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COMPARISON OF OPTIMISM AND MENTAL HEALTH IN BRAIN TUMOR PATIENTS AND HEALTHY SUBJECTS

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ABSTRACT

The purpose of this study is comparing the optimism and mental health in patients with brain tumor and healthy subjects. Study method is causal-comparative. The sample consisted of 32 patients with brain tumor that was selected by convenience sampling and 32 healthy subjects too. Data were collected in this study by The Attributional Style Questionnaire (ASQ; Peterson *et al.*, 1982) and General Health Questionnaire 28 (GHQ-28). Data were analyzed by SPSS, and is used from independent t-test for data analysis. The finding showed that there isn't significant difference in mental health between patient with brain tumor and healthy subjects. But optimism showed significant different between patient with brain tumor and healthy subjects. Based on our results, clinical and psychiatric services for patients to beneficial from consistency and basic skills information led to increase the optimism and metal health in brain tumor patients.

Keywords: *Optimism, Mental Health, Brain Tumor Patients*

INTRODUCTION

The worldwide incidence of primary malignant brain and central nervous system tumors, age-adjusted using the world standard population, is 3.6 per 100,000 person-years in males and 2.5 per 100,000 person-years in females. The incidence rates are higher in more developed countries (males: 5.9 per 100,000 person-years; females: 4.1 per 100,000 person-years) than in less developed countries (males: 2.8 per 100,000 person-years; females: 2.0 per 100,000 person-years). This discrepancy may partly be a reflection of poor facilities for diagnosis and reporting bias, as well as a true difference in the incidence (Ferlay *et al.*, 2001). Although brain tumours account for less than 2% of all primary tumours they are responsible for 7% of the years of life lost from cancer before age 70 (Office for National Statistics, 2006). Brain cancer is the commonest solid tumour in children and the most common cause of cancer death in children. If the burden of disease is considered in terms of the average years of life lost per patient brain tumours are one of the most lethal cancers with over 20 years of life lost (Burnet *et al.*, 2005). The high rates of mortality make these rare cancers into the third leading cause of cancer-related death among economically active men between 15-54 years of age and the fourth leading cause of cancer-related death among economically active women between 15-34 years of age (Kesari and Stiles, 2006). Existing therapies have limited efficacy and the need for new treatments is an unmet clinical need. Current clinical management of patients diagnosed with a malignant glioma involves a combination of surgery, radiotherapy and chemotherapy. Positive psychology is a means to aid individuals to live decent lives and help them be the best version of themselves (Lopez & Snyder, 2009). This developing field uses multiple approaches to increase life-satisfaction, spirit, and optimism. The use of positive psychology has been shown to reduce fear in children, increase resilience in college students, and foster optimism in individuals. Moreover, research has shown a positive relationship between trait resilience and physical and psychological health (Klohn, 1996; Mak *et al.*, 2011) as well as a negative relationship with depression (Edward, 2005). The findings suggest that those with more resiliencies tend to have more self-esteem and confidence, and more hope for the future. In addition to resilience, optimism researchers have shown that positive expectations of the future can influence people's actions and perseverance (Carver *et al.*, 2010). Optimists are people who expect good things to happen to them; pessimists are people who expect bad things to happen to them. Folk psychology has long held that these differences among people

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are important. Research over the past two and a half decades suggests that the folk wisdom is right (at least in this case). This rather simple difference anticipating good versus anticipating bad is linked to core processes that underlie behavior. The ways in which optimists and pessimists differ in their approach to the world have substantial impact on their lives. These people differ in how they confront problems; they differ in how well they cope with adversity; they also differ in their resources, both social and socioeconomic. Individual differences in optimism are relevant to clinical psychology because this dimension is associated, both directly and indirectly, and at both an individual and a social level, with risk for psychopathology. At the most basic level, optimism by definition is inversely related to hopelessness, a risk factor for depressive disorders (Alloy *et al.*, 2006). Further, optimism appears to confer resilience to stressful life events, which are associated with risk for both onset and relapse of psychopathology (e.g., Ellicott *et al.*, 1990; Finlay-Jones & Brown, 1981). Finally, at the broadest levels, optimism clusters with other factors such as socioeconomic status and social integration, which as a group have protective effects for both mental and physical health (House *et al.*, 1988; Kawachi & Berkman, 2001; Lorant *et al.*, 2003). Optimistic individuals cope with stressful events, such as surgery, illness, and other medical procedures better than pessimists (Scheier & Carver, 1985). When faced with challenges and adversity, individuals with higher optimism confront it with more belief, confidence, and persistence (Scheier & Carver, 1992). According to research, optimism and mental toughness, defined by authors as control, confidence, and coping skills, are highly correlated (Nicholls *et al.*, 2008). This suggests that by possibly increasing optimism, mental toughness can also be increased, leading to higher achievement. Numerous studies over the past few decades have shown the many benefits of optimism. The benefits include elevated mood and satisfaction, increased motivation, and greater achievement in various settings such as work, school, and sports. In sum, the trait of optimism may provide cognitive, coping, and contextual resources that promote better mental health. Mental health (MH) is increasingly recognized by the public health community as critical to good health (Danner *et al.*, 2001). The interconnections between chronic disease, injury, and mental illness (MI) are striking. For example, tobacco use among people diagnosed with a MI condition is twice that of the general population. In addition, the evidence is extensive for associations between MI and chronic diseases, such as cardiovascular disease, diabetes, obesity, asthma, arthritis, epilepsy, and cancer (Taylor and Sherman, 2004). MH and well-being are characterized by the presence of positive affect (e.g., optimism, cheerfulness, and interest), absence of negative affect, and satisfaction with life (Taylor and Sherman, 2004). One of the social needs is mental health, because of its optimal performance requires a community of people who have used mental health in good condition (Sharifi *et al.*, 2011). Mental health is one of the aspects of general health. The World Health Organization defines mental health as: state of complete physical, mental, social health, and not merely the absence of disease or disability. In fact, we can say that one of the goals of mental health facilities acceptable for a human life for each person, the human that take over physical, mental and social security (Asadi and Ahmadi, 1999). Based on above sentences, the aim of present study was to comparison of optimism and mental health in brain tumour patients and healthy subjects.

MATERIALS AND METHODS

The study statistical society included all patients who are diagnosed with a brain tumor and in the spring of 2012 referred to the Bu Ali hospital, Sari, Iran. And has ability to understand and respond to the questionnaire. After the preliminary survey, 32 persons that are diagnosed with a brain tumor and 32 normal persons selected.

In order to obtain general demographic data we used The General Demographic Questionnaire.

Attributional Style Measure

The Attributional Style Questionnaire (ASQ; Peterson *et al.*, 1982) is a self-report measure of attributional style, comprising 6 hypothetical negative events and 6 hypothetical positive events sampled from the domains of achievement and affiliation. The hypothetical ASQ events allow an individual to subjectively interpret each event and its possible cause (Schulman *et al.*, 1989). Respondents are instructed to think of a cause for each event and then to rate the cause along three 7-point scales

Research Article

representing the locus, stability, and globality causal dimensions. Higher scores on the ASQ scale items represent more internal, stable, and global attributions, whereas lower scores represent more external, unstable, and specific attributions (Peterson *et al.*, 1982). In total, the ASQ generates 36 scores: three items (i.e., locus, stability, globality) for each of the 12 hypothetical events. The locus, stability, and globality items are then summed (or averaged) across the negative events and separately summed across the positive events to create a locus, stability, and globality composite score for each type of event. Optimists have low composite negative scores and high composite positive scores; in contrast, pessimists have high composite negative scores and low composite positive scores. Peterson *et al.*, (1982) found modest internal consistencies for the individual dimensions but the composite scores have a more respectable Cronbach’s alpha ($\alpha = .75$ for CP; $\alpha = .72$ for CN). Similarly, Peterson *et al.*, (1982) reported good test–retest correlations with an interval of four weeks: $r = .70$ for the positive event composite score and $r = .64$ for the negative event composite score. In the present study, internal consistencies for CN ($\alpha = .79$) and CP ($\alpha = .82$) were acceptable.

General Health Questionnaire-28: To assess psychiatric morbidity we used the General Health Questionnaire-28 (GHQ-28, a commonly used questionnaire of proven validity and reliability; Goldberg, 1978). General Health Questionnaire 28 (GHQ-28) is a popular 28- item screening test that derived from factor analysis of General Health Questionnaire 60. The questionnaire has 4 subscales of Somatic Symptoms, Anxiety and Insomnia, Social Dysfunction and Severe Depression with 7 questions in each subscale. The scores are calculated by using binary (0-0-1-1) score.

The result distributions are presented and basic descriptive parameters (arithmetic mean \pm standard deviation) were calculated.

The differences between the groups were tested t test and two way ANOVA. The correlation between the variables was assessed with Pearson’s correlation coefficient. The level of statistical significance was set at $P < 0.05$.

RESULTS AND DISCUSSION

Age of brain tumor patients are 12.5, 25, 31.2 and 31.3% in 15-25, 26-35, 36-45 and 46-55 categories, respectively; while are 3.1, 28, 28.1 and 40.6% for healthy subjects (Table 1).

Table 1: Age distribution of brain tumor patients and healthy subjects

Variable (age)	brain tumor patients		healthy subjects	
	Frequency	Percent	Frequency	Percent
15-25	4	12.5	1	3.1
26-35	8	25	9	28.1
36-45	10	31.2	9	28.1
46-55	10	31.3	13	40.6
Total	32	100	32	100

Gender distributions of subjects are equal for two groups, 56.3% are male and 43.8% are female in brain tumor patients and healthy subject groups, respectively (Table 2).

Table 2: Gender distribution of brain tumor patients and healthy subjects

Gender	brain tumor patients		healthy subjects	
	Frequency	Percent	Frequency	Percent
Male	18	56.3	18	56.3
Female	14	43.8	14	43.8
Total	32	100	32	100

Marital status showed that 31.3 and 68.7% of brain tumor patients are single and married, respectively; and in healthy subjects are 34.4 and 65.6% (Table 3).

Research Article

Table 3: Marital status of brain tumor patients and healthy subjects

Marital status	brain tumor patients		healthy subjects	
	Frequency	Percent	Frequency	Percent
single	10	31.3	11	34.4
married	22	68.7	21	65.6
Total	32	100	32	100

Statistical analysis showed that differences between brain tumor patients and healthy subjects in optimism variable are significance, and mean score of optimism in brain tumor patients is lower than healthy subjects (Table 4).

Table 4: Compare of optimism between brain tumor patients and healthy subjects

Group	Variable	N	Mean	SD	t	df	sig
brain tumor patients	optimism	32	85.97	2.13	2.994	62	0.004
healthy subjects		32	88.7	4.53			

Statistical analysis showed that differences between brain tumor patients and healthy subjects in mental health variable is not significance differences, but mean score of social support in healthy subjects is higher than brain tumor patients (Table 5).

Table 5: Compare of Mental health between brain tumor patients and healthy subjects

Group	Variable	N	Mean	SD	t	df	sig
brain tumor patients	Mental	32	18.34	1.33	0.573	62	0.90
healthy subjects	health	32	18.54	1.39			

Chronic diseases are non-communicable illnesses that are prolonged in duration, do not resolve spontaneously, and are rarely cured completely. They are the leading cause of death and disability in the United States. They cause 7 out of 10 deaths each year and are among the most preventable and treatable of all health problems (see figure below). Chronic diseases include illness such as heart disease, diabetes, cancer, and arthritis (Centers for Disease Control and Prevention, 2009). Mental health disorders are medical conditions that disrupt a person's thinking, feeling, mood, ability to relate to others and daily functioning. They are medical conditions that often result in a reduced ability to cope with the routine daily activities such as going to work or raising a family. Just like chronic diseases, mental health disorders are treatable. Most people diagnosed with a serious mental health disorder can receive relief from their symptoms by following a treatment plan specifically designed for them by a trained psychologist or psychiatrist. Mental health disorders are not exclusive to those who exhibit a lack of personal strength, personality traits like being shy, or have a certain socioeconomic status. Mental health disorders include illnesses such as major depression, bipolar disorder, obsessive compulsive disorder, and post-traumatic stress disorder. One common finding is that people who suffer from a chronic disease are more likely to also suffer from depression (Chapman *et al.*, 2005). Scientists have yet to determine if having a chronic disease increases the prevalence of depression or depression increases the risk of obtaining a chronic disease. Regardless of the cause, chronic diseases and mental health disorders are treatable and employers can use multiple strategies to make their work environments more supportive of overall physical and mental health and general well-being. Both mental health disorders and chronic diseases are common and disabling. These conditions can affect anyone, regardless of age, culture, race/ethnicity, gender, or income. Many other associations exist between mental illness and cardiovascular disease, diabetes, obesity, asthma, and arthritis to name a few (Chapman *et al.*, 2005). For example, the chart to the right shows the prevalence of major depressive disorder and other common chronic diseases. Depression is found to co-occur in 17% of cardiovascular cases, 23% of cerebrovascular cases, and with 27% of diabetes patients and more than 40% of individuals with cancer (Lasser *et al.*,

Research Article

2000). The relationship between mental health, chronic disease and injury is significant. Many examples exist of individuals with a chronic condition or risk factor and an increased risk for mental illness such as the risk for tobacco use is about twice as high for those with mental illness compared to the general population (American Epilepsy Society, 2003). Injuries, both intentional such as homicide and suicide and unintentional such as motor vehicle accidents, are 2-6 times higher for persons with a history of mental illness than those without a history (Wan *et al.*, 2006). It is popular belief that an individual's psychologic response to cancer, particularly optimism or "a positive attitude," influences survival. In an Australian study of audiotaped consultations, it was found that cancer patients often try to develop a positive attitude or fighting spirit in the belief that it will enhance their chances of survival (Schofield *et al.*, 2008). Oncologists tended to encourage this strategy, which they perceive as potentially helpful to patients (Schofield *et al.*, 2008). The individual's psychologic state may affect their health-related behavior. Positive mood states, such as optimism, may facilitate enhanced selfcare activities, such as healthy eating, quitting smoking, moderate alcohol consumption, and exercise (Scheier and Carver, 1992). Scheier and Carver (1992) have defined dispositional optimism as the global expectation that good things will be plentiful in the future and that bad things will be scarce. Those authors argue that optimistic individuals believe that their goals can be achieved in the face of adversity and will continue to try to attain the goal, whereas pessimistic individuals are more likely to give up. Hence, it may be expected that optimistic patients may pursue life-prolonging treatments more vigorously and may be more vigilant about self-care activities such as diet, exercise, and managing treatment side effects. Based on our results, clinical and psychiatric services for patients to be beneficial from consistency and basic skills information led to overcome these problems and bring hope to patients. Hope can protect people against the effects of stressful life events.

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Research Article

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