

**DRIVERS FOR NUTRITION CARE TO CLIENTS WITH MENTAL ILLNESSES
ATTENDING UGANDAN REGIONAL REFERRAL MENTAL HEALTH UNITS**

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**Drivers for nutrition care to clients with mental illnesses attending Ugandan Regional
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DEDICATION

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LIST OF ACRONYMS

ACI	:	Agency for Clinical Innovation
BAPEN	:	British Association of Parenteral and Enteral Feeding
BMI	:	Body Mass Index
CED	:	Chronic Energy Deficiency
CMAM	:	Community-based Management of Acute Malnutrition
CME	:	Continuous Medical Education
DHO	:	District Health Officer
FANTA	:	Food and Nutrition Technical Assistance
FAO	:	Food and Agricultural Organization
FGDs	:	Focus Group Discussions
GoU	:	Government of Uganda
Hb	:	Haemoglobin
HSSP	:	Health Sector Strategic Plan
IMAM	:	Integrated Management of Acute Malnutrition
ITC	:	Inpatient Therapeutic Care
ITHBC	:	Integrated Theory of Health Behaviour Change model
LMICs	:	Low and Middle Income Earning Countries
MAM	:	Moderate Acute Malnutrition

MDGs	:	Millennium Developments Goals
MOH	:	Ministry of Health
MUAC	:	Mid Upper Arm Circumference
NCD	:	Non Communicable Diseases
NGO	:	Non-Governmental Organization
NMHC	:	National Mental Health Commission
OHCHR	:	Office of the United Nations High Commissioner for Human Rights
OTC	:	Outpatient Therapeutic Care
PLWMI	:	People Living With Mental Illnesses
RRH	:	Regional referral Hospitals
RUTF	:	Ready to Use Therapeutic Food
SAM	:	Severe Acute Malnutrition
SDG	:	Sustainable Development Goals
SPRING	:	Strengthening Partnerships, Results, and Innovations in Nutrition Globally
SSA	:	Sub-Saharan Africa
UBOS	:	Uganda Bureau of Statistics
UDHS	:	Uganda Demographic Health survey
UNAIDS	:	Joint United Nations Programme on HIV/AIDS

UNGASS : United Nations General Assembly Special Session

UNICEF : United Nations Children’s Fund

USAID : United States Agency for International Development

WFP : World Food Program

WHO : World Health Organization

OPERATIONAL DEFINITIONS

Anthropometry: The study of human body measurements especially on a comparative basis.

Drivers: These are factors influencing the provision of nutrition services to clients living with mental illnesses.

Eating disorder: Are serious conditions related to persistent eating behaviours that negatively impact health, emotions and a person's ability to function in important areas of life.

Diet: Are foods and drinks regularly consumed

Cardiovascular diseases: Are diseases of the heart and blood vessels

Malnutrition: Is a condition that results from eating a diet in which nutrients are either not enough or are too much such that the diet causes health problems

Disease Prevention: Interventions that not only prevent the occurrence of disease, such as risk factor reduction, but also arrest its progress and reduce its consequences once established.

Health: A state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity.

Health Care: Outpatient and inpatient, medical care, dental care, mental health care, acute and chronic care provided by registered health care professionals.

Health Care Professionals: These are individuals registered with the various health related Statutory Bodies who render health and any related care to improve and maintain the health status of all health care users within the Department of Health

Health Promotion: Actions and advocacy to address the full range of potentially modifiable determinants of health, including actions that allow people to adopt and maintain healthy lives and those that create living conditions and environments that support health.

Mental Health Care Practitioner: A psychiatrist or registered medical practitioner or a nurse, occupational therapist, psychologist or social worker who has been trained to provide prescribed mental health care, treatment and rehabilitation services.

Mental Health Care Provider: A person providing mental health care services to mental health care users and includes mental health care practitioners.

Mental Health Care User: A person receiving care, treatment and rehabilitation services or using a health service at a health establishment aimed at enhancing the mental health status of this person.

Mental Health Status: The level of mental well-being of an individual as affected by physical, social and psychological factors and which may result in a psychiatric diagnosis.

Mental Illness: A positive diagnosis of a mental health related illness in terms of diagnostic criteria made by a mental health care practitioner authorized to make such diagnosis.

Task shifting: The use of specialist health staff in training and supervisory roles to non-specialist health workers, as a mechanism for more efficient and effective care.

ABSTRACT

Background: The narrow approach of managing mental illnesses with drugs has made mental health to remain a global public health problem with deaths occurring as earlier as 32 years less than the rest of the population. Health care professionals in the mental health sector need to be knowledgeable and proficient in nutrition as it applies to health promotion, prevention and treatment of mental conditions. Due to the devastating medical, social, and economic effects malnutrition brings to the clients, their family and country as a whole, nutrition interventions deserve a place in the care of clients with mental illnesses. However, there is limited information on how nutrition care is being applied to promote the health of clients living with mental illnesses in Uganda.

Objective: The study examined health workers' perceptions of nutrition care; the nutrition supports offered and finally surveyed the dietary practices of people living with mental illnesses attending selected Ugandan Regional Referral mental health units.

Methods: This descriptive cross sectional study was conducted amongst 83 mental health beneficiaries and 19 healthcare workers. A purposeful sampling technique was employed to identify study participants in four Regional Referral mental units. Qualitative and quantitative methods of data collection such as; observation, key informant interviews, focus group discussions, and audio-visual materials were used in addition to check lists and food frequency questionnaires.

Results: Health workers exhibited utmost positive perceptions towards integrating nutrition in mental health care as nearly all participants acknowledged its importance. However, the lack of technical, financial, and material support frustrated this attitude.

Foods provided by hospitals lacked dietary diversity and were therefore of negligible value in promoting patients' recovery. In addition, nutrition assessment was never carried out in Regional Referral mental units. Only a few lucky clients received nutrition education.

In most of the times, food selection was governed by the desires of the clients. Patient's priorities and preferences determined food selection for any given meal from family members. As a result, diets of people with mental illnesses were mostly characterized by high fat consumption, with starch based staples and low fruit and vegetable consumption.

Conclusion: This study revealed that the drivers to nutrition care delivery to PLWMI were positive health workers' perceptions, adequate nutrition knowledge among health workers and presence of material and financial support. However, although health workers had positive perceptions, their nutrition knowledge was poor. Inadequate nutrition refresher training, lack of technical, financial, and material support were identified as the factors that inhibited successful implementation nutrition activities in mental units in the study area.

Recommendations: Enhancing mental health focused on-job nutrition training, mentorship and coaching for health workers serving in mental units; increasing the nutrition budget for mental health facilities and hiring clinical nutritionists in each mental department would improve nutrition management of clients with mental illnesses.

CHAPTER ONE

INTRODUCTION

1.0 Introduction to the study

The World Health Organisation (WHO), advocated for the right to health for all by the 21st century (HEALTH21) (WHO, 1948; WHO, 1999). This meant extending health services beyond diagnosis and treatment through health promotion and disease prevention, perceiving human beings holistically. The main aim was to improve the overall physical, mental and social wellbeing to attain the highest standard of health (Office of the High Commissioner for Human Rights (OHCHR), 2000). However, throughout the world, the physical health status of people living with mental illnesses (PLWMI) is recognized as being poor (ACI, 2013). As a result, these people are dying as earlier as 32 years less than the rest of the population due to preventable physical health and lifestyle related issues (MHDA, 2009). This leaves grieved families straining for social support. Furthermore, the psychological trauma, lack of parental affection and supervision experienced by orphans put them at risk of involvement in criminal and antisocial activities (Mock et al, 2004). As a result, they are rejected by communities where they live and seen as community out fits. This deprives them of their human rights.

In Africa, mental disorders account for a huge burden of disease and disability (Roberts et al, 2008). This is because this continent has for over decades suffered civil conflicts, high HIV/AIDS prevalence and poverty. This has widened the inequality gap and increased injustices especially among the poor and vulnerable such as those with mental illnesses.

In addition, there is massive unplanned urbanization, with a dramatic epidemiological shift from communicable to non-communicable diseases (NCDs) (Mugisha et al, 2016). All these factors do not only affect mental health, but also influence the nutrition status of affected individuals.

In Uganda, mental, neurological and substance use disorders are a major contributor to the public health burden. An estimated 35% of Ugandans (approximately 9,574,915 people) suffer from some form of psychiatric (mental) disorders (Uganda Bureau of Statistics (UBOS), 2006) and at least 15% of them require treatment (Basangwa, 2004; Sanyu, 2007). However, there is a general lack of social support to help these people access adequate health care (Sanyu, 2007) so as to enable them live a meaningful and enjoyable life.

This country has also for two decades suffered civil conflicts in the northern areas (Mugisha et al, 2015). It is widely known that war has a direct effect on people's mental health and impacts greatly on agricultural activities (Roberts et al, 2008). This negatively influences the nutrition status of affected people, which aggravates mental breakdown.

A series of factors have been seen to impact on the nutritional status of People Living With Mental Illnesses (PLWMI). Many of these issues are due to a complex interaction between a variety of causes including inability to interact with others, inability to make sound own decisions and at times inability to make for themselves meals, or even select or buy their own food stuffs (Kvamme et al, 2011). All these sprout from alteration in cognitive function and if not checked early can graduate into various health conditions thus, affecting a person's wellbeing and making those affected more dependent.

Nutrition care in mental health facilities is still a far-fetched concept, yet many people continue to silently suffer nutrition related conditions amidst mental disorders (Patel et al, 2013). These people

suffer a deteriorating health life, prolonged mental breakdown episodes, longer admission days and prolonged side effects of mental drugs (Masand et al, 2009). Being admitted in hospital for long make them vulnerable to other illness because the setting attracts many people with diverse illness, some of which are infectious and chronic. Secondly, hospital settings have demarcated boundaries, preventing PLWMI to socialize freely and move like they would be at home, which hinders quick recovery. On the other hand, hospital as a setting has rules and guidelines which may be a learning curve for the patients. Secondly, the presence of other people around in case they are in good health may be a good network to interact with, chat with and learn from in case they have similar problems. In other words the mentally sick feel stronger when they realize they are not the only people in that condition.

Malnutrition is a devastating medical, social and economic problem for PLWMI, their families, and the country as a whole (WHO, 2015). The health consequences of these deficiencies are silent but devastating, invisibly eroding the development potential of individuals, societies and national economies (FAO, 2015). This is because those who are responsible to curb this situation have not put enough efforts and focus on the problem. As a result, many individuals, communities and nations have remained in absolute poverty for decades.

Although, the human right to adequate food is recognized in several instruments under international law (OHCHR, 1999), nutrition care for people with mental conditions is still a far-fetched concept, yet many of these people continue to silently suffer nutrition related conditions amidst mental disorders (Patel et al, 2013). They thus, suffer a deteriorating health life, frequent mental breakdown, longer admission days and more side effects of mental drugs (antipsychotics) (Masand et al, 2009).

Despite sustained economic growth and poverty reduction, food and nutrition security remain the fundamental challenge to human welfare in Uganda. Almost 30% of households in Uganda are considered food insecure (FAO, 2010; Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING), 2015; Nekatebeb et al, 2013). This is no exception for people living with mental health conditions who often lack access to food or if chanced can only access foods that lack dietary diversity (Strassnig et al, 2005). This is often complicated by cultural and social traditions in addition to the scourging poverty levels.

According to SPRING (2015), health workers in hospitals have had little training on nutrition focus areas compared to health centre levels IV and III. Yet, none of the lower level health centres has a mental unit. This does not only affect nutrition care delivery in hospitals, but also endangers the lives of many people seeking nutrition help form hospitals.

Although mental illnesses are influenced by genetic, hormonal, immunological, biochemical, and neurodegenerative factors, diet is known to modulate each of these factors and, as a result, has a reasonable impact on the health of persons with mental illnesses (Jacka et al, 2013). Diet has also been seen to influence inflammatory processes, which are thought to play logical causative role in the onset and maintenance of not only mental illnesses like depressive disorders, but also plays a central role in the high-prevalence of heart diseases, diabetes and cancer (Shah et al, 2008). These factors combined together result in detrimental effects on the lives of people living with mental illnesses.

Severe nutritional deprivation in early life causes disastrous physical and irreversible brain effects, with a series of adulthood outcomes including mental disorders among affected individuals. Lumey et al (2011) and Venables & Raine (2012) highlighted that those permanent deficits in brain and behavioural functioning sprout from malnutrition during the critical period of brain

development in the first 1000 days (pregnancy and the first two years). In support of this, Uganda's Integrated Management of Acute Malnutrition (IMAM) guide lines (2010) stresses that brain damage resulting from malnutrition occurring within the 1000 days of life is irreversible. Therefore, the current high rate of malnutrition especially among the below two years places a big threat on Uganda's future generation to develop mental health conditions.

Eating disorders often co-occur with psychiatric disorders and mental disturbances, including depression, anxiety, obsessive disorders and substance abuse disorders (Flament et al, 2001). Deficiencies in particularly B vitamins present with features of mental illnesses and marked impairments in social functioning (Kaye et al, 2004). As a result, serious heart diseases and neurological complications as well as impaired physical development occur in this category of people (Mitchell et al, 1991). Consequently, health promotion approaches and social services for this group of people are required to prolong their lives. As a matter of fact, it would be a disservice if nutrition care services are withheld from PLWMI.

As Kolappa (2013) states, "there is no mental health without physical health and vice versa", people with serious mental health problems have increased rates of physical illness compared to the general population leading to premature death and reduced life expectancy. Various factors associated to living with a mental illness such as, lifestyle health behaviours (smoking, physical inactivity) result in increased rates of morbidity and mortality (Hardy & Gray, 2014). Being aware that financial and intellectual resources in any nation are not always adequate for a timely response, the search for appropriate health promotion strategies aimed at improving individual or group health and quality of life is therefore warranted. As a matter of fact, there is a need for medical interventions to shift focus from the individual oriented curative medicine to group/community oriented preventive medicine through health promotion interventions (WHO, 2015).

As in the 1986 Ottawa charter, the use of health promotion approaches to enable people to increase control over and to improve their health and its determinants such as nutrition interventions would increase and improve the quality of life (Laverack, 2007). Similarly, the use of nutrition assessment, education, guidance and coaching in kitchen gardening skills would cheaply promote the health of PLWMI. Such interventions have been long overdue and as a result, people living with mental illnesses have continued to live in misery in addition to suffering premature deaths (ACI, 2013; Mental Health, Drug and Alcohol Office (MHDAO), 2009; National mental Health Commission (NMHC), 2012).

According to Rosenfield (2012), medication for mental illnesses exacerbates weight gain, as they are known to increase appetite and lower physical activity. Strong evidence suggests two to three fold excess weight gain prevalence in people with severe mental illness than in the general population. Hence, a higher risk of developing other conditions associated with overweight, obesity and heart diseases (Allison & Casey, 2001; Hasnain & Fredrickson, 2010). Such conditions are more likely to increase the burden of disease without active health promotion interventions, augmenting the lowering of life expectancy of PLWMI. This research therefore explored nutrition care and other nutrition practices among people living with mental illnesses.

1.2 Background to study area

This study was conducted in Ugandan Regional Referral Hospital mental health units, located at Regional Referral hospitals. These units are public health facilities offering mental health services to a catchment population designated to the mother Regional Referral hospital.

Currently, Uganda has a total of 13 regional referral mental health facilities manned mostly by psychiatric clinical officers and nurses.

In Uganda, mental health service provision is more pronounced at national and regional referral levels. In a bid to extend the service to lower health facilities, psychiatric nurses have been recruited especially at district and health sub-district level. However, the services offered at these facilities remain minimal, worsened by frequent drug stock outs (Ndyabangi et al, 2012). Furthermore, there are no nutrition specialists at these lower health facilities (MOH, 2010a).

Butabika hospital is the major mental health care provider in Uganda with a bed capacity of 550, followed by a 50 bed mental health unit at Mulago National Referral Hospital. In the financial year 2009/2010, Butabika hospital provided inpatient mental health care to 4,394 first time admissions and 1,752 readmissions, totalling to 6,146 admissions for mental disorders at the tertiary level in one year (Ndyabangi, 2013).

Each of the 13 regional referral hospitals has available psychiatric beds capacity ranging between 16 and 40, with an average length of stay for a patient of 2 to 3 weeks (Ndyabangi et al, 2012). In these facilities, between 170 and 360 patients receive inpatient services per year while an average of 1624 (between 748 and 2500) patients are seen as outpatients. There is very little reliable data on treatment rates or service utilization at district general hospital and health centre levels (Ndyabangi et al, 2012).

By the year 2013, Uganda had registered 28 psychiatrists. These are mostly concentrated in the urban areas of Kampala, leaving the regional referral mental units with no option, but to be managed by psychiatric clinical officers (PCOs). Two hundred and twenty seven PCOs (1 per 154,185 people) and five hundred nurses (1 per 70,000 people) are known to be engaged in active mental health service delivery (Ndyabangi, 2013). In reality, this number of mental health care work force is too small for a country like Uganda which has suffered long term civil unrest,

poverty, and currently burdened by refugees from Democratic Republic of Congo (DRC), Rwanda, Burundi, South Sudan, and the post-election refugees from Kenya.

In Uganda, mental health services are arranged around a primary health care model built on the integration of mental health care into a decentralized health-care delivery system through the local government level at the district, to regional referral hospitals and finally the national referral hospital. This health structure is supported by a referral system, which includes regional referral hospitals, that have a mental health unit and the National Referral Hospital at Butabika (Ndyabangi, 2009). This kind of referral seems to be excellent for a lineal system of mental health management especially in situations where the use of mental stabilizing drugs is the order of the day. However, effective management of mental conditions require a multidimensional approach, involving psychiatric officers, nurses and other allied health workers for example, psychologists, occupational therapists, social workers and nutritionists, many of whom are lacking in some health facilities.

Furthermore, management capacity in the Ugandan health system is still very limited because leadership, management and specialist skills are in short supply at all levels of health care. At the same time, many health facilities continue to suffer high levels of staff attrition (Matsiko, 2010). This situation frustrates capacity building initiatives, which negatively impacts health systems. At the same time the creation of many districts over the past decade has over stretched the capacity of the Ministry of Health (MOH) to manage them (MOH, 2010a; MOH, 2009).

Various parts in Uganda every year are hit by natural calamities, exposing many people to food insecurity and famine. It was found out that famine exposure or prolonged food deprivation over months in early gestation increases the risk to schizophrenia in adult age (Susser, et al., 2008). In support of this, a two-fold increased risk of schizophrenia among those conceived or in early

gestation at the height of famine was reported in psychiatric hospital records from different sites (Xu, et al., 2009). However, despite Uganda's investment in agriculture, famine, food scarcity and deprivation continue to be a problem to many communities (SPRING, 2015). This is because programs expected to reduce food scarcity such as the National Agricultural Advisory Services (NAADS) project have continued to register more failures than successes (Kyambadde, 2014).

Despite being a part of non-communicable diseases that are on a rise globally, mental illnesses have received little attention in terms of nutrition care management especially in developing countries (Mfoafo-M'Carthy & Huls, 2014). There is a strong relationship between mental diseases and other non-communicable diseases. People with serious mental health problems have increased rates (5%) of developing physical illness compared to the general population, leading to premature death and reduced life expectancy (Hardy & Gray, 2014). However, despite all this evidence, no dietary advance has been made to improve the livelihood of people living with mental illnesses in Uganda especially in terms of understanding, and managing their eating disorders.

1.3 Problem statement

According to this research, “drivers” are factors that influence the provision of nutrition care to clients living with mental illnesses. There is a general lack of specific strategic goals, guidelines and appropriate programs to put nutrition interventions into operation as well as a system for monitoring and evaluation of progress (Ecker & Nene, 2012). As a result, some vulnerable populations especially PLWMI have received no attention whenever nutrition interventions are implemented. Secondly, the Uganda's mental health draft policy does not acknowledge nutrition as a key priority area (Sioban et al, 2014). This does not go unnoticed, but passes with heavy economic implications as lots of public funds are spent in managing the secondary medical

conditions such as diabetes, which would otherwise be cheaply prevented through health promotion approaches such as nutrition status assessment, nutrition education, counselling and demonstrations on food production, processing and preparation. Unfortunately, management of mental health conditions has been a piecemeal approach with a narrow focus of using brain stabilising drugs (Holt & Peveler, 2010). As a result, under looked conditions, most of them being nutrition related such as obesity, diabetes and heart diseases have emerged to cause a double tormenting effect on PLWMI (Acosta, 2011). This has eventually translated into long term suffering and shortening of the life expectancy among patients with severe mental illness.

Although genetic makeup may play an important role, research suggests a direct link between various mental health conditions and nutrition deficiencies (Wilson et al, 2010). Some nutrients like B-vitamins, omega-3 and omega-6 fatty acids are precursors to neurotransmitters like serotonin (Lakhan & Vieira, 2008; Siobhan et al, 2014). They thus, have a direct link to mental wellbeing and could therefore be employed in managing some of the mental health conditions or used to prolong the occurrence of mental breakdown.

However, due to lack of access to adequate food, poor food selection and preparation habits, and over reliance on care givers for social support and decision making, many PLWMI continue to suffer frequent mental breakdown despite being on brain stabilising drugs due to lack of effective nutrition interventions (Freudenreich, 2005). Efforts to implement nutrition programs in mental health care settings have only achieved a mild success. Despite the government of Uganda formulating a number of strategies such as, the Uganda Nutrition Action Plan (UNAP) in 2011, and implementing the Integrated Management on Acute Malnutrition (IMAM) guidelines in 2010, services offered by nutrition units in regional referral hospitals remain focussed on people living with HIV/AIDS, children, hypertensive and diabetic clients, neglecting those living with mental

health conditions (USAID, 2014). This kind of approach has resulted into a significant gap between the level of mental health needs and the availability of quality services to appropriately address them. As of now, it is only Butabika National Referral Hospital that officially provides food to clients admitted with psychiatric illnesses. Providing food to clients admitted in regional referral psychiatric units is still problematic.

Satisfactory data suggests that mental health drugs have undesirable side effects associated to over stimulation of appetite and involuntary excessive weight gain which culminate into multiple co-morbidities, reduced productivity and shorter life expectancy (Lambert, 2011; Acosta, 2011; Wallace, 2009; Rosenfield, 2012). These should be seen as a burden that warrants special intervention, which fortunately can all be controlled by nutrition interventions. However, there are no clear interventions designed to minimise these potentially dangerous effects that exist among the people living with mental illnesses.

Although, targeted nutrition interventions for non-communicable diseases exist in Uganda, no special accord has been awarded to mental illnesses at the moment, even when evidence suggests that a range of nutrition interventions are effective in treating and preventing mental disorders (Ssebunnya, et al., 2012). This justifies the need for this study. In addition, most studies have mainly ended on exploring how specific nutrients affect the body and brain functioning without an attempt to assess how health workers in mental units perceive the importance of nutrition care in mental health and how clients are being helped to improve their feeding practices. This research intends to cover this gap.

1.4 Research questions

1.4.1 Primary research question

What factors are influencing nutrition care to clients attending Ugandan Regional Referral mental health units?

1.4.2 Secondary research questions

- i. What perceptions do health workers in regional referral mental units have towards nutrition care in mental units?
- ii. What nutrition support interventions are being offered in Ugandan Referral Hospital mental health units?
- iii. How can good dietary practices be fostered among stable clients living with mental illnesses?

1.5 Theoretical model

In this study, the Integrated Theory of Health Behaviour Change (ITHBC) was chosen to help address gaps in nutrition care for people living with mental illnesses (Ryan, 2009).

This theory is a multifaceted model that integrates the Theory of Reasoned Action (Fishbein & Ajzen, 1975; Ajzen, Albarracin, & Hornick, 2007), the Social Cognitive Theory (Bandura, 1989), Theory of Health Behaviour Change (Clark et al, 1991), Self-regulation Theory (Baumeister & Vohs 2004), Social Support Theory (Cohen et al, 2000) and self-management of chronic illnesses (Ryan, 2009). This comprehensive integration of various theories helps specify how external variables, individual differences, and underlying beliefs contribute to the different influence pathways for outcome behaviours, intentions, attitudes, norms, and self-efficacy (Bridges et al,

2015; Hunter et al, 2009). The ITHBC is therefore a blending of concepts from multiple theories and numerous empirical studies. The model posits that fostering positive health behaviour change within primary care is critical to the improvement of one's health (Ryan, 2009).

Furthermore, the self-regulation, a concept from social learning theory (Bandura, 1986; Baumeister et al, 1998) includes what many people call "*will power*." Self-regulation includes cognitive and behavioural processes that involve the initiation, termination, delay, modulation, modification, or redirection of a person's emotions, thoughts, behaviours and physiological responses (Compas et al, 1999). However, since we are dealing with people who have cognitive challenges especially during periods of mental breakdown, self-regulation concepts can only be employed during moments when the clients are stable or through their care takers. Self-regulation is critical in health-protective and health-maintaining behaviours such as eating a healthy diet, engaging in regular exercise, and managing stress. The ITHBC model is therefore suitable in helping people with mental illnesses improve their health. It is upon the foundations of the above reasons that the researcher choose to use the ITHBC model in this study.

This model is based on the assumption that behaviour change is a dynamic, iterative process, while desire and motivation are prerequisites to change, and self-reflection facilitates progress (Braun, 2012). Positive social influences sway one's interest and willingness just as positive relationships help to support and sustain change (Ryan, 2009). It is therefore possible that mental health beneficiaries can adopt good nutrition practices through educative interactions such as nutrition education, counselling and demonstration with health workers.

Being enhanced by (a) fostering knowledge and addressing health beliefs, (b) increasing self-regulation skills and abilities and (c) social facilitation through family and health care providers,

the ITHBC model can be used to guide the identification, planning, implementation, and evaluation of various health improvement initiatives in the nutrition care for PLWMI.

Through these three components, this study focused on how health workers can foster nutrition knowledge to clients with mental illnesses, how self regulatory skills and client's potentials can be enhanced, and how social facilitation with the aim of improving of the quality of life of people living with mental illnesses through good dietary practices can be enhanced (Ryan, Weiss, Traxel, & Brondino, 2011).

Since the health promoting behavioural activities that individuals engage in are almost always voluntary, using the ITHBC model guarantees participatory processes where all stake holders such as mental health clients, their family members and mental health care givers are involved at the time of diagnosis of the problem, planning, selection of interventions, implementation and evaluation of the interventions (Ryan, 2009).

Ryan (2009) further mentions that engagement in healthy behaviour is an outcome that can be realized in the short-term (a proximal outcome), and engagement in health behaviour influences and leads to improvement in health status as the distal outcome realized over time. In this study, clients' or attendants' engagement in nutrition related activities conform to a proximal outcome, while improved general health (normal nutrition status, reduced mental breakdown) is a distal outcome.

By using of the mental unit as a setting where people with common characteristics (mental illness) can converge, the ITHBC model can help to create nutrition related health literacy among clients and their care givers. Through the use of mental health workers and nutritionists, mental health beneficiaries can be helped to make informed nutrition decisions, be guided on how to achieve

those decisions and conduct self monitoring and self evaluation. This results into better abilities to engage in self management behaviours leading to improved health outcomes (Ryan 2009).

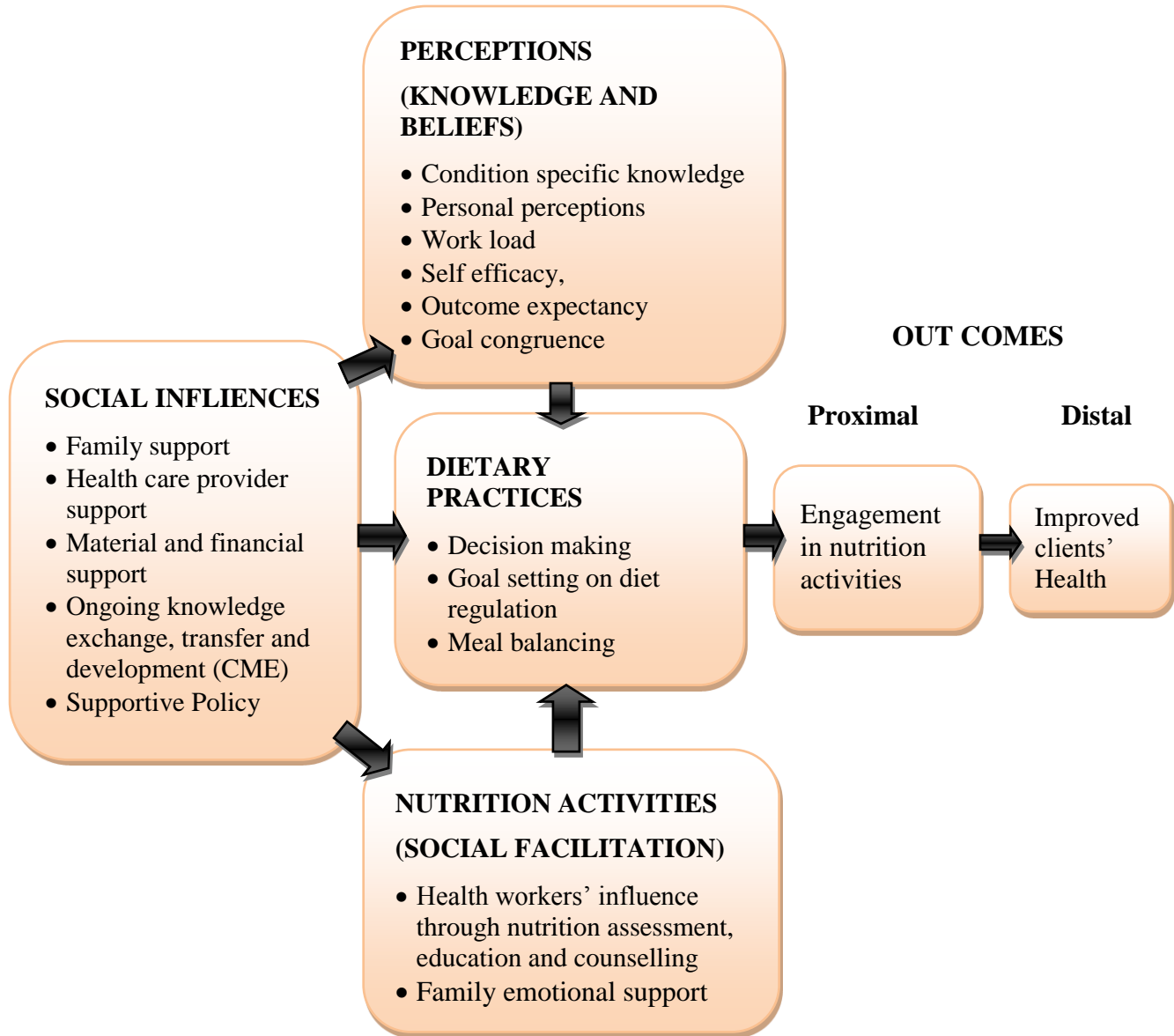


Figure 1: The Integrated Theory of Health Behaviour Change adopted from Polly Ryan, (2009)

The researcher sought to foster health behaviour change to improve nutrition care to people with mental illnesses, by enhancing knowledge and beliefs, facilitating development of self-regulation skills and beliefs, and enriching social facilitation.

This therefore requires mentoring and coaching health worker in nutrition education, assessment and care. The health workers can in turn educate clients and their care givers on nutrition related skills such as balancing meals through food demonstrations, kitchen gardening, food preparation methods and self monitoring.

Concepts from the ITHBC were also used to develop an intervention related to the prevention or attenuation of osteoporosis. The intervention was designed to foster health behaviour change, specifically osteoporosis prevention, by enhancing knowledge and beliefs, facilitating development of self-regulation skills and beliefs, and enriching social facilitation. In this intervention, it was found out that the ITHBC model was foundational to the development of the intervention (Ryan & Pumilia, 2009).

However, the ITHBC model is useful where there are Behavioural Health Consultants (BHCs) (licensed behavioural health care providers such as clinical social workers or psychologists who work within primary care as a “member of the team,” providing evidence-based behavioural health intervention to individuals in need) (Hunter et al, 2009). In low income countries such as Uganda, where human resource for health is scarce (Ndyabangi, 2012), it may be difficult to hire BHCs. This can cause failures in the program.

Secondly, sparse research exists using the ITHBC in the prediction and explanation of people living with mental illnesses and their dietary practices (Braun, 2012). For this reason, some concepts from the settings approach theory were borrowed to enable effective engagement of

health workers to conduct nutrition assessment and transfer nutrition knowledge through nutrition education to clients and their attendants. This is because the a settings approach views the physical, organizational, and social contexts in which people are found as the objects of inquiry and intervention (Poland et al, 2009). The settings based approach puts focus on policies across several systems that influence the setting; infrastructure and assigned staffing to support coordination of multiple programs; ongoing workforce development; ongoing knowledge exchange, transfer, and development; regular monitoring and reporting on progress; explicit procedures to identify emerging issues and trends and priorities; and explicit plans for sustainability (Elliot et al, 1998). Integrating these in the ITHBC model enhanced the researcher's ability to assess the magnitude to which the mental health policy, infrastructure, health work force development in nutrition issues, knowledge transfer to clients and how mental health beneficiaries are utilizing this knowledge to improve their wellbeing.

1.6 Goal

To contribute to the improvement of mental health care in Uganda through the identification of gaps in nutrition care to clients with mental illnesses so as to improve their health throughout their lifespan.

1.6 1 Aim

To generate information that will contribute to raising awareness and enable the different stake holders in the world of mental health care take on their roles in improving nutrition practices for PLWMI so as to enhance the management of mental health conditions and improve health.

1.6.2 General objective

To assess the drivers for nutrition care to clients attending Ugandan Regional Referral mental health units

1.6.3 Specific objectives

- i. To examine health workers' perceptions for nutrition care in regional referral psychiatric units
- ii. To establish the nutrition support services offered to patients at Ugandan Regional Referral mental units.
- iii. To assess the dietary practices of people living with mental illnesses attending Ugandan Regional Referral mental health units.

1.7 Justification

The results generated from this study helped to identify and advice hospital managers and mental health care providers on the best ways through which nutrition interventions to clients with mental illnesses can successfully be fostered. Through the ITHBC model results from this study enhances collaboration between top health manager, nutritionists, mental health care providers and mental health beneficiaries. This promotes health through increased health literacy and good eating habits. Furthermore, results from this study are intended to convince policy makers to address social issues surrounding mental health, food insecurity and diet. All these are focused at health promotion through protection of health and prevention of disease. In addition, the dissertation is to be availed to the University library after approval and if possible published so as to be referred to by other researchers when working in a similar area.

1.8 Significance of the study to Public Health and Health Promotion practice

This study intended to explore the health habits of a marginalised group of people, risk exposure to poor health and how best practices can be employed to improve health in this group of people. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition (WHO, 1964).

Public Health practice advocates for the rights of the vulnerable because there is a need for them to equally access services just like other people, irrespective of their health state (OHCHR, 2006). In regard to this, PLMI are not considered moral agents (Payne, 2012) and are not commonly considered important in communities (Sayce, 1998, Sayce & Curran, 2007). The fact that they are sometimes not in sound mind and cannot make sound judgement, they are looked at as hopeless, powerless and frequently marginalised. This puts them at risk of losing their freedom and human rights (Morgan et al, 2007; OHCHR, 2006), which furthermore puts them at risk of being exploited, abused, neglected, discriminated and denied the right to care surprisingly by those closest to them (Teferra et al, 2011). As a result they live in poor health, which does not only affect them but also those around them. PLWMI often have continued on an off mental breakdown and many times lack meaningful employment. This leads to financial constraints and as a result, they persistently face challenges in meeting their health needs including access adequate food, especially if they require financial inputs. This thus, violates their right to a sound health and access to adequate food. The latter human right is seen as of crucial importance for the enjoyment of all other rights. According to the United Nations High Commissioner for Human Rights (UNHCHR), (1997), the right to adequate food is only realized when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or means

for its procurement (UNHCHR, 1997). As for people with disabilities such as those with mental illnesses, this right is only realised through reliance on their care takers who in most times fail to meet their obligation of providing regular, adequate and balanced meals to enjoy the benefit of better health. Until now, very little success has been reported with regard to nutrition care among PLWMI. The reasons for such phenomenon therefore, need to be explored. This would improve health and help PLWMI enjoy living a better and meaningful life. This study therefore contributes to helping mental health care providers including clients and their attendants to learn and apply nutrition practices aimed at improving the general health of PLWMI.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter explores available literature concerning nutrition care and the dietary practices of people living with mental illnesses. It started by exploring health workers' perceptions on providing nutrition care in mental units, followed by examining the existing nutrition interventions being offered in regional referral mental units and then dug into the dietary practices of people living with mental illnesses. Each of these elements was discussed basing on findings from various studies, with a focus on improving the quality of life for PLWMI. Thereafter, a general discussion on nutrition requirements were compared to the existing nutrition practices.

2.1 Health workers' perception of nutrition care to PLWMI

2.1.1 Priorities

Mental disorders are prevalent in all regions of the world and are a major cause of low productivity and contribute to more than 10.4% of the total global burden of disease (WHO, 2008; Murray et al, 2012). Despite this striking fact, budgetary contributions towards mental health services especially in Low and Middle Income Countries (LMICs) is disproportionately low, compared to physical health problems (Saxena et al, 2007). As a result, there are constraints in implementing other avenues geared towards improving the quality of life for PLWMI.

Nutrition oriented evidence-based treatments for mental disorders are available and have been shown to be appropriate for Low and Middle Income Country (LMIC) settings (Patel et al, 2007). However, in these countries, most health workers in mental departments have a tendency to over

rely on synthetic brain stabilising drugs, which are often out of stock due to limited budgetary allocation (Kvamme et al, 2011). This creates a miss match between effective mental health care and the burden of metal disorders, leading to a large treatment gap and as a result many clients experience relapses and treatment failures.

Compared to less than 50% in high-income countries, up to 90% of persons with severe mental disorders go untreated in LMICs (Kebede et al, 2003; Wang et al, 2007). The consequences of untreated mental disorders in LMICs are substantial, often associated with personal suffering, premature mortality, poorer physical health and caregiver burden, stigma, discrimination and abuse (Teferra et al, 2011; Prince et al, 2007; Lund et al, 2012; Teferra et al, 2003; Thornicroft et al, 2009). With the limited budgetary allocation, cheaper approaches like targeted nutrition care would be opted for other than over reliance on synthetic brain stabilising drugs. Owing to the fact that nutritious foods are readily available in many African countries; targeted nutrition approaches have a place in the care and management of mental illnesses (Lakhan & Vieira, 2008, Mitchell et al, 2014). Health workers therefore ought to educate clients and their care givers on important nutrition tips to minimize relapses and the need for over reliance on the already scarce and expensive mental drugs.

Specialist mental health workers are scarce in LMIC settings and cannot, in isolation provide the solution to mental disorder management gap (Kakuma et al, 2011). In Uganda for example, by 2013, only 28 psychiatrists had been registered (about one psychiatrist per 1.24 million people) (Ndyanabangi, 2013). They are therefore very few and secondly, they are mostly concentrated in city areas and hospital settings, which are not accessible to the majority of the population (WHO, 2008). This leaves most of the mental units manned by low level cadres. The incorporation therefore of targeted nutrition components into mental health care, through a model of task sharing

from mental health specialists to clients and their caretakers, is advocated for as the best approach to narrow the management gap for mental disorders beyond the hospital setting.

Mental health service provider initiated nutrition care to PLWMI in the mental health care setting has potential benefits. These include the provision of a more holistic and locally available care, easier acceptance of nutrition messages, with rewards of behaviour change and better physical health outcomes (Ryan, 2009). These result into a decrease in the economic burden of care and a greater chance of maintaining contact with family support systems (WHO & Wonca, 2008).

Furthermore, co-morbidity between physical and mental health conditions is high and the expression of mental health problems as physical symptoms is widespread and often undetected in the general health care settings (Prince et al, 2007; Gureje et al, 1997). However, despite the desirability of task sharing from a public mental health and health service planning perspective, little is known about the perception of frontline mental health workers on taking on nutrition service delivery roles. The utilisation of the ITHBC with some constructs from the settings based approach as described by (WHO, 1988; Ryan, 2009) seem important in gathering the focus of family members and health care providers to address the above issues. This is because the model focuses on policy issues and social affiliation through family, community and health care providers

A recent systematic review of the acceptability and feasibility of task sharing mental health care in LMICs found that studies were scarce and were often concerned with clearly circumscribed interventions for specific disorders rather than providing a general mental health service (Padmanathan, 2012), a phenomenon that has created a knowledge gap and therefore calls for a need to know how different mental health care givers including family members, coordinate to improve the nutrition status of PLWMI.

2.1.2 Acceptance

Strong normative reasons relating good nutrition to proper brain functioning and human wellbeing exist. Good nutrition fosters normal brain functioning, with B vitamins, omega 3 and 6 showing excellent abilities in controlling mood disorders (Ecker & Nene, 2012). It is therefore easy for one to think that such evidence would stimulate policy makers to address nutrition challenges as an issue of public concern especially in mental health care so as to improve health. However, the over dependence on synthetic pharmaceutical drugs has derailed both the technical people and policy makers (Rosenfield, 2012). Hence, the minimal advance in nutrition approaches.

Recent evidence from observational studies suggests that habitual dietary intake can play a fundamental role in the risk for and progression of common mental disorders (Sanchez-Villegas et al., 2011,). Thus, it seems reasonable that a proportion of the burden of mental illnesses is potentially preventable by targeting dietary behaviours. Through the ITHBC model, it is hoped that by fostering health workers' and family care givers' knowledge and addressing their existing health beliefs will help to provide a holistic nutrition care package to PLWMI, with a resultant improvement in their general health.

2.1.3 Concerns related to work load

Throughout the world, health workers' experiences in different clinical areas of practice have received increasing attention in recent years. Evidence from developed countries shows interesting results about the experiences and work load concerns of health workers in acute psychiatric admission units (Zarea et al, 2012). However, in developing countries, such as Uganda, unlike the general concerns of health practitioners, little is known about the concerns of those who care for acutely ill psychiatric patients (Ngako et al, 2012).

Over and over again, it has been shown that Uganda's health work force is inadequate. Despite this known fact, efforts to increase health workforce have been futile due to a small health budget allocation, worsened by the rapidly growing population (UBOS & ICF, 2011).

There are inadequate human resources for health in most Ugandan health facilities. According to a report on the state of regional referral hospital, a considerable gap not only exists within the nursing cadres, but also the paramedics, doctors and is worse with specialist doctors (HURINET-U, 2012). The above author reveals that Ugandan regional referral hospitals have an average of 33% shortage of all medical staff positions to be filled for effective service delivery. Mental health units are similarly facing the same crisis. This shortage is suggestive that the available health workforce is over-worked hence the failure to take on other tasks in an integrative manner. Furthermore, HURINET-U, (2012) points out that there is poor staff motivation, with poor remuneration in addition to under staffing. "Most working conditions are characterized by poor staff accommodation and congested working space. As a matter of fact, health workers in mental units operate in a risky and dangerous environment without adequate protection and security". This demotivates even the most committed workers and generally affects service delivery. As a result, the quality of service delivery is affected.

In most situations, nurses are at the forefront of the health care system in the country, including the mental health system. They provide daily psychiatric care to both inpatient and outpatient psychiatric clients (Sobekwa & Arunachallam, 2015). They work in challenging and uncompromising acute inpatient psychiatric units which demands different levels of specialized care (Mullen, 2009; Kakuma et al, 2011), and are not only faced with the challenge of having to provide care to the acutely ill patients, but also face heavy workload due to a severe shortage of nursing personnel in acute psychiatric units (Van Rensburg & Jassat, 2011).

Mental units are most of the times extremely busy, high pressured environments and health care providers working in these units have to deal with patients who suffer from complex mental health problems (Kalisch et al, 2010). This kind of workload may cause demotivation leading to low job satisfaction amongst health workers in psychiatric units.

2.2 Nutrition interventions in psychiatric units

The practical use of nutrition-based preventive and curative interventions is rapidly growing in the medical field. This is moving together with implementation research with the aim of improving the delivery of best practices (Kris-Etherton et al, 2014). However, nutrition interventions need to be focused depending on the psychiatric condition since not all mental conditions require the same mode of nutrition management. For example, the scope and types of nutrition services provided in mental treatment programs has not been well defined nor has there been an attempt to determine if associations exist between the provision of nutrition services and specific mental illness treatment outcomes such as substance abuse (Grant et al, 2004).

Nutrition plays a major role in brain function and well-being in people with mental illnesses (BAPEN, 2010). There are numerous examples of beneficial patient outcomes resulting from nutrition practices in inpatient, outpatient, and community settings. In acute care settings, best nutrition practices have been shown to improve patient outcomes and reduce health care costs (Rosen et al, 2013).

2.2.1 Nutrition education to client/attendants

Nutrition education has a great influence on nutrition and related lifestyle factors, which greatly impact the wellbeing in health and disease. Throughout the world, patients and the public remain confused about the correct nutritional advice to follow given the widespread media

unauthenticated dietary information and the disparity in nutrition health related messages that are in circulation (Kohlmeier et al, 2015). These messages leave the public confused about the choice to make.

Nutrition knowledge is essential as it applies to health promotion and prevention, as well as treating acute and chronic diseases. However, despite the profound impact good nutrition has on health and wellness, the science of nutrition and its application to health care is not fully integrated in most health profession training programs (Ecker & Nene, 2012). This gap is further compounded by the fact that although dietitians and nutritionists are recognized as the health care professionals with nutrition expertise, they are very few compared to service needs. Not only the above, but also most health care professionals exhibit little knowledge and competence in nutrition education (Kohlmeier et al, 2015).

Poor dietary practices among people living with mental conditions are of great concern. The prevalence of obesity is also increasing among individuals with mental conditions as demonstrated by a significant percentage of overweight and obesity among this category of people (Prince et al, 2007). However, nutrition education (NE) programs, helping individuals with mental disorders to improve their dietary practices and to make informed choices about their diet quality and lifestyle, have received scant attention (Bhurosy & Jeewon, 2013). This does not foster behavioural change and hinders the adoption of good dietary practices. Adopting the ITHBC model however, may have positive strides on behavioural change towards good dietary practices. This is because this model puts emphasis on fostering knowledge, enhancing self-regulation skills and social facilitation through family, community and health care providers.

Findings support the position that nutrition education is an essential component of psychiatric treatment programs and can enhance treatment outcomes. However, there is a general lack of

nutrition knowledge among most health workers especially the lower carders (Munuo et al, 2016). According to the same author, most health workers only obtain basic nutrition training in medical/nursing schools. “There are a number of gaps in nutrition-related knowledge among health worker”. In most health settings, nutrition education is a rare activity and usually haphazardly performed, with most health workers not using any guidelines. They instead rely on information from expert patients (Yalcin et al, 2013). This creates huge gaps between the services provided and the client’s specific nutrition needs and as a result, clients’ nutrition needs are not addressed during admission period or follow up visits.

Educational interventions can confer modest beneficial effects in helping people to address their nutrition deficiencies, while healthy lifestyle education programs for people with mental conditions can address high-risk behaviours such as alcohol consumption and smoking (Louise et al, 2004; Bhurosy & Jeewon, 2013). With an effective health promotion model like ITHBC which this study is using, these programs can effectively be implemented. However, nutrition education has always been generalized for all mental conditions; with the scope and types of nutrition education provided not well defined (Grant et al, 2004). This leaves care providers confused about the education model to use in addressing nutrition issues, leading to failure of the program.

2.2.2 Client risk screening and assessment

People with mental illness have a significant number of problems with associated physical illnesses and disability (Scott & Happell, 2011). In addition, they suffer numerous effects of eating disorders such as accumulating a lot of fat in the body, thought to be caused by some of medications for mental health (Lambert, 2011). However, according to Taylor and colleagues (2012), the choice of mental treatment and regular monitoring through nutrition screening may help to reduce some

of these risks, as well as helping to minimise the onset of excessive weight gain or even other non communicable diseases such as diabetes. Furthermore, some treatments for mental illnesses such as clozapine cause excessive salivation (Freudenreich, 2005). These impact normal eating, increase body fluid requirements and can be a risk for choking. These can be combated by empowering health workers, who intern train and foster clients' knowledge on nutrition practices that can help in minimising the above side effects with the help of their family members (Ryan, 2009).

Screening for malnutrition is not routinely carried out in every care setting (BAPEN, 2010). Evidence to this is the absence of nutrition related data captured from key contact places using the common health management information system (HMIS). The available HMIS register books are deficient of space to capture mid upper arm circumference (MUAC), height, body mass index, and nutrition status classification. This makes it hard to know individuals with greatest need for nutrition care due to absence in HMIS registers. As a result, many opportunities for nutrition intervention are always missed.

The health and social care costs associated with malnutrition are enormous, and are often inevitably incurred. This is because the loss of appetite and the disorders that follow always accompany serious illness and impairment of body functioning. Yet, simple interventions such as oral nutritional supplements in targeted patients are highly effective, while using small fractional savings which eventually result in substantial cost savings (BAPEN, 2010).

Noting that there are specific problems in mental health such as learning disabilities, nutrition care for such clients should always involve nutrition screening. This is because screening is the only way through which individuals with nutrition problems can be identified and appropriate action

taken (BAPEN, 2003). Regular nutrition screening can therefore address the feeding problems that surround people living with mental illnesses.

However, despite the current perception of the usefulness of nutrition interventions at individual and community level in promoting health, nutrition knowledge and skills training is still a neglected subject of the curricula of all schools of medicine and of allied health professions (Trovato, 2012). Skills enhancement for healthy lifestyles, including appropriate physical activity prescription is still lacking and seems not to be near for implementation. Yet, if knowledge and skills enhancement to clients and their care givers are offered, this would reduce over reliance on multiple health worker consultations, which has major disadvantages in terms of time and financial expenses.

As if that is not enough, despite the existence of a multitude of information indicating a close association between mental health and nutrition, no formal collaborations exist between the government department responsible for mental health and the department of nutrition (Kigozi et al, 2010). The inability to realise the importance of collaboration between these two departments does not only cause a limit to budget allocation towards the mental department, but also inhibits the integration of nutrition care in mental health care.

2.2.3 Nutritional therapy and care planning

The modest success of the current pharmacologically focused model of managing mental illnesses has left the burden of addressing poor mental health at a crossroad throughout this World. Although, the determinants of mental health are complex, emerging and compelling evidence for nutrition as a crucial factor in the high prevalence and incidence of mental disorders suggests that diet is as important to mental health as it is to heart, and stomach conditions (BAPEN, 2010).

Evidence is steadily growing for the relation between dietary quality (potential nutritional deficiencies) and mental health, and for the select use of nutrient-based supplements to address deficiencies, either as single formulations or as formulations to amplify other treatments (Sarris et al, 2015).

Although, the aetiology, prevention and treatment of mental behaviours have been studied mainly from the pharmacological and social perspectives, a growing body of research has established a link between nutrition and emotional health. For example, persons with suicide tendencies often have decreased blood levels of essential fatty acids (EFA), and low serum cholesterol (Zukier et al, 2011). Unfortunately, these micronutrient deficiencies continue to exist unnoticeably due to poor nutrition assessment in most mental units (BAPEN, 2010). Hence, clients with mental illnesses continue to suffer from preventable loss of life. Given the relative inexpensive possibility of preventive diets that could save lives, a second thought ought to be given to targeted nutrition therapy interventions to PLWMI either at home with the help of family members or during admission at the health facility. Through constructs obtained from the settings based approach and the ITHBC model, ongoing nutrition knowledge exchange from nutrition experts to health care givers in mental facilities and then to clients and their attendants would foster good nutrition practices among PLWMI.

Nutritional care in mental health has been a neglected subject. Yet according to Selhub et al (2014) and Mazzawi et al (2016), the few studies carried out have been poorly designed. This has often yielded inadequate results and conclusions. However, in recent years there have been tremendous strides with research about nutrition in mental health increasingly becoming robust. Some of this research has implicated unhealthy maternal and early postnatal dietary patterns to be responsible for elevated risks of behavioural and emotional problems in children (Jacka et al, 2013). Inabilities

to integrate and offer nutrition care in mental health services have often been cited (BAPEN, 2007). In Uganda for example, nutrition services are only concentrated in HIV departments, paediatric wards and Antenatal care units (ANC) (MOH, 2010a). As a result, many clients come to hospital and often leave the health facility without their malnutrition being recognised.

Several studies have found mental disorders to be a risk factor for involuntary excessive weight gain and/or weight loss (Acosta, 2011; Wallace, 2009, Mozaffarian et al, 2011). If left unchecked, excessive weight soon progresses to over nutrition, while weight loss culminates into under nutrition. Unfortunately, little research has focussed on assessing the extent to which nutrition care has been integrated in mental health care especially in the developing world (Wallace, 2009).

Micronutrient deficiencies, which are a common outcome of poorer dietary intake, have been postulated to result into alteration of body biochemical processes (Stough et al, 2014). However, there has been widespread use of vitamins to compensate for the irregular eating patterns that often accompany stress, and psychological strain. Fortunately, micronutrient supplementation to overcome the resulting dietary deficiencies has been observed to improve stress and some aspects of every day mood (Long & Benton, 2013). This kind of evidence should always be used as a basis to advocate for nutrition care while managing mental illnesses.

Not only should micronutrient supplementation be embraced, but also the provision of meals to inpatient clients in mental units. It is a responsibility of the admitting health facility to provide excellent nutritional care and support to all inpatients and to meet their individual nutritional requirements if recovery is to be achieved efficiently. Although attempts to provide food rations to needy inpatient clients in mental units are sometimes made in some Ugandan regional referral hospitals, only corn flour and beans are given (FRRH, 2015). Such foods cannot satisfy the nutritional needs of the already compromised health of these clients. If any benefit is to be

achieved, food rations and menu designs should be based on the needs of the consumers of the mental health services, and should apply best-practice principles in menu planning, taking into account the length of stay and being consistent with current nutrition and health promotion guidelines (ACI, 2013).

According to ACI (2013), food served to people in hospital is an important factor that influences both their clinical outcomes and satisfaction with their hospital stay. Good quality food and fluids are basic requirements in effectively meeting the nutrition needs of people in hospital (MHDAO, 2009). Therefore, mental health consumers are entitled to quality, evidence based care and treatment in all aspects of their health.

Globally, mental disorders account for about 160 million lost years of healthy life. However, evidence indicates that health interventions coupled with focussed nutrition care can be substantial in decreasing the burden (WHO, 2001). Through the national development plan (NDP) 2010/11-2014/15, Uganda was to put emphasis on investing in the promotion of people's health and nutrition which constitute a fundamental human right for all people. This obligation would see the state provide basic health services to its people, through the promotion of proper nutrition and healthy lifestyles (MOH, 2010b). Five years down the road however, success has not befallen policy implementers. The country is still grappling with a double burden of both communicable and non-communicable diseases including a very high rate of malnutrition standing at 32% (MOH, 2010a).

2.2.4 Human resource training and education

Human resources are a critical resource in the operationalization of health plans. They are important at all levels in supporting the integration of nutrition services into mental health.

However, the planning models used in Uganda for recruiting and harmonising different health professionals affect the human resources available to deliver a particular service.

Uganda is suffering a great human resource shortage especially in the field of psychiatry. The current staffing levels do not conform to the Uganda Ministry of Health staffing norms (Ndyabangi, 2013; Saraceno et al, 2007). This affects effective service delivery. In addition, it limits in-service training as it would leave patients unattended to if health workers are sent away for training especially if the training is to take a number of days or weeks. However, despite the generally small numbers, the overall total number of health workers specializing in mental health is said to have increased over the past years (Mugisha et al, 2016).

Mugisha and colleagues further mention that despite mental health professionals being very few at regional and district levels, they do not receive any support in terms of capacity building. The situation at the national level is further complicated by the fact that some of these specialists are recruited and deployed as general health workers. All these factors create demotivation and affects service delivery.

Nutrition plays a major role in the protection against mental dysfunction and well-being in psychiatric patient (Trovato, 2012). The evidence base for practical use of nutrition-based preventive and curative interventions is rapidly growing and implementation research steadily improves delivery of best practices. With an effective Health Promotion model, there is little doubt that health professionals can be more effective in their daily practice when they draw on current nutrition knowledge and effective clinical skills (Kris-Etherton et al, 2014). Furthermore, there are numerous examples of beneficial patient outcomes resulting from nutrition practices in inpatient, outpatient, and community settings. In acute care settings, best nutrition practices have been shown to improve patient outcomes and reduce health care costs (Rosen et al, 2013). However, despite

the profound impact good nutrition has on health and wellness, the science of nutrition and its application to healthcare are not fully integrated in most health professional training programs.

Information from health workers to patients has been found to have a positive and significant correlation with adoption of dietary behaviour and reduced risk of nutrition related chronic disease (Bjerrum et al, 2011). However, ability of healthcare workers to provide accurate, practical and consistent dietary advice appropriate to the needs of patients is still limited (DiMaria-Ghalili et al, 2014).

Generally, there is poor nutrition knowledge among most health practitioners. Although they obtain basic nutrition training in medical/nursing school, there appears to be a number of gaps in their nutrition-related knowledge (Munuo et al, 2016). Munuo and colleagues further explain that the knowledge level of healthcare workers is higher due to the nutrition education received and higher level of professionalism in the application of their knowledge. It is however not related with increase in professional experience, but health workers who had fewer years of practices. This calls for refresher training.

More than the general population, people living with psychiatric conditions are prone to various macro and micronutrient deficiencies (WHO, 2015). This therefore calls for nutrition expertise among health service providers in mental units. However, the training curriculum for health workers seem to offer less nutrition knowledge to enable adequate provision of nutritional counselling and support to psychiatric patients (Munuo et al, 2016). A study on nutrition knowledge level of nurses in Turkey indicated that long-term clinical experience without any special training on nutrition and with no working experience in this field does not increase the nutrition knowledge (Yalcin et al, 2013). According to Yfanti et al (2011), there is inadequacy of education regarding nutrition in medical and nursing programs with less emphasis on nutrition in

the training. Furthermore, throughout the world, in-service nutrition training opportunities in psychiatric units is not regarded important compared to other departments in hospital settings (Nowson & O'Connell, 2015). This affects nutrition related service delivery in mental units and further inhibits the integration of nutrition into mental care resulting into denial of a service to those eligible for it.

Generally, nurses have a positive attitude towards nutritional management approaches. However, the limited knowledge about nutritional counselling, assessment and education could lead nurses to being negligent in managing patients' nutritional problems (Kim & Choue, 2009). This is made worse when nurses themselves develop a negative attitude regarding their own nutritional knowledge.

There is a growing interest on changes in disease patterns in relation to foods and nutrition in psychiatric conditions and nutrients adjustment is now of paramount importance (Hardy & Gray, 2014). For this case, clients perceive doctors and nurses to be the most reliable source of nutritional information. However, various studies have indicated that information provided by health professionals is sometimes inaccurate and there is a general lack of nutrition knowledge among doctors and nurses (Frew et al, 2010; Stark et al, 2011; Sobekwa & Arunachallam, 2015). This creates a knowledge and information dissemination gap from health care providers to clients, leading to misunderstanding and confusion of the information given to clients.

Some studies have revealed that in-service nutrition training can help to improve health workers' nutrition knowledge (Fletcher & Carey, 2011; Munuo et al, 2016; Sunguya et al, 2013). This does not only scale up health workers' skills in management of nutrition-related problems and nutrition-counselling skills, but may also facilitate positive changes in their attitudes toward nutrition care

(Jefferies et al, 2011). However, due to inadequate resources and inadequate nutrition training in medical/nursing schools (Munuo et al, 2016), proper nutrition management of psychiatric conditions is still lacking.

2.3 Dietary practices of people living with mental illnesses

As recommended by the National Mental Health Commission (NMHC), for governments to reduce early deaths in people living with mental health conditions, initial focus must be on rapidly reducing cardiovascular risk factors such as smoking and poor diet, and increasing physical activity (Lambert & Newcomer, 2009). Diet is not only a key factor in reducing cardiovascular conditions, but also very important in minimizing the need for readmission (NMHC, 2012).

For many years, it has been known that inadequate dietary intake is a common cause of under nutrition, while excessive nutrient intake culminates into systemic diseases like diabetes and hypertension, among others. However, people living with psychiatric conditions practice unregulated dietary practices (Lambert & Newcomer, 2009). They end up developing metabolic dysfunction (Lambert, 2011; Rosenfield, 2012), which affects their well being and economic prosperity through reduced ability to work.

Research suggests a direct link between various mental health conditions and some nutrition deficiencies. The most common deficiencies seen in mental disorder are omega-3 and 6 fatty acids, B vitamins, minerals, and amino acids that are precursors to neurotransmitters like serotonin (Lakhan & Vieira, 2008). The lack of B12 to the developing brain may have lifelong effects in what appear to be intellectually normal children (Mitchell et al, 2014). However, according to Wilson et al (2010), genetic makeup may play an important role in which populations or subgroups are sensitive to B vitamin deficiency, and thus exhibiting increased risk of mental disorders.

Unfortunately, little is known as to whether there are any efforts directed towards preventing these nutrition deficiencies using dietary approaches in the world of mental health management.

Food is necessary for growth and maintenance of body. If nutrition is not adequate, brain development and functioning may be impaired to a recognizable extent (Lumey et al, 2011). The actual determinants of human diet are economic, climatic, geographic and historical, with a strong psychological and sociological basis (Trovato, 2012). This is true because the food purchasing abilities depends on how much one has in the pocket, what is available on the market and his/her food preferences. In this situation, the psychological and sociological elements including economic factors are better addressed using the ITHBC model that focuses on enhancing knowledge and addressing health beliefs, enhancing skills and potentials of individuals and social affiliation through family, community and health care providers.

2.3.1 Food consumption patterns

Eating habits refer to how and why people consume, which foods they consume, and with whom they consume, as well as the ways they obtain, store, use, and discard food (Namrata & Dweep, 2014). Individual, social, cultural, religious, economic, environmental and political factors all influence people's eating habits (Rodriguez, 2007). In all aspects, these factors should be oriented towards good eating habits that promote good health.

In recent years, the global burden of chronic lifestyle-mediated, non communicable diseases, such as cardiovascular diseases, and mental diseases have become substantial. These diseases are largely attributed to changes in the dietary and exercise habits of populations in the developed and developing world (Mozaffarian et al, 2011; WHO, 2003). As a result, patterns of food consumption and their relation to mental health are receiving some attention in research.

Depression and anxiety are highly prevalent chronic mental illnesses (Kessler et al, 2005), which are thought to be influenced by diet and nutrition through biological processes such as inflammation, brain function, and oxidative processes (Jacka & Berk, 2007). Although, Ecker & Nene (2012), relates good nutrition to proper brain functioning and human wellbeing, Gomez-Pinilla (2008) and Engelhart et al (2002), affirms that psychiatry lacks strong evidence-based primary prevention and treatment strategies based on dietary modification. This leaves psychiatric health care providers in uncertainties on how to address nutrition issues among their clients.

Previous studies regarding the association between diet and depressive illness have focused on individual nutrients or food groups (Appleton et al, 2007; Felice et al, 2010). However, studying individual nutrients or foods may provide an incomplete picture of the relationship between diet and mental health, given the complex interactions among nutrients in our daily diets (Felice et al, 2010). People with mental illness often demonstrate unhealthy eating patterns compared to the general population. The effects of sensory issues, hyper-arousal, being easily upset and feelings of numbness can affect and alter appetite and eating (Adams et al, 2010; Folley & Park, 2010). These lead to poor food choices and refusal to eat, which predispose them to various nutritional deficiencies.

Table 1: Behaviours and nutrition implications associated with psychiatric disorders

Behaviour	Potential impact on food intake
Anxiety	Over eating or under eating Development of rigid eating patterns Difficulty in deciding what to eat
Depression	Over eating or under eating Feels too unworthy to eat Somatic delusions of not being able to eat or physically too ill to eat

Mania	Under eating Overactive and unable to take time to eat or drink
Behaviour related to organic brain syndrome	Under eating Confusion and forgetfulness (may not remember to eat)
Withdrawal (as seen in schizophrenia)	Under eating Expected delusions regarding food and fluid Lack of interest in eating

Adopted from Dietetics in developmental and psychiatric disorders practice group of the American Dietetic association 2008

According to Strassnig et al (2005), people living with mental conditions rarely meet the recommended dietary intake for certain standardized “healthy” food groups, such as fruits or vegetables. Their diets contain more total fat and less fibre than diets of a reference population matched for age, gender, and social class with a significant lack of dietary beta-carotene. The type of psychotropic medication also has negative influences on food consumption patterns. According to Darton (2012) and Gothelf et al (2002), those receiving the atypical antipsychotics such as olanzapine tend to eat more of the same foods over and over again and thus end up with significantly higher weight gain or develop various micronutrient deficiencies depending on the type of food frequented. The synergic effects of both the mental illness and psychotropic medication on dietary patterns with their resultant metabolic disorders are too much of a burden for a local poor person to manage and therefore requires urgent attention if adequate restoration of health is to be achieved.

Both excessive weight gain and weight loss are among the critical diagnostic signs for depression. Unfortunately, it is not obvious that these signs may regress following treatment of depression using synthetic antidepressants (Kvamme et al, 2011). It is therefore, highly certain that the

symptom will come back as long as the individual is off drugs. To minimise this, nutrition intervention are needed to restore normal body weight.

In addition, malnutrition especially the type associated with micronutrient deficiencies, adversely affects mental health clients. Inadequate intake of nutrients and energy may lead to deficiency of folic acid, thiamine and or cobalamin (Harris & Haboubi, 2005). This worsens mental health symptoms.

2.3.2 Culture and taboos

With a variety of foods at their exposure, our ancestors thousands of years back had plenty of opportunity for the consumption of food products that had been unknowingly subjected to natural microbial fermentation. Without microbial knowledge, they recognized over time, the palatability, preservative value, analgesia, and the mental stimulating or sedating qualities of fermented foods and beverages (Selhub et al, 2014; Steinkraus, 2002). Today, through a renewed examination of fermented foods that are so often a part of ancient diets, scientists have continued to uncover the health-promoting properties of ancestral dietary patterns (Hugenholtz, 2013). Although, these healthy choices can be made by each of us, they may be enhanced or slowed by the social, physical, economic, and regulatory environment in which we live.

Citing emerging research evidence that links traditional dietary practices and positive mental health, Selhub et al, (2014) argues the consumption of fermented foods. The author argue that fermentation amplifies specific nutrients and phyto-nutrient content of foods, some of which are associated with mental and brain health influence via direct and indirect pathways.

In urban and peri-urban areas of developing countries, there is a shift in dietary habits. Despite the knowledge that good diet is a strong candidate with protective effects against NCDs including

psychopathologies (Sanchez & Martínez, 2013), there is a steady shift from traditional diets with varying changes in lifestyle (Selhub et al, 2014). This shift has left many at risk of developing NCDs including depression and other mental illnesses. Furthermore, despite the brain's dependence on nutrients for its structure and functioning, nutrition has not yet secured a target place for research in mental health.

Mediterranean, hunter-gatherer and Japanese models of diet are commonly referred to as the traditional diets. They are often exemplified by higher intakes of fruits, vegetables, fish and seafood, fibre, cereals with limited processing, and limited amounts of dairy and lean meats (Azzini et al, 2011). These foods have in a variety of population studies been linked with lowered risk of anxiety and depression (Rienks et al, 2013). This means that if embraced and promoted, higher results will be achieved in decreasing these disease conditions. Thus, community efforts are needed to create an environment that makes it easier to make healthy choices when it comes to diet and physical activity.

2.3.3 Alcohol and drug abuse

There is a strong association between alcoholism, drug abuse, smoking and mental disorders (Lawrenoe et al, 2011). Frequent tobacco use is associated with anxiety and affective disorders while alcoholism leads to delirium (Bobes et al, 2010). On the other hand, drug abuse accelerates nutritional needs beyond normal, so that even a well-balanced diet may be inadequate (Hepgul, et al., 2011). The trio also increases money expenditure yet they are not nutritious and therefore have an indirect effect on nutritional intake, as they divert money away from the purchase of food. Although alcohol has deservedly received much attention especially for problematic consumption associated with a higher risk of depression, consumption of modest amounts (5 to 15 g per day) as

part of traditional dietary practices, particularly red wine has been associated with a lower risk of depression (Gea et al, 2012). However, regarding the low literacy levels of our communities (Hudson et al, 2009), such information if not well packaged before dissemination, will easily be misinterpreted by many receivers. Thus, health literacy deserves a place health promotion if health messages are to be passed on efficiently.

The existence of a mental disorder is linked to prospective risks for the onset of nicotine, alcohol and illicit drug dependence and abuse (Audrain-McGovern & Benowitz, 2011; Lohse et al, 2016). Strong and consistent associations have been observed for behavioural disorders, as well as for certain mood and anxiety disorders. When consumed together, the interaction of alcohol and tobacco use not only affect mental stability, but also increase the risk of developing cardiovascular diseases and cancers many times more than the effect of either drinking or smoking alone (Swendsen et al, 2010). This results into a much more shortened life span among the consumers.

Smoking is shown to increase the levels of free radicals and oxidative stress within the body (Ma et al, 2013), leading to an increased demand on the body's antioxidant system, notably vitamin C and vitamin E. This is linked to increased cancer rates and degenerative changes in the retina of the eye and psychotic conditions (Maatoug et al, 2013).

People who do not smoke or drink excessively live healthier than chronic alcohol consumers or smokers. Numerous studies verify that non-smokers have a healthier lifestyle than smokers as measured by dietary habits, physical activity, and alcohol consumption (Kvaavik et al, 2004; Maatoug et al, 2013). Since smoking and alcoholism are common habits among people living with mental illnesses, (Lawrenoe et al, 2011) their health may generally be poor.

Audrain-McGovern & Benowitz (2011), revealed that smokers tend to have poor dietary habits. They often drink more coffee and alcohol and yet consume less fruits, vegetables, whole grain bread and skimmed milk compared to non-smokers (White et al, 2010; Whichelow et al, 1991; Audrain-McGovern & Benowitz, 2011). The lack of fruits and vegetables (antioxidant rich foods) in their diet increases oxidative stress, leading to poor health. Many of these issues are due to an intricate interaction between a variety of causes including the mental illness itself, food choices, medications, lifestyle behaviours and alteration in cognitive function (Kvamme et al, 2011). These if not checked early can graduate into various co-morbidities thus, affecting people's wellbeing.

Alcohol, drug abuse and smoking which are common lifestyle practices for people living with psychiatric conditions are correlated with consuming higher percentages of energy from fat and lower intakes of selected antioxidants (Lawrenoe et al, 2011). This also increases the risk to development of obesity, metabolic disturbance, cardiovascular diseases and cancers, which consequently culminate into reduced life expectancy. As a result, the prevalence of hypertension, elevated cholesterol, and high levels of triglycerides exist in this category of clients (Audrain-McGovern & Benowitz, 2011). This is worsened by the sedative and tranquilizing effects of psychotropic drugs that lead to inactivity (Hasnain et al, 2010). Furthermore, both male and female alcoholics and smokers perform less strenuous physical activity compared to non alcoholics, non-smokers and former smokers (Lohse et al, 2016). This increases the risk to development of non communicable diseases at an early age, with subsequent reduction in one's lifetime.

Alcohol and drug abuse are associated with changes in dietary habits that may contribute to higher risk of coronary and vascular diseases and other disorders (Giudice et al, 2012). Alcoholics living with mental illnesses as shown above consume more total fat, little or no fruits, little vegetables and less dietary fibre. As a result, this type of diet exposes them to obesity, metabolic disorders

and those who are economically disadvantaged develop lower body mass index (BMI) (Hasnain et al, 2010). However, despite their lower BMI, they have higher rates of illness and deaths from respiratory and cardiovascular diseases than non alcoholic or non smokers (Bradley et al, 2010).

During exercise and after eating, smoking increases the 24 hour energy expenditure by 10%, which corresponds to an increased demand for energy of about 200 kcal per 24 hours due to nicotine (Gonseth et al, 2014). Gonseth et al, (2014) further explains that if there is no change in caloric intake, this increase in energy expenditure will eventually result in the loss of 10 kg in body weight over 1 year. This means that as smokers lose weight year after year, their BMI also progressively lowers thus, putting them to risks of malnutrition.

2.4 Behavioural change towards good dietary practices

Most health professions training programs are put little emphasis on nutrition related knowledge (Munuo et al, 2016). This gap is further compounded by the fact that patients and the public remain confused about the correct nutritional advice to follow given the widespread media interest attracted by diet and the disparity in nutrition-related health messages that are in circulation (Kohlmeier et al, 2015). Information from health workers to patients has been found to have a positive and significant correlation with adoption of dietary behaviour and reduced risk of nutrition related chronic disease (Bjerrum et al, 2011). However, the ability of healthcare workers to provide accurate, practical and consistent dietary advice appropriate to the needs of patients is limited (Kohlmeier et al, 2015; DiMaria-Ghalili et al, 2014). Inconcistances in information given by health workers creates worthness doubt, which makes clients fail to take up the advise. As a result, health literacy among the public is affected.

People who are inpatients in mental health facilities are often hungry and present with poor nutritional status at admission (ACI, 2013). The initiation of anti-psychotic drugs, cause their appetite to increase, with a tendency to over-consume food, and yet this treatment makes them physically inactive. The resultant sedentary behaviour culminates into excessive weight gain and obesity, which according to Bartels & Desilets (2012) are major risk factors for cardiovascular diseases, and diabetes. These conditions have negative effects on life and are known to cause reduced life expectancy.

Nutrition and mental health research has been published for decades, and available evidence suggests that there are many ways in which nutrition and mental health intersect (Davison et al, 2012). Publications are increasingly recognizing nutrition as a cornerstone in psychiatric treatment, as targeted strategies can effectively augment medical approaches to help optimize the structure and function of neurons and brain centres (D'Andrea-Matteo et al, 2015). This can reduce need to spend on psychotropic medication that are even expiry bound compared to fresh foods that are abundantly available in Ugandan local markets.

Additionally, making nutritional interventions as part of integrative programs in mental units through the ITHBC model as mentioned by Ryan (2009), can foster social inclusion, self-reliance, self-determination, food security, and healthy body image especially if they are aimed at mental health promotion (Bartels & Desilets, 2012).

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the study area, study design, study population, procedures used in selecting study participants, sampling procedure, methods of data collection, data analysis, trustworthiness, ethical considerations adhered to during this research, study limitations, the work plan and how the findings of the study are to be disseminated.

3.1 Study Area

The study was conducted in Regional Referral mental health units, located at Regional Referral hospitals of Fort portal, Mubende, Jinja and Masaka. These regional mental health units besides Butabika, the National Referral Hospital were chosen because they are dispersed throughout the country and are therefore easily accessible by majority of the population, serving most of the patients from the rural areas of Uganda. This study collected data from four regional referral hospitals (two from remote upcountry areas, and the other two from areas near to the capital city Kampala). This was intended to obtain representative study areas from which generalizable data could be collected so as to easily convince the mental health department heads at the Ministry of Health to adopt recommendations from the study.

3.2 Study design

A descriptive cross sectional study majorly comprising of qualitative methods with some quantitative approaches was employed to assess drivers to offering nutrition care to clients attending Ugandan Regional Referral mental health units.

A mixed research design was chosen because as qualitative methods allowed more insight into health professionals' perceptions for nutrition care and identification of barriers to this service (Miles & Huberman, 1994), the quantitative methods allowed systematic collection of numerical data, often under conditions of considerable control and the analysis of that information using statistical procedures (Polit and Hungler, 1995).

This mixed methods study helped to generate information that contributes to raising awareness and enable the different stake holders in the world of mental health take on their roles in improving nutrition practices for PLWMI so as to improve health.

The reason for collecting both quantitative and qualitative was to develop a complete understanding of the research problem by converging quantitative and qualitative data and comparing the two databases (Creswell 2014).

Oral interviews were conducted with key informants such as, nutritionists, psychiatric nurses and clinical officers and the heads of departments (Medical directors) to understand why integration of nutrition care in mental health units has not successfully been effected as has been carried out in other departments such as the HIV clinics, paediatric wards and diabetic/hypertension clinics. Pre-prepared interview guides were used to gather the data. These were structured in a flexible fashion to allow groups and individuals to take the discussion in any direction they deem fit but at the same time not losing track of the original topic of discussion.

3.3 Study setting

The study was conducted in four purposively selected referral hospital mental health units found in Ugandan regional referral hospitals of Fort Portal, Mubende, Jinja and Masaka. Fort Portal and Mubende regional referral hospitals are 297.93 kilometres (km) and 137 km by road from Kampala

respectively, while Jinja and Masaka are 85 km and 131km from Kampala correspondingly. In each of these health facilities, between 170 and 360 patients receive inpatient services per year while between 748 and 2500 patients are seen as outpatients. On average, each of these units receives 265 inpatients and 1624 outpatients in a year (Ndyabangi et al, 2012).

3.4 Study Population

The study population comprised of mental health care providers as the main target population and mental health beneficiaries (clients and their attendants). A combination of mental health clients, their care givers, and mental health service providers, including nutritionists provided a vast pool of varying information that was rich enough to allow the researcher draw conclusions and recommendations. This category of study population was selected because there is an intricate interaction between mental health clients, their care givers and mental health service providers thus completing a cycle that directly influences quality of mental health care. This combination of study participants suitably conform to the ITHBC model that focuses on bringing together both family and health worker efforts to help mental health clients identify their potentials, skills and being able to utilise resources around them. In so doing, behaviour change towards good nutrition practices is achieved.

3.5 Study Units

The study units were the individual stable mental health clients at mental units, care givers of these clients found at mental units at the time of interviewing, psychiatric nurses, psychiatric clinical officers, nutritionists, medical social workers and medical directors serving in the mother regional referral hospital.

As long as they consented to be part of this study, all stable clients with or without their care takers found at the time of interview in each of the Regional Referral mental health units were given a chance to participate in focus group discussions (FGDs) to explore dietary practices, especially food selection and food preparation. Recruitment of respondents in the study was terminated when a saturation point was reached. Responses from stable mental health clients, aided by their care givers about the FFQs were obtained from each of the study units. Health workers serving in the psychiatric unit including the nutritionist were interviewed from each of the selected mental health units, using an interview guide.

3.6 Sampling Technique

Uganda has a total of 13 regional mental health units which served as the sampling frame. In each of these health facilities, between 170 and 360 patients receive inpatient services per year while between 748 and 2500 patients are seen as outpatients (Ndyanabangi et al, 2012). However, due to limited funds, a sample of only four from the 13 mental health units in the sampling frame were selected two from an up country setting and the others from the central area near Kampala.

Because of convenience and easy access, purposeful sampling technique was employed in identifying the four Regional Referral mental units. Similarly, because not all clients with mental illnesses could sustain a conversation, only stable clients were included in the study. Purposive sampling is suitable for qualitative studies where the researcher is interested in informants who have the best knowledge concerning the research topic (Kyangas et al, 2011). However, a disadvantage of purposive sampling is that it can be difficult for the reader to judge the trustworthiness of sampling if full details are not provided (Creswell, 2013). This method was used

because it provided researchers with the justification to make generalization from the sample that was studied (Lund, 2012).

3.7 Sample size

The sample size will be calculated using Kish Leslie formula (1986).

$$N = \frac{Z^2 \times P \times Q}{d^2} = \frac{(1.96)^2 \times (0.35) (1-0.35)}{0.1^2} = 87$$

Where;

Z = Z value (1.96 for 95% confidence level)

d = Confidence interval, expressed as decimal (in this study, a confidence interval of 10% (0.1) was used)

Q = 1- p

P= 35% (0.35) = Estimated proportion of people living with mental illnesses (35%) in Uganda.

This was the proportion of PLWMI who were expected to receive mental health care from regional referral mental facilities (Basangwa, 2004; WHO, 2012). However, due to the inability of some of them to maintain a sensible conversation, only 83 respondents were interviewed.

3.8 Inclusion and exclusion criteria

Individuals selected were stable mental health clients and/or their care givers found at the mental unit at the time interviews were conducted. Only staff members who had spent not less than six months of service on the mental unit were included in the study because it was assumed that service providers who have served longer had received various on-job training and refresher courses. The

experience of such health workers would help in providing adequate information on the various dietary practices and nutrition activities in mental units.

3.9 Data sources and Methods of Collection

The researcher used both qualitative and quantitative methods of data collection such as; observations, key informant interviews, documents review and audio-visual materials. Data was collected directly from respondents through interviews and follow up questions came from their answers. Checklists comprising of nutrition related activities undertaken at the health facility were used in addition to reviewing Health Management Information System (HMIS) registers for completeness of nutrition related information. Food frequency questionnaires to obtain data on feeding habits of people with mental illnesses were also used. Thirdly, interviews were conducted with key informants like psychiatric health care providers, nutritionists and facility in-charges to obtain information about service provider's concerns related to work load, priorities, acceptance to provide nutrition care and any other hindering factors to offering nutrition services.

3.10 Data Analysis and Presentation of results

Data collection and analysis were carried out concurrently to enable the researcher have a deeper understanding of issues raised in the research and an opportunity to further develop issues in interviews and FGDs as data collection progresses. Key themes arising from the data were identified to help understand their patterns, classes and characteristics as the research unfolded (Schatzman & Strauss, 1973). The emergent themes from the analysis, notes and summaries became the foundation for clustering the data.

As regards the process of organizing data, the researcher followed the six stages demonstrated by Marshall & Rossman (1999).

The first stage was to organize the data. This was carried out at the end of every day's data collection and was achieved by listening to audios and reviewing videos several times in order to comprehend it and to begin to reduce it into readable formats. According to Miles and Huberman (1994), this process of organizing the data in a compact form allows the researcher to capture all important and relevant information without only highlighting the interesting and vivid events (Miles & Huberman, 1994).

The second stage was carried out to generate codes, subthemes/patterns and themes which came out as a result of continued immersion in the data. The identification of these codes, subthemes/patterns and themes become 'baskets' into which information was placed (Marshall and Rossman, 1999).

The third stage involved coding the data. Marshall and Rossman (1999) describe this as "formal representation of analytical thinking". At this stage the different codes, subthemes and themes were allocated colour codes that identify them for further analysis. As the process of coding continued, more relevant data was generated, as further comprehension of data was achieved. Different colour codes were used to identify similar patterns within the text.

The fourth stage of data analysis was to test emergent understandings, in relation to the research questions which were being explored. These were both positive and negative. The researcher looked out for any similar and contrasting patterns and fit them into the general discussion as was deemed necessary.

The fifth stage involved searching for alternative explanations for patterns that were apparent in the research study and then presented an argument that linked the patterns to previous research. By doing this, the researcher presented the most conceivable explanation of findings and offered

assertions about the data, provided substantial evidence for those assertions and built a logical interrelationship among them and related assertions to future research as supported by Marshall and Rossman, (1999).

The final and sixth stage was report writing. The researcher interpreted the information obtained from respondents to give meaning.

3.11 Quality Control and Trustworthiness of the study

Before data collection, all the designed quantitative data collection tools were pre-tested in an environment similar to the study area. Secondly, after every day's data collection, interview guides, checklists and any other questionnaires used were cross checked on a daily basis for completeness and appropriateness of responses. Any missing information was corrected before being entered in the computer.

Trustworthiness is the when the research work reflects the reality and ideas of participants (Krefting, 1991). It is the truth value of a piece of research (Holloway & Wheeler, 2010). In this study, trustworthiness was achieved through four elements: credibility, confirmability, dependability and transferability as described by Graneheim & Lundman (2004). The researcher laid aside his preconceived ideas about the phenomenon under investigation and made four focus group discussions in addition to informant interviews in each hospital to confirm whether descriptions made by some participants were a true reflection of their experiences in mental units.

3.11.1 Credibility

Credibility refers to confidence of data and exists when the research findings reflects the experience of people under study (Polit et al, 2001). In this study, credibility was achieved by using different data collection tools such as FGDs, Informant interviews, FFQs, and checklists.

Interview guides were conducted in English language while FGDs guides were translated according to the languages spoken in the designated regions where the hospitals are found so as to increase credibility. This helped to capture diverse views of many people on influences to nutrition service delivery in mental health units. Data collection triangulation is illustrated below

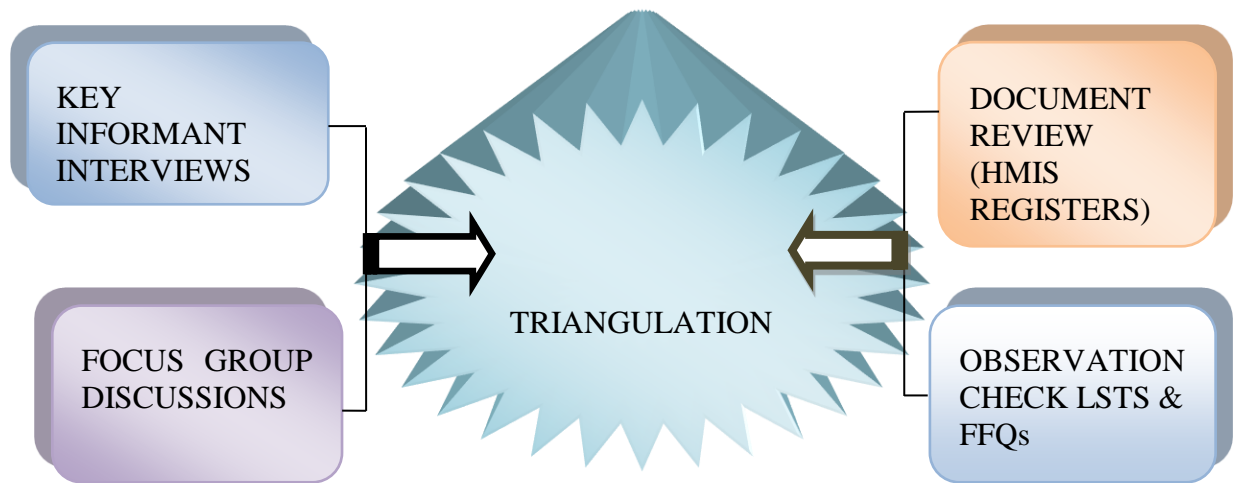


Figure 2: Triangulation of data collection methods, Source, Author (2016)

3.11.2 Confirmability

According to Polit et al (2001), confirmability refers to how neutral or objective research data is. Irrespective of the researcher's own opinion, the research findings should be a true result of the data collected from true participants. This was achieved by obtaining authorization letters from the University and all hospitals where data was collected as displayed in the appendix section.

3.11.3 Dependability

Polit et al, (2001), defined this as the degree of data stability over time and conditions. According to Lincoln and Guba (1985), accuracy and consistency determine dependability of a study. This

was achieved by recruiting participants from mental health service providers, primary mental health beneficiaries (patients) and secondary mental health beneficiaries (patient's attendants).

3.11.4 Transferability

Transferability is the extent to which the findings can be transferred to other settings or groups. Data collection and analysis strategies were reported in detail in order to provide a clear and accurate picture of the methods used in this study (Creswell, 2013). All phases of this project were subject to scrutiny by my supervisor who is experienced in qualitative research methods. Furthermore, direct quotation of findings was used to achieve this.

3.12 Ethical Consideration

A research proposal was submitted to the researcher's supervisor for approval before data collection commenced. Secondly, permission was sought from the directors of the regional referral hospitals to allow the researcher conduct this study. Finally, study participants were given consent forms to read and sign or thumb print, assuring confidentiality of their information.

3.13 Scope and study limitations

Malnutrition does not only affect people with mental health problems, but also the general Ugandan population, rich and poor. Therefore, it was ideally good to study how nutrition services were being offered in an integrated system currently being used in Uganda. However, due to limited resources this study only focused on mental health units where the service was presumed less provided. In this cross sectional study, it was expected that data was also to be collected from the existing HMIS records which in some cases were not very consistent. However, constant inquiries were made from unit in-charges, clients and care givers until considerable data is

obtained. The fact that some of the respondents in this study were people with mental illnesses, caution was exercised in addition to being sensitive to the respondents' feelings. This caused limitations in data collection. As anticipated earlier, there were difficulties in approvals at most of the referral hospitals as medical directors were most of the time out of their designated duty stations. This came with a lot of financial implications as the researcher had to make numerous trips to these hospitals. Secondly some hospitals required to pay money before being endorsed to collect data. These made life very hard and caused a delay in data collection. However, the researcher managed to secure all necessary approvals through clear communication of the intent of the study, using anonymous data instruments and ensuring full confidentiality for all respondents.

3.14 Plan for dissemination of results

The findings obtained from this study are to be provided to the Directors of all the sampled regional referral hospitals. This aims at sharing knowledge gathered and enable decisions to be made about integrating nutrition activities in mental health facilities that are not only covered by this study, but the entire country. Copies have been submitted to the Faculty of Health sciences Uganda Martyrs University. These are to be kept in the University library where other researchers and academia can access them for further research and information. Furthermore, the findings of this study would be published by the researcher so that other readers and development partners may use the findings to effectively integrate nutrition services in mental health care.

3.15 Budget and work plan

For this study, only two million one hundred and seventy thousand shillings had been budgeted. However, when it came to implementing activities, the total expenditure raised to two million three hundred thousand shillings. This was because of the frequent trips the researcher made to the

sampled hospitals while trying to secure permission to conduct the study. Secondly, there were some unexpected expenses such as payment of money to research committees of some hospitals. These contributed to spending beyond the estimated budget.

The study was successfully completed within the anticipated time. The study took a solid eight (8) months to get completed. It was started in January with proposal writing, preceded by pretesting of data collection tools in June, data collection in July and report writing and handing in of the final draft in August. Defending the dissertation was in September 2016.

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION AND ANALYSIS

4.0 Introduction

In this chapter, the presentation of data, analysis, as well as interpretation is given. Analysis followed three specific objectives of the study. For instance to examine health workers' perceptions of nutrition care services in Referral Hospital mental health units, to establish the nutrition support offered to patients and their care givers at Ugandan Referral Hospital mental health units and finally to survey the dietary practices of people living with mental illnesses attending Referral Hospital mental health units.

Findings were analyzed and presented in relation to specific objectives and it was from these that themes and sub themes were generated. Findings were described and analyzed using verbatim quotations. For easy reference, participants were described by their titles, settings and the sequence in which the interviews were conducted. In order to keep confidentiality, all participants were given participant identification codes. Data was collected from 102 participants. 83 of them were clients and their attendants in 14 FGDs, while 19 were key informants. Key informants included 1 medical director, 4 mental unit In-Charges, 9 nurses working on mental units, 2 social workers and 3 nutritionists. Details of the codes for participants and their respective regional referral hospitals are found in Appendix VII.

4.1 Health worker's perceptions on nutrition care to PLWMI

As health workers were interviewed, a number of categories emerged regarding their perceptions towards nutrition care to PLWMI and these included; relevance of nutrition services in mental

health care, the dependence nature of clients with mental illnesses, mental health medication and appetite stimulation, health worker's feelings about nutrition assessment and hindrances to nutrition assessment. These subthemes were described in details as indicated below.

4.1.1 Relevance of nutrition services in mental health care

Most of the study participants showed that incorporating nutrition services in mental health services is crucial to patients because it helps their mental capacities to function well and prevents further mental disorders to occur. One of the nursing officers was quoted as saying:

[“...it is relevant because most of our patients due to their poor mental condition do not eat and if they eat they don't eat the right amount of food. If someone is fed well, the brain functions well. Good nutrition also prevents some mental conditions such as dementia...”] (Participant MSN1).

In a similar voice, another respondent said:

[“...Ideally there is no way we can treat our clients without nutrition support because psychotropic drugs are strong. Some patients come when they have refused to eat for a number of days. They therefore need nutrition intervention...”] (Participant 1.1).

Differing from the above, participant 1.2 expressed fears that providing food to clients may bring about institutionalisation of clients. She showed that clients would prefer to stay in the hospital for longer period even when they are discharged because there is free food. However, this is not the case because in other hospitals where food was provided, there were no complaints of patients refusing to leave hospital after their discharge.

Nearly all health worker participants were in agreement that it was necessary for hospitals to provide food to clients. One of them was quoted as saying:

[“...If food is not provided, it becomes hard to manage these patients especially those without attendants. When they fail to get food, they always come requesting

to be discharged, saying they cannot take the drugs any more without food. Others run away...”] (Participant 2.2).

This meant that providing food to clients admitted on the mental unit has positive effects of enabling patients to adhere to psychotropic medication.

Additionally, health care provider participants argued that good nutrition fosters proper brain functioning and human wellbeing. Secondly, people living with mental conditions rarely meet the recommended dietary intake for certain standardized “healthy” food groups, such as fruits or vegetables, but instead consume more total fat and less fibre. This puts them at risk of nutrition related conditions and therefore it is relevant to incorporate nutrition services into mental health care so as to achieve the best control of mental health conditions.

4.1.2 The dependent nature of clients with mental illnesses

Most people living with mental illnesses are usually dependent on their relatives especially during mental break down. They often face employment challenges which in turn affect their income. In Fort Portal Referral Hospital mental unit for example, responses were more related to income and financial status of patients with mental health problems. Participants here argued that in most cases people with mental illnesses have minimal or little income that cannot sustain them for long during mental breakdown. They are usually poor and some uneducated. It is therefore essential that they are given some food, health educated on various foods they need to eat and trained on how to grow these foods as they improve. Most patients are unable to obtain food on their own. One participant from Fort Portal said:

[“.....most patients depend on their relatives or even good Samaritans, who most of the times are irregular in providing meals leading to nutrition deficiencies. In all aspects, nutrition services are very important to mental health clients and incorporating them will help solve health related problems of these patients...”] (Participant FN1).

This showed that mental health clients require social facilitation through family, community, and health care providers. As family and community members provide social support, health worker would help in fostering knowledge, addressing health beliefs and enhancing self-regulation skills which in turn would help individuals identify their potentials to live a better and healthier life.

4.1.3 Mental health medication and appetite stimulation

Participants further revealed that most clients tend to eat a lot soon after initiating drugs. It was said that they continuously demand for food. Leaving patients in that state to depend on good Samaritans was therefore unfair. Most of these Samaritans also have financial and material constraints and therefore are likely not to provide the basic nutrition demands for the clients they offer help. Secondly, the Good Samaritan may have obligations outside hospital or even their patient may be discharged anytime. This meant that clients who depended on Samaritans at some moments suffered hunger and consequently could have developed malnutrition as participant FN2 narrated:

[“...some of the patients are brought here by police without attendants. Some are brought in when they are already malnourished especially those with HIV/AIDS. These need nutrition care because of the side effects of the drugs that cause them to over eat. It is therefore good to provide nutrition support...”] (Participant FN2 from Fort Portal).

Findings from participants in all the sampled regional referral hospitals indicated that psychotropic drugs cause high appetite, cause patients to frequently feel hungry and in turn they threaten to refuse to take medication if not given food first. One participant was quoted as saying:

[“...our drugs can cause hypoglycaemia so if patients are not fed; they end up getting low blood sugar level. Hence, causing another emergency for us...”] (Participant FN3).

Another participant (MBN1) indicated that:

[*“...sometimes there are mothers who breakdown when they are having babies or are pregnant.”*] (Participant MBN1).

If no nutrition interventions are made in this situation, the mother and their babies are more likely to become malnourished.

Generally, psychotropic drugs could be the leading cause of appetite stimulation in patients with mental illnesses. Good enough, health workers held positive perceptions about incorporating nutrition services in mental health. However, clients with mental illnesses are poor and may not afford adhering to nutrition guidelines or advises given. Therefore, incorporating nutrition services in mental health services is essential as it fosters drug intake and stabilisation of patients to a normal mental status.

4.1.4 Health worker's feelings about nutrition assessment

Still on the first objective, study participants were asked to discuss through a full expression of their feelings about practicing nutrition assessment for all clients attending mental health unit. Similarly, findings revealed that the feelings of participants on practicing nutrition assessment for all clients were positive and in favour. Participants were quoted as saying:

[*“...nutrition is important because it helps us to know the actual nutrition status of the client so that appropriate advice can be given...”*] (Participant FN1).

[*“...To the worst, patients should be given breakfast and lunch and attendants would only be coming here to check on them in the evening probably to give them some food supplementation...”*] (Participant MD1).

In agreement, some participants (nursing officers) indicated that nutrition assessment is necessary for all OPD clients, while others seconded that it is necessary to assess all patients especially in these days where HIV psychosis and malnutrition are co-occurring.

It is crucial to carry out nutrition assessment and health care providers clearly understand the importance of nutrition assessment to clients with mental illnesses. This because health care

providers love to see their clients improve and be discharged. Secondly, nutrition assessment helps to identify malnutrition early. Otherwise, micronutrient deficiencies will continue to exist unnoticeably in most clients leading to deteriorating health and reduced life expectancy.

4.1.5 Hindrances to nutrition assessment

Although, feelings about integrating nutrition in mental health care were positive, some of the participants showed limitations to nutrition assessment. Some participants disclosed that they are under staffed and therefore it would be too much work for them to assess the nutrition status of each and every patient. Secondly, the lack of nutrition assessment equipment such as weighing scales, height metres and measuring tapes is a demotivating factor for nutrition assessment. Sometimes mental units stay for months without weighing scales as said by one participant.

[“...it would be very good to nutritionally assess all clients. However, it is much inconveniencing since we lack the equipment to use. We only have one weighing scale. Furthermore, we are always under staffed and most of our patients are restless. Otherwise, it is good to do nutrition assessment to all clients...”]
(Participant MSN1).

This was true because on observation, there was no single nutrition assessment tool seen in Masaka hospital mental unit throughout the entire period of interviews. It was alleged that even the single weighing scale talked about had been locked up in the store for months. In addition, another participant was quoted as saying:

[“...it is good and necessary to conduct nutrition assessment. However, sometimes our patients come when they are violent so it is hard to start nutrition assessment...”] (Participant MBN1).

This indicated that although the feelings towards nutrition assessment are positive, material and human resources to help carry out the assessment were lacking. Secondly, nutrition assessment for all patients may not be carried out because health workers in mental units allege they are

understaffed. This because Uganda's general health works force is inadequate. Until now, most skilled health workers shun working upcountry and remain mostly concentrated in city areas. This leaves most of these units manned by low level cadres. The views also reflected that some patients are uncooperative, while others are restless. This makes it hard to perform accurate nutrition assessment. Eventually, they leave hospital without undergoing nutrition assessment. This leads to poor management of their health conditions.

Furthermore, one of the participants saw the justification for conducting nutrition assessment coming out well on patients coming from poor families. She said:

[“...Nutrition assessment is important because most patients come from poor families that cannot offer adequate nutrition support ending up with malnutrition...”] (Participant FN1).

These findings suggested that the feelings of participants about practicing nutrition assessment for all clients attending mental health units were positive since it was the only opportunity to receive nutrition care and advice, given their poor family economic status.

Still on the same subtheme, most of the respondents showed that patients are uncooperative and hardly accept nutrition assessment especially in the initial days of admission. Due to this, most health workers ignore nutrition assessment since it is not an emergence compared to violence which some patients come with. Some of the participants were quoted as saying:

[“...sometimes patients are uncooperative and nutrition assessment is not possible. Some refuse to take feeds (F100) provided and we certainly get disappointed. Others especially those who are paranoid, refuse to eat giving excuses such as their food was poisoned...”] (Participant FN1).

[“...some patients are uncooperative to allow nutrition assessment to be carried out...”] (Participant MBN2).

These indicated that in the initial days of their admission, mental health clients are uncooperative. Hence, for health workers with little nutrition assessment expertise, it is hard to integrate nutrition services into mental health care services.

There was also a challenge of shortage of human resources to carry out integration of nutrition services into mental health. Most participants complained they were under staffed to carry out nutrition assessment for all clients. At the same time, sometimes health care providers in mental units found it hard to liaise with the nutritionist since she/he is only one and has to cover the whole hospital as one of them said:

[“...there is shortage of staff members and specialists to carry out nutrition assessment and management of complex nutrition conditions...”] (Participant JN1).

The existence of man power challenges therefore is a hindrance to integrating nutrition services in mental health. This is due to limited employment structure of health workers into mental units by government or frequent absenteeism from duty as mentioned by participant MD1

Participants also unearthed the lack of skills to carry out nutrition integration in mental health. These included the lack of skills for nutrition education on production, selection, and preparation of foods that help in normal brain functioning. Some nutrition assessments are not time consuming like measuring weight or even measuring the mid upper circumference (MUAC). However, the skills to measure perfectly especially when patients are restless are lacking. Some of the participants said:

[“...nutrition assessment is not all that hectic but the skills to do it. We need some training to perfect these things...”] (Participant FN1, FN3).

Similarly, participant JN1 summed it up by noting that the lack of specialists in psychiatric nutrition, inadequate health worker's knowledge about nutrition hinders the provision of this service in mental health care.

Thus, the skills to carry out effective integration of nutrition services into mental health were lacking. This is because in-service nutrition training opportunities in psychiatric units is not regarded important compared to other departments in hospital settings. Hence, the inadequate involvement of mental health care service providers in refresher nutrition trainings. Secondly, the fact that dieticians and nutritionists referred to be professional experts in nutrition are few, there is limited chance for continuous on job mentorship and coaching. This limits task shifting and impinges greatly on nutrition service delivery in mental units.

Respondents clearly noted that some patients were aggressive, violent and stubborn, while others were unaware about good nutrition and its benefits. In this way, they refused nutrition assessment, did not consider nutrition advice given as important and sometimes they refused to eat the Ready to Use Therapeutic Food (RUTF) if provided. Many of them preferred processed drinks like sodas.

In regard to these, some participants were quoted saying:

[“...sometimes patients come when they are violent, making it difficult to assess their nutrition status...”] (Participants MBN1, MBN2).

[“...some patients do not know what good feeding is. They think that processed foods are better than local unprocessed foods for example people here prefer sodas to unprocessed fruit juices, they don't want to eat green vegetables...”] (Participant FN1).

Other participants blamed the lack of resources as one of the main challenges inhibiting the integration of nutrition services into mental health. Many said it was good to health educate clients while demonstrating. However, demonstration materials were lacking. Even when health workers wanted to involve clients in physical activities, it was not possible. They could be taught on vegetable growing in small gardens, due to lack of land allocated for this in some hospitals. We cannot try it because we have no materials to use. Some participants said:

[“...we are let down by lack of resources. Our requisitions for nutrition support have always not been successful. Not even a small piece of land was allocated for demonstration in vegetable growing. In such situations, we are left with no options but to sit back and look on...”] (Participant MSN1).

Another one added that:

[“...the supply of the new nutrition integrated HMIS registers is inconsistent. These registers are frequently out of stock prompting health workers to use the old registers which have no provision nutrition assessment recording. Consequently, some nutrition parameters not included in the old registers are not performed...”] (Participant MD1).

In line with resources, another participant said:

[“...there is shortage of nutrition assessment tools such as MUAC tapes, body mass index charts or calculators and weighing scales...”] (Participant JN1).

Therefore, material and financial resources needed to integrate nutrition into mental health were lacking in some mental units. This was due to a limited budget allocation to mental units or the failure of resource controllers to realise the need for nutrition interventions in mental health care. This meant that with such nutrition assessment tool shortages, it became difficult for health care providers to assess and establish specific nutrition needs of individual clients.

Furthermore, some participants expressed disappointment with the way their colleagues from other “nutritionally well facilitated departments” behave. Their attitudes towards those from mental unit were not welcoming.

[“...They can never allow us use anything from their wards. Not even therapeutic feeds can we access. Sometimes we give up and in the end the patient suffers more.....It would have been easy if the nutritionist was readily available but it is rare for the nutritionist to come to the mental unit, otherwise he would solve some of this mess...”] (Participant 4.1).

Another participant was quoted as saying:

[“...I have never seen a nutritionist come to this unit.....many times we have challenges with some health workers outside this unit who have poor attitude about mental health. For example, getting just one nutrition package (1 box of RUTF) for

a child admitted in mental unit from the paediatric ward is a problem.”]
(Participant MSN1).

However, according to participant MD1, each Regional Referral Hospital has a nutritionist who should be supporting other health workers to carry out assessments like MUAC, weight, BMI and interpretation in their respective departments.

It is therefore clear that health workers view nutrition services in mental units as important and worthy for provision. This is because of the existence of some patients on the ward who entirely depend on the mercy of good Samaritan throughout the time they are admitted.

It is also worthy to incorporate nutrition services in mental health care because participants indicated that feeding is related to drug intake and stabilisation of patients to a normal mental status. Secondly, patients on psychotropic drugs at times over eat. If their nutrition is not given enough attention they are at a greater risk of developing metabolic disorders.

In summary, the perceptions held by health worker participants were positive as incorporating nutrition services in mental health would help reduce malnutrition and quicken acceptance of medication. However, clients with mental illnesses are poor, yet, the actual determinants of human diet are economic, climatic, geographic and historical, with a strong psychological and sociological basis. Most of the clients are still grappling with the above elements and may not afford adhering to nutrition guidelines or advice given.

Although, the feelings towards nutrition assessment were positive, material and human resources to help carry out the assessment were lacking. Nutrition assessment for all patients may not be carried out because health workers in mental units allege they are understaffed. This meant that with such shortages of man power and nutrition assessment tools, it was difficult for health care providers to assess and establish specific nutrition needs for individual clients. Inadequate nutrition

skills, material and financial resources appeared to hinder nutrition services. These were thought to be due to limited employment structure of health workers into mental units, frequent absenteeism from duty, limited involvement of mental health clients in nutrition education, inadequate involvement of mental health care providers in refresher nutrition trainings and limited budget allocation for nutrition activities in mental units. With all these constraints nutrition has only been partially integrated into mental health care.

4.2 Nutrition related services offered in Ugandan Referral Hospital mental units

A number of questions were used to arrive at findings for this objective. This objective was addressed using questions from FGD and Key informant interviews. In this section, participants in FGDs (mental health service beneficiaries) narrated about nutrition related services offered in Regional Referral mental units, the types of food supplied, adequacy of quantities and frequency of food supplied and to suggest ways in which nutrition service delivery could be improved in mental units.

On the other side, mental healthcare service providers gauged the adequacy of their nutrition knowledge and how they apply that knowledge in improving the dietary practices of people with mental illnesses. They were also explained as to when they conduct nutrition education, screening and assessment, any nutrition related training attended, nutrition services they are currently offering in their department and to suggest ways in which nutrition assessment and other nutrition services can be improved their mental units.

In this section, subthemes such as food supply in mental health units, nutrition related knowledge among health workers, nutrition education, screening and assessment in mental units, hindrances

to nutrition activities in Referral Hospital mental units, nutrition services benefits as perceived by beneficiaries, nutrition expertise among mental health care providers were identified

4.2.1 Food supply in mental health units

This was addressed by inquiring from participants about the types and quantities of food the hospital provides and how often they receive that food. They were further required to state whether they are satisfied with the quantities.

Some participants showed that they did not receive any food support from mental health facilities. In the empirical findings, all respondents who attended FGDs from Fort Portal Referral Hospital with the exception of one had never received any food from that hospital. It was their relatives who provided food. Raw food was brought from home and cooked at the hospital. Sometimes they bought food from vendors in case they had money. Those without money and family relatives keep on begging. Others sleep hungry. In a loud voice with his face frowned, one of the participants asked:

[“...which food are you talking about? You mean the hospital is supposed to give us food in addition to medical treatment? How come in addition to my own patient I am suffering feeding another man dumped here with no relative. Whenever I fail to get enough food, he sleeps hungry”] (Participant FAM4 wondered).

In the same line, a female patient respondent (FPF2) said she had never seen anyone supplying food in Fort Portal referral hospital. However, she had heard of someone who gives maize flour and beans. Only one out of the nineteen participants who attended FGDs in Fort Portal, in a low tone said:

[“...it is coming to one week and I have only received half a kilogram of posho, beans, sugar and a small cup of cooking oil once...”] (Participant FPF5)

This implied that there are feeding challenges among patients attending Fort Portal regional mental unit and means that it is only the lucky few patients who receive an opportunity to receive food.

Secondly the food quantities supplied are small to take a patient for more than a day or even satisfy someone. This is due to lack of enough funds to procure enough food for all patients. Similarly, the lack of streamlined guidelines or policy on feeding patients admitted to mental units may be causing these feeding challenges.

In Mubende Referral Hospital, all inpatients in the mental unit were provided with food but not to attendants or out-patients clients. For instance, an outpatient participant MBAF3 noted that she had never received any food from the hospital. However, in disagreement two attendant participants refuted the above claim. They said:

[“...I had come to visit my friend and found when she had been given ready prepared posho and beans; they were adequately enough for the patient...”] (Participant MBAF2).

[“...the posho and beans were generally adequate for a patient and used to receive them for lunch and supper...”] (Participant MBAF1) confirmed.

This showed that in Mubande hospital, cooked food was provided to patients admitted in the mental unit. However, those attending as outpatients are not catered for. All inpatients confessed to receiving cooked posho and beans and milk-porridge. Although, these food combinations may provide enough carbohydrates and all the essential amino acids, the meals are deficient in micronutrients. Micronutrients enhance cellular utilisation of carbohydrates and proteins and can only be found abundantly in fruits and vegetables. Providing only posho and beans with a little milk may not satisfy the nutritional needs of the already compromised health of mental health clients. If success is to be achieved, food rations and menu designs should be based on the needs of each individual client. The implication of this is that balancing of clients’ diet remains unemphasised as meals are limited in nutrient content and cannot be used in targeted management of mental illnesses. This could be a result of the small food budget, inadequate nutrition skills of health workers and inability to employ nutritionists on mental units have remained a challenge.

In Jinja, majority of the participants indicated that they had never received any food from that hospital. Not even a single patient participant who attended Jinja hospital mental unit had ever received any food from that hospital. One participant narrated:

[*“...I have never received any food from this hospital and I don't know whether I will ever get it...”*] (Participant JAM1).

To some respondents, receiving food from Jinja Referral Hospital mental unit was still rumour.

One participant who had for more than a year received services from this health facility said:

[*“...I have heard patients receive food from here but I don't know the type, quantity and how often they give it because I have not seen any being given...”*] (Participant JPF4).

In the same way, another participant added:

[*“...I had some long time ago come to pick drugs from the former unit and found when admitted patients were being given ready prepared posho, rice and beans at lunch time, which were adequately enough for the patient...”*] participant JPF5

However, a nurse participant (JN1) from this health facility said that at times the hospital gave food to some needy patients. This indicated that the hospital gave some food to a few selected needy admitted clients. However, these foods were limited to maize flour, and beans at the neglect of other nutritious brain stabilising foods.

In conclusion on this subtheme, all sampled hospitals provided either maize flour or posho and beans as a form of food help to admitted clients. However, Fort Portal and Jinja referral hospitals irregularly provide small quantities of uncooked foods. In comparison, Mubende and Masaka referral mental units provide adequate cooked posho and beans to all clients admitted on psychiatric wards. There are no fruits or vegetable served to patients in all hospitals. This meant that the meals were mostly carbohydrate and plant protein based with limited or no micronutrient (minerals and vitamin) supply. Such foods cannot satisfy the nutritional needs of the already compromised health of mental health clients, as this kind of diet seem not focused on providing

nutrients that can help clients improve, but mostly to make patients satisfied and comfortably stay on the ward and swallow psychotropic drugs if available.

4.2.2 Nutrition related knowledge among health workers

Under this sub theme, health care provider participants (nurses) were tasked to think back over all the years since school time, and gauge the adequacy of their nutrition knowledge to the current mental client's demands and narrate how they are applying that knowledge in improving the dietary practices of people with mental illnesses.

The responses given by participants showed that nutrition knowledge among nurses was not adequate in relation to the needs of mental health clients. Many of the participants confessed to having limited nutrition knowledge. They claimed not to have up to date nutrition knowledge yet the need for nutrition care was increasing day after another. One of the participants from Fort Portal hospital mental unit (FN1) mentioned that although she had attended some nutrition workshops, her nutrition knowledge was not adequate.

Similarly the participants from Jinja also confessed that their nutrition knowledge was not all that adequate to handle mental-nutrition related problems. This indicated that nutrition knowledge acquired since school time is not enough to address the current mental health client's demands.

In the same line, a nurse from Mubende Referral Hospital was quoted as saying:

[“...my nutrition knowledge is not adequate and since my professional training I have never attended any nutrition training...”] Participant MBN1

However, another participant from the same hospital (MBN3) said that his nutrition knowledge was moderate because he had at least attended some nutrition training and likewise the respondent from Masaka Referral Hospital (MSN1).

Despite the current perception of the usefulness of nutrition interventions on the mental unit, it is conclusive that health workers' nutrition related knowledge was not adequate to attend to the nutrition demands of clients living with mental illnesses. This could have resulted from neglecting nutrition related subjects, skills teaching and training in the curricula of all schools of medicine. Secondly, it could also have been a result of inadequate refresher training in nutrition education. This can lead to health workers being negligent in managing patients' nutritional problems.

On the other side, when participants were tasked to explain how they are applying their nutrition knowledge in improving dietary practice of people living with mental illnesses, most of them revealed that they use their little nutrition knowledge in advising clients on feeding. Provided that it is found necessary, patients are advised on eating a balanced diet. However, when tasked to explain what a balanced diet constitutes, some of the health workers could not give an idea.

[“...I give some health education about a balanced diet and usually advise some patients to take natural fruit juices instead of sodas and to eat green vegetables;”]
(Participant FN1).

In line with this, one participant from Mubende hospital said:

[“...some patients have eating problems. Therefore I use my knowledge to intervene and help them feed well,”] (Participant MBN1).

While as another participant from Masaka hospital said for them in their hospital, they were using nutrition knowledge to modulate patient's diet.

[“...We are using it to modulate the diet. We change patients' meals at least once in a week and give individual health education in relation to the patient's condition.”]

However this ends only in discussions as we do not always document anything about nutrition interventions for any client.”] (Participant MSN1).

Therefore, however little their nutrition knowledge may be, health workers were endeavouring to help their clients improve on their dietary practices. This is because they see a need and demand for nutrition services. It is indeed true that fostering best nutrition practices can help improve patient outcomes and reduce health care costs. Secondly, information from health workers to patients has been found to have a positive and significant correlation with adoption of dietary behaviour and reduced risk of nutrition related chronic diseases. Therefore, improving health workers’ nutrition knowledge may help improve client’s dietary practices which in turn will lead to improved health outcomes.

4.2.3 Nutrition education, screening and assessment

Through interviews, health care provider participants were asked to indicate when they conduct nutrition education, screening and assessment in their respective mental department. In response, all health worker participants from Fort Portal hospital contradicted the information given earlier and said they were not conducting nutrition education, assessment or screening in their mental department. Specifically, one participant whispered:

[“...We have not been putting it in practice. We did not think it was important since patients were providing food for themselves unless we really see that someone is dying from hunger, or patient is extremely needy. That is when we ask the administration to provide posho and beans. Secondly, we do not discuss nutrition management because it would be a challenge to us in case patients start to ask for the food we were talking about...”] (Participant FN2).

This to a great extent indicated that nutrition assessment and screening were not performed due to a general lack of nutrition related knowledge. Secondly, although, the new integrated nutrition HMIS registers were available and being used in most facilities, it was observed that nobody weight, mid upper arm circumference and body mass index results were recorded in these health

data collection tools. It was also evident that health care providers feared to initiate nutrition talks and nutrition education to their clients because of the fear to be asked for food by patients. This was because the hospital did not regularly provide food to clients. Secondly, health care providers seemed not to appreciate the importance of nutrition education. They thought it could only apply when patients are having plenty of food at their exposure. This suggested that health workers in mental units need to be oriented on nutrition service delivery in mental health care.

By the same token, in Mubende hospital, nutrition education, assessment or screening for clients attending the mental unit were not performed at all. As much as some participants from this hospital had earlier said that they use their knowledge to intervene and help clients feed well (MBN1), one of them confessed:

[“...we have never conducted nutrition education but we do educate on other mental health issues and it is very rare to discuss nutrition management on ward rounds.”]
(Participant MBN2).

This meant that it was only in exceptional cases that nutrition education was carried out in both Fort Portal and Mubende Referral Hospital mental units. Equally important, both nutrition assessment and screening were not performed at all. This was because health workers attached little importance to nutrition education, assessment and screening in mental health care service delivery.

In Jinja, nutrition education was offered in form of advice with no organised arrangements to educate clients. As outpatient clients arrived in the morning, they were health educated. Likewise, during ward rounds, health workers gave some nutrition advice to a few selected clients. However, no nutrition assessment or screening was performed. One of the participants narrated:

[“...we health educate outpatients in the morning as they arrive and get are seated in their groups. Sometimes we go to the ward for example, as you are greeting the

patient; you identify those who need nutrition care and advice accordingly.”]
(Participant JN1).

This indicated that no nutrition screening was performed. However, nutrition education in Jinja hospital mental unit was offered in the morning hours for only outpatients. For inpatients, unless one was visibly malnourished, he/she would never receive nutrition education.

In Masaka hospital mental health unit, the case was slightly different. One participant revealed that

[“...every time we review the patient, we assess the nutrition status by observing the status of the patient for example, by comparing age to body weight and use of history from their attendants if the patient has been eating.”] (Participant MSN1).

However, this statement could not be taken wholesomely because for all the time data was collected from this health facility; no weighing scale was seen being used. Moreover, we did not see any weight records on the patients’ admission forms or HMIS register.

All things considered, a general conclusion in this subtheme was arrived at that in most mental health units, nutrition education, screening and assessment were rarely conducted in the sampled Regional Referral mental units of Fort Portal, Mubende, Jinja and Masaka. In a few situations where nutrition education was offered, the procedure was informal and usually haphazardly performed, with most health workers not using any guidelines. This was due to lack of nutrition expertise. Inability to conduct nutrition education, screening and assessment is basically a denial of services to mental health clients. This is because information from health workers to patients has a positive and significant correlation with adoption of dietary behaviour and reduced risk of nutrition related chronic disease.

4.2.4 Awareness on the current nutrition activities performed in mental units

On this subcategory, both FGD and key informant participants were tasked to describe the nutrition activities offered in their mental departments and give hindrances to the offering of such services.

In response, almost all service provider participants anonymously showed that they engaged themselves in offering some kind food help to clients. As seen earlier, hospitals like Masaka and Mubende provide cooked food (posho and beans) to all admitted clients, while in others (Fort Portal and Jinja) only dry food rations like corn flour, beans and sometimes cooking oil are provided to a few needy patients. One of the participants explained:

[“...food supplied to the mental unit is very little. We only offer posho and beans to patients who are unable to get food. Secondly, we lack people to cook for those needy patients without attendants. Those who offer to cook for the needy also need to given food hence, encroaching on the stock...”] (Participant (FN3).

Similarly in Mubende hospital, participant MBN1 said the hospital gave posho and beans to all inpatients. However in Jinja, a participant was quoted as saying:

[“...we discuss nutrition management therapies on ward round with patients and advise accordingly, give nutrition education, and for some needy patients we give food.”] (Participant JN1)

However, on other side most of the participants in FGDs (attendants and clients) refuted the above and said they had not received any nutrition services from mental units. For example, out of the 17 participants from Fort Portal who attended FGDs, 13 showed that they had not received any nutrition service from this hospital. This to a great extent showed that few patients in Fort Portal received nutrition services while admitted and at or after discharge. However, on a few exceptions, some clients had been advised on feeding, while others had received posho and beans. Specifically, four participants from Fort Portal hospital confessed to have received some nutrition advises. Two of those participants were quoted as saying:

[“...health workers gave us some nutrition advice and it seems to have helped us. However, we could not afford to get the foods...”] (Participants FAM1, FAM3).

In the same manner, another participant said:

[“...they advised me about the special foods and juices that would be worthy to give to my patient. Now with this advice, I know that fruits, vegetables, and other foods

like fish are essential for people with mental illnesses and it has helped us...”]
(Participant FAM4).

Therefore, to a small extent advice on nutrition was sometimes given to selected patients. However, patients were not being advised on how to obtain some foods. This suggested that as clients are being advised on good nutrition, alternatives on how to obtain some foods like creating kitchen gardens should also be given concurrently.

Stunningly, even those who had received some nutrition services like food rations were not satisfied with the amounts and frequency. One beneficiary narrated:

[“...I have only received half a kilogram of maize flour, beans and sugar once. Most of the times I keep on begging from supermarkets, Mpanga central market and katojo prison...”] (Participant FPF5).

This implied that the food rations given to patients in Fort Portal were not enough. Hence, forcing some of them to beg and exposing them to various kinds of assault and abuse.

In Mubende, the situation was different. Nearly half of the FGD participants in this hospital confessed to have received at least some nutrition services. It was however noted that those who had not received nutrition services were mostly outpatients.

Findings from this hospital showed that clients were receiving cooked posho, beans and milk-porridge as one of the participants narrates:

[“...I have ever received a cup of milk for my patient and posho when he was admitted but it is many years ago...”] (Participant MBAM1).

In support of this, a female beneficiary participant said:

[“...they give us nutrition education on how to feed the patient with body building foods like avocado, soya, yellow bananas and how to take care of the patient.”]
(Participant MBAF1).

This indicated that attendants were being health educated and helped to feed their patients. This was because health workers perceive it that people with mental illnesses were at a higher risk of developing malnutrition.

On the other hand, some male patients from Mubende hospital said they had not received any nutrition service. However, out of the group came one participant client who said they used to go and line up for food at the kitchen at around midday. Identically, another participant said:

[“...when admitted they used to give me free posho and beans. I have had nutrition education on drinking (passion fruits and water) and I was told to stop taking fatty food and was left on milk.”] (Participant MBP2).

It was therefore evident that some kind of nutrition education was being offered in addition to providing some food. These findings were consistent with what health care providers said that at least they provide nutrition education and give cooked food to clients which to some extent facilitate their stay on the ward.

Secondly, unlike in Fort Portal hospital where clients were given raw food, admitted clients in Mubende hospital were saved from the risk of cooking and exposure to harmful objects like fire wood that could easily be used by violent patients to injure others. However, the diet offered to patients was still not balanced since it only consisted of posh, beans and some little milk, with no vegetables or fruits.

In Jinja hospital, all the male and female patient participants who attended FGDs showed that they had not yet received any nutrition education from the hospital. Although this could have been true, their attendants (both the males and females) showed that at least some nutrition education was offered in this hospital. To bring out this clearly, one of the participants said:

[“...I have always received nutritional education. I was told to provide food and drinks to my patient in time. Antipsychotic drugs are strong and require eating.”]

They cause dizziness. Health workers always remind us to provide food and drinks to patients whenever we come to hospital to pick drugs for them...] (Participant JAF2).

In agreement with the above, another participant said:

[“...they educated me on feeding my patient in time and giving drinks on time...”]
(Participant JAM2).

Therefore, in Jinja hospital, nutrition education is offered mostly to patients’ attendants. This may be because patients are always unstable. This puts patients at a disadvantage because not all attendants are able to transfer that knowledge to patients as they improve and become more independent.

In regard to Masaka hospital, all the six female attendants involved in the FGD showed that they had not received any nutrition related service from this hospital. However in disagreement, all the male attendants, female patients, and male patients confessed to have received nutrition services from this hospital. Services received included; cooked posho, beans and porridge, vegetables seeds, paw paws, avocados, and piglets to rear. One of the participants specifically said:

[“...since 2003, we received an organisation, Uganda Schizophrenia Fellowship (USF) which has given us nutrition education. In this organisation, they have taught us modern crop growing and rear animals like pigs, goats and chicken. They provided fruit seeds like paw paws and they periodically measure our blood nutrient profiles...”] (Participant MSPF5).

Another participant showed that

[“...they used to give us nutrition education about eating a balanced diet when taking medication, and encouraged us to eat foods containing vitamin B...”]
(Participant MSAM2).

Generally, these results showed that not only does Masaka hospital provide cooked posho, beans and breakfast porridge to all admitted patients in the mental unit, other Non Government Organisations (NGOs) were also contributing greatly towards the nutrition welfare of clients receiving mental health services. The services of USF were complementing those received from

the mental unit to improve the livelihood of clients. This approach seemed to conform to the Integrated Theory of Health Behaviour Change model. This suggested that although the hospital was unable to provide other foods that make a balanced meal, the fact that these patients had been empowered to grow fruits, vegetables and rear some animals, they were at a better position to supplement their diet. This was due to the empowering interventions of Uganda Schizophrenia Fellowship.

In general, few nutrition related activities are being carried out in Referral Hospital mental units. These include providing either cooked or raw maize flour, posho or beans. It is only in Jinja hospital where nutrition education is offered to patients. This is due to lack of awareness on the different nutrition activities to implement, lack of nutrition assessment tools or lack of skills to implement nutrition activities.

4.2.5 Hindrances to nutrition activities in Referral Hospital mental units

On this sub theme, participants were required to show factors hindering the delivery of nutrition services. The responses on this issue were related to inadequate knowledge, lack of training for health workers, patient's poor mental status, undermining of information given, limited financial status and inadequate food stocks. For instance, participant FN1 said:

[“...there is inadequate stock of food. Sometimes we run out of food stock. Food is only stocked here quarterly yet within a month everything is finished leaving nothing for the next two remaining months of the quarter.”] (Participant FN1).

However in disagreement, another participant from the same hospital said:

[“...There is a lot of “organised absence” from duty. Nutritionists are most of the time away training or attending workshops. You cannot effectively offer nutrition services to mental health clients when most of the time you are away in workshops.... Who will make requisitions for demonstration foods and who will carry out the demonstrations?” (Participant MD1).

Participants from Fort Portal and Jinja hospitals pointed out the lack of adequate knowledge about nutrition services as a major hindrance, which greatly limited nutrition service delivery to clients.

One participant from Jinja hospital mental unit said:

[“...health workers have inadequate knowledge about nutrition, there are no nutrition specialists coming to the mental unit and lastly some health workers have negative attitudes about mental health department. All these hinder service delivery.”] (Participant JN1).

This implied that although health workers wished to offer nutrition services, the fear of giving wrong nutrition information and instructions limited their ability to offer the service. This was because mental health professionals hardly received any support in terms of nutrition capacity building. At the same time, they are very few at regional referral level. Secondly, the frequent absence from the duty station by the nutritionist hinders coaching, mentorship, and inhibits procurement of demonstration foods. This negatively affected nutrition service delivery in mental units. Therefore, health workers should be empowered through nutrition training so as to be confident enough to carry out nutrition activities.

Client’s undermining of information given by the health worker was another limiting factor. Clients and their attendants often disregard health workers’ advice. This was because health workers were not confident enough on nutrition related issues. Specifically, a participant from Fort Portal hospital said:

[“...some patients for example the paranoid have poor mental status. They often think their food has been poisoned and refuse to eat. Others even within a few minutes of advising to take organic fruit juices, you can be shocked to find them sipping a soda...”] (Participant FN1)

This implied that the negative attitudes some patients exhibit about nutrition advice offered by health workers limited the success of nutrition related activities in the department. This was due to a low perceived susceptibility to developing nutrition disorders and mental health deterioration.

Secondly, the effects of sensory issues, hyper-arousal, being easily upset and feelings of numbness can affect and alter appetite and eating. This requires nutrition intervention, or else the patient may develop nutrition deficiencies leading to a slowed recovery.

Furthermore, the ability of healthcare workers to provide accurate, practical and consistent dietary advice appropriate to the needs of patients was limited. This creates doubt in the authenticity of the nutrition information they give information.

Other participants also hinted on inadequate financial resources as another hindrance. Although the mental health department would wish to provide all food varieties, trainings, assessment and screening of patients for malnutrition, the meagre financial resources could not allow these activities to be carried on. In relation to the above, a participant from Masaka hospital commented:

[“...limited financial resources greatly hinder nutrition activities. For example whenever we make our requisitions for nutrition, they do not always succeed yet, sometimes patients have limited resources that they cannot afford to buy the foods we advise them.”] (Participant MSN1).

Another participant hinted that:

[“...Services like nutrition sometimes have no budget allocation. Here in Uganda most of the money is spent outside public services..... We used to have funding for patient feeding but people abused this fund. Eventually, the funds were scraped off. Many health workers complained about it but no more funds were given for patient feeding...”] (Participant MD1).

This meant that nutrition activities were underfunded and as money becomes scarce, interventions on nutrition related services were reduced. This is true because it is money which is counted as the life blood of all that the department offers, be it buying food stuff.

4.2.6 Nutrition services benefits as perceived by beneficiaries

In this subtheme, FGD participants (mental health service beneficiaries) were tasked to explain how they have benefited from the nutrition services they received from their treatment centres.

Findings from Fort Portal hospital showed that all participants did not acknowledge any beneficial nutrition service received from this treatment centre. They disregarded services like nutrition education/advice and for this reason, most of these participants said they did not receive nutrition related services in Fort Portal hospital and therefore had gained nothing related to nutrition.

Even the participant who had at least received some food said it was almost of no benefit to her because it was too little and never liked the food supplied as she explained:

[“...I do not see any beneficial nutrition services here. A half kilogram of maize flour and beans can never feed me for a week. It has not helped me in any way. After all I don't like posho. It causes nausea to me...”] (Participant FPF5).

This meant that nutrition services were poorly facilitated in Fort Portal hospital to the extent that patients felt not cared for. This implied that health workers were only concentrating on management of mental illnesses using psychotropic drugs forgetting that mental illnesses are non communicable diseases that require multiple approaches. The Integrated Theory of Health Behaviour Change model should be employed to achieve mental health promotion and increase life expectancy through health literacy and health learning.

In Mubende hospital, most of the participants could not easily explain how they had benefited from the nutrition services offered. However, some participants (female attendant and four patients) attached some benefits to nutrition services the hospital was providing.

[“...my patient was badly off. He could sometimes refuse to eat but ever since he received nutrition counselling, he feds well. This has helped him improve. He has even started doing some work...”] (Participant MBAF1).

This meant that nutrition education was crucial in improving the well being of clients with mental illnesses. This is because as they obtain nutrition education, they change their feeding habits, leading to improved health. Secondly, nutrition education creates a belief that specific health behaviours can prevent an illness. In the end, the desire to avoid becoming ill is a value.

Similarly, four female patients attributed some benefits to nutrition services received from the hospital. They showed that the nutrition education they received and the food offered (posho, beans and milk-porridge) helped in improving on their nutrition status as a participant narrated:

[“...before being told, I used to have severe dizziness but ever since I was advised on drinking and eating, the dizziness stopped. I can now carry a 10 litre jerry can on the head without any trouble...”] (Participant MBPF2).

Furthermore, another participant said:

[“...I had given up doing some of my work. However, following the health worker’s advice on how to improve my feeding, I am now strong and managed to proceed with my work...”] (Participant MBPF4).

Therefore, nutrition education is helpful and very essential in enhancing and improving the health status of clients with mental conditions.

In addition, male attendants from Jinja hospital also showed that they had highly benefited from the nutrition education and advice given. A participant from this hospital explained:

[“...my patient came when he was very weak. However, following the health worker’s feeding advice, he is now strong and can walk around...”] (Participant JAM3).

This indicates that the nutrition advice given was positively utilised to the benefit of patients leading to improvement of their health status.

In the light of male attendant participants, female attendants also were in agreement that nutrition services had some benefits to them. Two care takers pointed out that the advice given had helped their patients to overcome drug side effects like dizziness. They said their patients used to become drowsy after swallowing drugs. However, following nutrition counselling, their patients’ feeding has improved and the drowsiness is no more.

However, most of the male and female patients from Jinja hospital showed that they had not gained from any nutrition interventions in this hospital. In all their statements, a common view “I have

not received any nutrition related service from here” was given. This revealed that nutrition education was mostly offered to patients’ attendants. Thus, meant that the motivating benefits of perceived susceptibility and perceived severity were lost since the primary beneficiaries were not involved. Hence, the refusal by patients to follow health workers’ instructions.

In Masaka hospital, apart from the six female attendants who anonymously said they had not received any nutrition related service and therefore could not attach any benefit, the rest of the respondents distinctly pointed out strong benefits achieved from nutrition services at the hospital.

Most of the respondents attached economic benefits to nutrition services provided in Masaka hospital. The provision of some food in the hospital had helped them to save money. Specifically, one respondent said:

[“...it helped me to save money. I do not get worried about my patient. Even when I have nothing in my pocket I know my patient will at least eat something. The money I would have spent on basic foods is now used to buy supplementary food...”]
(Participant MSPF2).

Other participants attached a satiety benefit to some nutrition services. They shared the view that the food supplied helped sustain their patients as they waited for relatives to bring them supplementary food from home. Participant MSPF1 narrated:

[“...it has helped my patient because he does not need to wait for me to bring food from home. The food is served in time even before home food is brought. Therefore, when hospital food is served and he feels hungry, he eats that food and gets satisfied...”] (Participant MSPF1).

Furthermore, a number of participants gave nutritional benefits in relation to the services received at the hospital. Participant MSPF4 in Luganda, one of the local languages explained:

[“...okunjigiriza ku by’okulya kyanyamba nyo. Luli nga tebanatandika kunjigiriza ebimu ku bintu ebyo, nali mukovu nyo, naye kati laba siri mutono nyo, ate siri munene nyo, ndi mu shape entufu eyomubiri gwange. Nobulamu bwange kati ndaba nga bweyongera ko emyaka egiwera...”]

Literally she meant that she had benefited a lot from nutrition services. Before receiving nutrition education, she had a very low body weight, but now she has a normal body weight (not too thin and not very fat). She felt her life span had increased by a number of years.

Another participant while using a polite voice, said:

[“...we usually come here when desperate and helpless. The food they give helps the patient improve. In this way we feel cared for, loved and our dignity taken care of as humans who should access basic needs.”] (Participant MSAM3).

Therefore, providing a range of nutrition services has a positive effect on improving the health status of people living with mental illnesses. Nutrition services complement client’s ability to comprehend the whole of the stressful situation and enhance their capacity to identify, benefit, use, and re-use the resources at their disposal as stipulated in the ITHBC model.

Although, there are financial constraints, nutrition services in mental units ought to be offered so as to help people with mental illnesses live a better life.

4.2.7 Nutrition expertise among mental health care providers

Apart from one, who had attended once nutrition training, nearly all the service provider participants in all the sampled mental units had not received any nutrition related training outside their formal professional training. Participants depended on the knowledge they had acquired way back during school time to health educate clients, while others on knowledge acquired from continuous medical education (CME) about nutrition. One participant specifically said:

[“...I have not received any nutrition training since school time. Nobody can even consider us from this mental unit to go for those trainings because there is a lot of stigma.”] (Participant JN1).

Since completion of professional training, nearly all participants had not received any adequate training on nutrition related services. This could be contributing to the gaps in nutrition-related

knowledge among health workers and could be resulting from lack of awareness of the importance nutrition in mental health care among those who endorse for workshops.

4.2.8 Improving nutrition services delivery in mental health units

Key informant participants were tasked to narrate ways in which nutrition service delivery in mental units can be improved.

In reaction, nearly half of all participants' responses were in line with increasing and enhancing human resource. Many participants suggested the recruitment of a special nutritionist in the mental unit so as to manage nutrition related conditions as well as helping clients adopt self support in diet regulation. One participant said:

[“...We need a nutritionist stationed in the mental department because he will carry out nutrition assessment, educate and manage all patients in the unit and not only to select a few...secondly, the nutritionist will lobby for mental health nutrition activities budget allocation like they have done for T.B patients”] (Participant 2.3).

Other participants' views were in line with sourcing support and finances from hospital administration and NGOs to carry out nutrition activities and also enhance patients' livelihood and financial status. Some the participants were quoted as saying:

[“...Administration should support nutrition activities such as demonstration gardens, provide watering cans and also help to identify NGOs and Volunteers to help in social support...”] (Participant 2.1).

[“...What is the difference between patients in referral hospitals and those in the National Referral Hospital? Why can't there be equality? It is unfair for one patient in the same country enjoy benefits at the expense of another. Animal proteins should also be provided to patients alongside plant sources of food just like the way it is in Butabika...”] (Participant 3.1).

In addition one participant said:

[“...Nutrition assessment should be done at every key contact area and measurements recorded in the HMIS register and patient's Form 5...”] (Participant MD1).

All the above indicated that there is a need to boost human and financial resources in the mental unit. The recruitment of a clinical nutritionist may produce positive results towards integrating nutrition activities in mental health care. Apart from helping in mentoring and coaching others, nutritionists have the professional expertise in managing nutrition related conditions.

4.3 Dietary practices of people living with mental illnesses

This category surveyed the dietary practices of people living with mental illnesses attending Referral Hospital mental health units. To address this, FGD participants were tasked to describe the factors they usually consider when selecting food for a meal and give the ways in which they prepare that food.

On the other hand, key informant participants were tasked to describe the eating habits they find abnormal among clients admitted in mental units and there after state how they are helping these clients regain their normal eating habits?

4.3.1 Reasons for providing food to clients admitted on Psychiatric units

Participants were tasked to give reasons as to why it is required for the hospital to feed clients admitted on the mental unit.

In response to this, it was noted that for majority of participants food was provided mainly for satiety reasons. Most of the participants believed that feeding clients was a way of respecting their dignity as human beings. Some said feeding helps in keeping clients calm and makes them comply not only to taking their medication but also to stay on the ward until deemed ready for discharge. One respondent said that:

[*“...As a human being one has to eat. Hunger has to be satisfied. Some patients run away from hospital because of lack of food. This causes frequent relapses...”*] (Participant 1.1).

In disagreement, some participants argued that some patients are brought when they are restrained, injured, neglected and emaciated. Psychotropic drugs alone cannot help such clients. They need to eat a health meal to heal wounds and gain weight. A participant was quoted saying:

[*“...much as we need them to get satisfied, we also aim at therapeutic advantages of this food. That is why we add milk in porridge...”*] (Participant 2.2).

Therefore, health workers feed patients with the objective making them satisfied, stay on the ward and swallow medication. However, others share a view of the therapeutic benefits of food. Food is medicine and therefore if given to clients in a well formulated and controlled manner can help patients recover quickly.

4.3.2 Factors mental health service users considered in food selection

Most of the participants showed that they depended on patient's preference to select food to be eaten on a given day. They did this to show concern, please and respect the sick. It was also used as another way of encouraging the patient to eat. One participant (MSAF3) said that patients only eat what they want. When forced, sometimes they end up refusing all the food. Even when the attendant knew the right food, they believed it was good to give a patient an opportunity to make a choice. After making a choice, the attendant then suggests to add other foods while explaining the patient the importance of the suggested foods. In this way, patients feel respected and loved. In the end, they agree and eat all the food prepared. One participant narrated:

[*“...I base on what my patient needs to eat. If his choice is not respected, sometimes he refuses to eat. In the end, he suffers more mental break down...”*] (Participant FAF2).

Therefore, attendants are conscious of what their patients need to eat and will always follow the demands of their patients. This means that the preference of patients is core in determining nutrition and food choices. Hence, food selection may be balanced in favour of individual desires at the sacrifice of food varieties essential for good health.

However, a number of respondents also suggest that they select food according to what is available. Food for a meal is selected according to what you have in store, in the garden or even what your pocket can afford to purchase. You cannot wish for what I do not have and I bring it. Another participant narrated:

[“...I base on availability of food for the family but not more than three types of food are prepared. That is what I can afford to provide...”] (Participant FAM4).

Availability of home grown food is also another big influencing factor on food selection among the beneficiaries of mental health care services. This was because most of these people are peasant farmers without any steady income and depend mostly on home grown food. This therefore, suggested a need to help them identify their individual potential and skills to use and re-use resources at their disposal so as to help them live a meaningful life. Notably, no single client was on a specific food menu or food prescription. This was because nutritionists were not always available to make such prescriptions.

Different from the above, other participants showed that income was a strong influencing factor for making food choices. Some of the participants said they come from very far. Attainment food daily from home was equally expensive as buying therefore, most of the time they bought either raw or cooked food from vendors. The type of foods bought was dependent on how much one had in his or her pocket. One participant said:

[“...I sometimes purchase food according to my financial stand. When money is not there I eat what my pocket can afford...”] (Participant MBAF2).

This indicated that some participants depended on their income in selection of food for a meal. When the financial status is good, they may buy a variety of foods and when with low finances, their ability to purchase variety reduces. This therefore implied that although, attendants and their patients would have loved to eat the best meal, their food choices were at times limited by income. For that reason, patient's food preferences, availability of food and income are strong determinants of food selection among mental health care service users.

4.3.3 Food preparation methods

On this subtheme, various food preparation methods were identified by study participants. These methods involved much of boiling, frying and sometimes buying already prepared food which in most of the times was stewed (cooking by frying and then boiling).

Both male and female participants in all the sampled hospitals showed that boiling was the major food preparation method. However, nearly the same number as those using boiling method were frying their food.

In addition, some participants said they bought already cooked (stewed) food from vendors, while very few used the steaming methods.

This meant that patients admitted to referral mental health units prepared their food mostly by boiling and frying methods. A few of them employed stewing and steaming methods. This is because boiling and frying are quicker methods of food preparation. However, frying food destroys most food nutrients and secondly increases fat consumption, putting clients at risk of metabolic disorders such as diabetes.

4.3.4 Eating habits of people with mental illnesses

Nearly all the participants revealed that psychotropic drugs cause patients to over eat. In agreement, two of the health workers added that in some instances a few of the patients loose appetite. Health workers in all the four sampled Referral Hospital mental units complained that drugs cause a lot of appetite to patient as soon as they are initiated and eventually patients start to over demand for food. Some patients go to the extent of begging whoever they see eating anything. This does not only irritate health workers but also cause a lot of worry about the health risks of over eating.

While standing to bring out his point clearly, a participant said:

[“...Patients demand for food all the time. Even when a patient has just been given two chapattis, after 30 minutes he/she demands for more. A patient eats at 1:00pm and at 2:00pm he wants to eat. Patients over demand food from their care takers...”] (Participant MSN1).

Psychotropic drugs have unpredictable effects on clients’ appetite. It is clear that most clients get excessive appetite while a few loose appetite. Situations of this kind require regulation of food intake. Short of this, those who develop excessive appetite are more likely to develop, hyperlipidemia which is an early metabolic response to excessive food intake, while those who loose appetite develop nutrient deficiencies.

Findings from the Food Frequency Questionnaire (FFQ) were summarised as shown in the tables below.

Table 2: Monthly mean consumption rates for common foods

n=83

FOOD	CONSUMPTION FREQUENCES								MEAN Monthl y mean food
	2-3 in per day	Once a day	4-6 in past week	2-3 in past week	Once in	2-3 in past	Once in past month	Neve r in past	

					past week	month		month	consumption
Liquid cooking oil	28	28	13	7	4	0	0	3	6.6506
Posho	7	31	15	21	7	1	1	0	6.0361
White rice	1	21	19	17	8	10	0	7	5.0964
Sweet potatoes	3	7	15	35	19	1	0	3	5.0482
Cassava	2	5	12	38	16	7		3	4.8313
Ground nuts	1	6	19	19	22	8	4	4	4.6145
Beans	6	3	18	18	30	13	10	3	4.0000
Whole milk	5	10	9	14	16	0	2	25	3.9880
Beef	2	15	1	12	15	5	18	15	3.7711
Fish	1	2	3	4	13	8	23	29	2.5422
Millet bread	0	5	3	5	13	5	14	38	2.5422
Chicken	0	0	0	0	4	2	20	57	1.4337
Brown rice	0	0	0	0	0	0	0	83	1.0000
Whole meal bread	0	0	0	0	0	0	0	83	1.0000

Data from the above table indicated that the consumption of liquid cooking oil superseded the consumption of any other foods with a monthly mean consumption rate of 6.6506. Among the foods, cereals and root tubers were the most frequently eaten foods. Maize bread (posho) was consumed more often than other cereal followed by white rice with monthly mean consumption rates of 6.0361 and 5.0964 respectively.

These two cereal foods have high quantities of carbohydrates with minimal micronutrients owing to their poor methods of processing (polishing) which involve removal of the husk and the micronutrient dense layers from the grain. Similarly, root tubers especially sweet potatoes and cassava were habitually consumed with monthly mean consumption rates of 5.0482 and 4.8313

correspondingly. This is because these foods are readily available in local markets, easy to cook and apart from rice, they are more easily grown at home. These four foods are known to have very low protein and micronutrient contents. For example, cereals are deficient of an essential amino acid lysine and therefore need to be supplemented with other nutrient dense foods.

Among the sauces, groundnuts were the most regularly consumed with a mean monthly consumption of 4.6145. This is because they are readily available in local markets and easy to cook. However, in Uganda often people buy already ground (hulled) nuts that sometimes have been stored for long. Frequent consumption of such may put many clients at the risks of liver cancer due to aflatoxin in poorly stored ground nuts.

From the above table, it is evident that the consumption of whole grain foods like Brown rice and Whole meal bread was low among the FGD participants. This is because these foods are expensive as in the case of brown rice or less palatable as in the case of whole grain bread. This implies that income and palatability are big determinants of foods consumed.

Table 3: Monthly mean consumption rates for common foods **n=83**

FRUITS	CONSUMPTION FREQUENCES								MEAN
	2-3 in per day	Once a day	4-6 in past week	2-3 in past week	Once in past week	2-3 in past month	Once in past month	Never in past month	Monthly Mean food consumption
Tomatoes	14	17	20	15	7	3	0	7	5.6627
Onions	20	17	4	11	20	6	1	4	5.5663
Cabbage	1	1	9	33	27	4	0	8	4.3614
Banana	3	1	16	14	23	9	2	15	4.0361
Carrots	1	1	7	15	24	5	6	24	3.3614
Avocado	0	1	4	14	23	15	5	21	3.2410

Pawpaw	0	1	7	14	19	12	2	28	3.1687
Pineapple	1	1	4	6	24	19	3	25	3.0843
Melon	2	0	5	10	20	10	6	30	2.9880
Pumpkins	0	0	0	3	27	14	7	32	2.5422
Amaranthus	0	0	3	5	12	14	18	31	2.4096
Jackfruit	0	1	6	6	6	10	11	43	2.3133
Mango	0	1	1	3	9	17	8	44	2.1084
Mushrooms	0	1	0	0	5	11	8	58	1.6145
Apple	0	0	0	0	2	6	4	71	1.2651
Lemon	0	0	0	2	0	3	5	73	1.2289

In the table above, it is shown that the consumption of fruits and vegetable among FGD participants was very low. The table shows that tomatoes and onions were the most consumed vegetables with a monthly mean consumption rate of 5.6627 and 5.5663 respectively. This is because the two vegetables are frequently used as spices in food preparation. However, although they are known to contain reasonable amounts of vitamins, food preparation methods like frying destroy them. On the other hand, the least utilised vegetables are mushrooms with a monthly mean consumption of 1.6145 and amaranthus (commonly referred to as “dodo”) averagely being consumed 2.4096 times per month. This is due to westernisation of diets where participants regard the consumption of the two vegetables as remote and ancient.

The most frequently eaten fruits were bananas with a monthly mean consumption of 4.0361. This is because bananas are easily grown at home, readily available in markets and cheap. On the other hand, lemons, and mangoes were the least consumed fruits. This is due to lack of awareness of the benefits of eating lemon fruits or due to its taste. As for mangoes, it may have been due to the seasonal nature of the fruits.

Clients receiving services from the selected referral mental health units over consume fat and mostly depend on staple cereals and root tubers for their meals. This is because these kinds of food are locally produced at their homes and are therefore acquired at no cost or are available in local markets at low costs. Secondly, vegetables and fruits were rarely consumed by clients. This is due to a common culture in Africa where fruits are not part of meals but mostly eating at leisure. Furthermore, it is a common phenomenon that people living with mental conditions rarely eat enough of the “healthy” food groups such as fibre, fruits or vegetables but instead consumes more of total fat.

4.3.5 Health worker’s interventions for feeding disorders in PLWMI

A number of interventions were brought forward by participant (health care givers). Most of the participants showed that they health educated attendants and there after patients as they stabilised and regain incite.

[“...We educate them about what to eat, when to eat, amounts to eat; tell them about the effects of alcohol, talk to them and counsel about side effects of the drugs...”]

However, two of the participants had different management approaches to abnormal eating habits as quoted below.

In Fort Portal hospital, one respondent said:

[“...as they recover, we reduce drug doses and encourage them to do exercises and for some we link them to peer groups...”] (Participant FN1).

However, in Masaka

[“...we space the provision of our meals. When breakfast is served at 10:00am, lunch is give at 1:00pm or 2:00pm and some of them cope up.”] (Participant MSN1).

Patients and their attendants were advised about drug effects on eating habits. Also counselling on feeding and exercising and referral linkages were used in some hospitals like Fort Portal. This implied that although, abnormal eating habits existed in patients using antipsychotic drugs, health workers were doing their best to help patients overcome this problem.

4.3.6 Changing alcohol, drugs use and other lifestyle habits

In all the sampled Referral Hospital mental units, nearly all participants said they were currently not taking alcohol, smoking, or even using any recreational drugs. Those who used to drink alcohol or smoke confessed to have stopped the habit some time back. With the exception of only four (4) out of the eighty three (83) FGD participants, a common phrase “I don’t take alcohol, smoke or use any recreation drugs” was mentioned. Obviously, none of them had been health educated about the effects of alcohol or smoking on nutrition. One of the participants said:

[“...I used to drink alcohol, smoke and take other drugs, but I stopped and have never received any information in regard to those drugs from the health worker...”]
(Participant MSPF2).

Similarly, among those who were still drinking alcohol or smoking, only one participant had been health educated about the dangers of alcohol and smoking as noted below:

[“...I sometimes drink alcohol and smoke took. The nurse told me that taking alcohol is the one preventing me from eating. She also said alcohol affects the working of drugs.”] (Participant MSPF5).

These showed that health education about the interaction between alcohol, smoking and nutrition is rarely performed. This is because health workers do not see it as a big problem.

However, in contradiction health worker participants showed that sensitization about harmful effects of drug abuse, referral to peer groups and psychosocial therapy were offered. In Fort Portal, one participant said

[“...we organise and involve them in peer groups where we discuss with them about the effects of drug use...”] (Participant FN1).

Similarly, in Jinja patients who did not respond to counselling were referred to a Non Government Organisation (NGO) "Alcohol Anonymous Group Support" at town hall, while in Masaka, they are referred to the Uganda Schizophrenia Fellowship (USF).

This implied that sensitisation about negative effects of drugs is practiced in most of these hospitals. Secondly, the use of referral linkages was practiced in most of the selected Referral Hospital mental units.

4.3.7 Challenges in helping clients change their eating habits

All health worker participants showed that they faced challenges while trying to help patients living with mental illnesses. Some clients were brought in by good Samaritans leaving all the responsibility to health workers. Others were brought by police, so it presented a challenge for health workers to advise them on diet because no one would buy food for them. One participant narrated that:

[“...Many times clients without attendants sleep hungry. Sometimes they do not get food rations regularly yet; they are taking drugs that increase their appetite. They usually get stubborn and refuse any nutrition advice...”] (Participant FN3).

Similarly, another nurse participant commented that clients with mental illnesses were not easy to convince. Many clients due to their mental state were not employed and therefore had no money and it was expensive for them to maintain a balanced diet. It was not easy to convince them to change their eating habits as said by participant FN2.

This shows that the lack of social support and financial incapability are both major hindering factors in helping clients improve their eating habits. This is due to broken marriages, straying away from relatives, loss of a job and inability to create and sustain income generating activities.

However, in trying to solve the above challenges, participant health workers from all hospitals suggested that the nutritionist should always come to support the patients who need nutrition services or a special nutritionist should be assigned to the mental unit.

[“...Have a specific nutritionist for the department to lobby and advocate for nutrition service here from the administration. Also this hospital should provide some basic food to all admitted patients onto which attendants can supplement other foods like greens. This will make our advice to patients valid...”] (Participant MBN1)

Similarly, another participant from Masaka hospital said that in addition to breakfast and lunch which the hospital provides, patients should be given dinner.

In addition, another participant was quoted as saying:

[“...You cannot tell a mentally ill person to control eating unless you have full control of the foods that patient is eating. The food budget should be increased so as to improve on the diet we provide. In this way we shall control the patient’s feeding habits. The hospital should also allocate land and resources for a demonstration garden where we can plant some vegetables...”]

This indicated that health workers were willing to improve the quality of nutrition care for patients. Unfortunately, their efforts have not yielded much as far as nutrition in mental health care is concerned. This is because they lack technical guidance from nutritionists, financial and material support from their heads of department.

4.3.8 Summary of findings

This research established that health workers had positive perceptions to offering nutrition services. However, the lack of technical, financial, and material support frustrated advances towards nutrition care delivery.

Although advances for mental health facilities to provide some food support to clients are evident, the foods provided are mostly carbohydrate based with little protein supply and no vitamins at all. Such foods provide little nutritional value to facilitate mental stabilisation and healing.

Lastly, mental health clients due to the mental medication frequently feel hungry and demand for food. In addition they consume cooking fat more frequently than any other food, with minimal consumption of fruits and vegetables. This puts them at a high risk of developing metabolic and cardiovascular disorders.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

In this chapter, findings of the research, implications of the study findings and conclusions based on the research findings were summarized and outlined. The key issues raised in this chapter were discussed in comparison with the ITHBC theoretical model and literature from other scholars. Recommendations and suggestions for further research were made to the designated authorities for their appropriate actions.

5.1 Discussion of findings

In this section, findings were discussed in relation to the ITHBC model (Ryan, 2009) and categorized according to objectives of the study. The model provided a guide on how behaviour change in Ugandan Referral Hospital mental units for both health workers serving on mental units and patients or their care givers could be fostered through addressing knowledge and health beliefs, enhancing self-regulation skills and potential of individuals, and social facilitation through family, community, and health care providers.

5.1.1 Health workers' perceptions of nutrition care services in Ugandan Regional Referral Psychiatric units

The present study made it known that across all the four Regional Referral Hospitals, health workers perceived nutrition services as very vital in enhancing recovery and simplifying the management of mental illnesses. The desire for nutrition services in mental health care had far deeper roots than expected, as nutrition was considered to help clients adhere to medication, foster

recovery and minimise self discharge (run away) from hospital. This is in line with Ecker & Nene (2012), who showed that strong evidence relating good nutrition to proper brain functioning and human wellbeing exists. This author pointed out that good nutrition fosters normal brain functioning, with B vitamins, omega 3 and 6 showing excellent abilities in controlling mood disorders. However, according to Rosenfield (2012), there is over dependence on synthetic pharmaceutical drugs (artificial mental health drugs). This has derailed both the health workers' and policy makers' focus from nutrition approaches. Secondly, having positive perceptions does not mean practicing and offering a service. The provision of nutrition care to PLWMI has attracted little attention in Uganda's Referral Hospital mental units. To achieve good benefits from nutrition care, one requires to employ a good health promotion model like ITHBC which focuses on skills enhancement for both the health workers and clients to achieve best nutrition practices. This is in line with Rosen et al (2013), who noted that, best nutrition practices can improve patient outcomes and reduce health care costs.

One out standing behaviour noted among clients on mental drugs was over demanding for food and excessive eating. This was in line with ACI (2013), where it was noted that initiation of anti-psychotic drugs, cause excessive appetite, with a tendency to over-consume food. At the same time, patients become physically inactive exposing them to obesity. This was further argued by Bartels & Desilets (2012), citing that the resultant sedentary behaviour leads to excessive weight gain and obesity. The two are major risk factors for diabetes and heart diseases. According to ITHBC model (Ryan, 2009), it is at this time that patients should be engaged, starting with letting them know that they need to change their eating behaviour and perform some exercises and then guided through advise, support and motivation.

Furthermore, most clients with mental illnesses are poor, dependant on family member and may not afford adhering to nutrition guidelines or advises given. They more often engage in poor nutrition practices due to financial constraints. This is in line with Greene & Yedidia (2005) who hinted about the severe poverty among most people with chronic illnesses. However, the ITHBC model focuses on potential identification and skills enhancement. Therefore, during moments when clients are mentally stable, coaching, mentoring and training in vegetable growing and other income generating activities can foster their skills, improve nutrient intake, improve their income and above all help them exercise their bodies.

Although, the feelings towards nutrition assessment were positive among all health workers, financial, human and material resources to help carry out nutrition assessment were lacking across all study hospitals. This is in line with Sobekwa & Arunachallam (2015), who noted that nurses who in most situations are at the forefront of the health care system in any country work under challenging and compromised situations. Secondly, Uganda's general health work force is inadequate (HURINET-U, (2012). At the same time, most skilled health workers shun working upcountry and remain mostly concentrated in city areas (WHO, 2008). Furthermore, the expenditure on mental health in Uganda is less than 1% of the health budget and 55% of this total amount is dedicated to Butabika National Referral Hospital (Kigozi et al, 2010). This compromises service delivery as most regional referral mental health facilities are left manned by the few low level cadres with limited financial support.

There is a general lack of skills to effectively integrate nutrition care into mental health services. This is mostly in the areas of nutrition education and counselling, nutrition skills development, nutrition assessment and documentation. This is in line with what Kohlmeier et al (2015), said that most health care professionals exhibit little knowledge and competence in nutrition education.

Similarly, Munuo et al (2016), noted that there is a general lack of nutrition knowledge among most health workers especially the lower carders. This is due to lack of in-service nutrition training opportunities for health workers in psychiatric units. According to Munuo et al (2016) and Yalcin et al (2013), most health workers only obtain basic nutrition training in medical/nursing schools which require supplementation during their professional practice. This knowledge gap therefore presents as a major challenge to health workers, who as behaviour change consultants need to be knowledgeable and prepared all the time (Ryan, 2009). This therefore calls for effective in-service coaching, mentorship and training of health care providers so that they can be able to transfer the knowledge to client through advice, support, coaching and helping them develop a shared plan, as indicated in the ITHBC model. In support of this, Bjerrum et al (2011) acknowledged that information from health workers to patients has a positive and significant correlation with adoption of dietary behaviour and reduced risk of nutrition related chronic disease. However, this is compounded by the fact that patients and the public remain confused about the correct nutritional advice to follow given the widespread media interest attracted by diet and the disparity in nutrition-related health messages that are in circulation (Kohlmeier et al, 2015).

5.1.2 Nutrition support services offered to patients and their care-givers at Ugandan Regional Referral mental health units.

Feeding mental health client is still a big challenge in Ugandan Referral Hospital mental health facilities. There is a general claim that budgetary allocation to mental health departments cannot accommodate balanced diets that have healing effects to clients admitted in mental units, despite knowing that targeted dietary approaches can help in management of mental illnesses. Furthermore, policy makers seem to keep a blind eye about utilising this relatively affordable and readily available means of mental health care. This is evidenced by lack of the Uganda's National

Mental Health Policy to acknowledge nutrition as one of its key priority areas (Ssebunnya et al, 2012).

In all the selected regional referral hospitals, the basic foods supplied were polished maize flour and bean either in raw form or cooked. Hospitals provided no fruits or vegetable to supplement this diet. Therefore, the diets provided by hospitals were imbalanced, and incomplete to enhance client's recovery. Furthermore, maize and Beans have minimal values of lysine and sulphur amino acids, such as methionine respectively. This is worsened by the Maillard-type reactions that occur during food preparation, in addition to the polishing that cereals undergo, exacerbating the problem of lysine deficiency (Rutherford et al, 2012). This concurs with Strassnig et al (2005), who pointed out that people living with mental conditions rarely meet the recommended dietary intake for certain standardized "healthy" food groups, such as fruits or vegetables. Consequently, they face various nutrient deficiencies leading to frequent mental break down, intense drug side effects, and delayed healing (Harris & Haboubi, 2005; Kvamme et al, 2011). The high levels of poverty among people with mental illnesses worsen this situation (Payne, 2012). Many of the PLWMI are unable to supplement their diets with nutritious foods and therefore continue to suffer various nutritional deficiencies, which eventually leads to frequent mental breakdown.

Nutrition assessment is still a challenge in Referral Hospital mental health units. Not only do these facilities lack nutrition assessment tools but also the ability to perform, interpret and record nutrition assessment result is generally lacking. This correlates with the inadequate nutrition related knowledge exhibited by most health workers. It is also in line with Kim & Choue (2009), who clearly noted that nurses have a positive attitudes to nutritional management but limited knowledge of nutritional assessment. Bjerrum et al (2011), Fletcher & Carey, (2011) had similar findings. This is because most of the health service providers in mental units rarely attend nutrition

refresher trainings. Thus, they have limited nutrition related skills. Similarly Nowson & O'Connell (2015), stated that throughout the world, in-service nutrition training opportunities in psychiatric units is not regarded important compared to other departments in hospital settings.

Although, the 2000-2005 draft mental health policy does not recognize nutrition as a key focus area, it at least acknowledges partnership and collaboration for mental health, neurological, and substance use (MNS) care services as its sixth key focus area (Ssebunnya et al, 2012). Ssebunnya and colleagues (2012), urge that collaborations with Non Government Organisations (NGOs) contributes greatly towards the nutrition welfare of clients receiving mental health services. Evidence to this are the services of Uganda Schizophrenia Fellowship (USF) in improving livelihood of clients through skills enhancement and supply of planting materials. This approach seems to conform to the Integrated Theory of Health Behaviour Change model through skills development and enhancement.

Complicated with understaffing, frequent absenteeism from duty stations is a common phenomenon in Regional Referral Hospitals. Nutritionists are always away from their duty station and by default; it hinders nutrition service delivery to target populations. This is agreement with WHO (2008), where it was noted that health workers are very few and secondly, are not accessible to the majority of the population.

Patients' negative attitudes towards some nutrition activities greatly impinge nutrition service delivery in mental health units. The refusal to follow nutrition advice given by health workers is a clue to nutrition service dissatisfaction. In agreement with findings of this study, Tang (2011), mentioned that patient's attitude towards health policy greatly influence patient's satisfaction which in turn influences patient's trust with medical services. However, through the ITHBC model, patients' attitude can be improved through dialogue with patients, increasing their awareness on

nutrition, linking them to internal and external resources (NGOs), helping them to set goals on diet regulation, meal balancing and self monitoring. This can be achieved through the use of social facilitation structures such as family support and health workers' influences of nutrition status assessment, nutrition education and counselling Ryan, 2009). Through this model, clients' ability is enhanced to comprehend the whole stressful situation and their capacity is fostered to identify, benefit, use, and re-use the resources at their disposal.

5.1.3 Dietary practices of people living with mental illnesses attending Ugandan Regional Referral mental health units

On the theme of dietary practices for people living with mental illnesses, patients' preference was a core factor in determining food choices. To a lesser extent, this was influenced by availability of home grown food. According to Adams et al (2010), the psychological stresses experienced by clients with mental illnesses lead to behaviour modifications that affect health, especially food choice. This may be attributed to some drugs for mental illnesses that cause excessive salivation (Freudenreich, 2005) and eventually influence normal eating. The dependence on patient's food choice may therefore hinder good dietary practices as food selection remains in favour of individual patient's desires at the sacrifice of food varieties essential for good health. This is related to a study by Folley & Park (2010) who concluded that sensory issues, hyper-arousal, being easily upset and feelings of numbness can affect and alter appetite and eating. Thus, patients may not have a sound mind in selecting healthy foods. This compromises healthy eating and it requires the involvement of family members to select healthy foods for a patient's meal. In the ITHBC model, this was termed as social influence.

There is a steady shift from traditional to western diets with varying changes in lifestyle (Selhub et al, 2014). Similarly, food preparation methods and consumption patterns for people with mental illnesses have changed. Most of the foods eaten by clients with mental illnesses were prepared by either boiling or frying. Although, cooking by boiling is a safe method in preserving nutrients, food preparation by frying results into enormous destruction of heat sensitive nutrients. Secondly, frying increases fat consumption, putting clients at risk of various metabolic disorders such as diabetes. This is in line with Lawrenoe et al (2011), who noted that people living with psychiatric conditions are correlated with consuming higher percentages of energy from fat and lower intakes of selected antioxidant foods. These coupled with the side effects of mental health drugs such as increased food consumption and physical inactivity, culminates into excessive weight gain and obesity, which according to Bartels & Desilets (2012), are major risk factors for cardiovascular diseases, and diabetes with consequences of premature mortality.

Dietary practices of people living with mental illnesses lack diversity. In addition to over consumption of fat, diets of people living with mental illnesses are mostly composed of starchy staples, with polished cereals and root tubers forming most of their daily diet. This is in line with the World Bank (2007) report where it was noted that most people lack access to nutrient-rich sources of food such as animal proteins. This is worsened by poverty, changes in perception, preferences and excessive appetite as reported by Lambert (2011).

Furthermore, the above poor dietary practices are complicated with low consumption of “health foods” such as fish, vegetables and fruits, resulting into a variety of micronutrient deficiencies. Unfortunately, due to poor or lack of nutrition assessment in most mental health facilities (BAPEN, 2010), these micronutrient deficiencies continue to exist unnoticeably in clients living with mental

illnesses. Hence, the resultant frequent mental breakdown, delayed recovery, with the associated economic consequences to the individual, family, and nation at large.

5.2 Conclusion

As found in the present study, health workers held positive perceptions towards nutrition care to PLWMI. Nutrition was viewed as very vital in enhancing the management of mental illnesses. However, despite their positive attitudes, health workers failed to practice nutrition activities in mental health care due to inadequate resources and limited nutrition knowledge and skills which all hindered proper nutrition management of clients with mental illnesses. This therefore calls for continuous in-service nutrition education programs, increasing resource allocation and hiring clinical nutritionists in each regional mental department so as to improve nutrition management of clients with mental illnesses.

Although, attempts to provide food exist in Regional Referral hospitals, there are ethical issues and human rights violation in some hospital where food supply is inconsistent, quantities inadequate, and foods supplied in raw form. It is unethical to instruct patients who have no food to swallow drugs whose side effects of excessive drowsiness and hunger are well known.

Secondly, attempts to provide food support to needy clients exist in Referral Hospital mental health units. However, there is non-uniformity as some hospitals provide raw while others cooked food. The foods provided lack variety and are of very low nutritive value to enhance therapeutic management of mental illnesses. These meals are therefore focused on making patients feel satisfied and keep them swallowing drugs while on the ward until time for discharge. This calls for increments in mental units nutrition budgets to allow food variety and designing mental condition focused food menus that will provide therapeutic benefits.

Lastly, there is a general lack of food diversity in the dietary patterns of people living with mental illnesses. In addition to over consumption of fat, diets of people living with mental illnesses are mostly composed of starchy staples, cereal based foods and root tubers forming most of their meals, with minimal consumption of fruits and vegetables. The involvement of all mental health stake holders (from individual clients to policy makers) through the ITHBC model which engages clients through their family, community and health care providers will help to enhance nutrition skills, service delivery and dietary practices of clients. This will in turn improve livelihood and prolong life expectancy of people with mental illnesses.

5.3 Recommendations

All hospitals should provide cooked food to clients admitted on psychiatric units putting in mind the therapeutic advantages of a balanced meal in mental illness management

With evidence indicating that nutrition and diet has a place in the management of mental illnesses, the team drafting Uganda's mental health policy should consider including nutrition as one of the key priority areas in this policy.

Following policy amendments, heads of departments in regional referral hospitals should enhance skills development among health care providers in mental units, especially in nutrition counselling and education, nutrition assessment, health information management, diet and meal planning, vegetable growing and kitchen gardening. This will not only make health care providers well equipped with nutrition knowledge but will also foster the transfer of knowledge to mental health service beneficiaries.

Each regional referral hospital should reserve and put to use plots of land for their mental health facility to enhance skills development of stable mental health clients in kitchen gardening and

vegetable growing. This will not only provide a form of exercise to stable clients but will help them and their care givers to learn vegetable growing in addition to producing cheap highly nutritious food for their own consumption while admitted at the ward.

Government should source finance and human resources through collaboration with mental health focused Non Government Organizations and enhance client linkage to these organizations

Ministry of health should hire more clinical nutritionists to handle and manage the technical part of nutritional management of mental illnesses such as meal planning.

5.4 Suggestions for further research

There is a need for further research to assess the nutrition status of people living with mental illnesses in the Ugandan setting. This is because most of the studies available are from developed country settings and therefore cannot be generalised.

There is a need to study targeted nutrient supplementation to specific mental health conditions so as to minimise the over reliance on psychotropic medication that are known to have many side effects.

Studies should be conducted to match a patient's behaviour and health care advice adherence to assess the effectiveness of treatment recommendations in promoting health.

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APPENDICES

Appendix I: Interview guide for Medical Directors

Section A: Biographic Data

Telephone contact.....

As a top manager of a referral hospital, express your feelings about providing nutrition and diet services in the psychiatric unit and how this would affect mental health service delivery.

What challenges are you currently facing in integrating nutrition services in mental health?

Just like diabetes and cardiovascular diseases, mental health is Noncommunicable disease which is greatly influenced by nutritional factors. How are you going about integrating nutrition services into the psychiatric department to achieve the above mission and vision?

I'll be analyzing the information you and others will have given me and use it to design ways in which nutrition service delivery in Referral Hospital mental unit can be improved. I'll be happy to send you a copy of the design, if you are interested.

Thank you for your time.

Appendix II: Interview guide for mental unit managers and nutritionists

Position.....

Section A: Perceptions

As a unit in-charge, express your feelings about providing nutrition and diet services in the psychiatric unit and how this would affect mental health service delivery.

As a department in-charge, narrate to us the feelings you have observed your co-workers express as far as offering nutrition services in this unit is concerned.

Section B: Nutrition support

What nutrition services are offered in the psychiatric unit and how they are being carried out?

The current HMIS OPD register clearly mandates nutrition assessment of every client attending this unit as evidenced by the columns of weight, Height, BMI and MUAC. Suggest ways in which nutrition assessment and other nutrition services can be improved in this mental unit.

Section C: Dietary practices

What are your main objectives for providing food to clients in this unit?

What abnormal feeding habits have you observed among clients admitted in this unit?

Section D: General questions

What have been your enablers and/or disabling factors in the struggle to integrate nutrition services in mental units?

Appendix III: Interview guide for health workers

Health workers' perception of nutrition services in psychiatric units

From your own understanding, narrate to us the relevancy or irrelevancy of incorporating nutrition services in mental health services?

Discuss with us through a full expression of your feelings about practicing nutrition assessment in all clients attending mental health unit.

Narrate to us what you face or go through while integrating nutrition services into mental health.

Nutrition support interventions

a) Think back over all the years since school time up to now. How do you gauge the adequacy of your nutrition knowledge to the current mental client's demands?

b) How are you applying that knowledge in improving the dietary practices of people with mental illnesses?

When do you conduct nutrition education, screening and assessment in this department?

Since completion of your professional training, which other nutrition related training have you attended?

What nutrition related services or interventions are you currently offering in this department and which factors do you find hindering the delivery of such services in this department?

Dietary practices of people living with mental illnesses

Alcohol and drug abuse are some of the leading causes of mental illnesses. Narrate to us the approaches you have been employing to help clients overcome these lifestyle habits after discharge from this unit?

It is a known fact that psychotropic drugs alter patient's eating habits and food preferences. What eating habits do you find irritating or abnormal among clients admitted in this department and how have you been helping these clients to regain their normal eating habits?

What challenges have you been finding in helping clients change their eating habits and what do you think should be done to improve quality of nutrition care for patients with mental illnesses?

Thank you for your cooperation

Appendix IV: Focus Group Discussion guide for clients and attendants living with mental illnesses

NAME OF DATA COLLECTOR.....

Signature..... Date.....

Section A: Perceptions

For all the time you have received services from this unit, gauge the extent to which health workers use nutrition approaches in managing your condition compared to using antipsychotic drug approaches.

Section B: Nutrition support

Which nutrition related services have you ever received from this department and how have they changed your life ever since you were discharged?

If food is supplied, which types and quantities of foods does the hospital provide to you and how often do you receive that food? Are you satisfied with the quantities served?

Who among you drink alcohol, smoke or use any other stimulating drugs? What messages have health worker told you of these drugs in line with nutrition?

Section C: Dietary practices

What factors do you consider when selecting food for your meal and which food preparation methods (frying, steaming, boiling etc) do you always use?

Appendix V: Food Frequency Questionnaire (FFQ)

Please estimate your average food use as best as you can, and answer the questions that will follow

FOODS AND AMOUNTS	AVERAGE USE OF FOOD IN THE LAST ONE MONTH			
	Never in the past month	Once in the past month	Once in the past week	Once a day
CEREALS AND BREAD (Medium serving)				
CEREAL AND GRAIN PRODUCTS				
Maize porridge				
Millet porridge				
Cornflakes				
Posho (maize bread)				
Millet bread				
Cassava bread				
Cakes				
Biscuits				
White bread				
Brown bread				
Whole meal bread				
Rice (white)				
Brown rice				
Macaroni				
Chapatti				
STARCHY ROOT TUBERS				
Sweet potatoes				
Cassava				
Irish potatoes				
Yams				
MEAT AND FISH (medium serving)				
Beef				
Pork				

Chicken				
Sausages				
Fish				
Eggs				
Full fat yogurt				
Cheese				
Milk				
Margarine (Blue band)				
Pea nut butter				
DRINKS/JUICES				
Wine				
Mixed fruit juice (orange, apple, passion fruit)				
SEASONAL FRUITS				
Apples (1 fruit)				
Pears (1 fruit)				
Oranges (1 fruit)				
Lemon 1 (fruit)				
Grapes (medium serving)				
Melon (slice)				
Banana (1 fruit)				
Jackfruit				
Pineapples				
Guavas				
Pawpaw				
Mango				
VEGETABLES (FRESH) medium serving				
Carrots				
Spinach				

Cabbage				
Peas (dried)				
Onions				
Garlic				
Mushrooms				
Sweet peppers				
Ground nuts				
Beans (dried)				
Tomatoes				
Beetroot				
Avocado				
Soya beans				
Pumpkins				
Eggplants				
Amaranthus				
Mental stimulants				
Alcohol				
Cigarette and related substance smoking				
Others				
Added salt				

Appendix VI: Observation Checklist

Name of hospital.....

Date

Time.....

Name of data collector.....

Signature.....

Nutrition assessment		YES	NO	REMARKS
1	Patient anthropometric measurement taken correctly			
2	Presence of a functioning weighing scale			
3	Presence of a height meter			
4	Presence of MUAC tapes			
5	Nutrition therapy discussed in ward round			
6	Patient handled humanly/ethically			
Nutrition counselling				
7	Availability of space/ room for nutrition /health education session			
8	Availability of nutrition education materials			
9	Use of education materials (booklets, brochures, posters)			
10	Uses of notes			
11	Space / privacy available			
12	Availability of kitchen for food preparation			
13	Availability of food models, pictures or sample			
14	Use of counselling card			
Nutrition records in HMIS register				
15	Patients' weight recorded			
16	Patients' MUAC column filled			
17	Patients' BMI calculated and recorded			

Appendix VII: Key for respondents' Identification Codes

Name of regional referral hospital	Hospital ID	Key informant ID	Focus Group Discussion ID
Fort Portal	F	MD1= Medical Director Fort Portal hospital	FAM1,2,3....7 = Fort Portal male attendant 1, 2 up to 7
		1.1 = Mental unit In-charge	FAF1,2,3.....7 = Fort Portal female attendant 1, 2 up to 7
		1.2 = Nutritionist	FPM1,2,3.....7 = Fort Portal male patients 1, 2 up to 7
		1.3 = Social worker	FPF1,2,3.....7 = Fort Portal female patient 1, 2 up to 7
		FN1....3 = Fort Portal Referral Hospital Nurse	
Mubende	MB	MD2= Medical Director Mubende	MBAM1,2,3....7 = Mubende male attendant 1, 2 up to 7
		2.1 = Mental unit In-charge	MBAF1,2,3.....7 = Mubende female attendant 1, 2, up to 7
		2.2 = Nutritionist	MBPM1,2,3.....7 = Mubende male patient 1, 2 up to 7
		2.3 = Social worker	MBPF1,2,3.....7 = Mubende female patient 1, 2 up to 7
		MBN1....3 = Mubende Referral Hospital Nurse	
Jinja	J	MD3= Medical Director Jinja	JAM1,2,3....7 = Jinja male attendant 1,2 up to 7
		3.1 = Mental unit In-charge	JAF1,2,3.....7 = Jinja female attendant 1, 2 up to 7
		3.2 = Nutritionist	JPM1,2,3.....7 = Jinja male patients 1, 2 up to 7
		3.3 = Social worker	JPF1,2,3.....7 = Jinja female patient 1, 2 up to 7
		JN1....3 = Jinja Referral Hospital Nurse	

Masaka	MS	MD4= Medical Director Masaka hospital	MSAM1,2,3.....7 = Masaka male attendant 1,2 up to 7
		4.1 = Mental unit In-charge	MSAF1,2,3.....7 = Masaka female attendant 1, 2 up to 7
		4.2 = Nutritionist	MSPM1,2,3.....7 = Masaka male patients 1, 2 up to 7
		4.3 = Social worker	MSPF1,2,3.....7 = Masaka female patient 1, 2 up to 7
		MSN1....3 = Fort Portal Referral Hospital Nurse	

Appendix VIII: Consent form

I am Gwaita Aggrey a post graduate student at Uganda Martyrs University undertaking a course of Masters in Public Health-Health promotion. I am carrying out a study aimed at assessing drivers for nutrition service delivery to clients with mental illnesses in Ugandan Regional Referral mental health units. This study is purely for academic purposes but is also hoped to help in improving nutrition service delivery in mental departments of regional hospitals. I would like to get information from you about your experience regarding the nutrition services in the mental unit of this hospital. I therefore invite you to participate in the study

The information you give will be treated with confidentiality. Your identity shall not be disclosed to any other person. Participation in this study is voluntary and you are free to withdraw your participation when you want to. Feel free to ask any question in relation to this study. The findings will be used to generate information which can be used by policy makers in designing policies concerning nutrition services in mental health facilities.

RESPONDENT’S DECLARATION

I have read and understood above information and the purpose of the study is adequately explained to me. I am also informed that participation is voluntary and that I am free to withdraw from the study if I wish to without it affecting me. I therefore, agree to take part in this study.

Signature Date:

Respondent

Signature Date:

Researcher

Appendix IX: Ekiwandiiko kyo'kukaanya (Luganda)

Amanya gange nze Gwaita Aggrey omuyizi okuva mu'ssetendekero Uganda Martyrs University asoma o'kutumbula ebyobulamu mu bantu ba'bulijjo. Nkola omusomo ogugendereddwamu okunonyereza kubyendya ennungi ne'ndwadde zo'mutwe mu malwaliro ge'mitwe mubitundu bya Uganda ebyenjwulo (Ugandan Regional Referral Mental Health units).

Omusomo guno gwa bya njigiriza naye gusubirwa okuyamba mukulongoosa ebyendya e'nuungi mu'buwereza bwomu malwaliro ge'mitwe gonna. Nandi yagadde okufuna ebirowoozo byo ku'byendya mu bitundu bya malwaliro ebikola kunsonga zo'bulwadde bwe'mitwe.

No'lwensonga eyo nkwaniriza okwetaba mumusomo guno.

Ebirowoozo byowa bijja kukumibwa nga bya kyama. Amanya ggo tegajya kutegezebwa muntu mulala yenna. Okwetaba mukunonyereza kuno kwa kyeyagalire nga era oliwaddembe okugaana okwetabamu bwoyagala. Osobola okubuuza ebibuuzo byona ebikwata ku kunonyereza kuno. Ebinazuulwa mukunonyereza binnakozesebwa okwongera okumanya ekiyinda okuyamba bannamateka mukukola ennongosereza mumateeka agakwata ku'byendya mu malwaliro ge'ndwadde ze'mitwe.

OKUSALAWO K'YETABYEMU

Nsomye ne'ntegera obubaka obuliwagulu ne'kigendererwa kyo'kunonyereza kintegezeddwa bulungi. Mbuliddwa nti okwetabamu kwa kyeyagalire era nga ndi wa'ddembe okugaana bwe'njagala ne'kitankosa mungeri yonna. No'lwensonga eyo, nsazeewo okwetaba mukunonyereza.

Omukono.....
Ay'etabyemu

Omukono.....
Anonyereza

Appendix X: Okuteesa mu kiwayi kya balwadde ababeera ne'ndwadde ze'mitwe oba abajjajabi babwe (Luganda)

Amanya Go'munonyereza.....

Omukono..... Enanku zo'mwezi.....

Ekituundu Ekisooka: Birowoozo

Ebisera byona byo'funye obuwereza okuva muddwaliro lino, olowoza otya kungeli abe'byobulamu gyebakozesa ebyendya mu ku kujjanjaba bwogerageranya ne'nzijjanjaba eye'ddagala.

Ekituundu Ekyokubiri: Obuyambi Ku'byendya

Byandya'ki byewali ofunye okuva muddwaliro lye'ndwadde ye'mitwe era bikyusiza bitya obulamu bwo okuva bwe'wasibulwa?

Emere bwegabwa, bika'ki era miwendo ki egye'mere eddwaliro gyelikuwa era mirundi emeka gyofuna emere? Olimumativu ne'kipimo gye'mere gyofuna?

Ani kumwe anywa omwenge,sigala oba akozesa ebilangala lagala? Bubaka ki abe'byobulamu bwebabagambye kukukozesa ebilangala lagala ne'byendya?

Ekituundu Ekyokusatu: Ebikolwa Ebikwata ku'byendya

Biki byo'sinzirirako ngo'londa emere yo era ngerii ki gyotegeka oba gyofumba mu emere? (Kusiika, Kubugumya, Kutokosa.....oba)?

Appendix XI: Lusoga consent form

Amainha gange nhinze Gwaita Aggrey omusomi okuva mu'itendekero lya Uganda Martyrs University kwidhala lya Masters mu'kutumbula ebyobulamu mu bantu ba'bulidho. Ndhikukola okunonereza kubyendya enhungi mubantu abalina endwaire dho kutabuka obwongo mumalwaliro amanhenhe mubitundu bya Uganda ebyendhawulo (Ugandan Regional Referral Mental Health units).

Okunhonhereza kunho kugemagana na'byabusomi byonka, aye kusuubirwa okuyamba mukulongoosa ebyendya e'nuungi mu'buwerezwa bwomu malwaliro ge'mitwe gona gona.

Nandyenze okufuna ebidhuubo byo ku'byendya mu bitundu bya malwaliro ebikola kunsonga dho'bulwaire bwe'mitwe oba bwe biwanga. No'lwensonga eyo nkwanhiriza okwenhigira mumusomo gunho.

Ebidhuubo byonampa bidha kukumibwa nga bya kyama. Amainha go tigaidha kutegezebwa muntu wundhi yenha yenha. Okwenhigira mukunonhereza kuno kwa kyeyendhere era oliwaidhembe okudheema okwetabamu. Olowaidhembe okubuuza ebibuuzo byona byona ebigemagana ku kunhonhereza kunho.

Ebinazuulibwa mukunhonhereza kunho bidhakozezebwa mukwongera okutegeera ekiyinda okuyamba bannamateka okulongoosa mumateeka agagema ku'byendya mu malwaliro ge'ndwaire dhe'mitwe.

OKUSALAWO

Nsomye era nategeera bulungi obubaka bwonabwona waigulu namakulu gona gona nga bwebanhinhoire. Era nga bwendhi waidhembe okwetabamu mukunhonhereza kunho nga bwenendha. Ndhikiliza awazira bukake okwetaba mu'kunhonhereza kunho.

Omukono Enaku dhomwezi:

Omulwaire/Omugenza

Omukonho..... Enaku dhomwezi:

Anhonhereza

Appendix XII: Okukubaghanya ebidhuubo mu kiwayi kya balwaire be ndwairere dhe'mitwe oba abaidhandhabi baibwe (Lusoga)

Amainha go'mulodozi.....

Ekinkumu..... Enaku dho mwezi.....

Ekiketezo A: Endhowoza yo

Emilundhi gyonagyona gyofunye obwidhandabi wano, gerangeranyha ekigero kyo'bwidhandabi obwekuusa kubyokulya nga bukuweebwa abasawo nobwo obwo'kumira amakerenda agatereza obwongo.

Ekiketezo B: Obuyambi Ku'byendya

Byandya'ki byewafuku okuva mu'irwaliro lye'ndwairere dhe'mitwe era bukyuusiza butya obulamu bwo okuva bwe'wasibulwa ku kitanda?

Emere bweegabwa, bika'ki era bipimo ki ebye'mere eirwaliro byerikuwa era mirundi emeka gyofunha emere? Olimumativu ne'kipimo kye'mere kyofuna?

Ani ku'imwe anhwa omwenge, sigala oba akozesa ebitamiiza ebindhi? Bubaka ki abe'byobulamu bwebakukoba kukukozesa ebitamiiza ne'byendya?

Ekiketezo C: Ebikolwa Ebigemagana ku'byendya

Biki byo'sinziriraku ngo'londa emere yo era ngerii ki gyotegeka oba gyofumba mu emere? (Kusiika, Kubugumya, Kutokosa.....oba)?

Appendix XIII: Ebigambo ebyenyikirraniza n’abantu (Rutooro)

Ninyowe Gwaita Agrrey omwegi mu’itendekero erya Uganda Martyrs University ah’idaara rya Digri eyakabiri omu byo bwomezi habwabantu boona.

Ninkora okuseruliza habyemiriire enyakusemeriire nkoku abantu abarukutalinizibwa endwara zemitwe barukutunga abuhereza bunu omumarwarro amakooto omu’ihanga linu Uganda.

Okuseruliza kuno kukira muno nikugendeerra kuhikiriza ebigendererwa eby’emisomo yange, baitu nikkwijja n’okugasira ihanga lyaitu linu mubyo kutekaniza ebiragiro ebikukwata aha emiriire y’abantu abaine endwara z’emitwe.

Hati ninkusaba tubazeho hamu, mungambireho habyemirire egi eyingambireho nobuhereza bwayo nkokubukuhikibwaho abantu abendwara ezemitwe mu’irwaro lyaitu linu. Ebirimukungambira nibija kulindwa nk’ebyensita.

Okubaza kunu tikuli kwakagemo. Omuntu nayecweramu kugenda omumaiso nitubaza hamu rundi kuleka.

Oli wobugabe kunkaguza ekikaguz kyoona ekirukukwataho hati binu ebiturabazaho.

KUGUMYA KWOGU OW’ARUKUGARUKAMU

Nsomere nayetegereza kurungi habyokuseruliza kunu, kandi nsoborolirwe kurungi, nahwituka. Kandi n’okugarukamu ebikaguzo kwokwegondeza, kakuba mpindura ekitekerezo, ninsobora obwire bwona kubirugamu, ntaine ekimbaireho kyoona. Nahabweki, nyikirize kuba muntekaniza enu.

Saini.....

Ebiro by’okwezi.....

Owarukugarukamu

Appendix XIV: Okukaguliriza aha endiisa ya’balwaire be ndwaara zemitwe n’abo abarukubaroleera (Rutooro)

Ibara lyogu owarukukaguza..... Ebiro by’okwezo

Ekicweeka A: Omulingo orikwetegererezamu ebintu

Habwobwire obuwakamara notunga obuhereza/obujanjabi kuruga omwirwarro munu haho ekisisani abafumu baine nkokubakujanjabire nibakozesa ebyemiziize enungi kulengesaniza okwokukozesa amibazi eyokukuhumuza.

Ekicweeka B: Obusagiki mubyendya enyakusemeriirwe

Buherezaaki oburukukwata haandya enyakusemerirre obuwatungire obwire obuwamazire omwirwarro munu, kandi bukukonyiire buta habwomeezi bwabwe kuruga oruga omwirwarro munu?

Obworaaba oheebwa ebyokulya kuruga omwirwarro linu biba bya miringoki, kandi mubwingiki. Obitunga hanyuma ya bwiireki? Obwingi bwabyo obu bwotunga ohurra omazirwe?

N’oha omulinywe owakozesa ebykunya ebitamiiza, owanya etaaba, rundi nebibazi ebindi ebirikusisa nka’ebi? Hali ebi ebitwagambaho, bukwenda ki obwabafumu b’omwirwarro linu obubabalizeeho obwiine obuzaale ne’emiriire enungi?

Ekicweeka C: Ebyemiriire

Obwooba no’tekaniza kucumba ebyokulya byawe, otekanizaaki ha micumbire yabyo (Kusiika, kutogosa,.....) okira kucumba ota?

Appendix XV: Vision, guiding principles, key priority areas, and selected policy objectives of the Uganda Mental Health Draft policy

Vision	Guiding Principles	Key Priority Areas	Selected Policy Objectives
A population free of MNS disorders	1. Right to health, regardless of sex, race, and creed.	1. Availability and access to quality MNS services to the population	1. To increase availability of, and access to, quality MNS services
	2. Equitable distribution of services	2. Capacity of health workers at all levels of health care to provide MNS services	2. To provide services in a multifaceted and multidisciplinary manner, ensuring the relevant skills mix
	3. Use public–private partnerships in delivering MNS services	3. Strengthening community mobilization for involvement and participation	3. To ensure collaboration with traditional and complementary practitioners in order to provide coordinated service delivery
	4. Community involvement and participation	4. Strengthening Health Management Information System (HMIS), monitoring and evaluation, and research	4. To strengthen the capacity of health workers, at all levels, to provide MNS services
	5. Services of the highest standard possible according to current scientific knowledge and available resources	5. Advocacy and fundraising for MNS services	5. To promote and strengthen the involvement and participation of all stakeholders in MNS services
	6. Ethical code of conduct and promotion of integrity	6. Partnership and collaboration for MNS care services	6. To strengthen community involvement and participation
	7. Efficiency in the provision of services		7. To encourage cooperation between the services and programs needed to enable people with MNS problems to participate fully in community life

	8. Gender sensitivity in all program areas		8. To mobilize financial resources for MNS service delivery by ensuring equity, efficiency, transparency and accountability
			9. To ensure the relevant laws and regulations concerning MNS issues in Uganda are developed and enforced
			10. To harness scientific knowledge through research for evidence-based policy and decision making

Adopted from Siobhan et al (2014).

Appendix XVI: Proof of authorisation from Fort Portal Regional Referral Hospital



making a difference

I No objection-

For: DIRECTOR
FORT PORTAL REGIONAL
REFERRAL HOSPITAL
29 JUN 2016
P.O. BOX 10, FORT PORTAL

Handwritten initials and date: 29/6/16

23rd June, 2016

Dear Sir/Madam

RE: Introducing Mr. AGGREY GWAITA

This is to introduce Mr. Aggrey Gwaita as a bona fida student of the Faculty of Health Sciences, Uganda Martyrs University. Aggrey is currently undertaking the award of Master of Public Health – Health Promotion. He is at present undertaking research on:

Drivers for Nutrition Services to Clients with a Mental Illness in Ugandan Regional Referral Mental Health Units.

Any assistance that you can give to Aggrey will be most appreciated by the faculty and university.

For any further clarification, please do not hesitate to contact me.

Yours faithfully

Vivienne Laing

Vivienne Laing
Programme Co-ordinator MPHHP/Lecturer
vlaing@umu.ac.ug/vivlaingculross@gmail.com
0704078205

Appendix XVII: Proof of authorisation from Mubende Regional Referral Hospital

ganda
MARTYRS
UNIVERSITY



In-charge Mental Health
making a difference

Handwritten signature

Handwritten signature



23rd June, 2016

Dear Sir/Madam

RE: Introducing Mr. AGGREY GWAITA

This is to introduce Mr. Aggrey Gwaita as a bona fida student of the Faculty of Health Sciences, Uganda Martyrs University. Aggrey is currently undertaking the award of Master of Public Health – Health Promotion. He is at present undertaking research on:

Drivers for Nutrition Services to Clients with a Mental Illness in Ugandan Regional Referral Mental Health Units.

Any assistance that you can give to Aggrey will be most appreciated by the faculty and university.

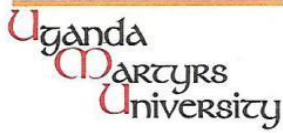
For any further clarification, please do not hesitate to contact me.

Yours faithfully

Handwritten signature of Vivienne Laing

Vivienne Laing
Programme Co-ordinator MPHHP/Lecturer
vlaing@umu.ac.ug/vivlaingculross@gmail.com
0704078205

Appendix XVIII: Proof of authorisation from Jinja Regional Referral Hospital



making a difference

Handwritten note:
I am sorry please
forward to me
Jinja Regional Referral Hospital
DATE: 23/06/2016

23rd June, 2016

Dear Sir/Madam

RE: Introducing Mr. AGGREY GWAITA

This is to introduce Mr. Aggrey Gwaita as a bona fida student of the Faculty of Health Sciences, Uganda Martyrs University. Aggrey is currently undertaking the award of Master of Public Health – Health Promotion. He is at present undertaking research on:

Drivers for Nutrition Services to Clients with a Mental Illness in Ugandan Regional Referral Mental Health Units.

Any assistance that you can give to Aggrey will be most appreciated by the faculty and university.

For any further clarification, please do not hesitate to contact me.

Yours faithfully

Handwritten signature: Vivienne Laing

Vivienne Laing
Programme Co-ordinator MPHHP/Lecturer
vlaing@umu.ac.ug/vivlaingculross@gmail.com
0704078205

Appendix XIX: Proof of authorisation from Masaka Regional Referral Hospital

General Line: 0481-420018
Causality Dept: 038-2274346
Maternity: 038-2274340
Private wing: 0481-432395
Fax line: 0481-421343
E-mail: masakarrh@gmail.com



MASAKA REGIONAL REFERRAL HOSPITAL
P.O. BOX 18
Masaka
Uganda

THE REPUBLIC OF UGANDA
MINISTRY OF HEALTH

For any correspondence on this Subject, please quote: ADM. 170/06

Date: 18th July 2016

Gwaita Aggrey, Reg. 2014-M282-20008
Uganda Martyrs University
P.O. Box 5498
KAMPALA.

Subject: PERMISSION TO CARRY OUT RESEARCH

This is to inform you that you have been allowed to carry out a research study at Masaka Regional Referral Hospital.

Topic: "DRIVERS FOR NUTRITION TO CLIENTS WITH A MENTAL ILLNESS IN UGANDAN REGIONAL REFERRAL MENTAL HEALTH UNITS" using the tools and methodology as presented in your proposal.

Thank you very much for having interest in this Hospital.


Dr. Kamugisha Albert
For: HOSPITAL DIRECTOR



Mission statement: To increase access of all people in Masaka region to quality, general & specialized services

Appendix XVI: Map of Uganda showing Regional Referral and General Hospitals

