The role of Healthy Nutrition in Enhancing Mental Health: A Nutritional Psychology Perspective

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Abstract: Our intervention aims to highlight the importance of nutrition in promoting physical and mental health. It is scientifically known that the quality of the food we eat directly affects brain function and cognitive processes, both positively and negatively, as well as glandular activity in terms of hormone secretion. It is therefore natural that there is a direct relationship between the two. Through this, we demonstrate the relationship between nutrition and certain mental and behavioural disorders such as depression, anxiety, hyperactivity and attention deficit in children, based on the results of scientific studies. Based on this, we will present a forward-looking vision by providing recommendations in the form of a healthy, balanced dietary protocol that incorporates periodic fasting to maintain mental and psychological fitness and balance, informed by the latest scientific studies.

Keywords: Nutrition, mental health determinants, mental health, nutritional psychology approach.

الملخص: تهدف مداخلتنا الى ابراز أهمية التغذية في تعزيز الصحة الجسمية والنفسية. فالمعروف علميا أن نوعية الغذاء الذي نتناوله يؤثر بشكل مباشر في وظائف الدماغ ونشاط العمليات المعرفية سلبا وايجابا كما يؤثر في نشاط الغدد من حيث افرازات الهرمونات المختلفة كهرمون السعادة و هرمون التوتر والقلق، وبالتالي من الطبيعي أن توجد علاقة طردية بينهما. حيث سنبين علاقة التغذية ببعض الاضطرابات النفسية والسلوكية كالكآبة، القلق، النشاط الزائد وضعف الانتباه والتركيز لدى الأطفال، ومشكلات الاندفاعية، استنادا إلى نتائج بعض الدراسات العلمية. وبناء على ذلك سنقدم رؤية استشرافية نقدم فيها توصيات على شكل بروتوكول غذائي صحي متوازن مع صيام دوري للحفاظ على اللياقة العقلية والنفسية والتوازن النفسي استنادا الى نتائج أحدث الدراسات العلمية.

الكلمات المفتاحية: التغذية. مقومات الصحة النفسية ـ الصحة النفسية ـ مقاربة علم النفس الغذائي.

1. INTRODUCTION:

The modern lifestyle is characterised by a multitude of psychological stressors, which can contribute to a range of mental health issues, including anxiety, depression, pessimism, mood swings, impulsivity, anger, and more serious conditions such as schizophrenia. As reported by the World Health Organization (WHO), depression has become one of the most critical mental health challenges of the 21st century, affecting approximately 3.8% of the global population, including 5% of adults. (Organization, 2023) The ramifications of depression are profound, resulting in personal disabilities and, in select instances, prompting individuals to engage in self-destructive behaviors such as suicide, substance abuse, or the misuse of psychotropic substances. In some cases, individuals may resort to criminal acts as a means of seeking revenge against society. Such outcomes impede individuals from making a constructive contribution to social and developmental initiatives, resulting in a considerable financial burden on national economies.

A further WHO report indicates that one in eight people globally is affected by a mental health disorder, (Organization, Mental Disorders, 2023) emphasising the necessity for countries to implement efficacious treatment programmes in order to mitigate the social and economic consequences. This has resulted in an increased emphasis on a multifaceted approach to mental health, encompassing medical, psychological, and social interventions.

In response, researchers in the field of psychological sciences have investigated novel and efficacious approaches to mental health care, with a particular emphasis on psychological, behavioral, cognitive, and medical therapies. While these treatments can be effective, they often rely on advanced pharmaceuticals, which have significant economic costs. A WHO report indicates that global spending on mental health treatments has reached an estimated $2.5 trillion annually, reflecting the increasing prevalence and financial burden of mental health disorders. (aljazeera, 2018)

Considering these challenges, there is a pressing need for more holistic, accessible, and cost-effective methods, including nutritional approaches, to support mental health and overall well-being.

Despite the considerable advances made in psychological research in the fields of therapy and psychiatry, it has become evident that these fields still have significant room for improvement. There is a pressing need for further review, experimentation, discovery, and innovation in this area. This necessitates the investigation of novel therapeutic modalities employing a comprehensive array of methodologies and techniques, particularly those pertaining to the environment, nature, and nutrition. Of particular interest are studies examining the influence of climatic factors, water, geographical location, colors, natural illumination, water, natural sounds, wind, and nutrition across the four seasons, with the objective of identifying efficacious alternatives to synthetic pharmaceuticals derived from natural sources. As a human being created from dust in a comprehensive sense, encompassing all the components of nature, he is an integrated whole that cannot be separated

from his physical, mental, psychological, and spiritual aspects from everything that surrounds him. Rather, he is cosmically intertwined with all the elements of physical and human nature. It is therefore unsurprising that humans interact with their environment in ways that affect their general health, including their psychological and mental health. This is evident in the fluctuations in people's moods observed during the four seasons. Individuals may experience a range of emotions and behaviors in response to the seasonal changes. Some may feel irritated or anxious during the winter season, while others may find it cheerful or happy. The same is true for the spring, summer, and fall seasons. Natural disasters and atmospheric fluctuations also elicit a range of reactions. It is important to note that physical health is the foundation of mental and psychological health. The body is supplied with vital energy from nutrients that enable the electrochemical activity of the brain to perform essential functions and tasks for human life. An individual's mood, psychological state, and mental disposition are all influenced by their emotional state, which in turn affects their cognitive processes and their ability to cope with the challenges and circumstances they encounter.

The objective of this study is to underscore the significance of mental health and the pivotal role of nutritional well-being in fostering its preventive and therapeutic aspects. This study demonstrates the impact of nutrition on various aspects of mental and psychological health, based on the findings of scientific research. It presents examples of mental disorders and diseases that have been proven to be associated with nutritional factors. Furthermore, we will endeavor to direct the attention of researchers engaged in psychological sciences and mental health to the necessity of conducting field, experimental, and clinical research on samples drawn from our communities to assess the efficacy of healthy diet programs in the prevention and treatment of various psychological and mental diseases and disorders. Considering the evidence, it is our intention to provide guidance to the community with a view to encouraging them to reconsider their current dietary habits and replace them with a more secure and beneficial pattern of eating that will have a positive impact on their overall health, and in particular on their mental and psychological well-being.

1. 1-The study problem

The relationship between nutrition and mental health is a contemporary area of research, prompted by the emergence of intractable mental and psychiatric disorders worldwide. Researchers have identified limitations in the efficacy of established psychiatric and medical treatments, prompting a shift in focus towards exploring the potential of nutrition as a complementary approach. This topic has been of interest to ancient philosophers, particularly given the evidence that ancient Hindu monuments classified foods into different categories according to their impact on human physical, psychological, and mental health. In light of these considerations, she underscored the impact of nutrition on the spiritual behavior of the human

being. The categories are as follows: (Al-Ghamdi, 2017) The first category is designated as "pure food," which encompasses vegetables, fruits, and dairy products. This class of food is believed to facilitate tranquility of the soul and mind, as well as behavioral adjustment with clarity of mind. The second category is termed "stimulating food," which includes meat, spices, onions, and the third category is "spoiled food," which includes sugars and carbohydrates. These foods contribute to impaired cognitive function and are linked to chronic diseases. They are important to consider when examining the evolution of human thought processes regarding health. By understanding these stages, we can develop more effective awareness, educational, and therapeutic programs to address contemporary issues.

The significance of these theoretical and philosophical concepts has prompted numerous researchers in the biological, medical, and psychological sciences to investigate their potential correlation with the relationship between nutrition and mental health. The results of numerous recent studies have demonstrated a functional relationship between the quality of nutrition and human mental and psychological health. For example, the study conducted by Marie-Jo Brennstuhl et al. (Marie-Jo Brennstuhl, 2021) analyzed twenty-one (21) scientific articles and concluded that "healthy and balanced nutrition contributes to the well-being of individuals and improves the quality of life of many individuals who are likely to suffer from various diseases." These scientific facts call for a reconsideration of the approaches and therapeutic protocols currently in use for the treatment of many diseases and mental and psychological disorders. The introduction of diet as a strategic dimension and an integral part of contemporary preventive and therapeutic protocols could help to minimize the spread of such diseases. From another perspective, the objective is to reduce the financial burden associated with medical treatment. Regarding the significance of nutrition and its impact on human health, another World Health Organization (WHO) report, "Mental Health and Psychosocial Well-Being in Acute Nutritional Deficiencies," (Organization, Department of Mental Health and Substance Abuse , 2007) indicates that: Severe nutritional deficiencies may result in a lack of essential nutrients, which can lead to health issues and a lack of psychosocial stimulation.

This, in turn, can cause developmental delays and mental health issues. It is evident from the report that there is a functional relationship between the quality of nutrition and a child's physical and mental health. Considering the reports and a plethora of intriguing studies in the domain of mental health science, we have elected to investigate this subject matter further. Our objective is to present a comprehensive account of the most recent scientific research on the interconnection between nutrition and mental well-being. This endeavor is intended to guide those who are interested in this subject matter to the necessity of intensifying research efforts in clinical and clinical methods, particularly regarding samples and environments that are specific to our societies.

2- The methodology employed in this study

This research employs an inductive approach, utilizing the findings of contemporary scientific studies accessible through electronic research, in addition to articles and interviews with experts and researchers in nutrition and psychiatry published in specialized electronic magazines and newspapers. These sources will be analyzed, and scientific facts will be employed. Furthermore, examples of prevalent psychological and mental disorders and diseases that can be prevented or treated through healthy nutrition will be provided, based on the findings of scientific studies and their field experiences in this regard. The following questions will be addressed: What are the essential elements that comprise mental health? What are the most salient indicators of mental health? What is the significance of nutrition for human health? What is the relationship between nutrition and mental health? What is the impact of nutrition on mental health? What dietary protocol is most appropriate for the prevention of mental disorders and diseases?

3- The following section defines the concepts that will be explored in this study

4- Definition of Mental Health

The concept of mental health is defined in a multitude of ways, with variations contingent upon cultural norms, theoretical frameworks, assessment methodologies, and the standards adopted in evaluating the degree of mental well-being. Accordingly, we will rely on the most significant and renowned definition, as adopted by the World Health Organization.

In accordance with the World Health Organization, mental health is defined as an emotional state associated with mental well-being that enables individuals to cope with the stressors inherent to life, realize their potential, learn and work effectively, and contribute to society. Mental health is an integral component of overall health and well-being, influencing our capacity to make informed decisions, form meaningful relationships, and contribute to the development of our communities and the world at large. It is a fundamental human right that necessitates care and attention. Personal, social, and economic development is contingent upon it.

From another perspective, it underscores that mental health does not equate to the absence of mental illness. Instead, it is a multifaceted phenomenon that manifests in individuals with varying degrees of complexity, sensitivity, and a range of behavioral, social, and clinical symptoms. Mental disorders encompass a spectrum of conditions, including psychosocial impairments, psychosocial disabilities, and some mental illnesses that are associated with suffering, impaired functioning, or an increased risk of self-harm. (WHO, 2022)

In light of this definition, it can be inferred that the World Health Organization (WHO) views mental health as a state of well-being and happiness, a crucial element in sustainable and comprehensive social

development, and a fundamental human right that enables the realization of societal health security.

Furthermore, it can be posited that mental health is a state of complete self-confidence that enables the individual to live in psychological balance and satisfaction with themselves and those around them. This state of mental health raises the individual's level of motivation to achieve and address their life issues in positive ways, while enabling them to build positive relationships.

Creativity and the capacity to act in a positive manner in the face of challenging and stressful circumstances, through the utilisation of self-awareness and the ability to regulate emotions and life passions. It is important to recognise that the human psychological state is not fixed, but rather variable and evolving.

4-1- **Definition of nutrition**

The term "nutrition" encompasses all nutrients consumed by humans on a daily basis. These include vegetables, herbs, fruits, meats, grains, water, nuts, and the organic elements they contain that are essential for bodily development, growth, and protection from physical diseases and mental and psychological disorders.

5- The following components comprise the construct of mental health :

Mustafa Hijazi posits that the components of mental health are those attributes that constitute the personal, behavioral, and value schema of mental health. (Hijazi, 2004). It should be noted that there are various models of the components of mental health, which differ according to the theories and cognitive approaches that are employed in the study of this subject. Despite these differences, many of the models share a number of common qualities and characteristics, while also exhibiting some divergence in certain aspects. This paper will focus on Swain's 1970 model, which outlines eight components[1].

Efficacy: This refers to the capacity to resolve issues and respond constructively to circumstances.

Compétences: It denotes the ability to utilize one's resources and capabilities in a manner that yields optimal outcomes with minimal expenditure of effort.

Adaptability: It signifies the individual's capacity to align with reality and integrate into it in a constructive manner.

Flexibility: The capacity to adapt and respond effectively to changing circumstances is known as flexibility. This concept pertains to an individual's capacity to adapt constructively to potential alternatives and solutions, demonstrating resilience in the face of challenges and the ability to learn and evolve in a positive manner.

Adaptability: The term "adaptability" is defined as the capacity to adapt to new or changing circumstances in a manner that is effective and appropriate. It is the capacity of the individual to modify those aspects of their situation

that can be altered, to accept those that cannot be changed, and to adapt positively to the latter.

The application of experience: It signifies the application of past experiences and lessons learned in order to facilitate positive growth and development.

The effectiveness of social interaction: It signifies an individual's capacity to navigate social interactions through empathic engagement and service to others.

Psychological well-being: Is based on positive self-esteem and satisfaction with the self as it is, with its positives and negatives, with a belief in one's own abilities that allows the individual to develop, succeed, and achieve goals in life. This can be described as the state of reconciliation with oneself or inner peace.

Based on these components, three dimensions of mental health can be derived as follows:

6- Dimensions of Mental Health

6-1- The initial dimension is as follows: What are an individual's self-perceptions?

These are subjective feelings about one's own thoughts and feelings, which Carl Rogers refers to as the "personal self." These feelings differ from one person to another and are shaped by an individual's psychological structure, unique experiences, and psychological history. They are influenced by the situations and events that a person has encountered throughout their life, which in turn shape their self-image and affect their behavior and approach to life's challenges.

6-2- The second dimension : What are the feelings that an individual has towards others?

These are the attitudes, beliefs, and perceptions that individuals form towards those around them, which may evoke positive or negative sentiments depending on the subjective evaluations they make about these individuals, taking into account their personal experiences, cognitive background, and past interactions with others.

6-3- The third dimension : How does a person respond to the demands of life?

This dimension encompasses the strategies, methods, and approaches that a person employs in navigating the mundane and challenging aspects of their daily lives. This includes personal experiences gained from socialization institutions throughout the stages of individual development, as well as those acquired in academic settings.

7- Mental Health Indicators

Mental health indicators are defined as signs or behaviors that are indicative of the extent of human health, which can be observed and measured. Psychologists utilize these indicators to identify the extent of an individual's health or disorder. The most important indicators can be extracted from the models adopted by mental health researchers and presented in the following form:

7-1- Self-acceptance and the formation of positive attitudes towards oneself

This corresponds to a feeling of satisfaction and reassurance with oneself. It is an indicator that is considered the backbone of mental health. It is defined as the extent to which an individual feels satisfied with themselves, their abilities, skills, competencies, level of performance, and success in life. This is determined through self-evaluations of the individual in comparison to either their own potential or that of others.)Kafani(2003 ،

7-2- Maturity and emotional balance

It serves as a crucial indicator of the degree of composure and inner tranquility that typifies an emotionally balanced individual. (Said Bakhir, 2005)

7-3- Adaptation

It encompasses all its psychological, personal, and social dimensions. The nature of the relationship that an egotist builds with his environmental and social surroundings serves as an important indicator of the extent to which a person is able to adapt to the demands of social and cultural life, as well as its developments and complexities across the various stages of his life. Furthermore, the individual must demonstrate an effective and positive response to all challenges, avoiding irritation and avoidance of change, renewal, and adaptation to emergencies and surprises. Instead, the individual should understand and appreciate the situation as it truly is. (El-Qousy, 1952)

7-4- Psychological resilience

This concept pertains to an individual's capacity to cope with the multifaceted and cumulative pressures of life in a constructive manner, thereby preventing the onset of psychological disorders and diseases. (Rafiq, 2019)

7-5- Full Self-Confidence

This is a level of self-esteem and belief in one's own abilities and potential. It makes the individual more energetic, active, and interested in the requirements of success in life. It also makes them more initiative and adventurous with a high level of motivation, without fear or hesitation.

7-6- The capacity to collaborate with others and cultivate constructive and harmonious relationships with them

This indicator reflects an individual's emotional intelligence and their aptitude for navigating social interactions, empathizing with others, and striving to serve them with satisfaction, enjoyment, and pride, which are among the dimensions of personal well-being.

8- The significance of nutrition for human health

The significance of nutrition for human health can be attributed to the following factors:

It is essential for the sustenance of his existence as a biological entity. In accordance with Chinese wisdom, food represents the primary necessity for humans.

It provides the requisite energy (in the form of fuel) to facilitate the performance of daily and vital activities.

Nutrition provides the brain and nourishes the body's cells with the components and elements necessary for their growth and the effectiveness of their vital functions.

It ensures the general health of the human being and protects against various diseases resulting from malnutrition or poor nutritional balance, while strengthening the immune system.

Nutrition plays a role in regulating mood and mental health, particularly in regard to cognitive processes such as thinking. It can be seen, therefore, that in order to achieve physical and psychological health, it is necessary to consume a varied and balanced diet that provides the body with the nutrients it requires, without excess or deficiency. It should be noted that there is no distinction between essential and non-essential elements; rather, all elements are important in certain amounts, without excess or deficiency. These nutritional needs vary from person to person, from one age group to another, and according to age and physical activity.)Al-Kilani ،Without a year(The saying that a healthy mind is a healthy body is undoubtedly accurate.

9- The relationship between nutrition and human mental and psychological health

It is a logical, empirical, and factual certainty that the human body cannot be separated from the rest of its components or its psychological, mental, and spiritual parts. Man is an integrated unit whose parts and components interact directly with one another, such that each part affects and is affected by the other parts, both positively and negatively. Furthermore, it is one of the fundamental principles governing growth.

Growth is an integrative process whereby the constituent aspects are functionally integrated. Conversely, the unity and complementarity of the components of the human personality can be seen to be affected by bodily pain resulting from disease, stress, or weakness. This, in turn, has an impact on our moods and our mental and psychological balance, particularly in

relation to our mode of thinking and our outlook on life. Negative emotional states such as stress, anxiety, anger, and depression have been linked to physical health issues. These emotions can disrupt the functioning of glands and their hormone secretions, leading to imbalances in the body. For instance, increased levels of the hormone ketosis and adrenaline have been associated with an increased risk of chronic diseases such as diabetes, high blood pressure, and even cancer, as evidenced by numerous contemporary studies. As outlined in the World Health Organization's (2007) report on the importance of nutrition, severe nutrient deficiencies pose a significant threat to an individual's nutritional status. (World Health Organization, 2006). This is due to the fact that such deficiencies can result in micro-nutrient deficiencies, which in turn can lead to a reduction in mental energy activity. This serves as a clear indication of the vital relationship between nutrition and the maintenance of human mental abilities. Food is the primary source of energy for the human body, providing the brain with the nutrients it requires to perform a range of essential functions. Consequently, deficiencies or imbalances in nutrient intake inevitably led to adverse effects on health, psychology, and mental well-being.

To gain a more profound comprehension of the interconnection between nutritional intake and mental well-being in humans, it is essential to elucidate the functional interactions that occur between the stomach and the brain. This will demonstrate the extent of synapses between these two pivotal systems, which ultimately determines human physical, mental, and psychological health.

9-1- Functional Interactions Between the Digestive System and the Central Nervous System

In order to provide a scientific explanation of the relationship between nutrition and mental health, it is necessary to analyse the functional interactions between the digestive system and the nervous system. The gastrointestinal system has been designated the "second nervous system" due to the robust neural synapses that exist between the two. The gastrointestinal nervous system is directly connected to the central nervous system. (Brennstuhl, 2018). The effector end of the enteric nervous system is responsible for integrating physiological responses and modulating immune activity. (Collins, 2012). The effector end is comprised of sensory nerves that act on intestinal reflexes and transmit information to the brain.(ibid) The stimulation of the vagus nerve allows for the interaction between microbes and the brain to be observed and documented. (Bastiaanssen, 2019) The microbiota intervenes in the interactions between the gut and the brain by allowing the bacteria in the microbiota to metabolize and break down undigested food, enabling the gut microbiota to generate energy, eliminate toxins, and synthesize vitamins. (Marie-Jo Brennstuhl, 2021)

Other studies have also identified a correlation between nutritional intake and the onset of certain psychological disorders, such as depression. The

relationship between food consumption and psychological well-being is such that an individual with depression may be prone to developing anorexia nervosa or anorexia mentalis. Such behaviors can result in a state of malnutrition, rendering the individual susceptible to a range of illnesses. Alternatively, the individual may engage in excessive eating, leading to obesity or what is clinically defined as bulimia nervosa. (Al-Feki, No year)

It has thus become evident that the impact of nutritional intake on mental wellbeing is contingent upon the interactive relationship between the two digestive systems that facilitate the conversion of nutrients into vital energy for the brain via the bloodstream. The quantity, quality, and nature of the organic substances transported to nourish the brain in order to facilitate its functional processes ultimately determine the nature of the activity of the various organic systems and, in turn, the nature of the mood, psychological state, and mental climate experienced by the human being. This phenomenon can be observed in oneself when consuming a diet high in sugars and starches, which can result in feelings of irritability and hyperactivity. Similarly, the consumption of tea or coffee can alter one's mood and energy levels, creating a contrast when compared to periods of abstinence.

10- The impact of food on mental health

The consumption of foodstuffs exerts an influence on our mental health, manifesting in the quality of the foodstuffs themselves, the nature of the glands they activate, and the nature of the hormones they secrete. These factors are interrelated with our daily dietary habits, including the quantities consumed, the variety and quality of the organic ingredients, and the regularity of meals. As posited by Al-Faqi, Marie-Jo Brennstuhl et al. (2021) and Leigh Gibson, scientific evidence attests to the fact that our moods and emotional dispositions are modified when we eat a meal. This is evidenced by a reduction in stress and irritability, accompanied by an increase in positive emotions and calmness. Some meals are high in fat and saturated carbohydrates. In her book Food and Mental and Physical Health, Amal Elfeki elucidates that the effects manifest at multiple levels, as follows:

10-1- Hormonal Activity

Hormones are chemical substances secreted by various glands in the body to interact with other organic substances to perform specific functions for various organs, especially the human nervous system. The ratio of hormones and neurotransmitters to the brain, especially serotonin and dopamine, is affected by the type of food we eat, which determines our thinking style, our feelings, and the way we behave in front of situations. These hormones are responsible for feelings of comfort, satisfaction, happiness, and love. Therefore, the regulation of these hormones directly impacts mood, and vice versa.

10-2- The activity of group B vitamins

These vitamins are instrumental in the synthesis of neurotransmitters, with vitamin B12 being of particular importance. Deficiency in these vitamins has been identified as a risk factor for depression, cognitive impairment, and memory impairment. Furthermore, vitamin D deficiency (vitamin DD) has been linked to adverse effects on cognitive processes and the development of depressive disorders. (Barberger-Gateau, 2011) B vitamins are found in a variety of foods, including: These nutrients are found in a variety of foods, including chicken, fish, red meat, whole grains, peanuts, dairy products, chickpeas, potatoes, liver, lentils, and egg yolks. (Santé, 2011) As reported by the same specialized medical journal, "Passeport Santé," these vitamins contribute to the prevention of cardiovascular diseases, depression, and the strengthening of mental functions.

10-3- Zinc and Sleep Disorders

Zinc plays a pivotal role in numerous bodily functions, including the fortification of the immune system, the sustenance of normal nervous system activity, and a multitude of other essential processes. As Pascale Barberger-Gateau elucidates, zinc deficiency can precipitate a plethora of ailments, including sleep disorders, diminished libido, fatigue, alopecia, visual disturbances, olfactory and gustatory dysfunctions, and stunted growth in children. These conditions collectively impact an individual's emotional state and cognitive function. Zinc is predominantly found in meat, liver, and whole grains, among other dietary sources.

10-4- Magnesium and Neural Activity

It has been demonstrated through scientific inquiry that magnesium plays a role in numerous biochemical processes, particularly in the functioning of nerve cells, heart rhythm, blood pressure, the immune system, and insulin regulation. Consequently, when magnesium levels are insufficient, it can lead to anxiety, irritability, and sleep disturbances. (DiGirolamo, 2009). It is evident that many individuals who experience insomnia often turn to hypnotics and tranquilizers found in dietary supplements due to the lack of a healthy food culture, which often results in their inability to consume the necessary nutrients through appropriate food sources.

10-5- Deficiency of omega-3 fatty acids

These are found in almonds, walnuts, and marine meats, especially salmon, and are involved in metabolism, vision, and the central nervous system. Deficiency of omega-3 fatty acids may cause depression. (Pao-Yen Lin, 2009).

11- Nutrition and Psychological Disorders

This section will examine the impact of nutrition on the onset of various psychological and behavioral disorders and diseases in children and adults

across different age groups. The following are among the most significant findings:

11-1- Nutrition and Attention Deficit Hyperactivity Disorder (ADHD)

As previously stated, the relationship between nutrition and mental health is a well-established phenomenon. Among the cognitive and behavioral disorders commonly observed in children across the globe, attention deficit hyperactivity disorder (ADHD) with or without motor hyperactivity stands out as a prevalent condition, affecting approximately 5% of the global pediatric population. (Ray, 2019). Some researchers have proposed a unified conceptualization of this disorder, combining the previously distinct categories of motor hyperactivity and attention deficit. This concept refers to the tension and instability that characterizes the child while carrying out a specific activity, resulting in a high level of mobility and a tendency to transition rapidly from one activity to another. Additionally, the child may exhibit rapid speech and an inability to listen to others due to a lack of patience. It is important to note that hyperactivity inevitably results in a lack of attention span. This is due to the child's inability to focus on a specific stimulus for an adequate period of time. Instead, the child often finds himself moving from one stimulus to another and from one situation to another simultaneously. This results in a lack of stability in posture and a tendency to shift positions abruptly. In contrast to the typical scientific search for natural therapeutic alternatives for mental disorders, numerous scientific studies have demonstrated a positive correlation between nutrition and a disorder known as attention deficit hyperactivity disorder (ADHD) in foreign language sources. In particular, a study published by La Nutrition in 2011 and 2017 indicated that reducing certain foods may significantly contribute to the treatment of ADHD in children. The results of a field study conducted on a sample of 100 children between the ages of 5 and 8 years, published in The Lancet and reported by La Nutrition, indicated a correlation between abstaining from certain foods and the reversal of The study demonstrated that following the elimination of specific foods, 78% of children exhibited a reduction in ADHD symptoms. However, upon reintroduction of these foods, two-thirds of the children experienced a recurrence of symptoms. (nutrition., 2011) He has published a book on the subject, entitled Hyperactivity, the Solution is Magnesium. In his publication, the author posits that the treatment for hyperactivity and attention deficit disorder lies in consuming foods rich in magnesium. In light of the adverse effects observed in patients taking medications such as Ritalin, which have been linked to the development of various side effects, including: Furthermore, sleep deprivation, fluctuations in blood pressure, heart rate, and weight have been observed.(Ibid). This prompted researchers to recommend a natural alternative to consuming foods rich in omega-3 and polyunsaturated fatty acids for the treatment of the disorder. Following testing on samples of children, a number of foods were identified as potential treatments, including fish, walnuts, and almonds. Fish,

walnuts, and almonds, among other foods, were identified as potential sources of omega-3 and polyunsaturated fatty acids. A study published in the journal Translational Psychiatry examined the effects of omega-3-rich substances on a sample of children. The study compared the effects of omega-3 treatment with those of a control sample that did not receive omega-3. The results indicated that the children who received omega-3 exhibited increased attention compared to the control sample, whose attention levels declined and became more distracted. (Ray, 2019).

11-2- The Relationship Between Nutrition and happiness

Happiness is among the most significant dimensions of human mental and psychological health. It pertains to the degree of inner tranquility and contentment that an individual in a state of positive emotional well-being 26motions26es with regard to themselves and their interpersonal relationships, as well as their overall outlook on life, which is characterized by optimism and positivity. A substantial body of scientific evidence attests to the existence of a robust correlation between well-being and happiness, and the dietary habits of individuals. In an interview with BBC News Afrique, nutrition researcher Sonal Shah highlighted that low blood sugar is a common cause of fatigue and irritability. (Afrique, 2021). Irregularly high blood sugar has been linked to mood disorders, including anxiety and nervous breakdowns. In a review of 21 scientific articles on the relationship between food intake and mental disorders, Marie-Jo Brennstuhl and colleagues (2021) at the University of Lorraine in France concluded that : (Marie-Jo Brennstuhl, 2021). The findings of the aforementioned studies indicate a robust positive correlation between optimal nutritional intake and the level of well-being experienced by individuals, as evidenced by indicators such as life satisfaction, sense of well-being, and others. Furthermore, it contributes to the improvement of quality of life in individuals at risk of various diseases. The most strongly associated foods with happiness and well-being are : The consumption of greens, fruits, fish, and various substances rich in omega-3 (polyunsaturated fatty acids) has been linked to positive outcomes. The same researchers indicate that other studies have corroborated the finding that increased seafood consumption is strongly associated with a lower prevalence of manic depression and severe sadness that prevents people from engaging in their daily activities. Additionally, researcher Amal Faki notes that some studies have confirmed that consuming large amounts of saturated fats may increase the risk of depression, while consuming unsaturated fatty acids has been linked to feelings of joy, enjoyment, and the dissipation of negative 26motions. (Al-Feki, No year).

11-3- Nutrition and Depression

Depression is defined as a state of emotional distress that results in feelings of inadequacy, insecurity, and hopelessness, leading to a sense of meaninglessness and a diminished sense of self-worth. In advanced stages of

stress and turmoil, individuals with depression may consider suicide as a means of escape from their overwhelming feelings. It is the result of a number of factors that have been identified by numerous studies, including the role of nutrition in depression. This is corroborated by an editorial in the January 2011 issue of Aprifel, No. 105, (Barberger-Gateau, 2011), which is based on the findings of two significant studies published in the journal. These studies employed the descriptive factor approach on a large sample and demonstrated that diets high in artificial foodstuffs, particularly sugar and dairy products, are linked to elevated levels of depressive symptoms (dépression). In contrast, a study conducted in the United Kingdom indicated that a diet comprising vegetables, fruits, and fish was associated with reduced depressive symptoms. Both studies make reference to the Mediterranean dietary pattern, which is based on vegetables, fruits, and fish.

These foods are rich in fiber, antioxidants, unsaturated fatty acids (specifically omega-3), magnesium, zinc, and other nutrients that are beneficial to mental and psychological health. Dr. Ahmed El-Olaimy, a nutrition researcher at the National Center for Marine Science in Egypt, elucidates the psychological alterations that accompany inflammatory bowel disease. (Al-Alimi., 2022) A substantial body of evidence indicates a correlation between intestinal inflammation and the emergence of psychological disorders. A sudden surge in the concentration of the pro-inflammatory cytokine IL-6 in the cerebrospinal fluid is often associated with the onset of depressive symptoms in men. Furthermore, another study conducted on a sample of patients with major depression revealed an increase in CRP as a marker of inflammation, accompanied by a decrease in the anti-inflammatory cytokine IL-10.(Ibid).

Nevertheless, despite the significance and value of these scientific findings in pioneering a novel direction in the field of mental health or nutritional psychology, they are constrained by a number of considerations, the most pivotal of which are:

The researchers attempted to attribute all psychological disorders to a single factor, namely nutrition, despite the acknowledged complexity and intricacy of psychological phenomena. A number of subjective and objective factors may be involved in this process, including life experiences, psychological history, cognitive styles, strategies for coping with life challenges, socialization, and the value system of the broader society. In addition to environmental, geographical, nutritional, technological, political, security, and other factors, this highly biased perspective must be rejected, despite the indisputable importance of nutrition and its role in maintaining physical, mental, and psychological health. As Hippocrates observed, "Let food be your medicine, and let it be your medicine." It is recommended that individuals make food their medicine and, in turn, make their medicine their food. It is important to note that a significant portion of this research was based on questionnaires, scales, and psychological tests that allow examinees to respond to questions that assess their conditions, moods, aspects of their

personalities, behaviors, and cognitive processes. With the exception of some other studies that relied on clinical or clinical approaches, which provided more accurate and objective results than the others, further research is required to ensure the results of these studies are as accurate and effective as possible. This will necessitate in-depth reviews and new approaches with more controlled and credible tools.

12- The objective is to propose a protocol for a diet that promotes mental health

In light of the aforementioned evidence, we propose a protocol for a diet that protects humans from a range of physical, psychological, and mental diseases and disorders, based on proven scientific facts. It should be noted that there are numerous dietary programs and models proposed by nutrition and health specialists, taking into account the specific characteristics and health conditions of each individual. However, the objective of this protocol is to provide a general preventive approach rather than a therapeutic one. It is important to recognize that therapeutic protocols are dependent on the specific results of medical diagnoses for each patient and require the expertise of specialists. Therefore, to enhance mood and prevent disease while maintaining mental health, it is recommended to adhere to the dietary guidelines outlined in this protocol.

The objective of this protocol is to instill new healthy eating habits that will contribute to the prevention of numerous psychological, mental, and physical diseases.

It is essential to adhere to a diet that is both varied and balanced, ensuring the intake of all the organic substances required by the body in the appropriate quantity, without excess or deficiency.

There is a necessity to increase the consumption of dark fruits and vegetables, which are rich in fiber and antioxidants that protect the body from various diseases.

It is recommended to limit the consumption of red meat and eggs and to incorporate a variety of fruits and marine (meat) sources (such as fish of all kinds) into one's diet.

It is imperative to cease consumption of all food items containing sugars, fats, processed oils, sweets, fried foods, starches, and other similar substances.

It is recommended to limit the quantity of food consumed per day to a maximum of two to three meals and one light meal at night. It is of great importance to organize one's eating breaks in a manner that allows for intervals of 8 to 12 hours between each meal.

It is recommended that individuals consume a sufficient quantity of water on a regular basis, with an emphasis on diversifying the sources of this essential fluid. The mineral properties inherent to different water sources can positively impact the biological, psychological, and mental health of the body.

It is recommended that individuals consume natural liquids and beverages and refrain from consuming artificial liquids and beverages.

It is advisable to avoid processed foods that are filled with chemicals.

It is advisable to avoid consuming sugars, sweets, and all processed or manufactured substances.

It is recommended that individuals commit to fasting two days per week and three fasting days per month, with a full month of fasting per year (Ramadan) whenever feasible. Fasting is a physiological mechanism that contributes to cleansing the body of toxins and restoring the body's cells and the activity of the glands and blood circulation. Additionally, it plays a role in promoting psychological and mental health, particularly by enabling rest for stomach activity, which in turn allows for mental clarity. It is imperative to engage in regular physical activity on a daily and weekly basis. It is essential to incorporate periods of leisure and recreation into one's daily routine, particularly by embracing the benefits of laughter and positive affect as a daily disposition, in order to maintain psychological and mental well-being.

It is crucial to adhere to hygienic standards in the consumption of fresh food, including proper handling, preparation, and storage.

It is imperative to refrain from the use of tobacco, alcohol, drugs, or psychotropic substances of any kind, including both natural and manufactured substances.

Conclusion

The relationship between nutrition and mental health is a significant area of research, as it has the potential to contribute to the promotion of a healthy home for societies and nations, rather than being regarded as an individual or personal issue. In this topic, we have demonstrated, based on the findings of scientific field studies, how different food types affect our mental activity, moods, ways of thinking, and overall mental health. Furthermore, we highlighted how food can positively contribute to the alleviation and treatment of numerous diseases and mental disorders. In particular, we emphasized the role of vitamins, zinc, magnesium, and certain Mediterranean foods rich in unsaturated amino acids (Omega3), particularly in the context of depression, hyperactivity, and attention deficit disorder. Additionally, we discussed the role of these nutrients in promoting feelings of well-being, happiness, and improving the general mood of the human being. This information is beneficial for researchers in health psychology, psychiatry, and psycho-nutrition who are engaged in research on the role of nutrition in the prevention and treatment of many intractable mental and psychological diseases that affect human societies due to the complexity of life. Furthermore, efforts should be made to integrate this approach into the medical and psychological treatment protocols currently in use at various international clinics and those recommended by the World Health Organization (WHO). It is therefore proposed that this topic be introduced as a means of drawing the attention of researchers specialising in psychology

and psychiatry in various laboratories in our universities to the potential of this area of research as a means of advancing social development and community health security, while also offering an economically inexpensive solution. It is further proposed that the media, educational programmes and all socialisation institutions should employ contemporary scientific findings to organise awareness and sensitization campaigns with the aim of establishing a healthy food culture and habits in society, thereby encouraging individuals to protect their health through their food choices. The integration and cooperation between all societal institutions has facilitated the development of a more aware society, cognizant of the potential detrimental impact of certain foodstuffs on mental health. This awareness has led to the adoption of safer options and habits, particularly in regard to mental and psychological health, which has in turn contributed to an enhanced quality of life and well-being.

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