



INVESTIGATIVE STUDY ON RELATIONSHIP BETWEEN NEUROTIC TRAITS & BACKACHE WITH A FOCUS ON THE IMPACT OF BACKACHE ON SELECTED ADJUSTMENT ISSUES.

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ABSTRACT

The focus during the course of study was to study different dimensions of selected neurotic traits and their relationship between backache and selected neurotic traits.

During the course of research more inferences were put into light as what were the areas where the people who have backache had associated difficulties and adjustment issues.

KEYWORDS : Neurotic Traits, Backache, Adjustment issues.

INTRODUCTION

Large area of human body is covered by back.^{7,8,10} It lies opposite to the chest defined by vertebral column the height and breadth supported by rib cage^{7,8,10} The spinal cord runs through the spinal canal which has some curvature and it gives shapes to the back.^{7,8,10} The ribcage extends from the spine at the top of back, the width of the back at the top is defined by scapula.^{7,8,10} The spine is bordered by several groups of muscles which aids in movement between the individual vertebrae and also facilitates complete movement of spine as a whole.^{7,8,10} Other movements of back muscles are associated with movements of neck and shoulders.^{7,8,10,13} The back gives complete support for the head and trunk of the body, strength in the trunk, flexibility and movement to body.^{7,8,10}

Lower Back Pain: It is a kind of musculoskeletal disorder.^{4,18} There can be many episodes like acute; sub-acute or chronic in duration.^{4,18} The causes of low back pain can be many.^{4,18} Back pain can be associated to injury to any part of the spine. Injury to muscles, ligaments, tendons cause sprain.^{4,12,15,18} These all conditions cause pain and inflammation.^{12,15}

Neuroticism: The neurotic disorders are distinct from psychotic disorders in that the individual with neurotic symptoms has a firm grip on reality, and the psychotic patient does not.^{1,2,9,16} There are several major traditional categories of psychological neurosis. These include:

Anxiety neurosis: Mental illness defined by excessive anxiety and worry, sometimes involving panic attacks and manifesting itself in physical symptoms such as tremor, chest pain, sweating, and nausea.¹⁶ • **Depressive neurosis:** A mental illness characterized by a profound feeling of sadness or

despair and a lack of interest in things that were once pleasurable.¹⁶ • Obsessive-compulsive neurosis: The persistent and distressing recurrence of intrusive thoughts or images (obsessions) and repetitive behaviours or mental acts (compulsions).¹⁶ • Somatization (formerly called hysterical neurosis): The presence of real and significant physical symptoms that cannot be explained by a medical condition, but are instead a manifestation of anxiety or other mental distress.¹⁶ • Neurasthenia: A condition that is characterized especially by physical and mental exhaustion usually with accompanying symptoms (as headaches, insomnia, and irritability), is believed to result from psychological factors (as depression or emotional stress or conflict), and is sometimes considered similar to or identical with chronic fatigue syndrome.^{1,2,9,16}

Review of Literature

Relationship between Back Pain and Depression (Currie and Wang, 2004). Is it difficult for you to understand the reason for your bad moods and feeling less energetic? Do you like to be lonely? Have you ever noticed that your peers and group members are backing away from spending time with you? Are day to day activities becoming more difficult for you? If the answer is yes to any of the above questions, then you may be suffering from depression. Chronic back pain and depression are two of the most common problems among modern day lifestyle which clinicians come across. But very few studies have compared the relation between them. There can be a close relation between stress and anxiety arising out of chronic pain and it can be a major cause of depression. It is already estimated by many researchers in different studies that depression and anxiety occur in twenty to fifty percent of the patients suffering from chronic back pain.

Major depression is thought to be four times higher in people with chronic back pain than in general population.³ A study by spine health specialists supports the said statement (William Dear Dorff, 2007). One of the research projects conducted shows that sixty one percent of people who have back pain also have depression in some form. Clinical evidence also estimates that depression is found to be twenty to thirty percent among people who have chronic pain. A medical advisor and a psychologist also opine that this is not unusual that people suffering from chronic back pain also have depression, A person who suffers from consistent back pain is also affected in three dimensions that are physical, mental and emotional. This kind of situation generally makes the life of person very difficult in everyday living. What increases the curiosity is that people those themselves come to clinicians and express that they are depressed which further implies that: A. That whether people suffering from back pain are under diagnosed with depression. All clinicians who are treating such patients suffering from back pain must look for signs or symptoms of depression.^{5,6} A study by Strunin and Boden (2004). He analysed the family consequences of back pain. During evaluation they see a lot of limitations on family and social roles. People at physical level are unable to do household works, while taking care of kids and entertainment with family. In many cases family and kids took over the responsibility of family which usually used to be carried by the person who is suffering from consistent back pain. These kinds of situations make people who are suffering from back pain depressed and they have direct or indirect stress in their family lives.¹⁷

Research Methodology

Aim: The focus during the course of study was to study different dimensions of selected neurotic traits and their relationship between backache and selected neurotic traits. Although we will be discussing selected and chosen variables and will be discussing in relation to them.

Objectives of the entire study:

A. To study neuroticism among people suffering from back pain on following dimensions:

- **Hysteria, Anxiety neurosis, Neurasthenia, Reactive depression, Obsession compulsion**

B. To study depression among people suffering from back pain.

C. To study adjustments among people suffering from back pain on following dimensions:

- **Home, Health, Social, Emotional, Occupational.**

D. To Study neuroticism among people suffering from back pain between males and females on following dimensions:

- **Hysteria, Anxiety neurosis, Neurasthenia, Reactive depression, Obsession compulsion**

E. To Study depression among people suffering from back pain between males and females.

F. To Study adjustment among people suffering from back pain between males and females on following dimensions:

- **Home, Health, Social, Emotional, Occupational.**

Research Design

The research design was Correlational research design where the relationship has been seen with the same group of samples with different factors. The dependent variable was back pain and independent variables were depression, neuroticism and adjustment.

Research Hypothesis

H₀1. There will not be neuroticism among people suffering with back pain on following dimensions:

- Hysteria, Anxiety neurosis, Neurasthenia, Reactive depression, Obsession compulsion

H₀2. There will not be depression among people suffering from back pain.

H₀3. There will not be adjustment problems among people suffering from back pain on dimensions:

- Home, Health, Social, Emotional, Occupational.

H₀4. There will not be neuroticism among males and females suffering from back pain on following dimensions:

- Hysteria, Anxiety neurosis, Neurasthenia, Reactive depression, Obsession compulsion

H₀5. There will not be depression among males and females suffering from back pain.

H₀6. There will not be adjustment problems among males and females suffering from back pain on following dimensions:

- Home, Health, Social, Emotional, Occupational.

Technique of Data Collection

Face to face fixed response questionnaire were used for data collection.

A set form of questionnaires having reliability, validity and generalization were used for data collection to see level of neuroticism, depression and adjustment domain among people who were suffering from back pain. The questionnaires were very much indicative to study and measure the domains selected for study. All samples were personally interviewed in a professional way and utmost care was taken to rule out any kind of bias from interviewer's point of view. All the questionnaires which were used were structured questionnaire in nature. With respect to the type of research conducted all fixed response questionnaire's majorly covered domains in various angles to be analyzed. First of all a friendly rapport was established with the subject. After doing so, the subject will be made to feel free and comfortable about the nature of work. The subject was asked to record his/her responses on an individual level. The same pattern or procedure was followed for every subject and the data will be

collected in this manner. Informed consent, due process and protocols were properly followed during this process.

Sampling Methods

Purposive or judgemental sampling was used for collecting samples as it was based on the typicality of cases that will be included in the sample.

Purposive or Judgemental sampling is a kind of Non-probability sampling method and it was deliberately selected concerning the others items as supreme.¹¹ Since the main aim of sampling is very selective regarding the people who were suffering from back pain between a specific age group as well as people who were suffering from back pain between a specific period of time. There were couple of secondary factors involved also in selection of patients like those where the back pain was not due to any neurological reason reported and being treated by the clinician also the person was not under any kind of psychiatric or psychological intervention.

Sample Size

The total sample size was 120 people suffering from back pain. The sample was further divided into 60 males and 60 females. The samples for research were collected from Clinical Setup of Specialist who specialized in Physical therapy treatment. The patient population in local area was coming for back pain treatment of different kinds refereed by orthopaedic specialist or directly to physiotherapist. After Following all Protocols and Processes, I have used purposive sampling and judgemental method for all patients that wanted to screen as per the requirement of my study.

Inclusion Criteria

1. Diagnosed patients with back pain from the past six months and more will be included.
2. Diagnosed patients with back pain within the age group of 25-40 years will take up for research study.
3. Diagnosed patients with back pain of both the genders will be included in the research study.
4. Only patients who were willing and able will be included in the study.

Exclusion Criteria

1. Patients suffering from back pain from less than 6 months will be excluded from the study.
2. Patients who were below the age of 25 years and more than 40 years will be excluded from the study.
3. Patients who were suffering from and other psychological and neurological problem only will exclude from study.
4. Patients who were not willing & uncooperative were also excluded from the research study.

STATISTICAL ANALYSIS & APPLICATION

“T” test used to find out the significant difference in order to analyse the data.¹¹

The t-test assesses whether the means of two groups are *statistically* different from each other.¹¹ A t-test is any statistical hypothesis test in which the test statistic follows a Student's *t* distribution if the null hypothesis is supported.¹¹ It can be used to determine if two sets of data are significantly different from each other, and is most commonly applied when the test statistic would follow a normal distribution if the value of a scaling term in the test statistic are known.¹¹ When the scaling term is unknown and is replaced by an estimate based on the data, the test statistic (under certain conditions) follows a Student's *t* distribution.¹¹

ANOVA is done to see the inter correlations among the variables.¹¹

Analysis of variance (ANOVA) is a collection of statistical models used to analyze the differences between group means and their associated procedures (such as "variation" among and between groups).¹¹ In the ANOVA setting, the observed variance in a particular variable is partitioned into components attributable to different sources of variation.¹¹ In its simplest form, ANOVA provides a statistical test of whether or not the means of several groups are equal, and therefore generalizes the *t*-test to more than two groups.^{11,14} As doing multiple two-sample *t*-tests would result in an increased chance of committing a statistical type I error, ANOVAs are useful in comparing (testing) three or more means (groups or variables) for statistical significance.¹¹

Tools for Data Collection

1. Medico Psychological Questionnaire by Dr. Bharat Raj to check level of Neuroticism.
2. Bells Adjustment Inventory to Assess level of Adjustment among areas.
3. Beck's Depression Inventory to see level of Depression among individuals.

Description

1. Medico Psychological Questionnaire: Also Known as MPQ by Dr. Bharat Raj helps in identification of neurotic cases among general population. It enables to obtain total score reflective of 'general neuroticism' which is interpretable on 'emotional adjustment –emotional maladjustment continuum' as described by Eysenck and others. Main categories of neuroticism it covers are following:

1. Hysteria
2. Neurasthenia
3. Anxiety Neurosis
4. Reactive Depression
5. Obsession Compulsion

Administration: The Questionnaire consists of 50 items selected from earlier instruments for measuring neurosis like rating scales from R.B. Cattell , A guide to mental testing 1965, Maudsley Medical Questionnaire 1953 , Coleman's Abnormal Psychology and Modern life 1972 ,How psychiatry Helps 1965 etc. Each item is to be answered by encircling Yes or No Categories. After all items answered they were calculated and total number of YES were counted and total is multiplied by 2. The total number of Doubtful (?) answers were calculated and multiplied by 1. The total score on the test is the sum of above two.

Interpretation: Any individual obtains a score of more than 46 is considered to be neurotic. Any individual falling in the range of 17- 45 should be considered as falling in normal range. any individual obtaining a score of 16 or less should be considered emotionally stable and well balanced.

Reliability: The reliability has been obtained by test – retest method. The correlations turned out to be +0.71, the value being significant at 0.05 and 0.01 levels of probability.

Validity: The value of correlation turned out to be +0.68, being significant at 0.05 and 0.01 level of probability. By administering Eysenck Personality inventory and Medico psychological Questionnaire to a group of 120 normal's the scores were correlated. This point out good validity of test.

2. Bells Adjustment Inventory: The adult form of adjustment inventory provides 5 measures on personal and social adjustment:

1. Home Adjustment
2. Health Adjustment
3. Social Adjustment
4. Emotional Adjustment
5. Occupational Adjustment

Administration: It is a self-administering inventory. The examiner reads the instructions to the subject. It is successful in counselling and interpretation of problems which were stated above on 5 domains. Suitable to be used in both sexes. The total score may be used to indicate general adjustment status.

Interpretation: To obtain the score on home adjustment take scoring stencil entitled home and lay the column for page 2 on page 2 at the top and the bottom of stencil were superimposed on the corresponding figures of the test. Then count the number of instances where the vertical marks on scoring stencil fall immediately over a circle on the test, writing this total at the bottom of page two or keep it in memory. Obtain scores of all dimensions in same manner. According to manual reference from The adjustment inventory on occupational adjustment domain Individuals who score less tend to be well pleased with their present job as compared to high scores.

Example taken from Occupational Adjustment Domain Reference Manual (The Adjustment Inventory)

Description	Score Range	
	Men	Women
Excellent	0-1	0-1
Good	2-4	2-4
Average	5-13	5-13
Unsatisfactory	14-17	14-17
Very Unsatisfactory	Above 17	Above 17

Norms: High scores on any dimensions tend to show unsatisfactory adjustment to their home surroundings, unsatisfactory health adjustment, retiring in social contacts and submissive, unstable emotionally & dissatisfied with their present occupations.

Reliability: It is done by correlating odd and even items then applying Spearman-Brown prophecy formulae.

1. Home Adjustment - 0.91
2. Health Adjustment - 0.81
3. Social Adjustment – 0.88
4. Emotional Adjustment – 0.91
5. Occupational Adjustment – 0.85
6. Total score -0.94

Validity: The inventory has been validated in 2 ways:

First the items were selected in terms of degree to which they differentiated between upper and lower fifteen percent of individuals in distribution of adult scores. Only those items which were clearly differentiated between groups were included in inventory.

Secondly it has been selected through 'very well and very poor' adjusted groups of individuals by specialists in adult counselling and a determination of degree to which the inventory differentiates among them.

3.Becks Depression Inventory: The Beck Depression Inventory (BDI, BDI-1A, BDI-II), created by Aaron T. Beck, is a 21-question multiple-choice self-report inventory, one of the most widely used instruments for measuring the severity of depression. Its development marked a shift among health care professionals, who had until then viewed depression from a psychodynamic perspective, instead of it being rooted in the patient's own thoughts.

Administration: Participants were asked to rate how they have been feeling for the past two weeks

Interpretation: It contains 21 questions; each answer being scored on a scale value of 0 to 3. Higher total scores indicate more severe depressive symptoms. The standardized cut-offs used differ from the original:

0–13: minimal depression

14–19: mild depression

20–28: moderate depression

29–63: severe depression.

Reliability: The test is also shown to have a high one-week test-retest reliability (Pearson $r = 0.93$), suggesting that it is not overly sensitive to daily variations in mood. The test also has high internal consistency ($\alpha = .91$)

Validity: One measure of an instrument's usefulness is to see how closely it agrees with another similar instrument that has been validated against clinical interview by a trained clinician. In this respect, the BDI-II is positively correlated with the Hamilton Depression Rating Scale with a Pearson r of 0.71, showing good agreement.

DATA ANALYSIS & Conclusion

1. Neuroticism and Back Pain

A. Results concluded that there were neurotic features among people suffering from back pain on Hysteria, Anxiety neurosis, Neurasthenia, Reactive depression & Obsession compulsion dimensions.

B. Gender analysis have shown that there were neurotic features among people suffering from back pain on Hysteria, Anxiety neurosis, Neurasthenia, Reactive depression & Obsession compulsion dimensions.

Data obtained & correlating with hypothesis The "Neurotic level" of females and males having mild, moderate and severe level among back pain patients indicates that the difference was prevalent in Reactive depression more than the Anxiety, Hysteria, Neurasthenia and Obsession-compulsion. Females were more affected as compared to the sustaining in males.

Significant difference in "Neurotic level" of males having mild and moderate level among back pain patient was prevalent in Anxiety, Neurasthenia and Reactive depression more than the hysteria and Obsession-compulsion. Males suffering from mild feature were less affected as compare to the moderate feature sustaining in males. The "Neurotic level" of males having mild and severe level among back pain patient indicates that the difference was prevalent in all the factors Anxiety, Neurasthenia, Reactive depression, Hysteria and Obsession-compulsion. Males suffering from mild features were less affected as compare to the severe feature sustaining in males. The "Neurotic level" of males having

moderate and severe level among back pain patients indicates more difference in Anxiety and Reactive depression than the Hysteria, Neurasthenia and Obsession-compulsion. Males suffering from moderate feature were less affected as compare to the severe feature sustaining in males. During further detailed analysis The "Neurotic level" of females having mild and moderate level among back pain patient indicates that the difference was prevalent in Hysteria and Reactive depression more than the Anxiety, Neurasthenia and Obsession-compulsion. Females suffering from mild features were less affected as compare to the moderate feature sustaining in males. The "Neurotic level" of females having mild and severe level among back pain patient indicates that the difference was prevalent in all the factors Anxiety, Reactive depression, hysteria, Neurasthenia and Obsession-compulsion. Females suffering from mild features were less affected as compare to the severe feature sustaining in females. The "Neurotic level" of females having moderate and severe level among back pain patients indicates that the difference was prevalent in obsession-compulsion and Reactive depression more than the hysteria, Neurasthenia and reactive depression. Females suffering from moderate feature were less affected as compare to the severe feature sustaining in females.

2. Depression and Back Pain

A. This was found that there is depression among people suffering from back pain.

B. With Gender analysis the results have shown that there was depression among males and females suffering from back pain.

Supporting scientifically the results obtained and correlating with hypothesis. The mean score of depression for males was 24.18, while it was 36.01 for females. The obtained means of female was found to be relatively higher than that of male. Further, t testing showed that the difference between the means was found to be significant. Thus, the data obtained in the present study revealed that the tendencies and symptoms of depression among female than the male patients of chronic back pain were experienced with a higher frequency / intensity.

3. Adjustment and Back Pain

A. Results concluded there were adjustment problems among people suffering from back pain on Home, Health, Social, Emotional, Occupational dimensions.

B. Gender analysis have shown that there were adjustment problems among males and females suffering from back pain on Home, Health, Social, Emotional, Occupational dimensions. Data obtained & correlating with hypothesis. Research revealed that across all Dimensions in adjustment problems with females and males suffering from back pain the significant difference was found in social, health, home, educational and occupational factors. Females were more affected as compare to the male in all the adjustment level.

We found significant difference in all the adjustment factors in the mild and moderate category of the males suffering from back pain. The difference was prevalent in social, emotional and occupational adjustment more than the health and home adjustment factor. Males suffering from mild depressive feature were less affected as compare to the moderate feature sustaining male. Between mild and severe category of the males suffering from back pain the difference was prevalent in social, emotional and occupational adjustment more than the health and home adjustment factor. Males suffering from mild depressive feature were less affected as compare to the severe feature sustaining male. In the moderate and severe category of the males suffering from back pain the difference was prevalent in health, social, and home more than emotional and occupational adjustment factors. Males suffering from moderate depressive feature were less affected as compare to the severe feature

sustaining male. Combined in all the adjustment factors in the mild, moderate and severe category of the males suffering from back pain the difference was prevalent in social, emotional and occupational, health and home adjustment factor. Males suffering from mild depressive feature were less affected as compare to the moderate and severe feature sustaining male. Further analysis in adjustment factors with mild and moderate category of the females suffering from back pain indicated the difference was prevalent in social, emotional and occupational adjustment more than the health and home adjustment factor. Females suffering from mild depressive feature were less affected as compare to the moderate feature sustaining male. In the mild and severe category of the females suffering from back pain the difference was prevalent in social and occupational adjustment more than the health, emotional and home adjustment factor. Females suffering from mild depressive feature were less affected as compare to the severe feature sustaining male. In the moderate and severe category of the females suffering from back pain the difference was prevalent in social and occupational adjustment more than the health, emotional and home adjustment factor. Females suffering from moderate depressive feature were less affected as compare to the severe feature sustaining female. We found in all the adjustment factors in the mild, moderate and severe category of the females suffering from back pain the difference was prevalent in social, emotional, occupational, health and home adjustment factor. Females suffering from mild depressive feature were less affected as compare to the moderate and severe feature sustaining male.

REFERENCES

- [1].Baron, Robert, A. (2001).*Psychology*. New Delhi: Pearson Hall.
- [2].Cowen, Philip, Harrison, Paul&Gelder, Michael (2006).*Oxford textbook of psychiatry*.Delhi: Oxford university press.
- [3].Currie,R.,S.,Wang,L.J.,(2004). *Chronic Back pain and Major Depression in General Canadian Population*.Retrieved October 15, 2012, from https://www.somasimple.com/pdf_files/lbp_depression.pdf
- [4].Downie, Patricia, A. (1992).*Cash's textbook of orthopaedics and rheumatology for physiotherapists*. New Delhi: Jaypee.
- [5].Deardorff,W.,(2004, October).*Depression and Chronic Back Pain*. Retrieved March 24, 2013, from <http://www.spine-health.com/blog/back-pain/chronic-low-back-pain-incidence-rising-obesity-depression-among-suspected-causes>
- [6].Deardorff,W.,(2004, October).*Depression can lead to Chronic Back Pain*. Retrieved October 29, 2013, from <http://www.spine-health.com/conditions/depression/depression-can-lead-chronic-back-pain>
- [7].(2012,March).*Spine Anatomy*. Retrieved November 22, 2013, From <https://www.orthopaedicsone.com/display/Main/Spine+anatomy>
- [8].Elizabeth,Quinn.*structure of lower and upper back*. Retrieved June 20, 2011, from <http://sportsmedicine.about.com/cs/back/a/back1.htm>
- [9].Hilgard's & Atkinson (2003).*Introduction to psychology* .Bangalore: Thomson Learning, Inc.
- [10].Kotwal, Prakash& Joshi, Jayant (1999).*Essentials of orthopaedics and applied physiotherapy*. New Delhi: Elsevier.
- [11].Kothari,C.R. (2004).*Research Methodology Methods and Techniques*. New Delhi: New Age International Private Limited.
- [12].Mohan, Harsh (2000). *Textbook of pathology*. New Delhi: Jaypee.
- [13].Peter, Ullrich.*Lower back pain and various pathologies*.Retrieved June 18, 2011, from <http://www.spine-health.com/conditions/lower-back-pain/lower-back-anatomy>
- [14].(2013).*Research Design* .Retrieved November 15, 2012, from

https://en.wikipedia.org/wiki/Research_design

[15]. Sircar, S. (1999). *Questions and answers in medical physiology*. New Delhi: CBS.

[16]. Sadock's & Kaplan (2007). *Synopsis of psychiatry*. New Delhi: Wolters Kluwer India Pvt. Ltd.

[17]. Strunin, L., & Boden, L. I. (2004). *Family consequences of chronic back pain*. *Social Science & Medicine*, 58(7), 1385–1393. Retrieved October 29, 2013, from <https://psycnet.apa.org/record/2004-12179-011>

[18]. William, Shiel Jr., *various kinds of back pain*. Retrieved February 15, 2011, from http://www.medicinenet.com/low_back_pain/article.htm