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Chronic Kidney Disease and Psychological Adjustment: A Clinical Study in Bhagalpur

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Abstract

The present study, titled “Chronic Kidney Disease and Psychological Adjustment: A Clinical Study in Bhagalpur”, investigated the psychological distress, coping strategies, stigma perception, social support, and treatment adherence among patients diagnosed with Chronic Kidney Disease (CKD). A total of 114 participants aged between 18 and 65 years were randomly selected from hospitals, dialysis centers, and community organizations in Bhagalpur. Standardized tools including the GHQ-28, Brief COPE Inventory, and Psychological Adjustment Scale were administered through structured in-person and online interviews. Descriptive statistics were computed to establish baseline psychological profiles, while independent-samples t-tests were performed to examine differences across gender, residential background, and treatment status. The findings indicated clinically significant levels of psychological distress across the sample, alongside a balanced but mixed use of problem-focused and emotion-focused coping strategies. Avoidant coping and stigma perception were also evident, though strong family support appeared to buffer psychosocial strain. The t-test analysis revealed no statistically significant differences between male and female patients in distress levels or coping responses, underscoring the equalizing psychological burden of CKD. The study highlights the necessity of integrating psychosocial interventions, such as counseling, resilience training, and stigma-reduction programs, within nephrology care. Broader implications extend to tuberculosis (TB) management programs in India, where similar challenges of distress, stigma, and adherence have been documented, underscoring the need for holistic patient-centered approaches.

***Keywords**: Chronic Kidney Disease, Psychological Distress, Coping Strategies, Stigma, Clinical Psychology*

Introduction

Chronic Kidney Disease (CKD) is a progressive and life-altering health condition that not only affects physical well-being but also significantly shapes psychological functioning and social relationships. In India, the burden of CKD is rising steadily, fueled by increasing cases of diabetes, hypertension, and limited access to advanced nephrology care. Beyond its medical complications, CKD imposes a heavy psychosocial toll, patients often experience high levels of anxiety, depressive symptoms, disrupted family roles, and uncertainty about survival.

The psychological adjustment of CKD patients involves navigating distress, adopting effective coping strategies, and relying on family and community support systems. In resource-limited settings like Bhagalpur, these challenges are compounded by financial strain, stigma, and gaps in healthcare infrastructure. Previous research across chronic illnesses has shown that coping mechanisms and social support play decisive roles in determining treatment adherence and quality of life. However, empirical studies focusing specifically on psychological adjustment among CKD patients in smaller Indian districts remain scarce.

This study therefore aims to bridge this gap by systematically examining distress, coping, stigma perception, and social support among CKD patients in Bhagalpur. In addition, the use of independent-samples t-tests allows for comparative insights across gender, residential background, and treatment modalities. By situating findings within health psychology frameworks and chronic illness literature, the research not only enriches understanding of CKD adjustment but also offers lessons for managing other stigmatized conditions, including tuberculosis, where psychological well-being and adherence remain crucial determinants of recovery.

Review of Literature

Chronic Kidney Disease (CKD) is increasingly recognized not only as a medical but also as a psychological burden. Studies have consistently reported elevated levels of anxiety and depression among CKD patients, largely due to uncertainty, financial stress, and the demanding nature of dialysis or conservative management (Cukor et al., 2007). Coping strategies play a decisive role in adjustment: while problem-focused strategies enhance adherence and resilience, emotion-focused and avoidant coping often exacerbate distress (Christensen et al., 2012; Lazarus & Folkman, 1984).

Stigma further complicates psychological adjustment, as chronic illness often carries social labeling that contributes to secrecy and isolation (Link, 1987). Yet, family and community support have been shown to buffer distress, especially in collectivistic societies like India (Sharma & Prasad, 2020). Gender differences in coping are reported inconsistently—some research finds women more vulnerable to distress (Murtagh et al., 2016), while others find no significant variation, highlighting illness severity as a more powerful determinant.

Overall, literature underscores the need for integrated psychosocial interventions in CKD care, combining counseling, coping-skills training, and stigma reduction to improve adjustment and adherence.

Methodology

The present study titled *"Chronic Kidney Disease and Psychological Adjustment: A Clinical Study in Bhagalpur"* adopts an empirical and quantitative research design. It is aimed at examining the psychological adjustment patterns, distress levels, and coping mechanisms among patients suffering from Chronic Kidney Disease (CKD). A structured research methodology was employed to ensure scientific rigor and validity of findings. The methodology has been elaborated under the following subheadings.

Participants

The study was conducted with a total sample size of **114 participants**, all of whom were diagnosed with varying stages of Chronic Kidney Disease (CKD). The participants were recruited from hospitals, dialysis centers, and community-based kidney health organizations in Bhagalpur. Random sampling was used to select participants from the available patient pool, ensuring that every individual had an equal chance of being included. Random selection minimized researcher bias and improved representativeness of the population.

Inclusion criteria required participants to:

1. Have a confirmed diagnosis of CKD by a nephrologist.
2. Be aged between 18 and 65 years.
3. Have the ability to comprehend and respond to questions in either Hindi or English.
4. Provide informed consent voluntarily.

Exclusion criteria included patients with severe psychiatric disorders, those with cognitive impairment preventing reliable self-reporting, and individuals undergoing acute crisis interventions.

Demographic diversity was ensured by including participants from both **urban and rural settings**, as well as from different socio-economic and educational backgrounds. To allow group comparisons, the sample was stratified into subgroups:

- **Gender:** Male (n ≈ 57) and Female (n ≈ 57).
- **Residential Background:** Rural (n ≈ 56) and Urban (n ≈ 58).
- **Treatment Status:** Undergoing Dialysis/Treatment (n ≈ 60) and Non-Treatment/Conservative Management (n ≈ 54).

This stratification allowed for comparative analysis across groups using independent-samples t-test, which is central to the study design.

Tools

The following standardized tools and instruments were employed to measure psychological adjustment, distress, and coping strategies:

1. **Demographic and Clinical Data Sheet**
2. A structured proforma was developed to collect participants' demographic details (age, gender, education, occupation, family income, marital status, residential area) as well as clinical variables (stage of CKD, duration of illness, type of treatment, comorbid conditions).
3. **General Health Questionnaire-28 (GHQ-28)**
4. The GHQ-28 was administered to assess psychological distress. It measures somatic symptoms, anxiety, social dysfunction, and depressive symptoms. Its reliability and validity are well established in clinical populations.
5. **COPE Inventory (Brief Version)**
6. Coping strategies were assessed using the Brief COPE scale. It evaluates problem-focused coping, emotion-focused coping, and maladaptive coping mechanisms. This tool was chosen because of its applicability across diverse populations and its ability to capture multi-dimensional aspects of coping.
7. **Psychological Adjustment Scale (PAS)**
8. The PAS, designed for patients with chronic illness, was administered to measure adjustment levels. It assesses acceptance, self-concept, interpersonal relationships, and resilience in the context of chronic disease.
9. **Interview Protocol**
10. Both **in-person and online interviews** were conducted using structured and semi-structured questionnaires. In-person interviews were held in hospitals and dialysis units, while online interviews were conducted via secure video-conferencing platforms for patients unable to travel due to health limitations. This dual approach maximized inclusivity.

Procedure

The research was carried out in multiple stages:

Stage 1: Ethical Considerations and Approvals

Ethical clearance was obtained from the Institutional Ethics Committee prior to the commencement of the study. Permissions were also secured from hospital administrations and dialysis centers. Participants were provided with detailed information about the study's purpose, procedures, risks, and benefits. Written informed consent was obtained. Confidentiality and anonymity were maintained throughout.

Stage 2: Pilot Study

A pilot study was conducted with 10 participants to test the feasibility of the tools and interview protocols. Minor modifications were made to language simplification and order of questionnaire administration based on feedback, ensuring clarity for the main study.

Stage 3: Data Collection

The main study was conducted over a period of four months. Participants were approached randomly from hospital records and patient lists. After obtaining consent, they were assigned randomly to the in-person or online interview mode. The administration of questionnaires was done in a quiet, distraction-free setting. On average, each interview lasted 45–60 minutes.

- **In-person Interviews:** Conducted by trained clinical psychology researchers in hospital counseling rooms.
- **Online Interviews:** Conducted via secure platforms with prior scheduling. Necessary instructions were given to ensure privacy during online sessions.

Data collection was standardized to reduce interviewer bias. The order of administering questionnaires was fixed to minimize fatigue effects. Participants were debriefed after the session, and psychological support resources were offered if required.

Stage 4: Data Recording and Coding

Responses were recorded on structured sheets and subsequently coded into numerical form for statistical analysis. The coding ensured consistency across datasets. Double-entry of data was carried out to minimize human errors.

Research Design

The present study followed a **comparative cross-sectional research design**. The primary objective was to analyze the psychological adjustment, distress, and coping strategies among CKD patients while comparing differences across demographic and treatment groups.

Independent variables included:

- Gender (Male vs. Female).
- Residential background (Rural vs. Urban).
- Treatment status (Treatment vs. Non-treatment).

Dependent variables included:

- Psychological distress scores (GHQ-28).
- Coping strategies (Brief COPE).
- Adjustment levels (PAS).

This design allowed for both descriptive analysis of overall patterns and inferential statistical analysis of group differences.

Data Analysis

The data were analyzed using **SPSS (Statistical Package for the Social Sciences)**. The following statistical procedures were applied:

1. **Descriptive Statistics**

   Mean, standard deviation, frequencies, and percentages were computed for demographic variables and scale scores. This provided a profile of the sample population and baseline understanding of psychological adjustment patterns.

2. **Independent-Samples t-test**

   To test the study hypotheses, independent-samples t-test was employed for comparing the means of two groups. The following comparisons were made:

   - Male vs. Female participants in terms of psychological distress and coping.
   - Rural vs. Urban participants in terms of coping and adjustment.
   - Treatment vs. Non-treatment groups in terms of distress and psychological adjustment.

   The t-test was chosen as it is an appropriate statistical test to determine whether two independent groups differ significantly on a continuous dependent variable. Statistical significance was set at **$p < 0.05$**. Effect sizes (Cohen’s d) were also calculated to understand the magnitude of group differences.

3. **Reliability Testing**

   Cronbach’s alpha was computed for each scale to verify internal consistency reliability in the present sample.

4. **Exploratory Analysis**

   Correlational analysis was performed between coping strategies and adjustment scores to explore whether specific coping mechanisms predicted better psychological adjustment among CKD patients.

Ethical Safeguards

Participants’ well-being was prioritized at every stage. If any participant showed signs of severe distress during the interview, immediate referral to the hospital’s clinical psychologist was made. Data confidentiality was strictly maintained; responses were anonymized before analysis. Participation was voluntary, and participants could withdraw at any stage without penalty.

This methodology, based on a random sample of 114 CKD patients from Bhagalpur, systematically integrates standardized psychological tools, in-person and online data collection, and rigorous statistical design. The inclusion of **t-test analysis across gender, residential background, and treatment status** enhances the study’s ability to provide meaningful insights into how different groups of CKD patients adjust psychologically to their illness. The methodology thus ensures both depth and generalizability of findings.

RESULTS AND DISCUSSION

The present study examined psychological distress, coping mechanisms, stigma perception, social support, and treatment adherence among patients with Chronic Kidney Disease (CKD) in Bhagalpur. Both descriptive statistics and inferential comparisons were carried out to explore the psychological adjustment patterns in this clinical population.

1. Demographic Profile of Participants

Table 1. Demographic Profile of Participants (N = 114)

Gender	Count	Percent
Male	59	51.8%
Female	55	48.2%

Residence	Count	Percent
Rural	61	53.5%
Urban	53	46.5%

Education	Count	Percent
No formal	7	6.1%
Primary	12	10.5%
Secondary	26	22.8%
Higher Secondary	33	28.9%
Graduate	29	25.4%
Postgraduate	7	6.1%

Occupation	Count	Percent
Unemployed	11	9.6%
Homemaker	26	22.8%
Agriculture	18	15.8%
Laborer	8	7.0%
Service/Salaried	29	25.4%
Business	12	10.5%
Student	3	2.6%
Retired	7	6.1%

Income Group	Count	Percent
Low	40	35.1%
Lower-Middle	39	34.2%
Upper-Middle	25	21.9%
High	10	8.8%

Marital Status	Count	Percent
Single	18	15.8%
Married	80	70.2%
Separated/Divorced	8	7.0%
Widowed	8	7.0%

CKD Stage	Count	Percent
1	14	12.3%
2	20	17.5%
3	37	32.5%
4	32	28.1%
5	11	9.6%

Metric	Age (years)	Duration of Illness (months)
Mean	41.2	29.8
SD	14.0	16.2
Min	18.0	1.0
Max	65.0	72.0

Discussion of Demographics

The sample distribution was fairly balanced by gender, residence, and education, which strengthens the representativeness of the findings. Most patients were in the **productive age range (M = 41.2 years)**, indicating that CKD impacts individuals in their working years, often coinciding with family responsibilities.

Educational attainment was moderately high, with 54.3% having higher secondary or above. However, 16.6% of patients had only primary or no formal education, which could affect health literacy and treatment adherence. Occupational status showed that 22.8% were homemakers and 25.4% were salaried employees, while 15.8% depended on agriculture, reflecting the rural-urban economic divide.

A significant portion of patients belonged to **low and lower-middle income groups (69.3%)**, highlighting financial vulnerability, especially given the high costs of dialysis and kidney transplants in India.

CKD stage distribution revealed a majority in **stage 3 and stage 4 (60.6%)**, reflecting a sample skewed toward moderate-to-severe disease. Duration of illness averaged 2.5 years, suggesting that psychological adjustment was being shaped during chronic exposure to illness.

The profile confirms earlier Indian studies that CKD often strikes economically disadvantaged populations with restricted access to advanced nephrology care (Joshi et al., 2018).

2. Psychological Variables

Table 2. Descriptive Statistics for Major Psychological Variables

Variable	Mean	SD	Min	Max
GHQ-28 Distress	32.92	8.45	8	50
Problem-focused Coping	22.80	3.04	16	32
Emotion-focused Coping	21.04	2.99	14	28
Avoidant Coping	16.11	3.09	8	24
Stigma Perception	28.30	5.65	18	41
Social Support	58.89	8.25	40	80
Treatment Adherence %	75.53	10.29	54	100

Discussion of Descriptive Findings

- **Psychological distress** (M = 32.92) was **above the GHQ-28 cut-off of 23/24**, suggesting clinical-level distress in the majority of CKD patients. This aligns with earlier findings that CKD patients report elevated anxiety, depression, and somatic complaints due to uncertainty and treatment fatigue (Cukor et al., 2007).
- **Coping strategies** revealed moderate levels of both **problem-focused (M = 22.80)** and **emotion-focused coping (M = 21.04)**. The reliance on both suggests a mixed pattern: patients attempt to actively solve problems (e.g., adhering to diet, arranging funds) while also managing emotional burden through religious/spiritual coping or emotional venting.
- **Avoidant coping** (M = 16.11) was comparatively lower but still present. Avoidance in CKD may include denial of disease severity or withdrawal from social contact, which is maladaptive in the long run.
- **Stigma perception** (M = 28.30) indicates moderate-to-high perceived stigma. Many CKD patients feel socially devalued, either due to visible symptoms (e.g., fatigue, dialysis scars) or financial dependence.
- **Social support** was relatively high (M = 58.89), reflecting strong family ties in Indian settings, consistent with collectivistic culture buffering illness stress.
- **Treatment adherence** averaged **75.53%**, suggesting reasonable but imperfect compliance. In CKD, strict dietary and medical adherence is crucial; thus, psychological interventions could help enhance compliance.

3. Gender Differences in Distress and Coping

Table 3. Independent Samples t-test Results (Male vs. Female)

Comparison	Male Mean (SD)	Female Mean (SD)	t-value	df	p-value	Cohen's d
GHQ-28 Distress	32.49 (7.44)	33.38 (9.46)	-0.56	112	0.5796	-0.11
Problem-focused Coping	22.69 (2.59)	22.91 (3.48)	-0.37	112	0.7117	-0.07

Discussion of Gender Differences

The independent-samples t-test revealed **no statistically significant gender differences** in either psychological distress (p = 0.5796) or problem-focused coping (p = 0.7117). Cohen's d values were very small (-0.11 and -0.07), confirming negligible effect sizes.

This suggests that **both male and female CKD patients experience comparable psychological strain** and adopt similar levels of problem-focused coping. While some literature has reported higher distress among women in chronic illness due to compounded caregiving burdens (Murtagh et al., 2016), the absence of gender difference in this study may reflect the shared severity of CKD burden that overshadows gender-based variations.

Moreover, coping responses may be shaped less by gender and more by illness stage, socio-economic pressures, and family dynamics. This finding aligns with Sharma & Prasad (2020), who observed no significant gender-based coping differences among dialysis patients in India.

4. Broader Discussion and Theoretical Implications

Psychological Distress in CKD

The elevated distress levels underscore the **biopsychosocial impact** of CKD. According to the **Health Belief Model (HBM)**, illness perceptions (e.g., chronicity, threat) strongly predict distress and adherence. CKD patients' awareness of progression to dialysis or transplantation likely fuels anxiety.

Coping Mechanisms

The mixed use of problem-focused and emotion-focused coping reflects **Lazarus and Folkman's Stress and Coping Theory**. Given the uncontrollable nature of CKD progression, patients cannot always rely on problem-focused strategies alone, leading them to supplement with emotion-regulation strategies. However, the presence of avoidant coping suggests maladaptive tendencies that could worsen adjustment if unchecked.

Stigma and Social Support

Perceived stigma aligns with **Modified Labeling Theory** (Link, 1987), which posits that awareness of illness-related stereotypes leads to secrecy, withdrawal, and distress. However, high family support indicates that collectivistic Indian culture may act as a buffer against full-blown social isolation.

Treatment Adherence

Adherence levels of 75.53% highlight a gap that could be targeted by **psychological interventions such as Cognitive-Behavioral Therapy (CBT)**, motivational interviewing, and psychoeducation. Studies have shown that patient-centered counseling improves adherence in CKD (Christensen et al., 2012).

Integration with TB-related Stigma Literature

Parallels can be drawn with TB patients in India, who also report high distress, reliance on mixed coping, and stigma (Dhuria et al., 2008). The similarity suggests that **chronic, socially devalued illnesses in India evoke common psychosocial patterns**, reinforcing the need for stigma-reduction and family-based interventions across conditions.

5. Summary of Key Findings

1. **High distress levels** (GHQ-28 above threshold) confirm CKD's psychological toll.
2. **Balanced coping patterns**, with both problem-solving and emotion regulation, but maladaptive avoidance present.
3. **Moderate-to-high stigma perception** despite strong family support.
4. **Treatment adherence** was good but not optimal.
5. **No gender differences** in distress or problem-focused coping.
6. Findings align with global and Indian CKD psychology literature, while also resonating with TB-related stigma studies.

The study highlights that CKD patients in Bhagalpur endure substantial psychological distress while attempting to balance adaptive and maladaptive coping strategies. Perceived stigma persists despite family support, and adherence remains sub-optimal. Importantly, gender did not significantly influence distress or coping patterns, suggesting that CKD is an equalizer in its psychological burden.

These results underscore the need for **integrated psychosocial care in nephrology**, involving routine mental health screening, counseling, and stigma reduction strategies. Health psychology frameworks and past stigma research converge on the conclusion that **addressing the mind is as vital as treating the kidney**.

Conclusion

The present study on Chronic Kidney Disease and Psychological Adjustment in Bhagalpur revealed that patients experience clinically significant psychological distress, moderate reliance on both problem-focused and emotion-focused coping, and a sense of illness-related stigma despite strong family support networks. Treatment adherence was fair but not optimal, indicating that psychological and behavioral interventions remain crucial. Results from the independent-samples t-test demonstrated that there were no statistically significant differences between male and female patients in psychological distress or problem-focused coping, suggesting that the severity and burden of CKD exert a uniform psychological impact across genders.

For clinical psychology practice, these findings highlight the importance of routine screening for distress and maladaptive coping among CKD patients, with interventions focusing on enhancing resilience, reducing stigma, and strengthening adaptive coping strategies. Although the study examined CKD patients, the results resonate strongly with literature on tuberculosis (TB), where stigma and psychological distress similarly impede treatment adherence. Thus, the implications extend to TB management programs, which should integrate psychosocial care, such as counseling, psychoeducation, and stigma-reduction initiatives, into standard treatment protocols to improve patient well-being and adherence outcomes.

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