Major Depressive Disorder: Pathways to Lasting Recovery

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Depression, for the purposes of this article, refers to the mental disorder known as major depressive disorder. This kind of depression is a recognized clinical condition and is becoming a common condition in developed countries, where up to 20% of the population is affected by this disorder at some stage of their lives. Patients are usually assessed and managed as outpatients, and only admitted to an inpatient mental health unit if they are considered to pose a risk to themselves or others.

The three most commonly indicated treatments for depression are psychotherapy, psychiatric medication, and (in severe cases) electroconvulsive therapy. Psychiatric medication are the primary therapy for major depression. Psychotherapy is the treatment of choice in those under the age of 18, with medication offered only in conjunction with the former and generally not as a first line agent. Furthermore, pathology in the parents may need to be looked for and addressed in parallel.

Psychotherapy

There are a number of different psychotherapies for depression, which may be provided to individuals or groups. Psychotherapy can be delivered by a variety of mental health professionals, including psychotherapists, psychiatrists, psychologists, clinical social workers, counselors, and psychiatric nurses. With more complex and chronic forms of depression the most effective treatment is often considered to be a combination of medication and psychotherapy. As mentioned earlier, psychotherapy is the treatment of choice in people under 18.

The most studied form of psychotherapy for depression is cognitive behavioral therapy (CBT), thought to work by teaching clients to learn a set of cognitive and behavioral skills, which they can employ on their own. Earlier research suggested that cognitive-behavioral therapy was not as effective as antidepressant medication in the treatment of depression; however, more recent research suggests that it can perform as well as antidepressants in treating patients with moderate to severe depression.

Behavior therapy for depression is sometimes referred to as behavioral activation Studies exist showing behavioral activation to be superior to CBT. In addition, behavioral activation appears to take less time and lead to longer lasting change.

For the treatment of adolescent depression, CBT performed no better than placebo, and significantly worse than the antidepressant fluoxetine. Combining fluoxetine with CBT appeared to bring no additional benefit or, at the most, only marginal benefit.

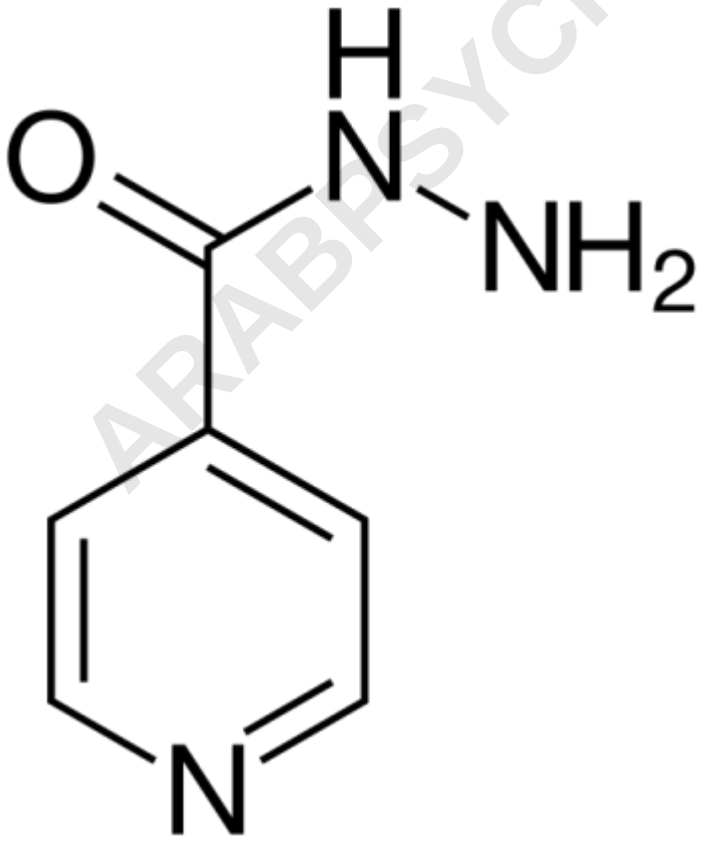
A review of four studies on the effectiveness of mindfulness-based cognitive therapy (MBCT), a recently developed class-based program designed to prevent relapse, suggests that MBCT may have an additive effect when provided with the usual care in patients who have had three or more

depressive episodes, although the usual care did not include antidepressant treatment or any psychotherapy, and the improvement observed may have reflected non-specific or placebo effects.

Interpersonal psychotherapy focuses on the social and interpersonal triggers that may cause depression. There is evidence that it is an effective treatment for depression. Here, the therapy takes a structured course with a set number of weekly sessions (often 12) as in the case of CBT, however the focus is on relationships with others. Therapy can be used to help a person develop or improve interpersonal skills in order to allow him or her to communicate more effectively and reduce stress.

Psychoanalysis, a school of thought founded by Sigmund Freud that emphasizes the resolution of unconscious mental conflicts, is used by its practitioners to treat clients presenting with major depression. A more widely practiced technique, called psychodynamic psychotherapy, is loosely based on psychoanalysis and has an additional social and interpersonal focus. In a meta-analysis of three controlled trials, psychodynamic psychotherapy was found to be as effective as medication for mild to moderate depression.

Medication



Isoniazid, the first compound called antidepressant

To find the most effective pharmaceutical treatment, the dosages of medications must often be adjusted, different combinations of antidepressants tried, or antidepressants changed. Response rates to the first agent administered may be as low as 50%. It may take anywhere from three to eight weeks after the start of medication before its therapeutic effects can be fully discovered. Patients are generally advised not to stop taking an antidepressant suddenly and to continue its use for at least four months to prevent the chance of recurrence. People with chronic depression need to take the medication for the rest of their lives.

Selective serotonin reuptake inhibitors (SSRIs), such as sertraline (Zoloft, Lustral), escitalopram (Lexapro, Cipralex), fluoxetine (Prozac), paroxetine (Seroxat), and citalopram (Cipralex), are the primary medications considered, due to their relatively mild side effects and broad effect on the symptoms of depression and anxiety, as well as reduced risk in overdose, compared to their older tricyclic alternatives. Those who do not respond to the first SSRI tried can be switched to another; such a switch results in improvement in almost 50% of cases. Another popular option is to switch to the atypical antidepressant bupropion (Wellbutrin) or to add bupropion to the existing therapy; this strategy is possibly more effective. It is not uncommon for SSRIs to cause or worsen insomnia; the sedating antidepressant mirtazapine (Zispin, Remeron) can be used in such cases. Cognitive Behavioral Therapy for Insomnia can also help to alleviate the insomnia without additional medication. Venlafaxine (Effexor) may be moderately more effective than SSRIs; however, it is not recommended as a first-line treatment because of the higher rate of side effects, and its use is specifically discouraged in children and adolescents. Fluoxetine is the only antidepressant recommended for people under the age of 18. Evidence of effectiveness of SSRIs in those with depression complicated by dementia is lacking.

Tricyclic antidepressants have more side effects than SSRIs and are usually reserved for the treatment of inpatients, for whom the tricyclic antidepressant amitriptyline, in particular, appears to be more effective. A different class of antidepressants, the monoamine oxidase inhibitors, have historically been plagued by questionable efficacy and life-threatening adverse effects. They are still used only rarely, although newer agents of this class (RIMA), with a better side effect profile, have been developed.

Augmentation

Physicians often add a medication with a different mode of action to bolster the effect of an antidepressant in cases of treatment resistance; a 2002 large community study of 244,859 depressed Veterans Administration patients found that 22% had received a second agent, most commonly a second antidepressant. Lithium has been used to augment antidepressant therapy in

those who have failed to respond to antidepressants alone. Furthermore, lithium dramatically decreases the suicide risk in recurrent depression. Addition of atypical antipsychotics when the patient has not responded to an antidepressant is also known to increase the effectiveness of antidepressant drugs, albeit at the cost of more frequent side effects. There is some evidence for the addition of a thyroid hormone, triiodothyronine, in patients with normal thyroid function.

Efficacy of medication and psychotherapy

Antidepressants are statistically superior to placebo but their overall effect is low-to-moderate. In that respect they often did not exceed the National Institute for Health and Clinical Excellence criteria for a "clinically significant" effect. In particular, the effect size was very small for moderate depression but increased with severity reaching "clinical significance" for very severe depression. These results were consistent with the earlier clinical studies in which only patients with severe depression benefited from either psychotherapy or treatment with an antidepressant, imipramine, more than from the placebo treatment. Despite obtaining similar results, the authors argued about their interpretation. One author concluded that there "seems little evidence to support the prescription of antidepressant medication to any but the most severely depressed patients, unless alternative treatments have failed to provide benefit." The other author agreed that "antidepressant 'glass' is far from full" but disagreed "that it is completely empty". He pointed out that the first-line alternative to medication is psychotherapy, which does not have superior efficacy.

Antidepressants in general are as effective as psychotherapy for major depression, and this conclusion holds true for both severe and mild forms of MDD. In contrast, medication gives better results for dysthymia. The subgroup of SSRIs may be slightly more efficacious than psychotherapy. On the other hand, significantly more patients drop off from the antidepressant treatment than from psychotherapy, likely because of the side effects of antidepressants. Successful psychotherapy appears to prevent the recurrence of depression even after it has been terminated or replaced by occasional "booster" sessions. The same degree of prevention can be achieved by continuing antidepressant treatment.

Two studies suggest that the combination of psychotherapy and medication is the most effective way to treat depression in adolescents. Both TADS (Treatment of Adolescents with Depression Study) and TORDIA (Treatment of Resistant Depression in Adolescents) showed very similar results. TADS resulted in 71% of their teen subjects having a "much" or "very much" improvement in mood over the 60.6% with medication alone and the 43.2% with CBT alone. Similarly, TORDIA showed a 54.8% improvement with CBT and drugs verses a 40.5% with drug therapy alone.

Other medications

Numerous alternative treatments have been used to treat depression, whether medications or

other kinds of intervention.

Opiates

Various opiates were commonly used as antidepressants until the mid-1950s, when they fell out of favor with medical orthodoxy due to their addictive nature, tolerance buildup issues and their side-effect profile. Today the use of opioids in treating depression is a large taboo in the medical field due to associations with drug abuse; hence, research has proceeded at a very slow rate. A small clinical trial conducted at Harvard Medical School in 1995, demonstrated that a majority of treatment-refractory, unipolar, non-psychotic, major depression patients could be successfully treated with an opioid medication called Buprenorphine, which is a partial μ-agonist and potent κ antagonist. The exact mechanism of its action in depression is not known, as κ (kappa) antagonists are antidepressants in their own right.

In 2006, The Journal of European Neuropsychopharmacology published a follow-up study to the 1995 Harvard experiment, with results consistent with the original Harvard findings. Eleven severely depressed patients, refractory to all the conventional depression treatments, were given small doses of buprenorphine. Most of these patients found the buprenorphine to be of significant benefit. The researchers theorized that "Possibly, the response to opiates describes a special subtype of depressive disorders e.g. corresponding to a dysregulation of the endogenous opioid system and not of the monaminergic system."

Another scientific paper was published in the American Journal of Psychiatry in 1999, detailing how researchers found Oxycodone/Oxymorphone to help 5 out of 6 "incurable" refractory severe depression patients.

Buprenorphine was found to be effective as a treatment for depression in patients that had responded to neither antidepressants nor electroconvulsive therapy.

Other treatments

Gamma-Hydroxybutyric acid (GHB) has been used by some as an antidepressant. Claude Rifat, a French biologist, conducted some early research into GHB's antidepressant potential. Rifat noted that GHB did not cause the emotional blunting effects caused by conventional antidepressants, but instead intensified pleasurable and rewarding feelings in the user while powerfully suppressing depression. However, GHB has now been outlawed, except for use as a prescription treatment for narcolepsy.
NMDA antagonists such as ketamine and dextromethorphan have recently gained some interest in this field as their apparent ability to reverse opioid tolerance, and can give fast-acting dramatic effects. However, their acute psychoactive effects have been a problem.

Memantine, a moderate affinity NMDA antagonist, has been used to avoid tolerance buildup, and has seen use in opioid tolerance reversal. Proglumide is used to induce acute reversal of tolerance prior to this maintenance strategy; it does not work by itself in the long term, due to tolerance to its effects.
Marijuana - The use of marijuana, in moderation, has shown to be of benefit in severely depressed patients. Many people that do not respond well to the use of traditional antidepressants, or who do not like the many unpleasant side effects, prove to do rather well using this plant in moderation.

Treatment using medical devices or equipment

A variety of medical devices are in use or under consideration for treatment of depression including devices which offer electroconvulsive therapy, vagus nerve stimulation, repetitive transcranial magnetic stimulation, and cranial electrotherapy stimulation. Use of such devices in the United States requires approval by the U.S. Food and Drug Administration (FDA) after field trials. In 2010 a FDA advisory panel considered the question of how such field trials should be managed. Factors considered were whether drugs had been effective, how many different drugs had been tried, and what tolerance for suicides should be in field trials.

Electroconvulsive therapy

Electroconvulsive therapy (ECT) is a treatment where seizures are electrically induced in anesthetized patients for therapeutic effect. ECT is most often used as a "last resort" (from the perspective of hospital psychiatrists) for severe major depression which has not responded to trials of antidepressant or, less often, psychotherapy or supportive interventions. It has a quicker effect than antidepressant therapy, and thus may be the treatment of choice in emergencies such as catatonic depression where the patient has ceased oral intake of fluid or nutrients, or where there is severe suicidality. Some evidence suggests it is the most effective treatment for depression in the short-term and one study, without a comparison group or assessment of additional treatments given, suggested that in the minority who remit it may be related to improved self-rated quality of life in both the short-term (which was correlated with the degree of amnesia) and after six months. However, the first systematic documentation of the effectiveness of ECT in community practice in the 65 years of its use found much lower remission rates than in prior research, and most of those relapsed. ECT on its own does not usually have a sustained benefit, as virtually all those who remit end up relapsing within 6 months following a course, even when given a placebo. The relapse rate in the first six months may be reduced by the use of psychatric medications or further ECT (though the latter is not recommended by some authorities, such as NICE), but remains high. Short-term memory loss, disorientation, headache and other adverse effects are common, as are long-term memory and other neurocognitive deficits, which may persist. The American Psychiatric Association and the National Institute for Health and Clinical Excellence have concluded that the evidence they had suggested that the procedure, when administered according to their standards

and without complications, does not cause brain damage in adults.

Deep brain stimulation

Deep brain stimulation (DBS) is a neurosurgical treatment that has been used especially to treat movement disorders such as Parkinson's disease. It requires a neurosurgeon to drill a hole in the skull and insert an electrode into the patient's tissue. Then, a device located in the chest transmits a signal to the implanted electrode through wires located underneath the scalp.

Clinical trials are focused on the use of DBS for epilepsy and depression but the FDA has not approved this use. It requires brain surgery and it is therefore the most invasive form of brain stimulation in the treatment of depression.

Other conventional methods of treatment

St. John's Wort (Hypericum perforatum)

St John's wort extract is used extensively in Europe to treat mild and moderate depression. It is a prescription antidepressant in several European countries but is classified as an herbal supplement and sold over the counter in the US. Opinions on its efficacy for major depression differ. A systematic meta-analysis of 37 trials conducted by Cochrane Collaboration indicated statistically significant weak-to-moderate effect as compared to placebo. The same meta-analysis found that St John's wort efficacy for major depression is not different from prescription antidepressants. NCCAM and other NIH-affiliated organizations hold that St John's wort has minimal or no effects beyond placebo in the treatment of major depression, based primarily on one study with negative outcome conducted by NCCAM.

SAMe

S-Adenosyl methionine (SAMe) is available as a prescription antidepressant in Europe and an over-the-counter dietary supplement in the US. Fairly strong evidence from 16 clinical trials suggests it to be more effective than placebo and as effective as standard antidepressant medication for the treatment of major depression.

Repetitive transcranial magnetic stimulation

Repetitive transcranial magnetic stimulation (rTMS) use in treatment-resistant depression is supported by multiple controlled studies, and it has been approved for this indication in Europe, Canada and Australia, and now in the US. A 2008 meta-analysis based on 32 trials found a robust effect of this method on depression, and it appeared similarly effective for both uncomplicated depression and depression that is resistant to medication. However, it was inferior to ECT in a

side-by-side randomized trial.

Vagus nerve stimulation

Vagus nerve stimulation (VNS) uses an implanted electrode and generator to deliver electrical pulses to the vagus nerve, one of the primary nerves emanating from the brain. It is an approved therapy for treatment-resistant depression and is sometimes used as an adjunct to existing antidepressant treatment. The support for this method comes mainly from open-label trials, which indicate that several months may be required to see a benefit. The only large double-blind trial conducted lasted only 10 weeks and yielded inconclusive results; VNS failed to show superiority over a sham treatment on the primary efficacy outcome, but the results were more favorable for the secondary outcome.

Alternative treatments

Bright light therapy

Bright light therapy is sometimes used to treat depression, especially in its seasonal form.

A meta-analysis of bright light therapy commissioned by the American Psychiatric Association found it to be more effective than placebo--usually dim light--for both seasonal affective disorder and for nonseasonal depression, with effect sizes similar to those for conventional antidepressants. For non-seasonal depression, adding light therapy to the standard antidepressant treatment was not effective. A meta-analysis of light therapy for non-seasonal depression conducted by Cochrane Collaboration, studied a different set of trials, where light was used mostly as an addition to medication or sleep deprivation. A moderate statistically significant effect of light therapy was found; however, it disappeared if a different statistical technique was used. Both analyses noted poor quality of most studies and their small size, and urged caution in the interpretation of their results. The short 1-2 weeks duration of most trials makes it unclear whether the effect of light therapy could be sustained in the longer term.

Acupuncture

A 2004 Cochrane Review concluded that based on the low quality of the evidence base there is "insufficient evidence to determine whether acupuncture is effective in the management of depression." Clinical trials have shown the effect of acupuncture to be comparable with amitriptyline; in addition, specifically electroacupuncture has been found to be more effective in depressive patients with decreased excretion of 3-methyl-4-hydroxy-phenylglycol (the principal metabolite of the central neurotransmitter norepinephrine), while amitriptyline is more effective for those with inhibition in the dexamethasone suppression test. Acupuncture has also been proven to prompt the body to produce greater levels of endorphins.

Exercise

"A 2001 study by the Duke University in North Carolina found that exercise is a more effective treatment for depression than antidepressants, with fewer relapses and a higher recovery rate." An earlier Duke study likewise found patients who completed 30 minutes of brisk exercise at least three times a week had a significantly lower incidence of relapse; "Only 8 percent of patients in the exercise group had their depression return, while 38 percent of the drug-only group and 31 percent of the exercise-plus-drug group relapsed."

Vigorous exercise has significant physiological effects which help to reduce stress and counter depression. Also, by improving fitness and self-esteem, exercise may enable the sufferer to cope better with demanding events and situations and so reduce the likelihood of depressing failure.

Exercise in natural surroundings such as the countryside or parks is especially recommended

because contact with nature and green spaces has a positive effect upon mental health. Gardening is an ideal activity of this sort, providing mental, practical and social benefits. The benefits of such exercise in improving mood and self-esteem are experienced primarily in the first five minutes and are strongest in young people.

Deep brain stimulation

The support for the use of deep brain stimulation in treatment-resistant depression comes from a handful of case studies, and this treatment is still in a very early investigational stage. A March 2010 systematic review found that "about half the patients did show dramatic improvement" and that adverse events were "generally trivial" given the younger psychiatric patient population than with movements disorders.

Cold Water (Shower, Bath) Therapy

Taking cold showers according to a study led by Nikolai Shevchuk may be an effective way to help treat depression. Shevchuck believes the biological explanation as to why cold showers help with depression involves the stimulation of locus ceruleus or blue spot which is the brain's primary source of norepinephrine. Also affected are beta-endorphin levels.

Tryptophan

Although tryptophan and 5-hydroxytryptophan may be more effective than placebo in alleviating depression according to the Cochrane Collaboration meta-analysis, only 2 out of 108 trials were of sufficient quality to be included in this analysis. The reviewers concluded that they were unable to recommend the drugs for use in major depression.

Tryptophan is the precursor of the neurotransmitter serotonin. It has shown some promise as an antidepressant alone and as an augmenter of antidepressant drugs. Foods rich in tryptophan include chickpeas, milk products, eggs, pork, beef, chicken, fish, oats, dates, mangoes, seeds, nuts and spirulina.

Low fructose diet

Fructose malabsorption is poor absorption of fructose and fructans in the intestines. Subjects with this condition show a significantly higher score in the Beck Depression Inventory than normal fructose absorbers. Some minerals and amino acids (among others, tryptophan) are also poorly absorbed. Because of the inadequate supply of precursor molecules, some hormones and neurotransmitters (among others, serotonin) may not be synthesized in sufficient quantities.

Treatment is a diet that is low in fructose, fructans and sorbitol. Depression scores were reduced by 65.2% after four weeks on this diet.

Omega-3 fatty acids

Omega-3 fatty acids have been studied in clinical trials for major depression primarily as an adjunctive to antidepressant therapy. A systematic review of 18 such trials found little evidence of a beneficial effect.

DHEA

Dehydroepiandrosterone (DHEA), a metabolic precursor for several hormones including estrogen and testosterone, has been promoted as a remedy for many ailments. Sold in the 1970s and 1980s as a weight-loss aid, it was subsequently banned for over-the-counter sale, but then unbanned, and is currently available as a supplement in the US. It has been shown to be more effective than placebo in two small double-blind trials: in one as an adjunct to antidepressant treatment, and as monotherapy in another. However, a larger placebo-controlled randomized clinical trial reported in the New England Journal of Medicine in 2006 found that DHEA supplementation in elderly men and women had no beneficial effects on quality of life.

Chromium picolinate

Chromium picolinate was found to be equivalent to placebo for atypical depression overall but possibly efficacious in the sub-group of patients with severe carbohydrate craving.

Zinc

Zinc supplementation was found in a small study to augment the effect of antidepressants.

Serum levels of zinc are found to be low in depressed patients and supplementation with zinc has been demonstrated to be of benefit. Most of the zinc found in the human body is located in the brain, mainly in the hippocampus and cerebral cortex area. Lack of zinc influences zinc homeostasis and leads to a change in learning, behavior, mood swings, mental function and epilepsy. Zinc is found in beans, meat, nuts, oysters, whole grains and seeds.

Lithium

In the late 1800s there was a vogue for consumption of lithia water which contained a significant quantity of lithium. Some claimed that this cured depression, but its effectiveness is not clear.

In May 2009, the BBC reported that a Japanese study of lithium in drinking water in the Japan prefecture of Oita, which has a population of more than one million, revealed that the suicide rate was significantly lower in those areas with the highest levels of lithium.

Lithium is also used as the standard drug to treat different mood disorders including depression. See Lithium pharmacology.

Magnesium

Magnesium deficiency is common and may cause depression. Supplementation or changes in diet may therefore be helpful. Foodstuffs rich in magnesium include whole grains, beans and seeds, halibut and spinach.

Cranial electrotherapy stimulation

Cranial electrotherapy stimulation (CES, electrosleep) devices currently on the market have been granted marketing authorization by the FDA based on the legacy waiver, that is because a sufficiently similar device had been marketed before 1976, when the new regulations requiring controlled testing were introduced. The FDA considers them to be the class III devices--"devices for which insufficient information exists to ... provide reasonable assurance of safety and effectiveness" The effects of CES on depression were inconclusive or negative in multiple double-blind studies of psychiatric patients. In one of them, four out of six clinically depressed patients dropped out of the study because of the massive worsening of depressive symptoms, with two of them becoming actively suicidal. One of the authors of the latter study cautioned that CES "should not be used as a treatment of choice" for the patients with the primary diagnosis of depression, "and should be used with caution if this diagnosis is suspected." Nevertheless, the CES practitioners continue to employ it as a treatment of choice for depression.

Eleuthero

Eleutherococcus senticosus is used in Traditional Chinese Medicine and is now used in the West as Eleuthero or Siberian Ginseng. The plant is an adaptogen or tonic and has been shown to have significant antidepressant effects in rats.

Saffron

Saffron, the flowers of Crocus sativus have been shown to have antidepressant properties. Two of the active ingredients are crocin and safranal.

Inositol (Vitamin B8)

Inositol or Vitamin B8 has been tested as a treatment for depression in four RCTs, but there is insufficient evidence of therapeutic benefit.

Kanna

Kanna (Sceletium tortuosum) is a succulent herb commonly found in South Africa. In doses as low as 50 mg, users have reported improvements in mood, decreased anxiety, relaxation and a sense of well-being. It contains about 1-1.5% alkaloids and those which are believed to be psychoactive include mesembrine, mesembrenone, mesembrenol and tortuosamine.

There is about 0.3% mesembrine in the leaves and 0.86% in the stems of the plant. This has been shown to be a potent serotonin reuptake inhibitor.

Flower remedies

Bach flower remedies and Australian bush flower essences are prepared from various flowers. Current clinical evidence does not support any hypothesized action or efficacy beyond placebo effects.

Meditation

Mindfulness meditation has been shown to be of medical benefit in a number of ways, including lowering blood pressure and stress levels. The most helpful and gentle form of meditation for a clinically depressed person may be the repetition--silently or aloud--of a mantra.

Neurofeedback

Neurofeedback is a form of biofeedback therapy in which brain activity is monitored using an EEG. The output is presented to the patient who is then able to see any variation in the brain waves associated with depression and may then develop some ability to reduce them, so improving their mood. The resulting direct control of mental state is thought to be similar to that achieved by the mental exercises of yoga.

Reiki

Reiki is a form of energy medicine which originated in 1922 by Mikao Usui. In the UK, it has been recommended as a complementary medicine for pain management, anxiety and depression by NHS Trusts and Princess of Wales's Foundation of Integrative Medicine, but there is no evidence

of its efficacy in the treatment of any disorder.

Religion

Numerous studies and clinical trials have looked at the relationship between religion and depression. These have looked at the matter from Buddhist, Christian and Muslim perspectives. These indicate that religious faith helps to prevent the onset of depression and assists recovery if depression should still occur.

Sleep

Depression is commonly associated with poor sleep (difficulty going to sleep, early waking, and general lassitude during the day). The interaction of the two results in each condition worsening. Good sleep hygiene is therefore important to help break this vicious circle. This would include measures such as regular bed times, avoidance of stimulants such as caffeine and management of disturbances such as sleep apnea. Ironically, sleep deprivation (such as wake therapy) is a temporary treatment for depression.

Chi Kung

The traditional Chinese exercise of Chi Kung and related martial arts such as Tai Chi can help to prevent and relieve depression.

Music Therapy

Studies have demonstrated that music can bring about different moods, conditioned by different emotional states. Music has the property of facilitating self-expression and in this way giving vent to disturbing emotional upheavals and dissipating them. Music has been proven that it can reach the sub-cortical centers of the brain and thereby helps to integrate the personality that is being disrupted by unhealthy emotions. Researchers have shown that music therapy is effective in patients. It has been shown that clinically depressed patients who were made to listen to soft, dissonant-free, melodic music gradually became more emotional and rhythmical.

Green/White Tea

A frequent consumption of green tea was associated with a lower prevalence of depressive symptoms in a Japanese study. Researchers conducted a cross-sectional study in 1,058 community-dwelling elderly Japanese individuals 70 years of age. The prevalence of mild and severe depressive symptoms was 34.1 percent and 20.2 percent, respectively. After adjustment for

confounding factors, the odds ratios for mild and severe depressive symptoms when higher green tea consumption was compared with green tea consumption of one cup/day were: two to three cups green tea/day and four cups green tea/day. Similar relations were also observed in the case of severe depressive symptoms.