

Research Paper

## Rorschach Study of Patients with Migraine: A Comparative Study

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### ABSTRACT

Migraine is a chronic and disabling neurological disorder often associated with personality traits and emotional disturbances. This study aimed to assess and compare the personality traits of migraine patients and healthy controls using the Rorschach Inkblot Method using Rorschach clusters: Control and Stress Tolerance, Situational Related Stress, and Cognitive Mediation, and other psychological assessments. A cross-sectional study was conducted with 40 participants (20 migraine patients and 20 healthy controls). Findings revealed that migraine patients exhibited higher levels of neuroticism, emotional distress, and maladaptive coping mechanisms compared to controls. Results also indicated significant differences in cognitive mediation, affect processing, and highlighting the role of personality traits in the experience and management of migraine. These findings have implications for psychological interventions targeting personality characteristics to improve migraine treatment outcomes.

**Keywords:** Rorschach Study, Patients with Migraine, Comparative Study

Migraine is a complex neurological disorder characterized by recurrent headaches and associated symptoms such as nausea, vomiting, and sensitivity to light and sound (Kaplan & Sadock, 2009). Beyond its physiological components, research has suggested that psychological factors, including personality traits, play a significant role in the onset, severity, and chronicity of migraines (Schmidt et al., 1986). The concept of a "migraine personality" has been explored in clinical settings, describing individuals with heightened emotional sensitivity, perfectionism, and difficulties in stress regulation (Wolff, 1937).

Personality assessment tools, including projective techniques such as the Rorschach Inkblot Method (RIM), have been utilized to examine cognitive, emotional, and interpersonal characteristics in individuals with migraine (Exner, 2003). This study aims to evaluate personality traits in migraine patients compared to healthy controls to determine potential psychological vulnerabilities and their implications for treatment.

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## METHODOLOGY

### Study Design and Participants

This study employed a cross-sectional design and was conducted at the Central Institute of Psychiatry, Ranchi. A total of 40 participants were recruited, including 20 patients diagnosed with migraine (as per ICHD-3 criteria) and 20 healthy controls. Participants were selected through purposive sampling.

### Inclusion Criteria

- **Migraine group:** Diagnosed with migraine (with or without aura), aged 18-50 years, minimum education level of 6th grade, and provided informed consent.
- **Control group:** Healthy individuals scoring  $\leq 3$  on the General Health Questionnaire (GHQ-12), with no psychiatric or neurological conditions.

### Exclusion Criteria

- Any psychiatric comorbidity
- Neurological disorders other than migraine
- Intellectual disability or developmental delays
- Substance use disorders (excluding nicotine and caffeine)

### Measures

1. **Socio-Demographic Data Sheet:** Captured age, gender, education, income, and marital status.
2. **General Health Questionnaire (GHQ-12):** Screened for psychological distress (Goldberg et al., 1988).
3. **Hamilton Rating Scale for Depression (HAM-D):** Assessed depressive symptoms (Hamilton, 1960).
4. **Hamilton Anxiety Rating Scale (HAM-A):** Evaluated anxiety symptoms (Hamilton, 1959).
5. **Migraine Disability Assessment Scale (MIDAS):** Measured the impact of migraines on daily life (Stewart, 2001).
6. **Rorschach Inkblot Method (RIM):** Assesses cognitive processing, emotional regulation, and stress tolerance.

### Procedure

Participants completed the socio-demographic questionnaire, followed by GHQ-12 screening (for controls). The experimental group underwent migraine severity assessment using MIDAS. Both groups were administered HAM-D, HAM-A, and Rorschach clusters: Control and Stress Tolerance, Situational Related Stress, and Cognitive Mediation. Inkblot Test. Data were analyzed using SPSS 23.0, employing t-tests for continuous variables and chi-square tests for categorical variables.

## RESULTS

### 1. Socio-Demographic Comparison

| Variable                        | Migraine Group (N=20) | Control Group (N=20) | $\chi^2$ / t-score | p-value      |
|---------------------------------|-----------------------|----------------------|--------------------|--------------|
| Age (Mean $\pm$ SD)             | 32.75 $\pm$ 8.16      | 32.40 $\pm$ 7.17     | 0.144              | 0.886 (NS)   |
| Sex (Male/Female)               | 8M / 12F              | 7M / 13F             | 0.10               | 1.000 (NS)   |
| Religion (Hindu/Others)         | 18H / 2O              | 15H / 5O             | 1.55               | 0.407 (NS)   |
| Residence (Urban/Rural)         | 3U / 17R              | 13U / 7R             | 10.41              | 0.003 (Sig.) |
| Family Income (>10,000/<10,000) | 8H / 12L              | 16H / 4L             | 6.66               | 0.022 (Sig.) |

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| Variable                          | Migraine Group (N=20) | Control Group (N=20) | $\chi^2$ / t-score | p-value      |
|-----------------------------------|-----------------------|----------------------|--------------------|--------------|
| Education (>Secondary/<Secondary) | 11 / 9                | 13 / 7               | 0.41               | 0.748 (NS)   |
| Occupation (Employed/Unemployed)  | 4E / 16U              | 13E / 7U             | 8.28               | 0.010 (Sig.) |

### 2. Psychological Differences Between Migraine Patients and Controls

| Assessment                               | Variable                    | Migraine Patients (Mean $\pm$ SD) | Healthy Controls (Mean $\pm$ SD) | U / t-score | p-value             |
|--|-----------------------------|-----------------------------------|----------------------------------|-------------|---------------------|
| Control & Stress Tolerance (Rorschach)   | R (Total Responses)         | 15.10 $\pm$ 0.64                  | 14.20 $\pm$ 0.52                 | 61.00       | $\leq$ 0.001 (Sig.) |
|  | Lambda (L)                  | 2.48 $\pm$ 7.90                   | 0.37 $\pm$ 0.21                  | 93.50       | $\leq$ 0.001 (Sig.) |
| Situationally Related Stress (Rorschach) | FM Responses                | 4.30 $\pm$ 1.17                   | 3.60 $\pm$ 1.09                  | 135.00      | 0.081 (NS)          |
| Cognitive Mediation (Rorschach)          | XA% (Form Accuracy)         | 0.75 $\pm$ 0.07                   | 0.79 $\pm$ 0.07                  | 120.00      | 0.030 (Sig.)        |
|  | P (Popular Responses)       | 4.25 $\pm$ 1.25                   | 3.20 $\pm$ 1.47                  | 109.00      | 0.01 (Sig.)         |
|  | X+% (Conventional Form Use) | 0.50 $\pm$ 0.11                   | 0.70 $\pm$ 0.09                  | 37.50       | $\leq$ 0.001 (Sig.) |
| Affect Processing                        | Depression Index (DEPI)     | Higher                            | Lower                            | 0.043       | 0.020 (Sig.)        |
| Emotional Processing (HAM-A, HAM-D)      | HAM-A (Anxiety Score)       | 10.70 $\pm$ 4.50                  | 2.45 $\pm$ 1.23                  | 7.89        | $\leq$ 0.001 (Sig.) |
|  | HAM-D (Depression Score)    | 13.15 $\pm$ 4.68                  | 1.45 $\pm$ 0.82                  | 10.75       | $\leq$ 0.001 (Sig.) |
| Migraine Disability (MIDAS)              | Disability Score            | 16.54 $\pm$ 7.05                  | N/A                              | -           |                     |

Here is a table summarizing the key results:

#### Socio-Demographic Characteristics

The migraine and control groups were comparable in terms of age, gender distribution, and educational background. However, significant differences were noted in occupation, residence, and family income, with migraine patients more likely to be unemployed and from lower-income backgrounds ( $p < 0.05$ ).

#### Clinical Characteristics

Migraine patients reported a mean illness duration of 4.96 years (SD = 5.69) and moderate disability scores on MIDAS (M = 16.54, SD = 7.05). Significant differences were found in depression (HAM-D:  $p \leq 0.01$ ) and anxiety (HAM-A:  $p \leq 0.01$ ) levels, with migraine patients exhibiting higher distress.

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### *Personality Traits and Rorschach Findings*

#### Control and Stress Tolerance

- **Total Responses (R):** Migraine patients provided significantly more responses than controls ( $p \leq 0.001$ ), indicating heightened cognitive engagement.
- **Lambda (L):** Higher lambda scores in migraine patients suggested an avoidant cognitive style ( $p \leq 0.001$ ).

#### Cognitive Mediation

- **XA% (Form Appropriateness):** Lower in migraine patients ( $p = 0.030$ ), suggesting perceptual distortions.
- **X+% (Conventional Form Use):** Significantly lower in migraine patients ( $p = 0.001$ ), indicating unconventional perceptual processing.

#### Affect Processing

- **Depression Index (DEPI):** Higher scores in migraine patients ( $p = 0.043$ ), supporting their vulnerability to depressive symptoms.

## DISCUSSION

The study findings support the hypothesis that migraine patients exhibit distinct personality characteristics, particularly in stress tolerance, cognitive mediation, and emotional regulation.

Higher **neuroticism and emotional distress** in migraine patients align with previous research (Breslau et al., 1996), indicating a potential role of emotional dysregulation in migraine pathophysiology. Findings on **cognitive mediation deficits** (lower XA% and X+%) suggest a tendency for non-conventional thinking and perceptual distortions, which may contribute to migraine-related distress.

Affective processing differences, reflected in **higher DEPI scores**, indicate vulnerability to depressive experiences, consistent with studies linking migraine to affective disorders (Huber & Henrich, 2003). The **heightened lambda scores** in migraine patients suggest a more avoidant coping style, which may influence pain management and treatment adherence.

### *Implications*

- Psychological interventions, such as **cognitive restructuring and stress management**, may be beneficial for migraine patients.
- **Personality-based treatment approaches** can enhance coping mechanisms and reduce migraine chronicity.
- Future research should explore **longitudinal changes in personality traits and migraine progression**.

## CONCLUSION

This study highlights the significant role of personality traits in migraine patients, particularly in stress tolerance, affect processing, and cognitive mediation. These findings emphasize the need for an integrative biopsychosocial approach in migraine management, incorporating psychological interventions alongside medical treatment.

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### **Conflict of Interest**

The author(s) declared no conflict of interest.

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