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# Nutritional Status of Psychiatric Inpatients at A National Mental Hospital in Kenya

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**Abstract**

Malnutrition among psychiatric patients in mental health units stands at 19%. It is a prevailing health care problem, that is affecting many psychiatry patients and it is a major public health problem especially in public hospitals in Kenya. Nutrition care is therefore an important component of mental health that require keen consideration. The goal of the study was to determine the nutritional status of psychiatric inpatients at a National Mental Hospital in Kenya. A cross-sectional design was used and 200 inpatients were recruited to the study using simple random sampling. Data was collected using a structured questionnaire which was adopted and modified from Short Nutritional Assessment Questionnaire (SNAQ) screening tool. Height and weight of the participants were measured and BMI was calculated. Clearance and approval to conduct the study was sought from University of Eastern Africa-Baraton Ethical Review Committee. Results of the study showed that majority of the participants were being treated for schizophrenia (41.5%) followed by drug induced psychosis at 22%. The results of the study also showed that 59.5% of the respondents were well nourished while a significant 40.5% were malnourished. Among the Malnourished patients, 67% had a BMI above 25.00Kg/M$^2$ and 33% had a BMI below18.50Kg/M$^2$. Malnourishment was associated with use of antipsychotic (P=0.021), use of antidepressants (P=0.018). It was also associated with female gender (P=0.001), abuse of cigarettes (P=0.041), abuse of marijuana (P=0.01), abuse of alcohol (P=0.001) and poor appetite (P=0.032). Nutritional management should be a component of the routine inpatient care of psychiatric patients.

**Keywords:** Nutritional status, Psychiatric patients, Malnutrition.

## 1. Introduction

Malnutrition results from eating a diet in which nutrients are either not enough or are too much (World Health Organization (WHO) 2014). The WHO, (2012), estimates that prevalence of malnutrition worldwide is 17.6% with the substantial majority living in developing countries of southern Asia and sub-Saharan Africa. A study cited by The British Association for Parenteral and Enteral Nutrition (BAPEN, 2010) found that 18% of adults admitted to mental health units were found to be at risk of malnutrition, with remarkable differences between acute care (29%) and long-stay rehabilitation (13%).

According to Abayomi, (2004) psychiatric patients are known to have greater risk of malnutrition, yet physical examinations and nutritional assessments seldom take place in psychiatric hospitals. The increased risk of malnutrition is because psychiatric patients are more likely to neglect their nutrition as a direct result of their mental disease (Bottomley, 2008). The risk of malnutrition may also be associated with the mental status of the patients or their management (Aquino, 2011).

According to Ragubeer (2011), Malnutrition has a negative impact on a patient's health. It is associated with neurological deficits, deficit in cognitive development and deficits visual-spatial working memory (Masson, 2003). These effects of malnutrition further affect mental health of the psychiatric in terms of development and exacerbation of their mental illness (Bottomley, 2008).

Other litersture report that malnutrition among hospitalized mental patients is the result of a number of factors to include inadequate dietary intake (Aquino, 2011), low income (WHO, 2012) and female gender (Magnus & Kvamme 2011)). Other factors include: personal tastes and preferences (Poggiano, *et. al* 2017) and antipsychotic use (Üçok, & Gaebel, 2008).

Ragubeer (2011) reports that malnutrition in psychiatric patients has a negative impact on their health, recovery, progress and in turn cost implications. Scanty information on nutritional status among psychiatric patients in

 

Kenya exists. Therefore, the purpose of this study was to establish nutritional status of psychiatric inpatients as the first step in guiding nutrition care of this patients. This is in the hope of overly improving the outcome in their course of management.

## 2. Methodology

A cross-sectional study design was employed for this study. The study was carried at the only National Teaching and Referral psychiatric hospital in Kenya. Inpatients who scored 23/30 and above on average in mini mental status assessment were randomly recruited into the study. A structured questionnaire was used to collect data which was adopted and modified from Short Nutritional Assessment Questionnaire (SNAQ) screening tool (Kruizenga, 2005). Height and weight of the participants were measured and BMI was calculated. Participants were classified as undernourished when BMI was less than 18.5, normal at 18.5-24.9 and over nutrition at 25 and above. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. Chi-square was used to determine significance of relationships between two nominal variables. A P-value of $\leq 0.05$ was considered significant. Review of the proposal, clearance and approval to conduct the study was sought from University of eastern Africa-Baraton ethical review committee. A voluntary, informed consent form was given to the respondents to sign by the researcher prior to participation. Participants were briefed on their rights and the expected benefits of the study. There was no coercion or incentives to participants. Serialized, structured questionnaire were used to ensure anonymity of participants. The identity of participants was not indicated anywhere on the questionnaire.

## 3. Results

Majority of participants (39.5%, n = 79) were between the age 31 – 40 years followed by 20 – 30 years (28.5%, n = 57) with 65% (n=131) being males. 50% (n = 100) of the participants had been admitted for a period between one to five months with 41.5% (n=83) being treated for schizophrenia. Participants psychiatric diagnosis is shown by table 1 below.

**Table 1: Distribution of participants' diagnosis**

| Diagnosis | Frequency | Percent |
|---|---|---|
| Schizophrenia | 83 | 41.5 |
| Schizoaffective | 17 | 8.5 |
| Brief psychotic episode | 7 | 3.5 |
| Drug induced psychosis | 44 | 22.0 |
| Major depressive disorder | 9 | 4.5 |
| Bipolar I | 25 | 12.5 |
| Bipolar II | 10 | 5.0 |
| Substance use disorder | 5 | 2.5 |

Other results showed that about 50.5% (n = 101) reported to have abused alcohol. Distribution of reported drug of abuse is presented in table 2 overleaf.

**Table 2: Distribution of reported drugs of abuse**

| Drug | Frequency | Percentage |
|---|---|---|
| Cigarette | 63 | 31.5 |
| Alcohol | 101 | 50.5 |
| Marijuana | 52 | 26 |
| Khat | 23 | 11.5 |
| Heroine | 3 | 1.5 |
| Cocaine | 2 | 1 |
| Others | 2 | 1 |

The participants were on different psychotropic drugs as shown in table 3 below.

 

**Table 3: Distribution of participants' treatment**

| Class of the drug | Frequency | Percentage |
|---|---|---|
| Antipsychotics | 182 | 91.0 |
| Antidepressant | 65 | 32.5 |
| Mood stabilizers | 114 | 57.0 |
| Anxiolytics | 24 | 12.0 |
| Antabuse | 4 | 2.0 |
| Others | 60 | 30.0 |

The Mass Index (BMI) was of the participants was distributed as shown in table 4 below.

**Table 4: Distribution of body mass index (BMI)**

| Range ($Kg/M^2$) | Frequency | Percent | Remarks |
|---|---|---|---|
| 18.50 – 24.99 | 119 | 59.5 | Normal BMI |
| Below 18.50 and 25.00 & above | 81 | 40.5 | Abnormal BMI |
| **Total** | **200** | **100** | |

Malnutrition was associated with different factors as shown by table 5 below.

**Table 5: Distribution of factors associated with Malnutrition**

| Factor | Category | BMI | | Chi-square | P Value |
|---|---|---|---|---|---|
| | | Nourished | Malnourished | | |
| **Age** | Below 20 years | 11 (57.9%) | 8 (42.1%) | 0.108 | 0.948 |
| | 20 - 50 years | 99 (60.0%) | 66 (40.0%) | 0.234 | 0.831 |
| | 50 years and above | 9 (56.2%) | 7 (43.8%) | 0.118 | 0.935 |
| **Gender** | Male | 89 (67.9%) | 42 (32.1%) | 0.119 | 0.925 |
| | Female | 30 (43.5%) | 39 (56.5%) | 11.222 | **0.001** |
| **Factor** | **Category** | **BMI** | | **Chi-square** | **P Value** |
| | | **Nourished** | **Malnourished** | | |
| **Appetite** | Poor | 16 (61.5%) | 10 (38.5%) | 4.356 | **0.032** |
| | Average | 36 (72.0%) | 14 (28.0%) | 2.925 | 0.087 |
| | Good | 67 (54.0%) | 57 (46.0%) | 2.943 | 0.084 |
| **Alcohol** | Yes | 60 (59.4%) | 41 (40.6%) | 12.111 | **0.001** |
| | No | 59 (59.6%) | 40 (40.4%) | | |
| **Cigarette smoking** | Yes | 43 (68.3%) | 20 (31.7%) | 4.124 | **0.042** |
| | No | 76 (55.5%) | 61 (44.5%) | | |
| **Marijuana** | Yes | 34 (65.4%) | 18 (34.6%) | 6.354 | **0.011** |
| | No | 85 (57.4%) | 63 (42.6%) | | |
| **Antipsychotics** | Yes | 105 (57.7%) | 77 (42.3%) | 3.942 | **0.021** |
| | No | 14 (77.8%) | 4 (22.2%) | | |
| **Antidepressants** | Yes | 31 (47.7%) | 34 (52.3%) | 5.571 | **0.018** |
| | No | 88 (65.2%) | 47 (34.8%) | | |
| **Mood stabilizers** | Yes | 72 (63.2%) | 42 (36.8%) | 1.472 | 0.225 |
| | No | 47 (54.7%) | 39 (45.3%) | | |

## 4. Discussion

A significant number of participants were observed to have abnormal BMI (40.5% n=81). This was higher compared to the studies done by British Association for Parenteral and Enteral Nutrition (BAPEN, 2010) which found out that 18% of adults admitted to mental health units were found to be having malnutrition with remarkable differences between acute care (29%) and long-stay rehabilitation (13%). This could be attributed to the low economic status of the study area since it's a developing country as Vikram and Arthur (2003) observed that poverty is likely to be associated with malnutrition. The malnutrition could also be attributed to alcohol abuse and cigarette smoking since they interfere with the absorption of nutrients. This corresponds with a study done by Dieticians of Canada, (2012) which concluded that substance abuse is known to result into deficiencies in vitamins and minerals that put the physical and mental health of the mentally ill patients at risk.

Poor appetite was associated with malnutrition. This agrees with a study done by Sathyanarayana, et. al (2008) who reported that many patients with mental illness suffer from calorie and protein malnutrition due to their inconsistent feeding patterns.

The researcher observed that 32.1% of the men and 56.5% were malnourished which coincide with a study by Magnus & Kvamme (2011) who observed that the risk of malnutrition was high in females compared to males suffering from psychiatric diseases.

The results also indicated that psychotropics were associated with malnutrition. This is supported by Moore, et al (2013) as they found that some psychotropic medications are associated with health concerns related to weight and appetite

## 5. Conclusion

A high number of psychiatric patients at National Teaching and Referral hospital in Kenya are malnourished. The malnourishment was associated with female gender, use of antipsychotic, and use of antidepressants. It was also associated with female gender, abuse of cigarettes, abuse of marijuana, abuse of alcohol and poor appetite. It is the view of the researcher that nutritional management should be a component of the routine inpatient care of psychiatric patients.

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