PERFORMANCE OF A TRIAGE ALGORITHM FOR PSYCHIATRIC SCREENING TOOL IN DETERMINING THE ABSENCE OF ACUTE MEDICAL ILLNESS AMONG ADULT PATIENTS PRESENTING WITH ACUTE PSYCHOSIS AT EMERGENCY DEPARTMENT OF THE MUHIMBILI NATIONAL HOSPITAL

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MMed (Emergency Medicine) Dissertation
Muhimbili University of Health and Allied Sciences
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Muhimbili University of Health and Allied Sciences

School Clinical Medicine

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By

Ruth Alex Mwita

A Dissertation Submitted in (Partial) Fulfilment of the Requirements for the Degree of Master of Medicine (Emergency Medicine) of

Muhimbili University of Health and Allied Sciences
October, 2024

CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled; **"Performance of a triage algorithm for psychiatric screening in determining the absence of acute medical illness among adult patient presenting with acute psychosis at emergency Department of the Muhimbili National Hospital",** in (partial) fulfillment of the requirements for the Master of Medicine (Emergency Medicine) of Muhimbili University of Health and Allied Sciences.

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DECLARATION AND COPYRIGHT

I, **Dr. Ruth Alex Mwita**, declare that I am the sole author of this Dissertation as my own original research work, and that it has not been presented and it will not be presented to any other University for the similar or any other degree award; and where other people's research was used, they have been dully acknowledged.

Signature…… **Date** ……...

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DEDICATION

This dissertation is dedicated to my parents; mother Aggy Nzawila and father Alex Mwita and my children Faith, Catherine, Dorcas & Ethan. I love you all.

ABSTRACT

Background: Some psychiatric disorders that appear to be organic or medical in origin may require immediate or emergency medical attention. Due to psychiatric presentation being caused by either organic of functional causes, sorting of patient at a triage unit with a proper screening tool will allow early identification of psychotic disorders with proper disposition and management at designated unit. An accurate standardized tool is needed to detect the absence of acute medical illness in patients who presents with psychiatric chief complaint. Triage algorithm for psychiatric screening tool was developed as a 6-question form which aided physicians in determine which patients could safely bypass the main emergency department.

Objective: To determine the feasibility and performance of Triage Algorithm for Psychiatric screening Tool (TAPS) in determining the absence of acute medical illness in adult patients presenting with acute psychosis at Emergency Department (ED) of Muhimbili National Hospital (MNH).

Methodology: This was a prospective cohort study of patients presenting at ED MNH from April to June 2023 with acute psychosis. Patients with psychotic symptoms were seen by a triage physician and consecutively enrolled in the study by a physician who screened using TAPS tool after being consented. Patients were managed either at ED or psychiatric unit as per triage physician discretion. Patients were followed up until discharge and diagnosis was based on psychiatric final diagnosis at discharge. A Redcap application was used for data entry, data management and analysis were done using SPSS software. Descriptive analysis was done to describe the study population and analysis of sensitivity, specificity, negative and positive predictive values to determine the diagnostic accuracy of the TAPS tool for detecting organic disease.

Results: A total of 280 patients with psychotic symptoms and 26 physicians were enrolled into the study. The majority 123 (43.9%) of patients were aged between 16 and 24 years. Previous history of mental illness was reported by 118 (42.1%) of participants. Fourteen

percent of respondents reported one or more comorbidities, with hypertension 18 (43.9%), HIV/AIDS 9(22.0%), and diabetes 12 (31.7%) being the commonest. The median time to complete the TAPS screening was 4 minutes and 88.5% of physician felt comfortable using the tool. Twenty-six (9.3%) patients were ultimately diagnosed with organic disease. The TAPS tool correctly identified 20 patients with organic for a sensitivity of 76.9% for identifying organic disease, specificity of 94.5%, negative and positive predictive of 58.8% and 97.6%.

The triage physician correctly identified 15 patients with organic disease for a sensitivity of 57.7% for identifying the organic patients and specificity of 90.9% for ruling out organic disease with a positive and negative predictive value of 39.5% and 95.1% respectively.
The commonly performed tests ordered by psychiatrist for ruling out organic causes of psychosis were liver function test (40.7%), renal function test (49.6%) and complete blood count 51.4%

Conclusion: The study demonstrated the feasibility and acceptability, and effectiveness of the TAPS tool for screening organic causes of acute psychosis. TAPS tool has better test characteristics with a higher sensitivity and specificity compared to that of the triage physicians hence TAPS can be used as alternative to physician decision. The use of TAPS at ED will ultimately improve screening for patient presenting with psychotic symptoms and reduce probability of missing organic cause of psychosis at ED.

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LIST OF ABBREVIATIONS

CI	Confidence interval
CVI	Content validity index
DIS	Diagnostic Interview Schedule
DSM-5	Diagnostic and statistical manual of mental disorders, 5th ed. Arlington:
ED	Emergence Medical Department
GHQ	General Health Questionnaire
HIV	Human Immunodeficiency Virus
ICD	International Classification of Diseases 10th Revision
MNH	Muhimbili National Hospital
MUHAS	Muhimbili University of Health and Allied Science
NIMH	National Institute of Mental Health
NPV	Negative Predictive value
PPV	Positive Predictive value
SPSS	Statistical package for Social Science
TAPS	Triage Algorithm Psychiatric Screening

DEFINITION OF TERMS

Acute psychosis: is an acute mental health condition causing a loss of contact with reality. It is characterized by one or more of following features; a reduced level of social functioning, blunted or inappropriate affect, changes in perception due to hallucinations, changes in thinking due to delusion.

Triage Algorithm for Psychiatric Screening (TAPS): refers to a screening tool that consists of a series of historical and physical examination criteria intended to identify patients who have a psychiatric manifestation of an organic disease.

Feasibility: is an assessment of the practicality or convenient to apply an intervention, in this case TAPS.

Mental disorders: are characterized by a clinically significant disturbance in an individual's cognition, emotional regulation, or behavior. They are usually associated with distress or impairment in important areas of functioning.

Gestalt psychology: is a school of thought that looks at the human mind and behavior as a whole. When trying to make sense of the world around us, Gestalt psychology suggests that we do not simply focus on every small component. Instead, our minds tend to perceive objects as elements of more complex systems.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Acute psychosis is defined in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) as the presence of one or more psychotic symptoms with sudden onset and complete remission within 1 month(1). Acute psychosis is often a preliminary diagnosis with a significant relapse rate, followed by other diagnoses such as organic psychosis, functional psychotic disorder, or mood disorder with psychosis. Duration of symptoms is a factor that distinguishes short-term psychotic disorders from schizophreniform disorders (1–6 months) and schizophrenia (at least 6 months).

Psychosis as a symptom has a complicated etiology which incorporates genetic or environmental changes elements that could increase susceptibility, such as youth trauma, infections, poisonous exposures including marijuana or tobacco smoke) and dietary deficiencies (inclusive of nutrition D or zinc). Approximately one in one hundred fifty people could be recognized with a psychotic ailment in some unspecified time in the future throughout the lifetime.

Most of psychotic manifestations are due to functional disorders and organic causes which may occur in patients with overt brain disorders or toxic metabolic encephalopathies. Organic psychosis is most commonly presenting with auditory hallucinations and accompanied by delusional syndromes. Disorders producing organic psychosis affect limbic system structures, and the lateral predominance of the lesion may influence the nature of the psychotic experience. Organic psychoses etiologies need to be evaluated and diagnosed in medical rather than psychiatric.

Management of acute psychotic patients presenting to the emergency department requires prompt physician decisions regarding treatment and disposition of often uncooperative, agitated, with disorganized thought individuals. Treatment decisions should be tailored to the

individual characteristics and needs of each patient, including exclusion of medical causes of acute psychosis(3,4).

In many countries, it is standard for people with acute psychosis to be seen first in an emergency department for evaluation to rule out medical causes of acute psychosis. Emergency Department of Muhimbili National Hospital (ED-MNH), unlikely many other EDs, lacks evidence-based, objective methods to rule out organic causes of psychosis. Currently, patients with psychotic symptoms are subjectively examined by a physician in a triage area and admitted to a psychiatric ward. TAPS is a validated screening tool consisting of a set of literature-derived history and physical examination criteria to identify patients presenting with psychotic symptoms.

This study was conducted to determine the feasibility and performance of the psychiatric screening tool TAPS in determining the absence of acute organic illness in adult patients with acute psychosis at ED-MNH compared with ED physician judgment. The study has provided information on the value of an alternative way of screening for medical causes of psychiatric presentations at ED-MNH and hence potentially improve accuracy and consistency of clinical assessment and management of psychiatric patients regardless of who will be sorting the patients.

1.2 Problem statement

Psychiatric appearing symptoms are acute changes in thought processes and behaviors potentially impairing patient ability to function. Patients are often in a state of crisis, fear with disturbed coping mechanisms, and overwhelmed by the situation. Sometimes patients with psychiatric symptoms might have acute medical illness which can be life threatening triggering the needs for medical emergency before being admitted to psychiatric unit. When patients with psychotic symptoms arrive at the emergency department of MNH, they are first seen by physician who must quickly determine whether medical issues are creating psychiatric manifestation and whether control of the aggregation is needed for safe placement. The medical clearance procedure at ED depends on knowledge and experience of the attending physician which is subjective and hence varies among individuals.

The current procedures may also result in psychiatric patients spending an excessive amount of time in the emergency department (ED) undergoing investigations, or directly triaged to psychiatry when there a need for management of an underlying medical condition that causes a psychiatric presentation. Despite several efforts to improve the medical clearance, such as appointing a triage doctor in every shift to evaluate psychiatric patient, some patients with organic causes of acute psychosis who require timely interventions still get admitted to the psychiatric ward and vice versa, thus delaying appropriate care. This study evaluated the performance of TAPS screening tool for ruling out organic causes among patient presenting with acute psychosis at ED MNH.

1.3 Conceptual Framework

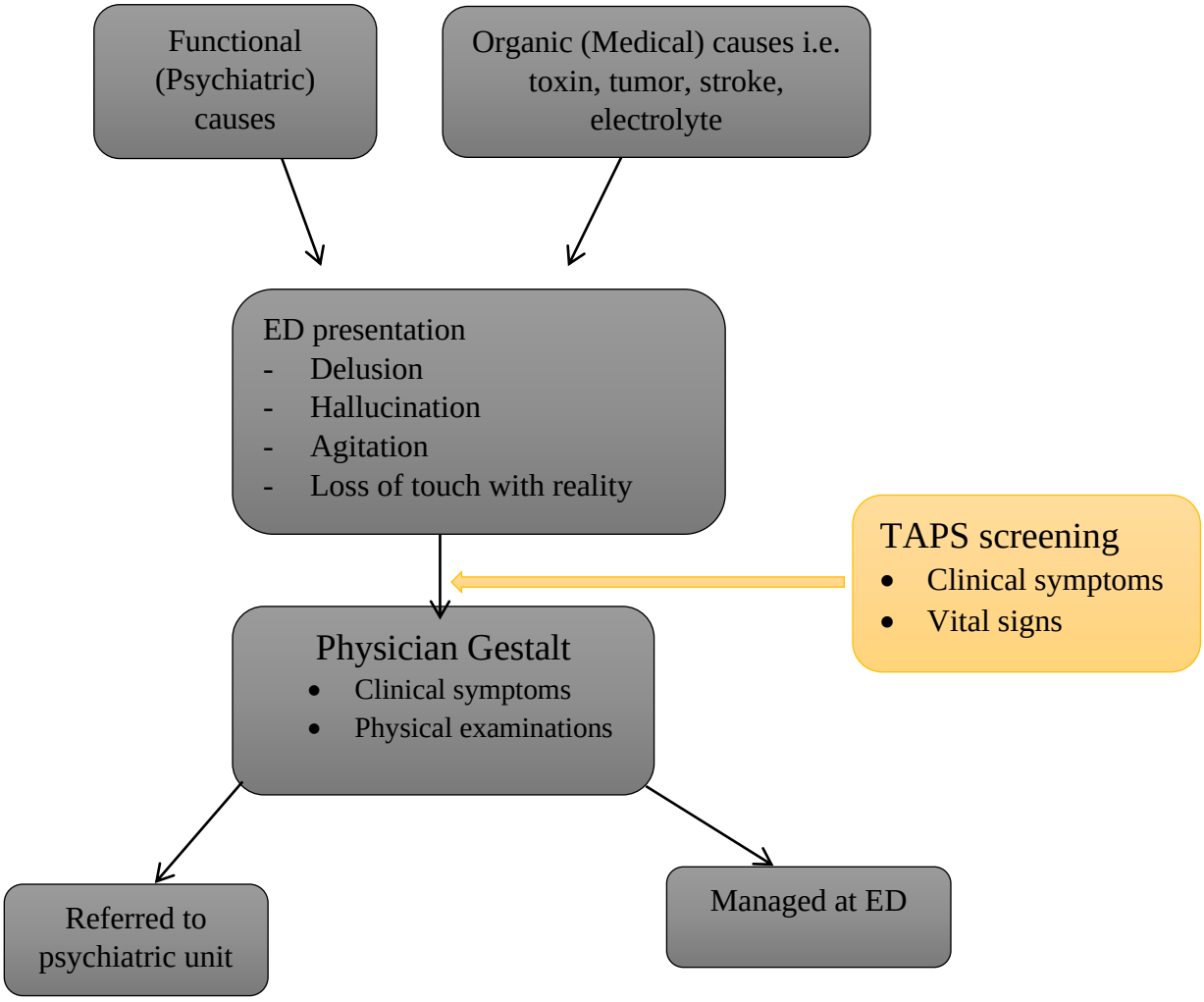


Figure 1: Conceptual framework

Figure 1 shows a conceptional framework for identification and management of psychosis patients. Patients with psychotic features (delusion, hallucination, agitation and loss of touch with reality) may have underlying organic or psychiatric causes. ED physicians use clinical gestalt to assess the patients and decide their disposition either ED or psychiatric due to the organic or functional causes of their psychiatric presentation. TAPS as an additional tool to the triage can improve the accuracy of the current triage process.

1.4 Rationale for the study

This study assesses the performance of TAPS in screening patient with acute psychosis presenting at ED. The results of the study have determined the value of using an alternative way of screening medical cause of psychiatric presentation at ED-MNH, potentially improving clinical assessment and management of psychiatric patients regardless of who is at the triage unit.

1.5 Research question

What is the performance, feasibility and acceptability of TAPS tool in determining the absence of medical illness among adult patients presenting with acute psychotic symptoms at ED?

1.5.1 Specific research question

1. What is the performance of TAPS in screening organic causes of psychosis using psychiatrist's final diagnosis as the gold standard?
2. What is the feasibility of administering TAPS for screening the organic cause of acute psychosis?
3. What is the acceptability of the TAPS tools by physician in screening for organic causes of acute psychosis in adult patients attending ED MNH?

1.6 Objectives

1.6.1 Broad objective

To assess the performance, feasibility and acceptability of TAPS tool in determining absence of medical illness among adult patients presenting with acute psychotic symptoms at ED of MNH.

1.6.2 Specific Objectives

1. To assess the performance of TAPS in screening organic causes of psychosis using the psychiatrist's final diagnosis at discharge as a gold standard.
2. To assess the feasibility of administering TAPS as screening for organic cause of acute psychosis in adult patient attending ED MNH.
3. To assess the acceptability of TAPS when used by physician in screening for organic causes of acute psychosis in adult patient attending ED MNH.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Concept of Acute psychosis

Psychosis is defined as the clinical mental syndrome characterized by loss of contact of reality according to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)(5). It can manifest with one or more symptoms including hallucinations, delusions, formal thought disorder such as incoherent and disordered speech, psychomotor disorders comprising several abnormal movements and behaviours also known as catatonia and negative symptoms such as lack of pleasure, poverty of speech, lack of motivation to engage in social interaction, inability to plan and carry out any goal directed activity and blunted affect(5,6). The acute psychosis is an actual emergency condition which may present as a manifestation of several organic or functional disorders.

Organic or secondary psychosis refers to the type of psychosis experienced in the state of overt brain disorders or toxic metabolic encephalopathies(5–7). The term “Organic” as applied to psychosis describes the presentation of hallucinations or delusions or thought disorders in the patient who has recently experienced the brain structural or functional disorders. The psychosis emanates from diverse brain disorders secondary to a wide spectrum of neuropathology profile encompassing the neurodegenerative diseases, cerebrovascular accidents, tumors and toxic or metabolic encephalopathies. Functional or primary psychosis refers to the type of psychosis which develops following the functional impairment of the brain, according to International. Classification and Diagnostic (ICD) four types of psychoses are classified on functional psychosis domain including schizophrenia, affective and mood disorders, paranoid state and reactive psychosis(8,9).

2.2 Epidemiology of Acute psychosis

Several studies have justified the existence of a potential disparity for acute psychosis across a wide spectrum of its presentation, population and etiological factors. In USA the mental health illness presentation to emergency department has increased overtime from 12% to 20% in

2018 a total of 52.8 million visits at emergency department were associated with mental health related conditions. In resource limited settings the acute psychosis diagnosis accounts for higher frequency with the proportion of 63% of all mental health related illnesses presented at the emergency department as described from the study conducted in Nigeria at Butabika National Psychiatric Referral and Teaching Hospital. The epidemiological trends studies have reported a prevalence of 10% of psychosis related presentation among the mental health illness at ED(10). The incidence and diagnosis of acute psychosis rate has been comparatively diverse across the age, gender, ethnic group and geographical regions from results reported in both High-Income Countries (HIC) and Low and Middle-income countries (LMICs)(11).

From studies reporting on the incidence of first episode psychosis presentation the age has been identified to be an independent factor with increased rate from adolescence to young adulthood at the incidence of 86 in 100000 between the age of 15-29 and reduced to half from middle aged to late adulthood with incidence of 46 in100000. The average mean age of patients who present with first onset of psychotic symptoms is reported to be 34.3 years. The male gender accounts for high frequency of acute psychosis with the predominant causes being medical illnesses and substance abuse.

The psychosis rate is far more disproportionate across different ethnic groups, several studies have significantly identified an increase of prevalence of psychosis in black groups than the other ethnic population with a rate range of 75.6% to 81.0%. The logistic regression analysis shows that the black population have higher relative risk about 3 folds for being diagnosed with psychosis compared with other non-black groups(12). The underlying etiology of acute psychosis is influenced by a constellation of numerous factors with age dependent. The primary psychosis disorders such as schizophrenia occurs predominantly in the young population affecting more the age of late teens to thirties whilst the organic psychoses are more frequent in older adults because of higher rate of medical comorbidities which subject them to neurological or metabolic derangements and toxicities(13). The epidemiological studies in Norway and London which examined the on the trends of first episode psychosis

(FEP) and organic brain disorder related psychosis using the radiological imaging profile have found the proportion of organic psychosis to be 10 -25%(14,15) .

2.3 Screening for organic cause of psychosis in adults

Among all hospital departments the emergency section outstands as the hectic department with intensive pressure such that clinicians attend patients with non-specific and critical life-threatening symptoms. Majority of patients present with aggressive and destructive features posing a serious threat to their life, health workers and the surroundings. Therefore, clinicians presumptively assign the patients to substance intoxication or functional psychiatric illness, nevertheless numerous of these patients may be experiencing the underlying critical medical condition such as brain tumors, meningitis, sepsis, subarachnoid hemorrhage, electrolyte derangements which may demand the focused and time dependent intervention(16).

Traditionally the gravity center for screening of mental illness has rested on the use of mental status examination for many decades, however it is without flaws which captures its applicability and sensitivity for delineating the appropriate diagnosis(16–18). Subject to this test is time consuming and complex, components of examination which are used in isolation may not be satisfactorily for discerning the diagnosis and it therefore suffers the low sensitivity and discriminatory capacity for differentiation of functional and organic psychoses(4). Excluding the organic psychosis from other acute psychosis disorders at emergency department demands the diligent and intensive resources to detect the causes of organic psychosis.

Numerous tools have been adopted on the armamentarium array for screening of psychosis at emergency department, however majority of them have proven to be complex and unreliable for detection and discrimination of specific psychosis disorders(10). For instance, the revaluation of use of Mental Status Examination (MSE) has extrapolated many uncertainties regarding its validity, reliability and applicability in the emergency settings(12). The study which was conducted from five Manhattan Psychiatric Emergency Departments for evaluating the accuracy of EDs psychosis diagnosis when compared with the standard best estimate

longitudinal diagnosis (BELD) on discriminating the substance induced psychosis from primary psychosis. It was revealed that clinicians at Emergency Departments had higher trends to diagnose primary psychotic disorders by defaults from the presenting symptoms than the substance induced psychosis(16).

A Triage Algorithm for Psychiatric Screening (TAPS) is a screening tool designed to reliably rule out acute medical illness in patients with psychiatric chief complain and reduce unnecessary laboratory testing(19). It was validated at Lehigh Valley Hospital and Health Network in Allentown Pennsylvania by assessing about 1179 patients who presented at emergency department with psychiatric chief complaints. It uses 6-component criteria; age younger than 65 years; normal vital signs such as body temperature, heart rate, blood pressure and respiratory rate; no medical complaints; no evidence of recent substance use; and no history of schizophrenia, mental retardation, or hallucinations(8). The tools also reduce the patient length of stay and cost of diagnostic that are not needed for management of these cases. Also, it has reduced the incidence of admitting patient with organic causes in psychiatric ward.

The tool has been proved to be working with the overall sensitivity (true positive rate) of 71.43%, and the specificity (true negative rate) of 32.98% (19). Jang et al verified the tool using 37 emergency room nurses with a content validity index of 0.8. The usefulness, adequacy, and convenience of the final algorithm was ranges from 2.98 to 3.53 (17).

2.4 Performance of TAPS in screening organic causes of psychosis

Tunner et al in Ireland showed significant change in the categories assigned when the mental health triage scale was in use; triage categories assigned using the mental health triage scale were significantly safer (high rate of under triage and low sensitivity in predicting higher urgency levels) than under the Manchester triage scale (79% versus 60% safe, respectively)(18). Miller et al revealed TAPS tool is potentially an effective tool in screening for the absence of acute medical illness in emergency screening (19). A Similar finding by Jennifer et al was found in the retrospective chart review of for psychiatric screening (TAPS)

for patients who present to emergency departments with psychiatric chief complaints. The TAPS tool appropriately identified patients without significant medical illness(4).

2.5 Feasibility of the TAPS screening tools

Over the years, the Triage Algorithm for Psychiatric Screening (TAPS) has proven to be a very reliable and effective tool for screening for mental health conditions in emergency settings(19). Research has demonstrated that TAPS is highly valid and reliable in its ability to assess psychiatric risk and mental health conditions. This algorithm helps to streamline the emergency assessment process, enabling health professionals to quickly obtain insight into a patient's mental health status and diagnosis and intervene accordingly(4,19). Moreover, TAPS is user-friendly and transferable, meaning that it can be used across multiple settings and health professionals. Thus, it is a feasible tool for use in emergency assessment and care.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study design

A prospective cohort study conducted among adult patients (18 years+) presenting with acute psychosis at ED of MNH in the three-month period from April 2023 to June 2023.

3.2 Study area

The study was conducted at the ED of the MNH in Dar es Salaam, Tanzania. This is a national referral hospital with a capacity of 1,500 beds. MNH serves an average of 1,000 to 1,200 patients per day, with an admission rate of 65%. The hospital is staffed with emergency physicians, students from under and post-graduate medical training program, medical officers, critical care nurses and nursing officers. The ED receives both, self-referral and patients referred from other facilities or brought in by the police. and managed until they stabilize. Majority of severe cases, stretchers and first-time ambulatory cases are seen at ED diagnosed and managed until stabilized before disposed to the respective ward.

Daily, a triage doctor is assigned to review all patients at the triage area including those with psychotic presentation. If the physician agrees that the patient is appropriate for psychiatry, the escorting personal and attending nurse transfer the patient to the psychiatric department, where there is an acute ward for admission and subsequent management of these patients. If the attending physician is concerned about a possible organic cause of symptoms, the patient is retained at the emergency department for further investigation. If the patient is found to have an organic cause for their acute psychosis, they are admitted to an appropriate ward thereafter.

3.3 Target population

All adult patients presenting with acute psychosis at all health facilities in Tanzania.

3.4 Study Population

Adult patients (18 years+) with acute psychosis presenting to ED- MNH during study period. 26 physicians working at ED where selected to participate in the study were also interviewed for assessing the acceptability of the TAPS tools.

3.5 Sampling Design

The consecutive sampling technique was used to recruit eligible patients who presents with acute psychosis at the ED of MNH.

3.6 Inclusion criteria

All adult patients aged 18 years and above presenting at ED of MNH with acute psychosis and arrived at ED.

3.7 Exclusion criteria

Patients with acute psychosis whose caretakers or themselves refused to participate in the study were excluded. An emergency waiver of consent was requested from the executive Director of the hospital for patients or family members unable to consent at the time.

3.8 Sample Size and sampling procedures

The sample size was calculated based on sensitivity and specificity of the index (TAPS tool) using the formula described by Buderer et al(20). Sensitivity and specificity values for ruling out acute medical illness in patients with psychiatric chief complaints of 71.43% and 32.9% respectively were used for sample size calculation(4). Using these formulas, the minimum sample size for specificity was 106 accounting for 10 % non-response gives a sample of 116.

Formula for sensitivity sample size

$$n_{sens} \geq \frac{Z^2_{1-\frac{\alpha}{2}} Sens(1-sens)}{d^2 x prev}$$

Formula for specificity sample size

$$n_{spec} \geq \frac{Z^2_{1-\frac{\alpha}{2}} Spec(1-spec)}{d^2 x(1-prev)}$$

Where by

n_{sens}=sample size for sensitivity

n_{spec} =Sample size for specificity

Sens=Expected Sensitivity (71.43%)

Spec=Expected Specificity (32.98%)

d=Precision (10%)

Prevalence of the disease=20 % (0.2)

$Z^2_{1-\frac{\alpha}{2}}$ =Standard Normal Variate for alpha -0.05 (1.96)

Thus, the sample size was calculated as;

n_{sens}

$$\boldsymbol{n_{sens}} \geq \frac{1.96^2 x 0.7143 x (1-0.7143)}{0.1^2 x\ 0.2}$$

$$\boldsymbol{n_{sens}} \geq \frac{3.8416 x 0.7143 x 0.2857}{0.002}$$

$n_{sens} \geq 391$

Minimum sample size for sensitivity is 391

n_{spec}

$$\boldsymbol{n_{spec}} \geq \frac{1.96^{\ 2} x 0.3298 x (1-0.3298)}{0.1^2 x\ (1-0.2)}$$

$$\boldsymbol{n_{spec}} \geq \frac{3.8416 x 0.3298 x 0.6702}{0.008}$$

$n_{spec} \geq 106$

Minimum sample size for specificity is 106

3.9 Data collection procedures

3.9.1 Data collection tool

Socio-demographic characteristics of the study participants including age, sex, residence, marital status, educational level and employment status were collected. The tool also included questions for assessing clinical variables such as chief complaint, duration of the illness prior to presentation, history of mental illness, any medication used before, history of substance abuse and components of the TAPS screening tool(19). The form captures triage physician

decision and the final diagnosis of study participants from psychiatric department or in the ED if patient was admitted to the main hospital. The final diagnosis of mental illness from psychiatrist was considered to be a gold standard for patients sent to psychiatry. A health care worker questionnaire was designed to capture providers medical education, years of experiences, their perception and usefulness of the TAPS screening tool. A copy of the final versions of the tools have been appended (appendix 1 A & B).

3.9.2 Performance of TAPS

All ambulatory patients presented at triage desk of the ED-MNH with a psychiatric chief complaint were assessed with TAPS tool. The tool used six historical and physical examination criteria namely; age; vital signs; medical complaints; evidence of recent substance use; and history of schizophrenia, mental retardation, or hallucinations. Each item in the list was binary with a score of "1" indicated the existence of the item. The TAPS score was derived from a sum of the scores of six items in the list per patient. A final TAPS diagnosis was obtained by considering scores of 3,4,5 or 6 as organic and 0, 1 or 2 as functional.

3.9.3 Pre-testing of the tool

Two Research assistants and twenty-six triage physicians were trained to use TAPS tool for screening patients in groups over the course of 2 days covering overview of the study and its objectives, data collection tools and procedures and ethical issues. The training was followed by two -days pilot test of every encounter at MNH emergency department to identify and refine the data collection tools and procedure before the actual data collection the role of research assistant was to correct patient demographic data before TAPS screening and timekeeping when a trained physician start screening using TAPS.

3.9.4 Data collection

Research assistant collected data under the principal investigator's supervision. All patients with psychotic related symptoms attending the ED of MNH from April to June 2023 were eligible. Emergency physicians explained the study to all potential participants/caretakers as part of the consenting procedure prior to enrollment. Eligible patients were enrolled and

screened by a TAPS scores at ED and disposed according to ED physician decision then trained physician who screened patient at ED by a TAPS tool followed up all patient admitted at psychiatric unit for the final diagnosis confirmation made by a psychiatrist from the day of admission until discharged and had their medical treatments tracked after the discharge to discern if any tests had clinically meaningful results consistent with acute medical illness. Both, TAPS form and their own clinical assessment were used by the triage physician to assess patients for acute psychosis in order to rule out organic causes (Figure 1).

3.9.5 Feasibility of TAPS

The tool's usability which was considered practically on how TAPS tool can be used as screening at triage time taken during screening, applicability of the tool to screen psychotic patient at ED triage area, the patients' cooperation during the assessment, and the trained physician comfortability during screening was used to gauge the TAPS feasibility. Screening was done during every shift day and night whenever patient with psychotic complaint arrived at ED. After the everyday appointed physician completed the assessment then the same patient was consented by the trained physician and screened by TAPS During the assessment a stopwatch managed by Research assistant was used, started at the beginning of the screening and stopped at the end to record the time taken to complete the assessment. A closed-ended questionnaire was administered by physician to patient to assess the TAPS performance based on the tool score.

3.9.6 Acceptability of TAPS

A closed-ended questionnaire was administered to triage physicians attending patients to assess their acceptability. The five likert scale questions coded as strongly agree, agree, neutral, disagree, or strongly disagree were used to measuring acceptability with the use of the TAPS tool for screening of psychiatric cases.

3.10 Data management and analysis

3.10.1 Data management

A paper questionnaire was used with data entry done into electronic form programmed into redcap system. Data was exported from red cap to an excel file and then imported into SPSS statistical software package for data management, cleaning and analysis.

3.10.2 Data analysis

Descriptive statistics was used to summarize continuous and categorical variables. Mean and/or median were calculate for numeric variables and proportions for categorical variables. Sensitivity, specificity, positive and negative predictive values of correctly identifying psychiatric patients between TAPS tool and Psychiatric physician (gold standard) were reported with a 95% confidence interval. The feasibility of the TAPS tool was assessed using self-reported data from the health care providers and the time taken to administer the tool. Chi square tests were conducted to examine the association between TAPS score and patients' clinical characteristics.

3.11 Ethical consideration

This study obtained ethical approval from MUHAS Senate of Research and Publication. Approval to data collection was offered by MNH administration team prior to data collection. Patient's relative were asked for both written and verbal consent preceding data collection. Serial numbers and the patient's medical record number was used document client's data in a structured questionnaire for easy of tracking of relevant patients' information in the medical record. Data was stored in password protected computer during and after data collection.

CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This chapter presents study finding organized as per research objectives. Sensitivity analysis were conducted at various stages of analysis to ascertain the validity of results.

4.2 Description of the Sample and Response Rate

Of 321 clients presented with mental related illness at ED-MNH from April to June, 2023 as per MNH Health Information System, 296 (92.2%) were approached for interview. A total of 25 (7.8%) clients were not included as they were admitted at the time when none of the study related doctor was on duty. Of approached clients, 280 were successfully enrolled into the study giving a response rate of 94.6%. A total of 277 (98.9%) clients out of 280 enrolled were successful followed up on day 7 at psychiatric unit. A total of 26 health care providers who attended these patients were also interviewed. (Figure 2).

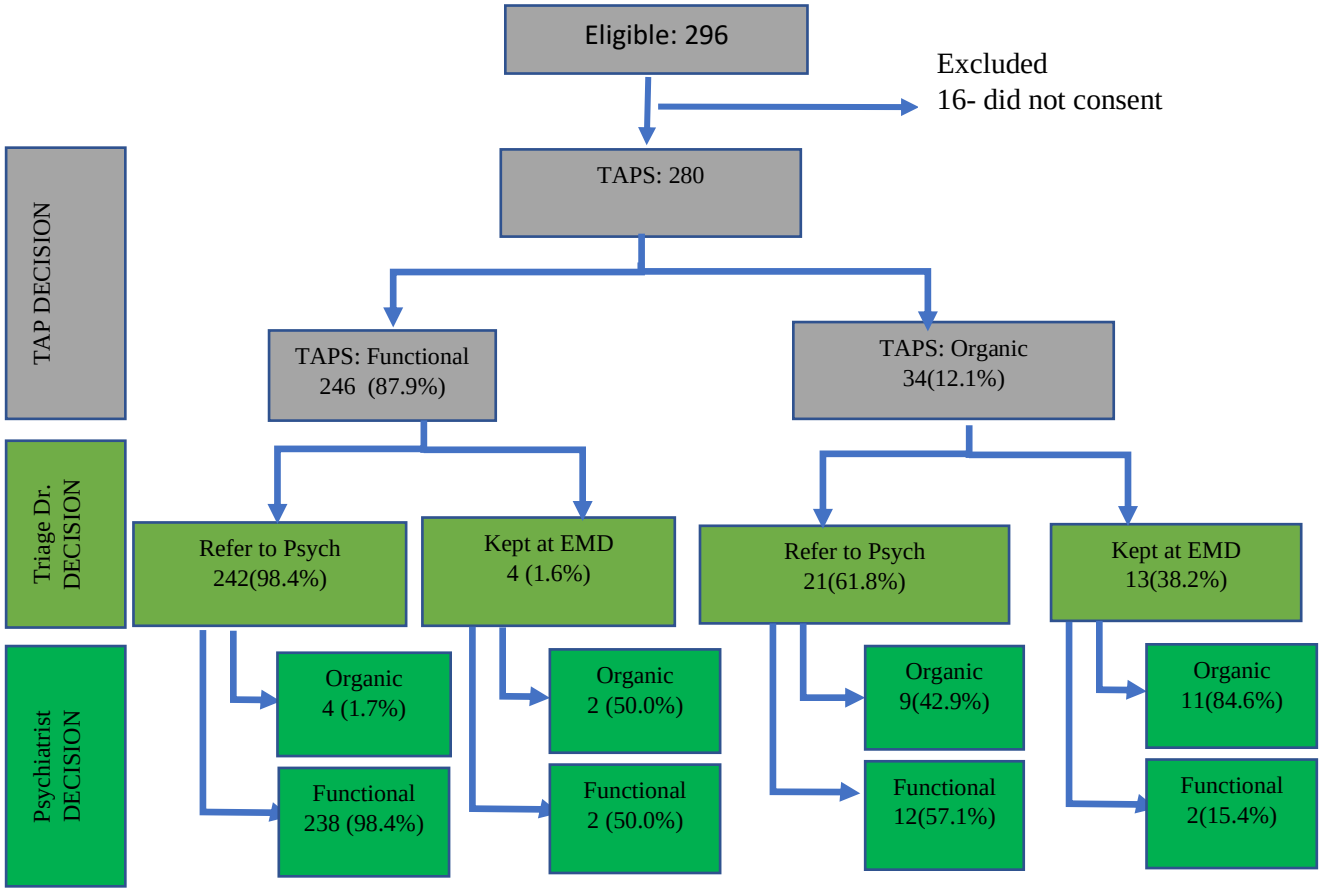


Figure 2: Flow diagram of study participants

4.3 Basic Characteristics of Study Participants

4.3.1 Patient characteristics

A total of 280 patients were interviewed; of these 94 (33.6%) were female. The study population had a median age (Interquartile range) of 30 (23-40) years and the size of the population decreases steadily with increasing age; nearly three quarter of the population (74.3%) consists of the two youngest age groups (16-24, and 25-39) with those age 25-39 being the dominant 123 (43.9%).

Table 1: Socio-demographic characteristics of the study participants (N = 280)

Variable	Frequency (n)	Percent (%)
Age group (years)		
16 – 24	85	30.4
25 – 39	123	43.9
40 – 59	56	20.0
≥ 60	16	5.7
Gender		
Male	186	66.4
Female	94	33.6
Marital status		
Single	165	58.9
Married	65	23.2
Cohabiting	12	4.3
Widowed	38	13.6
Level of education		
No formal education	15	5.4
Primary	85	30.4
Secondary	110	39.3
Higher	70	25.0
Health insurance		
Insured	52	18.6
Not insured	228	81.4
Referral place		
Dar es Salaam	263	93.9
Outside Dar es Salaam	17	6.1

More than half of the population 165 (58.9%) was single, and 77 (27.5%) were either married or living with a partner. A quarter of the respondents have attained higher level of education, while 39.3% completed secondary education, 30.4 primary education and 5.4% have never

been to school. Majority 263 (93.6%) of the participants enrolled were referred from facilities that are located in Dar es Salaam region (Table 1).

4.3.2 Health care providers characteristics

A total of twenty- six Physicians out of 44 attending clients at ED-MNH were interviewed to explore their experiences with the TAPS tools. Of these, 18 (69.2%) were females. The physician's median year of experience was 4.5 years (range: 0 -10 years). None of the participating physicians ever used a TAPS tools before this study.

4.4 Clinical characteristics of study participants

4.4.1 Chief complaint presented by study participants

Of 280 patients recruited, the most common presented symptoms were extreme mood changes 105 (38%), followed by excessive anger, hostility or violence 85 (30%). Excessive alcohol or drug use was the least frequent symptom 18 (6%) (Figure 2)

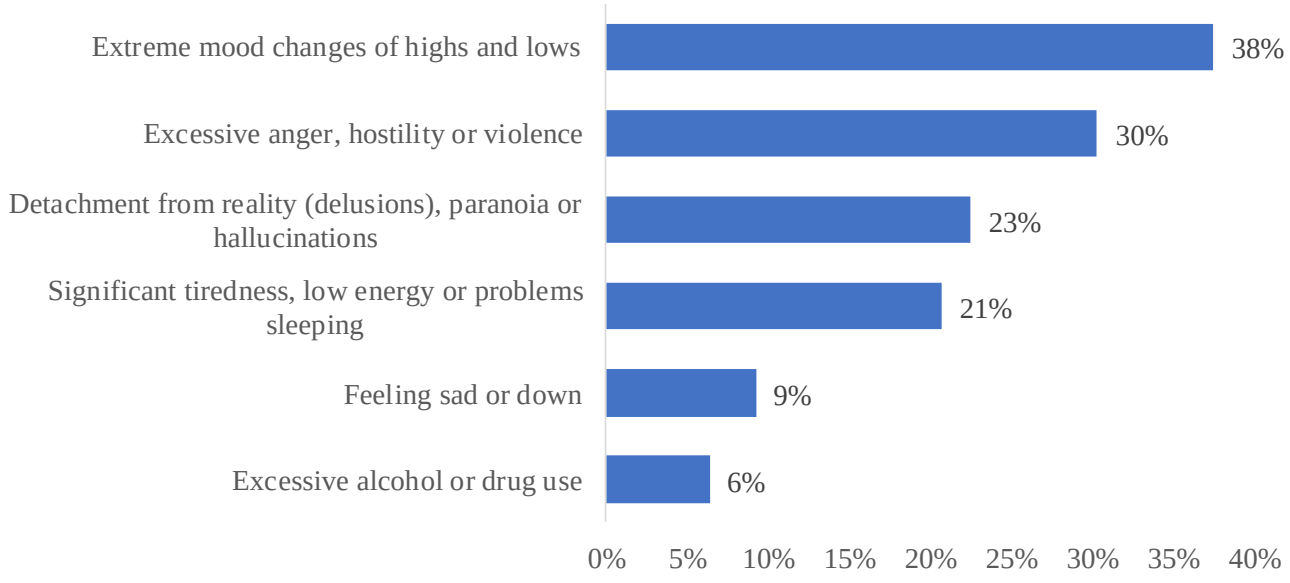


Figure 3: Signs and symptoms of mental illness presented

4.4.2 Client Medical History Obtained at Enrollment

Table 2 shows the prevalence of co-morbidities among study participants. Fourteen percent of study participants reported having at least one comorbidity. The prevalence of hypertension, HIV/AIDS, diabetes mellitus and chronic kidney disease was 12.2%, 22.0%, 31.7% and 2.4% respectively. A total of 118 (42.1%) also reported having history of mental illness in the past.

Table 2: Clinical characteristics of study participants

Variable	Frequency (n)	Percent (%)
Presence of comorbidity		
Yes	41	14.6
No	239	85.4
Types of comorbidity (n = 41)		
Diabetes mellitus	12	31.7
HIV/AIDS	9	22.0
Hypertension	18	43.9
Chronic kidney disease	2	2.4
Other	5	12.2
Prior mental illness		
Yes	118	42.1
No	162	57.9

4.5 Feasibility of administering TAPS for screening organic cause of acute psychosis

The median time to complete TAPS screening was 4 minutes (mean 5.2, standard deviation 7.7). More time was required for evaluating patients who were having excessive anger, hostility or violence, while less time was required assessing patient experiencing significant tiredness, low energy or problems sleeping.

Table 3 :Time for administering TAPS tool by client chief complain N=280

Chief Complaint	n	Median time (IQR)
Overall	280	4 (2-45)
Excessive alcohol or drug use	18	4 (2-30)
Feeling sad or down	26	3 (2-4)
Significant tiredness, low energy or problems sleeping	58	2 (2-15)
Detachment from reality (delusions), paranoia or hallucinations	63	3 (2-13)
Excessive anger, hostility or violence	85	5 (3-28)
Extreme mood changes of highs and lows	105	4 (0-10)

**Time is in minutes calculated as time from start screening to end time of screening*

4.6 Acceptability of TAPS by physician in screening for organic cause of acute psychosis

Health care providers attending clients were asked to rate the rate the performance of the TAP Stool at the end of data collection. A total of 23 (88.5%) providers were either comfortable or very comfortable using the TAPS tool. Only 3.8 % of providers were uncomfortable using the tools (Figure 4). Almost all health care providers 25 (96.7%) reported that the TAPS tool was easy to use.

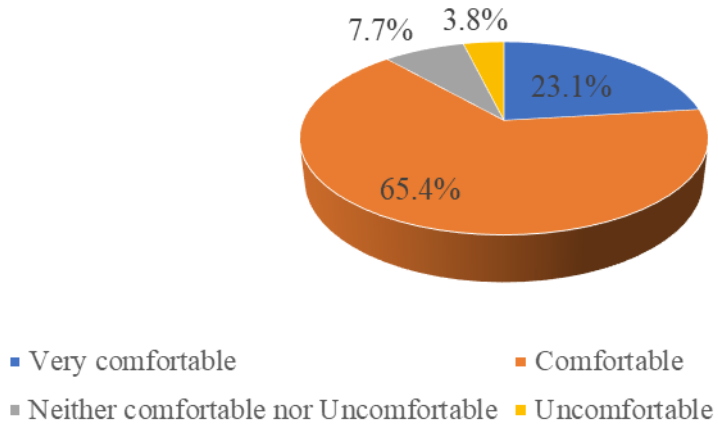


Figure 4: Level of Comfort of using the TAPS tool by health care providers (N=26)

4.7 TAPS results

4.7.1 Descriptive Statistics of TAPS scores

Descriptive statistics (n, %) for TAPS scores across the 280 patients is displayed in Table 4. Sixty-three (22.5%) of patients had a TAPS score of 0, total of 38 (13.6%) of participants had a TAPS score of more than 2 indicating an organic diagnosis and 242 (86.4%) had a TAPS score of 2 or less indicating a functional diagnosis.

Table 4: Elements of the TAPS score N = 280

Variable	n (%)
Age > 65 years	6 (2.1)
Abnormal vital signs*	45 (16.1)
T > 100.4 F	2 (0.7)
HR > 100 or < 60 bpm	30 (10.7)
SBP>180 or < 100 mmHg	8 (2.9)
DBP> 100 or < 60 mmHg	8 (2.8)
RR< 10 or >24	9 (3.2)
Had a medical problem as a chief complaint	43 (15.4)
Hallucinations or delusions with no prior history of the same	153 (54.6)
History Schizophrenia or Mental retardation	107 (38.2)
Visibly intoxicated or admits to drug or alcohol use within the last 8 hours	39 (13.9)
TAPS score**	
0	66 (23.6)
1	89 (31.8)
2	91 (32.5)
3	28 (10.0)
4	6(2.1)
TAP psychiatric diagnosis decision	
Organic (TAPS score>2)	34(12.1)
Functional (TAPS score<=2)	246 (87.9)
*Calculated as having any of the five abnormal vital signs	
** Calculated as a sum of score of all six items in the TAP tools	

4.7.2 Sensitivity and specificity of TAPS on Screening Organic Causes of Psychosis

TAPS tool diagnosed 34 (12.1%) of 280 patients had an organic cause of psychosis and 240 (85.6%) of 280 patients as functional causes of psychosis. Psychiatrists diagnosed 26 (9.3%) out of 280 patients as organic psychosis and 264 (94.3%) out of 280 as functional cause of psychosis.

Table 5 :Classification of TAPS Vs. Psychiatric final diagnosis

		Psychiatric diagnosis (Gold standard)		
TAPS		**Organic (%)**	**Functional (%)**	**Total**
	Organic	20 (58.8)	14 (41.2)	34
	Functional	6 (2.4)	240 (97.6)	246
	Total	**26 (9.3)**	**254 (90.7)**	**280**

Table 5 shows the comparison of TAPS tool results and psychiatrist final diagnosis at discharge (gold standard). Results showed TAPS correctly diagnosed 20(58.8%) patients with organic causes of psychosis in addition TAPS had correctly diagnosed 240 (97.6%) with functional psychosis. however, the false positive and negative results of TAPS were 41.2% and 2.4% respectively. The corresponding diagnostic metrics of TAPS are shown in table 6. The test had sensitivity of 76.9% (95%cl 72.0-81.9) a specificity of 94.5% (95%CL 91.8-97.2) and negative and positive predictive value of 58.8% and 97.6%respectively.

Table 6: Sensitivity, Specificity, positive and negative predictive values of TAPS in diagnosing organic causes

		95% Confidence Interval	
	Estimate	**Lower CL**	**Upper CL**
Sensitivity (%)	76.9	56.4	91.0
Specificity (%)	94.5	90.9	97.0
Positive predictive value (%)	58.8	40.7	75.4
Negative predictive value (%)	97.6	94.8	99.1

4.7.3 Sensitivity and specificity of Triage and Psychiatric physician on Screening Organic Causes of Psychosis

Table 7: Classification of the emergency Physician triage according to final diagnosis

		Psychiatric diagnosis (Gold standard)		
		Organic	**Functional**	**Total**
Physician	Organic	15 (39.5)	23 (60.5)	38
	Functional	11 (4.5)	231 (95.5)	242
	Total	**26 (9.3)**	**254 (90.7)**	**280**

ED Physician triaged 38 (6.1%) patients to remain in the ED for suspicion of organic diagnosis, and triaged 231 (95.5%) out of 280 to psychiatry as functional cause of psychosis. The final psychiatric diagnosis was 26 (9.3%) organic causes and 254 (90.7%) functional. ED physicians correctly triaged 15patients as having organic causes of psychosis (true positive) and 231 patients diagnosed as functional cause of psychosis, (true negative). A total of 23 patients were categorized as organic who had functional diseased (false positive) and 11 patients as functional who had organic disease (false negative). ED physicians test characteristics for correctly identifying patients with organic illness were: sensitivity of 57.7% and specificity 90.9 %, positive and negative predictive value of 76.5% and 95.1 % respectively.

Table 8: Sensitivity, Specificity, diagnostic accuracy, positive and negative predictive values of as well as positive and negative diagnostic like hood ratio of ED physician diagnosing organic psychiatric

		95% Confidence Interval	
	Estimate	**Lower CL**	**Upper CL**
Sensitivity (%)	57.7	36.9	76.7
Specificity (%)	90.9	86.7	94.2
Positive predictive value (%)	39.5	24.0	56.6
Negative predictive value (%)	95.5	92.0	97.7

4.7.4 Clinical investigation at ED and Psychiatric Department

Of 280 clients enrolled into the study, 169 (60.3%) had at least one of the following tests; Electrolytes, Liver function tests, Renal functional test, full blood picture, MRI Brain, CT Brain, Thyroid functional test, UPT. Majority 60 (36%) had four diagnostics tests done and very few had less than 3 or more than five tests (figure 5). The most commonly diagnostics tests done were Liver functional test114 (40.7%), Renal functional test139 (49.6) and Complete Blood Count (CBC) 144 (51.4%) (Table 8).

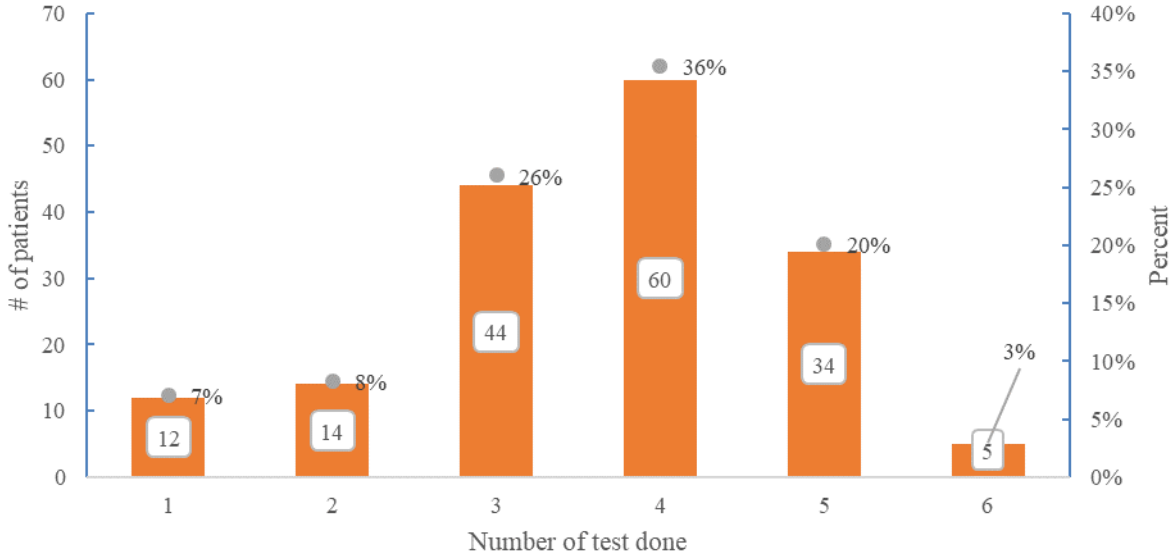


Figure 5: Number of diagnostic tests done per patient at psychiatric department

Table 9: Lab Investigation conducted and the results, N=280

Type of Investigation	Patients with test N (%)	Investigation results	
		Normal N (%)	Abnormal N (%)
Electrolytes	91	66 (72.5)	25 (27.5)
Liver function test	114	70 (61.4)	44 (38.6)
Renal function test	139	94 (67.6)	45 (32.4)
Complete Blood Count (CBC)	144	100 (69.4)	44 (30.6)
MRI Brain	3	2 (66.7)	1 (33.3)
CT Brain	3	3 (100.0)	0 (0.0)
Thyroid function test	10	6 (60.0)	4 (40.0)
UPT	3	3 (100.0)	0 (0.0)
Another diagnostic test	68	42 (61.8)	26 (38.2)

CHAPTER FIVE

5.0 DISCUSSIONS

Psychosis is symptoms of a certain underlying disease causes can be either organic or functional Psychosis is an important clinical problem not only for patient but for families and health care workers as well. Patient with mental disorders represent an increasing fraction of the total presentation to ED over time. In 2014, mental disorder was the 10th leading cause of the united states ED visit s for males aged 15-65 yrs. and mental disorder were the primary ED diagnosis in slightly over 5million ED visits. Thus, development of a better management approaches to assess and treat psychosis has become critical. this study aimed to assess the performance of TAPS tool as a screening method when used by physicians in determine the absence of medical illness among patient presenting with acute psychosis at emergency department. Its feasibility and acceptability of the tool by physician as a screening method Data was gathered from 280 of the patients who presented for assessment at the ED at the MNH over a three-month period. Additionally, 26 physicians attended these patients were interviewed.

In this study Nearly three quarter of the population that took part in the study were in the two youngest age groups (16-24, and 25-39) ,165 which is 58.9% were single and 93.6 % were referred from Facilities in Dar-es-salaam None of the interviewed Physicians have ever used a TAPS tool before this study but managed to successful introduce and use the tool with a minimum time on job training which suggesting the tool is easy to use.

The most common chief complaint among patients who presented with psychosis was extreme mood changes. A finding similar to that of Ee C et all, who found extreme mood changes influence a person's psychological well-being(21). Such mood changes may ultimately result in a variety of behavioral issues such as excessive anger, hostility, or violence, expressed as the second most frequent chief complaint in this study's participants(22). The least frequent symptom among patients was excessive alcohol or drug use. This result does not necessarily reflect a lower prevalence of such behavior but may merely indicate that it is perhaps less

commonly self-reported. Studies have consistently reported high rates of alcohol and drug use in the general population(23).

In this study 14 percent of participants reported having at least one comorbidity including HIV/AIDS, diabetes mellitus and chronic kidney disease. Which is similar to a study done by eg influence comorbidities has been associated with increased risk of developing additional illnesses and can worsening psychiatric illness but more important can contribute to misdiagnosis at ED. The burden of HIV in patient with first-episode psychosis (FEP) ranges from 24 to 40%, and FEP in people living with HIV ranged from 17% to 29%(24).

Based on the findings from this study it appears that the time needed to complete the TAPS screening varies depending on the patient presented symptoms. Specifically, the median time to complete the TAPS screening was 4 minutes, however, it took more time to assess participants who were exhibiting excessive anger, hostility, or violence, while assessments for those experiencing tiredness, low energy, or sleep problems took less time. These results are in line with the previous research which found that different symptomatic presentation have been associated with varying amounts of time to complete an assessment. For example, a study conducted by Snyder et all in 2009 found that the time taken to complete an assessment was longer for psychiatric patients evaluated for psychological testing as they want to appear psychologically fit so as to proceed with the treatments. Similarly, Karaulov et al. (2009) reported that longer assessment times were required for aggressive patients relative to other patient groups.

Moreover, the majority of physician found it comfortable and easy to use with very smooth learning curve and high satisfaction rate on the use of TAPS tool which shows it will be easy to administer on other facilities.

The elements of the TAPS score that were assessed showed that there is a wide range of medical and mental health factors that can affect the TAPS score of an individual Age, abnormal vital signs, temperature, heart rate, blood pressure, respiratory rate, chief complaint, hallucination/delusion history, and past drug/alcohol use all have an impact on the diagnostic decision made. Mental health diagnoses like schizophrenia and mental retardation were found

to be present in a significant no of patients. The most common TAPS score was 1, indicating that more individuals had some medical and/or mental health which required further investigation. Of the patient 34 (12.1%) had a TAPS score of more than 2, suggesting an organic diagnosis, and 246 (87.9%) had a TAPS score of 2 or less, indicating a functional diagnosis. These results suggest that the TAPS can be a useful tool to rule out organic disease also from the study patients who were diagnosed with TAPS positive for organic cause and then had a functional cause of psychosis from the final diagnosis majority their organic causes of psychosis by TAPS were not ruled out based on findings ordered by the gold standard.

In this study TAPS tool results were fairly sensitive for detecting organic causes of psychosis where by TAPS tool correctly an c identified 20 (76.9%) of organic cases but missed 6. The 6 patients missed by TAPS had no any investigation ordered by a psychiatrist who was a gold standard in this study thus, probably increased chances for misdiagnosis. Its specificity (ability to detect true negatives) 94.5%, which means that it correctly identified 94.5% of functional cases. However, it is important to note that the positive predictive value of the tool is still relatively low (58.8%), mainly due to the lower number of individuals diagnosed as organic cases.

Results on classification of the final diagnosis between emergency Physician and Psychiatrist demonstrate that emergency physician had 57.7% sensitivity and a specificity of 90.9% by clinical gestalt. Compared to TAPS the sensitivity was lower showing that ED might have miss true cases of organic psychosis, resulting in potentially inaccurate diagnosis and mismanagement. However, the TAPS were more specific, so if TAPS said the patient had the disease they were more likely to be correct. Hence the PPV was higher than for physician.

CHAPTER SIX

6.0 LIMITATION AND MITIGATION, CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The study demonstrated the feasibility and acceptability, and effectiveness of the TAPS tool for screening organic causes of acute psychosis. TAPS tool has better test characteristics with a higher sensitivity and specificity compared to that of the triage physicians which can be used as alternative to physician decision, the use of TAPS at ED will ultimately improve screening for patient presenting with psychotic symptoms, reduce probability of missing organic cause of psychosis at ED.

6.2 Recommendations

1. Educate and train health care providers on how to use TAPS tool for better screening.
2. Integrating TAPS tools into different hospital system eg well soft for easy of screening and documentation of results
3. Increase the support for the implementation of the TAPS tool to ensure greater accessibility and higher satisfaction rates among health care providers.
4. Enhance collaboration between EDs and psychiatrists to ensure quality care for patients with psychosis.
5. Develop protocol for basic investigation to rule out organic causes of psychosis.
6. TAPS tool should use alone in primary health care for quick screening and referral and be in high level facility can be used with physician gestalt to increase its accuracy in ruling out organic causes of acute psychosis.

6.3 Areas for Further Research

1. Assess the performance of the TAPS tool in other similar settings.
2. Explore which patients were missed by TAPS and which area of the TAPS tool could be improved.

3. Examine the outcomes of patients with organic psychosis and those with functional psychosis based on diagnoses made after screening with the TAPS tool.

6.4 Limitation and Mitigation

1. It is possible that the information from the relative who escorted the psychotic patient wasn't accurate due to the trauma caused by the situation. When in doubt, a close relative of the patient was contacted.
2. Data for this study was collected from only one center, so its findings might not be generalized to other hospitals.
3. Given the resource constraints for project execution, it was not possible to involve every physician in the unit so be able to recruit every eligible participant. This might have cases biased the results.
4. Bias on Sampling and technique and sampling procedure were not convenient due few to number of the trained physician at some point some of the shift missed a trained physician

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APPENDICES

Appendix I: Data collection tools

A: Patient Historical Questionnaire:

1. Study ID: □□-□□□
2. Medical Record No: _____
3. Age in years: _____
4. Date of arrival at emergency Muhimbili National hospital: □□-□□-□□□□
5. Sex: Male □ Female □
6. Chief complain at MNH ED: _____
7. Residence: Region _____ District _____ Village _____
8. Comorbid
    - □ Diabetes mellitus
    - □ HIV
    - □ Hypertension
    - □ Chronic kidney disease
    - □ Other _____
    - □ No any Comorbid
9. Any mental illness before this episode:

    Yes □ No □
10. Level of education of patient:

    No education ☐ Primary ☐ Secondary ☐ Higher ☐
11. Marital status of patient

    Single ☐ Married/cohabiting ☐ Widowed/Separated ☐
12. Health insurance status of the patient

    No insurance ☐ NHIF ☐ Others specify_____
13. What is the decision of ED Physician?

    Admit psychiatry ☐ Admot ED ☐

TAPS Screening Tool

14. Measurement of vitals signs

- Body temparature _____
- Heart rate_____
- Systolic blood pressure _____
- Diastolic blood pressure _____
- Respiratory rate _____

Criteria

1.	Age >65?	Yes	No
2.	Abnormal Vital Signs? T>100.4F HR>100 or <60 bpm SBP>180 or <100mmHg DBP>100 or <60 mmHg RR<10 or >24 per /minute	Yes	No
3.	Patient had a medical problem as a chief complaint?	Yes	No
4.	Hallucinations or delusions with no prior history of the same	Yes	No
5.	Schizophrenia or Mental retardation history?	Yes	No
6.	Visibly intoxicated or admits to drug or alcohol use within the last 8 hours?	Yes	No

The total score _____

15. What is the decision of the TAPS tool on the medical illness of this patients?

Psychiatry ☐ Organic ☐

16. What is the Physician impression on the client?

Psychiatry ☐ Organic ☐

17. Disposition

Admit Psychiatry ☐ Admit at ED ☐

NOTE: If either TAPS or physician suggest organic, keep in ED

Feasibility of TAPS -

18. Time of start of screening _____recorded in hours. Minutes. Seconds
19. Time of ending screening _____ recorded in hours. Minutes. Seconds
20. Any abnormal behavior of patient during screening necessitate to stop the screening?

    - Yes
    - No

21. Was the screening process completed?

    Yes ☐ No ☐

    If No why? _____

Follow up in ward (to be completed on the 7th day after recruitment for patients referred at the Psychiatric unit

1. Psychiatric diagnosis _____
2. There was any investigation done
    - Yes
    - No
3. If yes mention type of investigation done
    - _____
    - _____
4. For each investigation done, was the results normal or abnormal?
    - _____
    - _____
5. Any transfer to other ward
    - Yes
    - No
6. If yes, mention the reason for transfer
    - _____

B: Health care work questionnaire

To be asked to health care workers who uses the TAP tool to determine the absence of medical illness among adult patients presenting with acute psychotic symptoms.

1. Health care worker ID: □□-□□□
2. Years of experiences: _____
3. Ever used the TAP screening tools for assessing the absence of medical illness among adult patients presenting with acute psychotic symptoms

   1=Yes 2=No
4. How comfortable are you in using the TAPS screening tools?
   - Very comfortable
   - Comfortable
   - Neither comfortable nor uncomfortable
   - Uncomfortable
   - Very Uncomfortable
5. How do you rate the use of TAPS as the ideal tool to rule out organic cause at the emergency? (In the scale of 1 to 5) _____

Appendix II: Informed consent form - English Version

Consent to participate in the study titled **"PERFORMANCE OF PSYCHIATRIC SCREENING TOOL IN DETERMINING THE ABSENCE OF ACUTE MEDICAL ILLNESS AMONG ADULT PATIENTS PRESENTING WITH ACUTE PSYCHOSIS AT EMERGENCY DEPARTMENT OF THE MUHIMBILI NATIONAL HOSPITAL."**

NAME ----------

AGE ----------

My Name is DR RUTH MWITA a resident Doctor in the department of Emergency Medicine at Muhimbili University of Health and Allied Sciences (MUHAS). I am conducting a research study on "**PERFORMANCE OF PSYCHIATRIC SCREENING TOOL IN DETERMINING THE ABSENCE OF ACUTE MEDICAL ILLNESS AMONG ADULT PATIENTS PRESENTING WITH ACUTE PSYCHOSIS AT EMERGENCY DEPARTMENT OF THE MUHIMBILI NATIONAL HOSPITAL"**

I hereby request your participation.

Purpose of the study

This study aims to explore the perfomance of the psychiatric screening tool in determining the absence of acute medical illness among adult patient presenting with acute psychosis.

How to participate: A consent form will be signed by participants who agree to participate in the study or their relatives or caregivers for those who are verbally impaired. For patients or family members who are unable to consent at the time, the executive director of the MNH hospital will be asked for an emergency waiver of consent.

The research assistant will complete a questionnaire by conducting a brief interview with the respondent and/or caretakers.

Confidentiality: The data gathered for this study will be kept private and the information will only be used for research purposes and no data will be directly linked to you.

Costs: There are no additional fees associated with participating in this study.

Voluntary participation and the right to withdraw from the study : Your participation is voluntary and you have the right to withdraw from participating in this study at any time. Whatever your decision may be, it will not affect in any way to your rights to care and treatment.

Risk: No risk is expected to arise from participating in this study

Benefits: Your participation will contribute to a better understanding of the cost and utilization of emergency care among tertiary hospital emergency department patients who need social welfare clearance. You can get in touch with Dr. Ruth Alex Mwita, Principal Investigator, Muhimbili University of Health and Allied Sciences (MUHAS), Department of Emergency Medicine, P.O. Box 65001 Dar es Salaam, if you have any questions or concerns throughout the study. Mobile: +255 717592114. Please get in touch with Dr. Bruno Sunguya, Director of Research and Publication (DRP) of MUHAS, P. O. Box 65001, Dar es Salaam, Tanzania, if you have any questions about your rights as a participant. Email: drp.muhas.ac.tz, Telephone: +255-022- 2152489.

Appendix III: Informed consent form Swahili Version

Ridhaa ya kushiriki katika utafiti ……

Jina……..

Nambari ya kuandikishwa hospitali……

Umri……..

Jina langu ni DR RUTH MWITA

Utafiti kuhusu uwezo wa mfumo wa TAPS kujua sababu ya magonjwa ya dharura ya akili kusababishwa sababu nje ya ugonjwa wa akili.

Ninaomba ushiriki wako.

Lengo la utafiti: Lengo la utafiti huu ni Utafiti kuhusu uwezo wa mfumo wa TAPS kujua sababu ya magonjwa ya dharura ya akili kusababishwa sababu nje ya ugonjwa wa akili.

Jinsi ya kushiriki: Washiriki ambao wako tayari kushiriki katika utafiti huu watalazimika kusaini fomu ya idhini. Mahojiano mafupi yatafanyika kwa mshiriki.

Usiri: Taarifa zilizopatikana kutoka kwenye utafiti huu zitahifadhiwa kwa usiri. Hakuna taarifa ambayo itaunganishwa kwako moja kwa moja na taarifa itatumika tu kwa kusudi la utafiti.

Gharama:

Hutatakiwa kulipa kiasi chochote cha ziada kwa kushiriki kwako katika utafiti huu.

Ushiriki wa hiari na haki ya kujiondoa kwenye utafiti

Ushiriki wako ni hiari na una haki ya kujiondoa kushiriki katika utafiti huu wakati wowote. Vyovyote uamuzi wako unaweza kuwa, hauwezi kuwa na athari kwa njia yoyote ya haki zako za utunzaji siri na matibabu.

Hatari: Hakuna hatari inatarajiwa kutokana na kushiriki katika utafiti huu

Faida: Ni matumaini yetu kuwa matokeo ya utafiti huu yatasaidia kujua uwezo wa mfumo wa TAPS kujua sababu ya magonjwa ya dharura ya akili kusababishwa sababu nje ya ugonjwa wa akili.

Ikiwa una maswali yoyote au wasiwasi wakati wa utafiti, unaweza kuwasiliana na wafuatao

DR Ruth Alex Mwita

Mtafiti mkuu katika utafiti huu,

Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili (MUHAS)

Idara ya magonjwa ya dharura

S.L.P. 65001 Dar es Salaam.

Nambari ya simu: +255 717 592 114

AU

Ikiwa unahitaji maelezo yoyote kuhusu haki zako kama mshiriki tafadhali wasiliana na:

Dr. Bruno Sunguya,

Mkurugenzi wa utafiti na machapisho, MUHAS,

S.L.P. 65001, Dar Es Salaam, Tanzania. Simu: +255-022-2152489, Fax: +255-022-2152489, Barua pepe: drp.muhas.ac.tz.

KAULI YA MTAFITI

Mimi mtafiti nimemuelimisha mshiriki wa utafiti juu ya madhumuni na matumizi ya huu utafiti.

Saini..... Tarehe.....

HATI YA MSHIRIKI

Mimi..... kwa hiari nakubali kushiriki katika utafiti huu. Ninafanya hivyo kwa ufahamu kamili wa madhumuni ya utafiti huu kuhusu uwezo wa mfumo wa TAPS kujua sababu ya magonjwa ya dharura ya akili kusababishwa sababu nje ya ugonjwa wa akili.

Saini ya mshiriki..... Saini ya Shahidi.....

Tarehe.....

Sehemu hii isainiwe na mzazi au ndugu wa mgonjwa;

Mimi ..... nimesoma fomu ya ridhaa na maswali yangu yamejibiwa na ninakubali mwanangu/ ndugu yangu ashiriki katika utafiti huu kushiriki katika utafiti huu.

Saini ya mzai /mlezi wa mshiriki .....

Tarehe ya idhini iliyosainiwa .....

Appendix IV: Approval for ethical clearances

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – RESEARCH, PUBLICATIONS AND INNOVATION

Ref. No.DA.282/298/01.C/1754 Date: 12/06/2023

MUHAS-REC-06-2023-1754
Ruth Alex Mwita
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: PERFORMANCE OF A PSYCHIATRIC SCREENING TOOL IN DETERMINING THE ABSENCE OF ACUTE MEDICAL ILLNESS AMONG ADULT PATIENTS PRESENTING WITH ACUTE PSYCHOSIS AT EMERGENCY DEPARTMENT OF THE MUHIMBILI NATIONAL HOSPITAL

Reference is made to the above heading.

I am pleased to inform you that the Chairman has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 12/06/2023
EXPIRATION DATE OF APPROVAL: 12/06/2024

STUDY DESCRIPTION:
Purpose:
The purpose of this analytical study is to determine the performance of psychiatrics screening tool in determining the absence of medical illness among adult patients presenting with acute psychosis at Emergency Department of the Muhimbili National Hospital.

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided:
https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%2014885.pdf and in the MUHAS archives.

The PI is required to:

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain data transfer agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain material transfer agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country,
8. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
9. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
10. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website https://drp.muhas.ac.tz/.



Dr. Nahya Salim Masoud,

Chairperson, MUHAS Research and Ethics Committee