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Review Article

Non-pharmacological Interventions in the Management of Psychological Disorders

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Abstract

Psychological disorders are various in their causes and manifestations. Due to exhaustive efforts, the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-V) developed operational definitions of distinct psychological conditions, disorders, determining specific criteria for their diagnoses and treatments. The World Health Organization (through the Mental Health Gap Action Programme and World Mental Health survey) investigated the prevalence of individual psychological conditions and correlations between them.

Determining an accurate diagnosis remains the most significant challenge in effectively addressing mental disorders. Also, considering the latest research particularly in epigenetics, more specialized and individualized treatment programs are needed to improve treatment outcomes, ameliorate symptoms, and aid in the recovery from the condition. Medical research has determined that multiple factors can be at play in specific conditions, such as genetics, physiology (hormones), physical environment, social environment, diet, and lifestyle. Not all patients with the same condition and treatment respond similarly. Thus, non-pharmacological methods and modalities are being considered, researched, and applied as monotherapy or adjuncts to conventional pharmaceutical treatment and psychotherapy.

In dietary modifications or nutritional supplementation, nutritional intervention is one of the most straightforward methods of addressing nutrition-related mental disorders. Also, proven and time-tested complementary therapies—including acupuncture, aromatherapy, eye movement desensitization reprocessing, herbal medicine, homeopathy, phototherapy, massage therapy, meditation, spiritual healing and prayer, therapy pets, and yoga—can be invaluable aids in lessening symptoms of particular psychological conditions and disorders, as reported herein.

Keywords: *Complementary Medicine; Dietary Modification; Light Therapy Box; Mental Health; Natural Remedy; Nutrition; Probiotics*

Abbreviations

AAT: Animal-Assisted Therapy; ACTH: Adrenocorticotropic Hormone; ADHD: Attention-Deficit Hyperactivity Disorder; AN: Anorexia Nervosa; BLT: Bright Light Therapy; BPRS: Brief Psychiatric Rating Scale; CAIM: Complementary, Alternative, and Integrative Medicine; CIDI: Composite International Diagnostic Interview; CSF: Cerebrospinal Fluid; DHA: Docosahexaenoic Acid; DSM-V: Diagnostic and Statistical Manual of Mental Disorders, 5th Edition; EMDR: Eye Movement Desensitization and Reprocessing; EPA: Eicosapentaenoic Acid; mhGAP: Mental Health Gap Action Programme; MBI: Mindfulness-based Intervention; MDD: Major Depressive Disorder; OCD: Obsessive-Compulsive Disorder; PTSD: Post-traumatic Stress Disorder; RBC: Red Blood Cell; RCT: Randomized Control Trial; SAD: Seasonal Affective Disorder; SAMe: S–adenosylmethionine; SSRI: Selective Serotonin Reuptake Inhibitor; TCM: Traditional Chinese Medicine; WHO: World Health Organization; WMH: World Mental Health

Introduction

Mental disorders cover a broad spectrum of conditions: psychological, environmental, social, genetic-based, and hormonal-based. There is no single definition that includes all the aspects and variations of mental disorders. The nearest operational definition, defined by the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-V), states: "A mental disorder is a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning" [1]. Mental disorders are characterized by varied permutations and combinations of perceptions, emotions, abnormal thoughts and behaviors, and aberrant interpersonal relationships and interactions. In 2008, the World Health Organization's (WHO) launched the Mental Health Gap Action Programme (mhGAP), which uses evidence-based aids and training modules to implement necessary actions to bridge the gaps. The activities are systematized by integrating mental health care into distinct levels of care. In 2013, the World Health Assembly endorsed the WHO's Mental Health Action Plan 2013–2020. The action plan comprised imperative functions of mental health care in achieving mental health care goals [2].

The WHO designed the World Mental Health (WMH) survey to assist countries worldwide in conducting epidemiological surveys [3]. An analysis of these country-specific surveys determines the prevalence of specific conditions and correlations between them. The diagnostic interview used by WMH is the same as the WHO's Composite International Diagnostic Interview (CIDI). This fully structured research interview template is devised so that an interviewer with only basic training and no clinical experience can conduct the consultation. Besides evaluating prevalence, the CIDI aids in assessing the severity of specific disorders [3].

Discussion

Principles of management

The management of psychological disorders is challenging. The chief obstacle in overseeing mental disorders is the misconception that a proper diagnosis is not required. Patients often have various needs, requiring a more personalized approach. Thus, a precise diagnosis that facilities developing a specific management protocol is vital [4].

Non-pharmacological and complementary therapies can be a valuable addition to conventional pharmacotherapy in treating specific psychological conditions or disorders. The application of non-pharmacological and complementary therapies has proven to be effective alone or in combination with conventional pharmacotherapy [5]. Two notable conventional pharmacotherapies are nutritional modifications and complementary therapies.

Nutritional intervention

A practical approach in treating mental disorders often involves nutritional support and dietary management. A competent evaluation of a patient's mental health condition should include a detailed assessment of dietary habits. Irrespective of the disorder's underlying

cause. Nuritional (dietary) counseling is vital in formulating a correlation between the food consumed and patient's mental state. It has been well established that eating patterns reveal a considerable amount of information about an individual's state of mind. Consumption of a Western diet is increasing among countries across the world. However, such a diet lacks certain vital nutrients required for adequate central nervous system functioning.

Optimum mental health requires food with a low–glycemic index, such as: whole grains, seafood, vegetables, and fruits. Clinicians recommend consuming less processed foods to maintain healthy cerebral functioning [7]. Low Dog (2010), Selhub (2015), Adan., *et al.* (2019) and other researchers have suggested that a negative correlation exists between a diet rich in refined sugar and decreased brain function [7-9]. The high refined sugar diet has also been found to worsen depression and mood disorder [8].

There are specific physiological correlations between eating habits and psychological status and state. The neurotransmitter serotonin enhances and uplifts mood. Ninety-five percent of the body's total serotonin is secreted from the gastrointestinal tract, lined with millions of neurons. Thus, any alteration in the diet tends to alter the mood. Furthermore, the gastrointestinal tract is influenced by probiotics ("good bacteria"). These bacteria create a barrier in the intestinal lining, offering protection against toxins and harmful bacteria. Probiotics protect against inflammation and aid in the absorption of nutrients from the consumed food. Also, probiotics activate several neural pathways between the gut and the brain [8].

Dietary modifications

Various studies have suggested that dietary and lifestyle modifications play a significant role in preventing and treating mental health disorders. However, according to Adan., *et al.* (2019), dietary-intervention studies have had limitations, such as heterogeneity in population characteristics, lack of biomarkers to stratify within and across populations, small sample sizes, lack of blinding of participants during treatment allocation, or lack of blinded observers [9].

A proper balance of lipids, amino acids, vitamins, and minerals is necessary to maintain the brain's standard structure and healthy function. This required balance implies that diet as a modifiable factor can positively impact mental health, cognition, and mood. Hence, for non-vegetarians and non-vegans, diets should be modified to include fish, vegetables, fruits, and whole grains in adequate quantities.

Adan., *et al.* (2019) further noted that vitamin B12 significantly correlates with brain function. A deficiency of vitamin B12 results in depression, poor memory, lethargy, and fatigue. Also, vitamin B12 deficiency was linked with psychosis and manic episodes. Vitamin B9 is required in developing and maintaining a healthy brain and promoting brain function [9].

Jacka., *et al.* (2018) referred to one of the first dietary-intervention studies ever conducted, comprising a 12-week Mediterranean diet. The diet was characterized by a reduction of anxiety and improvement in mood in patients suffering from major depression [10]. Also, more recent randomized control trials (RCTs) by Parletta., *et al.* (2017) and Sánchez-Villegas., *et al.* (2019) established the Mediterranean–style diet's beneficial effect on mental well–being in treating depression, considering the HELFIMED [11] and PREDI_DEP trials [12].

Nutritional supplements

Conventional medical treatment for mental disorders may be augmented with nutraceuticals. Complementary, alternative, and integrative medicine (CAIM) is popular in Europe and has been utilized for over thirty years. The general medical opinion and response to nutritional supplement-aided therapy varies from practitioner to practitioner, and depending on the type of nutritional supplement [13]. Nutritional supplements known to have benefits in mental health disorders are folic acid, SAMe (S-adenosylmethionine), Omega-3 fatty acids, and melatonin.

Folic acid

Folic acid is a synthetic form of folate. Green leafy vegetables, citrus fruits, beans, and cereals are rich in folic acid. It is a fundamental nutrient for protein and nucleic acid synthesis (DNA and RNA).

Folates (especially methyl folate) are important for the brain and nervous system in children and adults. A lack of folic acid can impair SAMe levels in the brain [13,18].

Folates are critical in the development and maintenance of the nervous system in all stages of life. There is increasing evidence regarding the effect on the aging brain, particularly in cognitive and mood function. A long-established relationship exists between folate deficiency in neurological, psychogeriatric, epileptic, and psychiatric patients with dementia and depression—as demonstrated by reduced folate levels in red blood cells (RBCs), cerebrospinal fluid (CSF), and serum, and elevated plasma levels of homocysteine. This relationship has been further reinforced by neuropathological, neurochemical, and neuropsychological studies [14–17].

Folic acid has been shown to lessen or eliminate the symptoms of depression. The beneficial effects are more prominent in females than males. Folic acid is available as a vitamin supplement and as prescription medication [13,18].

SAMe (S–adenosylmethionine)

SAMe is a naturally-occurring endogenous, intracellular, amino acid metabolite and enzyme co-substrate. In 1952, Giulio Cantoni, the late Italian scientist and former director of the National Institutes of Health biochemistry, discovered SAMe [19,20]. The primary mechanism of action of SAMe is monoamine production. Also, SAMe is involved in creatine synthesis and may exert antidepressant effects through the bioenergetic pathway. SAMe levels in the CSF are reported to be low in neuropsychiatric diseases, such as depressive disorders, Parkinson's disease, and Alzheimer's disease. Oral or parenteral administration of SAMe is known to cross the blood-brain barrier. Its functions are similar to tricyclic antidepressants. Sharma., *et al.* (2017) found that SAMe enhances the effects of selective serotonin reuptake inhibitors (SSRIs), like venlafaxine (Effexor). The use of SAMe as adjuvant therapy with pharmaceutical antidepressants is mostly safe. However, it has been known to cause serotonin syndrome in patients with neuropsychiatric conditions. In the United States, SAMe is a popular over-the-counter dietary supplement [13,21].

Omega–3 fatty acids

Fish oil and specific marine algae contain an abundance of Omega–3 fatty acids. Mischoulon (2018) noted that the prevalence of depressive disorders is much lower in communities consuming fish as a part of their diet. Omega–3 fatty acids—eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)—are believed to be of benefit to people with mood disorders [22], as supported by specific research. Omega–3 fatty acids have also proved to be beneficial in treating bipolar disorders [13,22].

Melatonin

Melatonin, a peptide hormone synthesized in the retina and secreted by the pineal gland, is considered a dietary supplement in the United States. This substance is known to regulate the circadian rhythm. According to Sun., *et al.* (2016), melatonin is used to induce relaxation and a state of quiet wakefulness [23]. Moreover, melatonin improves the pattern and quality of sleep. Its application has successfully treated lipopolysaccharide-induced anxiety, suggesting potential applications in the spectrum of anxiety disorders. The biosynthesis and secretion of melatonin is chiefly regulated by norepinephrine. Melatonin levels reflect norepinephrine activity in the brain, establishing a connection to depressive disorders.

Sun., *et al*. (2016) also noted that melatonin had success in schizophrenia treatment (since 1920) [23]. In certain applications and under the supervion of a licensed health care provider, melatonin supplements can be used as an alternative to conventional drugs. It can be purchased over the counter [13,23]. However, in diagnosed mental health conditions and in combination with pharmaceuticals, its use should be prescribed and monitored by a qualified healthcare professional.

Complementary therapies

Conventional treatment of mental disorders includes pharmacotherapy and psychotherapy. However, a lack of satisfactory results and an inordinant amount of undesirable side effects are often reported. Subsequently, the prevalence of treatment-cessation has been increasing steadily. Thus, the search for alternative therapies has emerged.

Specific alternative therapies have been used in a wide range of disorders and conditions, such as anxiety, headache, insomnia, and depression. According to Asher., *et al*. (2017), patients who underwent complementary and alternative therapies frequently reported reduced stress, improved emotional health, and better coping [24]. Numerous people are seeking and using complementary therapy for conditions like anxiety and depression. About 50% of people with self-reported anxiety or depression use complementary therapy as a treatment option [24].

With the increasing popularity and self-prescribing of complementary therapies across the spectrum of mental disorders, clinicians must further understand the pros plus cons and indications and contraindications of these particular therapies. Clinicians must also know the associated risks when combining these therapies with prescribed pharmaceutical medications [24]. Some popular and lesser-known complementary therapies are identified and described below.

Acupuncture

Acupuncture has its origin in ancient China. Traditional Chinese Medicine (TCM) describes acupuncture as a system that harmonizes energy flow in the body. Positive effects of acupuncture have been observed in depression and anxiety, although more evidence is needed to establish these observations fully. Samuels., *et al*. (2009) reported that acupuncture increases several central nervous system hormones, such as adrenocorticotropic hormone (ACTH), beta-endorphins, serotonin, and noradrenaline [25]. Moreover, people have reported a sense of overall well-being and deep relaxation from acupuncture treatment. Improved blood circulation has also been noted. Acupuncture is often combined with massage therapy [25,26].

Aromatherapy

The origin of aromatherapy dates to ancient Egypt. Over time, much of the world has embraced and acknowledged the benefits of essential oils. Apart from ancient Egypt, India and China have explored the properties of essential oils since ancient times [27].

Aromatherapy has been applied in treating specific psychological conditions, such as depression, anxiety, cognitive disorders, insomnia, and stress-related disorders. The effects of an odor (aroma) can be instantaneous, having direct and indirect positive psychological effects. It has been posited that the mere thought of a smell may have a similar effect as the odor.

In experimental animal, molecular, and cellular models, there is increasing evidence that topically-applied or inhaled essential oils reach the bloodstream, manifesting quantifiable psychological outcomes. According to Heuberger (2001), these results suggest that the oils' effects are pharmacological [28]. While the precise mode of action and chemical nature of essential oils have not been thoroughly explored, there has been a small number of pharmacological-related trials. Application of the essential oils is done chiefly through inhalation or rubbing on the skin [29].

Eye movement desensitization and reprocessing (EMDR)

Eye movement desensitization and reprocessing (EMDR) is a psychotherapeutic procedure, the objective of which is to assuage psychological stress. EMDR has been applied in post-traumatic stress disorder (PTSD) and psychological trauma (as undesirable events in the patient's life). The application of this procedure requires the active participation of the patient and interaction with the therapist. Gotter

(2017) described how the patient's stressful and traumatic experiences are addressed in brief segments—as the therapist supervises and directs the patient's eye movements [30].

Cuijpers., *et al.* (2020) reported EMDR as beneficial in treating phobia and anxiety disorders. However, the researchers indicated that more comprehensive studies and analyses are required to confirm their preliminary data [31].

Herbal medicine

Herbal medicines have a wide range of therapeutic applications in humans. Psychological disorders that have been frequently treated with herbal medicines include the following:

- Attention-deficit hyperactivity disorder (ADHD)
- Anxiety
- Bipolar disorder
- Depression
- Obsessive-compulsive disorder (OCD)
- Phobias (specific types)
- Psychotic disorders
- Seasonal affective disorder (SAD)
- Somatoform disorder (somatic symptom disorder).

The following are several herbs that have been used in anxiety and depression with beneficial results:

- Anxiety: *Piper methysticum*, *Passiflora spp*. and *Galphimia glauca*
- Depression: *Hypericum perforatum* and *Crocus sativus* [32,33].

Montes., *et al.* (2015) noted that Ginkgo biloba extract, derived from Ginkgo biloba tree leaves, is reputed to help cognitive decline. The effects of this extract are similar to cholinesterase inhibitors. Although the extract's benefits in monotherapy are slight, its effects combined with cholinesterase are significant [34]. Ginkgo biloba is also known to relieve symptoms of antidepressant-induced sexual dysfunction. However, it is not recommended for vascular dementia [13,34].

Some herbal teas are ingested for their purported hypnotic and sedative effects. Besides valerian, other herbal teas contain hops, lemon balm, chamomile, and passionflower—although various other herbs are also used for distinct medicinal purposes [35].

Homeopathy

Hock and Juckel (2018) disclosed that despite the controversies and ideological conflicts surrounding homeopathy, it had been widely used to treat psychological disorders [36]. Nevertheless, there is a need for more evidence-based data (as opposed to anecdotal evidence)

supporting the application of homeopathy for specific psychological disorders. Homeopathy treatment options and efficacy are deemed dependent on the therapist's knowledge and experience because homeopathic medicines are typically customized for individual patients [36,37].

In a review by Davidson., *et al.* (2011), studies showed that homeopathy showed some beneficial effect on functional somatic syndromes; however, its effectiveness for anxiety and depression were ambiguous [38].

In a prospective, non-comparative, open-label, observational study, Oberai., *et al.* (2016) assessed the efficacy of homeopathic medicines in the management of schizophrenic patients, measured by the Brief Psychiatric Rating Scale (BPRS). The results revealed a positive-outcome correlation [39].

Phototherapy

As a non-pharmacological intervention, phototherapy or light-therapy (also known as bright light therapy or BLT) is utilized in treating specific psychological disorders, most notably seasonal affective disorder (SAD). As corroborated by Boivin and Shechter (2014), SAD is a depressive disorder following seasonal periodicity [40].

Parry and Maurer (2003) described the application of phototherapy as follows: The patient sits or works near a device known as the "light therapy box" [41]. This box emits light rays, resembling natural, outdoor light. Light therapy is posited to interact with and influence neurochemicals, affecting mood and sleep. This unique therapy has been utilized in addressing depression and sleep disorders [40,41]. Bright white light has been tried on patients with manic-depressive disorder with seasonal mood variation [41]; however, further studies are needed.

Other clinical applications of light therapy have included OCD, bulimia, premenstrual syndrome, panic disorder, non-seasonal major depression disorder, sleep disorders, jet–lag symptoms, and dementia.

Massage therapy

Massage therapy elicits enhanced relaxation, amplifies rest or sleep more deeply, relieves symptoms of certain chronic diseases, and increases overall happiness. Rapaport., *et al.* (2018) stated that massage therapy is a popular and frequently utilized mode of addressing various psychological disorders [42]. Garner., *et al.* (2008) specified that augmented results are achieved when massage therapy is combined with conventional medical treatments [43].

Massage therapy has certain immediate stress-relieving properties that are useful in inhibiting specific psychological conditions from worsening. Garner., *et al.* (2008) further noted that massage therapy has proved beneficial for hospitalized psychiatric patients [43]. Thus, massage therapy has promising applications in alleviating depression and anxiety [44,45].

Meditation

A search of the online WordSense dictionary describes the term "meditation" (derived from the Latin word meditor) to mean think, reflect upon, consider, contemplate, or ponder. Dakwar and Levin (2008) noted that meditation has emerged as an effective practice, not only spiritually but also in various clinical settings, especially in psychiatric disorders [46]. Clinically-applied meditation has been investigated extensively in psychiatric settings. Nevertheless, there remains a need for further evidence-based studies for meditation to join the medical mainstream treatment for psychological disorders.

Dakwar and Levin (2008) further noted that meditation helps to treat depression, anxiety, addiction, and overcome other self–harming behaviors. The researchers clarified that meditation has various styles, each of which may elicit distinct clinical outcomes. Distinctive styles of meditation induce varied transient and prolonged effects on the brain [46].

Hafid and Kerna (2019) described meditation as a subset of mindfulness-based intervention (MBI). They went on to state that meditation has demonstrated beneficial effects in major depression disorder (MDD), anorexia nervosa (AN), PTSD, and other psychological conditions [47–49]. In their article, entitled *Mindfulness-Based Intervention (MBI) in Major Depressive Disorder (MDD),* the researchers concluded: Mindfulness practices have been used in various forms throughout human history to gain self-awareness and a more profound sense of connection to the human "spirit", a creator, or creative force. Western medicine is beginning to seek a scientific rationale for applying MBI as adjunctive therapy for specific conditions. MBI may have an advantage in addressing MDD by lessening symptoms and avoiding or minimizing drugs with adverse or addictive effects. Currently, there is no standard medical protocol or guidelines for employing MBI in medical conditions. This makes its universal and prescription-based application challenging. However, it may be advantageous to refer a patient to a holistic practitioner, center for body wellness, meditation specialist, yoga instructor, or prayer community if deemed beneficial [47].

Spiritual healing

A relationship between spirituality and mental health is explored and known through experience. However, it is challenging to establish an evidence-based association (between spirituality and improved mental health) by such a subjective and personal experience. Nevertheless, researchers from various parts of the world are pursuing such a connection. Psycho–spirituality is of increasing interest to researchers. Spiritual healing focuses on six principles or pillars to achieve better mental health. These pillars are self–awareness, stress-coping mechanisms, interpersonal relationships, sense of faith, self–confidence, and hope for a higher purpose. Spiritual well–being helps mentally-ill or mentally-affected patients cope with negative thoughts [50,51].

Hafid and Kerna (2019) also specified that prayer is a subset of mindfulness-based intervention (MBI), the practice of prayer eliciting positive effects on various psychological conditions and disorders [47–49].

Therapy pets

Animal-assisted therapy (AAT) is an alternative therapy engaging pet animals. Dogs are frequently chosen for AAT; larger animals, such as horses, are seldom used. AAT has shown favorable results in chronic psychiatric patients predisposed to violence. According to Nurenberg., *et al.* (2015), AAT enhances positivity and socializing skills in mentally-afflicted patients. However, the researchers stipulated, realistic outcome goals should be considered [52].

Yoga

Yoga, like acupuncture and meditation, has ancient historical roots. Yoga continues to increase in popularity due to its adoption by populations of North American and Europe.

Yoga aids in modulating exaggerated stress responses. Moreover, it has demonstrated beneficial effects in treating anxiety and depression. Primarily, yoga acts by reducing perceived stress and anxiety. It has been empirically shown to lower heart rate and blood pressure while facilitating respiration by reducing the respiration rate in anxious people with hyperactivity conditions.

A University of Utah study discovered that participants who practiced yoga demonstrated an improved stress response to fibromyalgia pain.

Yoga should always be practiced under an expert's supervision. Although yoga is considered a safe modality, professional supervision is advised as some yoga postures and procedures may be unsuitable or harmful to specific persons or patients [53]. Yoga is also considered a subset of MBI [47–49].

Conclusion

Pharmacological agents have been of significant help to innumerable patients suffering from various psychological conditions and disorders. However, for various reasons, including epigenetics, not all patients with the same condition respond equally or favorably to specific medicines. Also, most of the medicines prescribed for psychological disorders have mild to severe side effects, resulting in discontinuing treatment. Ever-increasing medical research is discovering many factors (hormonal, genetic, environmental, social, and nutritional) affecting a person's mental state or triggering or aggravating a psychological condition.

In some instances, improper diet is a root cause or contributing factor in specific mental disorders. Thus, nutritional intervention—in the form of dietary modifications and nutritional supplementation—can significantly benefit a segment of this affected population. Also, complementary therapies—such as time-tested acupuncture, meditation, and yoga, aromatherapy, eye movement desensitization and reprocessing, herbal medicine, homeopathy, phototherapy, massage therapy, spiritual healing, prayer, and therapy pets—can be invaluable aids and treatments for patients with specific psychological disorders, alone as monotherapy or as an efficacious adjunct to conventional medical treatment as multimodal therapy; albeit further evidence-based research regarding these non-pharmacological interventions is needed to not only determine their effectiveness (or lack thereof) but also in establishing systematic regimes and prescribed protocols for their use.

Conflict of Interest Statement

The authors declare that this paper was written in the absence of any commercial or financial relationship that could be construed as a potential conflict of interest.

Supplementary Note

A recent global surge in interest and self-experimentation is underway regarding the use of medicinal plants and concoctions of ancient, indigenous, and original peoples of Earth. Psilocybin from distinct fungi ($C_{12}H1_7N_2O_4P$), mescaline from peyote (C11H17NO3), DMT from iowaska or ayahuasca (C12H16N2), THC from cannabis ($C_{21}H_{30}O_2$), and others are being scientifically researched and self-prescribed by people for their purported healing and spiritual effects. Also, as governments worldwide relax their "war on drugs" policy, a renaissance of sorts regarding investigations of the beneficial applications of LSD ($C_{20}H_{25}N_3O$) in specific psychological conditions is showing promise. Although these subtances are natural or naturally-derived compounds of potential significance in treating specific psychological disorders, it is well beyond the scope of this review to include them; such a topic is deemed extensive and suitable as a distinct topic for research and publication.

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