" UNVEILING THE MIND-PLATE CONNECTION: EXPLORING DIETARY EXPERIENCES IN MODERATE DEPRESSION THROUGH AN INTERPRETIVE PHENOMENOLOGICAL APPROACH"

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Abstract
This qualitative phenomenological study delves into the dietary habits of adults experiencing moderate-level Major Depressive Disorder, aiming to uncover lived experiences and perceptions surrounding food choices within this population. It seeks to reveal the intricate relationship between depressive symptoms and dietary behaviors. Eight participants (4 men & 4 women), aged 22 to 28 years, were interviewed in Lahore, Pakistan. The data were analyzed using a phenomenological approach. The study identified four superordinate themes: dietary patterns before depression, dietary patterns after depression, the effect of low mood on the dietary pattern, and the effect of dietary patterns on mood. Before the depression, participants had a balanced diet, including breakfast, vegetables, meat, rice, pulses, fruits, and fast food. However, after depression, they skipped breakfast and consumed fewer vegetables and meat. Rice, pulses, fruits, and fast-food intake increased after depression. Participants in a low mood either engaged in emotional eating or lost interest in food. Specific dietary patterns had positive and negative effects on mood. These findings emphasize the relationship between dietary patterns and depression risk offering insights crucial for interventions aiming to prevent depression through fostering healthier eating behaviors. The findings advocate for tailored strategies, emphasizing the role of dietary interventions in promoting mental well-being amidst depressive experiences.
Keywords: major depressive disorder, dietary patterns, mental health, mood, intervention.

Introduction

Major depressive disorder (MDD) is a prevalent and debilitating psychiatric condition affecting millions worldwide (WHO, 2020). According to the American Psychiatric Association (2013), MDD is characterized by enduring sorrow, lower interest in or enjoyment from activities, decreased energy, attention problems, changes in eating and sleep patterns, and even suicidal thinking. Along with medicine and psychotherapy, diet and nutrition are crucial in managing and treating MDD. Numerous academics have examined the link between eating behaviors and MDD. According to a recent systematic analysis of observational data, the Western diet, infamous for

being high in processed foods, sugar, and unhealthy fats, has lately been associated with an increased risk of depression (Jacka et al., 2010). Conversely, a decreased prevalence of depression has been associated with the Mediterranean diet, which is rich in fruits, vegetables, whole grains, and omega-3 fatty acids (Jacka et al., 2017).

The relationship between eating habits and major depressive disorder (MDD) is an exciting area of study in mental health. Numerous theories have been put up to clarify the relationship between nutrition and MDD, including the nutrient-based, psychosocial, and inflammatory hypotheses. According to the nutrient-based approach, some nutrients are essential for both the onset and treatment of depression, including omega-3 fatty acids and vitamins B12 and D (Berk et al., 2013). For example, omega-3 fatty acids have shown anti-inflammatory and neurotransmitter function-regulating abilities, which are thought to contribute to the development of MDD (Zhou et al., 2022). Low vitamin B12 and D levels have also been linked to an increased risk of developing depression (Bersingham et al., 2018; Hoang et al., 2016). These results imply that nutritional content-related dietary determinants may affect the start and development of MDD.

A different viewpoint is provided by the *psychological hypothesis*, which contends that social and emotional components of eating, such as mealtime rituals and social support, may influence the onset and treatment of depression (Adam et al., 2006). According to this hypothesis, participating in joyful mealtime rituals and sharing meals with others may positively affect mood and lessen the loneliness and isolation that people with MDD frequently experience (O'Connor & Conner, 2013). This hypothesis underlines the potential importance of psychological elements in the association between food patterns and sadness by highlighting the value of social interactions and enjoyable dining experiences.

Lastly, *the inflammatory hypothesis* postulates that Major Depressive Disorder (MDD) may be influenced by chronic low-grade inflammation (Raison & Miller, 2011). According to this notion, eating a diet high in processed foods and bad fats may encourage inflammation, which raises the risk of depression. On the other hand, a diet high in fruits, vegetables, and omega-3 fatty acids may have anti-inflammatory effects and may lessen the risk of depression (Jacka et al., 2017). By stressing the involvement of inflammation in the association between dietary choices and MDD, this hypothesis highlights the possible influence of dietary patterns on the inflammatory processes connected to depressive illnesses.

Recent research examining the relationship between eating habits and Major Depressive Disorder (MDD) has demonstrated this crucial connection. A diet strong in processed foods, sugar, and unhealthy fats is associated with an elevated risk of depression, according to a substantial study by Jacka et al. (2017) that examined a cohort of over 10,000 persons. On the other hand, a diet rich in fruits, vegetables, whole grains, and nuts were connected to a lower prevalence of depression. These results were supported by a comprehensive review and meta-analysis by Firth et al. (2019), which indicated a significant inverse connection between an increase in the consumption of fruits, vegetables, and whole grains and a reduced incidence of depression. In a systematic analysis of 20 papers, Ljungberg et al. (2020) discovered that following dietary guidelines, abstaining from processed foods, following an anti-inflammatory diet, and ingesting particular minerals like magnesium and fatty acids were all linked to a lower incidence of depression.

Intervention studies have also been conducted to determine how changing one's diet affects depression symptoms. Sanchez-Villegas et al. (2018) discovered that diet modifications aiming at increasing fish and vegetable consumption significantly decreased the symptoms of depression in a trial comprising close to 10,000 participants. Together, these recent studies demonstrate the

crucial role of eating habits concerning MDD and provide compelling new evidence about the potential benefits of dietary therapies for managing depressive symptoms. Akbaraly et al. (2019) conducted a randomized controlled experiment. They discovered that a Mediterranean diet-based intervention significantly reduced depressive symptoms compared to a control group with a sample of more than 2,500 adults. Ortega et al., 2022 highlighted the impact of diet on biological functions and the reciprocal association between MDD and malnutrition. The researchers highlighted the study's focus on particular nutrients, foods, and dietary patterns, along with the possible advantages of interventions for treating MDD.

Although the existing ideas provide important information on the link between eating habits and Major Depressive Disorder (MDD), it is important to understand that additional research is necessary to understand this intricate connection completely. It is crucial to remember that in patients with MDD, diet, and nutrition should not be considered stand-alone substitutes for medical treatments that are effective in a study, such as medication and psychotherapy. As potential extra management and therapy alternatives for the condition, dietary factors must be considered instead.

More study is needed to better understand the nuanced relationship between dietary practices and MDD and develop dietary therapies uniquely suited for management. Research across several groups is also essential, especially in countries like Pakistan, where there is a shortage of data on this problem. This will make it possible to comprehend the connection between nutrition and MDD in detail within particular cultural and socioeconomic circumstances. To better understand the food habits of Pakistani people who have been diagnosed with major depressive disorder, the current study was carried out. The study's research questions were designed to fill in information gaps and add to the body of literature. They are as follows:

1. What are the prevailing dietary patterns among individuals in the Pakistani population diagnosed with Major Depressive Disorder?
2. How do dietary patterns differ before and after the onset of Major Depressive Disorder in the Pakistani population?
3. How do specific dietary patterns affect mood and emotional well-being in individuals with Major Depressive Disorder in Pakistan?
4. How do mood and emotional state influence the dietary patterns of individuals with Major Depressive Disorder in the Pakistani population?

Through these inquiries, this study seeks to enhance our understanding of the relationship between dietary patterns and Major Depressive Disorder, specifically in the cultural context of Pakistan, and contribute to the development of culturally sensitive dietary interventions for managing and treating MDD.

Methodology

Research design

The phenomenological research design was employed to investigate the dietary patterns of individuals diagnosed with major depressive disorder. This design was specifically chosen to delve into the unique experiences and perceptions related to the phenomenon within the context of Pakistani culture. By employing a phenomenological approach, the aim was to gain a profound and comprehensive understanding of the subject matter under investigation.

Sample Recruitment and Participant Characteristics

Purposive sampling was employed to recruit participants who met the criteria necessary for the phenomenological exploration of dietary patterns among individuals with major depressive disorder. A deviant case sampling technique was utilized to select individuals who voluntarily

participated in the study and met the following characteristics: (a) diagnosed with moderate severity major depressive disorder, including moderate severity allows for a more nuanced examination of how depression impacts dietary behaviors. It helps differentiate between mild and severe cases, potentially revealing patterns unique to this level of depression that might not be apparent in other severities. (b) confirmed diagnosis by a qualified psychiatrist, (c) currently taking prescribed medication. Studying participants on prescribed medication offers a comprehensive view of dietary patterns within the spectrum of treatment modalities for MDD. It accounts for the multifaceted nature of managing depression, considering not just psychological factors but also the impact of pharmacological interventions on eating behaviors, and (d) categorized as young adults. Young adulthood often coincides with the peak onset of mental health conditions, including depression. This age range might experience a higher incidence of MDD, making it an important cohort to study in relation to dietary patterns and mental health. Selecting participants with specific criteria was crucial to ensure a homogenous sample that could provide in-depth insights into the lived experiences within an Interpretive Phenomenological approach. According to Creswell (2012), phenomenological research typically involves a sample size ranging from 2 to 25 participants. In this study, saturation was achieved, and the final sample consisted of eight emerging adults aged 22 to 28 years from Lahore, Pakistan, with an equal distribution across gender. By employing purposive sampling, the researchers were able to intentionally select participants who embodied the characteristics necessary to explore the research phenomenon in a meaningful and comprehensive manner. Including individuals with moderate severity of major depressive disorder who were undergoing treatment with medication provided valuable insights into the relationship between depressive symptoms and dietary patterns. Furthermore, focusing on young adults from Lahore, Pakistan, allowed for a specific cultural lens to be applied, enhancing the understanding of the experiences unique to this population within their cultural context. In-depth interviews, lasting approximately one to one and a half hours each, were conducted using a semi-structured approach. Participants granted permission for audio recording, and subsequent transcripts were generated for analysis. To safeguard participant anonymity, pseudonyms were assigned. This meticulous data collection and analysis method ensured compliance with all study criteria.

Table 1. Characteristics of study participants (n=8)

Participants	Gender	Age	Marital Status	Education	Job	Prescribed Antidepressant
Ali	Male	28	Married	Graduation	Teaching	Fluoxetine (Prodep)
Hannan	Male	23	Single	Intermediate	Unemployed	Sertraline (Zosert)
Hashim	Male	26	Single	Intermediate	Business	Paroxetine (Pexep)
Lashar	Male	24	Single	Middle	Business	Fluoxetine (Prodep)
Attiya	Female	26	Single	Middle	Housewife	Venlafaxine (Velax)
Sara	Female	23	Single	Intermediate	Housewife	Sertraline (Zosert)
Eilia	Female	27	Married	Graduation	Housewife	Fluoxetine (Prodep)
Durdana	Female	25	Married	Middle	Housewife	Sertraline (Zosert)

Data Collection Tools
Demographic Information Sheet

The researcher developed a comprehensive demographic information sheet to collect relevant personal details from the participants. This information sheet included fields to record the participant's name (to be kept confidential), initials, age, gender, academic qualification, and

socioeconomic status. By incorporating these demographic variables, the researcher wanted to collect crucial background data, which could offer contextual insights into the participants' experiences and illuminate potential factors that can influence their dietary patterns. Age was a key factor in determining the participants' life stages and potential difficulties in managing their mental health and food preferences. Considerations of potential gender-related disparities in experiences and attitudes were made possible by gender information. Academic accomplishments revealed educational background and potential influence on nutritional knowledge and awareness. Socioeconomic status was used to determine whether economic inequalities would limit participants' access to dietary options or services for managing their mental health.

Semi-structured Interview Questionnaire

The researchers created a semi-structured interview questionnaire to conduct in-depth face-to-face interviews with the participants. The survey's open-ended inquiries were specifically intended to delve into the food habits of people with major depressive disorder who were also taking medication. Participants were encouraged to express their experiences and points of view by responding in in-depth and well-considered ways to these questions. Participants were interviewed to learn more about different facets of their eating habits and how those habits related to their mental health. The following was one of the queries: "What was the quantity, variety, or combination of different foods that you used to include in your diet before being diagnosed with depression?" "How many, how many different kinds, or how many different foods do you now include in your diet? What particular foods, and how much of them, do you typically eat when you feel depressed? Are you happy with your current eating habits? How has your diet changed as a result of your depression? "What constitutes a healthy dietary pattern, in your opinion?" What meals affect your mood, and how do they make you feel? These open-ended questions allowed participants to express ideas about their eating habits and how they might relate to depression. The interview's semi-structured format provided flexibility in exploring particular areas of interest more deeply while allowing participants to share any additional relevant information they deemed important.

Data Collection

The University's Humanities Department's Ethical Review Board cleared the project before it started. Purposive sampling was used to choose eight participants who satisfied the study's eligibility requirements. The participants were approached, given thorough explanations of the study, and asked to participate voluntarily. Before starting the investigation, each participant's informed consent was obtained. After agreeing to participate, the participants completed a demographic questionnaire to supply essential personal information. This process ensured that pertinent background data was gathered to contextualize the study's findings. Participants received guarantees that the information they provided would be treated with strict secrecy and used only for research. Individual, in-depth interviews were performed with each participant in a private, safe setting. The site was picked to protect the participants' confidentiality and privacy during the investigation.

During the thorough interviews, the participants were allowed to share their experiences and ideas about their food habits. The interviews usually lasted an hour to an hour and a half, giving participants enough time to express themselves completely. The interview talks were audio-recorded with the participant's permission to ensure reliable data collection. To provide written transcripts for further examination, these recordings were transcribed verbatim. Each participant was given a pseudonym to maintain confidentiality, and these pseudonyms were utilized to protect their identities in the research materials under the pseudonyms Ali, Hannan, Hashim, Lashar,

Attiya, Sara, Eilia and Durdana. The Interpretive Phenomenological Approach was used to study the transcripts, the main data source.

Data Analysis

The analysis was carried out utilizing the Interpretive Phenomenological Analysis (IPA) paradigm after the verbatim transcription of the interviews. To obtain valuable insights from the data, the analysis involved numerous steps. Initially, the audio recordings and transcripts were 7carefully listened to and read aloud several times. The researchers could fully engross themselves in the data and comprehend the participant narratives through this iterative procedure. The researchers made important observations during this phase, paying close attention to unusual words, feelings, and remarkable components within the interviews. The core of the participants' experiences was then captured by translating these insights into codes. The extensive notes made by the researchers and the transcripts were studied in-depth during the second step. The notes created from the transcripts were carefully examined to find recurrent themes, linkages, and patterns. The codes created in the earlier stage were incorporated into the forming themes, representing the depth and richness of the participants' experiences. This procedure entailed rigorous consideration and data analysis to ensure a thorough grasp of the phenomenon under inquiry. The third phase of the research concentrated on building connections between the developing ideas. Similarities, relationships, and interdependencies were investigated to identify the conceptual framework. Based on the conceptual similarity of the topics, they were arranged and categorized, forming various clusters. It was given a name to symbolize each cluster of related topics' underlying concepts or ideas. The higher-level notions from the data were represented by these clusters, referred to as superordinate themes. Zy66The researchers combined the superordinate and subordinate themes to create a unified and thorough list. This list covered how the superordinate themes, which captured a broader conceptual knowledge, interacted with the specialized and granular subordinate themes. The compilation from the data analysis provided a well-organized and insightful depiction of the participants' experiences and viewpoints.

Quality Assurance and trustworthiness of Analysis

The Ethical Review Board initially approved a synopsis of this study. Informed consent was provided to each participant, including a detailed description and purpose of the study, the time to complete the interview, and the potential benefits of their participation. Participants were assured of confidentiality while reporting their discussions in the research and the dissemination of the results. Throughout the interview, the interviewer monitored how it affected the participants to take preventive measures against any emotional harm. Participation in the study was voluntary, and the right to withdraw from the interview at any time was given.

Ensuring the integrity and trustworthiness of this research's analysis process was paramount. The study meticulously adhered to established qualitative methodologies, employing an Interpretive Phenomenological Approach to examine dietary experiences amidst moderate depression. Rigorous data triangulation, comprising in-depth interviews and meticulous transcription, fortified the credibility of findings by presenting diverse participant perspectives. Additionally, the utilization of member checking and peer debriefing provided valuable validation, enhancing the authenticity of interpretations. The researchers exercised reflexivity, acknowledging potential biases and diligently bracketing preconceptions throughout the analytical journey. Moreover, thorough documentation of the coding process and interpretive decisions-maintained transparency, facilitating the replicability of the analysis. These strategies collectively fortified the study's trustworthiness, ensuring that the interpretations reflected the richness and nuances of participants' lived experiences with utmost fidelity.

Results

Table 2. Themes developed through IPA process.

Initial Codes	Subordinate Themes	Superordinate Themes
Milk, porridge, eggs, butter, yogurt (magnesium, iron, zinc, B vitamins, calcium, riboflavin (vitamin B2), phosphorous, vitamins A, B12, Potassium, Vitamin D, Vitamin E, Pantothenic Acid (Vitamin B5), Vitamin B and K)	Protein diet in breakfast	Diet patterns before depression
Ladyfinger, Bitter gourd, capsicum, brinjal, Potato, peas, pumpkin, Turnip, fenugreek, spinach, Bauhinia variegata, Praecitrullus, fistulosus, Taro root (minerals, antioxidants, fiber, Vitamin C, Vitamin A, vitamin B, Vitamin K, Folate, Potassium, Zinc, Iron, manganese, copper, vitamins B1, B3 and B6, magnesium, tryptophan, carbohydrates, starch, protein, Thiamine, Phosphorus, Copper, riboflavin, Phosphorus, Calcium).	Vegetable diet in lunch and dinner.	
Lentils, tea (caffeine), beef, mutton, chicken, rice, pulses, tortilla, bread, fish, tortilla (protein, fiber, folate, iron, calcium, magnesium, zinc and potassium, selenium, and phosphorus followed by vitamin A and B-complex vitamins. Niacin, Selenium, Vitamin B6.	Meat, fish, pulses and Rice diet in lunch and dinner.	
Mango, watermelon, banana, apple, pineapple, pomegranate, black currant and peach (vitamins A (beta-carotene), C and E, magnesium, zinc, phosphorous and folic acid.	Fruit diet between meals	
Pizza, burger, shawarma, cold drinks (High in sugar, salt, and saturated or trans fats; processed preservatives and ingredients; low in beneficial nutrients); Carbohydrates.	Junk food diet	
Lack of interest in dairy products; skipping breakfast; eating by force; having no interest in protein diet.	Absence of protein diet consumption	Dietary patterns after depression
Lack of interest in vegetable diet; skipping meals; bad feelings if vegetables are cooked; eating vegetables on recommendation for health only.	Low vegetable diet consumption.	
Skipping meals when meat is cooked; replaced food items with meat; quantity of intake decreased; likeness for meat decreased;	Low meat diet consumption	

Increased interest in rice and pulses; preference for homemade food; increased intake of rice and pulses.	Increase in pulses and rice diet consumption	
Need to eat fast food instead of proper meal; increased interest in fast food; emotional eating.	Increase in junk food intake	
Increase in likeliness for fruits; fruit intake for physical health.	Increase in fruit diet consumption	
Need to eat foods high in salt, sugar, saturated fats, trans fats, calories, and processed preservatives and ingredients when mood is low.	Emotional eating	Effect of low mood on dietary pattern
Starve when the mood is low; poor appetite; Decreased Hunger; lack of interest in food	Lack of interest in food intake	
Food high in sugar; less spicy food; fresh juices; porridge.	Dietary pattern with positive effects on mood	Effect of dietary pattern on mood
Fast food; spicy food; carbonated drinks	Dietary pattern with negative effects on mood	

Thematic Analysis
Superordinate Theme 1: Diet Patterns Before Depression
Subordinate Theme 1: Protein Diet in Breakfast
　　　　Based on these verbatim statements, the following themes are identified:
1. Consumption of dairy products: Multiple participants mentioned including dairy products in their breakfast, such as milk, butter, and yogurt.
2. Milk as a common element: All participants consistently mention milk as part of their breakfast diet before the depression.
3. Variety of dairy products: Along with milk, other dairy products like butter, yogurt, and milkshakes are also mentioned.
4. Protein-rich breakfast: Some participants explicitly mentioned protein-rich elements in their breakfast, including eggs, which are a good source of protein.
Subordinate Theme 2: Vegetable Diet in Lunch and Dinner
　　　　Based on these verbatim statements, the following themes have been identified:
1. Consumption of a variety of vegetables: Participants mentioned eating a wide range of vegetables, such as ladyfinger, bitter gourd, capsicum, potato, brinjal, peas, pumpkin, turnip, fenugreek, spinach, Bauhinia variegate, Praecitrullus fistulosus, and Taro root.
2. Fondness for vegetables: Some participants expressed a fondness for vegetables and mentioned eating every vegetable available.
3. Specific vegetable preferences: Participants mentioned vegetables they enjoyed, such as spinach, Bauhinia variegate, and Praecitrullus fistulosus. One participant mentions having spinach and Bauhinia variegates regularly at home.

Subordinate Theme 3: Meat, Fish, Pulses, and Rice Diet in Lunch and Dinner

Based on these verbatim statements, we can identify the following themes:

1. Inclusion of meat and poultry: Several participants mentioned consuming beef, chicken, and fish as part of their lunch and dinner diet before the depression.

2. Preference for rice: Rice is a common element in the mentioned diets, with participants expressing a liking for rice and consuming it regularly, often multiple times a week.

3. Consumption of pulses: Some participants mentioned including pulses, such as lentils, in their diet, typically paired with wheat tortillas (roti) or as part of homemade food.

4. Cooking methods and preferences: One participant mentioned cooking food in mustard oil, while another emphasized the preference for homemade food.

5. Bread consumption: One participant mentions consuming bread among bakery items but does not consume meat.

Subordinate Theme 4: Fruit Diet Between Meals

Based on these verbatim following themes have been identified:

1. Fondness for fruits: Participants expressed a strong fondness for fruits and mentioned enjoying a variety of fruits, including mango, watermelon, banana, apple, pineapple, pomegranate (anar), black currant (falsa), and peach.

2. Importance of fruits in the diet: Participants emphasized the significance of fruits in their diet, considering them an essential part of maintaining good health, staying active, and being physically fit.

3. Consumption of fruit juice: One participant mentioned consuming black currant (falsa) juice during summer.

Subordinate Theme 5: Junk Food Diet

Based on the verbatim statements of participants, the following themes have been identified:

1. Consumption of fast food: Participants mention frequently consuming food items like pizza, burgers, shawarmas, fried wings, and sweet dishes.

2. Consumption of cold drinks: Several participants mentioned consuming cold drinks, which refer to carbonated beverages or chilled drinks.

3. Consumption of carbonated water: One participant specifically mentions drinking carbonated water.

Superordinate Theme 2: Dietary Patterns after Depression

Subordinate Theme 1: Absence of Protein Diet Consumption

Based on the verbatim statements of participants, the following themes have been identified:

1. Absence of protein-rich breakfast: Participants mentioned discontinuing consuming protein-rich items like milk, eggs, yogurt, and dairy products.

2. Altered breakfast choices: Participants mention changes in their breakfast choices, such as consuming porridge made of dates, cookies, and bread.

3. Poor appetite and reduced hunger: Some participants mention a poor appetite and reduced hunger due to depression, leading to decreased overall food intake.

4. Skipping breakfast: One participant mentions occasionally skipping breakfast if they don't feel like eating.

Subordinate Theme 2: Low Vegetable Diet Consumption

Based on the verbatim statements of participants, the following themes have been identified:

1. Decreased interest in vegetables: Participants mentioned a decreased interest in consuming vegetables after experiencing depression. They express a lack of desire or feeling uninterested in eating vegetables.

2. Limited vegetable consumption: Participants either completely stopped eating vegetables or consumed them in a minimal quantity. They may only eat specific vegetable curries when they feel hungry.

3. Negative emotions towards vegetables: One participant mentioned feeling a negative emotional response when vegetables are being cooked, indicating an aversion towards vegetables.

4. External recommendation for vegetable intake: One participant mentioned following the advice of their psychiatrist to eat vegetables containing minerals. However, they consume vegetables in a minimal quantity.

Subordinate Theme 3: Low Meat Diet Consumption

Based on the verbatim statements of participants, the following themes have been identified:

1. *Loss of appetite and skipped meals:* Participants mentioned a loss of appetite and frequently skipping meals, particularly lunch. This can result in a decrease in overall food intake.

2. *Decreased meat consumption:* Participants mentioned a reduction in their meat consumption, including bakery items and meat, due to the loss of appetite or decreased food intake.

3. *Variation in meat choices:* Some participants mentioned specific changes in their meat choices, such as still eating beef but in reduced quantity or starting to consume mutton or beef made at home.

4. *Decreased food intake quantity:* Participants highlighted a significant decrease in the amount of food they consume, including curries or other dishes. This decrease in food intake may be associated with the experience of depression.

Subordinate Theme 4: Increase in Pulses and Rice Diet Consumption

Based on the verbatim statements of participants, the following themes have been identified:

1. Increased liking for rice and pulses: Participants expressed an increased liking for rice and pulses during depression. They feel the need to eat these foods, and their preference for them has increased.

2. Emphasis on pulses: Participants mentioned that when they feel hungry, they specifically choose to eat pulses as a source of nutrition.

3. Preference for homemade food: Participants stated that after being diagnosed with depression, they prefer to consume homemade food. This preference may be related to their overall dietary patterns and choices.

4. Increased rice consumption: One participant mentioned that their rice consumption has doubled compared to their stable condition before the depression. This increase may be a coping mechanism or preference developed during the experience of depression.

Subordinate Theme 5: Increase in Junk Food Intake

Based on the verbatim statements of participants, the following themes have been identified:

1. Decreased appetite for regular meals: Participants mentioned a poor appetite and a lack of desire for regular meals, such as lunch or dinner.

2. Increased fast-food consumption: Participants stated that when they feel hungry, they choose fast food as their meal choice. This indicates an increase in the consumption of unhealthy, processed food items, such as burgers and pizza.

3. Association of fast food with certain meals: Participants mentioned having fast food, such as burgers and pizza, usually for one meal, often dinner. They may also have a cold drink accompanying their fast food.

4. Emotional eating and food cravings: Participants talked of turning to food, particularly fried chicken, to get through tough times or to satisfy their hunger.

Subordinate Theme No. 6: Increased Fruit Diet Consumption

The following themes have been determined from the participants' verbatim statements:

1. Persistence in liking fruits: Participants reported that despite having experienced sadness, they continue to love eating fruits whenever they like.

2. Reduction in total calorie intake: Participants reported eating just half as much as before a depressive episode. This implies that eating habits change before, during, and after depression.

3. Fruits for physical health: Participants spoke of the benefits of fruit for their bodies. Fruits are regarded as a healthy food group in their diet.

4. Variety of fruits eaten: Participants reported consuming various fruits after experiencing depression, including bananas, oranges, watermelons, and mangoes. These fruits are frequently chosen and eaten.

Superordinate Theme 3: Effect of Low Mood on Dietary Pattern

Subordinate Theme 1: Emotional Eating

The following themes have been determined from the participants' verbatim statements:

1. Emotional eating: Participants reported a propensity to eat emotionally when feeling down, depressed, or unhappy. They refer to desires for particular foods, such as sweets, chocolates, and sweet dishes.

2. Skipping or changing meals: Participants talked about how their eating habits change when feeling down. This includes missing breakfast and substituting other meals, like dinnertime porridge.

3. Preference for specific foods: Participants admitted that when they are feeling down or depressed, they prefer certain foods. These include desserts, fast food (such as pizza, shawarma, and burgers), and chocolate.

Subordinate Theme 2: Lack of Interest in Food Intake

The following themes have been determined from the participants' verbatim statements:

1. Lack of interest in food: Participants reported that when they are feeling down, depressed, or in a bad mood, they lack interest in food. They don't have the want or need to eat, nor do they feel hungry.

2. Skipping or avoiding meals: Participants talked about skipping lunch or dinner or sometimes going the whole day without eating anything when feeling down. This suggests a lack of interest and motivation to eat.

3. Loss of appetite in depression: Participants specifically mentioned a loss of appetite during depression. They do not feel the desire to eat and do not find any enjoyment or liking for food.

4. Avoidance of homemade food: Some participants mentioned avoiding it when feeling low. This suggests a lack of interest in everyday or regular meals.

Superordinate Theme 4: Effect of Dietary Patterns on Mood

Subordinate Theme 1: Dietary Pattern with Positive Effects on Mood

Based on the verbatim statements of participants, the following themes have been identified:

1. Consumption of sweet dishes: Participants mentioned that consuming sweet dishes during lunch and dinner positively affects their mood. They associate these dishes with feelings of well-being

or a positive emotional response.

2. Preference for mild and bland foods: Participants expressed that certain foods, such as macaroni, which are not very spicy and have a bland taste, positively affect their mood. They find these foods comforting and enjoyable.

3. Positive effect of fresh juices: Participants report that consuming fresh juices positively affects their mood. They find them refreshing and uplifting.

4. Comfort foods: Participants described consuming specific foods, such as bread with milk and sugar or cereals and porridge, when they are in a certain mood or feeling depressed. They find these foods comforting and opt for them as lighter options.

Subordinate Theme 2: Dietary Pattern with Adverse Effects on Mood

Based on the verbatim statements of participants, the following themes have been identified:

1. Negative Impact of fast food: Participants expressed that consuming it adversely affects their mood. They mention a permanent negative impact on their mood and difficulty in digestion associated with eating fast food.

2. Negative effect of spicy food: Participants reported that consuming spicy food hurts their mood, leading to increased aggression. They associate the consumption of spicy food with an adverse change in their emotional state.

3. Adverse effects of carbonated drinks: Participants mentioned that carbonated drinks disturb them and have been advised by their psychiatrists not to consume them. They believe that these drinks play a significant role in mood swings.

Discussion

Diet patterns before depression

The protein-rich breakfast diet could indicate a focus on starting the day with a healthy and nutritious meal. A vegetable-based diet for lunch and dinner may suggest a preference for healthier food choices that are low in calories and high in nutrients. The meat, fish, pulses, and rice diet for lunch and dinner could reflect a balance between protein and carbohydrates, which can provide energy for the day. Consuming fruit between meals can be viewed as a technique to maintain energy levels and provide a nutritious snack. On the other hand, a junk food diet can signify a propensity to eat unhealthy, high-calorie foods that could exacerbate bad moods and even despair.

Dietary habits following depression

Some topics about dietary changes and the potential effects of depression on food choices may emerge from a thematic analysis of dietary patterns following depression. The absence of protein consumption may indicate a waning interest in healthy and nourishing meal options. This can also suggest you lack the will or stamina to prepare and eat protein-rich foods. The low consumption of vegetables in the diet may reflect a diminished desire for or ability to get healthier dietary options. This could have a severe impact on both physical and mental health, and increase the risk of vitamin shortages. A lack of availability to protein-rich meals or a diminished appetite could be the cause of low meat diet intake, which could have an adverse effect on both physical and mental health. The rise in the consumption of pulses and grains in the diet may indicate a preference for straightforward, easily accessible food options that are possibly simpler to prepare and eat. This might provide you with energy and sustenance, but it may not offer a healthy and well-balanced diet. Increased consumption of junk food may suggest a preference for high-calorie, unhealthful eating options, which could be detrimental to both physical and mental health. The rise in fruit diet consumption may be due to a desire for a nutritious snack or a means of sustaining energy. But relying solely on fruit for sustenance may lead to nutritional imbalances and harm

your overall health.

Depression's Impact on Dietary Habits

A thematic analysis of the effects of depressed symptoms on eating behaviors may reveal specific recurring themes in the relationship between mood and food. Emotional eating is utilizing food to cope with difficult or unpleasant feelings. This can entail overindulging in calorie-dense, unhealthy foods to soothe oneself, which could lead to weight gain and have a negative impact on one's physical health. A lack of interest in food intake may indicate a decreased appetite or a lack of motivation to prepare and eat healthy meal selections. Depressed moods, a lack of energy, or decreased appetite may cause this. A lack of interest in food may also lead to dietary deficiencies and have a negative impact on physical health.

The effect of diet on mood

After completing a thematic analysis on the influence of dietary practices on mood, several recurring themes regarding the relationship between food and mood were identified. Dietary patterns that provide essential nutrients and energy, while also boosting physical and mental well-being, may be considered to have a favorable impact on mood. A balanced and healthy diet, including fruits and vegetables, whole grains, and lean proteins, may help sustain good moods. Diets heavy in sugar, unhealthy fats, and processed foods, which can have a poor impact on physical health and perhaps worsen moods, may be referred to as having a harmful impact on mood. For instance, a diet rich in junk food can lead to blood sugar abnormalities, inflammation, and weight gain, all of which are possible consequences of eating foods high in sugar, fat, and processed carbohydrates.

According to the American Psychiatric Association (2013), major depressive disorder (MDD) is a widespread and crippling mental health illness characterized by persistent despair, hopelessness, and a lack of interest in once-enjoyable activities. According to Jamal, Khan, and Din (2017), 4 million to 5 million adults in Pakistan are thought to suffer from depression. As diet can significantly influence the onset, management, and prevention of MDD, it is crucial to comprehend the dietary habits of those with it (Jacka et al., 2011).

Limitations of the study

Several limitations of the study should be considered when evaluating the findings. First, the study sample consisted only of Pakistani individuals between the ages of 22 and 28. Therefore, it's possible that the results cannot be extrapolated to people of diverse ages, ethnic backgrounds, or dietary preferences. Future research should utilize a more diverse sample that encompasses a broader range of ages and cultural contexts to gain a comprehensive understanding of the relationship between nutrition and depression. In addition, although the study examined the relationship between nutrition and sadness, it did not establish causation. Additional variables, such as heredity, lifestyle, and external factors, may also influence the relationship between food and depression. Randomized controlled trials or longitudinal studies could be used to establish causal links and pinpoint the direction of the observed connections.

Future studies could employ a longitudinal or experimental design, utilize objective measurements of dietary intake and nutritional status, and include a larger and more diverse sample to overcome these limitations. Future research can more thoroughly and credibly demonstrate the link between nutrition and depression by correcting these methodological flaws.

Implications

To meet the needs of this population's mental health, a qualitative study on the eating habits of Pakistani people with MDD is essential. Important details about the relationship between diet and mental health have been revealed by this research, which has also influenced the development

of depression treatment strategies that consider cultural differences. The findings of this study will be essential in developing dietary recommendations for Pakistani individuals with MDD that respect their cultural traditions. Additionally, it would advance knowledge of the connection between diet and mental health and provide a model for creating more potent depression treatment programs.

The study's conclusions are essential for therapists, doctors, and the general public. The study provides important knowledge on the relationship between diet and depression, which can aid doctors in developing more effective treatment plans for patients with depressive disorders. By being aware of how different eating habits affect mood, healthcare professionals may create adequate meal plans, suggest appropriate medications, and offer therapy that addresses both the physical and psychological aspects of depression.

The finding also has ramifications for society as a whole. The findings may help to reduce the prevalence of depression by exposing the link between diet and depression. People are more inclined to prioritize self-care, which includes eating a healthy diet when they are aware of the possible implications of depression on their overall health and well-being. Now that they are aware of this, people can make more informed dietary decisions to support their mental health.

The paper also emphasizes the significance of depression as a significant health issue. The study contributes to the de-stigmatization of depression and raises awareness of its importance in public health discourse by exposing the connection between food and depression. This greater understanding may result in earlier detection of depression symptoms, more precise diagnoses, and quicker access to the proper care.

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Data will be made available as needed.

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