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# A Cross-Sectional Study on Factors Associated with Relapse in Patients with Schizophrenia at Mathari Hospital, Nairobi Kenya

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## Abstract

Schizophrenia is a chronic and disabling mental disorder with a high prevalence rate of 1.4-4.6 per a thousand populations. Schizophrenia is often accompanied by relapses even while on treatment. Relapse rate vary from 50%-92% and are similar in both developed and developing countries, despite the former having well established Mental health services. This was a cross-sectional descriptive study of 209 family members or significant others accompanying patients to Mathari Hospital. Patients were selected by random sampling and the study was carried out between June and July 2011.

Schizophrenia was diagnosed using Diagnostic and statistical manual of mental disorder, 4th edition text revision (DSM-IV-TR) criteria. Data was collected using semi-structured questionnaire and analyzed using Statistical package for social science (SPSS) and presented in frequency tables, bar graphs and pie charts. Relationship between independent and dependent variables was determined by calculating confidence interval and summary Chi-square statistics. P-value of < 0.05 was considered significant.

The findings indicated that majority of patients (81.8%) were aged between 17-46 years with (54%) of patients having had their first episodes of schizophrenia between ages 17-26 years. The results showed that factors associated with relapse in schizophrenia in Mathari hospital included, non-drug compliance and failure to attend follow-up clinic (67.9%), stressful life events (17.3%), and substance abuse (14.8%). Relapse rate was found to be 58%-97%. This calls for intensified Psycho education to both patients and family members for early recognition of signs of relapse and drug compliance. Improvement of community mental health services will reach more family members in their homes, encourage drug compliance and community involvement in understanding schizophrenia to reduce stigma.

Health policy makers will avail atypical antipsychotic drugs with minimal side effects to reduce the high relapse rate. Future research should focus on clinical factors associated with relapse in schizophrenia.

**Keywords:** Family member; Nuclear family; Household; Positive; Psycho education; Negative symptoms; Remission; Re-admission; Relapse; Significant others

## Introduction

Schizophrenia is a chronic and disabling mental disorder APA [1,2]. It has high prevalence rate of 1.4-4.6 per thousand populations at risk Knapp [3]. The first signs of Schizophrenia emerge in adolescence or young adulthood Barker [4]. Schizophrenia typically strikes young people at the very time they are establishing their independence and can result in lifelong disability and stigma. Townsend [5]. According to W.H.O. [6], a research done on "The Global Burden of Disease" Schizophrenia ranked forth as a leading cause of lost years of healthy life at ages 15- 44 years.

Relapse can occur at any time during treatment and recovery and 70% of patients may relapse after the first schizophrenic episode Muller [7]. Relapse predicts; poor prognosis, deterioration in social, occupational and financial status and increases the burden of care on the family Shives. With each relapse, there is a longer period of time to recover Shives [8]. One of the major reason for relapse is noncompliance with medication regimen Videbec [9]. Relapse can lead one to be a victim of violence and crime, (especially when responding to hallucinations), substance abuse, poverty and homelessness hence reducing quality of life for such individuals [10].

## Materials and Methods

A descriptive quantitative and qualitative, cross-sectional study was conducted at Mathari teaching and referral Hospital where data was collected for two months in June and July, 2011.

Approval to conduct study was obtained from MOH, Ministry of Science and Technology, and joint University of Nairobi and Kenyatta National Teaching and referral Hospital Ethics and research committee.

Sample size was calculated using the Fisher's formula (Haynes, Sackett, Guyatt, and Tugwell, (2006)

$$n = z^2 p (1-p) / d^2$$

Participants were 209 Family members or significant others accompanying Patients who had been selected by random sampling. Wards had been purposively selected to cater for both male and female wards. Prior to inclusion in the study, patients' records were scrutinized to ensure that the initial and current diagnosis of the patient was schizophrenia according to American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders-DSM-IV-TR (2002) [11].

Data were collected regarding participants' demographic characteristics, knowledge about schizophrenia and patients' management protocol using a semi-structured questionnaire.

Data input and analysis was performed using spss version 16. Relationship between respondents' socio-demographic factors and relapse was determined by calculating

Confidence interval and summary Chi-square statistics. P-value of <0.05 was considered significant

## Results

A total of 209 patients as reported by family members (139 male and 70 females) were included in the study. Majority of patients (81.8%) were aged between 17 and 46 years as shown in **Table 1**

**Table 1** Socio-demographic characteristics for patients.

Characteristics	Total (%)
<b>Age group in years</b>	
16 and below	1 (0.5)
17-26	32 (14.8)
27-36	85 (40.7)
37-46	55 (26.3)
47-56	20 (9.6)
57 and above	17 (8.1)
<b>Gender</b>	
Males	139 (66)
Females	70 (34)
<b>Marital Status</b>	
Single	132 (63.2)
Married	43 (20.6)
Divorced/separated	29 (13.8)
Widowed	5 (2.4)

<b>Education</b>	
None	6 (2.9)
Secondary	72 (34.4)
Primary	92 (44)
Mid-level college	23 (11)
University	16 (7.7)
<b>Occupation</b>	
Formal Employment	17 (8.1)
Not employed	138 (66)
Self employed	31 (14.9)
Casual workers	14 (6.7)
Retired	9 (4.3)
<b>Residence</b>	
High class	4 (1.9)
Middle class	145 (69.4)
Low class	60 (28.7)
<b>Living arrangements</b>	
Alone at home	8 (3.8)
With Family	156 (74.6)
Significant others	40 (19.1)
In the Streets	5 (2.4)

Most of the patients 134 (63.25%) were single and (13.9%) had been divorced as shown in the table above. Out of 209, those who had attained secondary education were 72 (34.4%), Primary level and below were 98 (46.2%) and only 39 (18.7%) had attained mid-level college and above. Most of the patients 138 (66%) were not employed and 196 (93.7%) lived with family members or significant others in middle class areas. Majority of patients 197 (94.3%) reported to have been supported by family members.

### Socio-demographic characteristics of household head

Majority of Household heads 120 (57.4%) were aged 56 years and above. Most of them 132 (63.2%) were married men 134 (64.1%) who lived in middle class areas with their patients. Only 84 (40.2%) had attained secondary education level and above with majority 125 (59.8%) having attained primary level of education and below. Most of the household heads 189 (93.4%) were able to recognize signs of relapse of schizophrenia (**Table 2**).

### Patient' management protocol

**Table 3** shows that 79 (37.8%) of the patients were on mood stabilizers while the same patients were on the typical class of anti-psychotic drugs. Thirty (14.4%) were on atypical class of drugs while 13 (6.2%) never knew the type of drugs they were

using, with other eight (3.8%) using antidepressant drugs. Majority of them, 192 (91.9%) were aware of their drug dosages, with 98 (46.9%) taking drugs by themselves.

**Table 2** Socio-demographic characteristic for the House hold head and knowledge about schizophrenia.

Characteristics	Total (%)
<b>Age group in years</b>	
54 and below	89 (42.6)
56 and above	120 (57.4)
<b>Gender</b>	
Males	134 (64.1)
Females	75 (35.9)
<b>Marital Status</b>	
Single	27 (12.9)
Married	132 (63.2)
<b>Education</b>	
Primary and below	125 (59.8)
Secondary and Above	84 (40.2)
<b>Occupation</b>	
Formal employment	53 (25.4)
Self employed	106 (50.7)
<b>Ability to recognize relapse</b>	
Yes	189 (93.4)
No	14 (6.6)
<b>Age groups of the patient on first onset</b>	
16 and below	14 (6.7)
17-26	113 (54.1)
27-46	76 (36.3)
47 and above	6 (2.9)
<b>Frequency of admissions</b>	
2-4 times	122 (58.4)
5 times and above	82 (30)

Eighty-three (39.7%) of the patients were assisted by their parents to take their medications. Others were assisted by their spouses, brothers and other family members to take drugs. Eighty-one (38.8%) of the patients never experienced any drug side effects. For those who had side effects, 46 (22%) complained of mouth dryness, muscle rigidity and cold extremities while 60 (28.6%) complained of hyper salivation. Other side effects included sexual dysfunction, inability to seat/ stand still and drowsiness.

On experiencing the above side effects, 85 (40.7%) of the patients took artane, while 21 (10%) stopped the medication until the effects were over. Other remedies applied by the

patients included taking a lot of water, washing head, and self-control.

Relapse was significantly related to taking of the typical class of drugs, ( $p=0.035$ ) and knowledge of drugs side effects ( $p=0.042$ ). Some specific side effects like dry mouth/muscle rigidity/cold extremities ( $p=0.0001$ ) and inability to seat/stand still ( $p=0.015$ ) also showed a significant relationship to relapse. Some of the side effects' corrective measures which were taken by the patients like the combination of taking a lot of water and washing the head ( $p=0.0001$ ) and also stopping the medications ( $p=0.003$ ) displayed a significant relationship to re-admissions (relapse).

**Table 3** Patients' management protocol.

Factors	Variables	No. (%)	$\chi^2$ (df)	p-Value
Type of drugs	Typical	79 (37.8)	10.317(4)	0.035
	Mood stabilizers	79 (37.8)	2.553 (4)	0.633
	Atypical	30 (14.4)	6.625 (4)	0.635
	Antidepressants	8 (3.8)	2.293 (4)	0.682
	Does not know	13 (6.8)	1.708 (4)	0.789
	Total	n=209 (100%)	-	-
Dose knowledge	Yes	192 (91.9)	9.114 (4)	0.058
	No	17 (8.1)	8.026 (4)	0.091
	Total	n=209 (100%)	-	-
Assistance in taking medication	Self	98 (46.9)	9.936 (4)	0.659
	By others	111 (53.1)	-	-
	Total	n=209 (100%)	-	-
Drug side effects	Yes	128 (61.2)	1.867 (4)	0.042
	No	81 (38.8)	0.442 (4)	0.934
	Total	n=209 (100%)	-	-
Corrective measures after side effects	Takes artane	85 (40.7)	8.321 (4)	0.506
	Stops medication	21 (10)	6.948 (4)	0.003
	Others	103 (49.3)	-	-
	Total	n=209 (100%)	-	-

## Discussion

### Patients' socio-demographic characteristics

The Commonly affected age was 17-46 years (81.8%). This finding indicates that psychiatric morbidity is maximal in young adults who make up most productive section of the population. Kenya National Bureau of Statistics et al. [12].

During the time of study there was twice number of relapses in males than in female patients who had schizophrenia (66%) were Males, while females were (34; does not agree with the report by Muller [13] that 1.4 more males suffer from schizophrenia than females. 54% of patients had their first episodes of the illness between 17-26 years while only 30% of patients had their onset of illness between 27-36 years.

The significant relationship between gender and age on onset of schizophrenia ( $p=0.019$ ) indicated that males had an earlier age of onset of schizophrenia than females. This supports report by Varcadoris [14] that the age of onset of schizophrenia ranges from 15-25 years for males and 25-35 years for females. Majority of the patients, (63.2%) were single, with only (20.6%) being married. A very significant relationship was observed between marital status and age of onset of mental illness ( $p=0.0001$ ).

This report supports facts by Townsend [5] that indicates that the earlier the age of onset the more the relapse and prolonged hospitalization. Leads to deterioration in cognitive functions, loose of chances for; Education, career, social interactions and employment. From the study, 44% of the patients attained primary level of education, 43.4% had secondary level of education and only 18% of patients were able to attain college and university level of education. The chronic nature of schizophrenia causes patients lose their independence and tends to depend on others as indicated by Townsend. 66% of patients were not employed, 93.7% of patients live with their family members and significant others in middle class residential areas. This finding is similar to W.H.O. [6] report that schizophrenia increases the burden of caring for patients both in the Family and in Hospitals. The relationship between patients and their neighbours was good as affirmed by 78.9% of the patients; this does not correspond with Townsend [5] that schizophrenia leads to stigmatization. Fifty eight percent of patients were re-admitted between two to four times is suggestive that the neighbours could have tolerated them.

The study found out that 35.9% of patients abused substances like alcohol, cannabis, miraa, cigarettes which trigger relapse of schizophrenia this agrees with W.H.O [6] report that a history of substance abuse leads to poor outcome of schizophrenia in patients and could lead to frequent relapses and poor drug compliance [15,16].

### Household Head socio-demographic characteristics

Fifty seven percent of the household heads were aged 56 years and above this indicated that they were family people who would have retired from formal employment but had engaged in income generating activities W.H.O that schizophrenia is the greatest youth disabler.

Majority of the household heads were married (63.2%) males (64.1%) and 40.2% had attained secondary level of education. this is typical of most African homes as indicated in KNBS (2010) where most homes are headed by males [17].

A significant relationship was observed between the age of the household head and re-emergence of symptoms of mental illness ( $p=0.009$ ) indicated that the head of the house hold is able to note changes in the behaviour of the patients and seek psychiatric help [18].

### Knowledge about schizophrenia

The respondents were able to recognize signs of schizophrenia as indicated in the findings that lead them to seek psychiatric care. The major reasons for the above complaints included drug abuse (22%), stress related problems 31.5%. Other reasons given for the above complaints included witchcraft and other diseases like HIV/AIDS and epilepsy.

These findings indicate that the family members had some knowledge about schizophrenia that enabled them care for the patient; As indicated in the findings, the major cause of relapse was (67.9%)- failure to take prescribed medicine and to attend clinic. This finding supports Videbec [9] who reported that the major reason for relapse is non-compliance with medication regimen

Failure to comply with medication regimen leads to several readmissions, as indicated in the findings that (58.4%) of patients had been admitted between two -four times, and (38.7%) of patients had been admitted more than five times before the study period. This corresponds with the Townsend that schizophrenia is a chronic illness. Other causes of relapse were substance abuse (14.8%), stressful life events, (64.1%) had no insight regarding their illness which can lead to poor drug compliance (93.3%) never sought healing assistance from any other source apart from taking the prescribed drugs [19].

### Patients' management protocol

(91.9%) were aware of their type of drugs, dosages and frequencies, with (46.9%) taking drugs on their own without supervision. (53.1%) of the patients were assisted by their family members/significant others to take their medications.

Non-drug compliance was brought about probably by lack of insight that leads to poor quality of life as reported 75.6%) of patients were on typical antipsychotic and mood stabilizer while only (14.4%) of the patients were on typical antipsychotics and (6.2%) of patients were on anti-depressant (38.8%) of patients did not experience any side effects [20].

(50.6%) of the patients experienced extra pyramidal side effects (40.7%) took antiparkinson's drugs for side effects, 21 (10%) stopped the medication until the effects were over. Other remedies applied by the patients included taking a lot of water, washing the head, and self-control. From the findings, the household head's knowledge on the side effect assisted the patient to reduce relapses.

Among the patients with schizophrenia interviewed during the study, only (5.3%) had co- morbid illnesses.

## Conclusion

The most common factor associated with relapse in Schizophrenia at Mathari hospital was non-drug compliance and failure to attend follow-up clinic.

From the study, non-drug compliance is brought about by; patients lack of insight regarding mental illness, occurrence of side effects after taking antipsychotic drugs and lack of knowledge on the course of schizophrenia.

## Recommendation

- Psycho education to family members and patients.
- The Mathari hospital management to avail more atypical drugs with minimal side effects for patients in Mathari Hospital.
- Enhancing community mental health psychiatric units.

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