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Comparison of Defense Mechanisms in Women with Temporal Lobe Epilepsy versus Ordinary Counterparts

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Abstract

Objective:: Epilepsy is one of the most prevalent neurological disorders, the contracting of which causes numerous physical, psychological, and social consequences. However, there are a number of defense mechanisms humans possess, which are responsible for protecting an individual against the stress, anxieties, and pressures of everyday life. Accordingly, the present study was undertaken with the aim of investigating the comparison of defense mechanisms in a group of women with temporal lobe epilepsy against a non-clinical group of females.

Methods: The research design of the present study was based on a causal-comparative case study. The statistical population of the study consisted of all epileptic women and their normal counterparts who had referred to Imam Hossein Hospital in Tehran during the first half of 2019. The sample population included 40 female patients already diagnosed with temporal lobe epilepsy by neurologists through electroencephalography who were randomly selected and compared to their 40 normal counterparts. The two studied groups were similar in terms of age, education, and marital status. Research data were gathered using the Andrews Defense Mechanism Questionnaire (DSQ40) and analyzed by the SPSS24 software program employing multivariate statistical analysis of variance.

Results: There was a significant difference ($p < 0.05$) between the defense mechanism used in epileptic women and healthy women.

Conclusion: It can be concluded that women with epilepsy have different defense mechanisms and are more likely to use immature mechanisms and neurotic defense mechanisms (only in terms of False Altruism) when compared to normal women.

Keywords: Defense Mechanisms, Temporal Lobe, Epilepsy.

Introduction

Epilepsy is defined as one of humanity's oldest diseases and is considered one of the most prevailing dysfunctions of the central nervous system (CNS) (Bell et al, 2011). In 1973, the International League against Epilepsy (ILAE) described epilepsy as a chronic and neurological disease leading to recurrent attacks which are provoked by sudden, intermittent, and excessive electrical discharges of brain neurons (Thijs et al, 2019). But thirty years later, in 2005, this association considered one more factor, as it plays a vital role in defining epilepsy, and altered its definition accordingly. In fact, corresponding to their revised definition, epilepsy is a disease that requires the occurrence of at least one epileptic seizure, although later, this definition was also modified once again (Singh & Sander, 2020). The prevalence and morbidity rates of this disease have always been controversial.

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According to the latest statistics from the World Health Organization (WHO), about 50 to 65 million people suffer from epilepsy (Menninga et al, 2020). This disease is also highly predominant in Iran, and its prevalence rate has been reported as being 1.8% (Fisher et al, 2014). Among the different types of epilepsy in adults, temporal lobe epilepsy (TLE) is the most common (Bell et al, 2011). Based on recent studies, researchers have concluded that behavioral disorders in patients with temporal epilepsy are more common than in any other neurological disorder (Cohen et al, 2020). It is well known that TLE is very resistant to pharmacologic treatment in many cases (Nuha et al, 2018). According to recent research, epilepsy is highly correlated with depression (Apata Barco AM, 2020), bipolar disorder (Harden & Goldstein, 2002), schizophrenia (Kanner, 2000), personality disorders (Trimble, 2013), and anxiety disorders (Johnson et al, 2004) (Azarmehr & Ahmadi, 2020). As a consequence, paying attention to psychological issues and mental health promotion will play an optimal role in individuals' well-being and controlling and improving their physical symptoms. Defense is one of the keys and basic concepts of psychodynamic approaches. This term was first utilized in Freud's study in 1894 under the title "defense neurological diseases" and was employed in this study and several subsequent investigations such as the "etiology of hysteria" and "other tips on defense neurological diseases" (Cramer, 2015). Defense mechanisms are unconscious psychological processes that protect individuals against internal and external adversities and troubles by reducing undesirable environmental effects and exacerbating pleasant emotions (Brody & Crason, 2012). George Eman Vaillant, an American psychiatrist and a professor at Harvard University, is one of the most prominent researchers in the field of defense mechanisms. In his book, "Ego Mechanisms of Defense", he divides defenses into mature, immature, and neurotic categories (Vaillant, 2000). However, for explaining each of them, it can be understood that mature defense mechanisms are denoted as adaptive, normative, and effective exposure methods, while on the other hand, immature defense mechanisms are undesirable manners of coping with mental pressures. Neurotic defenses are subdivided into obsessive-compulsive and suppressive components. Each of these defense mechanisms has its own special subcategory (Kurian et al, 2019). Frequent and continuous use of immature and neurotic variants is among the cases where defense mechanisms can endanger one's health. Although immature and neurotic defense mechanisms relieve stress, threat, and anxiety, they do not provide an effective way to solve the problem and their impacts are short-term. In fact, their approach is emotion-focused rather than problem-focused; so, they can have negative and deleterious effects on people's mental health (Albuquerque et al, 2011). On the other hand, based on their functions, defense mechanisms can reduce the severity of several diseases before, during, and after the outbreak. Therefore, they can play a significant role in one's health (Hyphantis et al, 2010). Defense mechanisms also play an essential role, even in the adaptation to the disease and the treatment conditions and processes (Yazdanshenas Ghazwin et al, 2017). Consequently, screening for psychological factors including defense mechanisms in various environments such as hospitals, practices, clinics, and rehabilitation centers appears to be necessary since their timely and appropriate treatments can help patients recover from diseases. As a result, the current study was conducted with the objective of comparing the defense mechanisms of women with epilepsy and their healthy counterparts.

Methods

The statistical population of this study included all women with TLE who had referred to Imam Hossein hospital in Tehran in the first half of

2019, and healthy women without a history of chronic physical and mental illnesses who matched the patient group in terms of age, education, marital and economic statuses. Information about the type of patients' epilepsy was collected by reviewing the files, using the recorded client information collected from offices of hospitals, and assessments such as EEG and initial interviews with each patient (initiation and clinical diagnosis). Eventually, 40 women with temporal lobe epilepsy and 40 healthy women were selected and examined using a convenience sampling approach. The study inclusion criteria for women with epilepsy were having temporal lobe epilepsy with at least a 5-year history of the disease, being in the age range of 30-60, having a minimum of secondary education, and conscious completion of the research consent form epilepsy and their healthy counterparts.

Ethical Statement

Before initiating the study, ethical considerations were cited for patients in an exclusive meeting. The participants were familiarized with the nature and manner of cooperation in implementing the research and were permitted to withdraw from collaboration at each step of the study. In this survey, all the information about the patients was kept confidential by the researcher.

The collected data were analyzed by SPSS-24 and multivariate analysis of variance measurements.

Study instruments

Defense Style Questionnaire (DSQ40)

A new version of this questionnaire has been formulated by Andrews (1993). The questionnaire was compiled in the format of 40 statements on a 9-point Likert scale (from completely agree to completely disagree) in order to measure the three mature, immature and neurotic defense styles. Mature defense styles consist of sublimation, humor, anticipation, and suppression mechanisms. Mechanisms of the neurotic defense style include revocation, false altruism, idealization, and antagonistic reaction. An immature defense style consists of twelve defense mechanisms as follows: psychological projection, passive-aggressive behavior, implementation, isolation, bipartisanship, autistic denial fantasy, displacement, diffusion, splitting, and justification. The Cronbach's alpha coefficient was found to be satisfactory for the questions related to each defense style (Andrews, Singh, Bond,1993).

Psychometric considerations of the Persian version of the Defense Style Questionnaire were examined and approved in several studies conducted on patients (n = 423) and normal samples (n = 1397) during the years 1999 to 2006 (Besharat, 2001). In this study, Cronbach's alpha coefficients for questions related to each of the subscales of the Defense Style Questionnaire were found to be 0.83 to 0.94 for mature style, 0.81 to 0.92 for immature style and 0.79 to 0.91 for the neurotic style (all of these coefficients are significant at $P < 0.001$ level and confirm the internal consistency of the subscales of the Defense Style Questionnaire). Convergent validity and differential diagnosis of the Persian version of the Defense Style Questionnaire were calculated and verified through the simultaneous implementation of the NEOPIR personality scale from the two groups. Correlation coefficients of the subscales of mature defense styles were 0.51 for psychological well-being. These coefficients were significant at the $P < 0.001$ level. Confirmatory factor analysis results also confirmed the construct validity of the Persian version of the Defense Style Questionnaire by determining three factors, namely mature, immature and neurotic defense styles (Besharat, 2001).

Results

Demographic characteristics of this research include the number of patients, marital status, level of education, and age. The study participants were

80 people who were divided into two groups of 40 individuals with epilepsy and 40 healthy ones. In both groups, about 32% were single and 68% were married. In terms of education, 40% were educated up to secondary school and diploma levels, while 60% were associate's degree and bachelor's degree holders.

Data Description

In this study, 40 studied subjects were patients, and 40 individuals were healthy. Table 4.1 indicates the mean and standard deviation for the scores of the different scales and subscales in the two studied populations.

The results acquired for the different dimensions of the "Immature" variable demonstrated that the mean total score of the patients was higher than that of the normal individuals. The results achieved for the total score of the "Mature*"* dimension revealed that the score of healthy individuals was higher than that of patients. The results obtained for the total score of "Psychotic" patients implied that the mean total score of the patients was higher than that of the healthy individuals.

Table 1. Comparison of the Patients and Healthy groups on the Immature Variable parameters

Dependent Variable	Group	Standard Error ± Mean	Average Difference	P
Justification	Patient	12/33±0/51	-1/13	0/12
	Healthy	13/45±0/51		
Projection	Patient	8/45±0/51	0/525	0/466
	Healthy	7/93±0/51		
Denial	Patient	9/33±0/74	2/325	0/03
	Healthy	7±0/74		
Omnipotent Power	Patient	9/65±0/68	-0/425	0/661
	Healthy	10/08±0/68		
Bipartisanship	Patient	10/28±0/56	1/675	0/039
	Healthy	8/6±0/56		
Transition to Action	Patient	12/13±0/69	2/3	0/021
	Healthy	9/83±0/69		
Somatization	Patient	12/45±0/6	-0/225	0/79
	Healthy	12/68±0/6		
Fantasy	Patient	11/15±0/74	1/8	0/089
	Healthy	9/35±0/74		
Layering	Patient	9/6±0/53	1/75	0/023
	Healthy	7/85±0/53		
Aggression	Patient	10/33±0/6	1/35	0/133
	Healthy	8/98±0/6		
Displacement	Patient	9/6±0/67	0/625	0/51
	Healthy	8/98±0/67		
Isolation	Patient	9/23±0/67	0/675	o/481
	Healthy	8/55±0/67		
Total Score of Immature Variable	Patient	124/23/652±	11/25	0/032
	Healthy	113/253/652±		

Table 2. Comparison of the *Patient* and *Healthy* groups on the mature Variable components

Dependent Variable	Group	Standard Error ± Mean	Average Difference	P
Sublimation	Patient	10/13±0/72	0/15	۰/۸۸۳
	Healthy	9/98±0/72		
Suppression	Patient	10/85±0/59	0/525	۰/۵۳۳
	Healthy	10/33±0/59		
Humor	Patient	9/55±0/59	-2/175	۰/۰۱۱
	Healthy	11/73±0/59		
Anticipation	Patient	13/18±0/44	-0/975	۰/۱۲۴
	Healthy	14/15±0/44		
Total score of Mature Variable	Patient	43/71/545±	-2/475	۰/۲۶۱
	Healthy	46/181/545±		

The results of the comparison between the two groups of patients for the "Immature" component parameters are presented in Tables 1-3. Patients' scores in Variables Denial (P = 0.03), Bipartisanship (P = 0.039), Transition to Action (P = 0.021), Layering (P = 0.023), and Total Immature (P = 0.032). =) were significantly higher than the scores of the healthy group participants.

The comparison results of the two groups for the parameters of the "Mature" component are presented in Table 2 There was no significant difference in terms of Sublimation (P = 0.883), Suppression (P = 0.533), and the Total mature score (P = 0.556) between the two groups.

The results of the comparison of the two groups of patients and controls for the parameters of the Neurotic component are presented in Table 3. The patient group scores were significantly higher only in terms of False Altruism (P = 0/000), and in other scores such as Reactive Formation (P = 0/081),

Table 3. Comparison of the Patient and Healthy groups on the Neurotic Variable parameters

Dependent Variable	Group	Standard Error ± Mean	Average Difference	P
False Altruism	Patient	14/5±0/47	2/65	0000/
	Healthy	11/85±0/47		
Reactive Formation	Patient	10/43±0/72	1/8	0/081
	Healthy	8/63±0/72		
Rationalization	Patient	12/8±0/6	20/	0/816
	Healthy	12/6±0/6		
Revocation	Patient	11/35±0/61	0/725-	0/406
	Healthy	12/08±0/61		
Total Score of neurotic variable	Patient	49/071/491±	3/925	0/067
	Healthy	45/151/491±		

Revocation (P = 0/46), and the total score of Neurotic (P = 0/067) there were not any significant differences.

Discussion and Conclusion

The results of the current study indicated that there was a significant difference between the two groups in terms of defense mechanisms. That is, women with epilepsy were more likely to use immature and neurotic defense mechanisms (only in terms of False Altruism) when compared to healthy individuals. This finding has been consistent with researches conducted by Villant (2000), Chales (2008), Malone (2013), and Hyphantis (2011) Zarei and Haghayegh (2017). Saghirzadeh. (2019). People with epilepsy have serious problems such as stigma, depression, anxiety, etc, which can affect their psychological states. Because of these limitations and problems that epileptic women face, they use defense mechanisms more extremely for distorting reality and reducing anxiety, in the hope of being able to protect themselves against hurts and injuries caused by painful reality. In line with this, women with epilepsy lose control of life events to some extent. On the other hand, the rejection and frustrations ahead make them incapable of employing mature defense mechanisms. Irrational defenses cause a person's internal perception of situations to be threatening, denied, or irresponsible. These people, therefore, resort to irrational defenses and have trouble solving life's struggles, and cannot resist stress. Since the disease and its progression give rise to a great deal of tension and provoke the person to use immature and neurotic defense mechanisms, the treatment process becomes more difficult. On the other hand, owing to the fact that patients psychologically run into a lot of problems, this issue reduces a person's general compatibility with the conditions ahead, negatively affecting the immune system and physical problems, and diminishing the quality of life and well-being in these patients. On the contrary, healthy individuals who utilize mature mechanisms such as sublimation (doing exercise and art education) and humor, cope well with mental pressures and compatibly respond to conflict.

As shown in this study, the salient patterns of defense mechanisms in people with epilepsy are in the "Immature" and "Neurotic Defense" categories. This indicates that people with epilepsy lose control over life events because of their physical problems and use immature and neurotic mechanisms because they are unable to use mature defense mechanisms. These failures increase the need to use immature and neurotic defense mechanisms, perhaps because these mechanisms are more capable of reducing anxiety and, the need to reduce anxiety is strongly felt in these people. Previous research on the correlation between defense mechanisms and medical illnesses have shown that defense mechanisms such as somatization, suppression, revocation, isolation, and even denial are more common in people with serious medical illnesses, and the defense mechanisms used by epileptic patients may have an effect on getting the illness, denial of the illness, the severity of relapse, and even failure to respond to treatment. Based on the findings of the current study, the use of mature defense mechanisms is more common in normal people than in epileptic individuals. The difference in the use of defense mechanisms shows the possible association of mature defense mechanisms with physical health. That is, people who do not suppress their emotions excessively have a more rational approach to stress and choose a more appropriate lifestyle, and by responding appropriately to a variety of environmental and intrinsic stimuli, they are immune to physical and mental disorders.

As Freud believed, defense mechanisms can serve both to reduce anxiety and psychological problems, and to increase psychological problems. By dividing defense mechanisms into three levels (mature, immature, and neurotic), Vaillant (2000)

also indicated the group of mechanisms that have health criteria. On the other hand, excessive use of defense mechanisms causes mental disorders. For example, the mechanisms of projection, fantasy, and dissociation cause paranoid, schizoid, and borderline personality disorders. In addition, some researches that have indirectly focused on the tendency of epileptic patients to sublimation defense mechanism through exercise or the arts, have shown that their recovery has been much better, and the athletes and artists are less likely to suffer from epilepsy than others. This argument proves that the use of mature defense mechanisms will be a step towards mental and physical health. The use of neurotic and immature defense mechanisms will create a critical process in people with epilepsy, either by suppressing their own tensions that cause a fatal blow or by using defensive mechanisms such as displacement, projection, and dissociation. These will both cause problems for their surroundings and lead to identity-related trouble. The present study had a number of limitations. It included only 40 patients, a fact which is effective when considering the generalizability of the findings. Another limitation was the fact that the research was conducted in Tehran, making it difficult to generalize the results to other cities. One last limitation regards the research participants' being only females, which limits the generalization of the results by excluding males.

References:

Albuquerque Sc, Carvalho ER, Lopes RS, Marques HS, Macedo DS, Pereira ED. (2011).Ego defense mechanisms in COPD: impact on health –related quality of life and dyspnea severity.qual life Res.; 20(9):1401-10 . doi: 10.1007/s11136-011-9884-9

Andrews G, Singh M, Bond M. (1993).The Defense Style Questionnaires. *Journal of Nervous And Mental Disease*.: 181(4), 246-56. doi:10.1097/00005053-199304000-00006

Apata Barco AM, Restrepo- Martínez M, Restrepo D. (2020). Depression in People with Epilepsy. What is the Connection? Rev Colomb Psiquiatr. ۴۹(۱):۵۳-۶۱. doi:10.1016/j.rcp.2017.10.004

Azarmehr,R.,Ahmadi,E.(2020).the role of anxiety sensitivity and attential control in predicting the tendency toward addiction in youth.*Biquqrterly Iranian Journal of Health Psychology,*2(2),45-50

Bell B. Lin J.J. Seidenberg M. Hermann B. (2011).The neurobiology of cognitive disorders in temporal lobe epilepsy. *Nat R*ev Neurol. 7: 154-164. doi:10.1038/nrneurol.2011.3

Besharat M.(2001).Attachment style and defense mechanism .Iranian Journal of psychology. 19;278-289.

Brody S,Crason cm. (2012).Brief report : self –harm isassociated with immature defense mechanisms but not substance use in a nonclinical Scottish adolescent sample .J Adolesc . 35(3):765-7. doi: 10.1016/j.adolescence.2011.09.001

Charles ST, Gatz M, Kato K, Pederson NL. (2008). Physical health 25 year later: The predictive ability of neurotism. health psychology; 27(3): 369-78. doi:10.1037/0278-6133.27.3.369

Cohen NT, Ziobro JM, Depositario-Cabacar DF, Havens K, Kao A, Schreiber JM, Tsuchida TN, Zelleke TG, Oluigbo CO, Gaillard WD.(2020). Measure thrice, cut twice: On the benefit of reoperation for failed pediatric epilepsy surgery. Epilepsy Res. 11;161:106289. doi:10.1016/j.eplepsyres.2020.106289

Cramer P. (2015).Understanding Defense Mechanisms. Psychodyn Psychiatry. 43(4):523-52. doi:10.1521/pdps.2015.43.4.523

Fisher RS, Acevedo C, Arzimanoglou A, Bogacz A, Cross JH, Elger CE, Engel J Jr, Forsgren L, French JA, Glynn M, Hesdorffer DC, Lee BI, Mathern GW, Moshé SL, Perucca E, Scheffer IE, Tomson T, Watanabe M, Wiebe S. (2014).A practical clinical definition of epilepsy. Epilepsia. 55(4), 475-482. doi:10.1111/epi.12550

Harden, C. L. , Goldstein M. A. (2002) Mood disorders in patients with epilepsy: epidemiology andmanagement. CNS Drugs.16(5), 291-302. doi:10.2165/00023210-200216050-00002

Hyphantis ,T.(2011). Personality variables as predictore of early non-metastastic colorectal cancer patients psychological distress and health related quality of life : A one year prospective study .Journal of psychosomatic Research 70. 411-421.

Hyphantis TN, Tomenson B,Bai M, Tsianos e, (2010). Somatization and defense mechanisms associated with quality of life in inflammatory bowel disease patients.Dig Dis Sci. 55(3):724-32 . doi: 10.1007/ s10620-009-0762-z

Johnson EK, Jones JE, Seidenberg M, Hermann B. (2004).The relative impact of anxiety, depression, and clinical seizure features on health-related quality of life in epilepsy. Epilepsia. 45(5):544-50. doi:10.1111/j.0013-9580.2004.47003.x

Kanner, A. M. (2000). Psychosis of Epilepsy: A Neurologist's Perspective. Epilepsy Behav., 1(4), 219-227. doi:10.1006/ebeh.2000.0090

Kurian N, Cohen TS, Öberg L, De Zan E, Skogberg G, Vollmer S, Baturcam E, Svanberg P, Bonn B, Smith PD, Vaarala O, Cunoosamy DM. (2019). Dual Role For A MEK Inhibitor As A Modulator Of Inflammation And Host Defense Mechanisms With Potential Therapeutic Application In COPD. Int J Chron Obstruct Pulmon Dis. 26;14:2611-2624. doi:10.2147/COPD.S211619

Malone JC, Cohen S, Liu SR, Vaillant GE, Waldinger RJ. (2013).Adaptive mid life defense mechanism and late- life health. Pers Individ Dif.55(2):85-89. PMID:24031102 doi:10.1016/j.paid.2013.01.025

Menninga N, Koukounas Y, Margolis A, Breslow R, Gidal B. (2020).Effects of enzyme-inducing antiseizure medication on vitamin D dosing in adult veterans with epilepsy. Epilepsy Res.5;161:106287. doi:10.1016/j.eplepsyres.2020.106287

Nuha F, Sawsan D, Salma s,Olfa H,Kacem Hanen H,Mariem D,Chokri M.(2018) Cognitive impairment in patients with temporal lobe epilepsy. Jurnal of Neuropsychiatry. 2(2:5):1-7. doi:10.21767/2471-8548.10009.

Saghirzadeh M, Sadeghi N, Azarbarzin M. (2019). The Relationship Between Defense Mechanisms and SelfEfficacy in Ischemic Heart Patients at Feiz Hospital of Esfahan in 2017. Avicenna J Nurs Midwifery care.; 27 (3) :170-177

Singh G, Sander JW. (2020). The global burden of epilepsy report: Implications for low- and middle-income countries. Epilepsy Behav. 20;105-106. doi:10.1016/j.yebeh.2020.106949

Thijs RD, Surges R, O'Brien TJ, Sander JW. (2019). Epilepsy in adults. Lancet.16;393(10172):689-701. doi:10.1016/S0140-6736(18)32596-0

Trimble, M. (2013).Treatment issues for personality disorders in epilepsy. Epilepsia. 54, 41-45. doi:10.1111/epi.12104

Vaillant G .(2000). Adaptive mental mechanism: The rolein a positive psychology .American psychologyist 55(1):89-98 . doi10.1037//0003-066x.55.1.89

Yazdanshenas Ghazwin M, Tavakoli SAH,Latifi S, Saberi H, Derakhshanrad N,Yekaninejad Ms.(2017). Psychological defense mechanism among individuals with SCI with adjustment disorder.J spinal cord Med. 40(5):538-47 doi: 10.1080/10790268.2016.1140389

Zarei A R , Haghayegh SA.(2017).The predict of psychological well-being based on defense mechanisms and adaptation strategies in patients with acquired immunodeficiency syndrome. Health Psychology. 5(20),137-151

Azarmehr,R.,Ahmadi,E.(2020).the role of anxiety sensitivity and attential control in predicting the tendency toward addiction in youth.Biquqrterly Iranian Journal of Health Psychology,2(2),45-50

Bell B. Lin J.J. Seidenberg M. Hermann B. (2011).The neurobiology of cognitive disorders in temporal lobe epilepsy. Nat Rev Neurol. 7: 154-164.

Besharat M.(2001).Attachment style and defense mechanism .Iranian Journal of psychology. 19;278-289.

Brody S,Crason cm. (2012).Brief report : self –harm isassociated with immature defense mechanisms but not substance use in a nonclinical Scottish adolescent sample .J Adolesc . 35(3):765-7.

Charles ST, Gatz M, Kato K, Pederson NL. (2008). Physical health 25 year later: The predictive ability of neurotism. health psychology; 27(3): 369-78.

Cohen NT, Ziobro JM, Depositario-Cabacar DF, Havens K, Kao A, Schreiber JM, Tsuchida TN, Zelleke TG, Oluigbo CO, Gaillard WD.(2020). Measure thrice, cut twice: On the benefit of reoperation for failed pediatric epilepsy surgery. Epilepsy Res. 11;161:106289.

Cramer P. (2015).Understanding Defense Mechanisms. Psychodyn Psychiatry. 43(4):523-52.

Fisher RS, Acevedo C, Arzimanoglou A, Bogacz A, Cross JH, Elger CE, Engel J Jr, Forsgren L, French JA, Glynn M, Hesdorffer DC, Lee BI, Mathern GW, Moshé SL, Perucca E, Scheffer IE, Tomson T, Watanabe M, Wiebe S. (2014).A practical clinical definition of epilepsy. Epilepsia. 55(4), 475-482.

Harden, C. L. , Goldstein M. A. (2002) Mood disorders in patients with epilepsy: epidemiology andmanagement. CNS Drugs.16(5), 291-302.

Hyphantis ,T.(2011). Personality variables as predictore of early non-metastastic colorectal cancer patients psychological distress and health related quality of life : A one year prospective study .Journal of psychosomatic Research 70. 411-421.

Hyphantis TN, Tomenson B,Bai M, Tsianos e, (2010).Somatization and defense mechanisms associated with quality of life in inflammatory bowel disease patients.Dig Dis Sci. 55(3):724-32 . PMID: 19255844.

Johnson EK, Jones JE, Seidenberg M, Hermann B. (2004).The relative impact of anxiety, depression, and clinical seizure features on health-related quality of life in epilepsy. Epilepsia. 45(5):544-50.

Kanner, A. M. (2000). Psychosis of Epilepsy: A Neurologist's Perspective. Epilepsy Behav., 1(4), 219-227.

Kurian N, Cohen TS, Öberg L, De Zan E, Skogberg G, Vollmer S, Baturcam E, Svanberg P, Bonn B, Smith PD, Vaarala O, Cunoosamy DM. (2019). Dual Role For A MEK Inhibitor As A Modulator Of Inflammation And Host Defense Mechanisms With Potential Therapeutic Application In COPD. Int J Chron Obstruct Pulmon Dis. 26;14:2611-2624.

Malone JC, Cohen S, Liu SR, Vaillant GE, Waldinger RJ. (2013).Adaptive mid life defense mechanism and late- life health. Pers Individ Dif.55(2):85-89.

Menninga N, Koukounas Y, Margolis A, Breslow R, Gidal B. (2020).Effects of enzyme-inducing antiseizure medication on vitamin D dosing in adult veterans with epilepsy. Epilepsy Res.5;161:106287.

Nuha F, Sawsan D, Salma s,Olfa H,Kacem Hanen H,Mariem D,Chokri M.(2018) Cognitive impairment in patients with temporal lobe epilepsy. Jurnal of Neuropsychiatry. 2(2:5):1-7.

Saghirzadeh M, Sadeghi N, Azarbarzin M. (2019). The Relationship Between Defense Mechanisms and SelfEfficacy in Ischemic Heart Patients at Feiz Hospital of Esfahan in 2017. Avicenna J Nurs Midwifery care.; 27 (3) :170-177

Singh G, Sander JW. (2020). The global burden of epilepsy report: Implications for low- and middle-income countries. Epilepsy Behav. 20;105-106.

Thijs RD, Surges R, O'Brien TJ, Sander JW. (2019). Epilepsy in adults. Lancet.16;393(10172):689-701.

Trimble, M. (2013).Treatment issues for personality disorders in epilepsy. Epilepsia. 54, 41-45.

Vaillant G .(2000). Adaptive mental mechanism: The rolein a positive psychology .American psychologyist 55(1):89-98 .

Yazdanshenas Ghazwin M, Tavakoli SAH,Latifi S, Saberi H, Derakhshanrad N,Yekaninejad Ms.(2017). Psychological defense mechanism among individuals with SCI with adjustment disorder.J spinal cord Med. 40(5):538-47.

Zarei A R , Haghayegh SA.(2017).The predict of psychological well-being based on defense mechanisms and adaptation strategies in patients with acquired immunodeficiency syndrome. Health Psychology. 5(20),137-151