Family Expressed Emotions, Treatment Adherence and Symptom Relapse Among Patients Suffering from Schizophrenia in Uganda

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Declaration

I, Judith M. Sorhe, declare that this Thesis is my original work and that it has not been presented to any other University for similar or any other degree award.

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Supervisors’ Declaration

This Thesis has been submitted with my approval as a University supervisor.

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Abstract
Symptom relapse among schizophrenia patients has become a global concern and accounts for the majority (75%) of the readmission cases. Studies world-over indicate that inconsistence to treatment regiments predicts disease relapse while the construct “Expressed Emotion (EE)” has been shown to play a role in this relapse in some cultures, especially the West. This study was aimed at establishing the relationship between Family Expressed Emotion, treatment adherence and symptom relapse among discharged schizophrenia patients at Butabika Hospital, Uganda. A descriptive correlational survey was carried out using a structured questionnaire, on 85 schizophrenia readmissions who had been discharged and were awaiting collection home at the recovery wards. Complete census on relapsed schizophrenia patients through convenient purposive sampling technique was used. Data were analysed and summarized using descriptive statistics, Spearman correlation and multiple regressions. The hypotheses were further tested using Fishers exact and Chi-square tests.

Majority of the respondents were female of age-group 30-39 years with secondary school education and lived with significant others. Of the 85 relapsed respondents, majority experienced High levels of family EE and majority also were non-adherent to treatment regiments. Levels of family expressed emotion had no significant relationship with either nature of treatment adherence or with symptom relapse. Nature of Treatment adherence and symptom relapse were correlated, and when nature of treatment adherence and levels of perceived expressed emotion were merged together, they predicted symptom relapse. However, perceived expressed emotion, nature of treatment adherence and frequency of symptom relapse have indicated a significant relationship (p<.05) among schizophrenia patients at Butabika Hospital-Uganda. Therefore, Mental health professionals need to integrate family therapy interventions specifically ‘family interaction’ in the provision of mental health services and to Psycho-educate both “family and patient” on disease-course. Further studies on the precipitating and maintaining factors of family EE among relatives of schizophrenia patients need to be considered.
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Chapter One

Introduction

This chapter gives an introductory background of the study variables. In part, it highlights on the statement of the problem, purpose of the study, objectives, a detailed significance of the study, scope and conceptual framework that summarises the relationship among the variables of the research.

Background

Relapse among patients with mental illness is increasingly a major concern worldwide, as it brings about negative effects and also results in a huge burden to patients, their families, the mental health sector and the country’s economy as a whole (Kazadi, Moosa, & Jeenah, 2008). Relapse here refers to reappearance or the worsening of psychopathological symptoms or re-hospitalisation in the year after hospital discharge (Schennach et al., 2012). Hence frequent hospitalizations, drug-resistance, cognitive impairment due to progressive structural brain damage, personal distress, incarceration and interference with rehabilitation efforts are quite common with recurrent relapses. Relapse is more common among individuals suffering from schizophrenia. Schizophrenia is among the known chronic psychological disorders (American Psychiatry Association (APA), 2013; Emsley & Orthuizen, 2013) and an individual may suffer from either schizophrenia alone or comorbid with substance use (APA, 2013; Pourmand, Kavanagh & Vaughan, 2005; WHO, 2009). Schizophrenia is a psychological disorder characterised by delusions, hallucinations, disorganized thinking (speech), grossly disorganized or abnormal motor behaviour and negative symptoms (APA, 2013). Research has shown that those who relapse usually deteriorate in their normal functioning with every relapse reducing their national economic contribution (Sariah, Outwater, & Malima, 2012, 2014). Often individuals suffering from schizophrenia may turn to alcohol to cope with the distressing
symptoms and these symptoms tend to be associated with number of social problems (WHO, 2009).

Globally, studies on symptoms relapse among patients with schizophrenia indicate a 75% relapse rate (Reist et al., 2014; WHO, 2001). A few studies in Africa also put the symptoms relapse between 50% and 92% among patients suffering from schizophrenia (Sariah, 2012; Weret, 2014). A few adhoc studies done in Uganda also report similar findings (Basangwa, 2007; Birabwa., 2015).

A number of factors have been found to contribute to symptom relapse among patients suffering from schizophrenia, among these is non-treatment adherence, poor family support, stressful life events (Sariah et al., 2014), nature of the condition (Basangwa,2007; WHO, 2004) and family expressed emotion (Hooley, 2007). According to Hooley (2007) family Expressed Emotion (family EE) is among the leading causes for the relapse among these disorders. Family EE is “the critical, hostile, and emotionally over-involved attitude that relatives have toward a family member with a disorder” (McDonagh, 2005: 1, 2). Family EE can be either high or low, and relapse is more likely where a family is high in EE (Brown et al., 1966). According to Platt, (1980) a family of a psychiatric patient is the “idealized nuclear family” that constitutes the patient’s significant close contacts who can be either nuclear or extended family member(s), house-hold member(s) or merely important person(s) in one’s life (Mcleary,2001). According to Vaughn and Leff (1976) a family high in criticism, hostility and over-involvement tend to cause more relapse in a member suffering from mental illness especially chronic illness like schizophrenia. Family members with High EE pose a great risk to relapse, as there is little encouragement towards treatment adherence (Christian, 2009). According to WHO (2006), treatment adherence is the extent to which a person’s behaviour of taking medications, following a diet and/or executing life style changes, corresponds with agreed recommendations from a health care provider.
In Uganda, the burden of mental illness is high although the actual prevalence is not known (Byaruhanga, Cantor-Graae, 2008; WHO, 2012). Data available at Butabika National Referral and Teaching Mental Hospital (Butabika Hospital) indicate high patient readmission rates, which constitutes about 50% of all admissions (Butabika Records, 2015/2016; Birabwa et al., 2015; personal observation). Furthermore, Adedeji, et al. (2014) established that schizophrenia is a common cause of readmissions affecting young productive age groups in Uganda. The major reason cited being failure to adhere to treatment resulting mainly from poor social support and poor quality of life (Birabwa et al., 2006).

According to Uys and Middleton (1997; 2), mental illness can be well managed in the community since it is a chronic illness and the sufferers are usually discharged back to the community. And the family’s social skills (like healthy communication) and their coping skills (or ability to handle the patient’s illness and treatment) help the patient to cope with the symptoms. Although there is clear evidence regarding the contribution of Family EE toward non-treatment adherence and eventually relapse, there is hardly any study in Uganda that has specifically focused on family EE. Yet understanding family EE is key in relapse prevention. Therefore, this study majorly focused on examining the contribution of family EE towards symptom relapse among the patients suffering from schizophrenia in Uganda.

**Statement Problem**

The chronicity of Schizophrenia symptoms is quite detrimental to the cognitive functionality of the patients. Yet still the repetitive re-hospitalizations impinge on the economy of their families. Readmissions at the Butabika Hospital form half of all admissions (Birabwa et al., 2006). Patients diagnosed with schizophrenia are among the most commonly readmitted in Uganda, affecting mostly young individuals of productive age groups (Adedeji et al., 2014). Apart from treatment non-adherence, Family Expressed Emotion is globally reported to contribute to these high readmission rates of schizophrenia. As Kigozi et al. (2013) say, apart
from the mental health professionals, relatives are closely involved in patient-care at the mental institutions in Uganda to provide social support. The reason for this is to reduce frequency of symptoms relapse but instead, these patients still come with symptom exaggeration even in worse states than previous presentation. Such frequent relapses if not controlled, compress the national labour force and overall national economy. In Uganda there is hardly any study that has ever focused on the contribution of Family Expressed Emotion toward symptoms relapse despite global evidence elsewhere. This study intends to fill this gap.

**Purpose**

To examine the relationship among family Expressed Emotion, treatment adherence and symptom relapse among patients suffering from schizophrenia in Uganda.

**Specific Objectives.**

1. To establish the levels of family expressed emotion, nature of treatment adherence perceived by patients suffering from schizophrenia in Uganda.

2. To find out whether there is a significant relationship between levels of family Expressed Emotion and nature of treatment adherence among individuals suffering from schizophrenia readmitted at Butabika Hospital in Uganda.

3. To find out whether there is a significant relationship between levels of Family Expressed Emotion and frequency of symptom relapse and length of stay among patients suffering from schizophrenia readmitted at Butabika Hospital in Uganda.

4. To assess whether there is a correlation between levels of Family Expressed Emotion, nature of treatment adherence and frequency of symptom relapse among patients suffering from schizophrenia readmitted at Butabika Hospital in Uganda.
Significance of the Study

The findings of this study are expected to generate awareness and thereby mobilize adjustments in the psychological services provided to improve on communication patterns in the care-giver–client alliance. These findings of this study may be used as study reference material for the institutions (Makerere University and Butabika Hospital) to the students who will carry out similar researches. Butabika hospital may also use the study findings to introduce alternative ways of management of these clients and reduce relapse rate or delay relapse. The patients and their relatives will benefit financially and psychologically from the changes that will be introduced as consequences of this study-findings especially in reduced expenditure on disease management once relapses reduce. The government, specifically Ministry of Health may be compelled to use the study findings as a reference point during budgeting or planning for mental health and help policymakers to design policies on management of schizophrenia.

Scope of the Study

This study was conducted among in-patients readmitted at Butabika Hospital, the largest mental-health institution in Uganda. The study specifically focused on male and female in-patients re-hospitalized with schizophrenia and recuperating at the male and female recovery wards. This research targeted those patients of age groups 20 to 59 years, diagnosed by the psychiatrist or psychiatry clinical officer as per the American Psychiatric Association: Diagnostic Statistical Manual for Mental Illnesses Revised 4th Edition (DSM-IVR™) or 5th Edition (DSM-5™; 2013). These patients were sampled out from accessible patients’ case-notes/files with the help of the ward nurse-in-charge. The study targeted those who were discharged but had not yet left the wards, and would communicate effectively.

This explicitly, focused on the nature of family Expressed Emotion whether high (characterized by lack of emotional support, irritability, negative criticism and emotional over-Involvement/ intrusiveness) or low (Emotional support) and the nature of treatment adherence
(whether good, poor or non-existent) among the patients with Schizophrenia and their contribution towards symptom relapse among these patients. Family for study respondents referred to nuclear, extended family- or household members and any close contacts meaningful to and living with the respondent. For Symptom relapse the researcher in this study considered any exaggeration or reappearance of positive or negative symptoms of schizophrenia considering the frequency of relapse and length of stay (away from hospital).

**Figure 1:**

**Conceptual Framework**

From the conceptual framework above, Family Expressed Emotion can be either High (negative criticism, irritability, intrusiveness/expressed over-involvement) or Low (emotional support and positive, warm remarks). When high it can lead to poor treatment adherence or non-adherence and when it is low it can contribute to good treatment adherence (Hooley, 2007). Consequently, good treatment adherence may influence low expressed emotion while poor or
non-adherence ends in high expressed emotion. The nature of treatment adherence will predict symptom relapse among patients with schizophrenia, whereby poor or no treatment adherence is likely to bring about symptom relapse. Similarly, the level of family expressed emotion can directly influence symptom relapse among these patients.
Chapter Two

Literature Review

Introduction

This chapter gives a review of the existing literature on Expressed Emotion and schizophrenia relapse under the specific study objectives: Expressed Emotion (EE) and treatment adherence, EE and symptom relapse, the relationship between EE, Treatment Adherence and Symptom Relapse among patients suffering from schizophrenia.

Overview

Mental illness relapse has become a global concern with most researches focusing the northern hemisphere. The few inquiries trickling southwards are more in the Asian world and quite minimal in Africa. Yet still, the few in Africa have hardly elaborated on Family Expressed Emotions as a contributing factor to symptom relapse in schizophrenia. In Davey (2008), schizophrenia is among the most chronic mental disorders known globally. Studies globally indicate a prevalence rate of schizophrenia at health care settings to be 1.5% to 3.8% (WHO, 2010). Banerjee and Ratemo (2014) in their article also emphasize that “Clinicians need to be aware of the existence of EE in the treatment of patients with schizophrenia and address it early to optimize benefits for the patients and their caregivers”.

Bebbington and Kuipers, (1994) emphasize that High Expressed Emotion in the family environment as was established by (Brown, Birley, & Wing, 1972), is predictive of relapse in the first 9 to 12 months following discharge from hospital among those with schizophrenia psychosis and this has been replicated across cultures worldwide. However, in Uganda, burden of schizophrenia is 1% (UBOS, 2006; WHO, 2004; 2006). Studies world-wide have demonstrated that Family Expressed Emotion (EE) and poor adherence to treatment regimens have a role in these relapses, yet there is scarcity of such scientific evidence in Africa, more so Uganda.
Expressed Emotion and Nature of Treatment Adherence

Studies indicate that relatives who have internal locus of control always assume that their patients who suffer mental illness should have control over their illness, so such relatives tend to be critical, controlling and intrusive. Those with external locus of control express low emotions to their mental patients (McDonagh, 2005; Anakel & Manian, 2012). Positive remarks and warmth by family-members to their patient on admission encourage conformity to treatment regimens, while negative remarks progress to non-adherence on discharge preceding a re-hospitalization for schizophrenia sufferers (Cruz & Pincus, 2001).

Several models have been employed in explaining expressed emotion and treatment adherence; Locus of control model is viewed from two extremities. An individual with internal locus of control is one who believes that he or she is responsible for all the happenings or consequences surrounding them. Hence such an individual believes she/he is in control of the illness. Family members with internal locus of control are seen to exhibit high expressed emotions to their patients with a disorder compelling them to non-adherence and consequential relapse. Contrary to this, one with external locus of control believes all the happenings are extrinsic; therefore they remain inactive with low self-esteem and do not trust others (Anakel et al. 2012). Conversely, those relatives who view the patient’s illness from external locus of control are less of critical responses to the patient, but likely to exhibit high EOI where the relative attributes patient’s behavior to factors outside the patient's control and so needs help. Such external factors include; how recent the illness is, one’s experience with the illness, knowledge about illness, social networks and social functioning (Barrowclough, Tarrier and Johnston, 1996).

More to this, is the attribution model which indicates that, that is part of the process of the cognitive appraisal of a stressor and has a role in people’s appraisal of life events. As part of the coping process, attribution is a determinant of attitudes and behavior in response to a
stressful situation (Lazarus & Folkman, 1984). Such and many other researches about EE and attribution have focused on relatives' attributions as cause of patients’ behavior to illness like refusal or acceptance to take medication. Yet in the voluntary control of behavior relatives view the patient as being able to control their own behavior, also referred to as internal locus of control.

According to (Pourmand, Kavanagh & Vaughan, 2005), when patients with schizophrenia are discharged from mental institutions to families where High Expressed Emotion dominates the style of communication inevitably get highly aroused and fail to see the need for treatment regimens and relapse becomes inevitable. And that EE has empirical consistency across studies of Schizophrenia than other mental health issues as morbidity and contributing factor to relapse. This is by predisposing patients to treatment non-adherence then the onset of a psychotic relapse, usually in the three weeks prior the relapse. In her study in Tanzania, (Sariah et al., 2014) found that High EE among care-givers precipitated treatment non-compliance among schizophrenia patients. This qualitative study on relapse in schizophrenia focused on seven out-patients of age 19 to 65 years and their seven relatives, selected through purposive sampling and interviewed and recorded on the Camberwell Family Inventory. The outcome showed that, all the seven patients had perceived emotional over-involvement as the lead factor to their non-adherence and all the seven relatives reported having expressed themselves in high emotions. These findings from such many researches are therefore confirming that in the presence of high family EE there is a likelihood of improper treatment adherence due to poor interaction styles.

**Expressed Emotion (EE) and Symptom Relapse**

The construct “Expressed Emotion” was coined by Brown, Carstairs & Topping, (1958) after realizing that many patients from mental institutions who returned to relatives who had emotional over-involvement, negative criticism and hostility always relapsed and got re-
hospitalized within a year of discharge. This prompted further studies, for example, Banerjee (2014) referred to EE as the quality of the emotional climate between a relative and a family member with a serious psychiatric disorder, and that it is a significant characteristic of the family milieu that has been found to predict symptom relapse in a wide range of mental disorders such as schizophrenia. Contrary to this, low EE families are found to be more knowledgeable, perceive better coping skills and report a low subjective burden, personal stress and behavioural disturbance.

Many studies on communication and interaction have proved that EE is an index of family communication processes. Miklowitz, Golstein, Nuechterlein, Snyder and Mintz (1989) emphasize that high EE resonates as a transactional process that is associated with observable disturbed family interactions. This can be viewed as an indicator of remarkable dysfunctional interpersonal relationships, which lack a constructive emotional connectivity. Findings compiled by APA (2008, 2013) have proved that repetitive symptom relapses are detrimental to the functionality of the sufferer who then, according to Davey (2008), falls vulnerable to relapse with minimal verbal comments due to attribution biases. And this may precede the trend of treatment inconsistency or immediate relapse even with maintained treatment regimens. The relapse may be full-blown or symptom exacerbation.

However some researchers like Anakel et al. (2012) have associated these dysfunctional interpersonal relationships with the stress-diathesis model. This model combines the biological-ecological factors that define the degree of one to tolerate trauma or life events. This measures one’s vulnerability to a psychiatric episode. According to this model, when there is a dysfunctional family milieu, the characteristics of the psychiatric patient or the care-taker will influence an expressed emotion-symptom relapse dyad. And all this is determined by previously formed believes as influenced by one’s cognitive appraisal. Therefore the three
models (locus of control, attribution theory and stress-diathesis) interact in their effect on EE and relapse.

Schizophrenia relapse has been broadly defined by different scholars ranging from symptom reemergence or the worsening of negative or positive symptoms, re-hospitalization change or increase of medication in the past 6 months. Schizophrenia relapse rates vary from 50% to 92% globally (Weret, 2011). And that studies, also indicate that some individuals relapse with or without medications and these repetitive relapses are known to reduce the degree and duration of the next remission, worsen disability, and increase period of response to future treatment. This relapse is frequent during the first years of the illness and may be associated with clinical deterioration and commonly discontinuing medication. Nonetheless, family emotional environment is said to direct the course of schizophrenia illness.

McDonagh (2005) in her findings expresses that family members high in expressed emotion cause relapse in psychological disorders such as schizophrenia within the year of discharge, and that the stress from negative criticism and pity overwhelm the sufferer who then copes by relapsing. Furthermore, McDonagh established that EE is a strong predictor for schizophrenia relapse with a mean relapse rate of 48% for patients living with high EE families versus 21% for those living with low EE families. Similarly, (Brown & Rutter, 1996; Butzlaff & Hooley, 2012) assert that Schizophrenia patients who get discharged from the hospitals to their families who are high in EE are more likely to experience a relapse in a year’s time even when conforming to treatment regimens. And that EE produces relapse by raising the patients’ arousal beyond an optimal level.

Furthermore, the over-involvement and negative critical comments a patient receives from their relatives usually overwhelm them leading to relapse as the only way to cope since they fear seeming different from the society where they belong. Researches on Expressed
Emotion and symptom relapse in Africa are scanty but Christian (2009) in Nigeria studied on 31 families’ members with schizophrenia patients. In this cross sectional survey, Camberwell Family Inventory was used and it was established that most (85.65%) of the families expressed themselves emotionally high to their patients leading to symptom relapse. However, the association between EE and mental illness relapse has been studied in various parts of the world but there is very little research in Uganda pertaining the same. The UBOS (2006) found that, of all the hospital attendances, 20-30% had mental illnesses of which 18% were substance abusers while 1% were schizophrenic usually turning up for treatment, but whether Family EE plays a role in this disease maintenance is not known. Furthermore, most patients are discharged back to their relatives after hospitalization for continued care and this is where effects of family interaction begin to show.

Several research tools have been used to ascertain the relationship between EE and relapse which have found similar results from various populations world over. For example, in China, Chien and Chan (2009) translated the level of expressed emotion (LEE) tool to Chinese language and it still showed that high EE by family members leads to symptom relapse in mental illnesses. Vaughn and Leff, (1976) used “Camberwell Family Inventory (CFI)” as the original measurement, while Bachmann et al (1998) used “Five-Minute Speech Sample” to measure the relatives’ appraisal of their patients and found out that EE was a predictor of symptom relapse in schizophrenia besides other mental illnesses. Kavanagh et al. (2006), used Family Attitude Scale (FAS) on 30 controls and 30 Schizophrenia patients in Australia on EE and the respondents had similar results as those for CFI where criticism, over-involvement and hostility from family members predicted relapse in schizophrenia. These many scales gave similar results of various populations being representative of their geographical and cultural settings in relation to family climate towards their patients with mental illness., hence the need
to establish if similar measurements can be determined on Ugandan populations using a patient
version approach of “Level of Expressed Emotion” in English language on in-patients

Treatment Adherence and Symptom Relapse

Conformity to treatment regimens has most often been a big challenge in mental health
practice, affecting the length of remission and progress to symptom relapse. Treatment non-
adherence ends up into disease relapse, re-hospitalisation, longer time to remission and suicide
which are so distressing to the individual, family, community and health sector (Leucht &
Heres, 2006). Gray, Wykes and Gourney (2002) put it that non-adherence is a consequence of
environmental problems. This therefore implies that the patient is not in control of the illness
and needs support (especially encouragement to treatment conformity) from the external world
in order to recover and prevent relapse. Studies estimate that non-adherence accounts for
about 40% of all episodes of relapse and subsequent readmissions to psychiatry unit with gaps
as small as 10 days among schizophrenia patients (Reist, 2012). These recurrent revisits to the
mental institutions within short periods of remission lead to disabling brain dysfunction, family
disengagement and social segregation.

In Davey (2008); Kring (2008) anti-psychotics help to maintain the normal
functionality of the Hippocampal-Pituitary-Adrenal-Axis hence regulating the dopamine
levels. Treatment non-adherence therefore renders the individual vulnerable to relapse. Sariah
(2012; 2014) in her research in Tanzania established that very little research so far has been
done in Africa to find the reasons for poor treatment compliance among psychiatry patients as
this continues to be a global problem. Non-adherence in schizophrenia is an obvious predictor
of relapse into worse mental states that aggravate care-giver spiking emotional intolerances.
The study by Sariah and colleagues (2012) on “factors influencing schizophrenia relapse in
Tanzania”, has indicated an association between treatment non-adherence and eminent
symptom relapse. The World Federation for Mental Health (2008), discriminatively surveyed
Australia, Canada, Germany, France, Italy, U.K and USA and established that 85.65% of the surveyed families reported relapse due to treatment non-compliance. This study omitted Asian and African countries prompting the need to have African studies from various settings and cultural backgrounds.

Expressed Emotions, Treatment Adherence and Symptom Relapse

Gray and colleagues (2002) further explain that non-adherence accounts for 33-73% of re-hospitalizations of mental illness persons and this is associated with relapse and homelessness world over Schizophrenia illness is synonymous with repetitive relapses resulting from the nature of disease, characteristics of the sufferer and or care-taker attributes and environmental influences. According to (Weiden, et. al. 2004) disorganized chaotic living, housing and logistic problems indicate lack of support and existing high EE which predict non-adherence ending in relapse of schizophrenia. Weiden and others (2004) in their study in the USA report that, when discharged patients stop their medication, relapse rates go up from about 3.4% a month to about 12% a month. From this study it was established that, 20% of it respondents with schizophrenia reported missing one week or more of oral antipsychotic medications during the first three months after hospital discharge. Another study found non-adherence following discharge from inpatient care to be at least 50% after 1 year and as high as 75% at 2 years.

In India, Bharat and Kalia (2013), found that schizophrenia patients whose relatives showed warmth, positive remarks and low Expressed Emotions had delayed or low rates of relapse and longer remission. Likewise, Sariah and colleagues (2012) have come up exceptionally that of the seven family members and seven schizophrenia patients they
investigated, all expressed their perception of EE as being a predictor of poor treatment adherence and the subsequent symptom relapse among schizophrenia patients.

Most of these studies done on EE focused on individual psychological distresses and were done in the Western world. This literature review indicates that studies have been done in various parts of the world explaining the influence of EE on symptom relapse using various designs and reveal that high EE predicts relapse. Such empirical data is quite scanty in the Ugandan setting. So, there is little or no literature focusing on the relationship between Expressed Emotion and relapse in schizophrenia studied in Uganda

**Hypotheses.**

1. There is a significant relationship between levels of Family Expressed Emotion (EE) and nature of treatment adherence among patients suffering from schizophrenia.

2. There is a significant relationship between level of Family Expressed Emotion and Frequency of symptom relapse among patients suffering from schizophrenia.

3. There is a correlation relationship among levels of family Expressed Emotion, nature of treatment adherence and frequency of symptom relapse among patients suffering from schizophrenia in Uganda.
Chapter Three
Methodology

Introduction

This chapter gives a detailed explanation of the procedures the researcher employed in this study. The procedures included; the study design approach, the site, study population and sample, sampling procedure, instrumentation, data collection procedure, data management and analysis methods.

Study Design

The study design in this research was correlational in nature. This design was chosen because it was suitable for the variables under study. The design aimed at describing the characteristics of the socio-demographic data, levels of family Expressed Emotion and nature of treatment adherence among patients suffering from Schizophrenia which they experience while at home that probably bring about symptom reappearance. This correlational design tried to establish the degree of relationship between levels of family Expressed Emotion, nature of treatment adherence and symptom relapse among the target populations. The study design was quantitative since a structured questionnaire was used for data collection and the information was analyzed statistically yielding statistical data. Brink (1996) explains that quantitative approach helps to yield predictability.

Study Site

This research was conducted at Butabika Hospital, the main National Teaching and Referral Mental Hospital in Uganda. It is situated 13 kilometers East of Kampala city center, in Nakawa division. Butabika hospital was chosen because being a national hospital all patients from various parts of the country, with complex mental health problems are referred to this hospital. Furthermore, it provides super specialized psychiatric services for mental illnesses and schizophrenia is one of such illnesses. At any given day it has around 750 in-patients with
over half of these being re-admissions (Birabwa et al., 2006). In the year July 2015/July 2016, this hospital saw 4929 male and 4899 female cases of psychosis, consider 1% to 3.8% of them with schizophrenia and [50-92%] of this having relapsed (WHO, 2010).

**Study Population and Sample**

**Study population.** The study population here refers to the entire aggregation of cases who meet a designated set of criteria (Polit & Hungler (1997:223), and for this study all readmissions with schizophrenia at Butabika hospital were considered.

**Study sample.** The study sample, according to Brink (1996:133), is the smaller representation of the larger whole, intended to reflect and represent the character, style or content of a population from which it is drawn, the sample for this study was drawn from in-patients diagnosed with schizophrenia, but have history of symptom-reappearance or exaggeration after improvement from the symptoms, and are readmission within the year after discharge. These were selected at the time of discharge according to the psychiatrist’s recommendations for suitability to go home as having improved, and these were located at the recovery units for male and female patients.

**Sampling Criteria**

**Inclusion criteria:**

1. The patients ranged from 20-59 years of age so as to omit developmental and aging-related factors.

2. Patients who had previously been treated for schizophrenia.

3. Patients relapsed after remission/ improvement from schizophrenia symptoms.

4. Patients who assented/ consented to take part in the study.
5. Patients who had improved and ready for discharge home according to the psychiatrist’s recommendations.

6. Patients who would communicate effectively

**Exclusion criteria:**

1. Patients admitted for the first time

2. Patients who relapsed or had been brought back after absconding before improving from schizophrenia symptoms first admission.

3. Patients who were below 20 years or above 59 years of age

4. Patients who had not yet improved for discharge.

5. Patients who could not communicate effectively.
Sample Size Calculation and Sampling Technique

Sample Size Determination. Since there was no constant number of patients readmitted or being discharged with schizophrenia, purposive sampling was considered. Registers at records office at Butabika hospital indicated an estimate of 9828 for 2015/2016 all admissions, 1% having schizophrenia (98), which has a researchable size of 80 (Krejcie & Morgan, 1970). According to Birabwa (2006), there is 50% relapse rate in Uganda, while WHO (2010) puts global relapse rate at 50%-92%. Therefore a sample size between “50/100 × 80 = (40)” and “92/100 × 80 = (74)” was considered. To minimize error, n=85 respondents were studied on. Recommended minimum size in a correlational study is 30 respondents and maximum 1000. The study sample was therefore 85 participants.

Sampling Technique. These patients were sampled out from accessible patients’ case-notes/files, with the help of the ward nurse-in-charge and targeted those who were discharged but had not yet left the wards, and would communicate effectively. Purposive-convenient sampling technique was employed to select from the available patients, those who would give the necessary information for the study. This was done in accordance with the inclusion and exclusion criteria.

Sample Selection Procedure

Each of the patients admitted in the hospital has a personal file and in most cases with a provisional diagnosis made either by the Psychiatrist or Psychiatric Clinical Officers (PCOs) on admission and subsequent reviews. Therefore, the respondents, that are the patients suffering from schizophrenia aged between 20 and 59 years, were identified using patients’ personal files. The researcher approached the Nurses in-charge of the general psychiatric recovery wards and requested to look in the patients’ files to generate a list (sample-frame) of the patients with a diagnosis of schizophrenia relapse and is discharged or awaiting discharge so as to get those who could effectively respond to the interview. Given the nature of schizophrenia illness, the researcher maintained a calm non-intrusive composure when establishing rapport with the respondents and remained observant for any symptomatic
escalations. She explained the purpose and procedure of the study. Only those patients who assented to the study were recruited and interviewed. The questionnaires were administered and retained same day by the researcher.

**Research Instruments**

The following tools were used in data collection:

**A socio-demographic questionnaire.** This was used to collect the respondents’ socio-demographic characteristics which included gender, age, level of education, contact relatives and occupation.

**Level of Expressed Emotion Tool.** Data on family Expressed Emotion was collected using “Level of Expressed Emotion Scale” (LEE; Gerlsma & Hale, 1997; Hale et al., 2005) patient version. This was used since the respondents were patients not family members. LEE has 38 items which measures patient’s perceived Expressed Emotion of their care givers and consists of four domains: perceived Intrusiveness (pIN) with seven items, perceived Criticism(pC) with five items, perceived Irritability (pIR) with seven items and Lack of Emotional Support with 19 items. Each item is scored on a scale of 1 – 4, where 1= untrue, 2= somewhat untrue, 3= somewhat true, 4= true and this took about 20 minutes when administered. In this study options 1 and 2 were grouped together as 1, while 3 and 4 were grouped as 2 for high and low expressed emotion respectively.

**Reliability and Validity of LEE scale:**

This scale was founded by (Cole & Kazarian, 1988) who took the scale through intensive psychometric testing which included theory, pilot testing and construct validation among schizophrenia patients and was found to have sound psychometric properties like internal consistency, reliability, independence from age, gender, close contacts and construct validity. This was later validated by (Gerlsma & Hale, 1997) on (a Netherland population) on
depressed patients and latest by Chien and Chan (2009) in China. It was established that its content validity was 0.82 to 0.93 while external validity was 0.99 with an internal consistency of Cronbach’s alpha, $\alpha = 0.93$. Content validity (whether the items measure Levels of Expressed Emotion) was further established through consistent supervision by the study supervisor. Cronbach’s alphas for the individual scales were: $p_{LES} = 0.88$ (in sub-samples ranging from 0.87 to 0.89), $p_{IN} = 0.83$ (range 0.78–0.85), $p_{IR} = 0.82$ (range 0.81–0.83) and $p_{C} = 0.73$ (range 0.70–0.77). Cronbach’s alpha for the total score, $p_{EE}$, was 0.93 (with the same value for all of the sub-samples). Frequencies of scores of “untrue and true” were also considered in establishing levels of expressed emotion. For this study Cronbach’s alpha for each sub-scale were $p_{LES}, = 0.746$, $p_{IN},= 0.787$, $p_{IR} = 0.787$, $p_{C} = 0.772$ and for entire $p_{EE}$, $= 0.877$.

**Simplified Medication Adherence Questionnaire (SMAQ).** This was used in assessing treatment adherence.

**Tool reliability and validity:**

Ortega et al., (2011) validated this tool using 144 renal patients on long-term medication to assess for; forgetfulness, routine adherence, adverse effects and quantity of omission and found high consistency and validity. It has 6 – items answered as 1= [Yes] or 2= [No] within 5 minutes. A patient is said to be non-compliant if she/he scores ‘yes’ on any non-adherence items, or lost two or more doses in the last one week, or failed to follow medication for two days in the last three months. The tool was modified by adding one item to measure for clinic follow up as part of treatment adherence.

**Symptom relapse measurement:** According to king & Dixon (2011) no one has ever come up with a tool measuring relapse. Therefore in this study Relapse was considered from the clinical assessment/diagnoses provided by the psychiatrist or psychiatric-clinical officer on admission based on the American psychiatrists Association (APA, 2008-DSM-IV or 2013-
DSM-5TM) criteria as was established from case notes. This constituted symptom exaggeration, rehospitalisation, change of medication due to the illness. For study purposes relapse was categorized as ‘frequency of relapse (recurrence) and the length of stay (remission)’.

The reliability of the entire tool was established through pre-test study through split-half over ten participants who were not included in the final data collection sample. The tool was found to be reliable and valid in measuring the three variables

**Data Collection Procedure**

The researcher obtained an introduction letter from the department of Mental Health, School of Psychology, Makerere University, which was used to get an approval from the Mulago National Hospital Internal Research Committee to seek permission from Butabika Hospital Administration to conduct research in the hospital. The administration gave the researcher a clearance/acceptance letter, which she used to introduce herself to the Nurses in-charge of the recovery wards. For the selected respondents, the researcher established a rapport by explaining the purpose of the study, and requested for their participation. Given the nature of schizophrenia illness, the researcher maintained a calm non-intrusive composure when establishing rapport with the respondents and remained observant for any symptomatic escalations. Data was collected from 85 respondents from August to October 2017. Respondents were reassured of confidentiality of their participation and the information gathered would be used for research purposes alone.

**Data Management and Analysis**

All questionnaires were checked for accuracy and kept under lock and key for confidentiality. Data was coded and analyzed using SPSS package version 22 (IBM Corp., 2013). Descriptive statistics were used to summarize data. While categorical variables were
tabulated using frequency and proportion for demographic characteristics, levels of expressed emotion, nature of treatment adherence and symptom relapse among schizophrenia patients at Butabika Hospital. Correlation coefficients were used to measure degree of relationship among the variables (significant at .05) for hypotheses one and two. Chi-square tests were also used to further test the hypotheses. The researcher used regression analysis for hypothesis three. That was measuring the correlation among family expressed emotion, nature of treatment adherence and frequency of symptom relapse. Measures of central tendencies were used to analyze the sub-scales within the EE instrument as reflected in chapter four.

**Ethical considerations**

Ethical approval was sought from The Internal Research Ethics Committee of Mulago National Hospital for study at Butabika Hospital. Rapport was carefully established between the researcher and the respondents. The respondents were explained to the purpose of the study and requested to sign an informed consent before participating. They were assured of privacy and confidentiality of the information they were to give. The respondents were informed that they were free to withdrawal from the study anytime they so wished, without any victimization or denial of any service. The data remained locked up and was used for the research purposes alone. Plagiarisms, manipulation of data to suit the study or coercion of clients into the study were avoided.
Chapter Four

Results

Introduction

The purpose of the study was to examine the relationship between family Expressed Emotion, treatment adherence and symptom relapse among patients suffering from schizophrenia in Uganda. In this study three hypotheses were tested, namely: “there is a significant relationship between levels of Family EE and nature of treatment adherence among patients suffering from schizophrenia”; “there is a significant relationship between levels Family EE and frequency of relapse symptom relapse among patients suffering from schizophrenia”; and “there is a significant relationship between levels of family Expressed Emotion, nature of treatment adherence and remission and frequency of symptom relapse among patients suffering from schizophrenia in Uganda”. The findings are presented below according to each hypothesis, beginning with socio-demographic characteristics of the respondents and distribution of the variables.

Social Demographic Characteristics

The study consisted of 85 respondents and their socio-demographic characteristics are presented in table 1 below.
Table 1:
Socio-demographic characteristics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequencies (n=85)</th>
<th>Percentages (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>48</td>
<td>56.5</td>
</tr>
<tr>
<td>Male</td>
<td>37</td>
<td>43.5</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>26</td>
<td>30.6</td>
</tr>
<tr>
<td>30-39</td>
<td>43</td>
<td>50.6</td>
</tr>
<tr>
<td>40-40</td>
<td>10</td>
<td>11.8</td>
</tr>
<tr>
<td>50-59</td>
<td>6</td>
<td>7.1</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uneducated</td>
<td>10</td>
<td>11.8</td>
</tr>
<tr>
<td>Primary</td>
<td>23</td>
<td>27.1</td>
</tr>
<tr>
<td>Secondary</td>
<td>39</td>
<td>45.9</td>
</tr>
<tr>
<td>Tertiary</td>
<td>13</td>
<td>15.3</td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dependent</td>
<td>46</td>
<td>54.1</td>
</tr>
<tr>
<td>Self-employed</td>
<td>26</td>
<td>30.6</td>
</tr>
<tr>
<td>Employed</td>
<td>9</td>
<td>10.6</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>4.7</td>
</tr>
<tr>
<td><strong>Staying with</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent</td>
<td>30</td>
<td>35.3</td>
</tr>
<tr>
<td>Spouse</td>
<td>6</td>
<td>7.1</td>
</tr>
<tr>
<td>Children</td>
<td>5</td>
<td>5.9</td>
</tr>
<tr>
<td>Others</td>
<td>44</td>
<td>51.8</td>
</tr>
</tbody>
</table>
As shown in table 1 above female constituted the majority (56.5%) of the respondents, and male were only 43.5%. Majority (50.6%) were aged between 30-39 years, while a significant number (30.6%) were aged 20-29 and those aged 40 and above were only 18.9%. In terms of education level, majority (45.9%) had secondary education, a significant number (27.1%) had primary level education, while 15% had tertiary education and only 11.8% had never been to school. As regards employment status most (54.1%) of the respondent were dependent on others for their economic survival, yet 30.6% were self-employed and only 10.6% were employed. Most (51.8%) of the respondents were staying with significant others, 35.3% with parents, about 7% and 6% were staying with their spouses or children respectively.

**Levels of Family Expressed Emotion, Nature of Treatment Adherence and Symptom Relapse**

In the study, the researcher tried to establish the distribution of the levels of family EE and the nature of treatment adherence among the respondents. Furthermore, she tried to establish the frequency and the period of remission of symptoms in their past one year. The results are presented below.
Table 2:

Distribution of pEE, SMARQ and Symptom Relapse

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
<th>Frequency (n=85)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>pEE</td>
<td>Low pEE</td>
<td>38</td>
<td>44.7</td>
</tr>
<tr>
<td></td>
<td>High pEE</td>
<td>47</td>
<td>55.3</td>
</tr>
<tr>
<td>SMARQ</td>
<td>Compliance</td>
<td>8</td>
<td>9.4</td>
</tr>
<tr>
<td></td>
<td>Non-compliance</td>
<td>77</td>
<td>90.6</td>
</tr>
<tr>
<td>Relapse; -Recurrence</td>
<td>Ones</td>
<td>17</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>Twice</td>
<td>22</td>
<td>25.9</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>46</td>
<td>54.1</td>
</tr>
<tr>
<td>-Remission</td>
<td>3 months</td>
<td>14</td>
<td>16.5</td>
</tr>
<tr>
<td></td>
<td>4-6 months</td>
<td>27</td>
<td>31.8</td>
</tr>
<tr>
<td></td>
<td>7-11 months</td>
<td>16</td>
<td>18.8</td>
</tr>
<tr>
<td></td>
<td>Up to 12 months</td>
<td>28</td>
<td>32.9</td>
</tr>
</tbody>
</table>

*pEE-perceived expressed emotion, SMARQ-treatment adherence.*

According to the above table, majority of the respondents, (55.3%) reported high pEE while a significant number (44.7%) reported low pEE. Seventy-seven (90.6%) respondents reported having been non-adherent to treatment while (9.4%) reported adherence. In relation to the distribution of symptom relapse under recurrence and remission/length of stay, majority (54.1%) of the respondents had had symptoms recurring three or more times in the past one year, 25.9% their symptom recurrence was twice, whereas those whose symptoms recurrence was once constituted only 20%. As regards period of remission of symptoms, 32.9% took up to 12 months in remission, 31.8% spent 4-6 months, yet 18.8% and 16.5% spent 7-12 and 3 months respectively.

**Family EE and Nature of Treatment Adherence**

The second objective in this study was to find out whether there is a relationship between levels of Family Expressed Emotion (EE) and nature of treatment adherence among patients suffering from schizophrenia. It was therefore hypothesized that: “there is a
relationship between levels of family EE and nature of treatment adherence among patients suffering from schizophrenia. A bivariate Spearman correlation was used to establish this relationship and the results are summarized in table 3 below.

Table 3:

Correlations between pEE, treatment adherence and symptom relapse (n=85)

<table>
<thead>
<tr>
<th></th>
<th>pLES</th>
<th>pIR</th>
<th>pIN</th>
<th>pC</th>
<th>pEE</th>
<th>Remission</th>
<th>Recurrence</th>
<th>SMAQ spearman’s rho</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMAQ</td>
<td>.324</td>
<td>-.304</td>
<td>-.319</td>
<td>.073</td>
<td>-.068</td>
<td>.106</td>
<td>.477</td>
<td>1</td>
<td>.002</td>
</tr>
<tr>
<td>p-value</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recurrence</td>
<td>.003</td>
<td>.080</td>
<td>-.075</td>
<td>-.137</td>
<td>-.013</td>
<td>.007</td>
<td>1</td>
<td></td>
<td>.981</td>
</tr>
<tr>
<td>spearman’s rho</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.465</td>
</tr>
<tr>
<td>p-value</td>
<td>.981</td>
<td>.465</td>
<td>.496</td>
<td>.213</td>
<td>.907</td>
<td>.947</td>
<td>.</td>
<td></td>
<td>.</td>
</tr>
<tr>
<td>Remission</td>
<td>-.027</td>
<td>-.016</td>
<td>-.122</td>
<td>.223*</td>
<td>-.086</td>
<td>1</td>
<td>.</td>
<td></td>
<td>.848</td>
</tr>
<tr>
<td>spearman’s rho</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.888</td>
</tr>
<tr>
<td>p-value</td>
<td>.848</td>
<td>.888</td>
<td>.264</td>
<td>.041</td>
<td>.432</td>
<td>.</td>
<td>.</td>
<td></td>
<td>.</td>
</tr>
</tbody>
</table>

Rho significant at 0.05. Where smaq = treatment adherence, pEE = perceived expressed emotion, pLES = lack of emotional support, pIN = intrusiveness, pC = criticism

Table 3 above shows that there is a positive relationship (rho=.324, p=.002<.05) between treatment adherence and perceived lack of emotional support, but a negative relationship (rho=-.304, p=.005<.05) with irritability and intrusiveness (rho=-.319, p=.003<.05) yet no significant relationship with perceived criticism (rho=.073, p=.510>.05) and the total expressed emotion (rho=-.068, p=.537>.05).

Further in-depth analysis was done using Chi-square (Fisher’s) test to ascertain the association between levels of variables and the results are summarized in table 4 below.
Table 4:

Association between treatment adherence and levels of pEE

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
<th>SMARQ</th>
<th>p-value</th>
<th>$X^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Compliance</td>
<td>Non-compliance</td>
<td></td>
</tr>
<tr>
<td>pEE</td>
<td>Low pEE</td>
<td>5</td>
<td>33</td>
<td>0.458</td>
</tr>
<tr>
<td></td>
<td>High pEE</td>
<td>3</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>pLES</td>
<td>Low pLES</td>
<td>6</td>
<td>32</td>
<td>0.132</td>
</tr>
<tr>
<td></td>
<td>High pLES</td>
<td>2</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>pIR</td>
<td>Low pIR</td>
<td>3</td>
<td>37</td>
<td>0.717</td>
</tr>
<tr>
<td></td>
<td>High pIR</td>
<td>5</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>pIN</td>
<td>Low pIN</td>
<td>1</td>
<td>42</td>
<td>0.030</td>
</tr>
<tr>
<td></td>
<td>High pIN</td>
<td>7</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>pC</td>
<td>Low pC</td>
<td>4</td>
<td>42</td>
<td>0.999</td>
</tr>
<tr>
<td></td>
<td>High pC</td>
<td>4</td>
<td>35</td>
<td></td>
</tr>
</tbody>
</table>

Fishers exact test: pLES-perceived lack of emotional support, pIR-perceived irritability, pIN-perceived intrusiveness, pC-perceived criticism.

The above table shows that the association between levels of perceived expressed emotion and nature of treatment adherence is statistically insignificant, ($\chi^2 = 1.131$, p= .458 >.05). Among those with high level of pEE, 93.6% were non-adherent as compared to 86.8% among those classified as having low pEE. Among those with low EE, 13.2% were compliant as compared to 6.4% of those classified as high EE. This shows that a high number of participants were non-adherent to treatment regardless as to whether they experienced low or high expressed emotion, hence no difference. Level of expressed emotion is therefore independent from nature of treatment adherence.
Again, more in-depth analysis was done to ascertain whether there was a significant relationship between the nature of treatment adherence and the individual subscales of pEE, and the results show that only perceived intrusiveness (pIN) has a statistically significant association with treatment adherence ($\chi^2 = 5.125, p = 0.020 < .05$). Whether the respondents perceived Low or High expressed emotions, the majority were non-adherent. Thus, apart from intrusiveness, there is no significant relationship between other subscales of expressed emotions and nature of treatment adherence. Hence, the hypothesis that there is a significant relationship between level of expressed emotion and nature of treatment adherence is rejected.

**Family Expressed Emotions and Symptom Relapse**

Another objective was to establish the relationship between Family EE and symptom relapse, and it was hypothesized that “there is a relationship between level of expressed emotions and frequency of symptom relapse”. This was analyzed using Spearman correlation coefficients. As the results have revealed that there was no relationship between family expressed emotion and symptom relapse displayed as recurrence and remission (length of stay). This was therefore further tested through Chi-square and the results are as indicated in the table5 below.

**Table 5:**
Association between levels of Expressed Emotion and symptom relapse

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
<th>Level of pEE</th>
<th>Total</th>
<th>p-value</th>
<th>$\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recurrence</td>
<td>Ones</td>
<td>6</td>
<td>11</td>
<td>17</td>
<td>0.473</td>
</tr>
<tr>
<td></td>
<td>Twice</td>
<td>12</td>
<td>10</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>20</td>
<td>26</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Remission</td>
<td>Three months</td>
<td>5</td>
<td>9</td>
<td>14</td>
<td>0.181</td>
</tr>
<tr>
<td></td>
<td>4-6 months</td>
<td>10</td>
<td>17</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7-11 months</td>
<td>11</td>
<td>5</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Up to one year</td>
<td>12</td>
<td>16</td>
<td>28</td>
<td></td>
</tr>
</tbody>
</table>

*Statistical test is Chi square*
From Table 5 above, association between expressed emotion and recurrence was not statistically significant ($\chi^2 = 1.499, p = 0.473 > 0.05$). Also there was no significant association between level of expressed emotion and remission ($\chi^2 = 4.881, p = 0.181 > 0.05$). The proportion of those with one episode of recurrence among those with high perceived Expressed Emotion (HEE) was (23.4%) compared to (15.8%) among those with low perceived Expressed Emotion (LEE). Those who had high pEE were 47 of whom (19.1%) had remission of 3 months, (36.3%) had remission of 4-6 months, (10.6%) had remitted for 7-12 months while (34.0%) had taken up to a year. Comparatively those classified as having low pEE were 38 of whom (13.2%) had remission within 3 months, 10(26.3%) had remission within 3-6 months, 11(28.9%) within 6-12 months while 12(31.6%) up to one year. There was no constant value in change of number of respondents at any given level, therefore the two variables were independent of each other. Level of expressed emotion had no significant association with frequency of symptom relapse (p > 0.05).

In overall there is no significant direct relationship between levels of expressed emotion and frequency of- and remission from symptom relapse (p > 0.05) as the distribution of expressed emotion was the same across categories of recurrence and remission. Therefore, the hypothesis that there is a significant relationship between expressed emotion and symptom relapse is rejected.

**Perceived Expressed Emotion, Nature of Treatment Adherence and Frequency of Symptom Relapse.**

The objective was to determine the correlation among level of Family EE, Nature of Treatment adherence, symptom recurrence and period of remission. The researcher therefore hypothesized that “there is a correlation among level of expressed emotion, treatment adherence and symptom relapse”. Spearman coefficients were used to test the correlation
between paired variables (table 6) while multiple regression analysis was used to establish the correlation as well as the predictability among the three variables (table 7).

Table 6: Correlation between pEE, SMARQ and relapse (n=85)

<table>
<thead>
<tr>
<th></th>
<th>pEE</th>
<th>SMARQ</th>
<th>e</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>pEE</td>
<td>Spearman correlation</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMARQ</td>
<td>Spearman correlation</td>
<td>0.1256</td>
<td>1</td>
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</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.2519</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Recurrence</td>
<td>Spearman correlation</td>
<td>-0.0678</td>
<td>0.4769</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.5374</td>
<td>0.0000</td>
<td>-</td>
</tr>
<tr>
<td>Remission</td>
<td>Spearman correlation</td>
<td>0.0305</td>
<td>0.1062</td>
<td>0.0074</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.7815</td>
<td>0.3336</td>
<td>0.9465</td>
</tr>
</tbody>
</table>

Spearman rank correlation, confidence level at 95%. Where pEE-perceived expressed emotion, smaq-treatment adherence.

The above table shows positive correlation between variables a part from correlation between pEE and recurrence ($r_s = -0.0678, p = 0.5374 \geq .05$) which was a negative correlation. Only correlation between SMARQ and recurrence was statistically significant ($r_s = 0.4769, p < 0.001 < .05$). This means that when nature of treatment adherence increases, there is concurrently an increase in frequency of symptom recurrence. The correlation and predictability among the three variables were further established using the regression analysis as shown in table 7 below.
Table 7:

Correlation between expressed emotion and treatment adherence against symptom relapse: a regression analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Std. Error</th>
<th>Beta</th>
<th>T Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>8.745</td>
<td>2.915</td>
<td>2.999</td>
<td>.004</td>
<td></td>
</tr>
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<td>Family expressed emotions</td>
<td>-0.028</td>
<td>.028</td>
<td>-.113</td>
<td>-.994</td>
<td>.323</td>
</tr>
<tr>
<td>Nature of treatment adherence</td>
<td>.188</td>
<td>.151</td>
<td>.142</td>
<td>1.245</td>
<td>.217</td>
</tr>
</tbody>
</table>

From the results in Table 7 above, a regression analysis between family expressed emotions and frequency of symptom relapse showed that a unit increase in family expressed emotion led to a reduction in symptom relapse by 11.3%, with (p=0.323>.05) which showed that family expressed emotion does not significantly predict symptom relapse. Results from Table 7 also show that when Merging Family Expressed Emotion and nature of treatment adherence, a p value of (p=0.04<.05) was got which showed that both independent variables had a significant effect on frequency of symptom relapse, hence agreeing with the hypothesis that Family Expressed Emotion, nature of treatment adherence and frequency of symptom relapse have a significant relationship. In conclusion, there is a significant relationship between
family expressed emotion, treatment adherence and symptoms relapse. Therefore, the H\textsubscript{1} is retained.

These results were summarized as shown in the diagram below

*Fig.2: Relationship among variables*

Figure 2 above summarizes the outcome of the analysis. According to the above figure, the levels of expressed emotion had a weak association with nature of treatment adherence but did not directly predict symptom relapse yet when merged with nature of treatment adherence, they predicted symptom relapse. Nature of treatment adherence had an association with symptom relapse. The distribution of those who reported high and low EE is similar yet almost all respondents had treatment non-adherence. It was therefore deduced that nature of treatment adherence and levels of expressed emotion were loosely associated.
Chapter Five
Discussion, Conclusion and Recommendations

Introduction

This chapter presents the discussion of results as an integration of related literature. It also gives the conclusions, recommendations and limitations of the study.

Socio-Demographic Characteristics

Majority (56.5%) of the respondents were female and the male were only 43.5%, this was not because female suffer more from schizophrenia, as this condition affects both gender equally (APA, 2013). It was probably so either because women are more in the general population (WHO, 2014) or it was probably due to the fact that female have better help seeking behaviors compared to men (Nsereko et. al, 2011). The majority (50.6%) of respondents were aged between 30 and 39 years, and this concurs with the epidemiological findings of Kring et. al (2010) regarding schizophrenia onset which is in late teens or early twenties; hence multiple relapses are most likely in their thirties onwards (APA, 2013). This is further supported by Adedeji et al. (2014), who found that schizophrenia relapse in Uganda affected mostly the young productive age-group. Likewise, majority of the respondents were of secondary school education level which may be due to daily life stressors and this is also in agreement with findings in Kring (2010) that while schizophrenia causality may be stress-vulnerability diathesis, it affects all populations despite the level of education.

Results have also revealed that most of the respondents were dependent on other people for financial support. These results were not so surprising, as repetitive symptom relapses among individuals with schizophrenia tend to compromise functionality, and hence they turn to others for financial support (APA, 2013; McDonagh, 2005). Further, because of the nature of the illness and stigma attached, People with mental disorders are in most cases denied income generation and employment opportunities (WHO, 2009), thus they have no option but
to be dependent on others. Finally, most (52%), of the participants, stay with significant others, other than, parents, children or spouse.

According to Anakel and colleague (2012), an individual with symptom recurrence may suffer more of attribution biases and prefer to wonder away or isolate themselves from those they are delusional about. So it was most likely that the respondents were not in good terms with their immediate relatives due to the nature of their illness.

**Distribution of levels of family expressed emotion, nature of treatment adherence and frequency of Symptom relapse**

**Levels of family expressed emotions.**

The results indicated that majority (55.3%) of the respondents, had high EE, and a good number (44.7%) perceived low EE. These levels of EE were unevenly distributed across the four sub-scales. This indicated that the responses may have been influenced by each respondent’s characteristics or nature of illness and not necessarily high EE. These results may also be explained from the perspective that care-givers of an individual, who is experiencing schizophrenia symptoms, whether negative or positive, may have minimal understanding and feel burdened. This may then elicit hostility that will be directed towards the sufferer who may feel rejected and retaliate with similar irritability. Symptoms like over-controlling, “always being checked upon, or wanting to know my whereabouts” as reported by some respondents, create a sense of high emotions to the patient. This agrees with what Davey (2008:233) postulated that families high in EE tend to be intolerant of the sufferer’s presentation. And as such these families interact with irritability and criticism.

Furthermore, Patients who are in remission of schizophrenia symptoms may usually exhibit negative symptoms, as residual presentations but relatives who have little understanding of the disease process are likely to attack the sufferer with criticalness or lack of
emotional support. Due to limited knowledge about schizophrenia and the inability to recognize its negative symptoms like lack of emotional responsiveness, motivation, socialization, speech, and movement, care givers of such individuals are bound to direct to them Criticism both from the perspective of the patient and of the caregiver, which predicts relapse (Banerjee & Retamero, 2014).

A good number (44.7%) of the respondents reported perceiving warm positive remarks that provided emotional support. This may symbolize the homely calm nature of the Ugandan family members towards their patients suffering from mental illness as observed personally at Butabika mental hospital. Also as established by Kigozi and others (2010), relatives of mental patients in mental institutions of Uganda are encouraged to visit and get involved in the management of their patients.

**Nature of Treatment Adherence.**

The nature of treatment-adherence in this study was categorized as adherence and non-adherence. Of the 85 respondents, majority (90.6%) were non-adherent to treatment while only 9.4% were adherent. Such results are common among schizophrenia patients most probably due to the nature of the illness (like compromised memory), lack of support by family members and the frequency of medication. According to Ortega and colleagues (2011), an individual is considered to be non-adherent if they give any negative response to the items on the adherence-tool (medication adherence questionnaire) denoting non-adherence to medication. Similarly, studies indicate that some patients do conform to treatment regiments due to their understanding of the illness or support from social networks. This is supported by few (9.4%) who complied with treatment regiments in this study.
Symptom relapse.

In this study, symptom relapse was assessed and analyzed by looking at frequency of symptom relapse (recurrence) and length of stay away from hospital (remission period). The results indicated that majority (67.1%) of the respondents had a remission of over 6 months. This may probably be the first effect of medication after discharge whereby the patient tends to remain with negative symptoms in remission. These results correspond with McDonagh (2005) who found in her study that many schizophrenia sufferers remitted for at least 9 months of discharge from mental health institutions after which they relapsed because of the high expressed emotions in the family and poor medication conformity.

In this study, 54.3% had relapsed more than twice and only 45.7% had relapsed once or twice. As it is expected, multiple relapses are very common in schizophrenia following the disease process like loss of touch with reality and especially precipitated by family climate. (Kring, 2010; McDonagh, 2005) found that many schizophrenia patients had frequent relapses soon after the first relapse. The chronicity of schizophrenia symptoms alone is enough to predict another relapse given the stress-vulnerability of sufferers and nature of the disease as it involves progressive brain damage. And even when a schizophrenia sufferer goes into remission, there is hardly full recovery of cognitive functioning as the illness alternates between positive to negative and disorganized symptom presentation. Exaggeration of any of these states is a relapse since intervention will be required at a higher level than the current.

Results from table one indicate that 48.3% had symptoms reappearing in less than 6 months after discharge. Just as Reist (2012) puts it, relapse can follow in as short a period as ten days and one can be in remission for as long as two to five years of discharge depending on family support or social net-works available besides medication (King and Dixon, 1999). However whether the schizophrenia symptoms can remain in ambiance with controlled home climate and optimal treatment regimens remains a subject for discussion. According to findings
of this study (table 2), frequency of relapse and period of remission is based on every individual. While 20.6% had relapsed only once, 54.6% had relapsed more than twice. This study sort to establish the contribution of nature of treatment adherence and expressed emotion to these patterns of relapse.

**Perceived Expressed Emotion and Symptom Relapse**

According to the results (table 3) there is no significant relationship between the levels of expressed emotion and symptom relapse. According to this study, both levels of EE are experienced in almost same ratio since the proportion of those classified as having high EE and those with low EE differed with a minimal margin in frequency and length of remission. The distribution of EE (table 5) was the same across categories of recurrence, rejecting the H1. This lack of relationship may be linked to several respects: the nature of schizophrenia illness where symptoms tend to be too repetitive once the disorder gets established and as it has been established (table 2), majority (80%) of the respondents had relapsed more than twice within the year of discharge hence disorganizing their functionality. McCleary (2001) also established that family expressed emotion was not a predictor of relapse as the patient’s social functioning may be defective. Another reason may be attributed to the fact that a good number (51.8%) of the respondents reported staying with significant others where they may be experiencing low EE unlike those who stay with immediate relatives who may be feeling burdened by the illness presentation.

Friends may be less hostile to the patient than immediate relatives especially if they present with internal control. Hence the number of those who reported high EE and low EE was almost the same. According to Davey (2008), expressed emotion as well as the nature of symptom presentation can similarly influence symptoms relapse either as an exaggeration or full blown. And the culture of a given population may determine the course of illness since social support comes from family members who assist the sufferer to cope with the symptoms.
Also considering the observed looming rampant HIV pandemic, high poverty level and post war trauma that prevail amongst majority of the populations may act as the maintaining factors for relapse, and not necessarily high EE. This observation is in agreement with findings by (Baryuhanga et. al., (2008) and Baingana et. al., 2011) that prolonged exposure to civil war, rise in HIV infection and high poverty level increase the severity of mental disorders.

Furthermore, some relatives in this study may have treated their patients with a lot of disapproving remarks (criticism and hostility). While others showed too much intrusiveness or emotional support marked with excessive pity, protection and self-blame for the patients’ suffering and these led the patients to unavoidable relapse as a means of coping, leading to a mixture of results that show no significant relationship. According to McDonagh (2005) patients who report high expressed emotion after rehabilitation end up being re-hospitalized due to inability to cope with hostility, expressed over involvement and criticism. And still, those who report low EE may relapse as a result of inability to cope with parents’ excessive sympathy, over-protection and feelings of mistrust which do not allow the patients independence over their lives. As is evident from table 1, majority (51.8%) of the respondents stay with significant others other than their immediate relatives, which may trigger different causalities to relapse like feeling of rejection and not necessarily high EE. This is what McDonagh refers to as ‘family falling apart’ as a cause of more problems that may lead to frequent relapses.

As it has been revealed from table 1, majority (51.9%) of the respondents were over 29 years of age whereby the relatives may have developed coping behaviours with their disease presentation, hence causing less stress. King and Dixon (1998) state that individuals traditionally transit from their original homes in their late 20s to 30s, and if they still stay with parents, then they develop coping mechanisms with the patient’s characteristics.
The results (table 3) of this study have indicated that criticism, (which constitutes hostility and over-involvement/intrusiveness) correlated with symptoms relapse. This may further be explained by the fact that many (48.1%) of the respondents reported staying with their close relatives and may be experiencing helplessness due to over-protection and over controlling behaviour of relatives. While those who stay with significant others (51.8%) may be leading independent lives. Hence having both those who reported low EE and high EE relapsed, indicating no relationship with relapse rates. These results tally with findings by Arzhar and Varma (1996) in Kelantan- Malaysia, that there was no association between high expressed emotion and schizophrenia relapse rates among Malaysian schizophrenia patients. Here Arthar and Varma explain that in the Malaysian-culture family members are tolerant of the presentation of schizophrenia patients yet they still relapse. Hence being in support of Hooley’s (2005) concern that the construct ‘EE’ needs to be assessed culturally.

As established in chapter four (tables 5,6 and 7) findings, family expressed emotions had no significant effect to symptom relapse. This is probably due to care-taker or respondent characteristics of being humbled to each other culturally or irritable as part of disease process. The results (lack of relationship) also emulate Cazzulo, Carra and Cleria (2012) who found that high expressed emotion had no relationship with number of previous admissions or period of illness, in their study in Europe due to cultural differences. These results also reflect what Wilbanks, (2010) reported that in Zanzibar family members interact with their schizophrenia relatives in Low expressed emotion and so the frequency of symptom relapse is minimally linked to family interaction style. Here the relatives were observed to explain the strange behaviours to the patient rather than harass him/her and they allowed the patient to withdraw without being criticized, but the patients still relapsed.
The respondents’ had multiple responses to the level of expressed emotion scale thus the results were also summarized per each sub-scale and then the total perceived expressed emotion.

From the results (table 3) in chapter four, the levels of the three components of expressed emotion (emotional support, irritation, and intrusiveness) had no significant relationship with schizophrenia symptom relapse (p>.01). There was a relationship between criticism and length of stay. This negative correlation between criticism and remission could be as a result of the respondents’ vulnerability to receive a lot of negative comments or non-verbal negative signals from their care-takers due to the disease presentation. This leads to frequent relapses reducing the remission period. According to Bullock, Bank, and Buraston, (2002) critical parents usually tend to influence their children to behave the same way towards individuals with mental disorder. This then will certainly lead to relapse within a short period after discharge. The lack of statistical correlation between lack of emotional support and irritation, and symptoms relapse contradicts what Anakel (2012) established that schizophrenia patients with stress-diathesis vulnerability, are likely to relapse when constantly addressed with irritability by their caregiver. Neither do the results agree with Kazarian and Cole (1998)’s findings that those relatives of schizophrenia patients, who blame themselves for the suffering of their patient usually get over-involved in the patient’s functioning. This hampers the patient’s recovery of functional skills. Such patients therefore end up with symptom exaggeration and subsequent relapse.

However, as Hooley and Hale (1998) have stated Level of Expressed Emotion tool predicts relapse better in two to five years of remission. These results in this study were based on less than two years’ period of remission. According to Davey (2008) the nature of symptom presentation can similarly influence symptoms relapse either as an exaggeration or full blown.
Family Expressed Emotion and Treatment-Adherence

Another objective for this study was to establish the relationship between levels of family expressed emotion and nature of treatment adherence. The researcher therefore hypothesized that there is a significant relationship between levels of family expressed emotion and nature of treatment adherence. Categorised results from table 4 indicate that the association between levels of expressed emotion (low or high) and nature of treatment adherence (good or non-adherence) was non-significant. Among the subscales, only perceived intrusiveness indicated a significant relationship (p<.05) while the rest of the sub-scales showed no significant relationship. This means that increase in intrusiveness by relatives increased with non-adherence among the respondents. This lack of relationship between levels of EE and nature of treatment adherence could be explained by the poor living stands or poor social support which may have influenced the treatment non-adherence among the schizophrenia sufferers.

These findings agree with results by Gray and colleagues (2002) that non-adherence is a consequence of environmental problems. However correlation results from table 3 on the sub-scales of perceived expressed emotion show a correlation with treatment adherence. The results have indicated that perceived lack of emotional support, irritability and intrusiveness had a relationship with treatment adherence. As the results have shown, frequent expression of irritability and over-involvement denies the patient the opportunity to excise self-care, while lack of emotional support creates abandonment feelings like “my family members will not help me when I’m upset”, as reported by some of the respondents on the questionnaires. The patient in turn depreciates in mental functionality and does not appreciate treatment regimens. These results are in agreement with McDonagh (2005) who established that family members high in expressed emotion do not provide emotional support to the patient who then finds no encouragement to follow treatment plans. Perceived Lack of Emotional Support indicated a
strong positive correlation (r=.423**, p=.000<.01) with treatment adherence. Implying that increase in lack of emotional support, increases with treatment non-adherence, and a decrease in perceived lack of emotional support decreases treatment non-adherence.

Another suspicion for poor relationship between expressed emotion and nature of treatment adherence could be culture related in that a component like criticism on the study tool may not indicate hostility to the client. This reflects the findings by King and Dixon (1999) in their study on schizophrenia patients in Scotland who found no relationship between perceived criticism, over-involvement (intrusiveness) and treatment adherence and recommended further investigation into contextual variances that may be contributing to this contradicting outcomes.

**Relationship between Family Expressed Emotion, nature of treatment adherence and frequency of symptom relapse**

The last objective was to assess the correlation between levels of expressed emotion, nature of treatment and frequency of symptoms relapse. Results on tables; 5 and 6 have shown that level of expressed emotion had no association with nature of treatment adherence and did not directly predict symptom relapse but when level of expressed emotion was merged with nature of treatment adherence, they predicted symptoms relapse. This thus leads to the acceptance of the hypothesis that there is a significant relationship between levels of family expressed emotion, nature of treatment adherence and symptoms relapse. These results could be because the respondents reported experiencing high over-involvement from their relatives (like; my relatives are always interfering) which may have reduced their willingness to take medication. According to Kavanagh and Vaughn (2005), high Expressed Emotion causes hyper-arousal of stress which reduces the volition to medication compliance hence leading to non-adherence. This is detailed on by Rosenfarb *et. al.*, (1994) that critical comments by relatives to schizophrenia patients arouse high sensitivity to stress which makes the patient
retaliate with criticism maintaining the cycle and finally sees no need to comply to treatment regimens. Relapse follows inevitably (Kring et al., 2008; 339). And such families who interact with irritability and criticism lead their patients to especially positive symptoms relapses. Furthermore, Davey (2008) asserts that High EE could therefore be both predictive and causal to symptom relapse, but further verification is needed.

Results in chapter four (rho=.477**, r=.576 p<.05) have indicated a strong relationship between nature of treatment adherence and frequency of symptom relapse. This may be because of the chronicity of schizophrenia where symptoms escalate once the neurotransmitter; dopamine is poorly controlled. Non-adherence alone in schizophrenia is associated with relapse, hospitalization, and elevated health care costs. Studies by National Institute of Mental Health (NIMH, 2008) further emphasize that accurate measurement of medication adherence is important in clinical practice where failure to detect non-adherence results in premature medication changes, unnecessary multi-drug-use, and higher probabilities of relapses observed in functional deteriorations and hospitalizations.

Furthermore, regression analysis between family expressed emotions and frequency of symptom relapse showed that there is no significant effect of family expressed emotions to symptom relapse. When the respondents who reported high EE also practice non-adherence, then relapse may follow since schizophrenia involves disorganized behaviour and memory deficiencies in self-care, medication conformity among others. Of those who had non-adherence majority (35) had relapsed more than twice and had high EE, while a good number (27) had low EE within a year of discharge. However, as Hooley and Hale (1998) have stated, Level of Expressed Emotion tool predicts relapse better in two to five years of remission. When nature of treatment adherence was regressed against frequency of symptom relapse there was no significant relationship.
However when merging Family Expressed Emotion and nature of treatment adherence a p-value of 0.04 was obtained which showed that both the perceived expressed emotion and nature of treatment adherence had a significant effect in frequency and remission of symptom relapse when all factors are held constant, hence agreeing with the hypothesis that “Family Expressed Emotion, nature of treatment adherence and frequency of symptom relapse had a significant relationship”. High expressed emotion and treatment non-adherence together predict high rates of symptom relapse which finally elongates the remission time. As can be seen from the results, when schizophrenia patients are exposed to high expressed emotion in form of irritability, intrusiveness and lack of emotional support, their motivation to treatment compliance gets derailed. According to Sariah et. al., (2012; 2014), high Expressed Emotion was a predictor of poor treatment adherence and the subsequent symptom relapse among schizophrenia patients in Tanzania.

This reveals the fact that in the presence of high expressed emotion, patients with schizophrenia are vulnerable to stressful emotions that lead them to disregarding treatment conformity. Since schizophrenia disorder is cognitive-based, relapse becomes an eminent entity. Christian, (2009) established similar results in his study in Nigeria where he emphasized that family members with High EE to their relative with schizophrenia offered minimal encouragement towards treatment compliance and this was a graduation to symptom relapse. These results are therefore evidence to the many findings that Level of Family Expressed Emotion and Treatment Adherence contribute to disease relapse in schizophrenia.

**Conclusions**

Results of this study show that Family Expressed Emotion and nature of treatment adherence had a significant relationship with frequency of symptom relapse when regressed, hence agreeing with the hypothesis that there is a significant relationship between Family Expressed Emotion, nature of treatment adherence and frequency of symptom relapse. These
results are in support of findings by many other studies by other scholars. It may be too early to generalize these results since the sample was selected purposively from hospitalized respondents, yet many studies were based on discharged clients. However, this information will help the mental health sector when planning the management programmes (especially for follow up) for these patients after which the relapse rates will reduce as the lengths of remission increase.

**Study Limitations and Future Suggestions**

Data collection in this study was based on client-version and their responses may have been biased by the clients’ vulnerability to stress. There is need therefore to do a comparative study on both the care-givers’ EE and patients’ EE with schizophrenia relapse in Uganda. Another short-coming of this study also leans on the study tool “Level of Expressed Emotion” which was constructed, standardized, and validated in countries outside. This may pose various constraints due to cultural differences on meaning of the components of Expressed Emotion. Thus, there is need to consider the contextual factors that may influence any relationship between relapse and Expressed Emotion like cultural-specific measurements.

**Recommendations**

This study has established that there is a significant correlation between Levels of Family Expressed Emotion, Nature of Treatment adherence and Frequency of Symptom Relapse among schizophrenia patients at Butabika Hospital. Schizophrenia Symptom relapse is a global concern and from these results more emphasis should be on Pharmacotherapy combined with Psychotherapy which has proven to be more effective than only either of the two elsewhere. Interventions should therefore focus on; improving the patients’ and family-members’ knowledge deficit about the illness and the communication styles so that they integrate low Expressed Emotion in their interaction styles. All mental health professionals can also be sensitized on addressing these patients through warm positive emotions. As much as
treatment conformity complements remission, further inquiries may be made on maintaining factors of high family expressed emotion among care-takers of schizophrenia patients.
References


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WHO. (2010). *Mental Health and Poverty project*: Mental Health and Development, Targeting people with mental health issues as a vulnerable group

WHO (2014). Population sex ratio (male per 100 females). *Health situation and trend Assessment*.

Appendices

Appendix 1: Budget

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<tr>
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<td>Printing and photocopying</td>
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## Appendix 2: Time frame

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</tr>
<tr>
<td>3 Submission of proposal</td>
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<tr>
<td>4 Defence of proposal</td>
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<tr>
<td>5 IREC approval and collecting data</td>
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<td>6 Data Analysis</td>
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<tr>
<td>7 Report Writing</td>
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<td>8 Report defence and presentation</td>
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</table>
Appendix 3: Consent Form

MAKERERE UNIVERSITY
School of Psychology
Directorate of research
Box 7262, Kampala.

Preamble

A study on Family Expressed Emotions, Treatment Compliance and Relapse among Patients Suffering from Schizophrenia in Uganda

My name is Judith Sorhe. I am a clinical psychology student at Makerere University carrying out a study to examine the relationship that exists between Family Expressed Emotions, Treatment Compliance and Symptom Relapse as perceived by Patients Suffering from Schizophrenia at Butabika National Teaching and Referral Mental Hospital in Uganda.

You have therefore been chosen to participate in this study as your information is quite valid and essential for the success of this research.

The objectives of the study are;

- To find out whether there is a relationship between levels of family Expressed Emotion perceived by individuals suffering from schizophrenia and nature of treatment adherence, to establish whether there is a relationship between levels of Family Expressed Emotion and frequency of symptom relapse, and to assess whether there is a correlation between levels of Family Expressed Emotion, nature of treatment adherence and frequency of symptom relapse among patients suffering from schizophrenia readmitted at Butabika Hospital in Uganda. The study requires you to give a written consent for participation, retain a copy, after which you are expected to respond to 55 items on a questionnaire presented...
to you by the researcher. The researcher will read to you the instructions, allow you to respond after which the researcher will retain the answered questionnaire for privacy and confidentiality and research purposes. There are no tests involved and this is not an examination. Your name will remain anonymous of the results. All the information you provide will be handled with confidentiality.

The results of this study will help the relatives and health staff of these patients to improve on how to handle the patients and reduce relapse rates. As a result, they will have longer time away from hospital in healthy states. However, you are free to withdrawal from participation anytime you feel like, without fear of any repercussion or intimidation on the services you are receiving. The information you provide will be specifically used for academic purposes only, by the researcher as this is not a funded research, and involves no monetary or time compensations. In case of any questions or clarifications please contact the researcher [Judith Sorhe on +254720030121 or the study supervisor Dr. Kizza on +256774997364 or the Chairperson Mulago Hospital REC on +256772325869.

If you are ready to participate please sign or put a thumb print here on the form below.

Your participation is highly appreciated.

Consent Form

I (participant’s name) ……………………………………… have read and understood the briefings on this study. I therefore accept or decline to participate.

Signature/thumb print ________________________     Date _________________

If thumb print, witness sign____________________      Date  ________________

Researcher’s sign…………………………………..    Date …………………
Appendix 4: Research Questionnaire

Family Expressed Emotions, Treatment Compliance and Relapse among Patients Suffering from Schizophrenia in Uganda

Respondent’s code number…………….…. [ ] Date: ---- / ---- /-----.

Below are three sets of questionnaires you are expected to respond to as they apply to you. I’m going to read questions before you and you give me the most appropriate response. This is not an examination and therefore there is no right or wrong answer. Remember your response will not interfere with the treatment you are receiving from the hospital. Everything will be handled with confidentiality.

A. Socio-demographic questionnaire.

Instructions: Please tick [✓] what applies to you

1. Gender

   Female 1 [ ]

   Male 2 [ ]

2. What is your current age in years?)

   20-29 1 [ ]

   30-39 2 [ ]

   40-49 3 [ ]

   50-59 4 [ ]

3. What is your highest level of education?

   Less than Primary/uneducated) 1 [ ]
Primary 2 [ ]
Secondary Education: ‘O’ & ‘A’ level 3 [ ]
Tertiary: College/University 4 [ ]

4. What is your source of income
   Fully dependent on others 1 [ ]
   Self-employed 2 [ ]
   Employed 3 [ ]
   Others, Specify 4 […………]

5. With whom did you stay the last three months before this admission?
   Parents 1 [ ]
   Spouse 2 [ ]
   Children 3 [ ]
   Others, specify 4 […………]

6. Who referred you to hospital?
   Relatives 1[ ]
   Self-referral 2[ ]
   Other health facility) 3[ ]
   Administration/police 4 [ ]

B. Symptom Relapse.

The following questions (7-10) were used to exclusively assess for symptom relapse and its frequency within a year of last hospitalization.

7. Before the current admission, have you ever been managed for any of the following?
   Schizophrenia 1 [ ]
   Substance use 2 [ ]
   Schizophrenia and other disorders 3 [ ]
8. Were you managed as an:
   Out-patient
   In-patient
   If yes to inpatient go to no.9; if no skip to section B

9. How many times have you been hospitalized with this problem in the past one year?
   Ones
   Twice
   Other specify

10. How long ago was the last hospitalization in (9) above?
   Less than 3 months
   4 to 6 months
   7 to 11 months
   Up to 12 months

C. Family Expressed Emotions Questionnaire.

When our relatives, friends and significant others relate with us, we usually perceive their expressions in different ways. Below is a table of how we sometimes perceive our parents’ and significant others expressions. Please read and tick [  ] one box that best describes your perception.

My parents……………………………………………… Other specify……………………………………

<table>
<thead>
<tr>
<th>Family Expressed Emotion Factors</th>
<th>Untrue</th>
<th>Somewhat Untrue</th>
<th>Somewhat True</th>
<th>True</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived lack of emotional support (pLES: 19 items)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Try to reassure me when I’m not feeling well</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2. Are sympathetic towards me when I’m ill or upset</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3. Are considerate when I’m ill</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4. Can see my point of view</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5. Often accuses me of making things up when I’m not feeling well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Are understanding if I make a mistake</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Make me feel relaxed when they are around b</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>8.</td>
<td>Understand my limitations b</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>9.</td>
<td>Try to make me feel better when I’m ill b</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>10.</td>
<td>Hear me out b</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>11.</td>
<td>Are tolerant with me, even when I’m not meeting their expectations b</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>12.</td>
<td>Make me feel valuable as a person b</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>13.</td>
<td>Accuse me of exaggerating when I say I’m unwell</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14.</td>
<td>Calm me down when I’m upset b</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>15.</td>
<td>Will not help me when I’m upset</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16.</td>
<td>Are willing to gain more information to understand my condition, when I’m not feeling well b</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>17.</td>
<td>Will take it easy with me, even if things aren’t going right b</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>18.</td>
<td>Don’t know how to handle my feelings when I’m unwell</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19.</td>
<td>Expect the same level of effort from me, even if I don’t feel well</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Perceived irritation (pIR: seven items)**

<table>
<thead>
<tr>
<th></th>
<th>Fly off the handle when I don’t do something well</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21.</td>
<td>Get irritated when things don’t go right</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22.</td>
<td>Make matters worse when things aren’t going well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23.</td>
<td>Get upset when I don’t check in with them</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24.</td>
<td>Can cope well with stress b</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>25.</td>
<td>Can’t think straight when things go wrong</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>26. Are able to be in control in stressful situations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived intrusiveness (pIN: seven items)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Are always nosing into my business</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>28. Have to know everything about me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>29. Are always interfering</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>30. Butt into my private matters</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>31. Often check up on me to see what I’m doing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>32. Insist on knowing where I’m going</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>33. Don’t pry into my life b</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived criticism (pC: five items)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Are critical of me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>35. Get annoyed when I want something from them</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>36. Show me that they love me b</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>37. Try to change me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>38. Usually agree with me b</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

b = Reverse scoring

**D. Simplified Medication Adherence Questionnaire (SMAQ)**

This questionnaire refers to the level of compliance that you hold with the treatment prescribed by your doctor following your Psychological distress. Please answer all of the questions, indicating the correct response in each case. Please remember that your answers are confidential, and that you should respond to the questions in as truthful a manner as possible.

Please tick [ ] ([1] for Yes, or [2] for No). THANK YOU

1. Do you always take your medication at the appropriate time?

   Yes 1 [ ]

   No 2 [ ]
2. When you feel bad, have you ever discontinued taking your medication?
   Yes 1 [ ]
   No 2 [ ]

3. Have you ever forgotten to take your medication?
   Yes 1 [ ]
   No 2 [ ]

4. Have you ever forgotten to take your medications during the weekend?
   Yes 1 [ ]
   No 2 [ ]

5. In the LAST WEEK, HOW MANY TIMES did you fail to take your prescribed dose?
   Never 1 [ ]
   1-2 times 2 [ ]
   3-5 times 3 [ ]
   6-10 times 4 [ ]
   More than 10 times 5 [ ]

6. SINCE YOUR LAST VISIT, how many whole days have gone by in which you did not take your medication?
   Days___
   Never 1 [ ]
   1-4 days 2 [ ]
   Over 5 days 3 [ ]

7. How many times did you miss your clinic appointments in the last three months prior to this admission?
   Never 1 [ ]
   Once or Twice 2 [ ]
   Three or more times 3 [ ]
Appendix 5: Letter of Introduction

The Director,  
Buttaba National Teaching and Referral Mental Hospital  
P.O. Box 7017,  
Kampala

3rd July, 2017

Dear Sir/Madam,

Re: Introduction of Ms. Judith M Sorhe Reg. No. 2015/HD03/266K

Ms. Judith M Sorhe is a Master of Science in Clinical Psychology student at Makerere University. She is in the process of writing her final dissertation and collecting data for that purpose. She is interested in exploring the link between “Family Expressed Emotions, Treatment Adherence, and Symptoms Relapse among Patients Suffering from Schizophrenia”. The purpose of this letter is to request for your assistance in regard to this matter.

The results are to be used for academic purposes only, participation is voluntary, and there is no compensation for involvement in this study. The participants will be provided with, and consider information about the study, and are free to withdrawal from participation at any time. The information collected from them is to remain confidential, and their names are not required.

Any assistance rendered to her is highly appreciated.

Best regards,

[Signature]

Kajumba M. Mayanja, PhD  
Head of Department  
Email: kajumbe@shss.mak.ac.ug

In future correspondence please quote the reference number above.
Appendix 6: Approval of Protocol MREd

Ms. Judith M Sorhe
Principal Investigator
School of Psychology
Makerere University.

Dear Sorhe,


The Mulago Hospital Research and Ethics Committee reviewed your proposal referenced above and hereby grant approval for the conduct of this study for a period of (1) year from 14th July, 2017 to 13th July, 2018.

This approval covers the protocol and the accompanying documents listed below:

- Consent form
- Questionnaire

This approval is subjected to the following conditions:

1. That the study site may be monitored by the Mulago research and ethics committee at any time.

2. That you will be abide by the regulations governing research in the country as set by the Ugandan National Council for Science and Technology including abiding to all reporting requirements for serious adverse events, unanticipated events and protocol violators.

3. That no changes to the protocol and study documents will be implemented until they are reviewed and approved by the Mulago Research and Ethics Committee.

4. That you provide annual progressive reports and request for renewal of approval at least 60 days before expiry of the current approval.

5. That you provide an end of study report upon completion of the study including a summary of the results and any publications.

6. That you will include Mulago hospital in your acknowledgements in all your publications.

I wish you the best in this Endeavour.

DR. NAKWAGALA FREDERICK NELSON
CHAIRMAN- MULAGO RESEARCH & ETHICS COMMITTEE.

Vision: “To be the leading centre of Health Care Services”
Appendix 7: Request to carry out Research

August 10, 2017

Ms. Judith M. Sorhe
Principal Investigator
School of Psychology
Makerere University
KAMPALA.

RE: REQUEST TO CARRY OUT RESEARCH ON FAMILY EXPRESSED EMOTIONS, TREATMENT ADHERENCE AND RELAPSE AMONG PATIENTS SUFFERING FROM SCHIZOPHRENIA IN UGANDA, A CASE STUDY BUTABIKA HOSPITAL

We have noted the approval of your research Protocol by Mulago Hospital Research and Ethics Committee (Protocol MREC: 1220): Your request to undertake research at Butabika hospital has been granted. You have been given permission to carryout data collection for a period of five months (August – December 2017). You are bound by ethical standards that govern undertaking research.

You are requested to provide an end of study report upon completion of the study, including any publication.

Yours sincerely,

Dr. H. Birabwa Otema
HEAD TRAINING/ BUTABIKA HOSPITAL