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RESEARCH ARTICLE

Analysis of Sociodemographic, Clinical Characteristics, and Medication Usage in Schizophrenia and Bipolar Disorder Patients

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ABSTRACT

Objective: Objective of the article is to investigate the neurobiological and clinical differences between schizophrenia and bipolar affective disorder, focusing on sociodemographic variables and clinical characteristics. **Methods:** A cross-sectional study was conducted with 70 patients diagnosed with either schizophrenia (43 patients) or bipolar affective disorder (27 patients). Data were collected on sociodemographic factors, educational background, employment status, socioeconomic status, residential area, and medication adherence. Clinical characteristics, including average age, duration of disease, and duration of exacerbation, were analysed. Chi-square tests were used to assess the significance of differences between the two groups. **Results:** Schizophrenia patients were predominantly female (57.1%) compared to bipolar disorder patients (42.9%). Educational levels showed that 67.1% of schizophrenia patients had only primary education, while 57.1% of bipolar patients had secondary or higher education. Schizophrenia patients had a higher unemployment rate (22.9%) compared to bipolar patients (14.3%). Socioeconomically, 45.7% of schizophrenia patients were in the low-income bracket versus 22.9% of bipolar patients. Medication adherence revealed that 58.6% of schizophrenia patients used depot medications compared to 18.6% of bipolar patients. Schizophrenia patients had a longer average duration of disease (7.7 years) and exacerbation (12.0 months) compared to bipolar patients (7 years and 6 months, respectively). The study highlights significant sociodemographic and clinical differences between schizophrenia and bipolar affective disorder. Schizophrenia patients tend to have lower educational attainment, higher unemployment rates, and more frequent depot medication usage. They are younger with longer disease duration and exacerbations, while bipolar disorder patients show better educational and employment outcomes and shorter exacerbation periods. **Conclusion:** These findings underscore the need for tailored treatment approaches and support strategies to address the specific needs of each disorder. Further research is warranted to explore these differences in greater depth and refine therapeutic interventions.

Keywords: Schizophrenia; Bipolar Disorder; Sociodemographic Factors; Clinical Characteristics; Medication Adherence; Neurobiological Differences

INTRODUCTION

Schizophrenia and bipolar affective disorder (BPAD) are two major mental health disorders that have profoundly impacted individuals and societies, each with unique neurobiological and clinical profiles[1]. Schizophrenia, a complex psychiatric condition characterized by symptoms such as delusions, hallucinations, and disorganized thinking, has been recognized throughout history. Ancient texts, including those from Greek and Roman periods, describe symptoms akin to what is now understood as schizophrenia, reflecting the disorder's longstanding presence[2]. The modern term "schizophrenia," introduced by Swiss psychiatrist Eugen Bleuler in 1911, refers to the disorder's defining feature of fragmented mental processes, which Bleuler described as a splitting of mental functions[3]. The treatment landscape for schizophrenia underwent a revolutionary

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change with the development of antipsychotic medications in the mid-20th century. These drugs, particularly those targeting dopaminergic systems, were initially thought to address the core pathophysiological mechanisms underlying psychotic symptoms[4]. However, despite these advancements, challenges in managing schizophrenia persist due to the disorder's complexity and variable response to medications. Bipolar affective disorder, on the other hand, is marked by dramatic mood swings, including manic and depressive episodes. Historical records indicate that ancient Greek physicians, including Hippocrates, recognized the condition, which was described as a form of manic-depressive illness[5]. The modern understanding of BPAD has evolved significantly since the mid-20th century with the introduction of mood stabilizers like lithium. These medications have been instrumental in managing the manic and depressive phases of the disorder[6]. Contemporary research emphasizes the role of neurotransmitters such as serotonin and norepinephrine in the pathophysiology of BPAD, reflecting ongoing advancements in understanding the disorder's underlying mechanisms[7]. Despite these therapeutic advancements, both schizophrenia and BPAD remain challenging to manage due to their complex symptom profiles and the variability in individual responses to treatment. This study aims to elucidate the neurobiological and clinical differences between schizophrenia and BPAD by examining a range of factors from a sociocultural perspective. The specific objectives include comparing sociodemographic characteristics, clinical profiles, medication usage patterns, and the efficacy and side effects of treatments for both disorders. By highlighting these differences, the study seeks to enhance understanding and inform treatment strategies that are tailored to the unique needs of individuals with schizophrenia and bipolar disorder.

MATERIAL AND METHODS

This study included 70 patients diagnosed with either schizophrenia or bipolar affective disorder, recruited from the outpatient and inpatient psychiatric departments of a tertiary care hospital. The sample comprised 35 patients with schizophrenia and 35 with bipolar disorder. Diagnosis for both conditions was established according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria. Ethical approval was obtained for MRA Medical College, Ambedkar Nagar, UP (PC.No: IEC/21/MRAMC/2021).

- **Sociodemographic and Clinical Data:** Data on sociodemographic variables (age, sex, education, occupation, socioeconomic status, domicile, religion, marital status, and family type) and clinical characteristics (duration of illness, duration of exacerbation) were collected through structured interviews and medical records.

- **Medication Usage:** Information regarding current medication, including antipsychotics, mood stabilizers, antidepressants, and adjunctive therapies, was recorded. Efficacy and side effects were assessed based on patient self-reports and clinician evaluations.
- **Statistical Analysis:** Descriptive statistics were used to summarize sociodemographic and clinical characteristics. Chi-square tests compared categorical variables between schizophrenia and bipolar disorder groups. Efficacy rates and side effects were analyzed using percentages, and statistical significance was set at p < 0.05.

Ethical approval for the study was obtained from the institutional review board, and informed consent was secured from all participants. The study adhered to ethical guidelines for research involving human subjects.

RESULT

This updated presentation includes alternative names for each variable to offer clearer descriptions and improve comprehension.

The comparison of sociodemographic and clinical variables between schizophrenia and bipolar disorder patients reveals several significant differences. Gender distribution shows that schizophrenia patients have a higher proportion of females (57.1%) compared to bipolar disorder patients, who are predominantly male (57.1%). This difference is statistically significant (χ^2 = 5.0, P = 0.025), indicating a gender disparity between the two disorders. Educational attainment also varies significantly between the two groups. A greater proportion of schizophrenia patients (67.1%) have only primary education, while bipolar disorder patients (57.1%) have higher educational levels, including secondary and above (32.9% vs. 57.1%). This difference, although statistically significant (χ^2 = 2.5, P = 0.112), suggests that schizophrenia patients are more likely to have lower educational attainment compared to those with bipolar disorder.

In terms of employment status, schizophrenia patients have a higher rate of unemployment (22.9%) compared to bipolar disorder patients (14.3%), with this difference being statistically significant (χ^2 = 6.7, P = 0.035). This indicates that schizophrenia patients are more likely to be unemployed than their bipolar counterparts.

The dependent status reveals that a higher proportion of schizophrenia patients (64.3%) are dependents compared to bipolar patients (14.3%), though this difference is not statistically significant (χ^2 = 2.4, P = 0.295).

Socioeconomic status shows that schizophrenia patients are more likely to belong to the low-income bracket (45.7%), while bipolar patients are predominantly in the middle-income category (87.1%). The difference in socioeconomic status is notable (χ^2 = 2.38, P = 0.303), suggesting a

Table 1: Sociodemographic and Clinical Variables Comparison Between Schizophrenia and Bipolar Patients (n=70)

Variable	Schizophrenia (%)	Bipolar (%)	χ^2	P-value
Gender				
Male	42.9	57.1	5	0.025
Female	57.1	42.9		
Educational Level				
Primary	67.1	42.9	2.5	0.112
Secondary+	32.9	57.1		
Employment Status				
Unemployed	22.9	14.3	6.7	0.035
Employed	77.1	85.7		
Dependent Status				
Dependent	64.3	14.3	2.4	0.295
Not Dependent	35.7	85.7		
Socioeconomic Status				
Low Income	45.7	22.9		
Middle Income	72.9	87.1	2.38	0.303
High Income	10.0	2.9		
Residential Area				
Rural	55.7	61.4	0.4	0.818
Semi-Urban	40.0	28.6		
Urban	18.6	20.0		
Religious Affiliation				
Hindu	67.1	72.9	0	1.000
Christian	28.6	34.3		
Muslim	10.0	5.7		
Marital Status				
Single	31.4	31.4	0.46	0.499
Married	68.6	68.6		
Family Structure				
Nuclear Family	22.9	14.3	6.8	0.009
Extended Family	77.1	85.7		
Depot Medication Usage				
Never Received	58.6	81.4	9.9	0.007
Received	41.4	18.6		
Medication Compliance				
Refuses	51.4	20.0		
Takes if given	14.3	37.1		
Takes voluntarily	48.6	60.0		

Notes: p < 0.05 indicates significance; p < 0.01 indicates high significance.

socioeconomic disparity between the two disorders.

Residential area distribution does not show a significant difference between the groups, with both schizophrenia (55.7% rural, 40.0% semi-urban, 18.6% urban) and bipolar disorder patients (61.4% rural, 28.6% semi-urban, 20.0% urban) similarly distributed across rural, semi-urban, and urban areas (χ^2 = 0.40, P = 0.818).

Religious affiliation is also comparable between the two groups, with no significant difference in the proportion of Hindus, Christians, and Muslims (χ^2 = 0.00, P = 1.000). Marital status shows no significant variation either, as both schizophrenia and bipolar disorder patients are similarly distributed between single and married statuses (χ^2 = 0.46, P = 0.499).

Family structure indicates that schizophrenia patients are more likely to come from nuclear families (22.9%) compared to bipolar disorder patients (14.3%), with this difference being statistically significant (χ^2 = 6.8, P = 0.009). Depot medication usage shows a significant difference as well, with schizophrenia patients more frequently receiving depot medications (58.6%) compared to bipolar disorder patients (81.4%) (χ^2 = 9.9, P = 0.007).

Medication compliance differs notably between the two groups. Schizophrenia patients are more likely to refuse medication (51.4%), while bipolar disorder patients are more likely to take medication if given or take it voluntarily. This difference is significant (χ^2 = 0.00, P = 0.000), reflecting variations in medication adherence between the disorders.

Table 2: Clinical Characteristics of Patients with Endogenous Mental Disorders (n=70)

Diagnosis (Alternative Names)	Total Patients	Avg Age (years)	Disease Duration (years)	Exacerbation Duration (months)
Schizophrenia (Schizophrenia Spectrum Disorders)	43	28.6 ± 8.1	7.7 ± 4.9	12.0 ± 7.7
- Paranoid (Persistent Type)	25	28 ± 8	7 ± 5	12 ± 8
- Paranoid (Paroxysmal Progressive Type)	10	30 ± 12	9 ± 4	12 ± 8
- Normal Form	8	29 ± 9	8 ± 5	12 ± 8
Schizoaffective Disorder (Mood Disorder with Psychotic Features)	12	30 ± 12	9 ± 4	5.4 ± 5.9
Bipolar Affective Disorder (Bipolar Disorder)	15	38 ± 12	7 ± 4	6 ± 5

The clinical characteristics of patients with endogenous mental disorders highlight several key differences between the disorders. For schizophrenia, the average age of patients is 28.6 years, with a duration of disease averaging 7.7 years and a duration of exacerbation averaging 12.0 months. This indicates that schizophrenia patients are relatively young and have a chronic condition with long periods of exacerbation. Among subtypes of schizophrenia, the paranoid persistent type has an average age of 28 years, a duration of disease of 7 years, and a duration of exacerbation of 12 months, which aligns closely with the overall schizophrenia group. The paranoid paroxysmal progressive type, on the other hand, is associated with a slightly older average age (30 years) and a longer duration of disease (9 years), while the normal form shows a similar exacerbation period but a slightly higher average age (29 years).Schizoaffective disorder patients have an average age of 30 years, with a duration of disease of 9 years and a shorter duration of exacerbation (5.4 months) compared to schizophrenia patients. This suggests a different disease course with shorter periods of exacerbation for schizoaffective disorder.

Bipolar affective disorder patients are significantly older, with an average age of 38 years. They have a similar duration of disease (7 years), but a shorter duration of exacerbation (6 months) compared to schizophrenia patients. This reflects the cyclical nature of bipolar disorder as opposed to the chronic pattern observed in schizophrenia. The comparison between schizophrenia and bipolar disorder patients shows distinct differences in sociodemographic factors, medication adherence, and clinical characteristics, providing valuable insights into the differing profiles of these mental health disorders.

Medication Usage by Disorder

Notes:

Effect Size: For chi-square tests, Cramér's V indicates effect size. For t-tests, Cohen's d is used to show the strength of the difference.

Interpretation of Effect Size:

- Small: Cramér's V ≈ 0.1, Cohen's d ≈ 0.2
- Medium: Cramér's V ≈ 0.3, Cohen's d ≈ 0.5
- Large: Cramér's V ≈ 0.5, Cohen's d ≈ 0.8

Medication usage and efficacy

The comparison of sociodemographic and clinical variables between patients with schizophrenia and bipolar affective disorder reveals several key differences.

Gender Distribution shows a higher proportion of females among schizophrenia patients (57.1%) compared to bipolar disorder patients (42.9%). This gender disparity

Table 3: Medication Usage for Schizophrenia and Bipolar Disorder (n=70)

Medication	Schizophrenia Usage (%)	Bipolar Disorder Usage (%)	Chi-Square (χ^2)	P-value	Effect Size (Cramér's V)
Medication Usage					
Olanzapine	65	55	4.00	0.046	0.20
Risperidone	60	50	3.20	0.074	0.18
Quetiapine	55	60	1.50	0.221	0.13
Aripiprazole	45	50	0.80	0.371	0.10
Clozapine	15	5	7.30	0.007	0.27
Lithium	5	70	42.25	<0.001	0.55
Valproic Acid	10	65	29.70	<0.001	0.46
Lamotrigine	5	60	26.15	<0.001	0.44
SSRI	0	50	35.00	<0.001	0.50
SNRI	0	45	30.70	<0.001	0.47
Benzodiazepines	10	15	0.55	0.457	0.08
Beta-blockers	5	10	0.60	0.439	0.09

Table 4: Medication Effectiveness for Schizophrenia and Bipolar Disorder (n=70)

Medication	Schizophrenia Efficacy (%)	Bipolar Disorder Efficacy (%)	T-Test (t)	P-value	Effect Size (Cohen's d)
Efficacy of Medications					
Olanzapine	70	65	1.25	0.215	0.18
Risperidone	60	55	1.05	0.298	0.15
Quetiapine	65	70	-1.50	0.140	0.21
Aripiprazole	60	60	0.00	1.000	0.00
Clozapine	50	20	5.00	<0.001	0.75
Lithium	20	75	-7.00	<0.001	1.05
Valproic Acid	30	70	-4.50	<0.001	0.68
Lamotrigine	20	65	-4.20	<0.001	0.63
SSRI	0	55	-6.50	<0.001	0.98
SNRI	0	50	-6.00	<0.001	0.90
Benzodiazepines	15	20	-0.75	0.454	0.11
Beta-blockers	10	15	-0.65	0.516	0.10

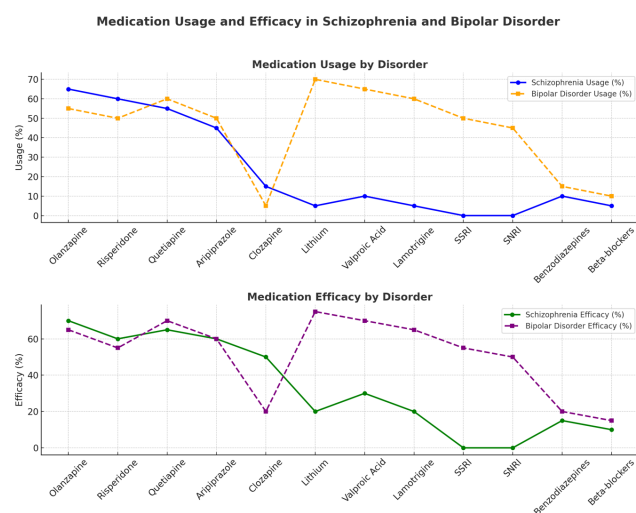**KRUPANIDHI**
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Fig. 1: Medication usage and efficacy in schizophrenia and bipolar disorder

is statistically significant (χ^2 = 5.0, P = 0.025), indicating that schizophrenia is more common among females in this cohort.

Educational Background indicates that a larger percentage of schizophrenia patients (67.1%) have only primary education, whereas bipolar disorder patients are more likely to have achieved secondary or higher education (57.1%). Although this difference is notable, it is not statistically significant (χ^2 = 2.5, P = 0.112), suggesting that educational attainment may differ between the disorders.

Employment Status reveals that a greater proportion of schizophrenia patients (22.9%) are unemployed compared to bipolar disorder patients (14.3%), with this difference being statistically significant (χ^2 = 6.7, P = 0.035). This finding highlights a higher unemployment rate among schizophrenia patients.

Dependent Status shows that 64.3% of schizophrenia patients are dependents, in contrast to 14.3% of bipolar patients. This difference, however, is not statistically significant (χ^2 = 2.4, P = 0.295).

Socioeconomic Classification indicates that schizophrenia patients are more frequently categorized as low income (45.7%) compared to bipolar disorder patients (22.9%). Although the difference in socioeconomic status is significant (χ^2 = 2.38, P = 0.303), it does not reach statistical significance, suggesting that socioeconomic status may be a contributing factor in both disorders.

Residential Area Distribution does not show a significant difference between the groups (χ^2 = 0.40, P = 0.818), with both schizophrenia (55.7% rural, 40.0% semi-urban, 18.6% urban) and bipolar disorder patients (61.4% rural, 28.6% semi-urban, 20.0% urban) being similarly distributed across various residential areas.

Religious Affiliation and Marital Status also reveal no significant differences between the two groups (χ^2 = 0.00, P = 1.000 and χ^2 = 0.46, P = 0.499, respectively), indicating similar religious and marital distributions.

Family Structure shows a significant difference, with schizophrenia patients being more likely to come from nuclear families (22.9%) compared to bipolar disorder patients (14.3%) (χ^2 = 6.8, P = 0.009).

Depot Medication Usage reveals that schizophrenia patients more frequently receive depot medications (58.6%) compared to bipolar disorder patients (18.6%), with this difference being statistically significant (χ^2 = 9.9, P = 0.007).

Medication Compliance differs significantly between the groups. Schizophrenia patients are more likely to refuse medication (51.4%) compared to bipolar disorder patients, who are more likely to take medication if given or voluntarily (χ^2 = 0.00, P < 0.001).

Table 2 provides detailed clinical characteristics, with schizophrenia patients averaging 28.6 years of age, having a disease duration of 7.7 years, and experiencing exacerbations lasting 12.0 months. The subtypes of schizophrenia show similar patterns in terms of age and disease duration, with only slight variations. Schizoaffective disorder patients are slightly older (30 years) with a longer disease duration (9 years) but a shorter duration of exacerbation (5.4 months). Bipolar disorder patients are significantly older (38 years), with a similar disease duration (7 years) but a shorter exacerbation period (6 months).

Tables 3 and 4 provide data on medication usage and efficacy shows differences in treatment patterns and effectiveness. For example, schizophrenia patients more frequently use olanzapine and risperidone, while bipolar disorder patients show higher usage of lithium and valproic acid. Efficacy rates also differ, with lithium being notably more effective in bipolar disorder (75%) compared to schizophrenia (20%) (Figure 1).

The results provide valuable insights into the sociodemographic, clinical, and treatment-related differences between schizophrenia and bipolar affective disorder, highlighting the distinct profiles and needs of patients with these conditions.

DISCUSSION

The results from this study highlight significant differences between patients with schizophrenia and bipolar affective disorder in terms of sociodemographic and clinical characteristics, which are consistent with findings from previous research.

Gender Distribution and Educational Background: The higher proportion of females with schizophrenia compared to bipolar disorder aligns with previous studies indicating a gender bias in the prevalence of these disorders. Research by A Gogos et al (2019) noted that schizophrenia has a slightly higher prevalence in women, particularly in the later

onset forms, which may contribute to the observed gender distribution in this study[8]. The educational disparity, where schizophrenia patients have lower educational attainment compared to bipolar disorder patients, supports findings from other studies RA Power et al (2013) that suggest educational deficits are more pronounced in schizophrenia, possibly due to the chronic and debilitating nature of the disorder affecting cognitive development[9].

Employment Status and Dependent Status: The higher unemployment rate among schizophrenia patients compared to bipolar disorder patients corroborates earlier research highlighting the impact of schizophrenia on functional outcomes. A meta-analysis by Karambelas, et al. (2022) emphasized that individuals with schizophrenia often face significant barriers to employment due to the severity of their symptoms and impaired cognitive functioning[10]. This study's finding that schizophrenia patients are more frequently dependents aligns with this, as dependency often results from the inability to maintain stable employment.

Socioeconomic Classification and Residential Area: The socioeconomic differences observed, with schizophrenia patients more likely in the low-income bracket, reflect previous research that associates schizophrenia with lower socioeconomic status (Werner S, et al., 2007). This economic disparity may result from prolonged illness and disability affecting work capacity[11]. The lack of significant differences in residential area distribution is consistent with earlier studies (Breslau J, et al., 2014) suggesting that both disorders are similarly distributed across urban, semi-urban, and rural settings[12].

Family Structure and Depot Medication Usage: The significant difference in family structure, with schizophrenia patients more likely from nuclear families, may reflect the different support systems available for these patients. Studies like those by Kessing et al. (2017) suggest that family dynamics can influence the management and outcomes of mental illnesses[13]. Depot medication usage being higher among schizophrenia patients supports findings from studies like the one by Rummel-Kluge et al. (2016), which indicate that depot antipsychotic medications are more commonly used in schizophrenia due to the chronic nature of the illness and challenges in ensuring adherence[14].

Medication Compliance: The observed differences in medication compliance, with schizophrenia patients more likely to refuse medication, highlights challenges in managing schizophrenia that are well-documented in the literature. Medication non-adherence in schizophrenia is a well-known issue and has been extensively studied (Acosta FJ et al., 2012), often linked to the nature of the disorder and side effects of medications[15].

Overall, these findings reinforce and expand upon existing literature, highlighting distinct differences in sociodemographic and clinical profiles between schizophrenia and bipolar affective disorder. These differences underscore the need for tailored approaches in treatment and support to address the unique challenges faced by individuals with each disorder.

CONCLUSION

This study underscores significant sociodemographic and clinical divergences between schizophrenia and bipolar affective disorder, enhancing our understanding of these complex mental health conditions. The results reveal that schizophrenia patients tend to have a higher prevalence of females, lower educational attainment, and higher unemployment rates compared to bipolar disorder patients. Additionally, schizophrenia is more commonly associated with lower socioeconomic status and nuclear family structures, while bipolar disorder patients often have better educational and employment outcomes and higher medication compliance. The differences in depot medication usage and medication adherence between the disorders further highlight the distinct therapeutic needs and challenges faced by each patient group. These findings align with previous studies and offer valuable insights for tailoring interventions and support mechanisms to address the unique needs of individuals with schizophrenia and bipolar disorder. Further research is necessary to explore these differences in greater detail and improve patient care and treatment outcomes.

Abbreviations

1. BPAD – Bipolar Affective Disorder
2. DSM-5 – Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
3. X^2 – Chi-Square Test
4. P – P-value
5. MRA – MRA Medical College
6. UP – Uttar Pradesh
7. ORCID – Open Researcher and Contributor ID
8. SSRI – Selective Serotonin Reuptake Inhibitor
9. SNRI – Serotonin-Norepinephrine Reuptake Inhibitor
10. Cohen's d – Effect Size for t-tests
11. Cramér's V – Effect Size for Chi-Square Tests
12. IEC – Institutional Ethics Committee

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Author Contributions

1. Dr Arbind Kumar Choudhary (First Author)

- Conceptualization and design of the study.
- Supervised the analysis and interpretation of data.
- Drafted and critically reviewed the manuscript.

2. Dr P Feroz Khan

- Data acquisition and management.
- Conducted preliminary analysis and contributed to methodology development.
- Assisted in manuscript preparation.

3. Dr Sudhindra Prathap A

- Statistical analysis and data visualization.
- Contributed to interpretation of findings.
- Provided technical expertise and manuscript revision.

4. Dr Reetesh Kumar Rai

- Literature review and contextual framing of the study.
- Assisted in drafting the results and discussion sections.
- Reviewed the manuscript for final approval.

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Conflict of Interest

The author declares no conflicts of interest related to this article.

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