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Medicine

PREVALENCE AND ASSESSMENT OF STRESS AMONG PATIENTS WITH CHRONIC ILLNESSES

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ABSTRACT (Prevalence of anxiety and depression in patients with airway obstruction using the hospital anxiety and depression scale (HADS) in different localities of Saudi Arabia). **OBJECTIVE:** Objective of this study is to determine the prevalence of anxiety and depression among patients with asthma and chronic obstructive pulmonary disease in different localities of Saudi Arabia. **METHOD:** This study included 420 subjects from three different places in KSA during the period between October 2015 and October 2016. All patients were instructed to answer the questionnaire of HADS. **RESULT:** The prevalence of anxiety and depression is elevated in the patients with both asthma (28%, 20%) and COPD (22%, 14%) in comparison to control group (16%, 4%) respectively. **CONCLUSIONS:** Anxiety and depression are more commonly encounter by the patients of asthma and COPD as compared to the normal population; this leads to bad outcomes of both diseases. Under-recognized and untreated co-morbid anxiety and depression in patients with chronic diseases have lethal consequences in the long-term. There are certain shreds of evidence that shows promising results regarding the rehabilitation of the respective disease, adopting a healthy lifestyle, and psychological and antidepressant drug therapy in reducing anxiety and depressive symptoms in patients. However, these results and findings required further elaboration to examine their efficacy in well-controlled randomized controlled trials with larger samples and long-term follow-up.

KEYWORDS : Stress, Anxiety, Chronic Illness, Chronic Kidney Disease, Psoriasis, Rheumatoid Arthritis, COPD.

INTRODUCTION:

Stress is defined as a process in which environmental requirements strain an organism's adaptable capacity resulting in both psychological demands as well as biological changes that could place at risk for illness. (1) those stimuli that drive us into the state of stress are called stressors. The bond between stress and illness is complex. The predisposition to stress varies from person to person. A circumstance that causes an illness in a person may not cause illness in another person. Events must interact with a wide variety of background factors to manifest as an illness. (1)

Among the components that influenced the susceptibility to stress are genetic vulnerability, coping style, type of personality and social support. When we are encountered with a problem, we assess the seriousness of the problem and judge whether or not we have the resources necessary to cope with the problem. If we believe that the problem is serious and do not have the resources necessary to cope with the problem, we will perceive ourselves as being under stress.(1) It is our way of responding to the circumstances that make a distinction in our susceptibility to illness and our overall well-being.

After Holmes and Wilkins's hypothesis suggesting a link between life events and illness in the 1950s, several types of equipment have been developed to evaluate stressful life events. Stressful life events are positively linked with chronic diseases, including ischemic heart disease, type 1 diabetes and depression, and obesity-related diseases. (2) Among healthy middle-aged women, stressful life events have been linked with a **1.2-** to **2.1-fold** increased risk for the metabolic syndrome. (2)

Not all stress has a negative effect. Studies have shown that short-term stress amplifies the immune system, but chronic stress has a considerable effect on the immune system that eventually manifests an illness. It arouses **catecholamine** and **suppressor T cell levels**, which suppress the immune system. This suppression, in turn, elicits the risk of viral infection.

The morbidity and mortality due to stress-related illness are alarming. One of the main contributing factors in death is emotional stress, it includes among the sixth leading cause of death in the US: cancer, coronary heart disease, accidental injuries, respiratory disorders, cirrhosis of the liver and suicide. According to statistics from Meridian Stress Management Consultancy in the U.K, almost 180,000 people in the U.K die each year from some form of stress-related illness. (1) The Centre for Disease Control and Prevention of the United States estimates that stress account about 75% of all doctors' visits. (1) This includes the diverse span of physical complaints including, but not limited to headache, back pain, heart problems, upset stomach, stomach ulcer, sleep problems, tiredness and accidents. According to Occupational Health and Safety news and the National Council on the compensation of insurance, up to 90% of all visits to primary care physicians are for stress-related complaints.

AIM:

The objective of this study is to determine the prevalence of anxiety and depression among patients with asthma and chronic obstructive pulmonary disease in different localities of Saudi Arabia.

PATIENTS AND METHODS:

This study included 420 subjects from three different places in KSA (Jeddah, Riyadh and Al Khobar) during the period between **October 2015** and **October 2016**. And was divided into three groups. Group, I asthmatic patients included 150 patients, group II COPD patients included 150 patients and control group contains 120 healthy subjects. All patients were instructed to answer the questionnaire of HADS.(10)

LITERATURE REVIEW

Based on fact, it is clear that stress and anxiety have been reasonably associated with chronic illnesses. But as mentioned above, regarding different diseases as a part of chronic illnesses. Each of them has a distinct relationship with stress, some of them are reasonably managed while some of them are difficult to cope with. Stressful life events are positively linked with chronic diseases, including ischaemic heart disease, type 1 diabetes and depression, and obesity-related diseases. Among healthy middle-aged women, stressful life events have been linked with a 1.2- to 2.1-fold increased risk for the metabolic syndrome. The morbidity and mortality due to stress-related illnesses are alarming. The Centre for Disease Control and Prevention of the United States estimates that stress account about 75% of all doctors' visits. Stress is defined as any physical, mental or emotional factor that causes bodily or mental tension. Stress can also affect many other systems of the body, including psychological conditions such as depression and anxiety along with many other physical conditions like digestive system disorders hypertension and diabetes mellitus. Chronic Diseases/Illnesses are defined as conditions that express themselves for more than one year and also require optimum treatment and care and limitation of activities of the daily routine. The term chronic is sometimes also applicable when the period of diseased lasts more than 3 months.

Associations between anxiety disorders and chronic illnesses appear to be largely explained by confounding factors that play a vital role in the causation of this association between the two, such as poor financial conditions, unhealthy lifestyle, increased work burden, and certain others. Increased inflammatory markers have been documented in both late-life depression and chronic illnesses.

The following are some examples of chronic diseases to elaborate on

the relation between them and stress.

Chronic kidney disease (CKD):

One of the highlighting chronic disease all over the globe includes chronic kidney disease (CKD). (11) Patients with CKD and their families present with the symptoms of psychological stress. CKD patients who are going through dialysis shows the prevalence of psychological disorders such as anxiety, depression, hostility, and suicidal tendencies is quite common.(12,13) CKD patients are also more susceptible to dementia, delirium, psychosis, anxiety, and substance abuse. (14) Hemodialysis is the most appropriate treatment for CKD. (15) The Patient now totally depends upon a machine and a medical personal two or three times a week due to Hemodialysis. The patient is directed to follow a strict diet routine and respective medications. The quality of life of the patient is severely affected by the physical, social, psychological variations which are undergoing hemodialysis. (16) In early stages, the patient is directed to follow a strict diet routine and proper bed rest but then, later on, that disease progresses. The patient is not able to cope with his normal work routine work which further leads to hospitalization of the patient, which then severely affect the financial condition of the patient and his family. These physical and psychological stresses can lead to delirium, depression, anxiety, suicide, uncooperative behaviour, sexual dysfunction, and psychosis. (17)

Psoriasis Patients:

Psoriasis is an inflammatory, chronic disorder that affects mainly the skin, always expecting systemic manifestations and distribution. The onset occurs before the age of 40 as a sharply demarcated scaly, red skin lesions, most often on the elbows, knees, scalp, hands, feet and joints considering osteoarticular involvement.

Individuals with psoriasis have drastic psychological and negative effects on their quality of life, but a handful of studies supports this link between Psoriasis and psychological effects. Depression, psychological stress and anxiety had known to decrease the quality of life. (18, 19, 20) Studies have shown that pruritis has a direct link to depression.(21) Pruritus, depression, stress and low quality of life have been associated with high anxiety in psoriasis patients. (22, 23)

Psychological well-being is well associated with the therapeutic success of individuals with psoriatic lesions. Implementation of cognitive behavioural therapy and management is proposed to deal with the psychological symptoms associated with psoriasis. (24) Intense psychological disorders are thought to be related to severe morbidity. Psoriasis like skin diseases plays a role in the impairment of facial features, which then leads to depression and stress, which causes a vicious cycle. As the disease is thought to be evolved during generations, it should be treated in a multidisciplinary manner by the outpatient clinic. Dermatologists represent the main pylon of all further treatment attitudes; They must analyze and observe the patient and further refer to the psychiatrist or psychologist which can then help the individual to overcome his disease and lead a satisfying life. More researches should be conducted to strengthen the relation between skin and psychology manifestations, which then helps to quantify the burden of psychological disorders for the patient and dermatologist.

Rheumatoid Arthritis:

Rheumatoid Arthritis (RA) Is a chronic inflammatory multifactorial disease affecting especially the joints with a prevalence of between 0.5%-1%. (25) Stress factors include pain, fatigue and disability (26), are commonly encountered challenges that may subsequently lead to psychological stress.(27) Various studies have enlightened the reasonable levels (21% to 70%) of anxiety in RA.(28) While there is considerable overlap (i.e., 69% shared variance) between anxiety and depression but the levels of anxiety are higher when depression is present (29), Both are supposed to be two different entities. (30) In RA patients, various studies have elaborated that the level of anxiety is more than depression (26,31), whereas others do not.(28,32) It is also supposed that both anxiety and depression have different mechanisms for influencing the RA. Some researchers have shown that both have a direct effect on the mechanism of pain, but the influence of anxiety is slightly more than the depression.(33) While anxiety appeared to increase exposure to stress, only depression influenced pain via stress. According to a tripartite model (30), it proposed that the symptoms of anxiety manifest through physical arousal, increase sensitivity to pain or sensations translated as pain. Depression due to loss of pleasure increases the susceptibility to the pain at times of stress (33) especially among those patients who have repeated bouts of major depression.(34) This elaboration also supports the stress process model, which proposed that susceptibility factors (such as anxiety and depression) may intensify the exposure or reaction to stress.(35) Thus, while closely associated depression, anxiety and stress are proposed to be different.

Chronic Obstructive Pulmonary Disease (COPD):

Studies in the past two decades have proposed that the patients of COPD with certain 2 or 3 comorbidities along with them are more likely to be hospitalized and die prematurely as compared to the patients of COPD without comorbidities. (36) Among these comorbidities, anxiety and depression are more prevalent and increase the morbidity of COPD patients to a reasonable increase level and also severely impair the quality of life of patients and decrease their persistence of taking medications. (37) The depression and anxiety that is unmanaged and under-recognized in COPD patients leads to the drastic effects on their physical functioning, social interaction, increase fatigue and health utilization.(38,39) It is quite difficult to identify depression and anxiety and treat them because their symptoms usually intermingle with those of the COPD. (40) It is crucial to identify depression and anxiety and develop a proper treatment plan for the patients to improve the quality of life of COPD patients and reduce their Healthcare utilization.

Chronic Diseases/Illnesses:

Chronic diseases are defined as conditions that express themselves for more than one year and also require optimum treatment and care and limitation of activities of the daily routine. (5) The term chronic is sometimes also applicable when the period of diseased lasts more than 3 months.

In 2015 the **World Health Organization** produced a report on non-communicable diseases, citing the four major types as. (6)

- Cancers
- Cardiovascular diseases, including cerebrovascular disease, heart failure, and ischemic cardiopathy
- Chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (COPD)
- Diabetes mellitus (type 1, type 2, pre-diabetes, gestational diabetes)

Variables:

A variable is a characteristic or feature that varies or changes within a study. These are further categorized into the following types:

Independent Variables:

An independent variable is a variable believed to affect the dependent variable. This variable is handled by the researcher to see if it makes the dependent variable change. In our discussion, our independent variable is **Chronic Illnesses.**

Dependent Variables:

The dependent variable is the variable a researcher is interested in. The changes to the dependent variable are what the researcher is trying to measure with all their fancy techniques. In our discussion, our dependent variable is **stress.**

DISCUSSION

Mechanism of the potential association of Stress with Chronic Illnesses:

A recent systematic review and meta-analysis of 25 studies with long-term follow-up revealed that the relationship between chronic illnesses and depression is likely to be bidirectional, as depression may be both a cause and a consequence of chronic diseases. However, the exact mechanisms linking chronic illnesses with depression and anxiety have not been identified. The interrelationship between smoking, depression and anxiety and these long term illnesses is unclear. Associations between anxiety disorders and chronic illnesses appear to be largely explained by confounding factors that play a vital role in the causation of this association between the two, such as poor financial conditions, unhealthy lifestyle, increased work burden, and certain others. Depression and anxiety may lead to fear, panic and hopelessness, low self-esteem, social isolation and dependence on caregivers, thereby initiating a vicious circle that perpetuates anxiety and depression. There is emerging evidence to suggest that low-grade

chronic inflammation mediates, in part, the association of depressive symptoms and respective disease symptoms. Increased inflammatory markers have been documented in both late-life depression and chronic illnesses. In a recent study of a population sample of older adults, elevated levels of the inflammatory biomarkers **interleukin-6** and **C-reactive protein** accounted in part for the association of depressive symptoms with pulmonary obstruction.

RESULTS:

The prevalence of anxiety and depression is elevated in the patients with both asthma (28%, 20%) and COPD (22%, 14%) in comparison to control group (16%, 4%) respectively. In females, anxiety was more frequent in comparison to males in asthmatics with highly significant statistical differences (p .002). At the same time, depression was common in males than females with highly significant statistical differences (p .001). In the COPD group, Males are more frequent with depression and anxiety with highly significant statistical differences for anxiety between males and females (p .004) and non-significant differences for depression. In (COPD) group, it was found that anxiety and depression have a strong negative correlation with pulmonary function and strong positive correlation with age, smoking index, several exacerbations per year and duration of disease. In contrast, in asthma and control groups, the correlations were weak. Geographically, anxiety and depression were more in AL-Khobar and Jeddah than Riyadh in asthmatic patients (P.01, 0.04) while no significant difference in the geographical distribution in COPD and control. (10)

On this vast topic regarding the correlation between stress and chronic illnesses, various studies have been performed all over the world for elaborating this noteworthy relation and using this further knowledge for dealing with diverse issues facing by the respective individuals. One of the core studies has been conducted in Saudi Arabia to take the research one step further. Following research play an important role in leading this struggle to the next heights:

Prevalence of anxiety and depression in patients with airway obstruction using the hospital anxiety and depression scale (HADS) in different localities of Saudi Arabia. In pulmonary outpatient clinics, the majority of the patients are representative of asthma and chronic obstructive pulmonary disease (COPD) and also attending frequently the primary care clinics. Life is further complicated by some psychiatric disorders, including anxiety and depression in chronically airway obstructed patients. This may bring the patient into a vicious circle of affecting each other. (7) Apart from this, other studies show that good mental health improves lung function and pulmonary health. (8),(9) The leading comorbidities in patients with chronic obstructive pulmonary disease (COPD) are anxiety and depression.(10) Necessary measures can be taken by the patients if there is awareness among them regarding the poor psychiatric conditions in patients with chronic obstructive pulmonary disease (COPD).

CONCLUSIONS:

Anxiety and depression are more commonly encounter by the patients of asthma and COPD as compared to the normal population. This leads to bad outcomes of both diseases. (10) Under-recognized and untreated co-morbid anxiety and depression in patients with chronic diseases have lethal consequences in the long-term, overwhelm the coping strategies of patients and their caregivers, and may enhance the utilization of healthcare services. There are certain shreds of evidence that shows promising results regarding the rehabilitation of the respective disease, adopting a healthy lifestyle, and psychological and antidepressant drug therapy in reducing anxiety and depressive symptoms in patients. However, these results and findings required further elaboration to examine their efficacy in well-controlled randomized controlled trials with larger samples and long-term follow-up.

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