

# A Comparative Study of Cognitive Distortion Among Mild and Severe Migraine Patients

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## Abstract

Migraine is a kind of headache which induced various types of problems in patients. Cognitive distortion is one the worst impact of migraine. The term cognitive distortion refers the individual's negative thoughts towards their environment. The aim of this research is to know the level of migraine and its impact on cognitive distortion. 62 migraine patients were selected from different hospitals of Ranchi. The Migraine Disability Assessment Test (MIDAS) was applied to know the severity level of migraine and Cognitive Distortion Scale (CDS) was applied to know the cognitive distortion in patients. After analysis of data it was found that the number of severe migraine patients was higher and they have higher level of cognitive distortion.

**Keywords:** Mild migraine, Severe migraine, Cognitive distortion

## Introduction

Migraine is very common types of headache. Feeling of pain on one side of the head, nausea, vomiting, irritation towards light (photophobia), sound (Phonophobia) and smell are the major symptoms of migraine which badly influence the health and behaviour of a person. In other words, Migraine is a recurrent throbbing headache that typically affects on one side of the head. It is the result of specific changes within the brain. It is a complex condition with various types of symptoms. The symptoms of migraine may vary from person to person and individuals may also feel different symptoms during different attacks. People describe migraine pain as pulsating, throbbing, perforating, pounding, and debilitating. Generally the symptoms of migraine roughly appear between 4 to 72 hours. It repeat again and again in patients which completely disturbs their life. Thus their work, family and social lives are badly influenced by it. According to the survey of WHO, migraine is ranked 19<sup>th</sup> among all diseases causing disability and is the 12<sup>th</sup> leading cause of years lived with disability among females of all ages worldwide.

According to Journal of Neuroscience (2015) –Migraine is a common, multi -factorial, disabling, recurrent, hereditary neurovascular headache disorder.

Charles (2017) – Migraine is common and disabling disorder. The diagnosis, treatment and preventions of migraine depending on it's frequency and severity.

**Common symptoms of migraine-**

- Feeling pain in eyes, face or neck.
- Sensitivity towards light, distorted vision or seeing flashes of light.
- Nausea or vomiting.
- Aura or sensitivity to sound.
- Irritability, nasal congestion or tenderness.
- Acute, frequent or throbbing headache.
- Allodynia (touch sensitivity).
- Dizziness or vertigo.
- Head throbbing or pulsating.

Cognitive distortion is one of the poorest impacts of migraine in patients. At first Aron T. Beck described about various types and aspects of cognitive distortion in his book “The Feeling Good Handbook” in 1989. His student Devid D. Burns also studied on cognitive distortion. The word cognitive distortion refers negative thinking towards one’s own- self or about external world. The person having cognitive distortion lost the ability to perceive reality in any situation and only focuses on the negative aspects. Consequently their mental state becomes anxious and depressed. They think that they are useless and external world is also very bad. They never enjoy their life. Life becomes very difficult for them. They have difficulties in processing information. They have so much negative thinking regarding their self and external world. It has been also found that migraine patients have irrational ideas, thoughts and attitude that distort their perception of reality, usually in a negative way.

Rhee (2000) found that girls tended to report more headaches than boys. Headache was associated with depression and low self- esteem.

Shnek, Irvine, Stewart et. al (2001) coded that cognitive distortions was significantly related to depressive symptoms.

Farmer, Cady, Bleiberg et al. (2001) found that migraine badly influences the cognitive factors like reaction time, concentration, working memory, visual- spatial processing, alertness etc.

Santangelo, Russo, Trojano et al. (2016) studied migraine without aura patients and found that they have cognitive impairments such as attention, remembering and visuo-spatial problems in comparison to healthy subjects.

Rnic, Dozois & Martin (2016) found that Cognitive distortion was negatively correlated with affiliated and self-enhancing humor. It was positively correlated with aggressive and self-defeating humor.

**Objectives & Hypotheses****Objectives**

- To assess the level of migraine among respondents.
- To compare mild and severe migraine patients in terms of cognitive distortion.

**Hypotheses**

- The Level of migraine among respondents would be different.
- There would be significant difference between mild and severe migraine patients in terms of cognitive distortion.

**Methodology**

**Sample**

62 diagnosed migraine patients ‘mean age 35’ were selected by purposive Sampling method, from Ranchi Institute of Neuro- psychiatry and Allied Sciences (RINPAS), Central Institute of Psychiatry (CIP) and Rajendra Institute of Medical Sciences (RIMS).

**Tools**

- **Personal Data Schedule (PDS)**

A short PDS was used to get essential information about the Samples, such as sex, age, marital status, educational level, religion, caste, locality, nature of family, income etc.

- **The Migraine Disability Assessment Test (MIDAS) (Hindi version)**

This scale was developed by Stewart and Lipton in 1999 and Hindi adaptation was done by Ratish juyal, Rajesh verma, Ravindra kumar Garg, Rakesh Sukla, Atul Agrawal, Manish kumar singh in 2010. This scale is useful to measure the impact of headache in life and to determine the level of pain and disability. In this research this scale is used to know the level of disability in migraine patients. This scale consists of seven items. The items are related to missing days in work/school, household works & social leisure activities and missing days on the account of reduction of productivity level. There are no any alternatives. Respondent has to answer number of days which they feel over last three days as a response. Total score is calculated by adding the total number of days on five items. The level of disability has been determined according to the below table.

MIDAS Score	Definition
0-5	Little or no disability
6-10	Mild disability
11-20	Moderate disability
21+	Severe disability

The test retest reliability of the scale was 0.94 and cronch-bach alpha reliability was 0.90 and validity was 0.91.

- **Cognitive Distortion Scale (CDS)**

This scale was created by Dr. Devendra Singh Sisodia and Mr. Dharmendra Sharma. This scale is useful for screening cognitive distortion. In this research it was used to know the level of cognitive distortion in adults. The scale consists of 25 items and all items are in Hindi language. This scale is based on likert five point scale and there are five options for every item- Strongly agree, Agree, Uncertain, Disagree and Strongly disagree. Score 5, 4, 3, 2 and 1 are given for every item respectively. The sum of scores on every item represents the level of cognitive distortion. The scores and their interpretations are given according to below table-

Scores	Interpretation
25-40	Very low cognitive distortion
41-60	Low cognitive distortion
61-90	Moderate cognitive distortion
91-110	High cognitive distortion
111-125	Very high cognitive distortion

Individual with high score on the scale represents high level of cognitive distortion. This scale is available for belonging to all age groups. There is no time limit for completion of the scale. Most respondents approximately take 15-20 minutes to complete the scale.

Reliability of the scale was determined by Test-retest method and internal consistency method. The test-retest reliability was 0.65 and internal consistency was 0.79 respectively. The scale has high content validity. The scale was validated against the external criteria and coefficient was 0.71.

**Procedure**

At first authentic permission has been taken to apply psychological scales (PDQ, MIDAS and CDS) on diagnosed migraine patients from the directors of RIMS, CIP & RINPAS hospitals of Ranchi. Then the process of data collection has been started when the diagnosed migraine patients came out from the clinic. Firstly every patient was intimated about the goals of this research and other necessary information which he/she wants to know. Thus patient was established a workable rapport then they were administered the scales. The scales were filled by the patients their own-self individually.

**Statistical analysis of data**

After completing the data-collection of 62 samples, all data was feed in SPSS version 16 and Percentage, t-test was used for the treatment of data. Then result has been drawn accordingly.

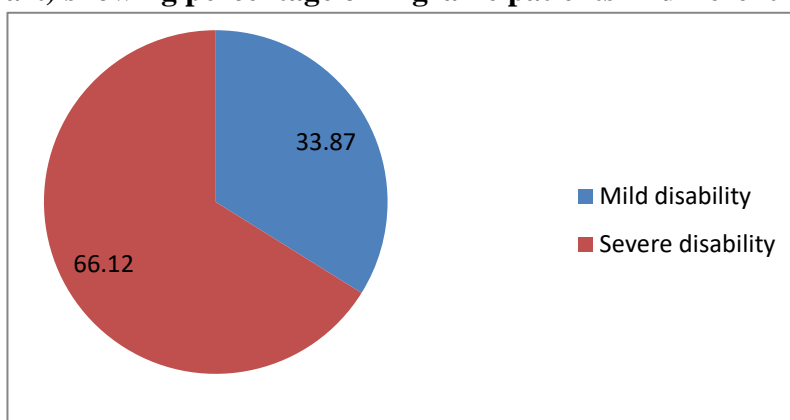
**Result and Discussion**

**H1- The level of migraine would be differ significantly among respondents.**

**Table-1 Distribution of migraine patients in different level of disability**

Disability level	Number	Percentage
Mild disability	21	33.87
Severe disability	41	66.12

**Graph-1(Pie-chart) showing percentage of migraine patients in different level of disability**



Above table and pie-chart shows that the number of mild and severe migraine patients are 21 and 41 respectively. This is clear that the number of severe migraine patients is higher than mild patients. We can say that level of migraine are significantly differ among respondents. Thus the proposed hypothesis is proved.

Every person has different level of stress and anxiety because they have different life style and have different ability to face any situation. Some people have stability in their nature. Thus the level of any disease has been different among patients. Therefore this type of result has been found. Stewart, Lipton, Celentano et al. (1992) found in his study that patients had severe to moderate disability. Clarke, Millan, Sondhi et al. (1995) found that there were majority of severe to moderate migraine patients, only 6% patients were from mild category. Dasbach, Carides, Gerth et al. (2000) also supports the result.

**H2-There would be significant difference on the level of migraine in terms of cognitive distortion.**

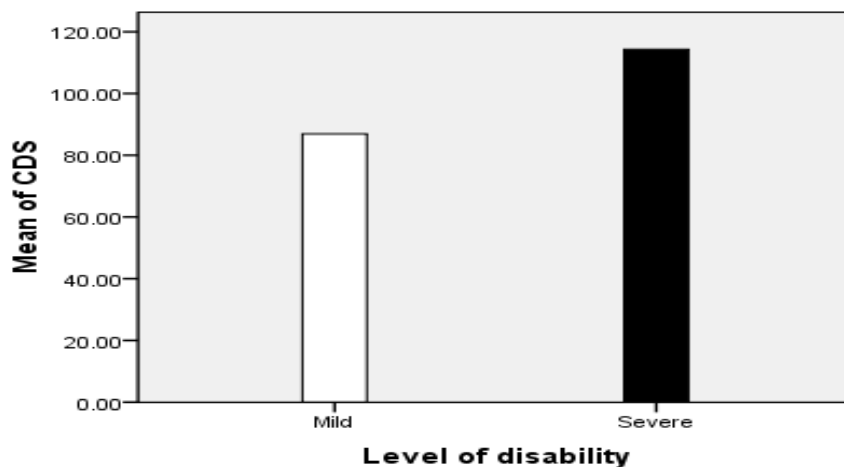
**Table- 2**

Comparison of mild and severe migraine patients in terms of cognitive distortion

Group	N	Mean (CDS)	SD	t-value	P
Mild disability	21	86.90	7.899	13.324	0.01
Severe disability	41	114.29	7.537		

13.324\*\*

**Graph- 2 (Bar-diagram) showing Mean difference of cognitive distortion scale between mild and severe migraine patients**



Above table and bar diagram show that Mean score of severe migraine patients on cognitive distortion scale is higher (114.29) than mild migraine patients (86.90). t-value is 13.324 which is significant on 0.01 level. This is clear that severe migraine patients have significantly higher level of cognitive distortion in comparison to mild migraine patients.

The level of disease in severe patients is very high in comparison to mild patients. Therefore it creates higher cognitive distortion in severe patients. Terwindt, Anand & Sharma (2007) coded that severe migraine attack badly influences on function, daily life such as work, family and social relationships. Shnek, Irvine, Stewart et. al (2001) coded that cognitive distortions was significantly related to depressive symptoms.

**Conclusion**

Conclusively we can say that most of the migraine patients are suffering from severe disability and seve-

ity creates higher level of cognitive distortion in patients.

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