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RESEACH ARTICLE

Correlate between Socio-Demographic Characteristics and Level of Knowledge of Mental Illness and Medication Adherence Among Patients with Their Caregivers in Jigawa State, Nigeria

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Abstract

Background: Patients must begin therapy and continue to take their prescriptions at the appropriate times to exhibit adherence to antipsychotics, which is a complicated and dynamic behaviour. Patients and society's quality of life may be greatly enhanced by adherence to treatment. The purpose of this study is to examine the relationship between patients with mental illness and their caregivers' sociodemographic traits, degree of understanding about mental illness and medication adherence in Jigawa State, Nigeria. **Methods:** A quasi-experimental design was used in this study. Using a multistage sampling technique, 260 individuals with mental illness and their caregivers were recruited for the study from psychiatric facilities in Jigawa State. The study was then separated into two groups, 130 patients in each group: the experimental and the control group. A semi-structured questionnaire was the instrument utilized during and after the data collection. All ethical considerations were obtained. **Results**: Only about one third of the study participants have educational status of non-formal in both the experimental and the control group. More than half of the study participants in both groups were females. In terms of ethnicity and tribe, Hausa and Muslims constitute majority of the study population with most of them being housewives. Following the application of logistic regression analysis, the study participants' educational status, cost of treatment and family history were found to be the significant predictors of good knowledge regarding mental illness and medication adherence. **Conclusion:** There is a correlation between the caregivers' knowledge of mental illness, medication adherence, their ethnic group, religion and monthly income.

Keywords: Caregivers, knowledge, mental illness, medication adherence, patients.

Introduction

A key element in preventing relapses is the family's mindset. Patients are at higher risk of recurrence if their caregivers exhibit strong emotional expression and do not treat them and their condition with a suitable demeanour (Azaiez et al., 2018). The attitude of the caretakers may be altered, and the harmful effects of their attitude could be lessened, via education and increased knowledge. Research demonstrates that when caregivers are well-informed about the disorder, its symptoms, and the patient's moods, the patient's agitation and stress levels decrease and their problem-solving skills rise. For this reason, all patients in Jigawa state, Nigeria, who suffer

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from mental illness require effective psycho-educational interventions. Enhancing coping mechanisms and providing psycho-educational programs are two common goals of family therapies. However, there are instances when family members fail to provide support for individuals suffering from mental illness. In the absence of treatment, their unusual conduct can cause them to become isolated from their family and their problems become exacerbated. The affection and support of one's family is crucial for the treatment of mental illness. Family caregivers must take advantage of these programs because it might be challenging to assist a patient family member without receiving assistance from social services (psycho-educational interventions). In addition, they must look after themselves to combat the challenges of providing care (Azaiez et al., 2018**).** According to Bauml et al. (2018), excessive obligation on the part of caregivers often results in expressed emotion, or a certain attitude toward patients with serious mental illness, which negatively impacts the patient's quality of life. Caregivers may find it challenging to offer care following a diagnosis of a mental illness. Psycho-educational therapies have the potential to alleviate caregiving stress, enhance patients' mental and physical well-being, improve the quality of life for main caregivers, and increase patient and caregiver understanding of mental health issues.

According to Bauml *et al.* (2006), "psycho-education" refers to systemic, didactic psychotherapeutic interventions that are suitable for educating patients and their families about an illness and its treatment, promoting understanding and personally accountable management of the illness, and assisting those affected in managing the disorder. The process of educating patients and their families about causes of mental illness, symptoms, outcomes, prognosis, available treatments, and other options is known as psychoeducation (Alizioti and Lyrakos, 2021).

Psychotherapy treatment method: In the 18th and early 19th centuries, philanthropists such as Johann Heinrich Pestalozzi (1746 – 1827) and Dr. Samual Gridley Howe (1801-1876) employed educational methods to provide therapeutic care and services to individuals who were physically and psychologically compromised. However, before the start of the "Mental Hygiene Movement" in the early 20th century and the "Deinstitutionalization Movement of 1950–1960", he did not provide an example of a formalized psychoeducation program. Following the introduction of "Expressed Emotion" and the "Family Burden Concept" concerning severe and persistent psychiatric disorders such as mental health sickness, psychoeducation became increasingly prominent in the area of psychiatry (Srivastava, 2017).

According to American researcher C.M. Anderson, the term "psychoeducation" became widespread and developed into its modern form in 1980. She developed this technique as a useful yet supplemental treatment for mental disorders. She undertook some admirable efforts to create psychoeducation as a therapeutic intervention modality for those with persistent mental disorders through scientific means (Sharif et al., 2012).

Drug Adherence

Adhering to recommended drug regimens is crucial since it reduces the risk of hospitalization by 5.5 per cent and increases the number of deaths caused by medication errors by an astounding 8.48 times. Two of the biggest obstacles to finishing therapy are the expense and lack of knowledge of the prescribed course of action. According to estimates from the World Health Organization, barely 50% of patients receive prescribed long-term therapy for chronic illnesses. Because of cognitive difficulties, sadness, or health concerns, half of all prescriptions for continuous use of medications are either never filled or are not filled to the fullest extent possible. It is probably best not to take medication for asymptomatic disorders lightly, since this could lead to severe issues down the road, particularly when it comes to conditions like diabetes, high blood pressure, or high cholesterol. According to an American Heart Association survey, around 60% of patients' experience confusion when taking five or more medications.

Globally, psycho-education has roots in many historical perspectives and is strongly linked to more recent theoretical perspectives. Over the last twenty years, a deluge of health-related information has reached a broad audience. Heart disease, diabetes, hypertension, cancer, prenatal care, nutrition, and

exercise are the main topics covered in these communications. "Health psychology" is a branch of psychology that was created to address patient education, which is now widely accepted as essential to medical care, especially when treating chronic conditions like diabetes and heart disease (Bisbee & Vickar, 2012). He then delivered a brief practical lecture, covering not only the patient's symptoms but also the disease in general. He applied all of his knowledge to the particular case, and his delivery was so methodical that it was simple to follow along. His explanations were always engaging and never boring since they were so succinct, and they were easily understood because of the plain language he used to explain everything, as all technical jargons were purposefully avoided. Diabetes education is provided by numerous clinics, hospitals, and physician offices. It involves a sophisticated curriculum of lectures and one-on-one training. For instance, patients can frequently acquire healthy eating practices by assembling meals with the appropriate numbers of calories and nutrients by manipulating plastic food models. Additionally, coronary disease is quickly becoming a condition that is taught widely, with a variety of patient and family education programs, computer programs, movies, videotapes, books, and home monitoring systems available. Patient education appears to improve patient understanding of illness; reduce delay in seeking treatment; and improve patient adherence to prescribed treatment regimens. Patient education has become recognized as a core component of nursing practice and as an expected part of their daily role. Education plays a key role in the emerging field of chronic disease care coordination sometimes referred to as care transitions. Programs with a substantial educational component have emerged to support patients and families and to increase skills among healthcare providers (Bisbee & Vickar, 2012).

Psycho-educational interventions belong to a standard therapy program in acute and post-acute phases of patients with mental illness (Bäuml *et al*., 2006). In the Cochrane analysis of Pekkala & Merinder, 2002, such interventions were accompanied by a higher level of compliance, lower rate of relapse, and improved psychopathological status. In the context of the currently internationally recognized vulnerability-stress–coping model, with its assumption of a bio-psychosocial cluster of causes, psycho-educational interventions as an obligatory exercise'' program provides the foundation for numerous further treatment measures (Bäuml *et al*., 2006).

MATERIALS AND METHODS:

The Study Design

This study's design was quasi-experimental. It was carried out among caregivers and mentally-ill patients in particular institutions in Jigawa State, Nigeria, using before and after designs.

The Study Area/Setting

Jigawa state is one of the 36 states that constitute the Federal Republic of Nigeria. It is situated in the north-western part of the country

The Study Population

All patients with mental illness and their caregivers at the Federal Medical Center Birnin Kudu, Kazaure Psychiatric Hospital, Gumel General Hospital, Ringim General Hospital, Hadejia General Hospital, and Rasheed Shakoni Specialist Hospital Dutse in Jigawa State, Nigeria, made up the study population.

Inclusion Criteria for Caregivers

- Individuals suffering from mental illness who have gained insight.
- Caregivers fluent in English or the local language in reading and writing.
- Caregivers who stay overnight with patients.

Exclusion Criteria for Caregivers

- Patients with a severe mental illness.
- Absence over the period of data collection

Sample Size Determination

The minimum sample size for the study was estimated using a formula for calculating sample size for studies using a test difference in proportions and considering alpha and beta errors i.e.,

$$n = \frac{(Z_\alpha + Z_\beta)^2 x\ 2\ x\ p\ x\ q;}{d^2}$$

Z (is the standard normal deviation that corresponds to a five percent significance level) and n is the minimum sample size that is needed. Z, which stands for the standard normal deviation and indicates the test's ability to identify differences, has a value of 1.96 according to the normal distribution table. With 80 percent power employed for this investigation, the result derived from the normal distribution was 0.84.

P is the pre-interventional drug adherence level (0.471) found in a prior study; q is the complementary probability to P (i.e., 1-0.471 = 0.529); and d is the difference (at least 20 percent) between the experimental and the control groups (0.20).

By substituting the values obtained into the formula, we have:

$n= (1.96+0.84)^2$ x2 x 0.471 x 0.529/ 0.20^2

n= 3.90681312/0.04

n= 97.67

30% of the sample size was added to take care of attrition and to increase precision.

n= 97.67+29.301=126.971

n= 127.0 (approximated to the nearest whole number)

One hundred and thirty was the minimum sample size required overall (130). This indicates that 130 individuals with schizophrenia and the people who care for them were chosen for the study (intervention) and the control groups.

Sampling Technique

The multistage sampling technique was used.

The Study Instruments

The main tool used was a questionnaire prepared by the researcher based on the WHO-QoLBref rating scale.

Data Collection Methods

Preparation for data collection:

After receiving ethical clearance, the researchers and research assistants visited the chosen hospitals as part of an advocacy team to secure authorization and ask the management of those facilities for cooperation. It was accepted that other hospital employees had cooperated, especially those who worked in the mental departments and sections. Three days of training for the support workers and the research assistants were held after the planned study was approved (six research assistants and two other supporting staff). The research assistants are healthcare professionals who have conducted researches and administered questionnaires in the past.

A pre-tests session of the questionnaires was conducted in hospitals other than the ones that were chosen for this investigation. After carefully examining the pre-tested questionnaires, all required structural adjustments were made.

Baseline data collection (pre-test)

Using the study questionnaire, baseline information was gathered from possible respondents (caretakers and patients with mental illness) in both the study and the control groups. Any member of the study team who signed a consent form to participate might administer the questionnaire to participants.

Intervention

Following the collection of baseline data for both the study and the control groups, the researcher provided 10 days of psycho-education or intervention to the study group participants. Following the study objectives, the researcher conducted a thorough literature search and review before developing the training guidelines and materials.

In the meantime, there was a 10-minute break in between each 52-minute training session. After each session, an average of twelve minutes was allotted to address participants' questions.

Family Psycho-Education

In the current study, mental health patients and their caregivers received ten days of family psycho-education. As a result, twenty sessions of 37 minutes each were held. The entire focus of family psycho-education was on providing factual knowledge about the signs and symptoms of mental illness, its consequences, how to deal with a family member who has it at home, particularly concerning high expressed emotion and relapse chances, identifying early signs and symptoms of illness and the significance of regular psychotropic medication of the patients, and reducing the distress experienced by the affected family. It was designed to raise participants' awareness of mental health illness and to determine how caregivers perceived quality of life related to mental health illness. The sessions were short, semi-structured, homogeneous (all mental illness), mixed family-based psycho-education sessions.

Procedure

The International Classification of Diseases-10 Diagnostic Criteria for Research were followed to confirm the patient recruitment. The severity of the patient's psychiatric issues was evaluated using the Positive and Negative Syndrome scale. The study only included caregivers who thought their patients' conditions were mild to moderately severe. These 260 caregivers were further divided into two groups, one for experimentation and the other for control, with 130 volunteers in each group. For ten days, or ten sessions per week, the caregivers in the experimental group received family psycho-education, while the caregivers in the control group did not receive this kind of intervention. The WHO Quality of Life-BREF scale was used to calculate a pre-test score for each group. The experimental group caregivers received family psycho-education on a variety of topics, such as mental illness, its clinical manifestation, how to manage patients at home, the significance of the patients' regular psychotropic medication, how to lessen the distress in the affected family, and the value of balanced expressed emotion toward patients concerning decreased relapse rates and improved tolerability of psychotic symptoms. Using the identical sets of questionnaires used at the pre-intervention level, the post-intervention score was determined after the intervention.

Post-intervention Data Collection

All research participants received a second set of identical study questionnaires six (6) months after the intervention (psycho-education) to collect post-intervention data. Nine months was the time frame in which the study was carried out.

Ethical Considerations

Before the study started, we received ethical clearance from the Jigawa State Ministry of Health's Ethics Council. The HELSINKI declaration's terms were adhered to. Every possible study participant gave their written, informed consent. Benefits, confidentiality, and the ability for patients and their caretakers to withdraw willingly were all covered.

RESULTS

This report describes the findings of a study conducted in Jigawa State, Nigeria, to examine the relationship between sociodemographic traits, medication adherence, and patients' degree of knowledge about mental illness.

In all, 130 patients as well as their caregivers were chosen for the intervention and the control groups. A total of 207 participants and 206 individuals from the intervention and the control groups finished the study. These results indicate a response rate of 97.7 percent and 96.9 percent, respectively in the intervention and the control groups.

Table 1: In the experimental group, there was a statistically significant correlation between medication adherence and understanding of mental illness and sociodemographic characteristics such as educational status (P=0.001), ethnicity (P=0.004), and religion (P=0.025).

TABLE 1: **RELATIONSHIP BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND LEVEL OF KNOWLEDGE OF MENTAL HEALTH ILLNESS AND MEDICATION ADHERENCE IN THE EXPERIMENTAL GROUP**

Variables	Good	Poor	X^2	*P*-Value
Age range				
20 – 29	20	3	2.656	0.4478
30 – 39	33	9		
40 – 49	25	11		
>50	19	7		
	92	30		
Educational Status				
Non-formal Education	24	16	10.7167	**0.0013361***
Primary	15	6		
Secondary	33	3		
Tertiary	20	5		
Gender				
Male	49	13	0.0605	0.80575199
Female	53	17		
Ethnic group				
Hausa	85	21	8.0860	**0.00446078***
Others	7	9		
Religion				
Islam	80	20	5.0030	**0.02530365***
Christianity	12	10		
Occupation				
Farmers	19	6	7.105	0.1304
Civil servants	8	5		
Housewives	50	10		
Student	6	4		
Business	6	5		
Marital status				
Married	57	20	0.0607	0.80533653
Others	35	10		

**Statistically significant difference*

It was discovered that several sociodemographic characteristic parameters were statistically not significant (P-value as stated in the respective parameter in the table). There may be a statistically significant correlation between knowledge of mental illness and medication adherence and an individual's ethnicity and religion among the study participants because more participants of Hausa and Muslims orientation made up this group.

Knowledge of mental illness and medication adherence, family history, and side effects were found to be statistically and significantly correlated (P=0.002, P=0.0001).

*TABLE 2: **RELATIONSHIP BETWEEN MEDICAL HISTORY AND LEVEL OF KNOWLEDGE OF MENTAL ILLNESS AND MEDICATION ADHERENCE IN THE EXPERIMENTAL GROUP***

Variables	Good	Poor	X^2	P-Value
Duration of Illness				
1 – 5	19	5	0.5609	0.9053
6 -10	32	12		
11 – 20	28	8		
>20	13	5		
Contacts Health Care Provider				
Psychiatrist	46	18	1.8937	0.3880
Psychiatric Nurse	34	7		
Others	12	5		
Admitted in Hospital				
Yes	60	21	0.0671	0.79561245
No	32	9		
Health Facilities Attended				
Psychiatric Hospital	70	17	5.4186	0.066584
Social Services	5	5		
Other Hospitals	17	8		
Family History				
Yes	30	20	9.4869	**0.00206940***
No	62	10		
Member of the Family				
Father	13	5	0.7932	0.67215
Mother	17	10		
Relative	4	1		
Type(s) of Treatment				
Drugs	63	17	3.5077	0.173103
ECT	25	6		
Others	6	5		
Cost of Treatment Per Day				
< N1500.00	44	16	0.0984	0.75375945
≥ N1500.00	48	14		
Treatment Side Effects				
Yes	70	20	20.6238	**0.00000559***
No	22	10		
Types of Side Effect				
Weight Gain	31	14	2.3788	
Sexual Dysfunctions	15	5		
Vomiting	6	6		
Others	8	5		
History of Relapse				
Yes	49	13	1.6111	0.446378
No	30	10		
Not Known	13	7		
Treatment Affects Performance				
Yes	53	14	1.7346	0.42008
No	20	10		
Not Known	19	6		

**Statistically Significant Difference*

It was discovered that there was no statistically significant relationship between other medical history factors and knowledge of mental illness and medication adherence (P-value as stated in the respective parameter in the table).

Table 3: In the experimental group, there was a statistically significant correlation between medication adherence and sociodemographic characteristics such as educational status (P=0.005), ethnicity (P=0.003), religion (P=0.009), and marital status (P=0.005).

TABLE 3: ***RELATIONSHIP BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND MEDICATION ADHERENCE AMONG CAREGIVERS IN THE EXPERIMENTAL GROUP***

Variables	Good	Poor	X^2	P-Value
Age Range				
20 – 29	19	4	4.4359	0.4478
30 – 39	32	10		
40 – 49	23	13		
>50	18	3		
Educational Status				
Non-formal Education		17	13.0383	0**.004555***
Primary	12	6		
Secondary	32	2		
Tertiary	15	5		
Gender				
Male	48	14	0.0984	0.75375945
Female	43	17		
Ethnic Group				
Hausa	84	22	4.9318	**0.002636719***
Others	8	8		
Religion				
Islam	82	18	11.0919	**0.0086706***
Christianity	10	12		
Occupation				
Farmers	18	7	8.1825	0.085117
Civil servants	8	5		
Housewives	51	9		
Student	6	4		
Business	6	5		
Marital Status				
Married	65	12	7.8612	**0.00505079***
Others	27	18		

**Statistically Significant Difference*

It was discovered that several sociodemographic characteristic parameters were statistically not significant (P-value as stated in the respective parameter in the table). This indicates that the study participants stick to their drug regimens more when their educational standing is higher. Additionally, people who were married have higher rates of effective medication adherence. There may be a statistically significant correlation between medication adherence and ethnicity and religion among the study participants due to the higher proportion of Hausa and Muslim participants.

TABLE 4: ***RELATIONSHIP BETWEEN MEDICAL HISTORY AND MEDICATION ADHERENCE AMONG CAREGIVERS IN THE EXPERIMENTAL GROUP***

Variables	Good	Poor	X^2	P-Value
Duration of Illness				
1 – 5	16	8	1.5618	0.668074
6 -10	33	11		
11 – 20	29	7		
>20	14	4		
Contacts Health Care Provider				
Psychiatrist	56	8	11.533	0.0031
Psychiatric Nurse	24	17		
Others	12	5		
Admitted in Hospital				
Yes	64	17	1.1583	0.28181570
No	28	13		
Health Facilities Attended				
Psychiatric Hospital	77	7	39.2694	**0.004555***
Social Services	5	5		
Other Hospitals	10	18		
Family History				
Yes	28	18	7.2073	**0.00726076***
No	64	12		
Member of the Family				
Father	12	6	0.5556	0.756474
Mother	15	12		
Relative	3	2		
Type(s) of Treatment				
Drugs	61	17	0.3046	0.858723
ECT	23	8		
Others	8	3		
Cost of Treatment Per Day				
< N1500.00	40	20	20.1583	**0.00000713***
≥ N1500.00	52	10		
Treatment Side Effects				
Yes	71	19	1.5815	0.20854522
No	21	11		
Types of Side Effects?				
Weight Gain	29	16	2.7239	0.436183
Sexual Dysfunctions	17	5		
Vomiting	6	6		
Others	8	5		
History of Relapse				
Yes	48	14	0.8602	0.650439
No	30	10		
Not Known	12	6		
Treatment Affects Performance				
Yes	55	12	5.4586	0.065266S
No	18	12		
Not Known	19	6		

**Statistically Significant Difference*

Table 4, medication adherence was statistically and significantly correlated with the individuals' type of healthcare facility (p=0.005), family history of mental illness (p=0.008), and treatment cost (p=0.0001). As evidenced by a statistically significant association among the factors, those who attended psychiatric hospital, had a family history of mental illness, and had treatment costs over n1500.00 were more likely than others to have good medication adherence.

Table 5: MULTIVARIATE (LOGISTIC REGRESSION) ANALYSIS OF PREDICTORS OF KNOWLEDGE OF MENTAL ILLNESS AND MEDICATION ADHERENCE AMONG THE STUDY PARTICIPANTS

Predictors	Crude OR (95% CI)	Adjusted OR (95% CI)	p-value
Educational Status			
Non-formal	Referent		
Primary	0.55(0.33– 7.533)	1.25(1.11 – 12.23	**0.04153**
Secondary	3.41(2.25– 14.45)	3.04 (2.67– 20.67)	**0.00361**
Tertiary	4.12(0.88 - 14.55)	5.00 (3.13– 22.66)	**0.00047**
Ethnic group			
Others	Referent		
Hausa	2.68(0.44– 22.45)	3.00 (0.24– 15.89)	0.5672
Religion			
Christianity	Referent		
Islam	1.75(0.88– 18.43)	2.00 (0.88– 14.89)	0.98734
Cost of treatment			
< N1500	Referent		
>N1500	2.75(0.83– 24.11)	4.11 (3.13– 33.25)	**0.00231***
Family history			
No	Referent		
Yes	3.12(0.75– 22.25)	5.01(3.56 – 22.79)	**0.0007951***
Treatment Side Effects			
No	Referent		
Yes	1.12(0.99– 23.25)	2.00 (0.76– 28.97)	0.8702

Statistically Significant Difference

Table 5: Following the application of logistic regression analysis to account for confounding variables, the study participants' educational status as primary (AOR = 1.25, 95 percent CI = 1.11 – 12.23), secondary (AOR = 3.04, 95 percent CI = 2.67– 20.67) and tertiary (AOR = 5.00, 95 percent CI = 3.13 – 22.66), cost of treatment (AOR = 4.11, 95 percent CI = 3.13– 33.25), and family history (AOR = 5.01, 95 percent CI = 3.56 – 22.79) were found to be significant predictors of good knowledge regarding mental health illness and medication adherence.

TABLE 6: MULTIVARIATE (LOGISTIC REGRESSION) ANALYSIS OF PREDICTORS OF MEDICATION ADHERENCE AMONG THE STUDY PARTICIPANTS

Predictors	Crude OR (95% CI)	Adjusted OR (95% CI)	P-value
Educational Status			
Non-formal	Referent		
Primary	0.33 (0.11 – 8.23)	2.10 (1.56 – 10.23)	**0.01293**
Secondary	2.75 (2.25– 14.45)	3.00 (1.67– 18.25)	**0.00113**
Tertiary	4.15 (0.88 - 14.55)	4.75 (2.88 – 34.11)	**0.00015**
Ethnic group			
Hausa	Referent		
Others	1.45 (0.76 – 15.76)	2.15 (0.83 – 19.23)	0.7375
Religion			
Christianity	Referent		
Islam	1.79 (0.45 – 22.11)	1.85 (0.76 – 18.23)	0.7333
Marital Status			
Others	Referent		
Married	2.66 (1.24 – 14.56)	2.51 (2.25 – 21.67)	**0.00451**
Health Facilities Attended			
Other Hospitals	Referent		
Social Services	0.67 (0.56 – 15.99)	0.50 (0.25 – 21.77)	0.7895
Psychiatric Hospital	3.15 (0.98 – 17.89)	3.00 (1.52 – 21.25)	**0.00042**
Cost of Treatment			
< N1500	Referent		
>N1500	3.89 (1.75 – 23.05)	3.50 (2.17– 29.45)	**0.04511***
Family History			
No	Referent		
Yes	3.18 (1.11 – 18.09)	3.03(1.99 – 28.68)	**0.001116***
Treatment Side Effects			
No	Referent		
Yes	0.75 (0.55 – 15.17)	1.50 (0.88 – 18.56)	0.6745

Statistically Significant Difference

From table 6, it can be seen that the study participants' educational status (AOR=2.10, 95 percent CI=1.56 – 10.23), marital status (AOR=2.51, 95 percent CI=2.25 – 21.67), type of health facilities attended (psychiatrist hospital, AOR=3.00, 95 percent CI=1.52 – 21.25), cost of treatment (AOR=3.50, 95 percent CI= 2.17–29.45), and family history (AOR=3.03, 95 percent CI=1.99–28.68) remained the significant predictors of medication adherence among the study participants.

DISCUSSION

This study evaluates the relationship between patients' and their caregivers' sociodemographic traits, degree of understanding of mental illness, and medication adherence in Jigawa state, Nigeria. The sociodemographic characteristics of the study participants did not show any significant difference

between the experimental and the control groups. The experimental (intervention) group consisted of 126 participants with a mean age and standard deviation of 40.2 ± 11.1 years, while the control group consisted of 126 participants with a mean age and standard deviation of 40.7 ± 11.8 years. More than 60% of the individuals in the intervention group and the control group were between the ages of 30 and 49.the analysis of the data about these individuals revealed that their inclusion in the intervention group had no appreciable impact on the outcomes. These individuals attended the psychoeducation seminars and follow-up appointments in general at the same rate as patients with other illnesses.

The following inquiries were made as part of the knowledge parameters for mental illness and medication adherence in this study: Mental illness is a chronic condition that primarily affects women. Being aware of the signs of mental illness helps in addressing a portion of the patient's symptoms, Drug therapy can lessen its severity; ongoing monitoring is required; medication must be taken at the appropriate time; drug side effects, both good and negative, and relapse warning signs must be understood. Only roughly one-third of the study participants were well-informed about medication adherence factors and mental illness at the baseline. Nevertheless, for every medication adherence characteristic, there was no statistically significant difference between the control group and the intervention group (P>0.05). At the post-intervention stage, the experimental group's participants scored high on knowledge of mental illness and medication adherence, compared to the control group's roughly 50% score on the same knowledge.

There was a correlation between the caregivers' knowledge of mental illness and medication adherence and their ethnic group, religion, and monthly income. These independent sociodemographic-related predictors of knowledge on mental illness and medication adherence are found among the study participants. Nonetheless, it was shown that this relationship was statistically significant (P<0.05). Caretakers who earned over 50,000 Naira per month were more likely to be well-versed in mental health issues and medication compliance.

Logistic regression analysis was used to adjust for confounding effects. The results showed that educational status (AOR=1.25, 95 percent CI=1.11 – 12.23), secondary (AOR=3.04, 95 percent CI=2.67– 20.67) and tertiary (AOR=5.00, 95 percent CI=3.13 – 22.66), cost of treatment (AOR=4.11, 95 percent CI= 3.13– 33.25), and family history (AOR=5.01, 95 percent CI=3.56 – 22.79) were still significant predictors of good of medication adherence among patients with schizophrenia.

The study participants' independent socio-demographic-related determinants of adherence to drug treatment include their marital status, religion, ethnicity, and level of education. Nonetheless, it was shown that this relationship was statistically significant (P<0.05). Individuals in the experimental group who were housewives by occupation were more likely to adhere to their medication regimens. In the experimental group, there was no statistically significant correlation between medication adherence and age, marital status, educational attainment, or sex (P>0.05). The type of health facility attended and the presence of a family member with a similar condition was also found to be medication-related predictors of adherence in this study's experimental group. In other words, those who attended psychiatrist hospitals and had family members with similar illnesses were also more likely to have good medication adherence. Nevertheless, it was shown that the relationship was statistically significant (P<0.05). Other factors including the length of sickness, interaction with a healthcare practitioner, and prior hospital admission did not correlate (P>0.05). Additionally, there was a correlation between medication adherence and the type of treatment as well as the daily cost of that treatment when it came to medical history. It was demonstrated that there was a statistically significant relationship (P<0.05) in this relationship. Individuals undergoing drug treatment and those with daily incomes over 1,500 naira were shown to have higher rates of medication compliance. Among the research participants in the experimental group, there was no statistically significant correlation found between medication adherence and work performance, the kind of side effects, or relapses brought on by non-compliance with treatment (P>0.05). In this instance, compared to individuals whose prescriptions cost less than one thousand five hundred naira per day, those

whose medication cost more than that amount were three times more likely to not take their prescribed medicine as directed. This result may be related to the fact that more than 80% of the study participants had educational backgrounds below the tertiary level, which could indicate low socioeconomic standing and extremely low or variable income. Furthermore, Jigawa State is one of the bottom five states in the nation with the highest rates of poverty, with more than 75% of its citizens surviving on less than $1 per day (National Bureau of Statistics, 2014). The fact that Kano, the capital of Kano State, is so close by may have contributed to the poverty rates since most residents, particularly those who work as civil workers, live in Kano and commute to Jigawa daily. Since income has a significant role in determining adherence, this suggests that these economic factors may have contributed to non-adherence in around half of the study participants in the experimental group. This result is consistent with that of Ibrahim *et al*. (2015) and Kane et al. (2013), who also found that pharmaceutical costs were a significant predictor of schizophrenia patients' non-adherence to medication therapy.

The existence of side effects, the expense of therapy exceeding one thousand five hundred naira per day, and the employment position of government servants, housewives, and company owners were all favourable indicators of good medication adherence among the research subjects in the experimental group. Individuals in the study who reported experiencing any kind of side effect were four times more likely to not follow through on their treatment than those who did not.

CONCLUSION

There is a correlation between the caregivers' knowledge of mental illness, medication adherence, their ethnic group, religion and monthly income. Following the application of logistic regression analysis to account for confounding variables, the study participants' educational status as primary, secondary and tertiary, cost of treatment and family history were found to be significant predictors of good knowledge regarding mental illness and medication adherence.

RECOMMENDATIONS

The study's conclusions led to the following recommendations:

1. All newly diagnosed patients with mental illness and one or more caregivers should get psychoeducation as part of their treatment plan.
2. All patients with mental illnesses should have their treatment costs subsidized by the government, as this can increase medication adherence and accessibility.

LIMITATIONS

1. A study participant may choose to leave the study at any point while it is being conducted.

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AS conducted the main work, ASA and UM contributed towards the data Analysis, MS checking grammar and use of correct English, BA contributed on ethical clearance, OMER contributed towards the lit. Review, USU results analysis, HG and SNG supervisors during the PhD work where the main work was extracted, AMM contributed towards abstract.

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