Project Report

On

"Study on the Mental Health, Fitness and Dietary Habits of Selected Patients" at National Institute of Mental Health and Hospital.

Submitted By:

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Submitted To:

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LETTER OF TRANSMITTAL

To
Ms. Fouzia Akter
Assistant Professor and Head
Department of Nutrition and Food Engineering
Faculty of Allied Health Sciences
Daffodil International University

Subject: Submission of Project Report.

Dear Sir,

I am here by submitting my project report at *"National Institute of Mental Health and Hospital"* which is a part of Nutrition and Food Engineering program curriculum. I would like to take this opportunity to thank you for the guidance and support that you have provided me during the course of this report. Without your help, this report would have not been possible to complete.

To prepare the report I collected what I believe to be most relevant information to make my report as analytical and reliable as possible. I have concentrated my best effort to achieve the objectives of the report and experience gathered during report preparation will immeasurably help in my future professional life. I request you to excuse me for any mistake that may occur in the report despite of my best effort.

I would really appreciate that you enlighten me with your thoughts and views regarding the report. I therefore, would like to place this report for your judgment and suggestion. Your kind advice will encourage me to perform better planning in future.

Sincerely Yours

Ankhi gupta

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LETTER OF AUTHORIZATION

To
Ms. Fouzia Akter
Assistant Professor and Head
Department of Nutrition and Food Engineering
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Daffodil International University

Subject: Declaration regarding the validity of the Project Report.

Dear Sir,
This is my truthful declaration that the "Project Report" I have prepared is not a copy any thesis report previously made any other students.
I also express my honestly confirmation in support to the fact that the said thesis report has neither been used before to fulfill my other course related not it will be submitted to any other person a authority in future.

Sincerely Yours

Ankhi gupta

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ID: 181-34-739
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LETTER OF APPROVAL

This is to inform you that Ms. Ankhi Gupta is final semester student of Nutrition and Food Engineering Department, under the Faculty of Allied Health Sciences, Daffodil International University. A project work is pre-requisite to fulfillment of their degree (B.Sc. in Nutrition and Food Engineering). Therefore I would like to request to permit her to collect data for the project entitled "Study on the Mental Health Fitness and Dietary Habits of Selected Patients" from your Institute.

Rashid

Ms. Fouzia Akter
Assistant Professor and Head
Department of Nutrition and Food Engineering
Faculty Allied Health Science (FAHS)
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ACKNOWLEDGEMENT

I feel great pleasure to communicate our most conspicuous and most profound appreciation to the incomparable of everything, the ALMIGHTY to whom all gestures of gratitude go, who enable us to finish the project work successfully for the degree of Bachelor of Science in Nutrition and Food Engineering.

I am grateful to our parents without whom we cannot be here. Without the help of our parents, I were incapable to have the option to achieve our purposes and objectives.

I ma greatly indebted to my supervisor, Md. Harun-Ar-Rashid, Lecturer (Senior Scale), Department of Nutrition and Food Engineering, Faculty of Allied Health Science for his whole-hearted supervision throughout my thesis and internship period.

My sincerest appreciation and honest gratitude to Professor Dr. Md. Bellal Hossain, Associate Dean, Faculty of Allied Health Science and Ms. Fouzia Akter, Head of the Department, Nutrition and Food Engineering for their caring collaboration and to acknowledge this degree.

I would also like to express our great respect & heartfelt thanks to our advisor Ms. Effat Ara Jahan, Lecturer (Senior Scale), Nasima Akter Mukta, Lecturer (Senior Scale), Mr. Md. Juwel Rana, Lecturer for their entire hearted help and oversight during our undergraduate period.

I should convey our sincere gratitude to Md. Emran Hossain, Co-ordination Officer .I grant our momentous gratitude to the working environment/labs stuff of the Department of Nutrition and Food Engineering under faculty of Allied Health Sciences, Daffodil University. Thanks to the higher management of Bangladesh government, especially Ministry of Education.

Dedicated

To

My Beloved Parents

Abstract

The fastest thing that is raising threats to public health is mental illness. In different number of mental health problems diet plays a vital role to diagnose it. All information that provide is considered totally confidential. A systematic review was conducted, and narrative synthesis analysis was performed. High adherence to dietary recommendations is showed basically in this result. Avoiding processed foods; intake of anti-inflammatory diet; magnesium and folic acid; various fatty acids; and fish consumption had a depression. Healthy eating habits may help prevent and treat depression based on the evidence presented in the results of this study.

Key variables of the study

- Age of the patient
- Weight of the patient
- Height of the patient
- Family income
- Eating habits of the patient
- Carbohydrate Intake of the patient
- Protein Intake of the patient
- Vitamin intake of the patient
- Junk food intake of the patient

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Chapter One
Introduction

1.0 Introduction

Although there has been a lot of focus on the link between diet and physical diseases, the link between diet and psychological functioning has largely been overlooked. The association between mental health and the reported frequency of consuming a variety of meals was investigated in this study utilizing a postal survey. There are a variety of reasons to believe that food and mental health are linked. Clinical deficiencies of various micronutrients, such as vitamin B1 (Editorial, 1990), niacin (Dickenson & Wiryanti, 1978), B12 (Hector & Burton, 1988), and folate (Carney & Sheffield, 1978), are widely known to be linked to psychiatric symptoms. Few attempts have been made to link more global food metrics to well-being indicators Bagley (1981), for example, observed a strong link between eating refined flour and sugar-rich foods and a measure of stress in 158 female students in a study of 158 female students. A postal questionnaire was used to correlate food preferences to a measure of mental health in 150 samples of the mental patients in this study. (Cook, 1993)

1.1 Importance of relationship between nutrition and mental health

In recent years, combined mind-body approaches to supporting mental health have increased in popularity, which has links between exercise, sleep, mindfulness, and mental health. Diet and physical health has strong link especially for non-communicable diseases such as Type 2 diabetes, Coronary Heart Disease and some cancers. Sometimes, the relation between diet to mental health is not well understood. This is occurs because of the complexity of the relationship, and the need to take into account the effects of other factors. Already research has provided evidence that physical health and mental health has strong relationship, such as the have heart disease, they have increased incidence of depression, establishing that there is an indirect link. The direct association between what people eats and how they feel is now building and it is the actual evidence. (Cook, 1993)

1.2 Dietary recommendations

Dietary Guidelines are units of advisory statements providing concepts and standards of properly nutritional practices to promote countrywide wellbeing. They are meant to be used via way of means of individuals. What type of foods have to be consumed, the extent to which they have to be consumed, including the use of spices, condiments and water are basically indicated by this dietary guideline. Using of healthy preparation and cooking methods are also suggested by this dietary guideline for the retention of nutrients and to promote better health. (Cook, 1993)

1. It suggested to eat a well-balanced diet which includes a variety of foods at each meal.
2. Use sparsely ingredients excessive in fats and limit fat and oils in each meal preparation.
3. Limit salt consumption and condiments and use best iodized salt.
4. Take much less sugar, goodies or sweetened drinks.
5. Daly drinks masses of water.
6. Consume secure and clean foods
7. Through a balanced food intake and regular physical activity maintain desired body weight

8. Adopt and observe suitable education and cooking practices and observe healthy eating habits.
9. During pregnancy and lactation, take greater care and eat additional food.
10. For the primary six months of life, practice exclusive breast-feeding. After completion of 6 month, introduce appropriate complementary foods and maintain complementary feeding alongside breastfeeding up to two years.

1.3 Aim & Objective

General objective

Thesis or project report is a graduation requirement for all university students. Department of Nutrition and Food Engineering of Daffodil International University provide thesis opportunity at **"National Institute of Mental Health and Hospital". Purpose** of this, we will study on the "Study on the Mental Health, Fitness and Dietary Habits of Selected Patients".

Specific objective

Purpose of this study about "determination of phytonutrients of different varieties of beetroot'' as follows:

- Determine the Pattern of fitness and dietary management of mental disorder patients.
- Find out how dietary pattern impact on mental sickness of mental patients.
- Fulfill graduation requirements.
- Figure out the exact information in practical.

Chapter Two Literature Review

2.1 Mental health and nutritional factors

Healthy neurotransmitter activity can be supported by a diet rich in complex carbohydrates, necessary fats, amino acids, vitamins, minerals, and water. It has been proven to protect the brain against the detrimental effects of oxidants, which have been linked to low mood and mental health. Throughout life, there is evidence of nutrition's protective properties. Good nutrition has been connected to academic success since childhood, with several studies indicating that providing children with breakfast enhances their academic performance. Several studies have found that hungry children behave poorly in school, with claims that fighting and absences are reduced and attention is increased when nutritious lunches are supplied. The protective influence of diet on the brain as we age is demonstrated by research findings indicating a diet rich in essential fatty acids and low in saturated fats delays the advancement of memory loss and other cognitive issues. (Cook, 1993)

2.2 Fruit and vegetables

A observe performed via way of means of Stranges et al. (2014), in England, determined that vegetable intake turned into related to high degrees of intellectual wellbeing. Along with smoking, the have a look at determined that of those examined, the behavioral hazard factor maximum constantly related to each low and excessive intellectual wellness in across each sexes become the individual's fruit and vegetable consumption.

2.3 Vitamins, minerals and acids

Vitamins and minerals are important micronutrients for human brain. Because of their position within side the conversion of carbohydrates into glucose, fatty acids into healthful mind cells, and amino acids into neurotransmitters, micronutrients play an essential element in protective mental fitness. A number of mental fitness problems have been connected if there is deficiency in micronutrients.

2.4 Vitamin B: niacin, folate, vitamin B6, and vitamin B12

As forms of cofactors, nicotinamide adenine dinucleotide (NAD) and flavin adenine dinucleotide (FAD). In a NAD-FAD-based and – impartial ways, the B vitamins, especially niacin, folate, vitamin B6, and vitamin B12 have an effect mental health. 'Homocysteine hypothesis' is famous hypothesis for mental disorders that excess homocysteine which is the reasons of improvement of psychiatric symptoms. MCI, dementia, and depression were observed in low levels of the B vitamins and high levels of homocysteine and homocysteine metabolism are involved in folate, vitamin B6, and vitamin B12. Homo cysteine action underlying on brain function which are impairments in cerebral vasculature and characteristic of neurotransmitters and neurotoxicity and oxidative stress will increase. Though comparing with other vitamin B nutrients, niacin's action on brain function is less studied. A case-look at suggested that a topic with pellagra, a sickness from niacin deficiency, confirmed psychiatric disorders, especially behavioral deterioration and dementia, which had been recovered with the aid of using niacin intervention. So far, diet B

vitamins intervention referring to brain feature confirmed equivocal outcomes concerning their efficacy on cognitive feature. (Cook, 1993)

2.5 Antioxidants

The mind is at risk of oxidative strain as it has lipid-wealthy location in particular in neuronal membrane and is metabolically active. Tight stability among oxidative strain antioxidant device is needed to preserve the structural integrity and most useful features of mind. Vitamins A, C, and E are most important non-enzymatic antioxidants in foods, and there are rising evidences that those antioxidant nutrients are shielding towards cognitive decline and mental problems such as tension problems, attention-deficit/hyperactivity disorder, autism, bipolar disorder, depression, schizophrenia, and substance abuse. Antioxidant vitamin levels in the blood are shown to be low in people suffering from a variety of mental illnesses. In the Prenatal Determinants of Schizophrenia study, perinatal retinol deficiency, as measured by low serum retinol concentrations, was found to be strongly related with an elevated risk (more than threefold) of schizophrenia and other schizophrenia spectrum disorders. In the Rotterdam Study, people who consumed a high tertile of vitamins C and E had a decreased risk of Alzheimer's disease than those who consumed lower tertiles of these antioxidant vitamins. One of the key causes of AD is amyloid-beta deposition in the brain, which is linked to increased oxidative stress [66], and low levels of vitamins C and E in blood and/or cerebrospinal fluid have been found in AD patients. Vitamin E inhibits cognitive impairment and the progression of Alzheimer's disease by reducing amyloid beta deposition, reactive oxygen species, and nitric oxide production. A new approach has recently been utilized to determine the underlying mechanisms of neurodegenerative disorders and assess the efficacy of interventions to treat the symptoms of mental disorders. (Lim, 2016)

2.6 Sugar and saturated fat

Because many of the factors that affect mental health coincide with those that affect cardiovascular health, dietary saturated fat and a Western-style diet may impair cognitive function, and those with a high BMI score poorly on a 37-item version of the Mini Mental State Examination. Recent research has regularly found a link between diabetes and dementia, and diabetes has been shown to cause Alzheimer's disease in animal models. In a group of healthy, older, nondiabetic people without dementia, increased blood glucose and HbA1c levels were linked to decreased memory ability and structural alterations in the hippocampus. The formulation of practical dietary guidelines for each mental condition, as well as the identification of effective techniques to mitigate the detrimental effects of saturated fat and simple carbohydrates on mental disorders, should be the focus of intervention studies. (Lim, 2016)

2.7 Dietary factors in relation to certain mental health issues

2.7.1 Schizophrenia

Despite the fact that this is a complex topic, several research have shown that diet is linked to the onset and progression of schizophrenia. The Dutch Famine Study and the Chinese Famine of the 1960s indicated that severe famine exposure during pregnancy resulted in a two-fold increase in schizophrenia diagnoses requiring hospitalization in both male and female children. According to

studies, people with schizophrenia have lower quantities of polyunsaturated fatty acids in their bodies than the general population, and their brains have fewer antioxidant enzymes. More study is being done in this area to determine precise mechanisms through which food can function in conjunction with other treatment approaches to prevent or lessen schizophrenia symptoms. (Foundation, 2017)

2.7.2 Depression

There could be a link between depression and eating habits. Adult Mental Health Dietitians, who deal with persons who have mental health difficulties to improve their knowledge and understanding of nutrition, have arisen as yet another therapeutic method. People who ate a poor-quality diet — one high in processed meat, chocolates, sweet desserts, fried food, refined cereals, and high-fat dairy items — were more likely to report depression symptoms, according to many studies. A recent study indicated that persons with low folate, or folic acid, intakes were much more likely to be diagnosed with depression than those with greater intakes.

2.7.3 Attention Deficit Hyperactivity Disorder (ADHD)

A brain illness known as attention deficit hyperactivity disorder (ADHD) affects how you pay attention, sit still, and control your behavior. It affects children and teenagers, and it can last throughout adulthood. Food's impact on behavior is still a relatively new and contentious field of study. Certain foods, on the other hand, have an effect on behavior. Omega-3 supplements have been observed to alleviate ADHD symptoms in a number of studies, albeit the evidence is not totally consistent. Essential fatty acids and minerals like iron have been shown to have health advantages in clinical studies. Iron, magnesium, and zinc deficiencies have been reported in children with ADHD symptoms, and studies have repeatedly showed significant benefits with supplementation when compared to placebo, whether used in conjunction with regular medication or as a stand-alone treatment. (Foundation, 2017)

2.7.4 Dementia

Dementia is one of the most common causes of disability and death in the world. Diabetes, obesity, and heart disease, all of which can increase the risk of dementia, are all on the rise, according to existing data. Many studies have discovered a link between a low fat diet and a high vitamin and mineral consumption in the prevention of some types of dementia. In one study, researchers looked at the overall fat intake of 11 countries and discovered a link between increased fat consumption and dementia in people over 65.

High levels of vitamin C and E were connected to a decreased incidence of dementia in a long-term community-based investigation, notably among smokers, with comparable findings in other studies focused on different population groups. (Foundation, 2017)

Chapter Three Methodology

3. Methodology

The approach used in this study was addressed in detail in this chapter. The exact technique to be followed in order to achieve the research objectives is referred to as methodology. The chapter will be divided into five sections: study area, data collection methods, primary / secondary data collection, research design, study limits, sample procedure, and research instrument.

3.1 Materials and Methods

Area for research: My research area was "Institute of Mental Health and Hospital". This study was primarily focused on the relationship between mental health and dietary intake.

Figure 1: Taking information about dietary intake

Figure 2: Some mental patients

3.2 Design of the research

The study used a prospective cohort design.

3.3 Population of the source

The study population consisted of all "National Institute of mental Health Hospital" who visited the hospital in order to receive health services.

3.4 Period of study

The research was conducted between the months of November 2021 to December 2021.

3.5 Sample size determination

Here is the sample size $n=Z^2 Pq / d^2$
Where: Z=1.96 (95% confidence interval)
Let us consider the proportion of mental patients is 0.30 (as per recent literature)

Therefore; P=0.30, q=0.70, d=5% and n=185, considering the time and resources available for thisstudy, a sample size of 150 is appropriate.

3.6 Sampling technique

The respondents were chosen using a systematic sampling technique from the total population.

3.7 Data collection

1. Data was gathered using a pre-tested, semi-structured, interviewer-guided questionnaire adapted from previous research.

2. The questionnaire included all of the required sections of questions in order to achieve the study's goal.

3. Data was acquired by conducting face-to-face interviews with the selected respondents for data collecting purposes.

4. The questions were posed to the respondents, and their responses were recorded in the response sheet.

3.7.1 Data Collection Methods

Primary data is direct information and is collected in a variety of ways, including surveys and interviews with key informants. In addition to the primary data, the secondary data are also very important secondary data for conducting research. Information about the care of newborns and lactating mothers comes from a variety of sources. Therefore, the information in the secondary data is obtained from various related books, articles, reports, maps, magazines, research papers, websites, daily newspapers, libraries, etc.
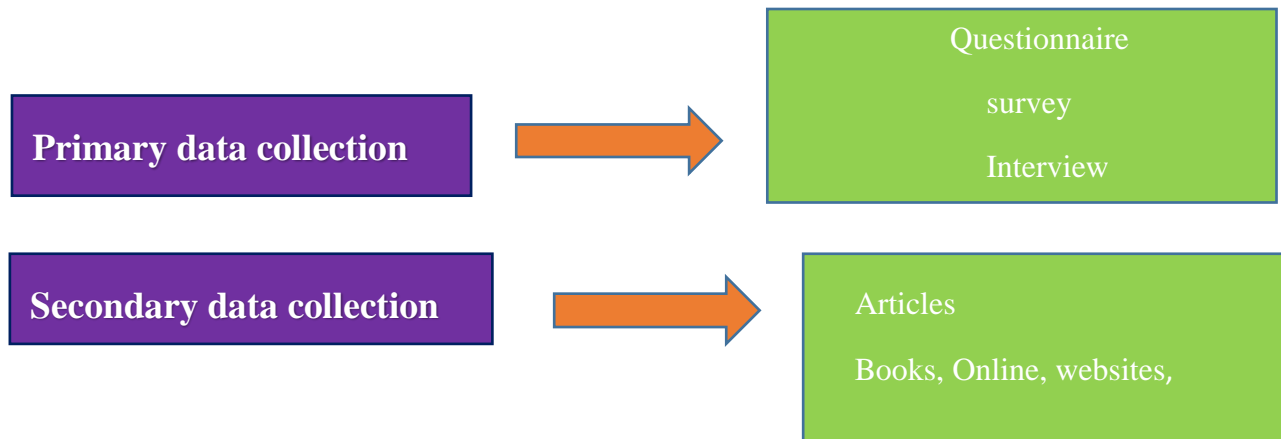
Figure 3: Data collection methods and techniques

3.7.2 Questionnaire

In an attempt to do this research, I had the opportunity to do an internship at Institute of Mental Health and Hospital. At that time, I created a questionnaire to get the actual study of my dissertation. This included many patients admitted to Institute of Mental Health and Hospital, especially my target subjects (all ages of mental patients).

3.7.3 Data analysis

After coding the survey, we used data entry and export (SPSS version 23.0 for analysis) and an Excel form to split the data, create graphs, and measure the grades of the respondents who participated in the survey. SPSS software helped with the analysis. Data and total answers for all respondents to each question by calculating SPSS. It was cleaned up by rearranging a simple frequency distribution table into a table.

3.7.4 Research limits

The main limitations of this study were:. So when I tried to do an interview, it became very difficult to do because of the language barrier between me and the patient. The part of the questionnaire helped me, it's not enough because sometimes my friend can't explain to ask and correct, so every day when he finishes part of the question he explains as a summary And that's the biggest problem I'm facing because you do research that you need to do patient research and ask yourself. That way, you can understand and write a lot about your research.

It was also very difficult for managing patients because we know, National Institute of Mental

Health and Hospital is a public hospital and very crowded also there are different types of mental patients, which are very dangerous.

3.7.5 Ethical issues

- Prior to the start of the study, the research protocol was submitted and approved by the FAHS Research Ethics Review Board (Faculty of Health Sciences, Narcissus International University).

- The study was explained to respondents in an easy-to-understand local language and then notified.

- Consent was obtained from each participant. After that, all information and records were kept confidential and the procedure was guaranteed to be used for research purposes only.

- The name of the hospital was retained for confidentiality reasons.

Chapter Four
Results
&
Discussion

4. Results and discussions

4.1 Results

The findings data on the respondents, I asked the following through questionnaire form and thedata from the responders are illustrated below, while (N=150)

Table 1: Distribution of the respondent by their age group

Age in category	Number	Percentage (%)
14-24	51	40.3
25-35	44	33.9
36-46	37	30.9
47-57	17	17.7
58+	1	7
Total	**150**	**150**
Mean ±SD	**31.60± 11.31**	
Minimum---maximum	**14-----65**	

The above table 1 shows that the minority of the respondent rate was 1% were more than 19years while the 51% were ages between 14 to 24years, 44% were ages between 25 to 35year and 17% were ages between 47 to 57 year, and theMean ±SD age of the respondent was 31.60 ± 11.31 and Minimum---maximum was 14------65.

Table 2: Distribution of the sex of the respondents

Gender	Number	Percentage (%)
Male	75	50
Female	75	50
Hermaphrodite	0	0
Total	**150**	**100**

 The above table shows that the half of the respondents 75 were male patients other half 75 were female mental patients. This data I had collected from" National Institute of Mental Health and Hospital.

Table 3: Distribution of marital status of the patient

Marital status	Number	Percentage (%)
Married	63	42
Unmarried	85	56
Others	2	1.3
Total	**150**	**100**

In the above table 2 asked the mentally disordered patients about their marital status, so it is summarized that the martial statues of mother out of 150 respondent and it is categorized married, unmarried and others which are divorced or widowed. Observed 42 percent were married while all

other 56 percent were unmarried, and 1.3 percent others .so that almost 56 percent of mental patients were getting treated in NIMH are married. It's a bit surprising in Bangladesh.

Table 4: Distribution of the occupation of the respondents

Occupation	Number	Percentage (%)
Health worker	0	0
Government job	13	8.7
Private Job	24	16.0
Business	34	22.7
Housewife	33	22.0
Day laborer	46	30.7
Total	**150**	**100**

The above table 4 showed that the percentage of occupation of the patients out of 150respondents (mental patients).so I categorized health worker 0%, Government job holder 8.7%,private job holder 16%, small business 22.7%, House wife 22%, day laborer 30.7% .That means , a large number of mental patients are day laborer and their income are very poor and lead a miserable life .

Table 5: Distribution of weight of the mental patients

Weight of the mental patient	Number	Percentage (%)
20 to 60	95	62.7
61-101	54	36.6
Greater than 101	1	**.7**
Total	**150**	**100**

Above table mentioned that the percentage of question that is for weight of the mental patients at NIMH.

Table 6: Distribution of height of the mental patients

Height of the mental patient	Number	Percentage (%)
4 to 5	27	62.7
5.1 to 6.1	97	36.6
Greater than 101	1	**.7**
Total	**150**	**100**

Above table mentioned that the percentage of question that is for height of the mental patients at NIMH.

Table 6: Distribution of the Family income per month

Monthly family income	Number	Percentage (%)
Less than or equal 10000tk	32	21.3
10000tk to 20000tk	78	51.9
20000-30000tk	24	16.1
30000-40000tk	8	5.3
>40000tk	8	5.3
Total	**150**	**100**
Mean ± SD	**18996 ± 12467**	
Minimum –maximum	**80000---5000**	

The above table showed that the family income of the respondents rate out of 150, and I categorized by those who take per month less than or equal 10000tk were 21.3%, 10000tk 20000tk were 78% and 20000- 30000tk were just 24% and 30000 to 40000tk and >40000tk both were just 8%. So I found out that the most family's per month income were between 10000tk to 20000tk and they live from hand to mouth, and for the Mean ± SD were 18996 ± 12467 and Minimum –maximum were 80000---5000.

Table 7: Distribution of the family member of the mental patients

Number of family member	Number	Percentage (%)
1-3	30	20.7
3-6	105	70
>6	15	10
Total	**150**	**100**

This study about 70% of family was having 3-6 members out of 150 data. On the other hand 20.7% were having 1-3 family member, 10% family were having >6 members as I mentioned above table and figure.
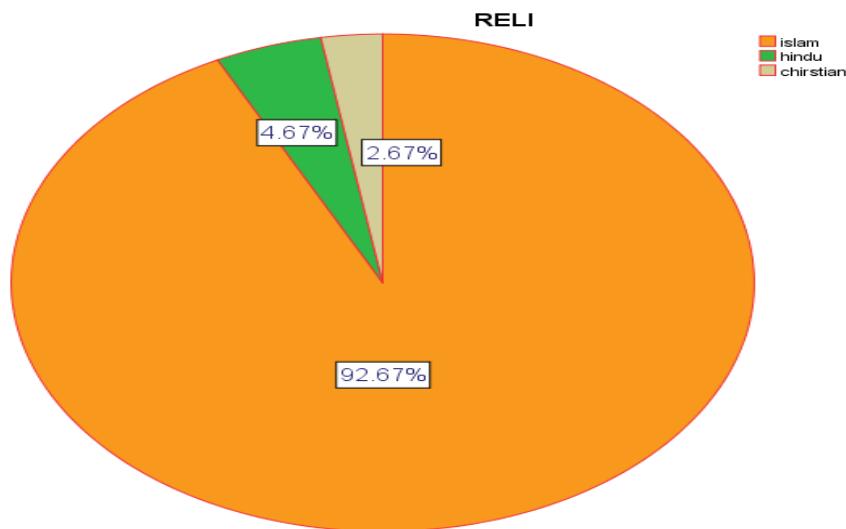
Figure 4: Religion of the Patient

The above figure shows that out of 150 respondents that admitted in NIMH 92.67% were Muslim and only 7.34% were non-Muslim that means other religious in Bangladesh like Hindu, Cristian and others,so finally found out almost 100% mental patients in NIMH are Muslim. It's a normal as well as I knew its Muslim country.

Table 9: Distribution of the educational level of respondents

Level of education	Number	Percentage (%)
No formal education / Primary	108	72.0
S.S,C	20	13.3
H.S.C	6	4.0
Bachelor degree & above	16	10.7
Total	**150**	**100**

The above table summarized that the educational level of the respondents (mental patients) out of 150 respondents level, it is categorized No formal education and primary level respondents rate were 108%, while the SSC for 20%, H.S.C 6% and the bachelor respondents rate were just 16%, so found out that most of the mental patients drop out of education when they were primary .as it is mention above108% for no formal education and primary. So there is too much gap between those three S.S.C were just 20%and H.S.C that were just 13%.
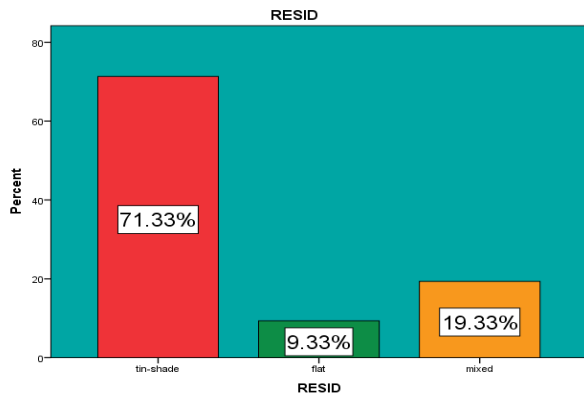
Figure 5: Distribution of residential status of the mental patients

The above figure showed the patient about their residential status so it shows above that the most respondents had tin shade house 71.33% and the other 9.33% of the respondents had flat so it means the most of mental patients out of 150 that admitted in NIMH were poor.

Table 10: Distribution of the occupation of the respondents husband

Occupation	Number	Percentage (%)
Health worker	4	2.7
Government job	3	2.0
Private job	3	2.0
Day laborer	26	17.3
others	17	11.3
Patients wife occupation/ unmarried	97	64.7
Total	**150**	**100**

The above table showed that the percentage of occupation of the mental patients husband out of 150 respondents, so it is categorized health worker, government job, private job, and day labor. Finally, found most of the mental patients husband are day labor 17.3% so their income is very little .

Table 11: Distribution of the occupation of the respondent wife

Occupation	Number	Percentage (%)
Housewife	34	22.7
Private job	2	1.3
Others	1	.7
Patients husband occupation and unmarried	113	75.3
Total	**150**	**100**

The above table showed that the percentage of occupation of the wife of mental patients who are married of 150 respondents ,so it is categorized housewife , private job, others .Finally, found most of the mental patients wife who are married are housewife 22.7% .

Table 14: Distribution of smoking condition of the mental patients

Smoker	Number	Percentage (%)
No	99	66.0
Yes	51	34.0
Total	**150**	**100**

The above table showed that the percentage of smoking condition of mental patients that they are smoker or not. Out of 150 respondents, it is found that 34.0% patients are smoker and 66.0% patients were not non-smoker.
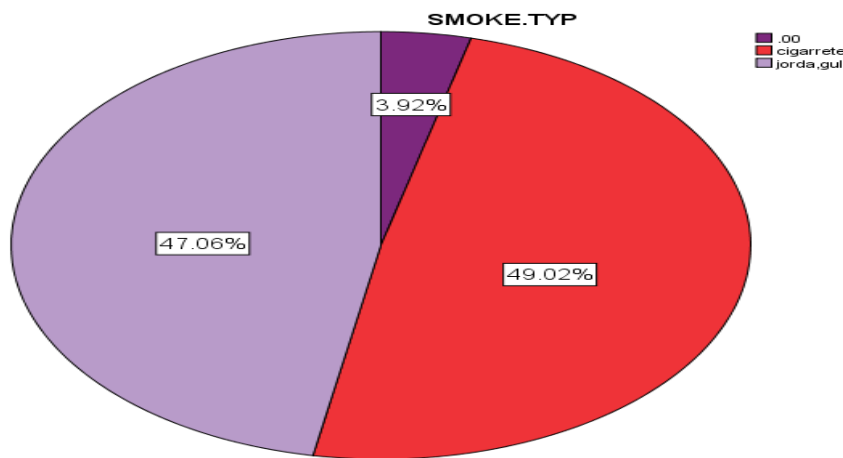

Figure 6: Distribution of smoking type of the mental patients

The above table showed that the percentage of smoking type of mental patients who were smoker. Out of 150 respondents, Finally, found that 49.2% patients were smoking cigarrete

and 47.06% patients were smoking jorda, gul.

Table 16: Distribution of regular entertainment of the mental patients

Regular entertainment includes song, television, social site, visiting different place, cooking which has a positive effect on mental health.

Entertainment type	Number	Percentage (%)
Song	7	4.7
Television	19	12.7
Social site	3	2.0
Visiting	4	2.7
Cooking	33	22.0
Others	**77**	46.9
Total	**150**	**100**

From this table it is found out of 150 mental patients 46.9% patients were doing cooking and 77% were doing others work.

Table 17: Distribution of the disease history of the respondents

Communicable diseases include infectious diseases tuberculosis and measles are among them, on the other side non-communicable diseases (NCDs) include mostly chronic diseases, which are cardiovascular diseases, cancers, and diabetes.

Disease type	Number	Percentage (%)
No disease	96	64.0
Diabetic	4	2.7
CVD	0	6.7
Asthma	0	0
Rehumatic fever	10	22.0
Others	**40**	26.7
Total	**150**	**100**

The above table showed that the percentage of disease history of mental patients who had other disease besides bad mental condition. Out of 150 respondents, found that 64.0 percent patients had no other diseases besides mental illness and 2.7 percent patients had diabetic, 22.0 percent had rheumatic ever .But on the other hand 26.7 percent had others medical and physiological issue such as getting hurt in brain during playing at small age, getting hurt in brain during accident, development disorder (autism), dementia in NIMH.

Table 19: Distribution of the physical exercise of the respondents

Physical exercise	Number	Percentage (%)
Yes	53	35.3
No	97	64.7
Total	**150**	**100**

The above table showed that the percentage of physical exercise of mental patients at NIMH.OI had found that large numbers of patients 64.7% were doing no physical exercise and 35.3% percent mental patients were doing physical exercise in NIMH.

Table 20: Distribution of the physical exercise time of the respondents

Time of physical exercise	Number	Percentage (%)
1 min to 59 second	25	16.7
1 hour to above	27	18.7
No physical exercise	97	64.7
Total	**150**	**100**

The above table showed that the percentage of physical exercise time of mental patients who were doing physical exercise at NIMH. So, it is already found from previous table that 35.3%patients were doing no physical exercise, So among 35.% patients 16.7 % patients were doing physical exercise from 1 min to 59 min and 18.7% patients were doing exercise from 1 hour to above in NIMH Hospital.
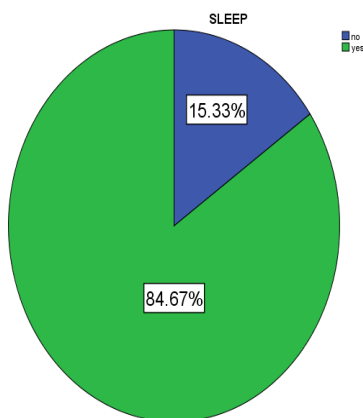

Figure 7: Distribution of the sleeping disorder of the respondents

The above figure showed that the percentage of the patient said yes and no if there is any sleeping disorder during mental illness, so it is summarized the above those who said yes or no

as a percentage, for yes were 84.7% and for no were just 15.3%, So I found out the majority of the patients at NIMH hospital, they had complications during sleeping.

Table 22: About treatment at hospital

Treatment at hospital	Number	Percentage (%)
Yes	132	88.0
No	18	12.0
Total	**150**	**100**

The above figure showed that the percentage of the patient said yes and no if they had taken immediate treatment at NIMH during mental illness, so summarized the above those who said yes or no as a percentage, for yes were 132% and for no were just 18%, So finally, found out the majority of the patients at NIMH, they had taken immediate treatment rom NIMH.

Table 23: Distribution of time of recovery and comparing between total number of treated patients and total number of recover patient

Time o recovery	Number	Percentage (%)
1 day to 29 day	6	4.0
1 month to 11 month	5	3.3
1 year to 3 year	3	2.0
4 year to 7 year	14	9.3
8 year to above	2	1.3
Total	**30**	20.0
Still sick	**120**	**26.7**
Total	**150**	**100**

• Comparing sector	• Number	• Percentage (%)
• Treated patients	• 132	• 88.0
• Recovered patients	• 30	• 20.0
• Still sick	• 120	• 26.7
• **Total**	• **150**	• **100**

The above figure showed that the percentage of the patient recovery who had taken immediate treatment at NIMH during mental illness, so out of 150 patients 88.0% patients were treated at NIMH hospital and among these 88.0% patients total 20 % patients were recovered from mental illness So found out that a little number of patients at NIMH hospital were recovered.

The other table showed that the percentage of the patient recovery time from mental illness. Among 30% recovered patients 4.0 % patients were recovered from 1 day to 29 day, 3.3% patients were recovered from 1 month to 11 month, 2.0 % patients were recovered from 1 year to 3 year,

9.3% patients were treated from 1 year to 7 year and 1.3 % patients were recovered from 8byear to above.

Table 24: Distribution of the CHO intake of the mental patients and comparing relationship between recovered patients and regular intake of CHO-rich foods

CHO-rich food	Number of patients who intake regularly	Number of recovery	Percentage of recovery
Brown rice	2	2	1.3
Sugar	95	2	1.3
White bread	79	2	1.3
No sugar	69	28	18.6
Low carb	2	0	0

The above figure showed that the percentage of the patient recovery who had taken high refined carbohydrate   and low carbohydrate in their regular diet, so out of 150 patients 2 patients intake brown rice, and the percentage of recovery is 1.3%,and 95 people intake high amount of sugar among them 1.3% patients   were recovered and 79 people intake white bread among them only 1.3% patients were recovered ,and 69 people intake no sugar in their regular diet among them 18.6% patients were recovered and finally 2 patients take low carb in their diet and their recovery percentage was 0.

Table 25: Distribution of the protein intake of the mental patients and comparing relationship between recovered patients and regular intake of protein – rich foods

Protein rich foods are fish, egg, chicken, nuts, seeds, milk.

Protein-rich food	Number of patients who intake regularly	Number of recovery	Percentage of recovery
Fish	51	30	20.0
Egg	61	27	18.0
chicken	27	12	9.3
Nuts	25	18	12
Seeds	6	6	4.0
Milk	43	25	16.6

The above figure showed that the percentage of the patient recovery who had taken protein –rich foods in their regular diet, out of 150 patients total 30 patients were recovered so, out of 150 patients 51 patients intake fish regularly and the percentage of recovery is 20.0%,and 61 people intake egg regularly among them 18.0%% patients were recovered and 27 people intake chicken among them 9.3% patients, and 25 people intake nuts in their regular diet among them 12.0% patients were recovered and 6patients take seeds in their diet and their recovery percentage was 6 and 43 patients drink milk in their regular diet and their recovery percentage was 16.6%.

Table 26: Distribution of the vitamin –rich foods intake of the mental patients and comparing relationship between recovered patients and regular intake of vitamin and mineral – rich foods

Vitamin rich foods are citrus fruit - including oranges and grape fruit and green peppers, potatoes, strawberries, blueberries and blackberries, green leafy vegetables - such as broccoli and brussels sprouts.

Comparing sector	Number	Number of recovery	Percentage of recovery
Fresh and seasonal fruits	46	24	16.0
Green leafy vegetables	145	30	20.0
Citrus foods	78	25	16.6

The above figure showed that the percentage of the patient recovery who were eating vitamin, mineral –rich foods in their regular diet, as out of 150 patients total 30 patients were recovered so, out of 150 patients 46 patients intake fresh and seasonal foods such as (bananas, apples, carrots, , grapefruit, fresh berries, and kiwifruit and the percentage of recovery is 16.8% and 145 people intake (dark leafy greens such as spinach, lettuce, cucumber, kale, spinach, and broccoli) among them 20.0%patients were recovered and 78 people intake citrus foods (guava ,lemon, orange, Tomato, sweet red pepper, white grapefruit)16.6% patients were recovered.

Table 27: Distribution of the junk food intake of the mental patients and comparing relationship between recovered patients and intake of junk food

Lots of processed meat, fried food, refined cereals, candy, pastries, and high-fat dairy products are junk foods, causes anxious and depressed.

Junk foods	Number	Number of recovery out of 30 recovered patients	Percentage of recovery out of 30 recovered patients
Yes	115	17.0	11.3
No	35	20.0	13.3

The above figure showed that the percentage of the patient recovery who were eating junk foods, as I had already gotten that out of 150 patients total 30 patients were recovered so, out of 150 patients 115 patients were eating junk foods and their percentage of recovery was 11.3 % and 35 patients were not eating junk foods and their percentage of recovery was 13.3 %.

Table 28: Distribution of the drinking water of the mental patients and comparing relationship between recovered patients and water

Water	Number of patients who drink 6-8 glass per day	Number of recovery out of 30 recovered patients	Percentage of recovery out of 30 recovered patients
Yes	94	24.0	15.9
No	56	6	4.0

The above figure showed that the percentage of the patient recovery who were drinking 6-8 glass water per day, as out of 150 patients total 30 patients were recovered so, out of 150 patients 94 patients were drinking water and their percentage of recovery was15.9% and 56 patients were not drinking 6-8 glass water per day and their percentage of recovery was 4.

Table 29: Distribution of the supplements of the mental patients and comparing relationship between recovered patients and supplement

Supplement	Number	Number of recovery out of 30 recovered patients	Percentage of recovery out of 30 recovered patients
Yes	64	29	19.3
No	85	1	.7

The above figure showed that the percentage of the patient recovery who were taking vitamin supplements, as out of 150 patients total 30 patients were recovered so, out of 150 patients 64 patients were taking supplements and their percentage of recovery was 19.3% and 85 number of patient were taking no supplement and recovery percentage was 1.7%.

4.2 Discussion

While looking for the exact data from the hospital during my internship days surprisingly experienced few circumstances that most of the patient's family income is very low. Who are admitted in NIMH hospital, 51.9%patient's family income between 10 to 20000tk, which is not enough for ensuring proper nutritional food for their family. Here is an overall discussion on this topic that Ifind after doing my thesis.

Nearly out of total 150 mental patients 132 patients were treated from a long time ago. Among these 88% patients 20% patients were recovered from mental illness. Mental distress are related to decrease consumption of healthy foods, and increase consumption of proper amount of carbohydrate, protein, vitamin and mineral –rich food. In NIMH hospital 95 patients had eaten sugar in their regular food and their recovery percentage is 1.3% .On the other hand 69 patients had eaten no sugar and their recovery percentage was increased too18.6%.Surprisingly 2 patients were eating low carb diet and their recovery percentage is 0, also 79 patients were eating white bread and their recovery percentage was only 1,.3%.

In another question asked our respondent about their protein intake. Out of 150 patients total 30 patients were recovered so, out of 150 patients 51 patients intake fish regularly and the percentage of recovery is 20.0%,and 61 people intake egg regularly among them 18.0%% patients were recovered and 27 people intake chicken among them 9.3% patients, and 25 people intake nuts in their regular diet among them 12.0% patients were recovered and 6patients take low carb in their diet and their recovery percentage was 6 and 43 patients drink milk in their regular diet and their recovery percentage was 16.6%.

Our brain has many neurotransmitters which are made of amino acids and Protein are source of amino acids .Anxiety and depression can caused by low levels of protein in regular diet. , out of 150 patients 51 patients intake fish regularly as fish is a great source of amino acid so the percentage of recovery is 20.0%,and 61 people intake egg regularly among them 18.0%% patients were recovered and 27 people intake chicken among them 9.3% patients, and 25 people intake nuts in their regular diet among them 12.0% patients were recovered and and 43 patients drink milk in their regular diet and their recovery percentage was 16.6%.

Physical health is always promoted by vitamins and minerals but many of us don't know that mental health is also promoted by vitamins and minerals, who had taken vitamin, mineral –rich foods in their regular diet, out of 150 patients 46 patients intake fresh and seasonal foods such as (bananas, apples, carrots, , grapefruit, fresh berries, and kiwifruit and the percentage of recovery is 16.8% and 145 people intake (dark leafy greens such as spinach, lettuce, cucumber, kale, spinach, and broccoli) among them 20.0%patients were recovered and 78 people intake citrus foods (guava ,lemon, orange, Tomato, sweet red pepper, white grapefruit)16.6% patients were recovered Because they were eating vitamin, mineral –rich foods in their regular diet.

You can imagine what happens when your brain becomes dehydrated because it is made up of 73 percent water. Systems begin to slow down and eventually stop working properly. Out of 150

patients 62.7 patients were drinking water and their percentage of recovery was 15.9% and 37.3% patients were not drinking 6-8 glass water per day and their percentage of recovery was 4.0. In another survey I asked the patient that they were taking supplements or not. As, Supplements, in addition to vitamins is beneficial in treating mental depression. Out of 150 patients 64 patients were taking vitamin supplements and their percentage of recovery was 19.3% and 85 number patient were not taking vitamin supplements and their percentage of recovery was 0 .7%.

Risk: In this study, there are no identified or anticipated risks. The benefit of this research is that it helps to find out the pattern of patients' healthcare-seeking behavior, medication, treatment, cure method, physical recovery, food intake, precaution measures, etc. in NIMH.

4.3 Recommendation

It is better to prevent problem instead of looking for once it happened. As a result, it is important to remember to maintain your nutritional status.

Increase eating nutritious foods

1. Improving health and raising awareness among family members.

2. Eating Complex carbs from complete meals (such as sweet potatoes, rolled oats, legumes, and quinoa) might boost your brain's availability of the feel-good chemical serotonin.

3. Eating protein (found in foods like fish, steak, chicken, turkey, tofu, beans, eggs, and unsweetened yogurt) has been related to higher levels of dopamine and norepinephrine, two brain chemicals that affect mood, motivation, and focus.

4. Eating more vegetables, fruit, potassium rich food such as banana, omega-3-rich fish, nuts, legumes, and olive oil. A diet rich in whole, unprocessed foods, as well as enough protein, healthy fat, and fiber, helps to maintain blood sugar levels steady after meals, which has been related to improved mood and anxiety.

5. Drinking 6-8 glass water every day.

6. Avoiding junk foods.

Avoid foods that can make us feel mentally exhausted

1. Foods made with flour, such as breads, crackers, and baked goods

2. Sugar-sweetened drinks and snacks like soda and cookies.

Chapter Five
Conclusion

5.0 Conclusion

The focus on aging-related mental diseases has grown, as the world is aging rapidly. Nutritional aspects are crucial for mental health, according to my current studies. It is recommended that people eat balanced meals on a regular basis and consume nutrients for mental health such as omega-3 fatty acids, antioxidants, niacin, folate, vitamin B6, and vitamin B12 at recommended dietary intake levels. According to my thesis more than half patient's family were ignorance about nutritious food. So, we should create awareness that with prescribed medicine good nutrition is associated with mental health. When asked questions about diets of mental patients, noticed that their dietary habits was not fulfilled with proper nutrition. They made poor dietary decisions and choose foods that may contribute to depression. Many nutrients, especially vital vitamins, minerals, and omega-3 fatty acids, are typically lacking in the mental patients as evidenced by their dietary intake patterns. Seen that more than half patient family income is not sufficient. So, it is quite difficult for them to buy nutritious food properly. In fact, out of 150 patient 46 patients intake fresh and seasonal fruits and the percentage of recovery is 16.8% .Suicidal tendencies are more common in patients with depression, and they are typically treated with antidepressants and/or psychotherapy. [6] Neurotransmitter deficiencies such as serotonin, dopamine, noradrenaline, and -aminobutyric acid (GABA) are frequently linked to depression. Tryptophan, tyrosine, phenylalanine, and methionine are amino acids As there are 12 amino acid but only 8 amino acid can be taken through diet and that can aid with a variety of mood disorders, including depression. Out of 150 patients only 51 patients intake fish (protein), which is a great source of amino acid but their recovery, percentage was 20.0% really high. The production of insulin in the body is triggered by eating a meal high in carbohydrates. Insulin facilitates the entry of blood sugar into cells, where it can be used for energy, while also triggering the entry of tryptophan into the brain. The levels of neurotransmitters in the brain are affected by tryptophan. Low-carbohydrate diets are also known to trigger depression. It has been already seen those mental patients take low carb diet their recovery percentage was 0. Through this whole thesis experienced that most of the patients were not educated they did not know about good or proper nutrition .Most of the patients did not eat any zinc, folate ,selenium, calcium, vitamin ,potassium rich food which is very important for their recovery.

Chapter Six
References

6.0 References

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