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Knowledge of registered mental health nurses about the role of nutrition in the management of Schizophrenia at Pantang hospital in the greater Accra Region of Ghana

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Abstract

Schizophrenia is an enduring mental condition that affects about 26 million people each year globally. The purpose of the study was to assess the knowledge of Registered Mental Nurses (RMNs) in Psychiatric Hospital, Pantang about the role of nutrition in the management of schizophrenia. Descriptive cross-sectional research design was used. Systematic sampling was used to select 170 RMNs for the study. A questionnaire was developed to collect data from the respondents. The processing of data was done with the use of the SPSS and all the research questions were analysed using descriptive statistics. The results from the study indicate that the RMNs showed an overall positive knowledge about the management methods of schizophrenia, but most did not know the recommended period to detect treatment resistance and when to stop PACT treatment. However, many did not accept that eating less nutritious food has a correlation with schizophrenia. Lastly, the study found that knowledge about the dietary composition of schizophrenic patients was also fair enough among the RMNs, aside from most of them not knowing much about gluten-containing food substances. The study recommended that mental health training institutions must emphasise on enough courses on nutrition to help increase the knowledge of future RMNs on the correlation between nutrition and schizophrenia.

Keywords : Mental Health, Nutrition and Schizophrenia

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Introduction

Schizophrenia is an enduring mental condition that affects about 26 million people each year globally (Lora *et al*., 2012). The onset of schizophrenia can be from childhood through to adulthood. Schizophrenia intensely affects the lives of the patients and their families due to the high cost of its management (Samoes and Silveira, 2017). Mostly, schizophrenia is treated by the use of antipsychotics. These anti-psychotics have their associated side effects which when not catered for, can compound the mental disease. However, nutrition has been found to significantly improve schizophrenic conditions with no side effects (Hoffer, 1975).

According to Banerjee (2012), schizophrenia as a mental disorder is characterized by a breakdown of thought processes and by poor emotional responsiveness. Samoes and Silvera (2017) opine that several maternal micronutrients have been related to an increased risk of schizophrenia, such as elevated homocysteine and iron, essential fatty acids, retinoids, and vitamin D deficiency.

According to Tinelli and Kanavos (2015), the protection and treatment of people with mental

disorders are recognised by the United Nations as a fundamental human right. All affected individuals should be helped to live a life free from prejudice, discrimination, and hostility. They have the right to be protected from abuse and from behaviour, attitudes, and assumptions that lead to exclusion; and access health care and benefit from the best available treatment (Fleischhacker *et al.*, 2014). As well as the potential human cost, the burden of schizophrenia and other mental health disorders is very high on healthcare resources and on society as they contribute to increased hospitalisation and emergency care, physical comorbidities and premature death, school absence, access to criminal justice system for violent act, unemployment, sickness absence, and lost productivity at work (Tinelli and Kanavos, 2015). The treatment of schizophrenia is therefore critical.

Although antipsychotic medication has persisted as the optimal treatment and is effective in managing the positive symptoms, it is limited in terms of treating negative symptoms (Buchanan, Freedman, Javitt, Abi-Dargham, and Lieberman, 2007). Bentall (2009) asserts thatin addition to the drawback of drug treatment, this type of therapy is based solely on symptomatology and dosage is often determined by a process of trial and error. In those who respond to antipsychotic medication, side effects can be distressing and often intolerable; these include involuntary movements such as tremor and rigidity, drug-induced Parkinson's, Tardive dyskinesia, hyper-salivation, increased heart rate, metabolic syndrome and weight gain. Often the side effects themselves require further pharmacological treatment and/or result in treatment discontinuation, leading to subsequent relapse. Furthermore, approximately one-third of individuals with schizophrenia do not respond to antipsychotic medication, either alone or in conjunction With psychodynamic counseling and other pharmaco-therapy (Ritsner, 2010).

However, there is now increasing evidence that a number of physiological mechanisms such as oxidative stress, one-carbon metabolism, and atypical immune-mediated responses exist in individuals with schizophrenia, not solely dopaminergic patho-physiology as per the dopamine hypothesis. Further more, these differing pathophysiological manifestations may be ameliorated by nutritional treatment strategies (Arroll, Wilder and Neil, 2014). Diet and nutrition have a complex relationship with mental health and there is evidence that specific micronutrients may have an effect on mood - particularly depression and also on the risk of developing and progress of dementia. It is important for community nurses who may come across people with mental health problems to think holistically about diet and how this is affected by mental illness, for example people may start to eat less when depressed, or when their memory is deteriorating, or if they have delusional beliefs which may affect what they choose to eat (Jennings, 2015).

Often, the foremost groups of people who are contacted for the management of all mental diseases, which include schizophrenia, are psychiatric doctors and nurses. It is believed that mental health nurses possess the requisite knowledge to offer treatment for schizophrenia. However, with the increasing evidence of the critical role that nutrition plays in the treatment and management of schizophrenic patients, coming by research evidence concerning the knowledge that psychiatric nurses possess on the efficacy of nutrition in the management of the disease is rare within the Ghanaian context. It is against this phenomenon that this current study was targeted at the understanding that nurses have on the use of nutrition in the management of the disease.

Research Questions

The study was guided by the following research questions:

1. What is the knowledge of the nurses about the various management methods of schizophrenia?

2. What role does nutrition play in the management of schizophrenia?

3. What should be the dietary composition of persons suffering from schizophrenia?

Methodology

Research Design

Descriptive cross-sectional survey research design was used. The study was solely quantitative as numerical data were gathered and analysed to give a description of the situation at hand. The use of the cross-sectional design for this study was informed by the researcher's intentions to collect data from a quite larger sample within a relatively shorter period.

Study Area

The study was conducted in the Psychiatric Hospital, Pantang. Psychiatric Hospital, Pantang is one of three psychiatric hospitals in Ghana, and it is the largest. It was opened by General I. K. Acheampong in 1975. The hospital is situated near a village called Pantang, about 1.6 kilometres off the Accra-Aburi road and 25 kilometres from Accra Central. The hospital was originally planned to be a Pan-African Mental Health Village. It has 500 beds and patients are from all over Ghana and nearby countries. It is separated into 10 wards with 50 beds each. Pantang is comprised of 28 departments including a mortuary, eye clinic, HIV counseling and testing, and family planning. There are 327 staff members who are made up of psychiatrists, occupational therapist, medical doctors, psychologist, and medical assistants. Most patients come for schizophrenia (42.9%), epilepsy (17.2%), substance abuse (7.8 %), and depression (5.2%). The map of the study area is shown in Figure - 1.

Figure 1: Map of the study area

Population

The population of this study comprised registered mental health nurses in the Psychiatric Hospital, Pantang. The hospital has about 275 registered mental health nurses (RMNs). Therefore, these 275 mental health nurses constituted the population for the study.

Sampling Procedure

The sample size for this study was determined by the use of the Krejcie and Morgan (1970) table of sample size determination. According to the table, working with a population of about 280 requires a sample size of 162. This figure is determined at a confidence interval of 95 percent and at an error of margin of 5 percent. To anticipate any unforeseen reduction in valid data, the sample size was increased to 170. Therefore, 170 RMNs formed the sample size of this study.

The sampling technique that was used in selecting the sample size for the study was the systematic sampling technique. With the use of

systematic sampling, all the RMNs in the hospital had equal chances of being selected as this technique is probabilistic in nature.

Equation 1: Systematic Sampling Calculation

$R = N/n = 275/170 = 1.61 \approx 2$

N = the population size, n = sample size, and R = sampling interval.

Data Collection Instrument

The data collection instrument used for the study was a questionnaire. The questionnaire is a widely used and useful instrument for collecting survey information, providing structured, often numerical data, being able to be administered without the presence of the researcher, and often being comparatively straightforward to analyse. Questionnaires are a useful option to consider when conducting a survey. They can be cheaper than personal interviewing and quicker if the sample is large and widely dispersed (Mathers, Fox, and Hunn, 2009). The contents of the questionnaire were developed based on the research questions of this study. The items in the questionnaire were all closed-ended in nature (Saris and Gallhofer, 2014). The questionnaire consisted of four sections. “Section A” sought to obtain the demographic features of the respondents. “Section B” focused on the knowledge of the nurses about the various management methods of schizophrenia. “Section C” sought information on the role nutrition plays in the management of schizophrenia. Lastly, the fourth section (Section D) was concerned with the dietary composition of food for persons suffering from schizophrenia. A specialist (the supervisor of the study) was consulted in order to do a face validity of the content of the questionnaire.

Data Collection Procedures

First and foremost, an introductory was sought from the Department of Science Education, University of Cape Coast, which was presented to the administrative authority of the Psychiatric Hospital, Pantang so as to be granted permission in collecting data. After permission was granted, the purpose of the study was communicated to the RMNs who were the subjects of the study. The RMNs were then required to consent to take part in the study. The questionnaires were then distributed to the participants. The participants were required to provide answers to the items in the questionnaire within a 10-minute maximum duration. The collection of data was done within one day, 1st August, 2019, between the hours of 9:00 to 11:00 am. After the collection of data, the participants and the administrative authority of the hospital were offered sincerest gratitude.

Data Processing and Analysis

After gathering information for this study, data (answered questionnaires) were skimmed to check for incompleteness in the provision of answers to the questions. For questionnaires that were not answered completely, such were excluded in the data analysis. After sorting out complete data, questionnaires that were fit for analysis, which was 166 in number, were assigned numerical codes for the purpose of identification and ability to trace mistakes in the data entry procedure. The Statistical Package for the Social Sciences (SPSS, version 22.0) software was used to process the data and subsequently to do the analyses. All the research questions (1-3) were analysed using descriptive statistics, whereby results were displayed in frequencies with corresponding percentages.

Ethical Consideration

Ethical issues that were considered included the protection of the privacy of the respondents as well as keeping their responses confidential enough and not to disclose their identities in any way. The respondents

were made to feel like they usually did in their natural environment without any form of anxiety. In addition, the selection of the respondents was done without any form of bias from the researcher. Lastly, the data were neither manipulated to favour the expectations of the researcher nor to favour the image of the respondents. Data were collected and presented in an honest and professional manner.

Results and Discussion

Background characteristics of respondents

The demographic features of the respondents were enquired and the results are presented in Table - 1. With the age of the respondents, the majority of them were aged from 30 to 39 years as indicated by the figure 54.8% (91). Also, most of the respondents, 56.6% (94) were females. A lot of the RMNs who were the respondents for this study, 56.0% (93) were married. Lastly, it was revealed in the demographic features that most of the respondents, 54.2% (90) had practiced as RMNs for a period of 5-9 years.

Management Methods of Schizophrenia

The first research question sought to find out the knowledge that the RMNs in the Psychiatric Hospital, Pantang possess on the methods of managing schizophrenia. Table 2 contains the results pertaining to the first research question. Concerning the statement that clozapine is reserved for patients who have not responded to other treatments, a lot of the respondents, 47.6% (79) agreed to it with a mean of 3.57 ± 1.20. The mean score reiterates that the average response on that item centered around "agree". It was agreed by most of the respondents, 34.9 (58) with a mean score of 3.34 ± 1.01, that the detection of treatment resistance is recommended to be done within 6-12 months, and was closely matched by 34.3% (57) who were uncertain about that fact. Again, with a mean score of 3.46 ± 1.20

Table – 1. Demographic Data of Respondents (N = 166)

Variable	Frequency	Percentage
Age		
20-29	43	25.9
30-39	91	54.8
40-49	22	13.3
50-59	9	5.4
60 and above	1	0.6
Gender		
Male	72	43.4
Female	94	56.6
Marital Status		
Single	52	31.3
Married	93	56.0
Divorced	8	4.8
Widowed	5	3.0
Co-habiting	8	4.8
Years of Practice		
0-4 years	30	18.1
5-9 years	90	54.2
10-14 years	26	15.7
15-19 years	12	7.2
20 years and above	8	4.8

indicating an average response of "agree", most of the respondents were of the view that electroconvulsive therapy is reserved for patients who have not responded to treatment with antipsychotics. Moreover, many of the respondents, 58.4% (97) with a mean score of 4.15 ±0.77, agreed to the statement that CBT is usually conducted in a one-to-one therapeutic relationship. More so, with a mean of 3.48 ± 0.81, 45.2% (75) agreed that PACT treatments take place usually in homes, neighborhood and workplaces of schizophrenic

Table – 2. RMNs' Knowledge about Management Methods of Schizophrenia (N = 166)

Variable	Frequency (Percentage)					Mean	Std.
	SD	D	U	A	SA		
Clozapine is reserved for people who have not responded to other antipsychotic treatments.	12 (7.2)	28 (16.9)	13 (7.8)	79 (47.6)	34 (20.5)	3.57	1.20
Detection of treatment resistance is recommended to be done within 6-12 months.	7| (4.2)	25 (15.1)	57 (34.3)	58 (34.9)	19 (11.4)	3.34	1.01
Electroconvulsive therapy is reserved for patients who have not responded to treatment with antipsychotics.	14 (8.4)	29 (17.5)	18 (10.8)	77 (46.4)	28 (16.9)	3.46	1.20
Cognitive behaviour therapy is usually conducted in a one-to-one therapeutic relationship.	1 (.6)	8 (4.8)	8 (4.8)	97 (58.4)	52 (31.3)	4.15	.77
PACT treatments take place usually in homes, neighbourhood and workplaces of schizophrenic patients.	1 (.6)	18 (10.8)	60 (36.1)	75 (45.2)	12 (7.2)	3.48	.81
Patients who are able to function in the community and stick fast to treatment still need PACT therapy.	1 (.6)	7 (4.2)	52 (31.3)	76 (45.8)	30 (18.1)	3.77	.82

patients. Lastly, with a mean of 3.77 ± 0.82 indicating that the responses averaged around "agree", majority of the respondents were of the view that patients who are able to function in the community and stick fast to treatment still need PACT therapy.

Role of Nutrition in the Management of Schizophrenia

The second research question focused on assessing the RMNs' knowledge on how nutrition can be used in the management of schizophrenia. Table 3 contains the results in relation to the second research question. Most of the respondents, 40.4% (67) with a mean of 3.27 ± 1.28, were in agreement with the statement that unhealthy dietary pattern is a high risk for psychosis. Again, with a mean of 4.07 ± .80, a lot of the RMNs (56.6% (94)) were in agreement that diet prescription for schizophrenic patients can help reduce weight gain. Fifty percent (n = 83) of the respondents were uncertain that gluten-free diets can have a significant symptom resolution on schizophrenic patients. Moreover, 59.0% (98) of the respondents were in agreement with the statement that vitamin D is connected with the brain development of fetuses - mean response score of 3.80 ± .79. In addition, it was agreed by 53.0% (88) that niacin and other vitamin B nutrients deficiency can result in psychiatric disorders. Lastly, most of the respondents were in agreement with the

statement that eating less nutritious food has no correlation with schizophrenia.

Dietary Composition of Schizophrenic Patients

The third research question sought to inquire from the nurses the nutrients that they think should be part of the diets of schizophrenic patients. Responses from the RMNs were analyzed and presented in table - 4. With a mean of 3.96 ± .86, many of the respondents, 54.2% (90), agreed that wheat products and fish cakes must be included in the diets of schizophrenic patients. Also, with a mean of 2.70 ± 1.10, 41.6% (69) disagreed that schizophrenic patients do not need to take oily fish like sardines, salmon and mackerel. Again, with a mean of 2.39 ± 1.13, most of the respondents disagreed that foods containing vitamins A, C, and E are not good for schizophrenic patients. Exactly 62.0% (103) were in agreement with the statement that foods that are rich in zinc must be included in the diets of schizophrenic patients. Lastly, it was disagreed by 42.8% (71) mean of 2.43 ± 1.25 that proteins are less necessary nutritional components for persons living with schizophrenia.

Discussion

According to Solanki *et al.* (2009), the high side-effect burden of clozapine means it is reserved for people who have not responded to other treatments. Based on that item, most of the respondents in this current study could rightly indicate so as described by Solanki *et al.* (2009). This result indicates that most of the RMNs in the Psychiatric Hospital, Pantang are knowledgeable about when clozapine should be administered. Although those who agreed to the statement that treatment resistance is recommended to be detected within the first 6-12 months as asserted by Solanki *et al.* (2009) were many, nearly that same number of respondents who agreed were also uncertain and others disagreed totally. The result portrays that the majority of the RMNs do not know the recommended period within which to detect resistance to treatment. Such an issue is alarming and needs to be critically attended to. In agreement with the stance of Kumagaya (2019), most of the RMNs were of the view that ECT in combination with antipsychotic medications may be considered for schizophrenic patients who have failed to respond to treatment with antipsychotic agents. Also, many of the respondents in this current study could rightly respond that CBT is usually conducted in a one-to-one therapeutic relationship and that PACT treatments usually take place in the homes, neighbourhood, and workplaces of schizophrenic patients, which are consistent with what Lehman *et al.* (2010) and Manu *et al.* (2015) articulated respectively. However, a lot of the RMNs had their responses wrong in responding to the statement that PACT therapy is still needful for patients who are able to function in the community and stick fast to treatment. According to Lehman *et al.* (2010), people who are responding to treatment effectively and are able to fit well into the community do not need PACT therapy. Therefore, it could be that the respondents did not really understand the statement in the questionnaire as it was very tricky to be answered. That notwithstanding, if the RMNs were really knowledgeable about PACT therapy, they still would have been able to get the response right.

In conformity to the position of Manu et al. (2015) on the unhealthy dietary pattern as a risk factor for schizophrenia, this study has made a confirmatory finding as most of the RMNs responded in agreement to that statement. This finding may not genuinely mean that most of the RMNs in the Psychiatric

Table – 3. Distribution of RMNs' Knowledge about the Role of Nutrition in the Management of Schizophrenia (N = 166)

Variable	Frequency (Percentage)					Mean	Std.
	SD	D	U	A	SA		
Unhealthy dietary pattern is a high risk for psychosis.	18 (10.8)	38 (22.9)	17 (10.2)	67 (40.4)	26 (15.7)	3.27	1.28
Diet prescription for schizophrenic patients can help reduce weight gain.	1 (0.6)	9 (5.4)	15 (9.0)	94 (56.6)	47 (28.3)	4.07	0.80
Gluten-free diets can have a significant symptom resolution on schizophrenic patients.	6 (3.6)	14 (8.4)	83 (50.0)	47 (28.3)	16 (9.6)	3.32	0.90
Vitamin D is connected with the brain development of foetuses.	1 (.6)	11 (6.6)	32 (19.3)	98 (59.0)	24 (14.5)	3.80	0.79
Niacin and other vitamin B nutrients deficiency can result in psychiatric disorders.	6 (3.6)	17 (10.2)	25 (15.1)	88 (53.0)	30 (18.1)	3.72	0.10
Eating less nutritious food has no correlation with schizophrenia.	20 (12.0)	49 (29.5)	21 (12.7)	63 (38.0)	13 (7.8)	3.00	1.22

Source: Field Survey (2019)

Table 4: Distribution of RMNs' Knowledge about the Dietary Composition of Schizophrenic Patients (N = 166)

Variable	Frequency (Percentage)					Mean	Std.
	SD	D	U	A	SA		
Wheat products and fish cakes must be included in the diets of schizophrenic patients.	4 (2.4)	5 (3.0)	26 (15.7)	90 (54.2)	41 (24.7)	3.96	.86
Schizophrenic patients do not need to take oily fish like sardines, salmon, and mackerel.	16 (9.6)	69 (41.6)	43 (25.9)	24 (14.5)	14 (8.4)	2.70	1.10
Foods containing vitamins A, C, and E are not good for schizophrenic patients.	35 (21.1)	73 (44.0)	27 (16.3)	21 (12.7)	10 (6.0)	2.39	1.13
Foods that are rich in zinc must be included in the diets of schizophrenic patients.	2 (1.2)	3 (1.8)	27 (16.3)	103 (62.0)	31 (18.7)	3.95	.73
Proteins are less necessary nutritional components for persons living with schizophrenia.	39 (23.5)	71 (42.8)	16 (9.6)	25 (15.1)	15 (9.0)	2.43	1.25

Source: Field Survey (2019), SD = Strongly Disagree, D = Disagree, U = Uncertain, A = Agree, SA = Strongly Agree, and Std. = Standard deviation

Hospital, Pantang are knowledgeable about how unhealthy dietary patterns can lead to psychosis. Undoubtedly, it is a common knowledge now that healthy diets promote the well-being of individuals and this might have accounted for that finding. As advocated by Niv *et al.* (2012) that psychoeducation regarding diet can stabilise weight, the finding of this study regarding diet prescription and reduction in weight gain are in alignment with each other. Moreover, the finding of this study about the impact of gluten-free diets on symptom resolution fits in what Arroll *et al.* (2014) describe about the same issue. Moreover, as emphasised by Arroll *et al.* (2014) that low prenatal vitamin D alters brain development, the responses of the RMNs in this study also claim the same. More so, the finding of this study agrees to Lim *et al.* (2016) point out that niacin and other vitamin B deficiency can cause psychiatric disorders. Lastly, many of the respondents provided wrong responses to the statement that eating less nutritious food has no correlation with schizophrenia. This finding is in contradiction to what Manu *et al.* (2015), Niv *et al.* (2012) and Lim *et al.* (2016) have all enunciated about the correlation between nutrition and schizophrenia.

Clearly, the knowledge of the RMNs about gluten-containing diets is not encouraging as many of them agreed that wheat products and fish cakes must be included in the diets of schizophrenic patients. To the contrary, Living with Schizophrenia (2017) advises that such food items must be excluded, as much as possible, in the diets of persons with schizophrenia. This result can be interpreted to mean that the RMNs in the Psychiatric Hospital, Pantang know less about gluten-containing food substances. Again, as rightly advocated by Living with Schizophrenia (2017), the RMNs in this study could conformingly indicate that oily fish like sardines, salmon and mackerel which are rich in omega 3 fatty acids are necessary food components for schizophrenic patients. Das (2013) supports the inclusion of vitamins A, C, and E in the diets of schizophrenic patients as they are major non-enzymatic antioxidants. The responses of the RMNs regarding the inclusion of vitamins A, C, and E containing substances in the diets of persons with schizophrenia are in conformity to what Das (2013) admonishes. Finding of this study and the assertion of Food for the Brain (2016) all allude to recognising the importance of zinc-rich foods in the resolution of mental illness. Finally, the finding of this study correspond to the advocacy of Aucoin *et al.* (2018) that proteins play a vital role in the management of schizophrenia, and as such, they must form part of the diets of schizophrenic patients. However, one thing is uncertain in this instance. Although the findings indicate that most of the RMNs have good knowledge about which food substances should form part of the diets of schizophrenic patients, this cannot be interpreted to mean that the RMNs actually know the roles of such food nutrients in mental development. What is for sure is that, many people know that food nutrients are good for the well-being of humans but may not know the specific roles that these nutrients play in the body system.

Conclusions

The study findings indicate that the RMNs in the Psychiatric Hospital, Pantang have good knowledge about the methods of managing schizophrenia. Notwithstanding the good knowledge that they possess based on the responses that they gave, the knowledge of the RMNs about the recommended duration within which to detect resistance to treatment and when to conduct PACT therapy is very low. A possible reason

for this anomaly is that the nurses are not in charge of diagnosing. Schizophrenic patients are diagnosed by psychiatrists. Therefore, it is the psychiatrists who are in the best position to detect treatment resistance. This finding has clearly indicated the boundary between RMNs and the psychiatrists in terms of their defining job roles. However, it should be a basic knowledge among the nurses on when detection of treatment resistance is recommended to be done so that they can offer greater assistance to the psychiatrists in treating schizophrenic patients.

RMNs in the Psychiatric Hospital, Pantang are knowledgeable about the role of nutrition in the management of schizophrenia. What were unexpected, however, were the responses of the RMNs that eating less nutritious foods has no correlation with schizophrenia. This raises another concern that the responses given on all the other items under the second research question might be by guessing or perhaps they had difficulty in understanding the meaning of that item.

The responses of the RMNs on the dietary composition of schizophrenic patients portray that the RMNs know some of the essential food nutrients that are needed by persons with schizophrenia. Conversely, knowledge about gluten-containing food substances is not fully developed among the RMNs. This finding has exposed the lack of knowledge on the part of the RMNs about exclusion diets. It is commonly known that vitamins are necessary for the body in diverse ways. What would have confirmed that the RMNs truly possess knowledge about the dietary compositions of schizophrenic patients is to know some of these exclusion diets such as wheat, fish cake, and bread which contain gluten.

The following recommendations are made:

1. The mental health authority and the management of the Psychiatric Hospital, Pantang can consider organising in-service training for RMNs on the detection of treatment resistance in schizophrenic patients and such training can also include the conduction of PACT treatments.
2. Nutrition specialists should be employed by the various mental hospitals to help in the rightful prescription of diets for schizophrenic patients. Such specialists will be able to point out both the exclusion and essential diets for the patients.
3. Mental health training institutions must ensure that there are enough courses on nutrition to help increase the knowledge of future RMNs on the correlation between nutrition and schizophrenia

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