

Research Paper

Comparative Study of Stress and Non Specific Musculoskeletal Pain among Adults

Dr. Arora Khushboo^{1*}

ABSTRACT

Study focuses on only pain related complications due to stress that are called Somatoform disorder, the relation of stress to Somatoform disorder that are being studied are Chronic Fatigue Syndrome(CFS) and Non Specific Musculoskeletal Low Back Pain. The study compares the relationship between low back pain, chronic fatigue syndrome and impact of emotional state (stress). A purposive sampling technique was used to collect the data from two OPD. The total sample size was 120 subjects with the age group of 25-35 and 36-45 years of both sexes. The statistical methods used were percentage and Karl Pearson Correlation method. The correlation between all the categories was significant at 0.05 and 0.01 level which shows that stress and low back pain is highly related in all age groups and sex. The male suffer more in stress and low back pain i.e. 66.6% in both categories 25- 35 and 36- 45 years. 73.4% male experience low back pain and 66.6% of stress. The study indicates that when stress is high then automatically chronic fatigue syndrome is high and vice versa. The percentage of stress in male and female is same in 25 – 35 years i.e. 60% in each. But the chronic fatigue syndrome male experience 46.6% where as female 26.6% in high categories. In 36- 45 years stress is more in males i.e. 66.6%, but in chronic fatigue syndrome female experience more i.e. 60% and male 26.6% only. The result of the present study indicates that male in all the categories experience more stress and chronic fatigue syndrome, stress and low back pain in two age groups. This shows very clearly that female coping strategies in all the categories are better than males. But, there is statically high correlation in all the four categories and as well as in gender.

Keywords: *Chronic fatigue syndrome, Low back pain, Stress, Tension myositis syndrome*

Stress is very common in modern times. Stress affects most people in some or other way. Acute stress leads to rapid changes through the body. Chronic stress can have real health problems like other diseases (Heart disease, immune system, and Gastric problem, Diabetes, Psychological Disorders and even Cancer). It can be experienced by external and internal factors. The study focuses on only pain related complications due to stress that are called

¹ Department of Clinical Psychology, Geetanjali Medical College and Hospital Udaipur, Rajasthan, India
[*Responding Author](#)

Received: January 10, 2018; Revision Received: February 27, 2018; Accepted: March 2, 2018

Comparative Study of Stress and Non Specific Musculoskeletal Pain among Adults

somatoform disorders, the relation of stress to somatoform disorders that are being studied are chronic fatigue syndrome(CFS) and non specific musculoskeletal low back pain.

Chronic Fatigue Syndrome (CFS) is a somewhat controversial disease due to its lack of objective findings in patients. CFS is unexplained, persistent or relapsing fatigue that is of new or definite onset; is not the result of ongoing exertion; is not alleviated by rest; and results in substantial reduction in previous levels of occupational, educational, social or personal activities. Some studies have been found to support the research are (2) Katharine A. Rimes, Joanna Ashcroft, Lauren Bryan, and Trudie Chalder. Emotional Suppression in Chronic Fatigue Syndrome: Experimental Study. *Health Psychology* (2016) American Psychological Association (2016), Vol. 35, No. 9, 979–986. CFS participants had lower observer-rated emotional expression than HC, despite greater distress and higher autonomic arousal. This may have implications for their ability to access social support at times of stress. As the degree of autonomic arousal was associated with short-term increases in fatigue in the CFS participants, this requires further investigation as a contributory factor for this condition. (3) Katie Thomas. Bailey Bosch. An Exploration of Impact of Chronic Fatigue Syndrome and Implications for Psychological Service Provision. Centre of International Health. The experience of CFS can be summarized as being devastating, isolating and as having a profound impact on all aspects of sufferer's life, particularly on their identity. Overwhelming, the participants in this study indicate that social support is greatly lacking in the experience of CFS and that there is a critical for the supportive psychological services as a part of a holistic treatment plan of CFS.

CFS is diagnosed on the basis of four or more of the following symptoms that persists or recurs during six or more consecutive months of illness and that do not predate the fatigue

- Self-reported impairment in short term memory or concentration
- Sore throat
- Tender cervical or axillary nodes
- Muscle pain
- Multi-joint pain without redness or swelling
- Headaches of a new pattern or severity
- Unrefreshing sleep
- Post-exertion malaise lasting over 24 hours

Low back pain is a very common health problem amongst population and a major cause of disability that affects work performances and well-being. Low back pain can be acute, sub acute or chronic. Though several risk factors have been identified such as occupational posture, depressive moods, obesity, body height or age, the causes of the onset of low back pain remain obscure and diagnosis difficult to make. The study (1)Byrns G, et al. *Appl Occup Environ Hyg*. Attributions, stress, and work-related low back pain. (2002) Byrns GE, et al. *AIHA J* (Fairfax, VA). 2002. Noted that the purpose of this research was to assess the association between worker attributions and LBP. Attributing LBP to internal causes may increase the worker's perceived control, whereas external attribution may cause distress. While both models appeared to be useful for

Comparative Study of Stress and Non Specific Musculoskeletal Pain among Adults

the study of low back pain, the R(2)(L) of the Demand-Control-Support model equalled only 11.9 percent, whereas the Attribution model equalled 26.2 percent. A common study was found to give a frame to the research was (4)Olivier B, MSc1 Mudzi W, MSc1 Mamabolo MV, MPH1 Becker PJ, PhD2. The Association between Psychological Stress and Low Back Pain among District Hospital Employees in Gauteng, South Africa. The aim of this study was to determine the point prevalence for LBP and the psychological stress experienced at work as a factor associated with the presence of LBP amongst staff employed at district hospital. Thus this study is very much needed and it aimed to compare the describe and explore the relationships between low back pain, chronic fatigue syndrome and role or impact of emotional state (stress).If the correlation of stress and chronic fatigue syndrome or stress and low back pain is established then it would be helpful for the diagnosis and treatment and can be a pioneer study.

Aim and Objectives

- The aim of the study was to compare the relationship between low back pain, chronic fatigue syndrome and stress. Objective of the study were to measure the correlation between stress and chronic fatigue syndrome and to measure the correlation between stress and low back pain

METHODOLOGY

The study was a cross-sectional study using a self administered questionnaire. The population for the study comprised of the patient from OPD of various hospitals. For the collection of sample purposive sampling technique was used. The total sample size was 120 which were divided into two different age groups and two different categories that were chronic fatigue syndrome and low back pain to measure stress. The inclusion criteria for the sample were working class patients from the age of 25 to 45 years. The statistical methods used were percentage and Karl Pearson Correlation method.

Description of sample

| Age Group | CFS | | LBP | | |
|-----------|------|--------|------|--------|------------|
| | Male | Female | Male | Female | |
| 25-35 | 15 | 15 | 15 | 15 | 60 |
| 36-45 | 15 | 15 | 15 | 15 | 60 |
| | 30 | 30 | 30 | 30 | 120 |

Study Design and Parameters

The study design was 2x2x2 factorial design. The independent variable of the study was chronic fatigue syndrome and low back pain, the dependent variable was stress and the controlled variable was working class (job or business) individual with the age of 25 to 45 years.

| Age group | CFS | | LBP | |
|-----------|--------|--------|--------|--------|
| | Male | Female | Male | Female |
| 25-35 | Stress | Stress | Stress | Stress |
| 36-45 | Stress | Stress | Stress | Stress |

Comparative Study of Stress and Non Specific Musculoskeletal Pain among Adults

Tools

General assessment Performa, Cohen Perceived Stress Scale assesses the degree to which people perceive their lives as stressful. High levels of stress are associated with poor self-reported health, elevated blood pressure, depression, and susceptibility to infection. Reliability: alpha at .78, Questionnaire for Chronic Fatigue Syndrome assess the severity of the fatigue syndrome in patients. Reliability: kappa coefficients at .70, Ronald Morris Questionnaire for Low Back Pain assess self-rated physical disability caused by low back pain. Test-retest reliability: 0.42 – 0.91. The tools used were reliable and valid.

RESULT

The correlation between all the categories were significant at 0.05 and 0.01 level which shows that stress and low back pain is highly related in all age groups and sex. The male suffer more in stress and low back pain i.e. 66.6% in both categories 25- 35 and 36- 45 years. 73.4% male experience low back pain and 66.6% of stress. Male excel in both the categories.

Table1 - Relationship between Stress and low back pain in males and females

| S. No. | Age Group | Sex | R | Percentage High (Stress) | Percentage Moderate (Stress) | Percentage High (LBP) | Percentage Moderate (LBP) |
|--------|-----------|--------|--------|--------------------------|------------------------------|-----------------------|---------------------------|
| 1 | 25 - 35 | Male | 0.90** | 66.6% | 33.4% | 66.6% | 33.4% |
| | | Female | 0.61** | 53.4% | 46.6% | 66.6% | 33.4% |
| 2 | 36 - 45 | Male | 0.94** | 66.6% | 33.4% | 73.4% | 26.6% |
| | | Female | 0.70** | 60% | 40% | 60% | 40% |

** Significant at 0.05 and 0.01 level

The correlation between all the categories are significant at 0.05 and 0.01 level which indicates that when stress is high then automatically Chronic fatigue syndrome is high and vice versa. The percentage of stress in male and female is same in 25 – 35 years i.e. 60% in each. But the chronic fatigue syndrome male experience 46.6% where as female 26.6% in high categories. In 36- 45 years stress is more in males i.e. 66.6%, but in chronic fatigue syndrome female experience more i.e. 60% and male 26.6% only.

Table 2 - Relationship between stress and chronic fatigue syndrome in males and females

| S. No. | Age Group | Sex | R | Percentage High (Stress) | Percentage Moderate (Stress) | Percentage High (CFS) | Percentage Moderate (CFS) |
|--------|-----------|--------|--------|--------------------------|------------------------------|-----------------------|---------------------------|
| 1 | 25 - 35 | Male | 0.88** | 60% | 40% | 46.6% | 53.4% |
| | | Female | 0.80** | 60% | 40% | 26.6% | 73.4% |
| 2 | 36 - 45 | Male | 0.77** | 66.6% | 33.4% | 73.4% | 26.6% |
| | | Female | 0.85** | 60% | 40% | 60% | 40% |

** Significant at 0.05 and 0.01 level

DISCUSSION

The socio-demographic characteristics of the present study were working class individuals which were divided into two age groups that are 25-35 and 36-45 years. These age groups are more susceptible to low back pain. Total sample size was 60. In the same type of study that is stress related back pain the (5) John Sarno, MD, a physician and professor of physical medicine and rehabilitation at New York University, has recently popularized the idea of stress-related back pain, which he terms “**Tension Myositis Syndrome**” (TMS), although the concept can be traced to as early as the 1820s. But today some doctors look primarily (and only) for structural "explanations" for back pain, convince their patient that the "finding" is the cause of the pain, implant fear in the patient, and then recommend “justifiable” treatment. However, if the true cause of the back pain is stress-related, then the multiple physical treatments will fail and cause the patient more distress.

The another study which is (4) The Association between Psychological Stress and Low Back Pain among District Hospital Employees in Gauteng, South Africa conducted by Olivier B have concluded that psychological stress experienced at work is associated with the presence of LBP. (6) The Peter O’Sullivan had conducted the study Characteristics of chronic non-specific musculoskeletal pain in children and adolescents attending a rheumatology outpatient’s clinic: a cross-sectional study concluded that the findings support multifactorial basis as psychosocial, lifestyle and physical factors were all found to play a role in the pain in subjects.

The present study also signifies that low back pain has strong relations with stress in regards to the term tension myositis syndrome.

The socio-demographic characteristics of the present study were working class individuals which were divided into two age groups that are 25-35 and 36-45 years. These age groups are more susceptible to chronic fatigue syndrome. Total sample size was 60. In the related study that is Emotional Suppression in Chronic Fatigue Syndrome: Experimental Study. Which was conducted by (2) Katharine A. Rimes has concluded as Chronic Fatigue Syndrome patients have higher autonomic arousal in the emotional distressing task. Higher levels of autonomic arousal were associated with greater increases in post task fatigue for the CFS patients.

In the other study that is An Exploration of Impact of Chronic Fatigue Syndrome and Implications for Psychological Service Provision which was conducted by (3) Katie Thomas. Bailey Bosch study indicates that social support is greatly lacking in the experience of CFS and that there is a critical for the supportive psychological services as a part of a holistic treatment plan of CFS.

The present study also signifies that there is a strong relationship of stress in CFS patients.

CONCLUSION

The result of the present study indicates that male in all the categories experience more stress and chronic fatigue syndrome, stress and low back pain in two age groups. This shows very

Comparative Study of Stress and Non Specific Musculoskeletal Pain among Adults

clearly that female coping strategies in all the categories are better than males. But, there is statically high correlation in all the four categories and as well as in gender.

Implications

This study is a pioneer for the effective treatment of low back pain and chronic fatigue syndrome because it shows strong relationship of stress with both variables. So the psychological interventions can be added to management plan.

Limitations

The study is limited to 25-45 years of adults of working class.

Ethical clearance

The study was conducted after the approval of research committee of the college, in the OPD of hospitals. The purpose and details of the study was explained to the study subjects and assurance was given regarding confidentiality of the data collected.

Acknowledgement

I sincerely acknowledge the guidance and help of Dr. D.M. Mathur (Prof. & Head Dep. Of Psychiatry) in conducting this study.

REFERENCE

- Boudewijn Van Houdenhove & Stefan Kempke & Patrick Luyten. Psychiatric Aspects of Chronic Fatigue Syndrome and Fibromyalgia. Published online: 30 March 2010 # Springer Science+Business Media, LLC 2010
- Byrns G, et al. Appl Occup Environ Hyg. Attributions, stress, and work-related low back pain. (2002) Byrns GE, et al. AIHA J (Fairfax, VA). 2002.
- Coen SJ, Sarno JE (1989), "Psychosomatic avoidance of conflict in Back Pain". The journal of American Academy of Psychoanalysis 17(3):359-76
- JA Knottnerus. Chronic Fatigue Syndrome. Gezondheidsraad Health Council of the Netherlands 2005; publication no. 2005/02E
- Kaplan and Sadock. Synopsis of psychiatry 11th edition
- Katharine A. Rimes, Joanna Ashcroft, Lauren Bryan, and Trudie Chalder. Emotional Suppression in Chronic Fatigue Syndrome: Experimental Study. Health Psychology (2016) American Psychological Association (2016), Vol. 35, No. 9, 979–986.
- Katie Thomas. Bailey Bosch. An Exploration Of Impact Of Chronic Fatigue Syndrome and Implications for Psychological Service Provision. (2005)
- Olivier B, MSc1 Mudzi W, MSc1 Mamabolo MV, MPH1 Becker PJ, PhD2. The Association between Psychological Stress and Low Back Pain among District Hospital Employees in Gauteng, South Africa. SA Journal of Physiotherapy 2010 Vol 66 no 2
- Peter O'Sullivan, Darren Beales, Lynn Jensen, Kevin Murray, and Tenielle Myers. Characteristics of chronic non-specific musculoskeletal pain in children and adolescents attending a rheumatology outpatients clinic: a cross-sectional study. BioMed Central
- William W. Deardorff, PhD, ABPP. Stress-Related Back Pain

How to cite this article: Arora K (2018). Comparative Study of Stress and Non Specific Musculoskeletal Pain among Adults. *International Journal of Indian Psychology*, Vol. 6, (1), DIP: 18.01.050/20180601, DOI: 10.25215/0601.050