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A STUDY TO EXAMINE THE IMPACT OF NUTRITIONAL INTERVENTION ON ANXIETY MANAGEMENT

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ABSTRACT

The vast majority of people who suffer from mental illness suffer from anxiety disorders. While more and more research points to dietary factors as important in the onset and maintenance of mood disorders like depression, little is known about the function of nutrition in anxiety disorders. Through a comprehensive mapping of the current literature on anxiety disorders and nutrition, this scoping review aimed to discover any connections between dietary components and the incidence of anxiety symptoms or disorders, as well as any gaps or possibilities for future study. Scope reviews are known for their rigorous methodology, which this review adhered to. The number of studies that found a link between a food ingredient and anxiety symptoms or disorders was tallied and shown graphically. A grand total of 55,914 distinct outcomes were discovered. Fifteen hundred forty-one articles were considered for inclusion after a full-text examination. According to the research, a reduced anxiety level was linked to a diet high in fruits and vegetables, omega-3 fatty acids, "healthy" eating habits, calorie restriction, eating breakfast, following a ketogenic diet, taking a broad-spectrum micronutrient supplement, taking probiotics, and consuming a variety of phytochemicals. A high-fat diet, insufficient tryptophan and dietary protein, excessive sugar and refined carbohydrate consumption, and "unhealthy" eating habits were all linked to increased anxiety levels, according to the review. Many research relied on animal testing or mere observation, which limits the generalisability of the results. The results are limited in applicability since only 10% of intervention trials included individuals with anxiety disorders. People suffering from anxiety disorders should be the subjects of high-quality therapeutic research.

KEYWORDS: Anxiety, Depression, Phytochemicals, Omega-3 Fatty Acids, Therapeutic Research.

INTRODUCTION

When it comes to mental ailments, anxiety disorders are at the top. Anxiety disorders affect almost 30% of the population (Psychiatry, 2025). When used in conjunction with other approaches to treat anxiety, the high failure rate of pharmaceutical therapies for many neurological illnesses is strikingly similar to that of behavioural therapy and medication alone. Major Neurodegenerative diseases like Alzheimer's and Parkinson's do not yet have any disease-modifying drugs, and antidepressants work in only around one-third of clinical cases. In regards to the latter, almost all of the treatments that have been created do not alleviate symptoms. The approach to neurological concerns is being misled by the research paradigm, which is plausible, if not probable. It stands to reason that mental disorders should also be treated with lifestyle interventions since lifestyle factors are a cause of certain metabolic abnormalities linked to neurological diseases and mental illnesses. In addition to metabolic medicine, lifestyle therapies for mental illness may help with metabolic diseases. Anxiety and other behavioural disorders have complex metabolic treatment requirements, and diet may help meet these demands. Modern dietary treatments for anxiety disorders are the subject of this study (Sadeghi et al., 2020).

BACKGROUND OF THE STUDY

There is a high potential for reverse causation to affect epidemiological studies that look at the link between food and mental health issues. Mental health illnesses, like anxiety, may have a two-way relationship with an unhealthy diet, acting as both a cause and an effect. People who are mentally well are more likely to engage in practices that benefit their physical and mental health, such as eating well and exercising often (Begdache et al., 2019). However, mental health declines due to the lack of good lifestyle habits, which in turn reduces the adoption of positive practices, creating a vicious cycle. When exactly dietary changes first appeared in relation to behavioural health problems is difficult to ascertain. Along with the usual obstacles in clinical nutrition research, the difficulty in isolating specific behavioural changes further complicates intervention studies aiming to prove a causal link between food and mental health. Anxiety is a common mental health issue, and this study aims to define it, with a focus on how nutrition and food might help with symptoms and prevention. Evidence suggests a link between nutritional choices and both mental and physical health, and those with mental illness are at increased risk for diet-related chronic disease comorbidities. Diet and other lifestyle factors substantially impact mental health treatment, according to most experts. A recent study by the Lancet Psychiatry Commission highlights the critical need for lifestyle interventions and ways to apply them in the context of mental disease (Firth et al., 2019). Prevention efforts, with an emphasis on working together with experts in relevant domains to develop and implement effective programs, were critically necessary. Lifestyle modification should be the first line of defence against mental illness, according to WHO recommendations for both drug abuse and physical health management. While the former stresses the need of receiving nutritional assistance during withdrawal, the latter stresses the value of achieving a healthy diet as a result of treatment. The treatment guidelines for eating disorders outline the role of dietitians as an essential element of the multidisciplinary care team (Zeng et al., 2021).

PURPOSE OF THE RESEARCH

This study is motivated by the possibility of dietary supplements assisting in the management of anxiety. Especially, the study aims to look at how anxiety symptoms could be affected by probiotics, omega-3 fatty acids, magnesium, zinc, B vitamins, and other nutrients. The study is to analyse the relationship between anxiety and supplements so that one may better grasp if they may be useful instruments in reducing anxiety, either as a treatment on their own or in conjunction with other therapeutic techniques. The main goal is to give helpful knowledge that could guide professional activities and educate those seeking for other or additional approaches of anxiety management.

LITERATURE REVIEW

One of the most prevalent forms of mental illness globally is anxiety. When a person has generalised anxiety disorder, they worry excessively about a wide range of things and may even have physical symptoms. Significant pain or functional impairment is caused by it, and it lasts at least six months. Recurrent, abrupt panic attacks; severe anxiety that lasts at least a month before, during, or after an attack; or noticeable changes in behaviour that occur in conjunction with an attack are the hallmarks of panic disorder (Kim, 2019). When people with agoraphobia see themselves confined, such as in a crowded public place where they cannot get out or get help in an emergency, they have a severe dread of these situations. Anxieties and a dread of being watched by others are symptoms of social anxiety disorder when it occurs in social situations. A specific phobia is defined by an extreme fear of a specific thing or situation. People and communities are greatly affected by anxiety disorders. Disabilities, decreased quality of life, and severe emotional and mental suffering are hallmarks of anxiety disorders. Anxiety problems are associated with more visits to primary care physicians, emergency rooms, and specialists. It is worth noting that these disorders are also quite common. Anxiety affects 31.2% of the population at some point in their life, according to the countrywide comorbidity research. It is common practice to combine psychotherapy and medication for treating anxiety disorders. Although these therapies help a lot of people, other people may find them too unpleasant, hard to get, or not successful enough to reduce their anxiety.

The study of mental health issues via dietary therapy and its potential prevention is a relatively new area of study known as nutritional psychiatry. Despite increasing evidence of their positive benefits, mental health patients in therapeutic settings seldom get dietary suggestions. When compared to mood disorders, anxiety disorders have been underfunded in terms of research. Even fewer studies have offered dietary advice, education, or food as an intervention for people with

recognised anxiety disorders, and even fewer have compiled the current literature on the link between dietary interventions and anxiety symptoms or disorders (Lacey & White, 2021).

RESEARCH QUESTION

- What is the influence of nutritional supplementation on managing anxiety?

RESEARCH METHODOLOGY

RESEARCH DESIGN

The researchers conducted a cross-sectional study to collect data spanning three quarters. The implementation of the cross-sectional design necessitated efficient and economical data collection at a singular moment. The researcher selected a quantitative methodology owing to constraints in time and resources. The poll was conducted among all participants by a random selection procedure. Subsequently, the researchers utilised Rao Soft to determine the requisite sample size; the program indicates that a minimum of 700 individuals must be interviewed for this study. For individuals who cannot read or write, or who are wheelchair-bound, a researcher would audibly present the survey questions and meticulously document their responses verbatim on the survey form. Participants would receive a briefing on the investigation and be afforded the opportunity to pose questions to the researcher while awaiting the completion of the surveys. Occasionally, the researchers request that the researcher complete and submit the surveys simultaneously.

SAMPLING

Participants were requested to complete questionnaires to participate to the research. Upon ascertaining that the research sample comprised 657 individuals utilising the Rao-soft tool, a total of 896 questionnaires were disseminated. 823 were returned, and 45 were discarded due to incompleteness, the researchers obtained 778 full responses, resulting in a total sample size of 778.

DATA AND MEASUREMENT

The primary data for the study was obtained from a questionnaire survey, which may have been conducted as a one-to-one correspondence survey or via Google Forms. Demographic data from both online and offline channels was gathered in part A, while responses to the criteria were solicited using a 5-point Likert scale in section B. The majority of the secondary material was derived from internet sources, while it was extracted from a diverse array of origins.

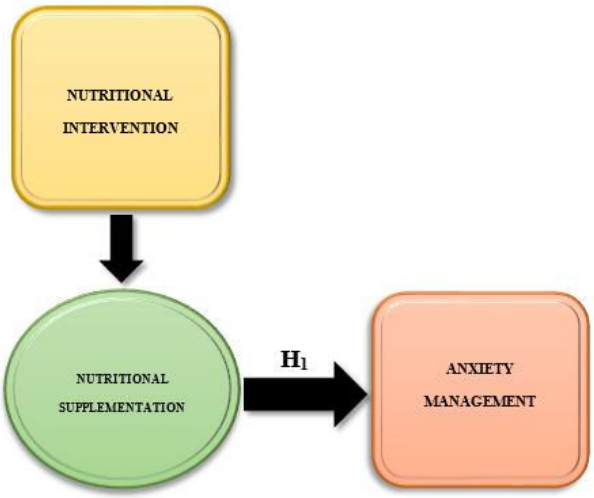
STATISTICAL SOFTWARE

SPSS 25 and MS Excel was used for statistical analysis.

STATISTICAL TOOLS

A descriptive analysis was conducted to comprehend the fundamental structure of the data. A descriptive analysis was conducted to ascertain the data's fundamental characteristics. The researcher employed ANOVA and factor analysis to assess validity.

CONCEPTUAL FRAMEWORK



RESULT

- **FACTOR ANALYSIS**

Factor Analysis (FA) is commonly employed to verify the foundational component structure of a set of measurement items. The values of observable variables are theoretically influenced by imperceptible influences. Model-based methodologies are employed in Factor Analysis. The primary objective of this research is to construct causal pathways that connect visible events, latent causes, and measurement errors.

The Kaiser-Meyer-Olkin (KMO) Method assesses the appropriateness of data for factor analysis. The researcher confirm that the sample size is adequate to encompass all model variables. To ascertain the extent of common variance, numerous variables are subjected to statistical analysis. Factor analysis is more efficacious when utilised on data with lower percentages.
A value between 0 and 1 is the outcome of executing KMO. A KMO score ranging from 0.8 to 1 signifies sufficient sampling.

If the KMO is below 0.6, sampling is inadequate, necessitating corrective measures. The precise value is at the researcher's discretion; nevertheless, several authors go for 0.5. The interval spans from 0.5 to 0.6.

The significance of partial correlations in relation to overall correlations becomes evident when the KMO approaches zero. To restate, robust correlations significantly hinder component analysis.

Kaiser has set down the subsequent criteria for acceptance:

Moderately between 0.050 and 0.059.

diverging from the standard by 0.60 to 0.69

Middle school students often fall within the 0.70 to 0.79 range.

Possessing a quality point score ranging from 0.80 to 0.89.

The interval from 0.90 to 1.00 was astonishing.

KMO and Bartlett's Test[a]		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.957
Bartlett's Test of Sphericity	**Approx. Chi-Square**	6953.162
	df	190
	Sig.	.000
a. Based on correlations		

Bartlett's Test of Sphericity further confirmed the overall significance of the correlation matrices. The Kaiser-Meyer-Olkin sample adequacy value is 0.957. Researchers identified a p-value of 0.00 using Bartlett's sphericity test. The correlation matrix is invalid as Bartlett's sphericity test yielded a significant result.

❖ INDEPENDENT VARIABLE

• NUTRITIONAL INTERVENTION

A nutrition intervention is a set of deliberate steps taken with the goal of resolving a nutrition-related issue. No nutrition intervention should be implemented until the PES statement identifies the aetiology, or the underlying cause, of the nutrition issue. Nevertheless, if the RDN is unable to address the root cause, the dietary intervention might focus on symptom relief. The Nutrition Intervention process consists of two parts: the first is the planning phase, during which the RDN and client work together to establish the intervention's purpose and anticipated results; the second is the implementation phase, during which the RDN and client work together to carry out the care plan, customise it for the client, communicate it, make any necessary adjustments, keep collecting data, follow up to make sure it's being followed, and adjust strategies according to the client's condition or response to the intervention based on data (Van der Merwe & Strydom, 2022).

❖ FACTOR

• NUTRITIONAL SUPPLEMENTATION

Whether in the form of a pill, capsule, tablet, powder, or liquid, dietary supplements are man-made goods that are meant to augment a person's diet. To help people consume more of these nutrients, supplements may give either naturally occurring nutrients or synthetic versions of these nutrients. Minerals, vitamins, fibre, fatty acids, and amino acids are some of the nutritional component types found in supplements. Dietary supplements may also include plant pigments or polyphenols, which are not nutrients in and of themselves but are advertised as having a positive biological impact. These compounds have not been shown to be necessary to life. Collagen, for instance, may be sourced from chickens or fish, two examples of animals that are used as supplement components. These are also available both singly and in sets, and the researcher can even mix and match them with nutrients that boost the researcher's nutrition. In order to guarantee that dietary supplements are safe and correctly labelled, the European Commission has also put in place standardised regulations (McLafferty & McCauley, 2022).

❖ DEPENDENT VARIABLE

- **ANXIETY MANAGEMENT**

Feelings of dread, unease, or concern manifest as anxiety in reaction to actual or imagined dangers. The fear response—sometimes called the "fight, flight, or freeze" mechanism—is activated when an individual experiences fear. This may cause changes in behaviour, thoughts, and even bodily functions, such a rapid heartbeat or shallow breathing, according to a reliable source.

An increase in blood flow and oxygen to the muscles allows people to flee or avoid danger. On the other hand, there are a lot of harmless things that might make individuals anxious, like: pivotal choices or occurrences, speaking in front of an audience. Anxiety is not always indicative of a mental illness. On occasion, a lot of individuals experience anxiety.

Anxiety disorders may be identified when anxious thoughts occur often, are excessive in relation to the circumstance, or continue even after the event has passed. Roughly 40 million Americans suffer from some kind of anxiety illness, says the Anxiety and Depression Association of America (ADAA). It ranks higher than any other mental disorder in the nation. But therapy is only sought after by 36.9% of those who suffer from an anxiety problem (Silveira et al., 2020).

- **RELATIONSHIP BETWEEN NUTRITIONAL SUPPLEMENTATION AND ANXIETY MANAGEMENT**

Increasing amounts of data point to nutritional supplements possibly aiding in the treatment of anxiety. Many studies suggest that certain foods may affect the brain in a way that aids in mood regulation, therefore reducing anxiety. Studies have, for instance, linked omega-3 fatty acids to a healthy brain and lower anxiety. Foods rich in omega-3 fatty acids, including flaxseeds and fish, may help control anxiety by affecting neurotransmitter function and thereby reducing brain inflammation.

Another excellent approach to reduce anxiety is adding magnesium. Maintaining a normal stress reaction in the body depends on magnesium; in fact, studies have connected a lack of magnesium to more anxiety. Those lacking sufficient magnesium from foods such nuts, seeds, and leafy greens might find great benefit from a magnesium supplement.

Zinc is also very important for mental health as it helps manage neurotransmitters that affect mood. Anxiety has been linked to zinc insufficiency; increasing zinc intake from diet or supplements might help symptoms. B vitamins include folate and B12 are needed for the creation of neurotransmitters that control mood. Deficit of these vitamins might set off anxiety and other mental health issues. Eating more of these nutrients or using supplements with them can help the researcher's anxiety and mood to get better. Probiotics are also attracting interest for their involvement in mental health because of their impact on the gut-brain axis. Probiotic pills and fermented foods like yoghurt help to promote a healthy microbiota in the stomach, therefore reducing feelings of anxiety and other mental health problems.

Based on the above discussion, the researcher generated the following hypothesis to examine the link between Nutritional supplementation and Anxiety management (Zeng et al., 2021).

- ***"H_{01}: There is no significant relationship between Nutritional supplementation and Anxiety management."***
- ***"H_1: There is a significant relationship between Nutritional supplementation and Anxiety management."***

ANOVA					
Sum					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	67785.480	319	6217.479	1924.943	.000
Within Groups	927.190	458	6.279		
Total	68712.670	777			

In this study, the result is significant. The value of F is 1924.943, which reaches significance with a p-value of .000 (which is less than the .05 alpha level). This means the ***"H_1: There is a significant relationship between Nutritional supplementation and Anxiety management."*** is accepted and the null hypothesis is rejected.

DISCUSSION

Millions of people worldwide suffer with anxiety; this study addresses how dietary supplements could be used to assist control this condition. Standard methods of anxiety control usually call for medication and counselling. Investigating the possible contribution of dietary therapies, especially dietary supplements, in improving the efficacy of these approaches in controlling anxiety symptoms is attracting increasing attention, nevertheless. Investigated more and more for their probable benefits in improving mental health and lowering anxiety levels include omega-3 fatty acids, probiotics, magnesium, zinc, B vitamins, and other nutritional supplements.

One such is the acknowledged influence omega-3 fatty acids have on mood regulation and mental performance. Studies suggest that omega-3 supplements may help to reduce anxiety by increasing neuroplasticity and lowering brain inflammation. Like other minerals, magnesium seems to calm the neurological system. Higher anxiety levels have been linked to magnesium deficits, which are necessary for regulating the body's stress reaction and maintaining stable mood.

It suggests that a mineral needed for neurotransmitter activity—zinc—may also help regulate anxiety. Zinc deficiency has been related to more anxiety; thus, enough levels of this mineral may help to preserve regular brain activity. Mood-regulating neurotransmitter synthesis calls for B vitamins including B12 and folate. Taking supplements might help lower anxiety symptoms by re-establishing normal neurotransmitter function as mood and anxiety problems could arise from vitamin deficits. Though their well-known impact on gut health, the putative use of probiotics in mental health is getting more and more interest. Research on the gut-brain relationship suggests that probiotics could help preserve a healthy gut flora, which would therefore aid to control mood and anxiety.

Although some research on these supplements indicate promise, it's important to bear in mind that individual variances in supplement effectiveness. Variables including eating patterns generally, the degree of anxiety symptoms, and particular vitamin inadequacies might influence supplemental effects. Furthermore, the researcher shouldn't expect dietary changes to replace more traditional therapies like cognitive-behavioral therapy or medication unless the researcher suffer with severe anxiety.

Based on the findings of this study, supplemental nutrition might aid with anxiety management; although, further research is needed to identify which supplements are most effective, at what dosages, and over long terms. Research indicates that by integrating dietary treatments with other therapeutic approaches, healthcare professionals should consider how best to assist persons with anxiety in the most complete sense.

CONCLUSION

This study shows that there is great possibility for the control of anxiety with dietary supplements. Studies on nutrition show that specific components—namely probiotics, magnesium, zinc, B vitamins, and omega-3 fatty acids—may reduce anxiety by helping the body to perform necessary physiological processes like cognitive processing, euro transmitter control, and stress reaction. Despite their great potential, nutritional supplements should never replace other therapies like medication or psychotherapy, even in the most severe circumstances. Individual dietary needs, deficits, and degree of anxiety symptoms define the efficacy of supplements. More thorough research is needed as this subject area develops to clarify the mechanisms and ascertain suitable dosages for every individual. This study offers a way to enhance mental health and emphasises the need of adding nutritional therapy into a whole plan for controlling anxiety.

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