Demographic characteristics and level of medication adherence as correlated factors to quality of life among Schizophrenic patients at some selected Hospitals in Jigawa state, Nigeria.

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Abstract

The aim of this study was to explore the demographic characteristics and level of medication adherence as correlated factors to quality of life among Schizophrenic patients a correlational descriptive hospital-based cross-sectional study design was adopted.A total of three hundred and ninety- nine patients using multi-stage sampling technique were recruited. Five hospitals were used as setting for data collection namely, 1) Gumel General Hospital II. Hadejia General Hospital III. Ringim General Hospital IV. Psychiatric Hospital Kazaure V. Federal Medical Centre Birnin-kudu and Rasheed Shakoni Specialist Hospital. Three tools were used in data collection 1)semi structured questionnaire , 2)medication adherence rating scale and 3)WHO Quality of Life Scale-Brief WHOQOL .All official approval and informed consent were collected as well as all privacy and confidentiality were kept during and after data collection. The results revealed that: The mean age was 42.3±11.2.years old. More than half of the sample 53.9%, 56.1 % are married and 11.5% of them were students. The level of medication adherence was 47.1 %, while the quality of life was 35.3%.There are significant relationship between level of adherence and quality of life. Also there are significant relationship between medications related variables and quality of life (P-value <0.05) .finally there are significant relationship (P-value <0.05) between quality of life and educational level marriage status, medication related variables and un-healthy behaviour like -smoking, and substance abuse. It can conclude that: the level of medication adherence among the schizophrenic patients was very low as well as the quality of life .There are significant relationship between level of adherence and quality of life. There are a significant relationship between medications related variables and quality of life, also there are significant relationship between quality of life and educational level, marriage status, cost of treatment and un-healthy behaviour like -smoking, and substance abuse. It was

recommendedthat: more attention should be given to the mental health through and more support should be offered to the schizophrenic patients and their relatives. Health education sessions on the medication adherence is also needed. Modified behavioral change communication techniques should be introduce by the Government.

Keywords: Demographic characteristics, medication Adherence, medications related variables, Quality of life, Schizophrenia, Jigawa State

Introduction:

Schizophrenia is a widely prevalent neuropsychiatric illness with public mental health significance, partly because of its disabling outcome if untreated or poorly treated. Despite being treatable, up to 30 million people suffer from schizophrenia globally, and together with other mental illnesses constitutes leading contributor to disease burden world-wide. Closely akin to effective treatment of schizophrenia, symptom remission and recovery is medication adherence. A review of previous works done among individuals with schizophrenia showed that up to half do not take their medications as prescribed, and socio-demographic along with clinical or treatment related factors were linked with non-adherence. Such factors include age, gender, marital status, educational level, poor insight, substance abuse, poorer therapeutic alliance, neuro- cognitive impairment and medication side-effects among others. In Nigeria, previous findings have indicated poor attitude towards antipsychotic medications among those with schizophrenia, thereby portending grave consequences to overall outcome (Ogunnubi et al., 2017). That said, exploration of the impacts of medication adherence on outcome measure indexed by quality of life (QoL) have not been adequately done in many developing countries, despite QoL constituting important indicator of treatment outcome and the relative costs of illness. Research interests on QoL issues will likely abound given the recent shift towards adoption of criteria for therapeutic outcome that favors psychosocial concept of health for mental illnesses. As it is, the evaluation of QoL is increasingly becoming integral to the management of chronic conditions like schizophrenia as the definition of treatment outcome embraces client-oriented bio-psychosocial health model. In particular because subjective assessment of QoL in the course of treatment is now considered a better reflection of well-being and a more acceptable measure of actual experience and life satisfaction compared to objective evaluations (Ogunnubi et al., 2017).

Adherence to a drug regime is a significant issue in the clinical management of schizophrenia.1 A study of adherence in Bipolar disorder showed that slightly more than one-half of the patients studied were fully adherent, 20% were partially adherent, and nearly 30% were non-adherent. Risk factors for non-adherence in this group included younger age, minority status, substance abuse, and homelessness. Non-adherence to antipsychotics was slightly higher (23%) among those with bipolar disorder but lower for lithium and antidepressants (26% and 22%) respectively (Shehu et al., 2019).

In Nigeria, a prevalence rate of non-adherence of 54.2%, 48% and 55% was reported from Maiduguri and Lagos respectively. While a study conducted in South Africa reported a non - adherence rates of 41% to 43% among patients with bipolar disorders. Risk factors for non-adherence included minority status, single status, and substance abuse. Reasons for non-adherence in this study included forgetting to take medications (55%) and adverse effects (20%) (Shehu et al., 2019). Medication adherence was assessed with Morisky Medication Adherence Questionnaire, and participants completed the World Health Organization Quality of Life Scale-BREF. The mean age of participants was 38.54 (±11.30) years, and all the participants were on antipsychotics, but only 45% were adherent to their medication. Out of all the participants, 45 (28.2%) considered their overall QoL to be good, 97 (60.6%) considered theirs to be fair, while 18 (11.2%); (Ogunnubi et al., 2017).

Adherence to drugs therapy and Quality Of Life of Schizophrenic Patients

Adherence to a drug regime is a significant issue in the clinical management of schizophrenia (Perkins DO, 1999). A study of adherence in Bipolar disorder showed that slightly more than one-half of the patients studied were fully adherent, 20% were partially adherent, and nearly 30% were non-adherent (Mahaye et al., 2012). Risk factors for non-adherence in this group included younger age, minority status, substance abuse, and homelessness(Mahaye et al., 2012).

Non-adherence to antipsychotics, lithium, and antidepressants among patients with schizophrenia was 20%, 38%, and 36%, respectively (Mahaye et al., 2012). Non-adherence to antipsychotics was slightly higher (23%) among those with bipolar disorder but lower for lithium and antidepressants (26% and 22%, respectively)(Mahaye et al., 2012). Lithium was associated with the highest rates of non-adherence in both groups, which reflects the adverse effect burden of the medication. Early treatment discontinuation on the part of patients with schizophrenia or schizophrenia-like disorders is strikingly common, with estimates of its prevalence in antipsychotic drug trials ranging from 25%–75%. The rates of nonadherence appear to be even higher in natural, uncontrolled settings (Wahlbeck K, *et al.,* 2001). Ascher-Svanum H *et al.* in the USA reported that, adherent patients had a lower rate of psychiatric hospitalization compared with partially adherent and non-adherent patients and were more likely than non-adherent to engage in group therapy, individual therapy, and medication management. Most patients (92.0%) who were adherent in the 6 months prior to hospital admission continued to be adherent 6 months following hospitalization. However, 75.0% of previously partially adherent became adherent, and 38.7% of previously non-adherent became adherent following hospitalization (Ascher-Svanum H *et al.,* 2009). The prevalence of either adherence or non-adherence to treatment among schizophrenic patients varies from country to country; and, within the same country it also varies from region to region. Thus, the overall rate of non-adherence was within the range of 30 to

65% reported in previous studies by Yang et al. (2012), Mahaye et al. 2012 and Kassis et al. (2014). In Nigeria, Ibrahim et al. 2015 reported a prevalence rate of non-adherence of 54.2% from Maiduguri, north-east, while Danladi et al. 2015 reported a prevalence rate of 34.2% from Jos, Nigeria in the same year. Thus, since adherence is determined to a large extent by one's income, it means non-adherence in a significant proportion of the subjects might be accounted for by these economic considerations. This finding is in tandem with that of Kane et al. (2013) that also reported the cost of medication as an important predictor of non-adherence. Logistic regression analysis also showed that subjects who were on more than one drug (polytherapy) were over two times more likely to be non-adherent to their medications when compared to their counterparts who were on mono-therapy (Chesney, 2000; Hauber et al., 2013).

Reasons for Non-Adherence of prescribed medication and scheduled dosage among individuals withschizophrenia is a major source of frustration for families and other caregivers. It is also thesingle biggest cause of relapse and rehospitalisation (Lacro, Dunn, Dolder, Leckband & Jeste,2002). Torrey (2001) notes some possible reasons for non-adherence by persons with schizophrenia. One significant reason is anosognosia, the lack of awareness that one is sick. Suchlack of insight is biological in origin; it is caused by damage to the frontal lobe. If people do notthink they are sick, they see no need for medications (Torrey, 2001).Denial is another reason people with schizophrenia do not take their medications. Indenial, the person is aware that he/she is sick but wishes not to be. Taking medication is a daily reminder of one's illness; not taking medication is therefore an attempt to refute that the illness exists. Denial is often temporarily effective until symptoms of the illness recur. Where as anosognosia is biological in origin, denial is psychological in origin.

A third major reason for non-adherence among individuals with schizophrenia is the side effects of the medications. Antipsychotic medications often have serious side effects that also must be addressed in order for patients to be comfortable enough to take the medications. These side effects include weight gain, loss of sexual desire and performance, and in some cases diabetes, and can be difficult for patients to cope with. Another factor in non-adherence is the symptoms of schizophrenia. For example, delusions may be present and this delusion may lead the patient to believe the medication is poison. Some patients do not take their medications due to confusion, disorganization or other cognitive deficits associated with schizophrenia. Here, the caregiver will need to play an important role in helping the person with schizophrenia remain on their medicines by providing support and encouragement to take the medications. A few people do not comply with medication protocols out of fear that they will become dependent on or addicted to the drug(s) (Griffith, 2012).

The present study has shown a significant positive correlation between medication non-adherence and impaired QoL in community-dwelling subjects with schizophrenia. These results are similar to those of previous studies.19,21,22 Indeed, it is possible that as Puschner and collaborators18 indicated that

medication non-adherence might affect patients' QoL "indirectly" via severity associated with uncontrolled symptomatology and/or side effects produced by the drugs.

Considering the control of clinical and socio- demographic variables, regression models also showed that adherence and moderate adherence, as opposed to non-adherence, influence the increase in self-esteem (SE), sentiment life (SL), family relationship (RFa), and autonomy (AU), which translates into higher levels of quality of life. These findings are consistent with a considerable number of studies showing that compliance with medication (Caqueo-Urízar et al., 2020).

Factors Influences the quality of Life

Awad and Hogan (2000), proposed a model which suggests that QoL in schizophrenia patients on neuroleptic medication is influenced by three factors: psychopathological symptoms, psychosocial functioning and neuroleptic side effects. A study by Dernovsek, Rupel, Rebolj, & Tavcar (2001), confirmed the validity and usefulness of this model in patients with first-episode schizophrenia. The sample included 200 mostly chronic outpatients with several episodes of schizophrenia and hospitalisations. Males were younger than females and had an earlier onset of illness. This result indicates that at least some patients were well-adjusted and still working. Others were receiving disability pension. Therefore almost all patients had some source of income. One-third of males and more than one-half of females had concomitant medical illnesses (mostly hypertension, diabetes mellitus, etc.) The study also revealed that smoking was present in two-thirds of patients while alcohol use was less frequent. However, the study not demonstrates the impact of medical illnesses, smoking and alcohol use on QoL.

The average dose of neuroleptic, expressed in chlorpromazine equivalents, was somewhat lower in females, but the difference was not significant due to the large variability of data (Dernovsek et al., 2001). This variability is frequently found in prescription habits surveys. The mean dosage was concordant with current guidelines for treatment of schizophrenia. Males had higher scores on the flattened and incongruous affect, psychomotor retardation and poverty of speech, while females were more anxious. In general, the psychopathological symptoms were quite frequent in these patients, which can be explained with illness chronicity. Extrapyramidal side effects were frequent: Parkinsonism was found in 50%, akathisia in 25% and tardive dyskinesia in 13.5% of patients, but the total scores were mild to moderate (Rupel et'al., 2001)

Materials and Methods

Design: The study was conducted among schizophrenic patients that were receiving treatment in Hospitals in Jigawa State.

Setting: A hospital based cross-sectional descriptive correlational study design was adopted.

Sample: A total of four hundred and thirty-six (436) schizophrenic patients undergoing treatment were recruited into the study through multi-stage sampling technique. Jigawa State is made up of five Emirate Council and these Councils are further broken down into local Governments Authorities. Stage I: Selection of the facilities:- simple random sampling was used to select one health facility each from the listed emirate council above. The hospitals are as follows:

Gumel General Hospital II. Hadejia General Hospital III. Ringim General Hospital IV. Psychiatric Hospital Kazaure V. Federal Medical Centre Birnin-kudu and Rasheed Shakoni Specialist Hospital .

Tools : Data was collected using three tools 1)Semi structured questionnaire composed of two main sections , socio- demographic characteristics and medical history 2)Medication adherence rating scale it composed of ten (10) questions the scoring for level of adherence was from 0-3 low adherence ,from 4-7 partially adhered and more than 7 consider adhered to medication .3)WHOCOL QOL by indicating a number on a scale ranging from 100-0, where 100 is labeled 'Perfect quality of life,' and 0 is labelled 'Might as well be dead'. less than sum score (40) consider bad quality of life while more than 40 consider good quality of life .Procedure : Ethical approval and informed consent were collected before data full explanation regarding the study was given to the patients.

Data analysis: All the data generated from the study was analysed using Epi info version. Chi-square test was used to determine significant association between categorical variables. A P-value of ≤0.05 was considered significant. Logistic regression analysis was also conducted as part of statistical analysis. Ethical clearance was obtained from the ethical committee of Jigawa State Ministry of Health and Ahmadu Bello University Zaria before commencement of the study.

Ethical considerations :The provisions of the HELSINKI declaration were respected (Shehu et al., 2019).All privacy and confidentiality was also guaranteed during and after the data collection.

Results

Table (1) above showed the socio-demographic characteristics of Schizophrenic patients receiving treatment in Hospitals in Jigawa State, Nigeria. From the result, three hundred and ninety nine (399) patients with mean age and standard deviation of 42.3 ± 11.2years participated in the study; with the age group of 20 – 29 years constituting one third of the study participants. Only about 10% of the study participants have educational status beyond secondary schools. In terms of ethnicity and tribe, Hausa and Muslims constitute majority of the study population with about half of them engage in farming as their mean sources of income. Table (2) shows medical history of the patients of Schizophrenic patients receiving treatment in Hospitals in Jigawa State, Nigeria. The duration of illness in about half of the study participants are within 1 – 5 years (mean = 7.8 years). Half of them have come in contact with psychiatrist. Three quarters of the study participants are admitted in the hospital previously and two thirds of the study participants have family members with similar

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conditions. Table (3) on bivariate analysis, only cost of treatment and types of treatment were found to be associated with good quality of life among study participants at P-level of <0.05.Table (4) Summary of the level of Quality of life (QoL) shows that the aggregate mean percentage of the quality of life was 35.3 % scored more than 40 score and got good quality of life, while 64.7% scored less than 40 score and got bad quality of life while   the medication adherence is 47.1 % adhered to the medication Table (5) On bivariate analysis, cigarettes smoking, alcoholism and drug and substance abuse were found to be negatively associated with good quality of life among the study participants at P-level of <0.05.Table (6)showed that there was statistically significant relationship between level of drug adherence and quality of life, i.e those with high level of drug adherence have good quality of life (P-value <0.05).

Discussion:

The importance of improving the quality of life of schizophrenic patients in order to maintain and promote better lives at the community level has been expounded upon in a wide variety of research (Rupel et'al., 2001). Quality of life is a subjective evaluation by individuals of their living situation that, accordingly, can only be defined using subjective measures. Skantze et al (1990) argued that subjective evaluations by patients of their own lives suggest that quality of life depends more on the "inner experiences" than on "external experiences". In other words, the "external world" represents "hard aspects" such as the environment in which patients live, while the inner environment represents thoughts and feelings. As such, Skantze et al. (1992) argued that it is necessary, when evaluating quality of life, to take into consideration patients' physical, social, and cultural environments, that is, individuals' living situations.

In this study, the socio-demographic factors found to be correlated with quality of life were marital status, educational status types of treatment (drugs, ECT, and combination of drugs and ECT), cost of treatment, alcohol consumption, drugs and substance abuse, and cigarettes smoking. Sex, age, religion, ethnicity and age at onset were not correlated with quality of life. In the case of marital status (being married), it is believed that the presence of someone to talk to and consult with and the creation of a trusting relationship serve to increase quality of life. In terms of types of medications taken, given that responses were provided by the schizophrenic patients themselves on a self-administered questionnaire, we were unable to confirm exact names of medications. As such, we were limited in identifying the types of medications taken. Tobacco use was also found to be inversely correlated with good quality of life among the study participants i.e, the more you smoke cigarettes the less you have good quality of life as reported in many other studies. Lehman, studying schizophrenic patients staying in an overnight care facility in Los Angeles County, found that neither socio-demographic nor clinical characteristics of patients had a substantial impact on overall peace of mind. Lehman reported

that females, married individuals, and individuals with lower levels of education tended to be more satisfied with life than other residents. However, in a study involving interviews with schizophrenic patients visiting a community-based consultation service, Baker and Intagliata reported no significant relationship between QOL and patient's age or sex, which is also the same findings with this study. As evidenced from the above, results of research vary to the point that it is difficult to identify a general trend. Multivariate (Logistic) regression analysis also showed that study participants with educational status of secondary schools and tertiary were two and four times more likely to have good quality of life compared to those with no formal education. As regard to the marital status, study participants who were married were three times more likely to have good quality of life compared to those who were single. Study participants who spent an average of more than one thousand naira per day were four times more likely to have good quality of life compared to those who spent an average of less than one thousand naira daily. Cigarettes smokers among the study participants were about four times less likely to have good quality of life following treatment compared to non-smokers. Finally, another important predictor of quality of life among schizophrenic patients was engagement in drug and substance abuse: drug abusers were three times less likely to have good quality of care following treatment

Conclusion

The level of medication adherence among the schizophrenic patients was very low as well as the quality of life .There are significant relationship between level of adherenceand quality of life. There are a significant relationship between medications related variables and quality of life, also there are significant relationship between quality of life and educational level,marriage status, cost of treatment and un-healthy behavior like -smoking, and substance abuse

Recommendations

 More attention should be given to the mental health through and more support should be offered to the schizophrenic patients and their relatives. Health education sessions on the medication adherence are also needed. Modified behavioral change communication techniques should be introduced by the Government.

Table (1) Distribution of the patients according to their Socio-demographic characteristics n=399

Variables	Frequency	Per cent
Age range		
20 – 29	132	33.1
30 – 39	100	25.1

40 – 49	62	15.5
50 – 59	57	14.3
60 – 69	48	12.0
Mean ± SD	42.3 ± 11.2	
Education		
Non formal education	115	28.8
Primary	58	14.5
Secondary	184	46.1
Tertiary	42	10.5
Gender		
Male	215	53.9
Female	184	46.1
Ethnic group		
Hausa	246	61.7
Fulani	105	26.3
Others	48	12.0
Religion		
Islam	331	83.0
Christianity	68	17.0
Occupation		
Farmers	189	47.4
Civil servants	70	17.5
Housewives	55	13.8
Student	46	11.5
Business	39	9.8
Marital status		
Single	153	38.3
Married	224	56.1
Divorced	22	5.5

Table (2) Distribution of the patients according to their Medical History.

Variables	Frequency	Percentage (%)
Duration of illness (years)		
1 – 5	202	50.6

6 -10	99	24.8
11 – 15	45	11.3
16 -20	25	6.3
21 – 25	17	4.3
26 – 30	11	2.8
Contacts with the Health Care provider		
Psychiatrist	199	49.9
Psychiatric nurse	101	25.3
CHEW	60	15.0
Others	39	9.8
Admitted in Hospital		
Yes	298	74.7
No	101	25.3
Health Facilities attended		
Psychiatric hospital	248	62.2
Social services	21	5.3
Day Centre	15	3.8
Other hospitals	108	27.1
Others (unspecified)	7	1.8
Member of family with similar condition		
Yes	263	65.9
No	136	34.1
Who among your family member has schizophrenia		
Grandfather	44	16.7
Grandmother	84	31.9
Father	51	19.4
Mother	66	25.1
Others	18	6.8
Medication adherence		
Yes	188	47.1
No	211	52.9

Table (3) bivariate analysis of relationship between medications related variables and quality of life among study participants

Variables	Quality of life		X^2	P-value
	Good	Bad		
	F	% F	%		
Duration of illness (years)				
1 – 10	90	211	2.97	>0.05
11 – 20	25	45		
21 – 30	16	12		
Cost of treatment				
< N1000	41	149	18.11	**<0.05***
>N1000	90	119		
Type of treatment				
Drugs	110	230	23.67	**<0.05***
ECT	15	24		
Combination of drugs and ECT	**6**	**14**		
Side effects				
Yes	110	180	1.96	>0.05
No	21	88		
Relapse due to non-compliance				
Yes	70	131	1.79	>0.05
No	40	81		
Not sure	21	56		
Effects of treatment on performance				
Yes	85	170	17.18	>0.05
No	40	50		
Not sure	6	48		
Ever admitted in hospital				
Yes	101	197	0.02	>0.05
No	30	71		

**Statistically significant difference*

Table (4) Summary of the level of Quality of life (QoL) and medication adherence

Variable	F	%	X^2	P-value
level of Quality of life				
Good	141	35.3		
Bad	258	64.7	150.143	<0.00
Medication adherence				
Adhered to medication(>7)	188	47.1		
Partially Adhered to medication (4-7)	00	00		
Not adhered to medication(< 3)	211	52.9		

Table (5) The relationship between medications related variables and quality of life among study participants

Variables	Quality of life (QoL)				X^2	P-value
	Good		**Bad**			
Medical care at onset	F	%	F	%		
Yes	70		61		2.33	>0.05
No	61		207			
Engaged in smoking						
Yes	22		78		45.08	**<0.05***
No	109		190			
Engaged in alcoholism						
Yes	18		67		33.56	**<0.05***
No	113		201			
Engaged in drugs and substance abuse						
Yes	44		100		22.45	**<0.05***
No	87		168			
Negative impact of medication on illness						
Yes	59		138		0.66	>0.05
No	72		140			

Statistically significant difference

Table(6) Relationship between level of adherence to treatment and quality of life among the schizophrenic patients

Medication adherence	Quality of life				X^2	P-value
	Good		Bad			
	F	%	F	%		
Adhered to medication(>7)	96	24.1	92	23.1	33.983	<0.000
Partially Adhered to medication (4-7)	00	00	00	00	00	00
Not adhered to medication(< 3)	45	11.2	166	41.6	128.092	<0.000

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