

**FACTORS ASSOCIATED WITH RELAPSE IN PATIENTS WITH  
SCHIZOPHRENIA ATMATHARI HOSPITAL, NAIROBI**

**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE AWARD OF MASTERS OF SCIENCE  
DEGREE IN NURSING (MENTAL HEALTH AND PSYCHIATRIC  
NURSING) OF THE UNIVERSITY OF NAIROBI**

**NANCY WAIRIMU GATHAIYA**

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**DECLARATION**

I, Nancy Gathaiya declare that all the work submitted is my original work and has never been presented for an award of a degree in any other university or institution of higher learning.

SIGNATURE.....

DATE.....

## **DEDICATION**

I wish to dedicate this dissertation to my dear husband Francis Gathaiya, my children Miriam, Lucy and Grace

## **CERTIFICATE OF APPROVAL**

This Dissertation has been submitted for examination with the approval of the following university supervisors

1. Dr. James Mwaura, PhD, MSc, BScN

Lecturer University of Nairobi

Signature.....

Date.....

2. Mrs. Miriam Wagoro, RN, MScN (Mental Health & Psych), BScN

Lecturer University of Nairobi

Signature.....

Date.....

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## **OPERATIONAL DEFINITIONS**

**Anhedonia** - Loss of pleasure in activities or interests previously enjoyed

**Apathy**-Lack of feeling, interest, or emotion

**Avolition**-Inability to initiate and persist in goal directed activities

**Catatonia**-Immobility as a result of psychologic factors

**Delusions**- Fixed, false beliefs, not consistent with the person's intelligence and culture

**Family member** - Nuclear family, i.e. parents and children

**Hallucinations**-False sensory perception unrelated to external stimuli.

**Household**- A group of persons, related, who live together in the same compound and share a common source of food

**Positive symptoms** - Are excess or distortion of normal functions, including delusions and hallucinations

**Psycho education** - Is the strategy of teaching patients and families about mental disorder, treatment, coping techniques and resources.

**Psychosis**-Inability to recognize reality, complicated by a severe thought disorder and inability to relate to others

**Negative symptoms**-Are loss of normal functions, such as restriction in the range and intensity of emotions

**Remission**-Elimination of positive symptoms

**Re-admission**-Second and above admission into a psychiatric unit.

**Relapse**-Re-emergence or worsening of psychotic symptoms

**Significant others**- Members of extended family

## **LIST OF ABBREVIATIONS AND ACRONYM**

<b>APA</b>	-	American psychiatric association
<b>BScN</b>	-	Bachelor of Science in Nursing
<b>DSM-IV-TR</b>	-	Diagnostic and statistical manual of mental disorders, 4 <sup>TH</sup> edition, text revision
<b>EE</b>	-	Expressed emotions
<b>MScN</b>	-	Masters of Science in Nursing
<b>KNH</b>	-	Kenyatta National Hospital
<b>PhD</b>	-	Doctor of Philosophy
<b>RN</b>	-	Registered Nurse
<b>SPSS</b>	-	Statistical package for social science
<b>UON</b>	-	University of Nairobi
<b>WHO</b>	-	World Health Organization

## ABSTRACT

Schizophrenia is a chronic and disabling mental disorder occurring roughly in 1% of people worldwide. 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 carried out between October 2010 and July 2011 to determine factors associated with relapse in Schizophrenia at Mathari Hospital, Nairobi. A total of 2009 family members or significant others accompanying patients with schizophrenia for re-admissions or visiting patients with schizophrenia in the wards were selected by random sampling.

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  $\leq 0.05$  was considered significant.

The findings indicated that majority of patients (81.8%) were aged between 17-46years 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 at 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 and also improvement of community mental health services



# **CHAPTER ONE: INTRODUCTION**

## **1.1 Background information**

Schizophrenia is a mixture of positive and negative symptoms that present for a significant portion of one month's period but with continuous signs of disturbance persisting for at least six months (APA, 2000). Positive symptoms reflect distortion of normal functions, include delusions and hallucinations. Negative symptoms include, lessening of normal functions such as flattening of affect. Schizophrenia typically strikes young people at the very time they are establishing their independence and can result in lifelong disability and stigma (Townsend, 2003). According to WHO report (2004), 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 is very detrimental to the successful management of schizophrenia. With each relapse, there is a longer period of time to recover (Shives, 2007). One of the major reason for relapse is noncompliance with medication regimen (Videbec, 2010). 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.

Many other factors trigger relapse; the degree of impairment in cognition and coping leaves the patient vulnerable to stressors, the accessibility of community resources, such as public transportation ,housing, entry level and low –stress employment, and social services; income supports that buffer the day today stressors of living; the degree of stigmatization that the community holds for the mental illness that attacks the self concept of patients; and the

responsiveness of family members, friends and supportive others when patients need help (Baldessarini,2002).

## **1.2 Problem Statement**

Schizophrenia is a chronic and disabling mental disorder that affects approximately 1% of the world population with a relatively high prevalence rate of 1.4-4.6 per thousand populations at risk (Knapp et al.2004).Relapse can occur at any time during treatment and recovery, and relapse can be expected in 70% of patients after the first schizophrenic episode (Muller 2004). Relapse in schizophrenia predicts poor prognosis, brings about deterioration in social, occupational and financial status and increases the burden of care on the family (Chabungbam et al, 2007).The risk for a relapse after a schizophrenic episode remains increased throughout the patient's lifetime thus causing cognitive decline and lowers the quality of life of the patient (Muller, 2004). Relapse rates are similar in both developed and developing world despite the former having well-established mental health services (Kazadi, 2007).In Mathari Hospital, there has been an increase in number of patient's re-admitted with mental disorders than in new admissions and approximately a half of those readmitted are alleged to have schizophrenia. This has been indicated in the outpatient department report; in 2007, total number of patients admitted was 2,032 among which 1,084 were re-admissions, in 2008, total number of patients admitted was 2,945,among which 1,795 were re-admissions and in 2009,total number of admissions was 3,540 among which 2,162 were re-admissions. Relapse prevention is a primary focus in the treatment of schizophrenia in both developed and developing countries like Kenya

### **1.3 Justification**

Of all mental illnesses responsible for suffering in society, Schizophrenia causes more lengthy hospitalization, more chaos in family life, more exorbitant costs to individuals and government; and more fears than any other. The onset of Schizophrenia is typically in late adolescence or in young adulthood and most people suffer throughout their lives thus losing opportunities for career and relationships (Townsend, 2003). The true incidence of relapse of Schizophrenia in Kenya is not well known but from a study done by Muchemi (1990), of any five admissions, three were re-admissions; and 38% of the readmissions had Schizophrenia. In Mathari Hospital the number of re-admissions in year 2006 was 946, out of which 460 had schizophrenia. These data indicate that the incidence of relapse in schizophrenia is high and it could be reduced if the causative factors were known. Though few studies have been done in other parts of the world to determine factors associated with relapse in schizophrenia, in Kenya, there are minimal researches done to establish factors associated with relapse in Schizophrenia. Hence there was need to carry out the study to determine factors associated with relapse in Schizophrenia at Mathari Hospital.

### **1.4 OBJECTIVES**

#### **1.4.1 Broad Objectives**

To determine factors associated with relapse in patients with Schizophrenia at Mathari Hospital, Nairobi –Kenya.

#### **1.4.2. Specific Objective**

- 1) To establish the relationship between socio-demographic characteristics of the patient's and relapse in schizophrenia

- 2) To determine which socio-demographic characteristics of the household head are related to relapse in schizophrenia
- 3) To explore the family members' knowledge about schizophrenia
- 4) To assess the patient's management protocol
- 5) To determine the rate of relapse in schizophrenia in Mathari Hospital

## **1.5 Hypothesis**

There are no factors associated with relapse in Schizophrenia at Mathari Hospital

## **1.6. RESEARCH VARIABLES**

### **1.6.1 Independent variables**

- 1) socio-demographic characteristics
  - a) Patient's Factors
  - b) Factors of the household head
- 2) Family members' knowledge about schizophrenia
- 3) Patient's Management protocol factors

### **1.6.2 Dependent variable**

- 1) Relapse

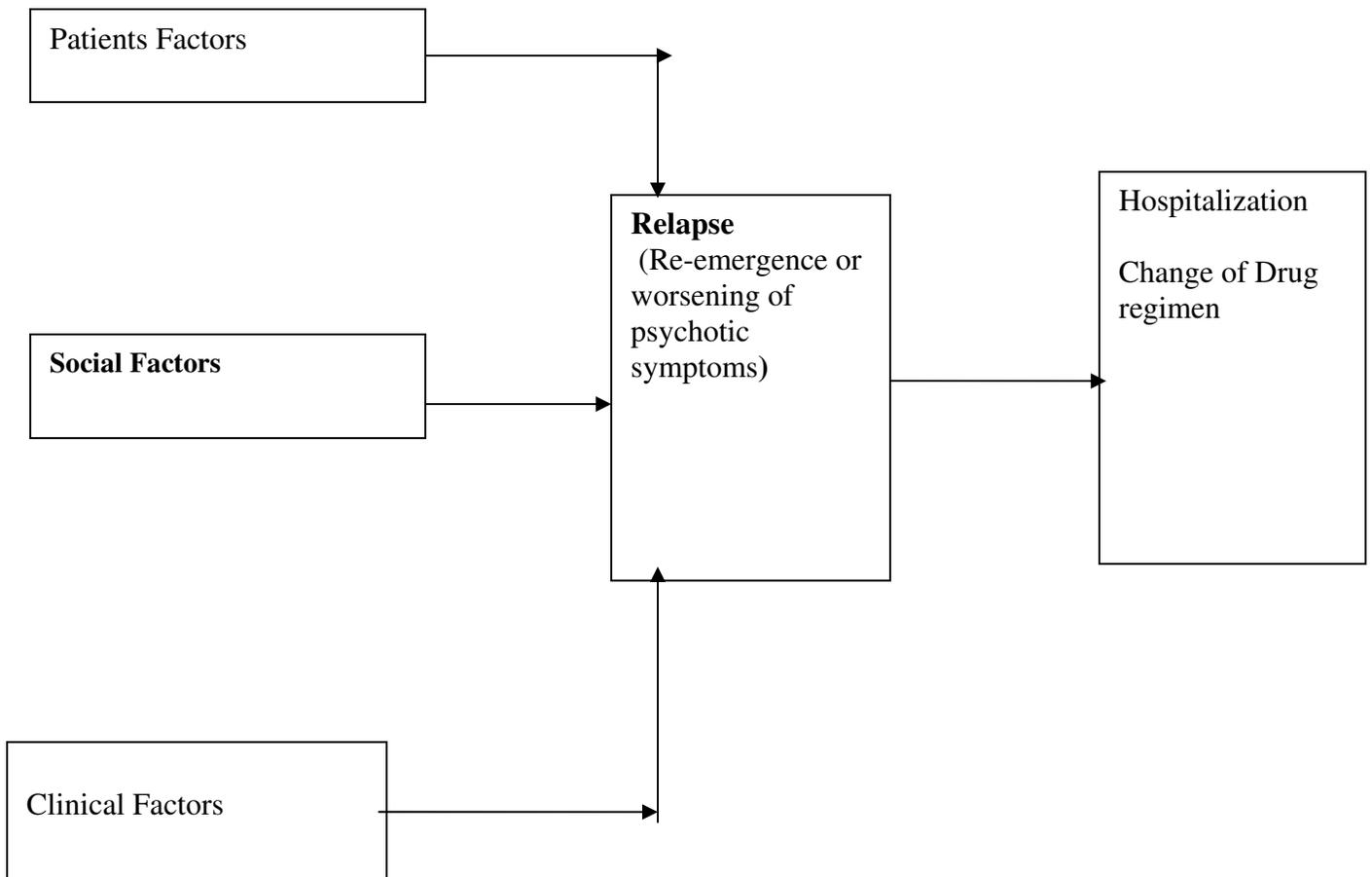
## 1.7 Conceptual Framework

### Variables

#### Independent Variables

#### Dependent variable

#### Outcome

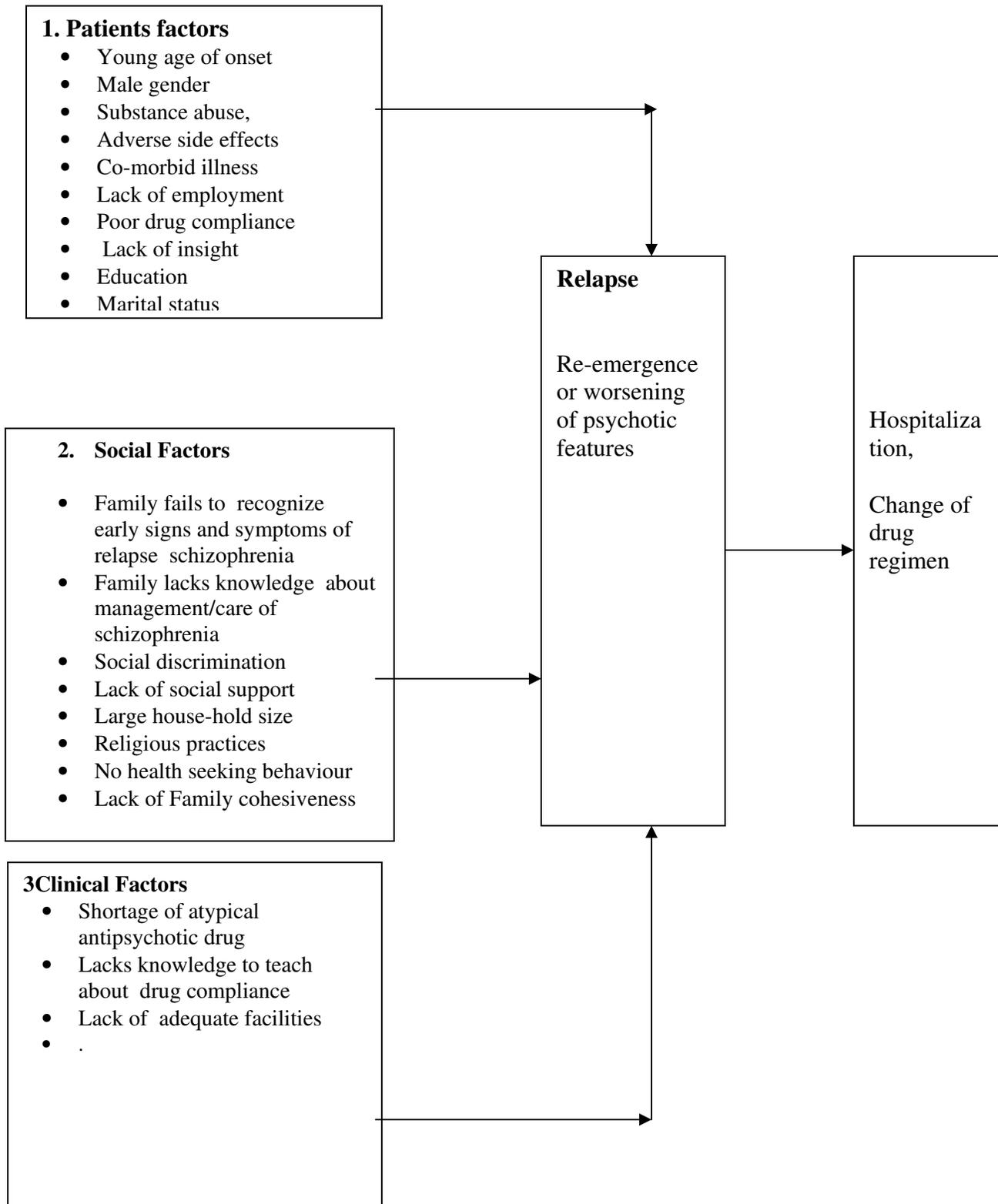


## 1.8 Operational Framework

### Independent Variables

### Dependent variable

### Outcome



## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

Schizophrenia is a chronic, debilitating illness characterized by perturbation in cognition, affect and behavior, all of which have a bizarre aspect (APA, 2004). The first signs of Schizophrenia typically emerge in adolescence or young adulthood. People affected with the illness become limited in their ability to interact with other people, and often withdraw from the outside world (Callaghan and Wadlock, 2006). Schizophrenia occurs 1.4 times more frequently in males than in females and typically appears earlier in men (Picchioni & Murray, 2007). The peak ages of onset are 15-25 years for males and 25-35 years for females (Varcarolis, 2011). Onset in childhood is much rarer as is onset in middle-or old age (Hassett, 2005). People with Schizophrenia suffer throughout their lives, thereby losing opportunities for careers and relationships. As a result of lack of public understanding about the disease, people with Schizophrenia often feel isolated and stigmatized, and may be reluctant or unable to talk about their illness (Hassett, 2005).

### **2.2 Overview of schizophrenia**

Schizophrenia is a chronic primary disorder that is prone to recurring psychotic episodes. It is not a single disease but rather a syndrome that involves cerebral blood flow, neuroelectrophysiology, neuroanatomy, and neurobio-chemistry (Varcarolis, 2011). The natural progression of schizophrenia is usually described as deteriorating with time, with an eventual plateau in the symptoms. Only for the elderly patients with schizophrenia has it been suggested that improvement might occur (Boyd, 2008). Deterioration in social functioning can lead to substance abuse, poverty, and homelessness. People with untreated schizophrenia may lose contact with

their families and friends and often find themselves living in the streets of large cities (Townsend, 2003)

### **2.3 Course of Schizophrenia**

The clinical picture of schizophrenia is complex, individuals differ from one another, and the experience for a single individual may be different from episode to episode. Schizophrenia typically occurs in adolescence or early adulthood, a time during which brain maturation is almost complete (Keltner, Schewecke & Bostrom, 2003). There are three overlapping phases of the disorder, Acute phase, stabilizing phase and Maintenance phase .

- **Acute Phase**-in this phase the patient experiences acute severe psychotic symptoms of hallucinations, delusions and/ or disorganized thinking. The initial treatment focuses on alleviating symptoms by use of antipsychotic medications, decreasing the risk of suicide thorough safety measures, normalizing sleep, and reducing substance use.
- **Stabilizing Phase**-After initiation of treatment, stabilization of symptoms becomes the focus. Symptoms become less acute but may be present. Treatment is intense during this period as medication regimens are established and patients and their families begin to adjust to the idea of a family member having along-term severe mental illness. Here, rehabilitation begins.
- **Maintenance phase**-in this phase, the patient focuses on regaining the previous level of functioning and quality of life. Continued medication regimens tend to lessen impairment in functioning. As with any chronic illness, stresses of life and major crisis can contribute to exacerbations of symptoms. Family support and involvement are

extremely important at this time. Patients and families must be educated to anticipate relapse and know how to cope with it.

## **2.4 Relapses**

Relapse in schizophrenia is broadly recognized as the re-emergence or the worsening of psychotic symptoms. Relapses can occur at any time during treatment and recovery and are very detrimental to the successful management of schizophrenia. With each relapse, there is a longer period of time to recover (Shives, 2007). Relapse can be defined by; aggravation of positive or negative symptoms, hospital admission in the past six months, and more intensive case management and /or change in medication. One of the major reason for relapse is noncompliance with medication regimen (Vibedec, 2010). Relapse can lead one to be a victim of violence and crime ,substance abuse ,poverty and homelessness hence reducing quality of life for such individuals.

According to WHO report (2004) ,a research done on ‘The Global Burden of Disease’ Schizophrenia ranked forth as a leading cause of lost years of healthy life at ages 15-44years.. A retrospective study done in Rozella Hospital in Australia by (Bergen et al, 1998) to identify factors associated with frequent hospitalization and poor outcome for patients with Schizophrenia identified factors associated with relapse of Schizophrenia as; non-compliance with medication, stress, inadequate social support and substance abuse. The poor outcome in patients with frequent relapse emphasizes the need to reduce the occurrence of Schizophrenic symptoms to provide a better quality of life .A study done in London by (Almond et al, 2004), examined factors associated with relapse and costs and found out that; costs for patients who

relapsed were over four times higher than those for non-relapse group and non-compliance with medication was the major factor associated with relapse in schizophrenia.

Rajkumar, (1989) of India found out that factors affecting relapse in schizophrenia were; poor regularity of follow –up, presence of affective symptoms, self neglect and lack of social contacts. He also found out that relapses are high in families where there are high expressed emotions (EE) 51% and low where there is low expressed emotion 13%. Recognition of these factors is important in order to prevent relapses of Schizophrenia.

David,(1994) did a study on psychosocial factors and relapse of schizophrenia and found out that;80% of patients relapsed repeatedly and at five years half showed persistent handicap

Chabungbam,(2007) did a study in India on sociodemographic and clinical factors associated with relapse in schizophrenia and found out that: relapse in schizophrenia was associated with, unemployment, number of psychotic episodes, side-effects of medication, and stressful life events.

Patel,(2007) in his study on medication adherence in mentally ill found out that non adherence rate in chronic disorders where schizophrenia is included is 40-60%..

Kazadi, (2008) of South Africa in his study on factors associated with relapse in schizophrenia found the following factors most likely to increase the risk of relapse; co-morbid depressed mood, poor adherence due to lack if patient insight, and medication side-effects.

From the studies done, it is evident that symptomatic relapse of Schizophrenia is both distressing and costly. It can devastate the lives of not only patients but of their families and care givers. The debilitating symptoms require a combination of specialized health care interventions, targeted treatment and family interventions that combine support and education about

Schizophrenia to help them cope and reduce relapse. From the literature search; the factors commonly associated with relapse in schizophrenia include poor adherence to treatment, substance abuse, co-morbid psychiatric illness, a co-morbid medical condition, stressful life events, and the treatment setting. In Kenya, there is minimal published data regarding factors associated with relapse in schizophrenia, this study is intended to address that need.

## 2.5 Diagnostic criteria

A. The current definition outlined in the American Psychiatric Association's Diagnostic and Statistical Manual for Mental Disorders, 4th edition, text revision (DSM-IV-TR) (APA, 2000) states that schizophrenia is a mixture of positive and negative symptoms that present for a significant portion of a one month period but with continuous signs disturbing for at least six months. This criterion uses the self-reported experiences of the person and reported abnormalities in behavior, followed by a clinical assessment by a mental health professional. According to DSM-IV-TR, for one to be diagnosed with schizophrenia, diagnostic criteria must meet **Characteristic symptoms** (at least two of the following)

- Delusions
- Hallucinations
- Disorganized speech
- Grossly disorganized or catatonic behavior
- Negative symptoms

**B. Social-occupational dysfunction:** work, interpersonal, and self-care functioning is below the level achieved before onset

**C. Duration:** *Continuous signs of the disturbance for at least (6) months*

**D.** Schizoaffective and mood disorders are not present and are not responsible for the signs and symptoms

**E.** Not caused by substance abuse or general medical disorder.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Study design**

This was a descriptive cross-sectional study aimed to determine factors associated with relapse in Schizophrenia.

### **3.2 Study area**

The study was carried out in Mathari National teaching and referral Hospital, Nairobi. Mathari Hospital was established in 1910 when it was converted from a smallpox isolation centre into a mental asylum. Mathari Hospital has grown to be a center of excellence in terms of referral, teaching and research in the field of psychiatry. Mathari Hospital is situated on Thika road opposite Muthaiga Police station about six Kilometers north of Nairobi City Centre. Besides providing quality mental health services, the hospital has integrated other fields of medicine to improve in and out patients care. Mathari Hospital offers clinical experience to undergraduate and postgraduate Medical students from the University of Nairobi and other local and international universities, both basic and post basic student Nurses, Occupational therapist and other students from Mid-level Medical training Colleges. This is the largest psychiatric Hospital in Kenya where majority of mentally ill patients are admitted, it has abed capacity of 700 patients.

### **3.3 Study population**

The target study participants were family members or significant others aged eighteen years and above, accompanying or visiting patient with Schizophrenia in Mathari Hospital during the months of June and July 2011 and had the required infor mation about the patient.

### **3.4 Inclusion criteria**

The research participants who were included in the study fulfilled all the inclusion criteria;

1. Family members or Significant others eighteen years and above accompanying patients with Schizophrenia who met the DSM-IV-TR criteria for Schizophrenia for re-admission in Mathari Hospital.
2. Family members or significant others visiting patients with schizophrenia who meet the DSM-IV-TR criteria for Schizophrenia in Mathari Hospital
3. Family members or significant others eighteen years and above who consented to participate in the study.

### **3.5 Exclusion criteria**

1. Family members or significant others who accompanied or visited patients with schizophrenia admitted for the first time.
2. Patients with Schizophrenia who were not accompanied by family members or significant others.
3. Family members or significant others who were not willing to consent.

### **3.6 Sample size determination**

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

$$n = \frac{z^2 p(1-p)}{d^2}$$

Whereby:

n = Sample size.

Z=95% confidence interval(1.96)

P = Estimated proportion of patients with schizophrenia who relapse (since there was no standardized number), 50% (0.5) was used.

d = degree of precision value used is plus or minus 0.05 (5%).

$$n = \frac{1.96^2 \times 0.5(1-0.5)}{0.05^2}$$
$$= 384$$

For population less than 10,000

$$n_f = \frac{n}{1 + \frac{n}{N}} \quad (\text{Haynes, Sackett, Guyatt, and Tugwell, 2006}).$$

$n_f$  = desired sample size- population less than 10,000

$n$  = desired sample size- population more than 10,000

$N$  = Estimate of population size (460)

$$n_f = \frac{384}{1 + \frac{384}{460}}$$

= 209.26 (which was approximated to 209).

### 3.6.1 Sampling method

Random sampling method was used to select all family members or significant others accompanying patients with schizophrenia readmitted to Mathari Hospital after confirming the diagnosis by reviewing patients records. Selection was done as follows;

#### Stage 1: Selection of hospital

Mathari Teaching and Referral Hospital was selected purposively, since it is a national hospital receiving mentally ill patients' country wide where the highest numbers of mentally ill are found.

## **Stage 2: Selection of the wards**

Male and Female civil wards were selected purposively because they admit mentally ill patients daily..

## **Stage 3: Selection of Participants**

In the wards, random sampling method was utilized to select participants whose patients' meet the DSM-IV-TR criteria for Schizophrenia. Ward admission registers and patients' records were utilized to confirm that the initial and current diagnosis of the patient was schizophrenia. Data was collected in all selected wards until the required number of participants was attained.

### **3.7 Study instrument**

A pre-tested semi-structured questionnaire comprising of the following parts was completed by the researcher as she interviewed the respondents:

1. Socio-demographic information of the patient
2. Socio-demographic information of the household head.
3. Family members' knowledge about Schizophrenia
4. Management protocols for the Patient

The researcher confirmed the diagnosis of the patient by review of patients records that indicate the diagnosis of the patient according to the psychiatrist.

#### **3.7.1. Pre-testing of the study instrument.**

Twenty questionnaires were pre-tested at Mathari Hospital out patient department to ensure validity and reliability. Data was collected through researcher administered semi-structured questionnaire. This data was used to refine the questionnaire that was finally administered during the research process.

### **3.8 Data collection, cleaning and entry**

The study was conducted in the selected wards in the hospital for a period of two months (June and July 2011).

#### **Procedure for Data collection**

The researcher introduced herself to the participant and explained the purpose of the study in order to obtain consent.

The participant was assured regarding confidentiality of the data and requested to answer questions truthfully.

Questionnaires were filled in the right sections

Quantitative data was coded and entered into the computer

#### **3.8.1 Data analysis and presentation**

Analysis was done using SPSS and frequencies of all variables generated.

Results were presented in tables, standard bar charts and graphs and report was written in Microsoft word.

### **3.9 Study Assumptions**

1. Participants (family members or significant others) provided the correct information for the questions asked.
2. The participants' sample was available throughout the research time
3. Errors during analysis of the results were minimal

### **3.10. Study Limitation**

1. The participants could have given incorrect information regarding his/her relationship with the patient
2. Some patient who met the DSM-IV-TR criteria for Schizophrenia were not accompanied by family members or significant others

### **3.11. Ethical considerations**

1. Voluntary informed consent was obtained from the participant before participating in the study.
2. Confidentiality was ensured and no names of participants were indicated in the filled questionnaires.
3. Participants were under no obligation to answer questions they were not comfortable with.
4. Clearance from Kenyatta National Hospital ethical and research committee and Mathari Hospital Medical Superintendent was obtained before conducting the research.
5. Authority to conduct research was also obtained from the National council of science and technology.
6. There were no risks involved in the study, nor were there any monetary gains for the participants

## CHAPTER FOUR: STUDY RESULTS

### 4.0. Introduction

This chapter displays the findings from the analyzed data obtained from the respondents on the factors associated with relapse in schizophrenia at Mathari teaching and referral hospital .Data was collected from 209 respondents and the results, Descriptive and inferential analysis was performed using SPSS Version 16. The results were presented in form of tables and charts shown below. The significance between independent and dependent variables was also highlighted.

### 4.1. SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE PATIENTS

**Table-1 - Patient's age groups**

Age categories (Years)	No (%)	$\chi^2$ (df)	P - value
16 and below	1 (0.5%)	0.717(4)	0.949
17-26	31 (14.8%)	10.678(4)	0.034
27- 36	85 (40.7%)	4.576(4)	0.331
37-46	55 (26.3%)	3.203(4)	0.525
47-56	20 (9.6%)	6.463(4)	0.167
57 and above	17 (8.1%)	7.955(4)	0.094
<b>total</b>	<b>n=209 (100)</b>		

Most of the patients, 85 (40.7%) were aged between 27 and 36 years. Only one (0.5%) patient was aged 16 years and below (Table 1).

The mean and modal ages were 36.93 and 36 respectively, with a standard deviation of  $\pm 11.24$  and a range of 16 to 81 years.

Patients who were in the age category of 17 to 26 years had a significant relationship to re-admissions ( $p= 0.034$ ).

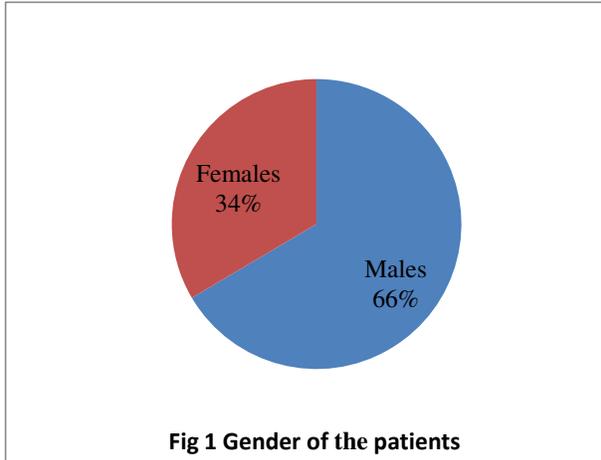
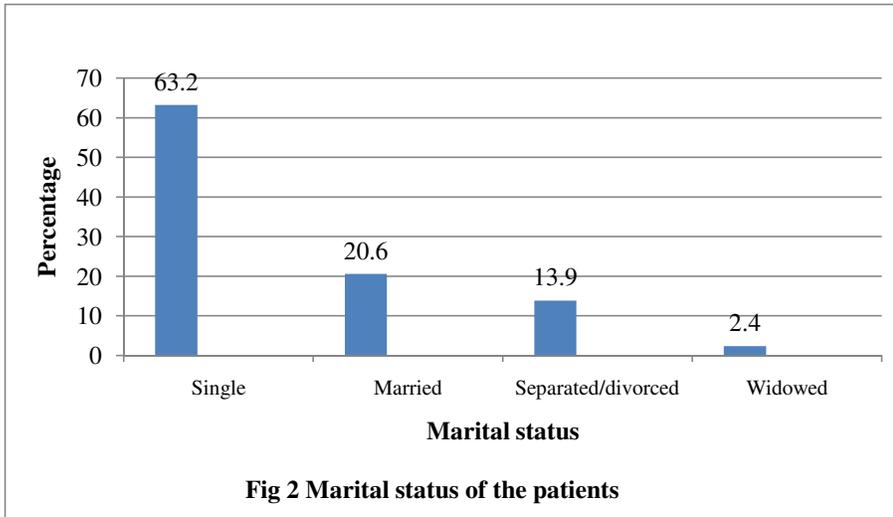


Figure 1 above shows that majority, 139 (66%) of the patients were Males, while females were 70(34%).

**Table 2- Gender of the respondents**

<b>Gender</b>	<b>No (%)</b>	<b><math>\chi^2</math> (df)</b>	<b><i>p</i>-value</b>
Males	139 (66%)	5.122(4)	0.027
Females	70 (34%)	5.080(4)	0.279
<b>total</b>	<b>n.=209 (100)</b>		

There was significant relationship between males ( $p= 0.027$ ) and relapse.



Majority of the patients, 132 (63.2%) were single, with only Five (2.4%) being widowed (Fig.2).

**Table 3 Education levels and occupation of the patients**

<b>Variables</b>		<b>No (%)</b>	<b>x<sup>2</sup> (df)</b>	<b>P - value</b>
Highest level of education	No formal education	6 (2.9%)	1.976(4)	0.922
	Primary	92 (44.0%)	24.234(4)	0.139
	Secondary	72 (34.4%)	14.279(4)	0.398
	Mid-level colleges	23 (11.0%)	2.860(4)	0.087
	University	16 (7.7%)	7.090(4)	0.682
	<b>total</b>	<b>n=209 (100)</b>		
Occupation	Employed	17 (8.1%)	4.942(4)	0.293
	Not employed	138 (66.0%)	5.400(4)	0.029
	Self employed	25 (12.0%)	2.835(4)	0.586
	Farmer	6 (2.9%)	2.625(4)	0.623
	Casual worker	14 (6.7%)	5.962(4)	0.202
	Retired	9 (4.3%)	17.106(4)	0.002
	<b>total</b>	<b>n=209 (100)</b>		

Tables 3 above shows that 92(44%) of the respondents had primary level of education, 72(43.4%) had secondary level of education, while 23 (11%) of the respondents had attended various colleges. The respondents who had attained university level of education were 16 (7.7%). Most of the respondents, 138 (66%) were not employed, with only 17 (8.1%) being employed. Twenty five (12%) of them the respondents were self employed.

Unemployment ( $p=0.029$ ) and retirement ( $p=0.002$ ) displayed a very significant relationship to relapse.

**Table 4- Patients' areas of residence and whom they live with**

Residential class	Residence category	No (%)	$\chi^2$ (df)	<i>p</i> -value
	High class	4 (1.9%)	1.516(4)	0.824
	Middle class	145 (69.4%)	5.969(4)	0.021
	Low class	60 (28.7%)	4.677(4)	0.032
	<b>total</b>	<b>n=209 (100)</b>		
Whom the respondents live with	Alone at home	8 (3.8%)	5.074(4)	0.186
	With family	156 (74.6%)	6.975(4)	0.048
	In the streets	5 (2.4%)	19.157(4)	0.563
	Significant others	40 (19.1%)	4.022(4)	0.391
	<b>total</b>	<b>n=209 (100)</b>		

Majority of the respondents, 145 (69.4%) live in middle class residential areas. Very few, [four (1.9%) live in high class residential areas (Table 4).

Living in middle class ( $p=0.021$ ) and low class ( $p=0.032$ ) residential areas showed a significant relationships to relapse.

**Table 5-Patients' religion, support from family and their relationship with neighbours**

Religion	<b>Variable</b>	<b>No (%)</b>
	<b>Catholic</b>	80 (38.3%)
	<b>Protestant</b>	121 (57.9%)
	<b>Islam</b>	7 (3.4%)
	<b>No religion</b>	1 (0.4%)
	<b>total</b>	<b>n=209 (100)</b>
Are family members supportive to the patient?	<b>Variables</b>	<b>No (%)</b>
	Yes	197 (94.3%)
	No	12 (5.7%)
	<b>total</b>	<b>n=209 (100)</b>
Patients' relationship with neighbours	Good	165 (78.9%)
	Poor	13 (6.3%)
	Feared by neighbours	31 (14.8%)
	<b>total</b>	<b>n=209 (100)</b>

Table 5 shows that most of the patients, 121 (57.9%) were protestants. It also shows that majority of them, 197 (94.3%) were supported by their family members. The relationship between patients and their neighbours was good. This was affirmed by 165 (78.9%) patients. Thirteen (6.3%) of the patients had a poor relationship with their neighbours, while 31(14.8%) of them were feared by their neighbours due to their violent behaviours.

**Table 6- Substance use among the Patients**

Does the patient abuse any substance?	<b>Response</b>	<b>No (%)</b>	<b>X<sup>2</sup> (df)</b>	<b>P= value</b>
	Yes	75 (35.9%)	7.869(4)	0.011
	No	134 (64.1%)	3.948(4)	0.072
	<b>total</b>	<b>n=209 (100)</b>		
Type of substance abused	Cigarettes alone	14 (18.7%)	2.855(4)	0.098
	Alcohol alone	11 (14.7%)	2.724(4)	0.065
	Both alcohol and cigarettes	21 (28.0%)	1.382(4)	0.044
	Cannabis and alcohol	20 (26.7%)	13.450(4)	0.026
	Heroin	1 (1.3%)	2.003(4)	0.239
	Others e.g. Miraa	8 (10.6%)	14.616(4)	0.103
	<b>total</b>	<b>n=75 (100)</b>		

Table 6 above shows that 75(35.9%) of the respondents were abusing various substances like cigarettes, alcohol, cannabis, heroine and miraa.

There was a significant relationship between drug use and relapse. Taking both alcohol and cigarettes ( $p=0.044$ ) and also alcohol and cannabis ( $p= 0.026$ ) had a significant relationship to relapse.

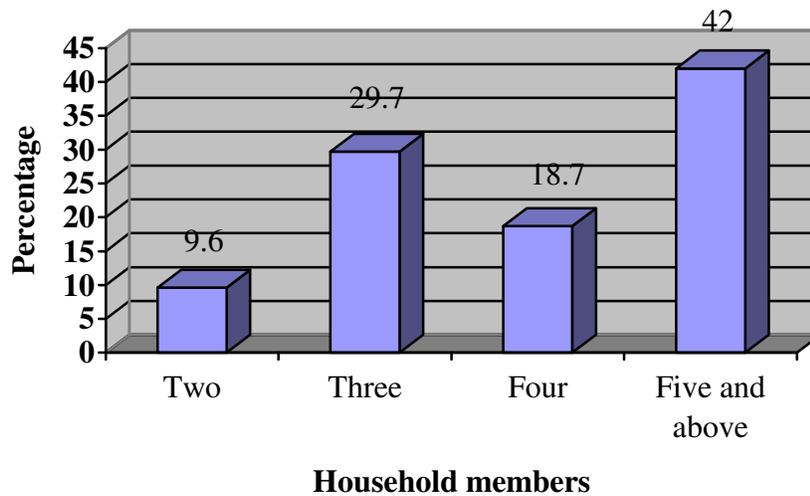
## 4.2 SOCIO-DEMOGRAPHIC INFORMATION OF THE HOUSEHOLD HEAD

**Table .7. Household heads' Age groups, gender, marital status, source of income and areas of residence**

Age Categories	Variables	No (%)
	26-30	2 (1.0%)
	31-35	8 (3.8%)
	36-40	16 (7.7%)
	41-45	11 (5.3%)
	46-50	27 (12.9%)
	51-55	25 (12.0%)
	56 and above	120 (57.4%)
	<b>total</b>	<b>n=209 (100)</b>
Gender	Males	134 (64.1%)
	Females	75 (35.9%)
	<b>total</b>	<b>n=209 (100)</b>
Marital status	single	27 (12.9%)
	Married	132 (63.2%)
	Separated/divorced	8 (3.8%)
	Widowed	42 (20.1%)
	<b>total</b>	<b>n=209 (100)</b>
Residence	High class	4 (1.9%)
	Middle class	145 (69.4%)
	Low class	60 (28.7%)
	<b>total</b>	<b>n=209 (100)</b>
Educational status	no formal education	29 (13.9%)
	Primary	96 (45.9%)
	Secondary	50 (23.9%)
	Mid level college	23 (11.0%)
	University	11 (5.3%)
	<b>total</b>	<b>n=209 (100)</b>
Source of income	Formal employment	38 (18.2%)
	Not employed	24 (11.5%)
	Self employed	80 (38.3%)
	Farmer	26 (12.4%)
	Retired	26 (12.4%)
	Casual worker	15 (7.2%)
	<b>total</b>	<b>n=209 (100)</b>

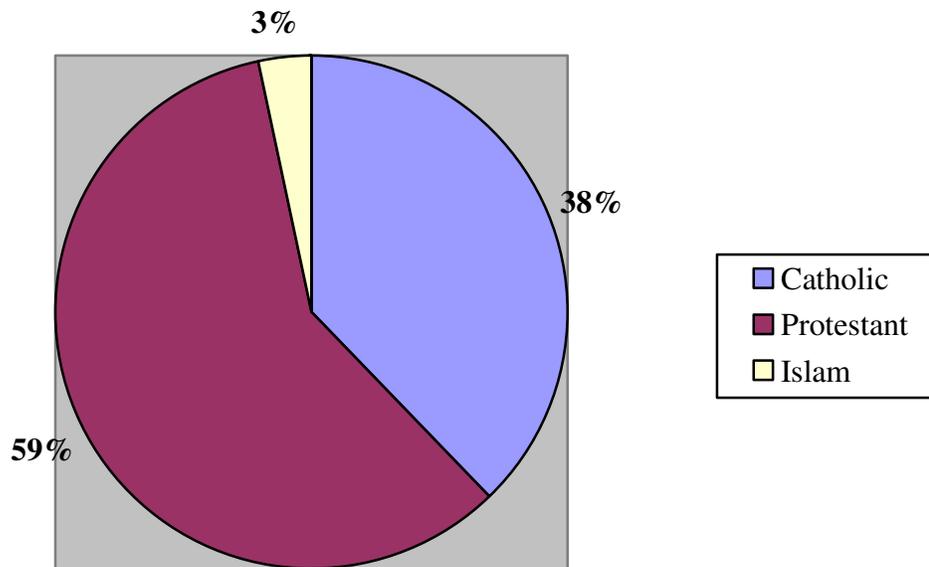
Most of the household heads, 120 (57.4%) were aged 56 years and above, with only two (1.0%) belonging to the age group (26-30 years). The mean and modal age for the household heads were 56.09 and 58 respectively, with a standard deviation of  $\pm 11.34$  and a range of 30 to 84 years.

Most of them, 134 (64.1%) were males. Majority of them, 132 (63.2%) were married, with 145 (69.4%) residing in middle class residential areas. A total of 84(40.2%) of the household heads had attained at least secondary level of education. In terms of occupation, 80(38.3%) were self employed, 38(18.2%) were on formal employment, 26 (12.4%) were farmers, with the same number had retired from their formal employments. Casual workers were 15(7.2%), while 24 (11.5%) of the household heads had no source of income (Table 6).



**Fig 3- Living arrangements**

Figure 3 shows that most of the respondents, (42%) were living in homesteads with five or more members.



**Fig-4 Religion of the househead**

Most of the respondents, 123 (59%) were protestants, while Catholics were 79(38%), with only seven (3.3%) being Muslims (Fig 4).

**Table-8 – Patients’ Self expression**

<b>Self expression</b>	<b>No (%)</b>
No difficulties	149(71.3%)
Only communicates when demanding for something	21(10.0%)
No constructive talk/ stammers when talking	28 (13.4%)
Very hostile, no proper communication	7 (3.3%)
Argues a lot	4 (1.9%)
<b>total</b>	<b>n=209 (100)</b>

Most of the respondents, 149 (71.3%) had no difficulties in self expression. Others, 21(10%) only communicated when demanding for something while 28(13.4%) had no constructive talk with some stammering as they talked. Some respondents were very hostile, hence no proper communication, while others argued a lot during their communication (Table 7).

#### 4.3 FAMILY MEMBERS' KNOWLEDGE ABOUT SCHIZOPHRENIA

**Table-9- Patient's age groups on first onset of mental illness, their major complaints, and reasons for these complaints**

Age groups of the patient on first onset	Variables	No (%)	$\chi^2$ (df)	P -value
Age groups of the patient on first onset	16 and below	14 (6.7%)	0.590(4)	0.949
	17-26	113 (54.1%)	8.017(4)	0.030
	27-36	64 (30.6%)	5.777(4)	0.334
	37-46	12 (5.7%)	4.288(4)	0.525
	47-56	5 (2.4%)	0.598(4)	0.167
	57 and above	1 (1%)	33.996(4)	0.093
	<b>total</b>	<b>n=209(100)</b>		
Patients' major complaints(as reported by the respondents)	Aggressive, abusive, disorganized, food refusal, irrelevant talk	45(21.5%)	0.293(4)	0.990
	Inability to sleep, mute, refusing to feed, abnormal behaviour, refusing medication	46(22.0%)	5.751(4)	0.219
	Suicidal ideas, hallucinations, disorganized	21(10.0%)	2.864(4)	0.581
	Unkempt, drug abuse, hallucinations, violence, inability to feed and sleep	42(20.1%)	13.166(4)	0.010
	Delusions, no sleep, running away from home, unkempt, violent, refusing to eat, hallucinations, standing for long	24(11.5%)	4.136(4)	0.388
	Neglecting personal hygiene, refusing to eat, abusive, hallucinations, confusion	31(14.8%)	2.056(4)	0.725
	<b>total</b>	<b>n=209(100)</b>		
Reasons that made patient to present with above complaints	Drug abuse	63(30.1%)	5.888(4)	0.021
	Socio-economic	31(14.8%)	3.452(4)	0.049
	Associates it with witchcraft	7(3.3%)	2.177(4)	0.703
	No reason, just an illness like any other	65(31.1%)	2.585(4)	0.629
	Other illnesses	7(3.3%)	4.880(4)	0.300
	Strain at school/work	23(11.0%)	3.856(4)	0.426
	Death of a family member	13(6.2%)	4.192(4)	0.381
<b>total</b>	<b>n=209(100)</b>			

Table 9 above shows that most of the respondents, 113 (54.1%) developed mental illness from the age of 17 -26 years while only 14(6.7%) developed the condition when they were 16 years or below. The mean and modal ages of onset of mental illness among the respondents were 26.37 and 26 respectively, with a standard deviation of  $\pm 7.67$  and a range of 10 to 55 years.

The patients presented with various complaints as their initial signs of mental illness. Forty six (22%) had inability to sleep, being mute, refusing to feed, refusing medications and also they displayed abnormal behaviours like collecting rubbish and laughing alone. Almost the same number, 45(21.5%) were aggressive, abusive, and they were verbalizing irrelevant things. All the others displayed other clinical presentations of mental illness like suicidal tendencies, having hallucinations, being disorganized, unkempt, standing in one place for long time, confusion and neglecting of personal hygiene.

The major reasons for the above complaints included drug abuse [63(30.1%)], family issues like disagreements and divorce/separation [31(14.8%)], strain at school or poor work relationships [22(10.5%)] and death of a family member [13(6.2%)]. Other reasons given for the above complaints included witchcraft and other diseases like HIV/AIDS and epilepsy.

A significant relationship was observed between relapse and drug abuse ( $p=0.021$ ), socio-economic issues like family/financial instabilities ( $p=0.049$ ).

In terms of respondents' age on first admission, a significant relationship was observed between age category 17 to 26 and relapse ( $p= 0.030$ ).

Table 10 below shows that most of the patients, 122(58.4) had re-admissions ranging between two to four. The major cause of readmissions was failure to take drugs and to attend clinic [142(67.9%)]. Other causes included drug abuse, over working and social issues like family disagreements. When asked whether they were aware of their condition most of them, 146

(69.9%) acknowledged that they were suffering from mental illness. Most of the patients, 134 (64.1%) were not able to explain their abnormal behaviours. Some of them felt that people were against them, while few of them associated the condition with witchcraft.

Most of the readmitted patients, 121 (57.9%) were protestants, with most of them, 156 (74.6%) living with their family members and 197 (94.3%) being supported by their family members.

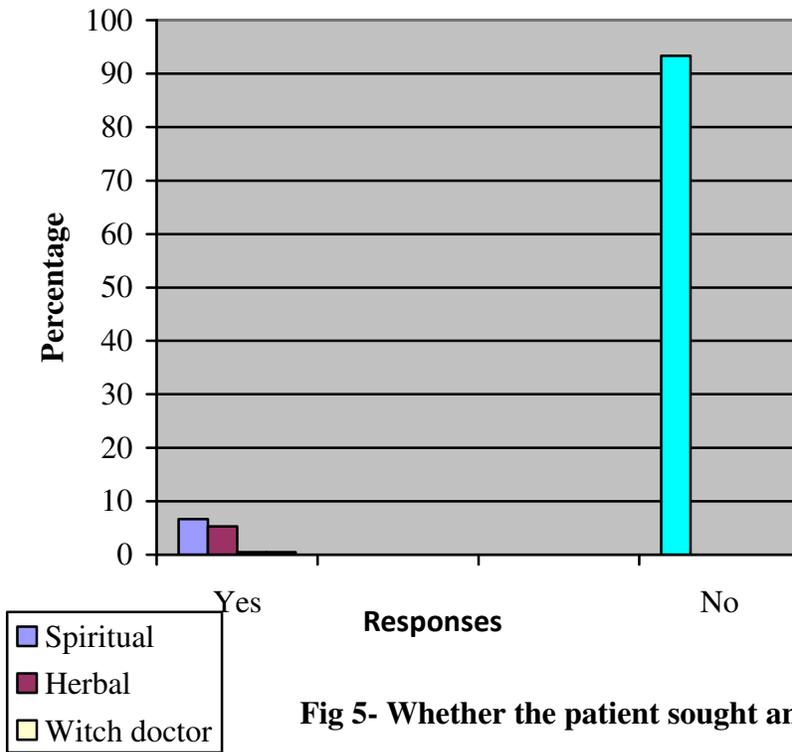
Most of the readmitted patients, 113 (54.1%) developed mental illness at the age of 17 to 26 years. Ninety two (44%) of these readmitted patients had primary level of education whereas 72(34.4%) had secondary level of education.

A significant relationship was observed between relapse and stoppage of drugs/ drug abuse ( $p=0.016$ ), stoppage of drugs/ failure to attend clinic ( $p=0.046$ ) socioeconomic issues ( $p=0.036$ ) and inability of the patient to explain his/her behavior ( $p=0.008$ ). The ability to acknowledge that one has mental illness had a significant relationship ( $p= 0.037$ ) with the number of re-admissions (relapse).

**Table-10-Patients' frequency of admissions, reasons for re-emergency of symptoms, patients' acknowledgment of mental disorder and Behavioural explanation**

Patients' frequency of admissions	Variables	No (%)	$\chi^2$ (df)	<i>p</i> - value
	Once	6(2.9%)	Referent factors	
	Two to four	122(58.4%)		
	Five to Six	35(16.7%)		
	Seven to Eight	14(6.7%)		
	More than eight times	32(15.3%)		
	<b>total</b>	<b>n=209(100)</b>		
What led to the re-emergency of the symptoms	Substance abuse	31(14.8%)	6.643(4)	0.016
	Not applicable	6(2.9%)	6.544(4)	0.610
	Overworking	3(1.4%)	4.793(4)	0.309
	Stoppage of drugs and failure to attend clinic	142(67.9%)	3.442(4)	0.046
	Socio-economic issues	18(8.6%)	1.245(4)	0.036
	Just occurs	9(4.3%)	2.414(4)	0.066
	<b>total</b>	<b>n=209(100)</b>		
Patients' acknowledgement of his/her mental disorder	Yes	146(69.9%)	10.226(4)	0.037
	No	63(30.1%)	9.478(4)	0.650
	<b>total</b>	<b>n=209(100)</b>		
Patients' explanation of his/her behaviour	No response	134(64.1%)	13.732(4)	0.008
	Not applicable	23(11.0%)	2.288(4)	0.683
	Feels that people are against him/her or they are jealous	29(13.9%)	4.117(4)	0.391
	Says not sick	12(5.7%)	1.440(4)	0.837
	Associates with witchcraft	9(4.3%)	2.167(4)	0.705
	Delusions	2(1.0%)	5.296(4)	0.364
	<b>total</b>	<b>n=209(100)</b>		

#### 4.4 PATIENTS' MANAGEMENT PROTOCOL



**Fig 5- Whether the patient sought any other assistance**

Most of the respondents, 195 (93.3%) have never sought healing assistance from any other source apart from taking the prescribed drugs. The rest went for prayers from their faith leaders, witch doctors and herbal therapies (Fig 5).

**Table .11. Patients' drugs, dosages, assistance in taking drugs, their side effects and how the patients deal with them**

Types of drugs	Variables	No (%)	$\chi^2$ (df)	<i>p</i> - value
	Typical	79(37.8%)	10.317(4)	0.035
	Atypical	30(14.4%)	6.625(4)	0.157
	Mood stabilizer	79(37.8)	2.553(4)	0.635
	Does not know	13(6.2%)	1.708(4)	0.789
	Antidepressant	8(3.8%)	2.293(4)	0.682
	<b>total</b>	<b>n=209(100%)</b>		
Dose knowledge	Yes	192(91.9%)	9.114(4)	0.058
	No	17(8.1%)	8.026(4)	0.091
	<b>total</b>	<b>n=209(100)</b>		
Who assists the patient in taking drugs at home?	Spouse	9(4.3%)	6.605(4)	0.158
	Parent	83(39.7%)	4.248(4)	0.374
	Brother/ sister	3(1.4%)	6.371(4)	0.173
	Other relatives	16(7.7%)	7.738(4)	0.102
	Self	98(46.9%)	9.936(4)	0.659
	<b>total</b>	<b>n= 209 (100)</b>		
Drug side effects	Yes	128(61.2%)	1.867(4)	0.042
	No	81(38.8%)	0.442(4)	0.934
	<b>total</b>	<b>n= 209(100)</b>		
Specific side effects	Dry mouth, Rigidity of muscles, cold extremities	46(22.0%)	2.201(4)	0.0001
	Sexual dysfunction	8(3.8%)	2.126(4)	0.713
	In ability to seat/ stand still	11(5.3%)	12.418(4)	0.015
	Hyper salivation, Rigid muscles	60(28.6%)	2.361(4)	0.670
	Not applicable	81(31.8%)	26.539(4)	0.988
	Drowsiness	3(1.4%)	4.520(4)	0.433
	<b>total</b>	<b>n= 209(100)</b>		
Corrective measures after side effects	No action	5(2.4%)	1.708(4)	0.455
	Take artane	85(40.7%)	8.321(4)	0.506
	Take a lot of water, wash head	14(6.7%)	7.665(4)	0.0001
	Not applicable	77(36.8%)	22.732(4)	0.132
	Stops medication	21(10.0%)	6.948(4)	0.003
	Controls self	7(3.3%)	9.229(4)	0.591
	<b>total</b>	<b>n= 209(100)</b>		

Table 11 above, 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. 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.12-Patients' reactions to drug side effects, other illnesses they were suffering from and the medications for these ailments**

	<b>Variables</b>	<b>No (%)</b>	<b>x<sup>2</sup> (df)</b>	<b>P value</b>
Patient's response following the side effects	Stops the next dose	48(23.0%)	16.280(4)	0.007
	No action	31(14.8%)	8.302(4)	0.041
	Continues with medication	5(2.4%)	12.817(4)	0.112
	Not applicable	74(35.4%)	22.732(4)	0.179
	Goes to hospital	5(2.4%)	2.514(4)	0.642
	Takes artane	34(16.3%)	5.408(4)	0.248
	Distressed by the drugs	12(5.7%)	3.722(4)	0.445
	<b>total</b>	<b>n=209(100)</b>		
How do you deal with the side effects?	No action	13(6.2%)	7.733(4)	0.019
	Advice patient to take artane	115(55.0%)	22.125(4)	0.0001
	Not applicable	76(36.4%)	22.732(4)	0.211
	Reduces dose	5(2.4%)	4.121(4)	0.379
	<b>total</b>	<b>n=209(100)</b>		
Any other illness?	Yes	11(5.3%)	3.452(4)	0.485
	No	198(94.7%)	1.867(4)	0.172
	<b>total</b>	<b>n=209(100)</b>		
If Yes, specify	Not applicable	198(94.7%)	3.656(4)	0.361
	Epilepsy	3(1.4%)	1.741(4)	0.394
	Hypertension	1(0.5%)	5.850(4)	0.987
	Diabetes	2(1.0%)	4.603(4)	0.689
	Asthma	2(1.0)	2.179(4)	0.399
	HIV +	3(1.4%)	1.297(4)	0.095
	<b>total</b>	<b>n=209(100)</b>		
Medications for other ailments	None	198(94.7%)		N/A
	Phenobarbitone	2(1.0%)		N/A
	Nifedipine	1(0.5%)		N/A
	Insulin	2(1.0%)		N/A
	Ventolin	2(1.0)		N/A
	ARV	3(1.4%)		N/A
	Prophylactic antibiotics	1(0.5%)		N/A
	<b>total</b>	<b>n=209(100)</b>		

Table 12 above shows that those who experienced drug side effects, 115 (55%) of them were advised by their household heads to take artane, with few of the patients deciding to reduce the drug dosages. Among the patients, only 11 (5.3%) were suffering from other ailments which included epilepsy, hypertension, diabetes, asthma and HIV/AIDS. In terms of medications for these ailments, the patients were taking phenobarbitone (epilepsy), ventolin (asthma), nifedipine (hypertension), insulin (diabetes) and antiretroviral (HIV/AIDS) while some of the patients were also on prophylactic antibiotics.

In terms of the patients' reactions to side effects, stoppage of next dose ( $p=0.007$ ) and not taking any action ( $p=0.041$ ) had a significant relationship to re-admissions (relapse).

When the patients experienced side effects some of the house hold heads took precautions of advising the patient to take artane. Those who took no action at all ( $p=0.019$ ) showed a significant relationship to relapse.

## **CHAPTER FIVE: DISCUSSION**

### **5.0 Introduction**

This chapter presents the discussion in relation to the main objectives of the research study which was to determine factors associated with relapse in schizophrenia at Mathari Hospital. The presentations were done based on the objectives of the study

#### **5.1 Patients' socio-demographic characteristics**

Majority of the patients (81.8%) were in the age of 17 -46 years. (Table 1). This finding indicates that psychiatric morbidity is maximal in young adults who make up most productive section of the population. It could also be due the comparatively young age structure of the Kenyan population as reported by Kenya National Bureau of Statistics et al (2010).

Majority of the Patients (66%) were Males, while females were (34%). This report indicates that at the time of the study , the occurrence of schizophrenia in Mathari was almost twice in males than in females unlike the report by Picchioni & Murray (2007) that Schizophrenia occurs 1.4 times more in Males than in females. Approximately 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 Varcarolis (2011) that the age of onset of schizophrenia ranges form 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 (2003) that indicate that the earlier the age of onset the more the relapse and prolonged hospitalization period that leads to wasted

years and deterioration in cognitive functions. This causes the patient to lose chances for; Education, career, social interactions and employment. From the study, it is evident that; 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 tend to depend on others as indicated by Townsend (2003). The study supported this by indicating that, 66% of patients were not employed, 93.7% of patients lived with their family members and significant others in middle class residential areas. This finding is similar to WHO (2004) report that schizophrenia increases the burden of caring for such patients both in the Family and in Hospitals due to its chronic nature. Such patients are not able to provide for their daily living hence they are supported by their family members.

. The relationship between patients and their neighbours was good as affirmed by 78.9% of the patients; this does not correspond with Townsend (2003) that schizophrenia leads to stigmatization. Although the family member indicated this, the high number of relapse (58.4 %) had re-admissions ranging between two to four is suggestive that the neighbours could have tolerated them rather than the term used 'good' relationship. The study found out that 35.9% of patients abused substances like alcohol, cannabis, marijuana, cigarettes which trigger relapse of schizophrenia and lead to poor prognosis of the illness, this agrees with WHO (2004) report that history of substance abuse leads to poor outcome of schizophrenia in patients and could lead to frequent relapses and poor drug compliance. Although relapse causes cognitive deterioration that affect their social functioning and speech, during the time of this study 71.3% of patients were able to express themselves well.

### **5.1.2 Household Head socio-demographic characteristics**

Most of the household heads, (57.4%) 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 to support of their mentally ill, this corresponds with WHO(2004) report that schizophrenia is the greatest youth disabler hence they need financial and social support.. 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. They are the authority in most African homes. A significant relationship was observed between the age of the household head and re-emergency of symptoms of mental illness ( $p=0.009$ ) indicated that the head of the house hold is able to recognize changes in patient's behavior and seek psychiatric intervention. Most of the respondents, (97%) were Christians which is over and above what is said about Kenya as having 85% of her population as Christians.

### **5.1.3 Family member's knowledge about schizophrenia**

The respondents were able to recognize positive and negative signs of schizophrenia as indicated in the findings by narrating the signs and symptoms 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 member had some knowledge about schizophrenia that enabled him look after the patient; he was able to recognize signs of relapse and the causes of relapse. 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 Vibedec (2010) who reported that the major reason for relapse is non-compliance with

medication regimen. Failure to comply with medicine regimen can lead 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 (2003) that schizophrenia is a chronic illness. Other causes of relapse were substance abuse (14.8%), stressful life events, Most of the patients (64.1%) were not able to explain their abnormal behaviours meaning they had no insight regarding their illness .This can lead to poor drug compliance. Most of the respondents, (93.3%) have never sought healing assistance from any other source apart from taking the prescribed drugs. The relapse rate as indicated in the study is between 58 -97 % this is higher than 70% indicated by Muller (2004) with this high rate of relapse, combined efforts need to be geared towards reducing relapse.

#### **5.1.4Patients' management protocol**

Majority of the patients (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. This unwillingness to take medicine is brought about probably by lack of insight that leads to relapse and eventually poor quality of life as reported by Shives (2007). (75.6%) of patients were on typical antipsychotic &mood stabilizer drugs while only (14.4%) of the patients were on typical antipsychotics and (6.2%) of patients were on anti-depressants. (38.8%) of patients did not experience any side effects due to use of atypical drugs and mood stabilizers. Nearly half. (50.6%) of the patients experienced extra pyramidal side effects which caused them to stop taking medication.

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 measures taken by the patients included taking a lot of water, and washing the head.

Table 12 above shows that those who experienced drug side effects, 115 (55%) of them were advised by their household heads to take artane, while a few number of the patients decided to reduce the drug dosages. 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 comorbid illnesses. Findings from this study indicate that there are factors associated with relapse in Schizophrenia which rejects the Null Hypothesis.

## **5.2 Conclusions**

The study found out that the relapse rate of schizophrenia in Mathari Hospital was 58-97%. This relapse rate is higher than recorded by Muller (2004). The main factor associated with relapse in Schizophrenia at Mathari hospital were non-drug compliance and failure to attend follow-up clinic (67%), others were substance abuse ( 14.8% ) and life related stress(17.3%). From the study it appears to be brought about by; patients lack of insight regarding mental illness as indicated by 69.9% of patient not able to justify their behaviour, 61.2% of the patients reported to have experienced side effects after taking antipsychotic drugs. Lack of insight and occurrence of side effects can lead a patient to stop taking the prescribed medication for lack of understanding their benefit to him. Majority of patients 75.6 % were on typical antipsychotic drugs that usually has distressing side effects to patients. Since relapse in schizophrenia predicts poor prognosis, brings about deterioration in social, occupational and financial status and increases the burden of care on family and the health care facilities, it is imperative for mental health personnel to employ measures of reducing relapses immediately a patient is commenced on treatment.

### 5.3 Recommendation

Having family a member of family with schizophrenia is a life changing event for family and friends who provide care and support. Educating patients and their families is crucial. Family support is crucial to help patients maintain treatment. Education should include information about the disease course, treatment regimens, support systems and life management skills.

- Psycho education should be enhanced in Mathari Hospital by mental health nurses to prevent relapses of schizophrenia and improve quality of lives in patients with schizophrenia especially on early recognition of relapse and drug compliance
- .Family education should be encouraged to enable the family members assist the patient attend follow up outpatient clinic, recognizing signs of relapse and seek for early treatment.
- The policy makers in Mathari Hospital to avail atypical drugs with minimal side effects for the patients
- Enhancing community mental health psychiatric units to do follow up at patients homes to encourage drug compliance due to the chronic nature of Schizophrenia and teach on life management skill for the patient to be able to handle life stresses
- More studies should be done to determine clinical factors that influence relapse of schizophrenia in Mathari hospital

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# APPENDIX2: LETTER OF APPROVAL FROM KNH/UON ETHICS AND RESEARCH COMMITTEE



**KENYATTA NATIONAL HOSPITAL**  
Hospital Rd. along, Ngong Rd.  
P.O. Box 20723, Nairobi.  
Tel: 726300-9  
Fax: 725272  
Telegrams: MEDSUP", Nairobi.  
Email: [KNHplan@Ken.Healthnet.org](mailto:KNHplan@Ken.Healthnet.org)  
21<sup>st</sup> June 2011

Ref: KNH-ERC/ A/135

Nancy Wairimu Gathaiya  
School of Nursing Sciences  
College of Health Sciences  
University of Nairobi

Dear Nancy

**RESEARCH PROPOSAL: "FACTORS ASSOCIATED WITH RELAPSE IN SCHIZOPHRENIA AT  
MATHARI TEACHING AND REFERRAL HOSPITAL, NAIROBI, KENYA" (P70/03/2011)**

This is to inform you that the KNH/UON-Ethics & Research Committee has reviewed and **approved** your above revised research proposal. The approval periods are 21<sup>st</sup> June 2011 to 20<sup>th</sup> June 2012.

You will be required to request for a renewal of the approval if you intend to continue with the study beyond the deadline given. Clearance for export of biological specimens must also be obtained from KNH/UON-Ethics & Research Committee for each batch.

On behalf of the Committee, I wish you a fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of the data base that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Yours sincerely

**PROF A N GUANTAI**  
**SECRETARY, KNH/UON-ERC**

c.c. The Deputy Director CS, KNH  
The Director, School of Nursing Sciences, UON  
The HOD, Records, KNH  
Supervisors: Dr. James Mwaura, School of Nursing Sciences, UON  
Miriam Wagoro, School of Nursing Sciences, UON

### APPENDIX 3: LETTER OF APPROVAL FROM MATHARI HOSPITAL

Nancy w. Gathaiya  
University of Nairobi  
P.O Box 30270  
Nairobi  
The Medical Superintendant  
Mathari Hospital  
P.O Box 40663  
Nairobi  
23<sup>rd</sup> June 2011  
Dear sir/Madam,

28/6/11 - Cleared  
- Proceeded  
28/6/11



**Ref: Request for permission to carry out a research in your Institution**

I am a final year, Masters of Nursing student at the University of Nairobi. I kindly request for permission to conduct a study on factors associated with relapse in Schizophrenia in Mathari Hospital.

The aim of the study is to determine factors associated with relapse of Schizophrenia. This study will be undertaken for partial fulfillment of the requirement for the award of the Degree of Masters of science in Nursing (Mental health and Psychiatric Nursing)

Attached is the Proposal Approval letter from KNH/UON Ethics & Research committee.

I will be most grateful for your consideration.

Yours Faithfully

*Nancy Gathaiya*  
Nancy Gathaiya

**APPENDIX4: LETTER OF APPROVAL FROM NATIONAL COUNCIL OF SCIENCE AND TECHNOLOGY**

<p>PAGE 2</p> <p>THIS IS TO CERTIFY THAT:</p> <p><b>Prof./Dr./Mr./Mrs./Miss</b>..... NANCY WAIRIMU GATHAIYA</p> <p>.....</p> <p><b>of (Address)</b>..... UNIVERSITY OF NAIROBI P.O BOX 30197 NAIROBI</p> <p>.....</p> <p><b>has been permitted to conduct research in</b> .....</p> <p>MATHARI TEACHERS &amp; REFERRAL <b>Location,</b> HOSPITAL <b>District,</b></p> <p>..... NAIROBI..... <b>Province,</b></p> <p><b>on the topic</b>..... FACTORS ASSOCIATED WITH RELAPSE IN SCHIZOPHRENIA AT</p> <p>MATHARI TEACHING &amp; REFERRAL</p> <p>HOSPITAL NAIROBI, KENYA</p> <p>.....</p> <p><b>for a period ending</b>..... 30TH NOVEMBER, 20<sup>11</sup></p>	<p>PAGE 3</p> <p>NCST/RRI/12/1/MED-011/101 <b>Research Permit No.</b>.....</p> <p><b>Date of issue</b>..... 15/07/2011</p> <p><b>Fee received</b>..... KSH. 1,000</p> <div style="text-align: center; margin: 10px 0;">  </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><i>Nancy Wairimu</i></p> <p>.....</p> <p><b>Applicant's Signature</b></p> </div> <div style="text-align: center;"> <p><i>M. M. Mwangi</i></p> <p>.....</p> <p><b>Secretary National Council for Science and Technology</b></p> </div> </div>
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## **APPENDIX 5: DSM-IV-RT CRITERIA FOR SCHIZOPHRENIA**

### **A. Characteristic symptoms**(at least two of the following)

- Delusions
- Hallucinations
- Disorganized speech
- Grossly disorganized or catatonic behavior
- Negative symptoms

**B. Social-occupational dysfunction:** work, interpersonal, and self-care functioning is below the level achieved before onset.

**C. Duration:** Continuous signs of the disturbance for at least (6) months

**D.**Schizoaffective and mood disorders are not present and are not responsible for the signs and symptoms

**E.** Not caused by substance abuse or a general medical disorder

## APPENDIX 6: RESEARCH INSTRUMENT

### 1. THE STUDY QUESTIONNAIRE (Researcher administered Questionnaire)

#### TOPIC: FACTORS ASSOCIATED WITH RELAPSE IN SCHIZOPHRENIA IN MATHARI HOSPITAL NAIROBI, KENYA.

Questionnaire no. -----

#### ***INSTRUCTIONS TO INTERVIEWER***

1. Ensure participants to this questionnaire are Family members or significant others to the patient with schizophrenia.
2. Don't suggest responses for the participant
3. Do not write the name of the participant
4. Write in the space provided or tick the appropriate option in the space provided.

#### **1. SOCIO-DEMOGRAPHIC INFORMATION OF THE PATIENT**

1.1 Age in years. -----

Gender: Male ( ) Female ( )

1.2 Marital status

( ) Single

( ) Married

( ) Separated /Divorced

( ) Widow/widower

1.4 Education level

( ) No formal Education

( ) Primary

( ) Secondary

( ) College

( ) University

( ) others, (specify) -----

1.5 Patient's occupation

( ) Employed

( ) Not employed

Others, (specify) -----

1.6 Where does your patient live?

- High class residential area,
- Middle class residential area
- Low class residential area

1.7 Living arrangement

- Alone at home
- With family
- significant others
- Others, (specify) -----

1.8 Religious affiliation

- Catholic
- protestant
- Muslim
- others, (specify)

1.9 Are family members supportive to the patient?

- Yes
- No

2.0 How does the patient relate with the neighbours?

.....

2.1 Does the patient use any substance?

- Yes
- No

If yes, specify the type of substance(s).....

## **2. SOCIO-DEMOGRAPHIC INFORMATION OF THE HOUSEHOLD HEAD**

2.1 Age in years of the household head -----

2.2 Gender: Male  Female

2.3 Marital status of the household head

- Single
- Married
- Separated /Divorced
- Widowed

2.4 Education level of the household head

- No formal Education
- Primary
- Secondary
- College
- University
- others, (specify) -----

2.5 Occupation of the household head

- Formal Employment
- self employed
- Others, (specify) -----

2.6 Residence of the household head

- High class residential area
- Middle class residential are
- Low class residential area

2.7 Living arrangement: How many people live in the household...?

2.8 Religious affiliation

- Catholic
- protestant
- Islam
- others, (specify)

2.9 In your opinion, which areas does the patient have difficulties regarding expressing himself?

.....

**3. FAMILY MEMBERS' KNOWLEDGE ABOUT SCHIZOPHRENIA**

3.1 What was the age of the patient during the first onset of this mental disorder? ----

3.2 What were the major complaints that lead you to seek psychiatric care for your patient fist time?

---

---

---

3.3 In your opinion, what were the reasons that caused the patient present with the above complaints?

3.4 How many times has the patient been admitted into a psychiatric hospital? -----

3.5 What do you think leads to re-emergence of the symptom of this mental disorder?

---

---

3.6 Does your patient acknowledge that he/she has a mental disorder?

- yes
- No,

If no, how does the patient explain his/her behavior?

**4. MANAGEMENT PROTOCOL FOR THE PATIENT**

4.1 Have you ever sought for any other type of assistance for your patient besides hospital care?

- yes
- No

If yes, which one? -----

- Spiritual
- Herbal Medicine
- Any other, (specify)

4.2 Can you give the specific names of the drugs your patient uses? -----

---

---

4.3 Indicate the dose of each drug and how many times the drug is taken per day-----

---

---

4.4 For how long has your patient been on treatment? -----

4.5 Who assists your patient in taking medicine at home? -----

4.6 Has your patient ever experienced any problems after taking the prescribed drugs?

- Yes

No

If yes, (Tick the appropriate one/s)

Dry mouth

Rigidity of the muscles

sexual dysfunction

Inability to sit or stand still

Hyper salivation

Others, (specify) -----

4.7 What does your patient do when he/she experiences the above problems?

.....  
.....

4.8 What is your patient's response on experiencing the above problems stated in no 4.6?

.....

4.9 How do you deal with the problems experienced by the patient?

.....  
.....

5.0 Does your patient suffer from any other illness apart from this mental Disorder?

Yes,

No.

If yes, specify.....

5.1 What other medication is your patient on apart from those for the mental disorder? -----

## APPENDIX7: RESEARCH WORK PLAN

Activity	Dec 2010	Jan 2011	Feb 2011	Mar 2011	April 2011	May 2011	Jun 2011	July 2011	Aug 2011	Sep 2011	Oct 2011
Proposal writing	x	x	x								
correction and approval of the proposal				x	x						
Printing of questionnaires for pretesting					x						
Pre-test field work					x						
Analysis and evaluation of pre-test					x	x					
Finalization and printing of research instruments						x	x				
Field data collect							x	x			
Data editing, coding and validation							x	x			
Data analysis and report writing								x	x		
Defense of project report										x	
Dissemination ,submission and publication											x

## APPENDIX8: RESEARCH BUDGET

<b>Description</b>	<b>Unit</b>	<b>Cost per Unit Ksh.</b>	<b>Total cost Ksh.</b>
<b><u>Proposal writing</u></b>			
1.Internet search	50 hours	60	3,000
2.Typing and printing	60	120	7,200
3.writing pad	2	30	60
4.biropens(10@20),3pencil,and 3 erasers	16	20	320
5.photocopy	5	200	1,000
6.KNH ethical committee	1	1000	1000
7.clearance by ministry of Education	1	1,000	1,000
<b><u>Preparation of instrument</u></b>			
1.Typing and printing	10	30	300
2.photocopy	209	12	2,500
<b><u>Staff cost</u></b>			
1.researcher	20 days	1,000	20,000
2..Stastician	1	25,000	25,000
3.transport	20days	300	6,000
<b><u>Data processing and binding</u></b>			
1.typing preliminary results	120	30	3,600
2.photocopy to supervisors	360	2	720
3.typing and printing final draft	200	30	6,000
4.printing and binding final copy	1,500	10	15,000
Sub Total			91,000
Contingencies 10%		10% total cost	9,100
Grand Total			100,100