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ATTITUDES, FACTORS, AND STRATEGIES INFLUENCING MEDICATION COMPLIANCE IN SCHIZOPHRENIC PATIENTS

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Abstract

Objective: This study aims to examine the attitudes, factors, and strategies that influence medication adherence among patients with schizophrenia, with the goal of developing effective interventions to improve compliance.

Methods: A cross-sectional study was conducted from January to December 2022 in the Psychiatry Department of a tertiary care hospital. The sample included 124 patients diagnosed with schizophrenia. Demographic, psychosocial, and clinical factors were assessed through structured questionnaires and medical records. Medication adherence was defined as taking prescribed medications at least 80% of the time over the previous month.

Results: Of the 124 patients, 61.3% were adherent, while 38.7% were non-adherent to their prescribed treatment. Key factors influencing adherence included positive attitudes toward medication, daily perceived benefits, family support, confidence in relapse prevention, and absence of barriers such as stigma, financial challenges, and substance use. Higher levels of patient insight and positive attitudes toward treatment were strongly associated with adherence.

Conclusion: Positive clinical and psychosocial factors play a crucial role in enhancing medication adherence among individuals with schizophrenia. Effective interventions should focus on improving patient awareness, fostering supportive attitudes, strengthening family involvement, and addressing barriers to treatment access and stigma.

Keywords: Patient Awareness, Psychosocial Factors, Medication Compliance, Schizophrenia

1. INTRODUCTION

Adherence to medication is a critical factor in clinical results in schizophrenia as well as other serious mental illnesses. Although effective antipsychotic drugs are available, the non adherence problem remains a challenge, with rates ranging widely from 26.5% and 85.1% [1]. The current variability highlights the complex interaction of the variables influencing adherence which ranges between individual patient attitudes to broader socio-demographic circumstances. Medication non adherence not only worsens the clinical symptoms but additionally, it also results in repeated hospitalizations, less favourable overall prognosis as well as increased healthcare costs. Understanding the many complex factors that influence medication adherence within schizophrenia individuals is crucial for the development of effective therapies as well as for improving patient results.

Many studies have emphasized the significance of psychological as well as attitudinal factors. Negative attitudes towards medicine, along with the presence of internalized stigma, significantly influence non adherence [1]. Marrero et al. understood the significance of health attitudes, locus of control, along with self-efficacy in adherence [4]. Impaired insight into the illness is another necessary obstacle, necessitating early treatments to enhance insight [6]. Buchman-Wildbaum et al. discovered the experiences of loss as well as sadness may be used to predict nonadherence [14].

Social assistance, as well as the participation of family caregivers, also play a critical role. The presence and attitudes of family caregivers significantly influence the adherence to stigma as well as the lack of awareness about mental illness being identified as the crucial factors in rural China [2]. Effective doctor-patient communication as well as positive medicine attitudes, have separate and significant impacts on improving adherence rates [3,7]. Surmann et al. emphasized the importance of the therapeutic partnership, emphasizing positive clinician input as well as less self-stigmatization are the attitude of better adherence [5].

The therapeutic relationship between patients along healthcare professionals during clinical contracts is important for better treatment. Positive clinician feedback, along with low self-stigmatization, are linked to better adherence attitudes, which emphasize the importance of a robust therapeutic connection [5]. The episodic character of schizophrenia, as the research was conducted in China, influences the age, steady income as well as severity of the illness, which affects the influence of medical adherence [8]. Gaigl et al. highlighted the limited knowledge along with the adherence rates with treatment standards among mental healthcare professionals, which further complicates the problem of adherence [10].

Socioeconomic position, urban residence, along current substance use are the important factors that significantly affect adherence [7,15]. Huang et al. investigated the challenges encountered by the family caregivers which emphasize their desire for greater participation in decision-making procedures [12]. Ma et al. conducted the examination of organizational factors on reviewed nurses' perspectives towards antipsychotics by highlighting the attitudes [13]. Innovative methods such as frontotemporal transcranial direct current stimulation (tDCS) have shown the potential to enhance the attitudes toward medication adherence along with the quality of life [11].

The purpose of this study is to examine the attitudes, techniques, along strategies that influence medication compliance among schizophrenic patients with the purpose of developing effective treatments to enhance adherence.

This work is motivated by the need to better understand the multifaceted nature of medical adherence in individuals with schizophrenia. Due to the significant influence of nonadherence on patient results, there is a need to develop efficient therapies that are tailored to several factors that influence adherence.

The adherence to medicine in patients of schizophrenia is affected by a complex interplay of psychological, clinical, social, along socio-demographic variables. It is essential to address this variable through targeted multifaceted interventions which is essential for enhancing adherence as well as improving patient results. The further sections include the methodology, which outlines the research design, analysis as well as data collection. The result section provides the findings along with the interpretations of the results. Discussion sections compare the findings of the results with the existing literature, and the conclusion summarizes the key insights.

2. METHODOLOGY

Study Design and Setting

The study was conducted at a tertiary care psychiatric facility at the Institute of Mental Health, Chennai, after obtaining approval from the institutional ethics committee (ECR/270/Inst./TN/2013) of Madras Medical College. The study spanned a period of one year. The work sought to investigate the factors, attitudes as well as strategies that impact medication compliance in schizophrenic patients. The trial duration spanned from January 2022 to December 2022.

Study Population

The study included a total of 124 patients diagnosed with schizophrenia according to the DSM-5 criteria. Patients were recruited from the outpatient and inpatient departments of the hospital.

Inclusion criteria

- Patients aged 18 years and above
- Those diagnosed with schizophrenia for at least one year
- Those who provided informed consent.

Exclusion criteria

- Patients with co-morbid psychiatric disorders other than schizophrenia
- Patients who were unable to communicate or understand the survey due to cognitive impairments.

Data Collection

Data were collected using a structured questionnaire and patient medical records. The questionnaire was designed to assess demographic variables, clinical and psychosocial factors, and medication compliance.

- Demographic Variables: It included sections on age, sex, marital status, educational level, occupation, family income, and type of family.
- Clinical Variables: It included age of onset, patient insight, and symptomatology (positive and negative symptoms).
- Psychosocial Variables: These included attitudes towards medication, perceived daily benefit, family belief, belief in relapse prevention, pressure to take medication, fear of rehospitalization, access to treatment, embarrassment or stigma, financial obstacles, substance use, denial of illness, the belief that medication is unnecessary, distress by side effects, and desire for hospitalization.

Medication Compliance Assessment

Medication compliance was assessed through self-reporting by patients and verification from their medical records. Compliance was defined as taking medications as prescribed for at least 80% of the time over the past month. Patients were categorized into compliant and non-compliant groups based on this criterion.

Statistical Analysis

Data were entered into a computerized database and analyzed using SPSS version 25.0. Descriptive statistics such as mean, standard deviation, frequencies, and percentages were calculated for demographic and clinical variables. Chi-square tests were used to compare compliant and non-compliant groups across various demographic, clinical, and psychosocial variables. A p-value of less than 0.05 was considered statistically significant.

3. RESULTS

Demographic and Socioeconomic Variables

The study included 124 patients diagnosed with schizophrenia, out of which 76 (61.3%) were compliant with their medication regimen and 48 (38.7%) were non-compliant. Table 1 provides a comparative analysis of demographic and socioeconomic variables between compliant and non-compliant patients.

Table 1: Demographic and Socioeconomic Characteristics of Compliant and Non-compliant Patients

Variable	Compliant (n=76)	Non-compliant (n=48)	Chi-square score	P-value	Significance
Age Group	<30 years: 22 (28.9%)	<30 years: 11 (22.9%)	0.548	0.459	Non-significant
	>30 years: 54 (71.1%)	>30 years: 37 (77.1%)			
Age of Onset	18-24 years: 20 (26.3%)	18-24 years: 10 (20.8%)	2.163	0.539	Non-significant
	25-30 years: 24 (31.6%)	25-30 years: 16 (33.3%)			
	31-36 years: 18 (23.7%)	31-36 years: 10 (20.8%)			
	>36 years: 14 (18.4%)	>36 years: 12 (25.0%)			
Sex	Male: 44 (57.9%)	Male: 28 (58.3%)	0.002	0.962	Non-significant
	Female: 32 (42.1%)	Female: 20 (41.7%)			
Marital Status	Married: 47 (61.8%)	Married: 34 (70.8%)	1.05	0.306	Non-significant
	Single: 29 (38.2%)	Single: 14 (29.2%)			
Education Status	Illiterate: 28 (36.8%)	Illiterate: 20 (41.7%)	1.028	0.795	Non-significant
	Primary: 18 (23.7%)	Primary: 11 (22.9%)			
	Secondary: 12 (15.8%)	Secondary: 9 (18.8%)			
	Graduate: 18 (23.7%)	Graduate: 8 (16.7%)			
Occupation	Employed: 16 (21.1%)	Employed: 14 (29.2%)	1.056	0.304	Non-significant
	Unemployed: 60 (78.9%)	Unemployed: 34 (70.8%)			
Family Income	<₹5000: 36 (47.4%)	<₹5000: 25 (52.1%)	0.262	0.609	Non-significant
	>₹5000: 40 (52.6%)	>₹5000: 23 (47.9%)			
Type of Family	Nuclear: 55 (72.4%)	Nuclear: 40 (83.3%)	1.974	0.16	Non-significant
	Joint: 21 (27.6%)	Joint: 8 (16.7%)			

Table 1 indicates no significant differences between compliant and non-compliant groups regarding age, age of onset, sex, marital status, education status, occupation, family income, and type of family. This suggests that demographic and socioeconomic variables do not significantly impact medication compliance among schizophrenic patients. The Chi-square scores and P-values for each variable indicate the lack of significant association, as all P-values are above the conventional significance level of 0.05.

Clinical and Psychosocial Variables

The clinical and psychosocial variables are presented in Table 2. There were significant differences between compliant and non-compliant groups in several variables.

Table 2: Clinical and Psychosocial Variables Influencing Medication Compliance

Variable	Compliant (n=76)	Non-compliant (n=48)	Chi-square score	P-value	Significance
Patient Insight	Present: 72 (94.7%)	Present: 6 (12.5%)	85.262	<0.001	Highly significant
	Absent: 4 (5.3%)	Absent: 42 (87.5%)			
Attitude Towards Medication	Positive: 73 (96.1%)	Positive: 3 (6.2%)	100	<0.001	Highly significant
	Negative: 3 (3.9%)	Negative: 45 (93.8%)			
Positive and Negative Symptoms	Positive: 58 (76.3%)	Positive: 20 (41.7%)	15.136	<0.001	Highly significant
	Negative: 18 (23.7%)	Negative: 28 (58.3%)			
Perceived Daily Benefit	Strong: 65 (85.5%)	Strong: 1 (2.1%)	91.931	<0.001	Highly significant
	Mild: 10 (13.2%)	Mild: 13 (27.1%)			
	None: 1 (1.3%)	None: 34 (70.8%)			

Positive Family Belief	Strong: 68 (89.5%)	Strong: 3 (6.2%)	91.658	<0.001	Highly significant
	Mild: 8 (10.5%)	Mild: 12 (25.0%)			
	None: 0 (0%)	None: 33 (68.8%)			
Belief in Relapse Prevention	Strong: 63 (82.9%)	Strong: 1 (2.1%)	89.376	<0.001	Highly significant
	Mild: 10 (13.2%)	Mild: 8 (16.7%)			
	None: 3 (3.9%)	None: 39 (81.3%)			
Pressure or Force to Take Medication	None: 52 (68.4%)	None: 8 (16.7%)	41.669	<0.001	Highly significant
	Mild: 21 (27.6%)	Mild: 19 (39.6%)			
	Strong: 3 (3.9%)	Strong: 21 (43.8%)			
Fear of Rehospitalization	Strong: 44 (57.9%)	Strong: 4 (8.3%)	34.304	<0.001	Highly significant
	Mild: 21 (27.6%)	Mild: 19 (39.6%)			
	None: 11 (14.5%)	None: 25 (52.1%)			
Access to Treatment Problems	None: 58 (76.3%)	None: 4 (8.3%)	68.854	<0.001	Highly significant
	Mild: 16 (21.1%)	Mild: 14 (29.2%)			
	Strong: 2 (2.6%)	Strong: 30 (62.5%)			
Embarrassment or Stigma	None: 38 (50%)	None: 14 (29.2%)	20.728	<0.001	Highly significant
	Mild: 33 (43.4%)	Mild: 15 (31.3%)			
	Strong: 5 (6.6%)	Strong: 19 (39.6%)			
Financial Obstacles	None: 57 (75%)	None: 6 (12.5%)	67.02	<0.001	Highly significant
	Mild: 16 (21.1%)	Mild: 8 (16.7%)			
	Strong: 3 (3.9%)	Strong: 34 (70.8%)			
Substance Use	None: 59 (77.6%)	None: 9 (18.8%)	58.1	<0.001	Highly significant
	Mild: 14 (18.4%)	Mild: 8 (16.7%)			
	Strong: 3 (3.9%)	Strong: 31 (64.6%)			
Denial of Illness	None: 48 (63.2%)	None: 1 (2.1%)	85.058	<0.001	Highly significant
	Mild: 25 (32.9%)	Mild: 7 (14.6%)			
	Strong: 3 (3.9%)	Strong: 40 (83.3%)			
Belief that Medication is Unnecessary	None: 62 (81.6%)	None: 1 (2.1%)	93.561	<0.001	Highly significant
	Mild: 11 (14.5%)	Mild: 5 (10.4%)			
	Strong: 3 (3.9%)	Strong: 42 (87.5%)			
Distress by Side Effects	None: 52 (68.4%)	None: 1 (2.1%)	85.974	<0.001	Highly significant
	Mild: 21 (27.6%)	Mild: 7 (14.6%)			
	Strong: 3 (3.9%)	Strong: 40 (83.3%)			
Desire for Hospitalization	None: 39 (51.3%)	None: 5 (10.4%)	23.549	<0.001	Significant
	Mild: 23 (30.3%)	Mild: 20 (41.7%)			
	Strong: 14 (18.4%)	Strong: 23 (47.9%)			

Table 2 highlights the significant factors influencing medication compliance among patients with schizophrenia. Key determinants include positive attitudes towards medication, perceived daily benefits, family support, belief in relapse prevention, and the absence of significant side effects or stigma.

- Patient Insight: Compliant patients show significantly higher levels of insight into their illness (94.7% vs. 12.5%), recognizing the importance of their treatment.
- Attitude Towards Medication: Almost all compliant patients have a positive attitude towards their medication (96.1% vs. 6.2%).
- Positive and Negative Symptoms: Compliant patients are more likely to have fewer negative symptoms (76.3% positive vs. 41.7% positive).
- Perceived Daily Benefit: Compliant patients perceive more daily benefits from their medication (85.5% strong vs. 2.1% strong).

- Family Support: Compliant patients receive stronger family support (89.5% strong vs. 6.2% strong).
- Belief in Relapse Prevention: Compliant patients have a stronger belief in preventing relapse through medication (82.9% strong vs. 2.1% strong).
- Pressure to Take Medication: Non-compliant patients feel more pressured or forced to take their medication (43.8% strong vs. 3.9% strong).
- Fear of Rehospitalization: Compliant patients have a higher fear of rehospitalization, which may motivate adherence (57.9% strong vs. 8.3% strong).
- Access to Treatment: Non-compliant patients face more significant problems in accessing treatment (62.5% strong vs. 2.6% strong).
- Embarrassment or Stigma: Non-compliant patients experience more stigma associated with their illness (39.6% strong vs. 6.6% strong).
- Financial Obstacles: Non-compliant patients encounter more financial obstacles (70.8% strong vs. 3.9% strong).
- Substance Use: There is a higher prevalence of substance use among non-compliant patients (64.6% strong vs. 3.9% strong).
- Denial of Illness: Non-compliant patients are more likely to be in denial about their illness (83.3% strong vs. 3.9% strong).
- Belief that Medication is Unnecessary: Non-compliant patients are more likely to believe that their medication is unnecessary (87.5% strong vs. 3.9% strong).
- Distress by Side Effects: Non-compliant patients experience more distress due to medication side effects (83.3% strong vs. 3.9% strong).
- Desire for Hospitalization: Non-compliant patients have a higher desire for hospitalization (47.9% strong vs. 18.4% strong).

The data displayed in Table 2 highlights the importance of the clinical as well as the psychosocial factors that are crucial in determining medication compliance among schizophrenic individuals. The Chi-square tests indicate significant differences ($P < 0.001$) for the majority of the clinical along with the psychosocial variables between compliant as well as non-compliant groups. This suggests that these factors play a vital role in determining medication compliance among individuals with schizophrenia. The outcomes underscore the need for addressing these factors to enhance adherence to medication.

Figure 1: Comparison of key Factors between Compliant and Non-compliant Groups

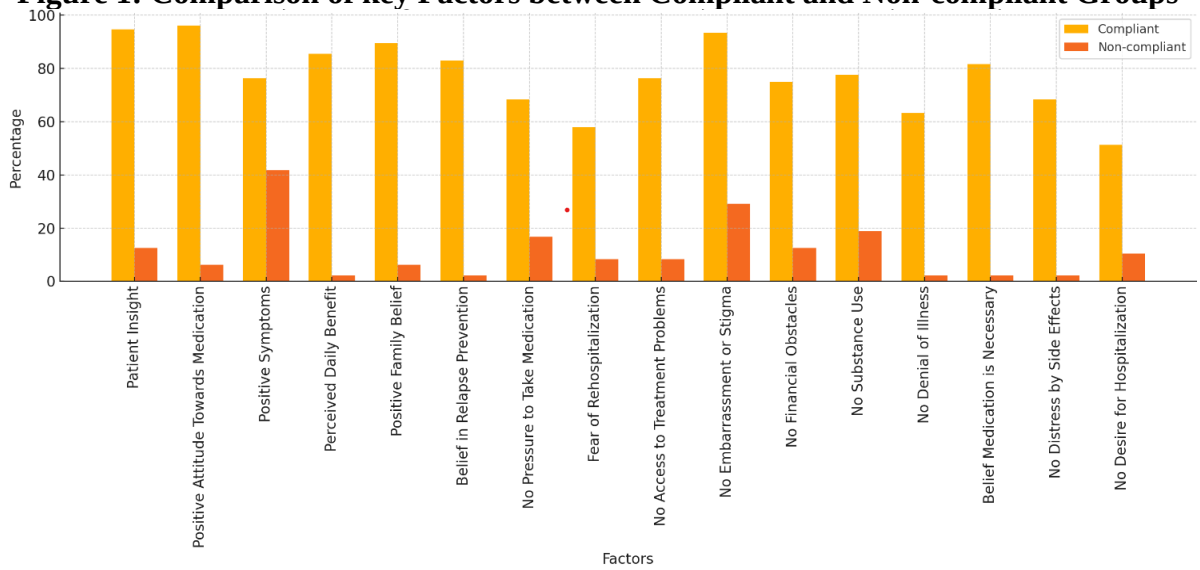

Figure 1 presents a comparative analysis of key characteristics between patients who are compliant with their medication regimen along those who are not. Figure 1 emphasizes the following key aspects:

- Patient Insight: Patients who exhibit a higher understanding of their illness. This means they are conscious of their health condition as well as understand the importance of adhering to their treatment plan.
- Positive Attitudes towards Medication: A larger percentage of compliant patients have positive attitudes towards taking their medication, which likely contributes to their adherence.
- Perceived Daily Benefits: Compliant patients are more likely to perceive significant daily benefits from their medication, reinforcing their adherence.
- Family Support: Compliant patients receive stronger support from their families, which aids in maintaining their medication regimen.
- Access to Treatment: Compliant patients report fewer issues with accessing their treatment, indicating that logistical barriers are less of a problem for them.
- Stigma: Compliant patients face less stigma associated with their illness and medication, which can improve their willingness to adhere to their treatment.
- Financial Obstacles: Non-compliant patients encounter more financial barriers in obtaining their medication, which can hinder adherence.
- Substance Use: There is a higher prevalence of substance use among non-compliant patients, which can negatively impact their ability to adhere to medication.

Figure 2: Distribution of Patient Insight

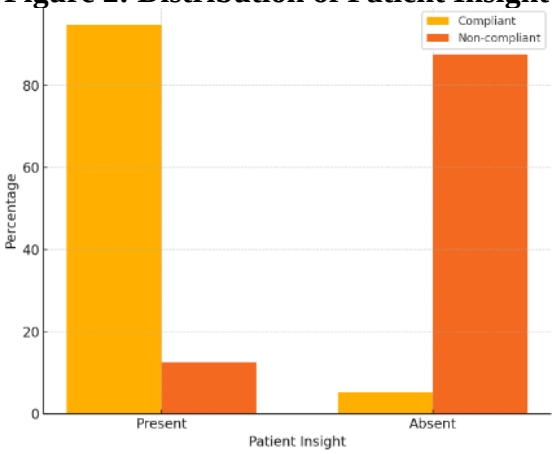

Figure 2 depicts the patient distribution understanding among patients who adhere to compliance and non-compliant. Key observations consist of:

- Higher Insight in Compliant Patients: Patient compliance demonstrate a greater significant level of insight into their condition. This highlighted awareness and enables the individuals to understand the necessity of their medication leading to better adherence.
- Lower Insight in Non-compliant Patients: Non-compliant patients have reduced levels of insight leading to a less likely to recognize the importance of their medicine which contributes to their non-adherence.

Figure 3: Distribution of Attitude Towards Medicine

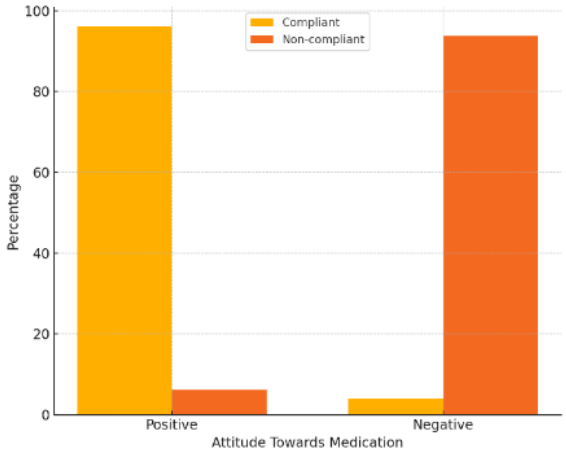

Figure 3 illustrates the distribution of attitudes toward medicine among compliant along non-compliant patients. The notable observations were:

- Positive Attitudes in Compliant Patients: The majority of patients hold positive attitudes regarding their medication. This optimistic perspective is often motivated by their recognition of the medication's benefits and the support they receive from their families along with healthcare professionals.
- Negative Attitudes in Non-compliant Patients: Non-compliant patients sometimes exhibit unfavourable attitudes towards their medicine, possibly due to an absence of perceived advantages, side effects, or external factors like stigma as well as substance use.

Clinical as well as psychosocial factors are essential in medication compliance among individuals with schizophrenia. The group that adhered to significantly high levels of patient insight perceived daily advantages, favourable attitudes towards medicine as well as family support. They experienced a reduced number of issues related to treatment accessibility, stigma, financial barriers as well as drug abuse.

4. DISCUSSION

The outcomes of this study are consistent with and extend upon previous studies on medication adherence in schizophrenia, which highlights the multifaceted nature of compliance. The study results align with the existing findings indicating that variables like positive attitudes towards medicine, perceived daily advantages, family support as well as confidence in relapse prevention were identified as significant factors influencing adherence to treatment [1,9].

These results significantly collaborated the significance of patient understanding along with good attitudes towards medicine. Patients with a higher level of disease awareness, as well as favourable attitudes toward their medicine, were more likely to follow their prescribed treatment plan. This corroborates with the findings of Kim et al. who emphasized the crucial importance of insight in improving medicine adherence [6]. Meta-analysis conducted by Kim et al. revealed that patients with higher levels of insight are more likely to acknowledge the importance of their treatment and, therefore, adhere more consistently [6].

Family support plays a crucial role in medication adherence observed in the current study and aligns with findings from Li et al., which emphasized the impact of family carers on adherence in rural China [2]. The supportive family members who encourage along with reminders patients to take their medicine can greatly improve adherence rates. Marrero et al. identified health attitudes as well as self-efficacy as essential determinants, indicating that family support may enhance these factors by creating a supportive environment that reinforces beneficial health behaviours [4].

Barriers like stigma, financial barriers as well and drug use were significant impediments to adherence in this research, which aligns with the results reported by Ghosh et al. The review by Ghosh et al. highlighted that socioeconomic difficulties often result in nonadherence due to the financial burden

of medicine as well as the smaller number of resources to support ongoing therapy [7]. The impact of stigma along with drug use, as identified in the current work, aligns with Barlati et al., who observed that internalized stigma and concurrent substance misuse disorders greatly hinder medication adherence [9].

The significance of the therapeutic relationship among patients as well as healthcare providers is highlighted in this current work, which aligns with the findings made by Surmann et al. [5]. Establishing a strong as well as positive relationship with clinicians may boost patients' perspectives on their prescribed treatment plan, diminish self-stigmatization, along promote adherence. Effective communication, as well as a supportive clinical environment, are crucial in establishing this bond.

The current findings suggest that treatments aimed at improving patient understanding, attitudes toward medicine as well as family support may greatly enhance adherence. Buchman-Wildbaum et al. [14], who identified health beliefs along with psychological factors as predictors of medication adherence, have supported these findings. Psychoeducation programs, as well as family participation strategies, may effectively address these factors, helping individuals to understand the benefits of their medication as well as encouraging a helpful home environment.

To tackle wider socio-economic obstacles like financial obstacles along with stigma needs policy as well as community-level interventions. Huang et al. highlighted the need for increased participation of family carers in decision-making processes, which suggests that policies that promote caregiver education along with involvement could improve adherence [12]. Interventions targeted at reducing stigma, as well as providing financial assistance for medications, could alleviate some of the notable barriers highlighted in this study.

The need of innovative interventions like fronto-temporal transcranial direct current stimulation (tDCS), to enhance attitudes towards medicine adherence as well as quality of life as proposed by Kao et al. [11]. Exploring noval therapy modalities and their influence on adherence might provide additional tools for clinicians to assist their patients.

This study's cross-sectional design limits its ability to demonstrate, which precludes the establishment of causality. Self-reported assessments of adherence, as well as attitudes, may be subject to bias. Future research should include longitudinal designs as well as the use of objective measures of adherence to verify these findings.

5. CONCLUSION

The present study undergoes the importance of positive clinical as well as psychosocial variables in highlighting medication adherence among schizophrenic individuals. Through a thorough analysis of existing literature, this research underscores the need for implementing multi-faceted interventions that address both individual as well as systemic barriers to adherence. Further investigation should continue to examine the innovative approaches as well as policy interventions to support long-term adherence along with improved patient outcomes in schizophrenia. Future research should prioritize doing longitudinal studies to identify causal relationships along with incorporating objective measures of adherence. It will be crucial in exploring innovative therapeutic approaches like transcranial direct current stimulation [16] (tDCS) as well as developing policy interventions to reduce socio-economic barriers along with stigma will be essential. Examining the efficacy of psychoeducation programs, as well as the involvement of family strategies in diverse populations, can further inform customized treatments to enhance medication adherence.

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