# ASSESSING THE LEVELS OF ADHERENCE TO ANTIPSYCHOTIC TREATMENT GUIDELINES FOR FIRST EPISODE SCHIZOPHRENIA BY PRESCRIBERS AT CHAINAMA HILLS COLLEGE HOSPITAL IN LUSAKA

**BY**

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**DECLARATION**

I, **James Mwanza** hereby declare that the work on which this discussion is based is original, except where acknowledgements indicate otherwise.

This dissertation is submitted for the degree of Master of Clinical Pharmacy at the University of Zambia. Neither the whole work nor any part of it has been submitted before for any degree or examination at this or any other university.

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**CERTIFICATE OF APPROVAL**

This dissertation of **James Mwanza**, has been approved as fulfilling the requirements or partial fulfilment of the requirements for the award of Master's Degree in Clinical Pharmacy by the University of Zambia;

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**DEDICATION**

I dedicate this dissertation to my wife, Mrs Helen Chishimba Mwanza, my children, my mother Mrs Robina Muyupi Mwanza for their love, support and patience during my studies.

## ABSTRACT

**Background:** Mental health disorders pose an increasing burden on societies all over the world .Notable one is schizophrenia, a debilitating conditions that presents as marked distortion in thinking and perception, whose first presentation of symptoms in a newly diagnosed patient requires accurate and effective management. Patients with first episode schizophrenia may present in a variety of clinical settings to providers who have a range of knowledge and skills. Clinical case vignettes with free-form responses can be used to carefully assess whether front line practitioners provide guideline-adherent management of first episode psychosis. This study aimed to assess the levels of adherence to first episode schizophrenia antipsychotic treatment guidelines by mental health prescribers at Chainama Hills Mental hospital because, Disease-specific clinical practice guidelines serve as a useful tool for effective clinical management.

**Methods:** This was a cross sectional study to assess adherence by prescribers at Chainama Hills Mental hospital. Out of the current establishment of 35 prescribers, 31 were sampled for the study. A clinical case vignette, presenting a patient with first episode schizophrenia, was created with algorithmically scored open ended responses to assess adherence. Free-form responses to 4 questions with question 1 asking about differential diagnosis, question 2 inquiring about the next steps in evaluation of the patient, question 3 asking to provide answers regarding first-line medication treatment (including type, name, initial dose and target dose of treatment), and question 4 asking for the proposed duration of treatment once the patient's symptoms had remitted, were scored based on published practice guidelines. A total of four points were possible for each question giving a maximum possible of 16 points. Response frequencies were tabulated and performance was compared among professional disciplines.

**Results:** There were a total 31 prescribers assessed for this study, 12/31 (38.7%) psychiatrists and 19/31 (61.3%) clinical officer psychiatrists. The proportional difference of the two groups of prescribers assessed was not statistically significant, P-value = 0.21. Overall, major depression was the most commonly listed diagnosis, with 29/31 (93.5%) naming this diagnosis; 26/31 (83.9%) respondents listed schizophrenia; 16/31 (51.6%) respondents listed substance induced psychosis (e.g. cannabis-induced). Regarding diagnostic workup, 13/31 (41.9%) of the respondents obtained a toxicology. Risperidone was the most frequently chosen antipsychotic with 18/31 (58.1%) of the respondents. There were only 9/31 (29%) respondents who recommended treatment for 1 year or more, which is in line with published recommendations. The overall mean treatment duration

was 0.7 years ± 0.30. The mean total score on the vignette questions was 8.4 points ± 4.86 out of a possible 16 points. The respondents scored best (mean score 2.8 ± 1.02 out of 4 points) on the differential diagnosis question (1) and lowest (mean score of 1.2 ± 1.85) on the treatment duration question (4). The mean score on the assessment questions (questions 1 and 2) was slightly greater than the treatment questions (question 3 and 4) but not significantly different; mean score on the assessment questions was 4.5 ± 2.87 vs. 3.9 ± 2.42 on the treatment questions; t = 0.77; P-value = 0.45. Comparing vignette performance between psychiatrists and clinical officer psychiatrists (COP), there were suggestive group differences favoring psychiatrists but however, the differences were not statistically significant. If urine toxicology investigation was not requested, there was on average 2.6 times increased odds for the prescriber to be a COP (OR = 2.60, CI = 0.93 – 7.29, P-value = 0.069). Overall, there were 23/31 (74.2%) prescribers with less than 85% compliance 7/31 (22.6%) between 85 – 95% compliance, and 1/31 (3.2%) with above 95% compliance.

**Conclusion:** The front line clinicians who encounter patients with first episode schizophrenia may have significant gaps in the initial and follow-up care of these patients. Given the preliminary nature of this study and the debate about the optimal care for first episode psychosis, further study with larger sample size is needed. If such gaps are confirmed additional educational interventions are required to align clinical management with published practice guidelines.

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## LIST OF ABBREVIATIONS AND ACRONYMS

AGREE…….Appraisal Guideline Research Evaluation Europe

AP……..Antipsychotic

BJPsych……..British Journal of Psychiatry

COP……Clinical officer Psychiatry

CDC……Centre for Disease control

EPS……Extrapyramidal Side effects

FGA……First Generation Antipsychotic

HPCZ……..Health Professions Council of Zambia

MO……..Medical Officer

MMED……Master of Medicine

MOH……..Ministry of Health

NICE……...National Institute for centre of Excellence

PORT……..Patient Outcome Research Team

SGA……....Second Generation Antipsychotic

WHO……..World Health Organization

## LIST OF DEFINITIONS

### Antipsychotic Treatment Guidelines

In the context of this study, it refers to evidence-based guidelines for treatment of schizophrenia as published in the NICE 2014 guidelines. These guidelines covers the treatment and management of psychosis and schizophrenia and related disorders in adults (18 years and older) with onset before 60 years (NICE 2014).

### Adherence

In the context of this study, it refers to treatment that is consistent with stipulated treatment guidelines (JAMA 2013).In this case adherence is when prescribers make antipsychotic treatment choice based of laid down treatment algorithms in the NICE 2014 guidelines.

### First-Episode Schizophrenia

Is the newly diagnosed schizophrenia, a disorder in which a person's perception, thoughts, mood and behaviour are significantly altered. The symptoms are usually divided into 'positive symptoms', hallucinations and delusions and 'negative symptoms' such as emotional apathy, lack of drive, social withdrawal (DSM IV-TR).

### Antipsychotic drug

This means pharmacological agents that are used in the treatment of schizophrenia. These agents act by blocking the dopaminergic and serotonergic receptors in the brain in specific centres. They are classified as either first generation or second generation antipsychotics based on their propensity to cause extrapyramidal side effects, with the first generation antipsychotic being the culprit to a larger extent.

### Prescriber

In the context of this study, it means a health worker authorized by the Health professions council of Zambia to prescribe antipsychotic drugs for the purpose of treating mental illness.

# CHAPTER ONE

## 1.0 INTRODUCTION

### 1.0 .Background information

Mental health disorders pose an increasing burden on societies all over the world (Murray ,2010).Notable one is schizophrenia, a debilitating conditions that presents as marked distortion in thinking and perception, whose first presentation of symptoms(First-Episode) in a newly diagnosed patient requires accurate and effective management (NICE, 2014). In psychiatry, as in all branches of medicine, an ever- expanding range of therapeutic options to treat schizophrenia is being created. And one response to this evolving complexity has been the development of guidelines (Evidence –based practices) for which there is scientific evidence consistently showing that they improve client outcomes, also intended to inform and influence clinical practice Fenton *et al.*,(2005). A proximal goal of practice guidelines is to promote the use of effective therapeutic interventions and reduce inappropriate variations in clinical practice (Audet, 2013).

In First-episode schizophrenia, antipsychotic pharmacological treatments should be introduced with great care due to the higher risk of extrapyramidal symptoms (EPS). Appropriate strategies include gradual introduction of antipsychotic medication with the lowest possible effective dose, combined with careful explanation (WFSBP, 2010).This is so because, People with First-episode schizophrenia exhibit increased treatment responsiveness and an increased sensitivity to adverse effects. Therefore antipsychotic treatment should be started with lower doses (schizophrenia Bulletin, 2010).Extrapyramidal side effects from antipsychotic treatment should be avoided in order to encourage future adherence to medication. Although typical antipsychotics maybe efficacious as atypical antipsychotics in reducing positive symptoms, they are frequently not well tolerated at low doses. For this reason atypical antipsychotics should be used as first line therapy, commencing with a low dose and titrating upwards very slowly over a period of several weeks (NICE, 2014).

However such practices in clinical set ups and far-fetched as studies have found that clinicians are particularly reluctant to recommend antipsychotic treatments and switches in concert with clinical guidelines and follow their dosage recommendations. Disease-specific clinical practice

guidelines serve as a useful tool for effective clinical management (Agency for health care policy and research, 2008).

Furthermore, the management of schizophrenia has moved beyond the mere control of psychotic symptoms to include functional recovery and social and vocational reintegration Nasrallah, *et al.*, (2002).Most clinicians agree that the primary treatment goal for patients with First-episode schizophrenia is to maximize the clinical effectiveness of the interventions in the first-episode phase of the illness, this is achieved by employing guideline-adherent management (Kane, 2005).

Numerous recent reviews of research evidence identify guidelines as a core set of interventions that help persons with First- episode schizophrenia attain better outcomes in terms of symptoms, functional status and quality of life. This core set includes medication prescribed within specific parameters such as dose, frequency and duration of treatment (Department of Health, 2005).

Lack of adherence to clinical guidelines has been identified as a significant impediment to the implementation of evidence-based practices, to the effective dissemination of knowledge and ultimately, to the improvement of quality of care (Chilvers *et al*., 2006). Studies have found that clinicians inability to recommend antipsychotic treatments in concert with clinical guidelines and follow their dosage recommendations results in high incidences of side effects and treatment failure (Dickey *et al.*, 2006).

Furthermore, WHO commissioned a guideline comparison project with regards to schizophrenia treatment. A total of 27 guidelines from 21 different countries were identified. This was to measure the scientific quality of practice guidelines using the recently published instrument developed by an international group of guideline experts, the Appraisal Guideline Research and Evaluation Europe rating scale (AGREE Collaboration 2003).The National Institute of Clinical Excellence (NICE) guideline being one of the guidelines which was evaluated, scored the highest and best methodological quality according to the AGREE. The NICE guidelines had the best applicability and its recommendations are evidence- based (British Journal of Psychiatry, 2005).It in line with the WHO study, we used the NICE guidelines as Gold standard to assess adherence levels at Chainama Hills college hospital.

According to NICE (2014) guidelines, initial management of first episode schizophrenia should include the following:

- Before initiating treatment, medical work-up need to be performed and also it is important to consider physical illness that can cause psychosis.
- Extrapyramidal side effects from antipsychotic treatment should be avoided in order to encourage future adherence to medication. Although typical antipsychotics maybe efficacious as atypical antipsychotics in reducing positive symptoms, they are frequently tolerated at low doses. For this reason atypical antipsychotics should be used as first line therapy, commencing with a low dose and titrating upwards very slowly over a period of several weeks.
- Examples of appropriate initial target doses for most patients are risperidone 2mg/day or olanzapine 7.5-10.0mg/day. Half to two-thirds of patients might be expected to achieve a good response in positive psychotic symptoms in 3 weeks at the initial dose, but if necessary the doses can be increased to 4mg/day risperidone or 20mg olanzapine. The level of clinical response and risk should be assessed frequently, but dose of antipsychotic should be increased only at widely spaced intervals(after initial titration, usually 14-21 days) if the response has been inadequate and then within the limits of sedation and emergence of extrapyramidal side effects
- When use of typical antipsychotics is unavoidable, they should be commenced at very low doses (1-2mg haloperidol or equivalent) and titrated very slowly within the limits of extrapyramidal side effects. Generally, this will be a maximum of 4-6mg haloperidol or equivalent in first –episode psychosis.

- If positive psychotic symptoms persist after a trial of two first- line atypical antipsychotics (around 12 weeks), the reason for failure of treatment should be reviewed. Possible contributing factors include adherence problems, family stress and substance misuse.
- Clozapine and cognitive- behavioral therapy for persistent symptoms are obvious alternatives to consider.

In a country where mental health is still a challenge, early identification of people in the earliest phase of psychotic disorders combined with optimal treatment is likely to reduce the burden of the disease. Early treatment of active psychosis is beneficial in its own rights, hence

Pharmacological treatments should be introduced with great care in drug naïve patients with an overriding principle of doing least harm while aiming for maximum benefit (British Journal of Psychiatry 2005).

There are many examples of physicians using treatments inappropriately, despite clear evidence about the circumstances under which the benefits of such treatments outweigh their harms. When such over-or under-use of treatments occurs for common diseases, the burden to the health care system and risk to patients can be substantial (Massawe, 2013).

We therefore assessed the levels of adherence to antipsychotic treatment guidelines for First-episode schizophrenia by mental health prescribers at Chainama Hills Mental Hospital for the benefit of an improved quality of care to schizophrenia patients.

Lastly, for the purpose of our study, Adherence to treatment guidelines meant when a prescriber made antipsychotic treatment choices based on laid down treatment recommendation as documented in the NICE 2014 schizophrenia guidelines. This include treatments prescribed appropriately, meaning correct class, name, initial dose, target dose and treatment duration (JAMA 2013).

## 1.1. Problem statement

In psychiatry, as in all branches of medicine, there is an ever- expanding range of therapeutic options being created. One response to monitor this evolving complexity has been the development of guidelines intended to standardize clinical practice. The importance of treatment guidelines is to promote the use of specific and effective treatment interventions and reduce inappropriate variations in clinical practice that may end up causing harm to patients. (Audet, 2013).

Lack of adherence to clinical guidelines by prescribers has been identified as a significant hindrance to the improvement of quality of life and also a reason to the harmful side effects seen in schizophrenia patients on antipsychotic medication Chilvers *et al.,* (2002).

Furthermore, although the development of guidelines for health care professionals has gained momentum in recent years, this does not necessarily mean that recommendations described in the guidelines are actually followed (Carol, 2003).

Ganju, (2008) observed that, despite major recent research advances, large gaps exist between mental health knowledge and clinicians' real-world practices. Although hundreds of studies have successfully utilized basic behavioral science theories to understand, predict and change patient's health behaviors, Physicians behaviors towards implementation of evidence-based practices is unclear.

Jeff *et al.,* (2010) also in their recent publication in the British Journal of Psychiatry concluded that there are significant gaps in the assessment and treatment of patients with First-episode schizophrenia by prescribers. They further concluded that, their results should be interpreted cautiously in the context of the on-going debates and uncertainty about what constitutes optimal care for these patients as prescribers may not systematically perform important medical work- up for patients with First-episode schizophrenia. Clinicians may prescribe doses of antipsychotics that are too high and administered for an inadequate duration. If these gaps from their preliminary study are confirmed through further research, additional educational interventions are required to align clinical management with published practice guidelines for treatment of this vulnerable population.

Therefore our study focused on assessing the level of adherence to antipsychotic treatment guidelines for First- episode schizophrenia by mental health prescribers at chainama hills mental hospital in Lusaka district in 2016.

### 1.2. **Rationale for study**

This study focused on the practice by mental health prescribers towards adherence to antipsychotic treatment guidelines for First- episode schizophrenia, schizophrenia being one of the many priority problems in our public health domain.

It is a study which has never been investigated before in Zambia but similar studies have been done in united states of American, Britain and south Africa though most of these studies looked at the effectiveness of tools used in assessing clinicians in management of schizophrenia.

The urgency of data needed (timeliness) for making interventions by policy makers in the treatment of First- episode schizophrenia further justified the undertaking of this study. The risk of confrontation with the local and national authorities was lessened by virtue of them being beneficiaries of the findings of the study which further solidified our study rationale.

In psychiatry, it is widely believed that progress towards overcoming the implementation gap has been hindered by practitioner resistance to using clinical guidelines in making treatment decisions Bosch *et al.,* (2007).

Furthermore, although the development of guidelines for health care professionals has gained momentum in recent years, this does not necessarily mean that recommendations described in the guidelines are actually followed Carol., (2003).For instance, Grol *et al., (*2005) concluded in an observational study on ten Dutch guidelines, that guideline recommendations were followed by GPs in an average of 61% of the relevant decisions. In addition, Bauer, (2006) analyzed 41 studies on the implementation of clinical guidelines in the field of mental health care including schizophrenia. Guideline adherence was found in 27% of the cross sectional and pre-post studies and in 67% of the controlled trials under review. Several of the studies showed that after the cessation of specific implementation strategies, adherence rates returned to baseline rates.

Therefore this study primarily aimed to assess the levels of adherence to the antipsychotic treatment guidelines for First- episode schizophrenia by mental health prescribers at chainama hills hospital in Lusaka.

### 1.3. Significance of study

The levels of the adherence to antipsychotic treatment guidelines for First-episode schizophrenia by mental health prescribers was not known at chainama, since no study has been documented to establish the concept. A Pub med, PsycINFO, JSTOR, Cochraine methodology, Blackwell search using the search term, "adherence to schizophrenia treatment guidelines in Zambia", produced no results.

The existence of perceived differences or discrepancies between what exists and the ideal situation in terms of levels of adherence to antipsychotic treatment guidelines for First- episode schizophrenia by mental health prescribers was eminent. The findings of this study will allow the policy makers come up with interventions to further improve on the treatment of First-episode schizophrenia.

This study will also generate information regarding the current state of schizophrenia care at chainama mental health hospital.

### 1.4. Research question

My research problem was subject to the influence of a number of factors including: the nature of the disease, accepted models of care in First- episode schizophrenia, international evidence relating to Mental health prescribers levels of adherence to antipsychotic treatment guidelines in First-episode schizophrenia and, most importantly, the capacity of Zambian mental health prescribers to deliver care, given the dynamics of practice in the country.

In formulating the research problem the following question was considered:

What are the levels of adherence to antipsychotic treatment guidelines for First-episode schizophrenia among the various disciplines of mental health prescribers at chainama Hills college hospital?

## 1.5. Aim

The aim of this study was to assess adherence levels to Antipsychotic treatment guidelines for First- episode schizophrenia by mental health prescribers at Chainama Hills college Hospital in Lusaka.

## 1.6. Specific objectives

1. To describe the demographic characteristics of prescribers at Chainama Hills college hospital.
2. To describe the ability of prescribers at chainama hills college hospital to make a Schizophrenia diagnosis and invoke a medical wakeup.
3. To assess the appropriateness of antipsychotics being prescribed in terms of class, name, initial dose, target dose and duration of treatment.
4. To determine adherence levels to antipsychotic treatment guidelines among the Psychiatrist and clinical officer psychiatry at Chainama hills college hospital.

## CHAPTER TWO

## 2.0. LITERATURE REVIEW

Our literature review was from main search engines namely; Pub Med, MEDLINE, JSTOR, Cochraine methodology, PsycINFO, Blackwell, Google scholar and the impact factor journals of psychiatry.

Various research papers were reviewed to show the available knowledge relating to adherence levels to treatment guidelines for First- schizophrenia which included clinical case vignette. The review included reviewing research study methods, findings and impact in case intervention studies.

Clinical decision making plays a crucial role in the transformation of science to service. Treatment decisions typically are evaluated by comparing them against norms, such as practice guidelines. An adherence standard has been criticized as inappropriate, but no measurable alternative has been proposed to date.surfice to say our literature search was tailored at highlighting weather clinicians incorporated a treatment guideline consistently or not.

### Global perspective for guideline adherence

A study conducted by Paul *et al.,* (2009) titled "Examining the Influence of Clinician Decision Making on Adherence to a Clinical Guideline using a clinical vignette". Twenty one psychiatric residents responded to 64 vignettes. Expected progress and patient adherence to treatment were systematically manipulated within the vignettes. Twenty-one volunteer psychiatric residents with experience in treating patients with schizophrenia participated in the study, which was conducted in 2007. The residents completed a stimulus task consisting of 64 case vignettes (with fillers) that were constructed from a fully balanced set of five variables. Expected progress and adherence to treatment were two of the study's independent variables. The other three variables were those in the Sernyak guideline: CGI severity score, which summarizes the patient's current condition, and the guideline step (the design used steps 2 and 4 of the five step algorithm). Four random orders of the 64 vignettes were created and randomly assigned to the residents, who indicated whether or not they endorsed the guideline recommendation. Guideline adherence was found to be at 42% on all a scale. The Lessons leant from this study is that, Although adherence did not in itself have a significant influence on clinician endorsement of guidelines, adherence to guidelines did

play an important role to explain the low level endorsement, as indicated by a significant two way interaction of expected progress with adherence (Wald $\chi 2=10.6$, df=4).However the results of this study have limitations in terms of generalability in that most of the participants in this study where trainees and it is a well-known fact that that trainees and experienced clinicians invoke different decisional processes.

Another study by Bernadette and colleagues titled" Guideline-Concordant Antipsychotic Use and Mortality in Schizophrenia", (Bernadette *et al.,* 2012).whose main objective was to determine if care concordant with 2009 Schizophrenia Patient Outcomes Research Team (PORT) pharmacological recommendations for schizophrenia is associated with decreased mortality. The study was a retrospective cohort study of adult Maryland Medicaid beneficiaries with schizophrenia and any antipsychotic use from 1994 to 2004 (N = 2132).

The finding where that: Annual antipsychotic continuity was associated with decreased mortality. Among patients with annual continuity greater than or equal to 90%, the hazard ratio [HR] for mortality was 0.75 (95% confidence interval [CI] 0.57–0.99) compared with patients with annual medication possession ratios (MPRs) of less than 10%. The HRs for mortality associated with continuous annual and average antipsychotic continuity were 0.75 (95% CI 0.58–0.98) and 0.84 (95% CI 0.58–1.21), respectively. Among users of first-generation antipsychotics, doses greater than or equal to 1500 CPZ dosing equivalents were associated with increased risk of mortality (HR 1.88,95% CI 1.10–3.21), and use of anti-Parkinson medication was associated with decreased risk of mortality (HR 0.72, 95% CI 0.55–0.95). Mental health visits were also associated with decreased mortality (HR 0.96, 95% CI 0.93–0.98).they further Concluded that Adherence to PORT pharmacological guidelines was associated with reduced mortality among patients with schizophrenia. Adoption of outcomes monitoring systems and innovative service delivery programs to improve adherence to the PORT guidelines should be considered. From the study we deduce the significant role adherence to treatment guideline plays. The results indicate a decrease in schizophrenia mortality due to the fact that guideline treatment steps with regards to treatment duration were implemented. This from the fact that the longer that patient continued on antipsychotic treatments, showed a decreased in mortality, however this study has some weakness in that it looked at data in retrospective. Such data may not reflect current times as

more and more programmes for continuous medical education (CME) are being undertaken in most institutions and clinicians are equipped with newer practice trends.

Further our study at chainama hills hospital was a cross-section study which looked at the current trends with regards to adherence levels and also the use of clinical vignette highlighted current trend based on what physicians are thinking when making treatment decisions.

Another study was conducted by the Department of Psychiatry, Massachusetts General Hospital, and Department of Psychiatry, Harvard Medical School Jeff *et al.,* (2010), with the overall aim of Assessing clinicians' management of first episode schizophrenia using clinical case vignettes, this was meant to measure adherence levels of clinicians using a clinical case vignette as an adherence assessment tool, presenting a patient with first- episode schizophrenia, was created and administered to the attendees of a continuing medical education programme.

Free-form responses to questions regarding differential diagnosis, workup, treatment and treatment duration were scored based on published practice guidelines. Response frequencies were tabulated and performance was compared among professional disciplines. The findings of the study were that prescribers have challenges in administering guideline-adherent treatment as seen with adherence found to be at 17% on some scales. Our analysis of these findings are the use of clinical Vignette with free-form questions was a better way of assessing clinicians with regards to adhering to guidelines than using closed- ended questions, also the low adherence levels on some scales observed in this study may not be a true reflection of prescribers state as this study also did include other non-prescribers in the study population, which our study at chainama did not include non-prescribers of antipsychotics.

Further, Michael *et al.,* (2003) in their study concluded that Treatment guidelines are frequently not followed. The authors examined the neuroleptic prescribing practices of psychiatrists responsible for 47 patients with schizophrenia who were being treated at health centers of the Department of Veterans Affairs. For 22 of these patients, a medication change was indicated by guidelines previously endorsed by the prescriber; for 21 of these 22 patients, prescribers indicated that a change in neuroleptic would not be attempted; for 15 patients (71 percent), the reason given was the patient's refusal to change medication or the patient's noncompliance with medication treatment.

The results suggest that patients' agreement with treatment guidelines should be taken into account in the evaluation of prescribers' use of such guidelines Michael *et al.,* (2003).this study also highlighted another domain of thought which showed that adherence to guidelines was not just a prescribers attribute but also the patient factors had a role to play in the choice of the medication, treatment duration and dose. Again it's the sole role of the prescribers to ensure that patients make informed decision based on the information availed to them by prescribers as stipulated in treatment guidelines. To this effect our study used the NICE 2014 guidelines which are more comprehensive in addressing patients role in the choice of treatment.

In another study by Thomas *et al.,* (2001) titled "Evidence-Based Pharmacologic Treatment for People with Severe Mental Illness: A Focus on Guidelines and Algorithms" the author concluded that the potential for guidelines to improve care ultimately depended on the acceptance and commitment of administrators, consumers, and members of the treatment team. Successful implementation of guidelines required administrative support and motivated prescribers. Non physician members of the treatment team have a critical role in monitoring medication compliance, affecting patients' and families' attitudes toward changes in treatment, and providing critical feedback to prescribers about a patient's clinical state and treatment response. Consumers and their family members must have an active role in discussing therapeutic options, initiating changes, and providing feedback about treatment response. Achieving the potential of improved quality of care through the use of medication guidelines founded on evidence-based practices requires collaboration between policy makers, administrators, providers, and consumers of psychiatric care.

Interestingly another study" Gaps between Knowing and Doing: Understanding and Assessing the Barriers to Optimal Health Care"Lorna *et al.,* (2007), observed that, significant gap exists between science and clinical practice guidelines, on the one hand, and actual clinical practice, on the other.

Matthews *et al.,* (2007) in their study titled "Applying Theory-Driven Approaches to Understanding and Modifying Clinicians' Behavior: What Do We Know?" reports that, Despite major recent research advances, large gaps exist between accepted mental health knowledge and clinicians' real-world practices. Although hundreds of studies have successfully utilized basic behavioral science theories to understand, predict, and change patients 'health behaviors, the

extent to which these theories—most notably the theory of reasoned action (TRA) and its extension, the theory of planned behavior (TPB)—have been applied to understand and change clinician behavior is unclear.

They concluded that the business of mental health is behavior change. Just as therapists seek to understand their patients through a thorough diagnostic process before recommending or applying appropriate treatment, individuals charged with improving clinicians' behavior must do the same. Understanding clinicians' attitudes, subjective norms, and perceived behavioral control and providing the necessary support are the keys to developing an intervention that is most likely to impact behavior. Utilizing the theoretical basis of the studies that have been completed, mental health researchers, clinicians, and policy makers are uniquely poised to be leaders in innovative and thoughtful interventions that are based on the best science to understand and change clinicians' behavior.

**Regional Perspective for guideline adherence**

Furthermore similar studies have been done in Africa.one of the studies done in Nigeria and published in the African journal of Psychiatry volume 10 of 2007 titled"Poly pharmacy in psychiatric outpatient's practice in northern Nigeria" (Adeponle, et al 2007), concluded that the complex interplay of factors influencing physician prescription practice requires that a more pragmatic approach be adopted in efforts to curtail polypharmacy practice. This entails, guideline specific practice to be implemented. This was a cross- sectional study, using chart reviews of new patients at the out –patient clinic.278 patients were seen of whom 92% received two or more drugs irrationally. The results meant that physicians where not adhering to treatment guidelines for psychosis hence the irrational use of antipsychotic drugs as seen in the use of more than one drug which is against most antipsychotic treatment guidelines.

In South Africa a similar study to the one done in Nigeria was conducted and published in the African Journal of Psychiatry volume 10 of 2007 titled "antipsychotic prescription patterns in Xhosa patients with schizophrenia or schizoaffective disorder" (Koen, et al 2008). The main objective of the study was to examine the degree to which South African physicians use similar treatment guidelines in their prescription of antipsychotic medication. The researchers noted discrepancies in medication prescription patterns between examined hospitals and further recommended that it is now paramount for practical implementation of guidelines to be

improved in South Africa to address low clozapine use and high frequency of poly pharmacy. They reported an overall low rate (10%) clozapine use and a relatively high occurrence of poly pharmacy (28.6%) of the 510 patients. There were statistically significant differences between the three catchment areas in terms of clozapine (p=0.002) and haloperidol (p=0.001) use. This study also highlighted the gap that exist between what is done and what should be done. Guideline adherence stills remains a challenge.

**Local Perspective for guideline adherence**

In Zambia no study has been documented so far.There seem to be very little research work being done in the field of mental health as evidenced from the literature search we did.

**Summary of Literature review**

From the wide literature search and reviews done significant gap existed between science and clinical practice guidelines, on the one hand, and actual clinical practice, on the other. We have observed that the problem of adherence to guidelines for treatment of schizophrenia was real as most prescribers were reluctant to implement treatment algorithms as stipulated by guidelines and that it was important to access whether prescribers adhered to guidelines before further interventions are put in place to improve patient outcomes. Factors associated with the reluctance are complex ranging from individual behavioral attributes among physicians, patient factors also were heighted to influence to what extent a prescriber would implement guideline-adherent treatments.

Also of significant lessons learnt was the complexity regarding the best methodological approach to study guideline-adherence. Various approaches have been seen trying to related clinicians real-world practices against evidence-based practices. From our point of view the use of clinical case vignette stood out as affective method especially the one with free-form open-ended questions, appeared to be essentially equivalent to standardized patients and chart audits and assessed physicians better than using closed-ended responses and retrospective chart reviews as seen in some studies.

The clinical case vignette method assessed adherence in a comprehensive and real-word manner than traditional educational assessment tools which tend to assess knowledge of isolated facts.

The significance of this literature review to our chainama study we conducted was that, it guided us on the best methodological approach possible to adopt and that enabled us answer our research question and helped us to develop our objectives and how to analyze our data based on the highlighted problems and finding of the studies we have reviewed.

## CHAPTER THREE

## 3.0. METHODOLOGY

The general objective of this research was to assess the levels of adherence to antipsychotic treatment guidelines for First-episode schizophrenia by prescribers at chainama hills mental hospital in Lusaka Zambia and it specifically related to the appropriateness of antipsychotics in terms of classs,name,intial dose, target dose and treatment duration.

The researchers intended to collect data based on the fact that there was no up to date data describing adherence levels to antipsychotic treatment guidelines for first- episode schizophrenia.

This chapter included the following: study design, study setting, data source, study population, inclusion/exclusion criteria, sample size/sampling method, variables, data collection/data collection tools, data consolidation/analysis/interpretation, gold standards for treatment and ethical considerations.

### 3.1 Study design

This was a cross sectional study whose design enabled us maintain validity regarding the objectives. This descriptive study aimed at assessing Adherence to antipsychotic treatment guidelines for First- episode schizophrenia by mental health prescribers at Chainama Hills Mental hospital.

A clinical case vignette, presenting a patient with first-episode schizophrenia was administered to prescribers. This is because Formal assessment of guideline adherence by prescribers' ability to evaluate and treat first -episode schizophrenia is challenging. Closed-ended multiple-choice questions and other commonly used assessment tools are unlikely to reflect clinical practice. In contrast, clinical case vignettes that allow free-form responses to open-ended questions appear to closely assess adherence as measured by chart reviews and simulated patients and are more efficient than these other measures of adherence (Peabody *et al.,* 2008, Paul *et al.,* 2010).

Hence in this study, we described our preliminary study of the mental health prescribers' ability to provide guideline-adherent treatment of patients with First-episode schizophrenia as measured by responses to a clinical case vignette.

### 3.2 Study site

The study was conducted at Chainama Hills college Hospital in Lusaka. The only third- level mental health referral hospital in Zambia. The hospital carters for both in-patients and out patients from across Zambia.

### 3.3 Study Population and Data source

The study population included Psychiatrist Doctors, Master of Medicine Students of Psychiatry, Resident doctors and clinical officer Psychiatry who are mandated by law to prescribe antipsychotics and treat mental patients in Zambia and based at Chainama mental health hospital.

The data source was the clinical case vignette of a patient presenting with classical symptoms of schizophrenia on first presentation. The vignette had four open-ended response questions.

### 3.4 Inclusion criteria

All mental health Prescribers based at chainama Hills college Hospital and are registered with Health Professionals council of Zambia.

### 3.5 Exclusion criteria

All other health workers not allowed to prescribe antipsychotic medication by the Health Professions council of Zambia.

### 3.6 Sample size determination

The target population based on the hospital establishment availed by the Human Resources department was 35.Using the CDC-Epi Info statistic calculator for sample size (CDC 2013), the sample size was calculated to be 32 at 95% confidence level. However only a total of 31 prescribers agreed and participated in the study of which 12 where doctors which included consultants,registraars and MMed students of Psychiatry and 19 clinic officers with a psychiatry specialty.

### 3.7 Study Variables

The variables used to conduct this study are summarized on table 1 below.

**Table 1.variables used in the study.**

| variable | Definition | Scale of measurement | measurement |
|---|---|---|---|
| Discipline | Psychiatrist or Clinical officer psychiatry | Categorical | Percentage |
| Differential diagnosis | Schizophrenia, schizoaffective, Major depression, Bipolar, substance induced psychosis as suggested by prescriber. | Categorical | Percentage |
| Antipsychotics Prescribed | Antipsychotic drugs prescribed as: Aripiprazole, clozapine, Haloperidol, etc., in response to the clinical case vignette. | categorical | Percentage |
| Appropriateness of antipsychotics | Defined as correct name, initial dose, target dose and treatment duration as recommended in the NICE 2014 guidelines. | Categorical | Percentage ,Mean & SD |
| Relationship between discipline &appropriateness of antipsychotics | Prescriber discipline who will prescribe according to or against NICE 2014 guidelines. | Categorical | Chi-Square<br><br>P<0.05 |

### 3.8 Data collection and Sampling Techniques

Convenience sampling was used. This implied that all consenting prescribers were included to participate in the study owing to the limited size of the target population and sample size.

### 3.9. Data collection tools

A clinical case vignette created with algorithmically scored open ended responses to assess adherence by prescribers was used.

### 3.10. Pre-testing research instruments

Before starting to collect data, pretesting of the research instruments was done to determine the strengths and weakness of the clinical case vignette questionnaire on question format, relevance, reliability, wrong wording and order.

### 3.11. Recruitment and training of research assistant

One research assistant with previous experience in data collection and a mental health nurse was recruited oriented with focus on the study objectives.

### 3.12. Data collection Procedure

### 3.13. Vignette completion and scoring procedure

A clinical case vignette with algorithmically scored open-ended responses was used. This vignette is separated into three sections, beginning with a broadly described scenario with multiple diagnostic possibilities that gradually become focused to allow for questions about management. The vignette described a patient initially presenting with probable psychotic symptoms who by the end of the case was diagnosed with schizophrenia. The consultant Psychiatrist in the university of Zambia department of psychiatry, edited the case for clarity, focus and clinical relevance.

Individual Prescriber were consented in written at a place of their convenience. The participant were asked to provide free-form written responses to open-ended questions at strategic points during the case.

The first two questions related to assessment of First- episode psychosis in general.

On the front side of the response form, Question 1 asked about differential diagnosis, and Question 2 inquired about the next steps in evaluation of the patient.

On the reverse side of the form, the Participant was then instructed to assume that the patient is diagnosed with schizophrenia. Hence they will be asked to provide answers to Question 3 regarding first-line medication treatment (including type, name, initial dose and target dose of treatment).Finally, Question 4 asked for the proposed duration of treatment once the patient's symptoms had remitted.

To generate the numerical scoring system for the free-form responses, published guidelines (NICE 2014) were reviewed on the assessment and treatment of schizophrenia.

For the final question on duration of treatment, guideline review suggests that 1 year will be regarded to be a minimum adequate duration of treatment.

A total of four points were possible for each question. Responses received points for guideline-adherent care and Zero point for unnecessary care.

Regarding questions for which an ideal response is composed of several items and where broad thinking is encouraged (e.g. differential diagnosis questions),acceptable answers were assigned one point each, up to a maximum of four points.

For those questions where an ideal response was a single answer (e.g. Duration of treatment), guideline-adherent responses received four points.

### 3.14. Data analysis Procedure

Data was analyzed using the SPSS statistical package (SPSS version 21). In this study both Descriptive and Inferential statistic were used. All statistical tests were two tailed and significance was set at $P < 0.05$. (Riegeman, 2005).variables analyzed and how they were measured is described in the table 2.

- Descriptive statistics:

  Response frequencies for all questions were recorded with specific focus on the following:

  a. Proportion of Prescribers who included schizophrenia in there differential diagnosis and mean number diagnoses considered (Question 1).
  b. Proportion of Prescribers who recommended a toxicology screen and other medical work up (Question 2).
  c. Antipsychotic treatment most frequently chosen and mean target dose(Question 3)
  d. Mean duration of Antipsychotic treatment the prescriber planned to put the simulated patient in the vignette on, after the remission of symptoms (Question 4).

- Inferential statistics:

  Data were analyzed using the statistical software package SPSS version 21. All statistical tests were at 5% significance level. The Pearson's chi-squared test was used for comparison of proportions between psychiatrists and clinic officer psychiatry.

**Table 2.Statistic Analysis.**

| variable | Definition | Scale of measurement | measurement | Inference statistics |
|---|---|---|---|---|
| Discipline | Psychiatrist or Clinical officer psychiatry | Categorical | Percentage | |
| Differential diagnosis | Schizophrenia, schizoaffective, Major depression, Bipolar, substance induced psychosis as suggested by prescriber. | Categorical | Percentage | |
| Antipsychotics Prescribed | Antipsychotic drugs prescribed as: Aripiprazole, clozapine, Haloperidol, etc., in response to the clinical case vignette. | categorical | Percentage | |
| Appropriateness of antipsychotics | Defined as correct name, initial dose, target dose and treatment duration as recommended in the NICE 2014 guidelines. | Categorical | Percentage ,Mean & SD | |
| Relationship between discipline &appropriateness of antipsychotics | Prescriber discipline who will prescribe according to or against NICE 2014 guidelines. | Categorical | | Chi-Square<br><br>P<0.05 |

The questions 1 to 4 in the clinical Vignette in line with the step by step management plan in the NICE treatment guidelines that prescribers must strictly follow when managing a case of First-Episode schizophrenia.

- Overall assessment on all questions:

  For each prescriber who attempted the clinical case vignette, the score for the four (04) total questions and each of the individual questions were tabulated.in addition, the combined mean scores for assessment questions 1&2 and treatment questions 3&4 were calculated and an independent sample *t*-test was used to compare the performance between pooled assessment and pooled treatment questions to determine whether performance between these domains differed. The maximum score for each question was four and the maximum attainable score was 16 points.

- Impact of discipline on overall performance on all questions (preliminary aim):

  This implies the various categories of mental health prescribers in the inclusion criteria. All consenting Prescribers were required to provide information on their profession discipline. This is in order to make it possible to perform *t*-test to determine whether there were group differences. Differences were examined between Doctors and Clinical officers Psychiatry. These evaluations were performed using total score on individual questions and pooled scores on the assessment and treatment questions as the dependent variable in separate analyses.

- Overall Adherence to antipsychotic treatment guidelines:

  Overall Adherence to treatment guidelines was measured as a Percentage arising from the combined mean scores for assessment questions 1&2 and treatment questions 3&4 using Traffic-Lights system as illustrated on page 24.

**Table 3.Traffic –light system tool for Assessing Adherence to guidelines.**

Traffic-light system with associated criteria range

| % compliance | Colour of traffic light |
|---|---|
| Less than 85 | Red |
| 85-95 | Amber |
| Greater than 95 | Green |

Source: The Royal College of Pathologists, Medical Microbiologists Audit template

Available at: http://www.rcpath.org/clinical-effectiveness/medicalmicrobilogy-audit-templates.htm

With values greater than 95% (green Colour on traffic light-symbolizing go ahead) means adherence to guideline is achieved.in this case percentage calculated by prescribers performance on all scale i.e., question 1&2 and question 3&4.

### 3.15. Gold standards for treatment

The clinical vignette responses were analyzed for compliance with the National Institute for Health and Care Excellence (NICE 2014) antipsychotic treatment guidelines for first-episode schizophrenia Wolfgang *et al.*, (2015).

### 3.16. ETHICAL CONSIDERATION

Consent was obtained from participants before they participate in the study and they had the right to decline participation.

All information obtained from the participants is regarded as confidential and used only for purpose of this study. Clearance for the proceedings of the study was obtained from ERES CONVERGE REB and the Ministry of health.

Data is stored and kept in a pass word file in a computer at the Directorate of post Graduate studies at the University of Zambia. The data will only be destroyed two (02) years after publication.

## CHAPTER FOUR

## 4.0 RESULTS

This chapter gives a brief description of the sample characteristics: demographics of the study Participants, the name and class of antipsychotics prescribed, the initial dose, Target dose and duration of treatment in line with the requirements in the NICE 2014 antipsychotic treatment guidelines. The chapter will also show a statistical association of type of professional discipline to levels of adherence to the NICE 2014 antipsychotic guidelines for First-Episode schizophrenia. **4.0 Demographics**

### 4.1Participant demographics-Profession

From the results, 61.3% of the prescribers were clinical officer psychiatry and 38.7% were psychiatrists (fig.1).

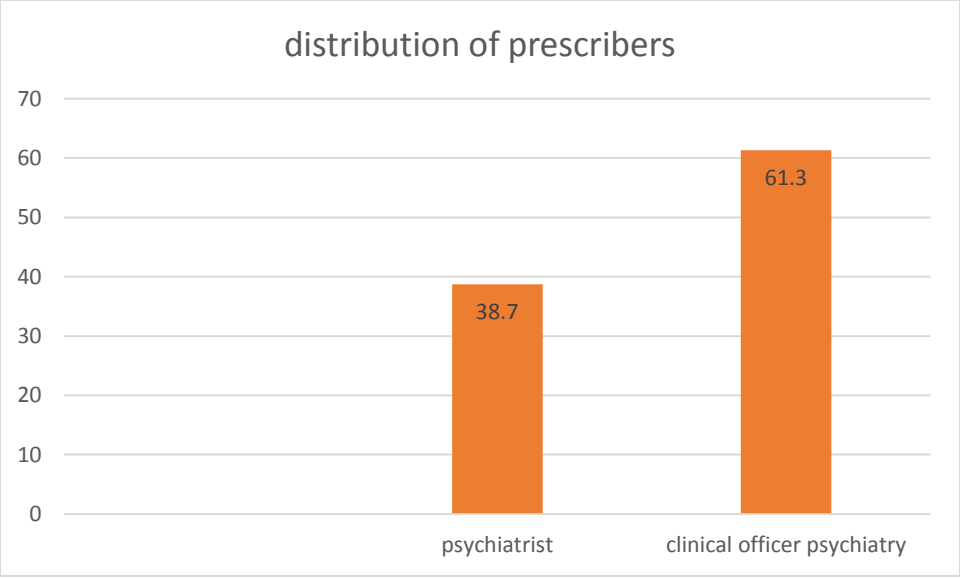


Figure 1.distribution of Prescribers.

This figure shows that 63.1% prescribers are clinical office.

### 4.1.1 Demographics-Gender

The results of the study shows that there were 50% female psychiatrist and 50% male psychiatrists as opposed to 15.8% female clinical officer psychiatry and 84.2 % male clinical officer psychiatry (fig.2)

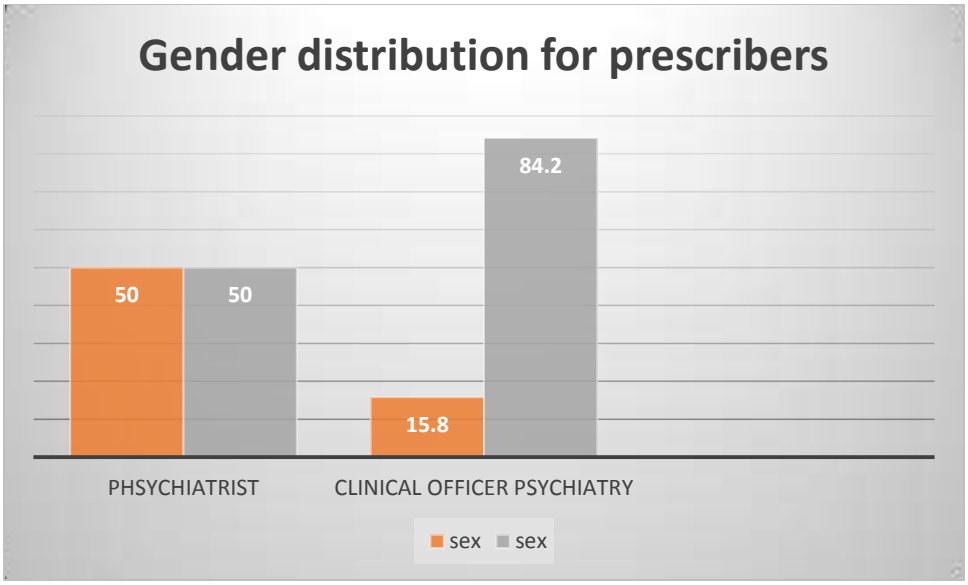


Figure 2.gender distribution for prescribers

This figure shows 84.2% of the participant prescribers are male.

### 4.2 Diagnosis, Name of drug, Dose of drug and Duration of treatment.

#### 4.2.1 Proportion of Diagnosis by Prescribers based on the clinical case vignette

The results of the study shows the proportions of the difference diagnosis made by the respondents based on the clinical case vignette of a patients presenting with new psychotic symptoms (fig.3 and table 3)

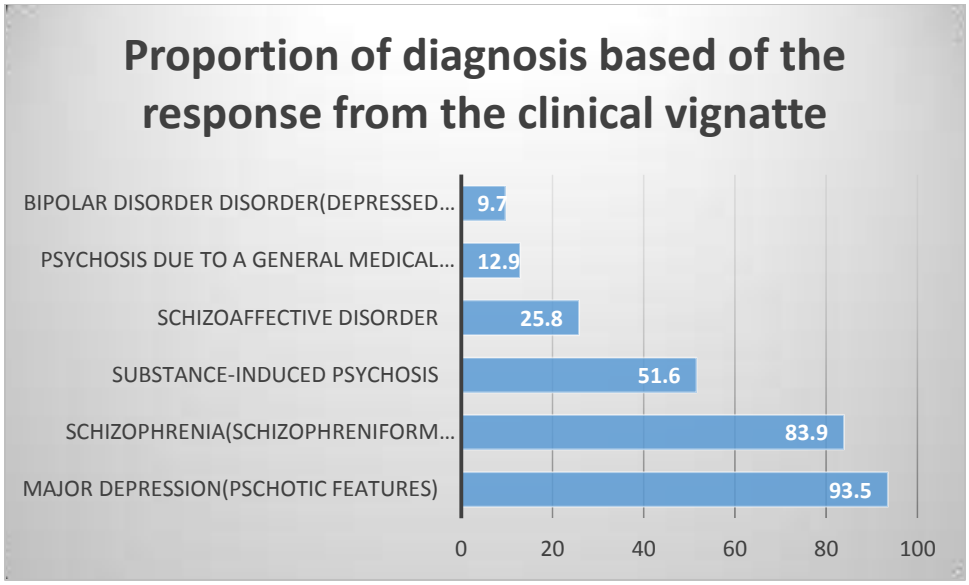


Figure 3.Proportion of diagnoses considered by respondents based on the clinical case vignette**.**

This shows that 93.5% of the diagnosis of choice among the prescribers was Major depression with psychotic features.

**Table 4.Proportion of Diagnosis by Prescribers based on the clinical case vignette**

| Diagnosis | Frequency | |
|---|---|---|
| | n | % |
| Major depression (with psychotic features) | 29 | 93.5 |
| Schizophrenia (or schizophreniform disorder) | 26 | 83.9 |
| Substance-induced psychosis (e.g. cannabis-induced) | 16 | 51.6 |
| Schizoaffective disorder | 8 | 25.8 |
| Psychosis due to a general medical condition (e.g. infection) | 4 | 12.9 |
| Bipolar disorder (depressed with psychosis) | 3 | 9.7 |

### 4.2.2 Name, Initial and Target dose of antipsychotics prescribed

The results shows that of the Five prescribed antipsychotics, the majority of the respondents prescribed Risperidone an atypical antipsychotic drug (58.1%) as opposed to Haloperidol with (22.6%).the study further shows that the mean initial dose and target dose for risperidone was 3.2 ± 1.92 and 8.1 ±2.22 respectively (fig 3 and table 4).

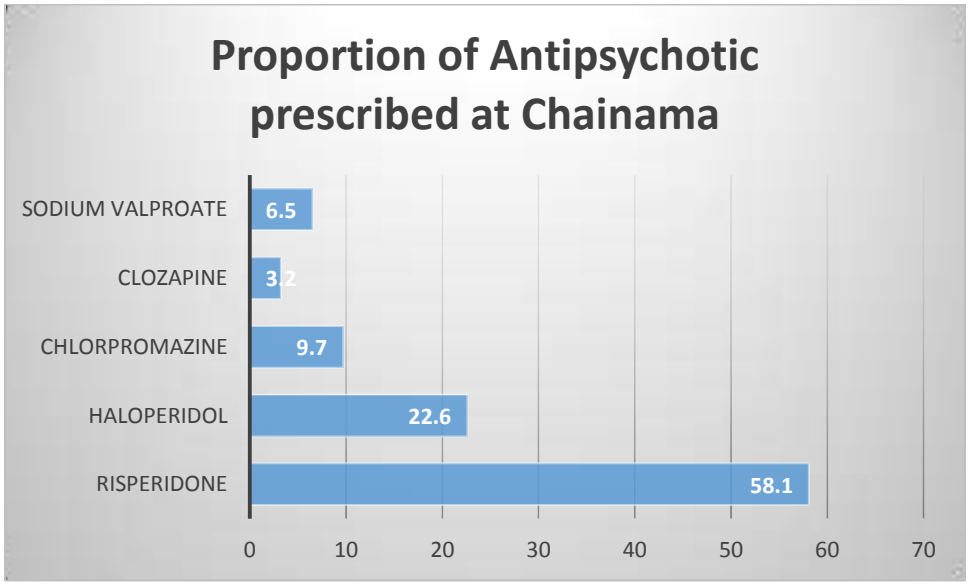


Figure 4.proportion of antipsychotic prescribed at chainama hills hospital.

The figure shows a higher proportion of prescribers prescribed Risperidone at 58.1%.

**Table 5. Antipsychotics (mean initial and target doses) selected for a patient with first episode of schizophrenia.**

| Antipsychotic | Number (%) | Mean initial dose (mg) | Mean target dose (mg) |
|---|---|---|---|
| Risperidone | 18 (58.1) | 3.2 ± 1.92 | |
| Haloperidol | 7 (22.6) | 6.0 ± 3.86 | 10.7 ±4.50 |
| Chlorpromazine | 3 (9.7) | 83.3 ± 28.87 | 133.3 ±57.74 |
| Clozapine | 1 (3.2) | | |
| Sodium Valproate | 2 (6.5) | | |

### 4.2.3Percentage duration of Treatment of antipsychotic treatment for First episode schizophrenia recommended by prescribers at chainama hills hospital.

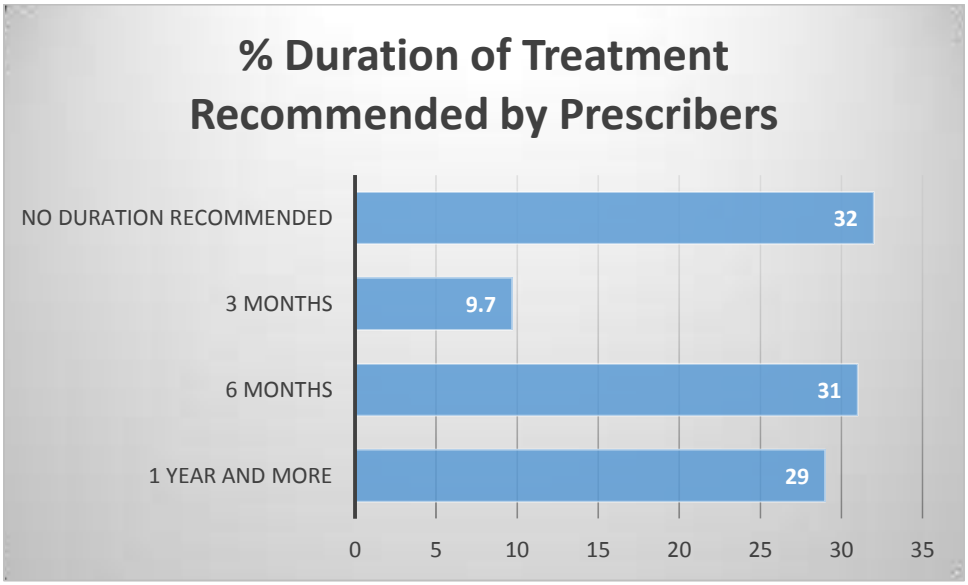


Figure 5 Shows percentage of duration of treatment recommended.

The study found that a slightly larger proportion of prescribers did not recommend any treatment duration (32%).

The overall mean treatment duration was 0.7 years ± 0.30.

### 4.3 Overall assessment of performance on all questions

The study found that the total score from the vignette was low (mean, 8.4 and SD, ± 4.86).refer to table

**Table 6. Question score case summary statistics**

| | Question 1 Score | Question 2 Score | Question 3 Score | Question 4 Score |
|---|---|---|---|---|
| N | 31 | 31 | 31 | 31 |
| Mean | 2.77 | 1.68 | 2.63 | 1.16 |
| Median | 3.00 | .00 | 3.00 | .00 |
| Std. Deviation | 1.023 | 2.006 | .966 | 1.846 |
| Minimum | 1 | 0 | 0 | 0 |
| Maximum | 4 | 4 | 4 | 4 |

**4.4 Impact of professional discipline on performance**

**4.5. Results for Association of diagnosis considered Vs Professional Discipline of prescriber at chainama hills hospital.**

The study found that, there was not statistical significance between the two groups of prescribers with regards to the diagnosis. (Table 7).

**Table 7.Results for Association of diagnosis considered Vs Professional Discipline of prescriber at chainama hills hospital.**

| **Relationship between Psychiatrist &COP in Diagnosis** | **P-Value** | **Interpretation** |
|---|---|---|
| **Schizophrenia** | 0.62 | Not significant |
| **Schizoaffective disorder** | 0.68 | Not significant |
| **Major depression with psychotic features** | 0.51 | Not significant |
| **Bipolar disorder** | 0.54 | Not Significant |
| **Substance induced psychosis** | 0.55 | Not significant |
| **Psychosis due to a general medical condition** | 0.63 | Not significant |

### 4.6. Analysis of name of Antipsychotic drug, Medical workup, Initial dose, Target dose, Treatment Duration recommended by the two groups of prescribers at chainama hills hospital.

The study did not find a significant relationship between the two groups of prescribers visa Vis the variable in table 7.

**Table 8. Bivariate analysis of study variables with professional discipline**

| Variable | Psychiatrist | | COP | | P-value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| **Initial medication treatment** | | | | | |
| Chlorpromazine | 0 | 0.00% | 3 | 15.8% | 0.34 |
| Clozapine | 0 | 0.0% | 1 | 5.3% | |
| Haloperidol | 4 | 33.3% | 3 | 15.8% | |
| Risperidone | 8 | 66.7% | 10 | 52.6% | |
| Sodium Valproate | 0 | 0.0% | 2 | 10.5% | |
| **Recommended urine toxicology** | | | | | |
| No | 5 | 41.7% | 13 | 68.4% | 0.14 |
| Yes | 7 | 58.3% | 6 | 31.6% | |
| **Question 3 Initial dose correct** | | | | | |
| No | 5 | 41.7% | 11 | 57.9% | 0.38 |
| Yes | 7 | 58.3% | 8 | 42.1% | |
| **Question 3 target dose correct** | | | | | |
| No | 10 | 83.3% | 17 | 89.5% | 0.63 |
| Yes | 2 | 16.7% | 2 | 10.5% | |
| **Recommended 1 year treatment** | | | | | |
| No | 8 | 66.7% | 14 | 73.7% | 0.70 |
| Yes | 4 | 33.3% | 5 | 26.3% | |
| **Question 1 score** | | | | | |
| mean, SD | 3.2, 0.94 | | 2.5, 1.01 | | 0.09 |
| **Question 3 score** | | | | | |
| mean, SD | 2.9, 0.71 | | 2.5, 1.09 | | 0.27 |
| **Assessment Question (1&2)** | | | | | |
| mean, SD | 5.5, 2.94 | | 3.8, 2.67 | | 0.11 |
| **Treatment Question (3&4)** | | | | | |
| mean, SD | 4.3, 2.27 | | 3.7, 2.54 | | 0.48 |
| **Overall score** | | | | | |
| mean, SD | 9.8, 4.75 | | 7.5, 4.84 | | 0.19 |

### 4.7. Determination of Adherence levels of prescribers to NICE 2014 guidelines using the Traffic-light system with associated criteria range.

#### 4.7.1 Overall level of adherence

Overall the study found that only 3.2% of prescribers complied with the NICE 2014 guidelines as measured by the Traffic-Light system tool (Table 9 and figure 5).

**Table 9. Results of adherence based on the Traffic-Light system tool for measuring adherence.**

| Traffic light | Percent |
|---|---|
| Red | 74.2 |
| Yellow | 22.6 |
| Green | 3.2 |

*RED means not adhering to guidelines
*Yellow means not adhering Guidelines.
*Green mean adhering to Guidelines

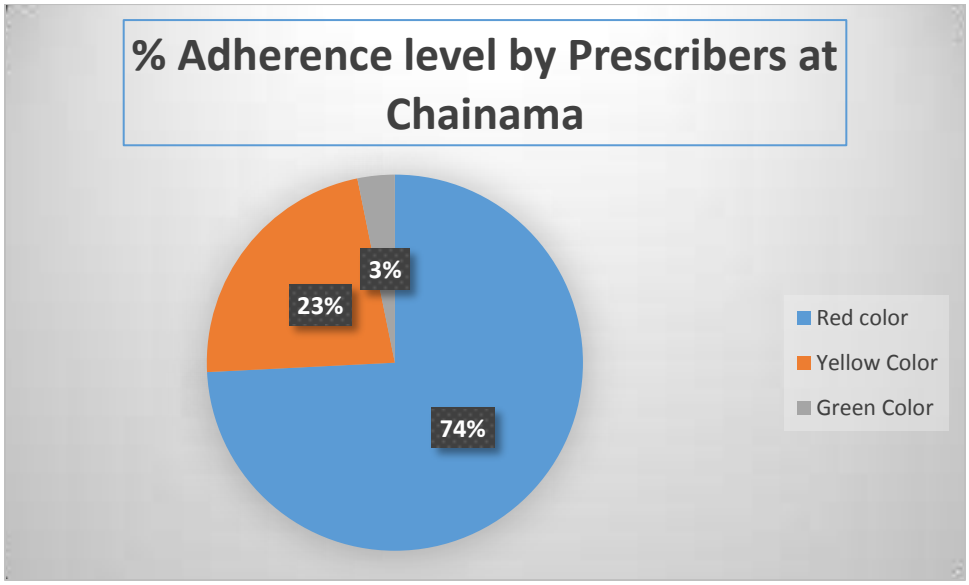


Figure 6.shows Percentage of Adherence levels.
Traffic-Light system results for adherence showed that only 3.2% of the prescribers at chainama hills hospital were adhering to the recommendations in the NICE 2014 guidelines.

### 4.8. Association between Adherence levels and Prescriber at Chainama hills hospital.

The study did not find any statistical significance between the two groups of prescribers with regards to adhering to the NICE 2014 guidelines (Table 10).

**Table 10. Compliance vs professional discipline cross tabulation.**

| Variable | Psychiatrist | | COP | | P-value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| **Compliance** | | | | | |
| Less than 85% (Red) | 8 | 66.7% | 15 | 78.9% | 0.63 |
| 85% - 95% (Yellow) | 3 | 25.0% | 4 | 21.1% | |
| Greater than 95% (Green) | 1 | 8.3% | 0 | 0.0% | |

# CHAPTER FIVE

## 5.0 DISCUSSION

### 5.1 Introduction

The study aimed at assessing the levels of adherence to antipsychotic treatment guidelines for First-episode schizophrenia by Mental Health prescribers at chainama hills hospital in Lusaka.

In this chapter, discussion will be structured according to the structure of results. It will include demographics of study population, diagnosis, medical workup, prescribed antipsychotics including the class and name of the antipsychotic drug the initial dose, target dose and duration of treatment. The study shall further discuss the adherence to recommendations in the NICE 2014 antipsychotic treatment guidelines as a way to assess levels of adherence using the traffic light system method by the various prescriber disciplines.

### 5.2 Demographic characteristics of study participants

In this study it was found that the majority of participants where clinical officers psychiatry. The evidence being that of the total 31 prescribers assessed 61.3% (19/31) were COP and 38.7% (12/31) were Psychiatrists.

Of the Psychiatrist 50% where female and 50% where male. Of the 19 clinical

Officer psychiatrist15.8% where female and 84.2% where male.

The proportional difference of the two groups of prescribers assessed was not statistically significant (P-value = 0.21).

The results of this study are similar to another study by Jeff *et al.,* (2010) who also reported a high proportion of mid-level prescribers who participated in their study as opposed to psychiatrists.

**5.3 Proportion of Diagnosis considered by participants.**

The study found that 93.5% of participants included Major depression (with Psychotic features) as the diagnosis of choice. This implies that prescribers had a somewhat limited performance when asked to assess and manage a patient with new-onset psychosis who was eventually diagnosed with schizophrenia.

The study presented the case of a student with progressively decreasing function, social withdrawal and cannabis use, and who was dishevelled, distracted and guarded on exam. This case, although made deliberately ambiguous, did represent a common presentation of schizophrenia. The mean number of diagnoses considered by the respondents was relatively broad, with substance-induced psychosis, mood disorders and a primary psychotic disorder listed by more than half of the participants as possible causes of the patient's symptoms. However, whereas the majority of participants (83.9%) listed schizophrenia as a potential diagnosis, more than one-quarter failed to list this disorder. The failure of a sizeable minority of the participants to consider schizophrenia (even after reading through the information sheet talking about schizophrenia, where participants are presumably primed to consider this diagnosis) as a possible diagnosis is disconcerting, given the evidence that the length of undiagnosed/untreated schizophrenia appears to be associated with inferior outcomes and slower symptom response once treatment is initiated Addingtone *et al., (*2004). Depressive symptoms are common during both the prodromal period of schizophrenia and the acute psychotic phase, and the presence of

depression should not have detracted from the identification of schizophrenia in patients with other typical features of this illness Freudenreich *et al.,* (2008).

### 5.4 Medical workup

In contrast with the broad differential diagnosis entertained, medical workup was limited (58.3% Psychiatrist) and (31.6% Clinical officer Psychiatry). NICE 2014 Treatment guidelines uniformly recommend toxicology screens and additional medical workup for such patients; one such proposed medical workup is listed in appendix section. However, less than half of the respondents planned to obtain a toxicology screen – despite the subject's known substance use – and only one-half listed a medical workup of any other kind.

The results of this study are different from what Paul *et al.,* (2013) found in their study where 97% of respondent s to a similar clinical case vignette did request for urine toxicological screen as this is a requirement is most international guidelines.

### 5.5 Class, Name, initial and target dose of antipsychotic drug

This study found that prescribers at Chainama hills hospital did not prescribe initial and target doses of antipsychotic drugs in concert with the NICE 2014 guidelines but were able to recommend the correct pharmacological class of antipsychotics. With regards to treatment, the prescribers (66.7% Psychiatrist and 52.6% COP) appropriately selected a second generation antipsychotic as their agent of choice. These agents are considered the first-line treatment of schizophrenia, though recent literature suggests a reconsideration of first generation antipsychotics as first-line agents for patients with first- episode schizophrenia Kahn *et al., (*2008), Sikich *et al., (*2010). However, the prescribers selected doses that were substantially

higher (mean dose 4.3 Psychiatrists, 3.2 COP) than those recommended for patients with firs-episode schizophrenia Freudenreich *et al.,* (2010).

### 5.6 Duration of treatment

This study found that prescribers did not recommend treatment durations as stipulated in the antipsychotic treatment guidelines for managing First-episode schizophrenia. This is evidenced from the fact that, once the patient's symptoms had remitted, less than half of the prescribers (33.3% Psychiatrist, 26.3% COP) recommended a duration of treatment that was longer than one year.

These dosing considerations are important, given that patients with first-episode schizophrenia respond well to low antipsychotic doses McEvoy *et al., (*2007), Crespo-Facorro *et al., (*2006) tend to have higher rates of side effects than those with chronic illness Merlo *et al.,* (2008) and are frequently non-adherent to treatment. Such non-adherence could certainly be exacerbated by side effects from high doses of antipsychotics.

With respect to duration of treatment, relapse rates of schizophrenia are very high with discontinuation of antipsychotics. Discontinuation of successful treatment after only months of stability is likely to lead to symptom re-emergence within 1 or 2 years Gitlin *et al.*, (2008).

### 5.7 Overall Performance on all assessment questions by prescribers.

The study further found that the psychiatrists performed better overall than the COP. The mean total score on the vignette questions was 8.4 points ± 4.86 out of a possible 16 points. The minimum score was 1 and maximum 16 points. The respondents scored best (mean score 2.8 ± 1.02 out of 4 points) on the differential diagnosis question (1) and lowest (mean score of 1.2 ± 1.85) on the treatment duration question (4). The mean score on the assessment questions

(questions 1 and 2) was slightly greater than the treatment questions (question 3 and 4) but not significantly different; mean score on the assessment questions was 4.5 ± 2.87 vs. 3.9 ± 2.42 on the treatment questions; t = 0.77; P-value = 0.45.

There were 15/31 (48.4%) respondents that prescribed the initial dose within guidelines for question 3, however, only 4/31 (12.9%) prescribed the target dose within guidelines. The mean score for question 2 was 1.7 ± 2.01 and the mean score for question 3 was 2.6 ± 0.97. Table 6 on page 32 shows the question score summary statistics.

However, even these specialized clinicians (Psychiatrists) had substantial gaps in their performance as most prescribed inappropriately high doses of antipsychotics, and more than one-third planned to discontinue anti- psychotic treatment prematurely. These results are consistent with the findings of a similar study conducted in Nigeria Adeponle *et al.,* (2007).They reported that psychiatrists performed better that other prescribers with regards management of new onset psychosis but the group difference where not statistically different.

**5.8 Adherence levels of prescribers to NICE 2014 guidelines using the Traffic-light system with associated criteria range.**

The study found that the levels of adherence to antipsychotic treatment guidelines for first-episode schizophrenia by prescribers at chainama hills hospital were low.3.2% (1/31) and no COP adhered to the recommendations in the of the NICE 2014 guidelines. This is evidenced from the results from the Traffic light system a tool for measuring adherence to guidelines. Overall, there were 74.2% (23/31) with less than 85% compliance (red), 22.6%(7/31) between 85 – 95% compliance (yellow), and 3.2%(1/31) with above 95% compliance (green).This result is worrisome as initial management of first-episode schizophrenia is critical and pharmacological

treatments need to be introduced with great care in these drug naïve population Audet et al.,(2013).however similar results have been reported from similar studies Carol *et al.,(*2003).Grol *et al.*,(2005) who concluded that recommendations described in guidelines are not followed by prescribers despite clear evidence supporting there clinical significance in management of schizophrenia.

# CHAPTER SIX

## 6.0 SUMMARY, CONCLUSION AND RECOMMENDATION

### 6.1 Introduction

This chapter includes a summary where the objectives are weighed against the key findings, limitations of the study and the study is evaluated in terms of the prescribers at chainama hills hospital adhering to antipsychotic treatment guidelines for Management First-episode schizophrenia.

### 6.2 Limitations

This exploratory study had several limitations. A major and important limitation is related to the ongoing uncertainty about several aspects of care for patients with first-episode psychosis. Evaluations of schizophrenia guidelines have shown a lack of consensus in many key areas, including what constitutes an ideal medical workup, the exact optimal duration of treatment and whether typical antipsychotics should be considered first-line agents alongside atypical antipsychotics. Therefore, the results of this evaluation must be tempered by the fact that clear, widely accepted guidelines are either not available or conflicting in important areas of evaluation and management of firs- episode schizophrenia, and thus, it can be substantially difficult to assess clinical ‘competence’ in some domains.

Finally, though clinical case vignettes with systematic scoring of free-form responses to clinical questions appear to be a substantially improved method of adherence assessment, such vignettes may not precisely match respondents’ behavior in a given clinical encounter.

## 6.3 conclusion

The study investigated the levels of adherence to antipsychotic treatment guidelines for First-episode schizophrenia by Psychiatrists and Clinical officer psychiatry at chainama Hills mental hospital in Lusaka.

In conclusion, it appears that there may be important gaps in the assessment and treatment of patients with first-episode schizophrenia by mental health prescribers owing to low levels of adherence to antipsychotic treatment recommendations. However, these results must be interpreted cautiously in the context of the ongoing debate and uncertainty about what constitutes optimal care for these patients.

## 6.4 recommendations

Prescribers may not routinely and systematically perform important components of the medical workup for patients with new psychosis and for patients with first-episode schizophrenia, Prescribers may prescribe doses of antipsychotic medication that are too high and administered for an inadequate duration. If these practice gaps from this preliminary study are confirmed, additional education should be provided to front line Prescribers regarding the optimal workup and treatment of this vulnerable population.

## 7.0 REFERENCES


Addingtone, J., Van Mastrigt, S.and Addington, D. (2008),'Duration of untreated psychosis: impact on 2-year outcome'. *Psychol Med*., **34**: 277–84**.**

Audet, AM., Greenfield, S. and Field, M. (2013), 'Medical practice guidelines: current activities and future directions'. *Annals IntMed*., **30**:709–714.

Buchanan, R., Kreyenbuhl, J and Kelly, DL, et al. (2010), 'The 2009 schizophrenia PORT psychopharmacological treatment recommendations and summary statements'. *Schizop Bull*., **36**:71–93.

Crespo-Facorro, B., Perez-Iglesias, R., Ramirez-Bonilla, M., Martinez-Garcia, O., Llorca, J and Luis Vazquez-Barquero, J. (2006), 'A practical clinical trial comparing haloperidol, risperidone, and olanzapine for the acute treatment of first-episode non affective psychosis'. *J Clin Psychiatry*., **67**: 1511–21.

Davis, J.M., Barner, JT and Kane, J.M. (1989), Antipsychotic Drugs. In: Kaplan, HI, and Saddock, BJ, eds. *Comprehensive Textbook of Psychiatry*. Vol 5. Baltimore.

Dixon, LB., Lehman, AF and Levine, J. (2006), 'Conventional antipsychotic Medications for schizophrenia'. *Schizophr Bull*. **21**:567–577.

Freudenreich, O., Tranulis, C and Cather, C. (2008), 'Depressive symptoms in schizophrenia outpatient– prevalence and clinical correlates'. *Clin Schizophr Related Psychoses*; **2**: 127–35.

Freudenreich, O., Holt, DJ, Cather, C and Goff, DC. (2009), 'The evaluation and management of patients with first-episode schizophrenia: a selective, clinical review of diagnosis, treatment, and prognosis'. *Harv Rev Psychiatry*., **15**: 189–211.

Gitlin, M., Nuechterlein, K and Subotnik, KL *et al.* (2008), 'Clinical outcome following neuroleptic discontinuation in patients with remit- ted recent-onset schizophrenia'. *Am J Psychiatry.*, **158**: 1835–42.

Jeff, CH., Oliver, F., Sarah, R and Lee, Baer. (2010), 'Early Intervention in Psychiatry' *Medline*., **4**: 31–38.

Kahn, RS., Fleischhacker, WW and Boter, H, *et al*., (2008), 'Effectiveness of antipsychotic drugs in first-episode schizophrenia and schizophreniform disorder: an open randomized clinical trial'. *Lancet*., **371**: 1085–97.

Merlo, MC., Hofer, H and Gekle, W, *et al.* (2008), 'Risperidone, 2 mg/day vs. 4 mg/day, in first-episode, acutely psychotic patients: treatment efficacy and effects on fine motor functioning'. *J Clin Psychiatry*., **63**: 885–91.

Jones, PB., Barnes ,TR and Davies, L, *et al.* (2006), 'Randomized controlled trial of the effect on Quality of Life of second vs first generation antipsychotic drugs in schizophrenia: Cost Utility of the Latest Antipsychotic Drugs in Schizophrenia Study'.*JClin Psychiatry*.,**60**: 773-73.

Kreyenbuhl, J., Buchanan, RW., Dickerson, FB and Dixon, LB. (2010), 'The Schizophrenia Patient Outcomes Research Team (PORT): updated treatment recommendations'. *Schizop Bull*.**36**:94–103.

Lehman, A., Kreyenbuhl, J and Buchanan, R, *et al*. (2004), 'The Schizophrenia Patient Outcomes Research Team (PORT): updated treatment recommendations 2003'. *Schizophr Bull.* **30**:193–217.

Lehman, AF., Steinwachs, DM., (2008), 'Translating research into practice: the Schizophrenia Patient Outcomes Research Team (PORT) treatment recommendations' *Schizophr Bull*.; **24**:1–10.

Leucht, S., Tardy, M., Komossa, K., Heres, S., Kissling, W and Davis, JM. (2012), 'Antipsychotic drugs versus placebo for relapse prevention in schizophrenia: a systematic review and meta-analysis'.*Lancet*.**12**:1–9.

Lieberman, JA., Stroup, TS and McEvoy, JP, et al. (2005), 'Effectiveness of Antipsychotic drugs in patients with chronic schizophrenia'. *NEngl J Med*.; **353**:1209–1223.

McEvoy, JP., Lieberman, JA and Perkins, DO, *et al*. (2007), 'Efficacy and tolerability of olanzapine, quetiapine, and risperidone in the treatment of early psychosis: a randomized, double-blind 52-week comparison'. *Am J Psychiatry*.,**164**: 1050–60.

Michael, J., Sernyak, M.D. PSYCHIATRIC SERVICES http://psychservices.psychiatryonline.org February 2010 Vol. **54** No. 2.

Miller, AL., Chiles, JA and Chiles, JK., *et al*. (2013), 'The Texas Medication Algorithm Project (TMAP) schizophrenia algorithms'. *J ClinPsychiatry.*, **60**:649–657.

National Institute for Clinical Excellence. Schizophrenia (2014): 'Core Interventions in the Treatment and Management of Schizophrenia in Primary and Secondary Care. London: National Institute for Clinical Excellence'.

Peabody, JW., Luck, J and Glassman, P., *et al.* (2010), 'Measuring the quality of physician practice by using clinical vignettes: a prospective validation study'. *Ann Intern Med*., **141**: 771–80.

Peabody, JW., Luck, J., Glassman, P., Dresselhaus, TR and Lee, M. (2000), 'Comparison of vignettes, standardized patients, and chart abstraction: a prospective validation study of 3 methods for measuring quality' *JAMA.*,**283**: 1715–22.

Sikich, L., Frazier, JA and McClellan, J., *et al.* (2008), 'Double-blind comparison of first- and second-generation antipsychotics in early- onset schizophrenia and schizoaffective disorder: findings from the treatment of early-onset schizophrenia spectrum'.*JAMA*., **514**:2203-78.

USA Department of health and Human Services 2006/j.1525-1497.00362.

Weinmann S, Read J, Aderhold V (2009). Influence of antipsychotics on mortality in schizophrenia: systematic review. *Schizophr Res*. 113:1–11.

Wolfgang, G., Stefan, W., Norman, S., Wolfgang, R and John, S, McIntyre. (2015), *BJP*., **187**:248-255.

## 8.0 APPENDICES

### A. GANTT CHART FOR DISSETATION

| ACTIVITY | MAY | JUNE | JULY | AUG | SEPT |
|---|---|---|---|---|---|
| DEPTMENTAL PRSENTATION | | | | | |
| GRADUATE FORUM PRESENTATION | | | | | |
| SUBMISSION TO ERES | | | | | |
| DATA COLLECTION | | | | | |
| ANALYSIS & REPORT WRITING | | | | | |
| FINAL SUBMISSION | | | | | |

**B. BUDGET**

| **Budget item** | | **Unit cost** | **Multiplying factor** | **Total cost ( ZMW)** |
|---|---|---|---|---|
| **Stationery** | Rims of paper | 50 | 20 | 1000 |
| | Pencils, Pens Erasers | 500 | 2 | 1000 |
| **Transport** | | 10 | | 3500 |
| **Statistician** | | 3000 | 1 | 3000 |
| **Research Assistant** | | 1000 | 1 | 1000 |

| | | | |
|---|---|---|---|
| **Printing and Binding of 4 copies** | 237.5 | 04 | 950 |
| | | Grand Total | **ZMW 10 450** |

## C. PARTICIPANT INFORMATION SHEET


**THE UNIVERSITY OF ZAMBIA SCHOOL OF MEDICINE**
**DEPARTMENT OF PHARMACY**

**INFORMED CONSENT FORM FOR MENTAL HEALTH PRESCRIBERS**

**[Name of Principal Investigator]: JAMES MWANZA**
**[Name of Organization]: UNIVERSITY OF ZAMBIA**
**[Name of Sponsor]: SELF**

**This Informed Consent Form has two parts:**

- **Information Sheet (to share information about the research with you)**
- **Certificate of Consent (for signatures if you agree to take part)**

**You will be given a copy of the full Informed Consent Form**

**PART I: Information Sheet**

**Introduction.**

I am James Mwanza, a student at the University Of Zambia School of medicine in the department of Pharmacy perusing a Masters degree in Psychiatry Pharmacy. We are doing a research titled "Assessing the levels of adherence to antipsychotic treatment guidelines for First-Episode schizophrenia". Schizophrenia is one of the public health concerns in Zambia.

I am going to give you information and invite you to be part of this research. You do not have to decide today whether or not you will participate in the research, before you decide, you can talk to any one you feel comfortable with about the research.

There may be some words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask them of me or any study staff.

**Purpose of the research**
This study is aimed at assessing the levels of adherence to antipsychotic treatment guidelines, specifically for managing first- episode schizophrenia by mental health prescribers at chainama hills hospital, we want to see the adherence levels among the different categories of prescribers. We are using the NICE guideline as a gold standard.

**Type of Research Intervention**
The procedure will involve you answering four (04) and reading a brief case presentation in form of a clinical case vignette.

**Participant selection**
We are inviting all mental health prescribers working at Chainama hills mental hospital.

**Voluntary Participation**
Your participation in this research is entirely voluntary.it is your choice weather to participate or not. You may change your mind later and stop participating even if you agreed earlier.

> *If you decide not to take part in this research study, do you know what your options are? Do you know that you do not have to take part in this research study, if you do not wish to? Do you have any questions?*

**Procedures and Protocol**
You will be presented with two (02) sets of papers. The first set of paper contains a clinical case presentation of a patient presenting with complaints and symptoms. This type of presentation is what is called a clinical vignette. All you need to do is to read it attentively as if you are listening to a real patient speak. You will then be required to answer to question, concerning medical-wake up.

After answering the two questions, you will then be given the last set of the case where you will be required to answer two (02) questions only. That is all you have to do to participate in this study.

**Duration**
The whole exercise should last less than an Hour to complete and it is only done once.

**Risks**
We do not expect any harm by you participating in this study.

**Benefits**
There may not be any benefit for you but your participation is likely to help us find answers to the research question. There may not be any benefit to the society at this stage of the research, but future generations are likely to benefit.

**Confidentiality**
Confidentiality will be reassured through anonymity by use of identification numbers.
**Sharing the Results**
The knowledge that we get from doing this research will be shared with you through hospital clinic meetings. Confidential information will not be shared. After the clinical meetings, we will publish the results in order that other interested people may learn from our research.

**Right to Refuse or Withdraw**
You do not have to take part in this research if you do not wish to do so.you may also stop participating in the research at any time you choose, it's your choice and all your rights will be respected.

**Who to Contact**
If you ever have questions about this study you should contact the study Supervisors Dr Ravi Paul and Dr.L.T. Muungo or the Principal Investigator James Mwanza of the University of Zambia school of medicine, P.O. Box 50110, Lusaka. If you ever have question about your right as a participant, you call the Chairman of the Excellence in Research Ethics (ERES CONVERGE).Tel:260 955 155 633

**This proposal has been reviewed and approved by ERES CONVERGE, which is a committee whose task it is to make sure that research participants are protected from**

**harm. If you wish to find about more about the IRB, contact (ERES CONVERGE).Tel:260 955 155 633.**

*Do you know that you do not have to take part in this study if you do not wish to? You can say No if you wish to? Do you know that you can ask me questions later, if you wish to? Do you know that I have given the contact details of the person who can give you more information about the study?*

You can ask me any more questions about any part of the research study, if you wish to. Do you have any questions?

**D.PART II: Certificate of Consent**

**ID-NO:**

| | | | |
|---|---|---|---|
| | | | |

**I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a participant in this research.**

**Print Name of Participant_____**

**Signature of Participant _____**

**Date _____**
**Day/month/year**

**Statement by the researcher/person taking consent**
**I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands the procedure.**

**I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.**

**A copy of this ICF has been provided to the participant.**

**Print Name of Researcher/person taking the consent_____**

**Signature of Researcher /person taking the consent_____**

**Date _____**
**Day/month/year**

**E. Clinical case vignette**

**PARTICIPANT DETAILS**

**ID-NO:**

| | | | |
|---|---|---|---|
| | | | |

**Professional Discipline…… Gender…….**

**READ THE CASE CAREFULLY AND ANSWER THE FOUR QUESTIONS.**

Described in the next section is a hypothetical patient who presents for treatment. We ask that you answer each question as though you were providing treatment to this patient.

1 Please list as few or as many responses as necessary to answer the question.

2 Please rank your responses from most likely to least likely.

3 Indicate combination answers (if any), by listing both responses on the same line.

4 Be as specific as possible in your answers.

A 22-year-old college student in his junior year with no prior psychiatric treatment is brought by a friend for evaluation in response to concerns about him getting depressed. The patient had initially adjusted well to college life, had good grades, participated in soccer and developed a network of new friends, though had been complaining of problems with concentration as time progressed. His friend notes that the patient has been more withdrawn, uninterested in activities and distracted in the preceding few months, and reports that the patient has not attended classes for the past 6 weeks. He also knows that the patient started smoking cannabis in college but is unsure how frequently and if he uses other drugs.

On exam, the patient appears dishevelled, distracted, and he has difficulties expressing himself. He appears guarded but on further questioning alludes to drops in his grades because his professors single him out and ‘don’t like him,’ a situation that he first noted 1 year ago.

---

**1** .Which diagnoses would you consider in the differential diagnosis of this patient?

List your possible diagnoses in order, from most likely to least likely. Be as specific as possible.

---

**2**. In your clinical practice, what action steps would take next to evaluate the patient? Be as specific as possible, and list in order from most to least important.

---

Let us next assume that the patient has schizophrenia, and requires psychiatric admission and acute treatment.

**3**. What initial medication treatment or treatments would you recommend for the patient at this point? List in order of preference, and be specific regarding medication names, initial dose, and target dose.

---

The patient is started on the treatment you selected, which included an antipsychotic. He shows a good response, and his positive symptoms completely remit after 3 months. He has no extrapyramidal side effects, and his weight has remained stable. There are minimal if any negative symptoms.

He would like to stop the antipsychotic.

**4**. What do you recommend to the patient regarding the duration of antipsychotic treatment in his case? Be specific

**8.5 Sample scoring algorithms**

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Question 1: Which diagnoses would you consider in the differential diagnosis of this patient?

Any four of the following (1 point each, max 4 points):

Schizophrenia (or schizophreniform disorder)

Schizoaffective disorder

Major depression (with psychotic features)

Bipolar Disorder (depressed with psychosis)

Substance-induced psychosis (e.g. cannabis-induced)

Psychosis due to a general medical condition (e.g. infection)

---

Question 3: What initial medication treatment or treatments would you recommend for the patient at this point? (Mg/day)

1 point each for antipsychotic, name of antipsychotic, reasonable initial dose, reasonable target dose.

| Antipsychotic | Initial daily dose | Target dose |
|---|---|---|
| Chlorpromazine† | 25 to 75 | 200 to 500 |
| Perphenazine† | 4 to 12 | 12 to 32 |
| Haloperidol† | 2 to 5 | 3 to 8 |
| Clozapine† | 12.5 to 25 | 125to 250 |
| Risperidone | 0.5 to 2 | 2 to 4 |
| Olanzapine | 5 to 10 | 7.5 to 15 |

| | | |
|---|---|---|
| Quetiapine | 25 to 75 | 250 to 500 |
| Aripiprazole | 5 to 10 | 10 to 15 |
| Paliperidone | 3 to 6 | 6 to 9 |
| Ziprasidone | 40 to 80 | 80 to 160 |

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†One-half point.

If only one dose is given (e.g. olanzapine 10 mg day-1), then use it for both initial and target dose.

If an overall dose range is given (e.g. olanzapine 10–20 mg day-1), use the lowest for initial, highest for target. If a range is given within initial/target dose (e.g. olanzapine initial dose 2.5–5 mg day-1, target 15–20 mg day-1), give a point if there is any overlap with the correct range.

## E. Ethical Clearance and approval letters

Proceed with data collection
Dr
Ag HoC
06.05.16

**THE UNIVERSITY OF ZAMBIA**
**SCHOOL OF MEDICINE**

5 May 2016

HCE
facilitate 05/05/2016
Ag SMS.

The Senior Medical Superintendent
Chainama Hills Mental Hospital
P O Box 33991
**LUSAKA**

Dear Sir/Madam,

**RE: INTRODUCTORY LETTER – JAMES MWANZA**

I write to confirm that Mr. James Mwanza is a student at the University of Zambia. He is pursuing a Master of Clinical Pharmacist in Psychiatry under the School of Medicine. In order to partially fulfil the requirements of an award of a Masters Degree, he is required to carry out a research.

He would like to conduct a research entitled **"Assessment of Adherence Levels to Antipsychotic Treatment Guidelines for First-Episode Schizophrenia by Mental Health Prescribers at Chainama Hills Hospital".** Information collected during the research will be used solely for academic purposes. Any assistance rendered to him during his research will be most appreciated. He has been cleared by Ethics committee as per attached certificate.

For further information please don't hesitate to contact the undersigning.

Yours faithfully,

UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
05 MAY 2016
ASSISTANT DEAN (PG)
P.O. BOX 50110, LUSAKA

Dr. S.H Nzala
**ASSISTANT DEAN POSTGRADUATE**

ERES CONVERGE

33 Joseph Mwilwa Road
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I.R.B. No. 00005948
F.W.A. No. 00011697

26th April, 2016

**Ref. No. 2016-Feb-013**

The Principal Investigator
Mr. James Mwanza
C/o University of Zambia
The University Teaching Hospital
Dept. of Pharmacy
P/Bag RW 1X,
**LUSAKA.**

Dear Mr. Mwanza,

**RE: ASSESSMENT OF ADHERENCE LEVELS TO ANTIPSYCHOTIC TREATMENT GUIDELINES FOR FIRST-EPISODE SCHIZOPHRENIA BY MENTAL HEALTH PRESCRIBERS AT CHAINAMA HILLS HOSPITAL.**

Reference is made to your corrections dated 18th April, 2016. The IRB resolved to approve this study and your participation as Principal Investigator for a period of one year.

| Review Type | **Ordinary** | Approval No. **2015-Feb-013** |
|---|---|---|
| Approval and Expiry Date | Approval Date: 26th April, 2016 | Expiry Date: 25th April, 2017 |
| Protocol Version and Date | Version - Nil. | 25th April, 2017 |
| Information Sheet, Consent Forms and Dates | • English, Nyanja. | 25th April, 2017 |
| Consent form ID and Date | Version-Nil | 25th April, 2017 |
| Recruitment Materials | Nil | 25th April, 2017 |
| Other Study Documents | Clinical Case Vignette, Sample Scoring Algorithms. | 25th April, 2017 |
| Number of participants approved for study | - | 25th April, 2017 |

Specific conditions will apply to this approval. As Principal Investigator it is your responsibility to ensure that the contents of this letter are adhered to. If these are not adhered to, the approval may be suspended. Should the study be suspended, study sponsors and other regulatory authorities will be informed.

**Conditions of Approval**

- No participant may be involved in any study procedure prior to the study approval or after the expiration date.
- All unanticipated or Serious Adverse Events (SAEs) must be reported to the IRB within 5 days.
- All protocol modifications must be IRB approved prior to implementation unless they are intended to reduce risk (but must still be reported for approval). Modifications will include any change of investigator/s or site address.
- All protocol deviations must be reported to the IRB within 5 working days.
- All recruitment materials must be approved by the IRB prior to being used.
- Principal investigators are responsible for initiating Continuing Review proceedings. Documents must be received by the IRB at least 30 days before the expiry date. This is for the purpose of facilitating the review process. Any documents received less than 30 days before expiry will be labelled "late submissions" and will incur a penalty.
- Every 6 (six) months a progress report form supplied by ERES IRB must be filled in and submitted to us.

Should you have any questions regarding anything indicated in this letter, please do not hesitate to get in touch with us at the above indicated address.

On behalf of ERES Converge IRB, we would like to wish you all the success as you carry out your study.

Yours faithfully,
**ERES CONVERGE IRB**

Dr. E. Munalula-Nkandu
BSc (Hons), MSc, MA Bioethics, PgD R/Ethics, PhD
**CHAIRPERSON**