assist health communication policy-making. Using the Internet for cancer patients is about 39% in the developed world and approximately 2.3 million worldwide who are living with cancer use online sites. Furthermore, 15% to 20% of the patients with cancer use the Internet

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indirectly through family and friends(Eysenbach, 2003). In this paper, the focus of attention is on investigating the prevalence of depression among the patients with cancer who use social networks. There was an attempt to determine if social media could help cancer patients overcome their stress and depression caused by incurable disease, which makes serious emotional and mental problems for them and their families.

## Materials and Methods

The participants of this descriptive study included 316 cancer patients with different types of cancer who existed in Association of Cancer Patients and other cancer-related centers in Tehran at 2015. They were selected using convenience sampling. Then, users social networks in health centers, those who agreed to have an interview with informed consent and had no problem to participate were included in the study. Other Inclusion criteria were being literacy and aging between 18 to 55 years. Further, not being in this age range, not being literacy, not being cooperative enough to answer the questionnaire and being unsatisfied were exclusion criteria. The instrument used for measuring depression was the Beck Depression Inventory (BDI). This inventory was designed and standardized by Aeron Beck in 1960 at the University of Pennsylvania. The inventory includes 21 multiple-choice questions (self-report), and each option describes four situations. Each item is scored from 0 to 3, and the total score ranges from 0 to 63. Beck adjusted this inventory according to the following five factors composed of the signs and symptoms of depression:

1) Pessimism, sense of failure, self-hate, suicidal thoughts, indecisiveness, and slowness

2) Feeling guilty and expecting punishment and blame

3) Crying, self-image change, unhappiness, and sadness

4) Weight loss, physical complaints, and fatigue

5) Irritability, insomnia, and anorexia

Many studies have been conducted on the validity and reliability of this test, and all indicate the high reliability and validity of the test. It is non-acculturation in the world; therefore, it applies to different social classes. In this study, we used version II of the inventory which translated into the Persian language and those whose cut-off score was equal to or above 16 were considered depressed. Patients' personal information, including sex, age, disease duration, education level, and usage of social networks were noted. Then all the analysis carried out with SPSS for Windows version 16 and P<0.05 was considered statistically significant. Chi-square test was used to compare the groups and check the hypothesis.

## Results

In this study, 316 cancer patients aged 20-53 were investigated, among whom 184 were female, and 132 were male. The mean patients' age was 28.8±9.17 years. Of the participants, about 181 were social-network users, among whom 65 were female, and 116 were male. Table1 shows the participants' demographic characteristics.

The prevalence of depression was 61% (N=192); about 86 (44.80%) and 106 (55.20 %) of the males and females were depressed, respectively. The difference observed between the two sexes was statistically significant (p=0.036). Regarding using social networks, the patients were divided into two groups, namely users and non-users of social networks. A significant difference was observed between depression in cancer patients concerning using and not using social networks (p=0.001), so that 33.86% and 66.14% of the users and non-users of social networks were depressed, respectively. No significant relationship was seen between the subjects' age and depression. The participants were divided two groups (under two years, two years and over) regarding disease duration, and a significant difference was recognized between the two groups concerning depression and disease duration (p=0.003). With respect on educational level, the

Table 1. The Frequency of Depressive Symptoms in 316 Patients with Cancer

| Variable | All patients N (%) | Depression (n=192) | Non- depressed (n=124) | result |
|---|---|---|---|---|
| Gender | | | | |
| Male | 132 (41.78%) | 86 (44.80%) | 46 (37.10%) | P = 0.036 |
| Female | 184 (58.22%) | 106 (55.20%) | 78 (62.90%) | X2 = 4.38 |
| Age | | | | |
| Under 30 years | 191 (60.44%) | 107 (55.72%) | 84 (67.74%) | NS* |
| Above 30 years | 125 (39.56%) | 85 (44.28%) | 40 (32.26%) | NS |
| Education | | | | |
| Under diploma | 93 (29.43%) | 72 (37.50%) | 21 (16.93%) | P = 0.004 |
| Above diploma | 223 (70.59%) | 120 (62.50%) | 103 (83.07%) | X2 = 8.19 |
| disease duration | | | | |
| Under two years | 134 (42.40%) | 71 (36.98%) | 63 (50.80%) | P = 0.003 |
| Above two years | 182 (57.60%) | 121 (63.02%) | 61 (49.20%) | X2 = 8.08 |
| Use of social network | | | | |
| user | 181 (57.27%) | 65 (33.86%) | 116 (93.54%) | P = 0.001 |
| non-user | 135 (42.73%) | 127 (66.14%) | 8 (6.46%) | X2 = 10.96 |

participants were also broken into two groups of under diploma and above a diploma, and a significant difference was observed between the two groups concerning depression in this regard (p=0.004). Table 1 shows the frequency of depressive symptoms in patients with cancer.

## Discussion

The results obtained from this study have revealed that a considerable number of cancer patients have depression. This result is in line with reports of a critical review article stating that in the context of cancer, depression is common comorbidity (Pasquini and Biondi, 2007). Khan et al., (2016) in another survey, evaluated depression among cancer patients and found that the more than 50% of the patients have severe symptoms of depression. Khan et al., (2016) on the other hand, some studies indicated an association between depression and the overall occurrence risk of cancer. Jia et al., (2017) Also, routine screening and adequate assessment of depressive spectrum disorders is necessary for patients with cancer (Caruso et al., 2017).

The results of this paper have demonstrated that the users of the social network are less depressed; this finding confirms other researchers' evidence that social networks can have a positive influence on health and improve health outcomes for people with depression (Sarasohn-Kahn, 2008). A systematic review of social media use in chronic disease by Patel et al., (2015) showed that using social media to provide social, emotional, or experiential support in chronic disease appears most likely to improve patient care in chronic disease such as cancer (Patel et al., 2015). Moreover, we found that the women with cancer, are at greater risk for depression, which might be owing to the limited social relationships in female patients and their particular condition regarding stressful situations within the family. Consequently, using social networks can be an opportunity for women to improve their psychosocial status.

In our study, the educated participants were less depressed than the non-educated ones. Other studies have verified the effect of education on depression. Scarinci et al. researched black women to determine which demographic variable affects depression. They concluded that education level, marital status, and age might be the important factors causing depression among black women (Scarinci et al., 2002).

All the same, some limitations need to be considered. For instance, kind of cancer and other clinical data of the patients and correct frequency usage of social media was not precisely assessed. Also, the analysis does not enable us to determine the impact of the type of different cancer on depression; therefore a further study of the issues would be of interest. Some studies on noncancer patients demonstrated it seems that maybe using some social media causes depression (Sidani et al., 2016; Primack and Escobar-Viera, 2017; Shensa et al., 2017). Therefore, further investigations will be required to assess the impression of each social network on depression separately in patients with cancer.

Accordingly, due to the high prevalence of depression among cancer patients, access to social networks and provision of these facilities to increase interaction through cyberspace can be considerable and useful for the prevention and treatment of their depression. Moreover, particular attention is recommended to be paid to the patients' sex and educational level in counseling and psychological skill training programs.

*Informed consent*
Informed consent was obtained from all individual participants included in the study.

*Ethical approval*
All procedures performed in studies involving human participants were in accordance by the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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