



Are You Blue? What Do You Do?

A Case Study on Treatment Options for Depression

by

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Introduction

This exercise is designed to introduce you to treatment alternatives for depression. This case is not designed to teach you how to make decisions about whether or not someone is depressed nor will it provide you with enough education to suggest treatments for someone who is depressed. It is designed to show you how complicated the process of choosing a treatment is so that you will see why it is necessary to seek professional help for appropriate diagnosis and treatment.

Most professors report that they learn best by teaching others. This class will give you a chance to do this by using the “jigsaw” method.

We have four goals:

- To learn the advantages, disadvantages, and costs of five treatments for depression.
- To better understand the difficulty and probabilistic nature of treatment decisions in order to understand why it is necessary to see a professional to get help with diagnostic and treatment decisions.
- To introduce the concept and potential value of alternative treatments or natural remedies for the treatment of depression.
- To stimulate curiosity about the resources for treating depression on your campus (i.e., counseling center, health center, etc.).

The class will be divided into Home Groups of five people by numbering off. Each person in the group will be responsible for becoming an “expert” on one of the five treatment alternatives we are going to discuss for depression. These experts will then return to their Home Groups and teach the material they have learned.

- *Home Groups (Phase 1)*—We will divide the class up into Home Groups of five, pass out the case study, and give you time to read the case and discuss the basic issues. Each of the Home Groups should arrange seats so you can easily see and hear each team member. After you have finished reading the case, your team needs to select one representative to attend each of the five Expert Groups.
- *Expert Groups*—At tables A, B, C, D, and E information sheets will be posted so team experts can take notes on the advantages, disadvantages, and costs of a main treatment of depression using the [note-taking sheet](#) developed for that purpose. It is here in your Expert Groups that you will use each other to make sure you understand the important aspects of the information you are to teach. You should actually rehearse what you are going to say back in your Home Groups.

- *Home Groups (Phase 2)*—Each representative will go back to their Home Groups and teach teammates what they have learned about their treatment method. Next the team should summarize what they have learned about all of the treatment alternatives. Finally, your group should pretend to be Peggy and indicate which type of professional and treatment you would prefer to check out first and why.
- *Full Class*—We will have each Home Group pick one spokesperson to present its treatment summary, decision, and rationale to the rest of the class on the overheads we will give each group.

Approximate Time Frame:

- 5 minutes to read and discuss the case study in *Home Groups (Phase 1)*.
- 15 minutes in *Expert Groups*.
- 15 minutes back in *Home Groups (Phase 2)*.
- 15 minutes *Full Class* presentation and discussion of group findings.

Evaluation:

Today—Groups will be evaluated on the degree to which each member participates in the discussion as well as on the quality and justification of your treatment decisions.

Long term—Questions about the advantages, disadvantages, and costs of each type of treatment for depression will be on the next test as well as on the final exam.



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“You know Peggy, don’t you? She’s been so down lately,” Brenda said as she, Christy, Bob, Jim, and Jean dropped into chairs at a table in the Student Union. “She hasn’t been at volleyball lately! We’ve missed her killer serve! I just saw her. She was mumbling and had tears in her eyes. She said she had gotten a couple of D’s on her mid-terms and was worried about losing her scholarship. Seems she hasn’t been able to concentrate on classes the past two or three weeks. But what really upset me was she said she doesn’t enjoy much of anything any more, not even volleyball!”

“Did she complain of feeling tired? Listless?” asked Bob.

“Yes, she did,” replied Brenda. “She said she’s exhausted but can’t seem to get a good night’s sleep. Today she woke up at 4:00 AM and couldn’t get back to sleep. She told me she felt so depressed she could hardly get up. I asked her if anything was going on that might be related to this and she told me her ex-husband is calling almost every night and often threatening suicide.”

“That’s real tough,” Jean sighed.

“Yeah, I know,” continued Brenda. “She’s got two years to finish her degree before the divorce settlement and health insurance expires. I know that she’s also worried about her parents’ health problems.”

“I saw Peggy the other day,” Christy interjected. “She was telling me how overwhelmed she feels trying to taking care of herself and her son. She said she can manage to get his dinner on the table—just barely—but doesn’t have the energy or the appetite to make anything for herself. She said she thought she may have frightened Joey the other day. He came back in from playing after dinner and found her sitting in the dark. That shook her up. She said it reminded her of when her mother would stay in her room for hours on end.”

“Well,” said Brenda, “just now when I saw her she told me she had gone to her family physician, who told her she should see someone about diagnosis and treatment for depression. Her doctor suggested there might be resources on campus that would be more affordable than his referral sources. She told me she felt worthless as a mom and a student, and then ran into the ladies room in tears! I checked to make sure she was OK and then came here. I don’t know what she can do. I’m so worried about her! I know I would feel better if I knew what kinds of treatments are available for depression. Do you guys know?”

“We can’t diagnose her or recommend treatments, but we could help you pull together information on the kinds of treatments available and the kinds of professionals Peggy might get help from,” offered Bob. “My RA told me that the campus health center can diagnose and prescribe medication for

depression. Someone on our dorm floor had recently gotten help through the health center. This was for an antidepressant medication, which the health center can write prescriptions for. I'd be willing to follow-up on that and try to get some information on tricyclic medications ([Expert Group A](#))."

"Come to think of it," said Brenda, "we just learned about Prozac and the other selective serotonin reuptake inhibitors ([Expert Group B](#)) in my physiological psychology class. I have a friend who saw a psychiatrist at the campus health center and was given a prescription for that. I can go check my notes on these meds. Christy, you're in that class, didn't we hear about something called MAO inhibitors ([Expert Group C](#))? Could you look up info on those?"

"Sure," said Christy. "I can do that."

"Some people feel hesitant about taking medication," said Jim. "I know I do! And drugs usually have side effects that make you feel worse, don't they? I'll check out something more natural, like St. John's wort ([Expert Group D](#)). They can hardly keep it in stock down at Herbal Health."

"Some people are against taking anything," said Jean. "I think you can get a diagnosis at the campus counseling center and they offer cognitive psychotherapy ([Expert Group E](#)). I've heard that it's as effective as medication and has almost no side effects. I'll check it out."

"Great!" said Brenda. "I know I would feel so much better if I knew the pros and cons of each of these and who one can turn to for help. Let's research these and compare our notes on them back here later today, OK?"

Handout for Expert Group A

TRICYCLIC ANTIDEPRESSANT MEDICATIONS

[Examples: Amitriptyline (Rx Elavil), Imipramine (Rx Tofranil), and Doxepin (Rx Sinequan)]

Pharmacologic Mechanism of Action

The mechanism of action of amitriptyline hydrochloride is not definitely known. However, we know that it does not act primarily by stimulation of the central nervous system. The clinical effect is hypothesized as being due to potentiation of adrenergic synapses by blocking uptake of norepinephrine and serotonin at nerve endings.

The time to onset of effect (i.e., relief of depression) varies from person to person, but typically takes an average of 1-3 weeks (and sometimes as long as 4-6 weeks) before mood improvement is noticed.

Indications

For the relief of symptoms of depression. Endogenous depression (i.e., meets DMS-IV criteria for melancholic features) is more likely to be alleviated than other depressive states. One to three weeks of treatment may be needed before optimal therapeutic effects are evident.

Dosage and Administration

Depression—Lower dosages are recommended for elderly patients and adolescents. Dosage should be initiated at a low level and increased gradually, noting carefully the clinical response and any evidence of intolerance. Following remission, maintenance medication may be required for a longer period of time at the lowest dose that will maintain remission.

Usual Adult Oral Dose:

Hospitalized patients—Initially, 100 mg/day in divided doses gradually increased to 200 mg/day as required. If no response after two weeks, increase to 250-300 mg/day.

Outpatients—Initially, 75 mg/day increased to 150 mg/day. Dosages over 200 mg/day are not recommended. Maintenance, 50-150 mg/day.

Side Effects

Common—Dry mouth; dizziness, lightheadedness or fainting may occur; headache; increased appetite and cravings; constipation.

Less common—Anxiety, restlessness, agitation; insomnia and nightmares; irregular heartbeat; confusional states (especially in the elderly) with hallucinations, disorientation, delusions.

Symptoms of acute overdose—Confusion, convulsions, enlarged pupils, irregular heartbeat, vomiting.

Precautions:

- Patients should be warned that amitriptyline hydrochloride might enhance the CNS depressant effects of alcohol.
- Patients taking amitriptyline hydrochloride should avoid excessive exposure to sunlight, since there have been reports of photosensitization (severe sunburn).
- Patients may feel drowsy. If this occurs, patients should not drive, use machines or do anything that could be dangerous if the patient is not alert.

Cost

Tablets: \$3.75 for generic, for a 3-month supply of 100 75mg tablets (\$98.17 for Elavil). The cost can be lower depending on the individual's medical insurance. Available by prescription only, so one must have an appointment with a physician or nurse practitioner for diagnosis and treatment. (Appointments may be available for a minimum cost at the college health center.)

Resource: Much of the material on this sheet is quoted directly from <http://www.rxlist.com/cgi/generic/amitrip.htm> and is used with permission.

Handout for Expert Group B

SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIs)

[Examples: Fluoxetine (Rx Prozac), Sertraline (Rx Zoloft), and Paroxetine (Rx Paxil)]

Pharmacologic Mechanism of Action

The SSRIs are a well-known group of prescription drugs, which presumably enhance the activity of the neurotransmitter serotonin by interfering with its reabsorption back into axon endings that have released it. There is evidence that depression, in many people, may be associated with low levels of serotonin activity. By making this chemical more available, SSRIs may "correct" this deficiency.

Studies at clinically relevant doses in humans have demonstrated that fluoxetine blocks the uptake of serotonin into platelets. Studies in animals also suggest that fluoxetine is a much more potent uptake inhibitor of serotonin than of norepinephrine.

SSRIs are no more effective than the older antidepressants (TCAs), but have less annoying side effects as well as fewer risks in most individuals. Patients are more willing to take the medication and physicians have fewer concerns about overdose or potentially dangerous cardiovascular side effects. There has been only a single recorded case of an SSRI overdose being fatal, which is an important consideration when treating depression. Patients also like the once-a-day dosing.

Indications

Depression: Fluoxetine HCl is indicated for the treatment of depression (see web site listed below for information on other disorders that it is indicated for). The efficacy of fluoxetine HCl was established in 5- and 6-week trials with depressed outpatients whose diagnoses corresponded most closely to the DSM-III category of major depressive disorder.

The antidepressant action of fluoxetine HCl in hospitalized depressed patients has not been adequately studied.

The efficacy of fluoxetine HCl in maintaining an antidepressant response for up to 38 weeks following 12 weeks of open-label acute treatment (50 weeks total) was demonstrated in a placebo-controlled trial. The usefulness of the drug in patients receiving fluoxetine HCl for extended periods should be reevaluated periodically.

Dosage and Administration

Initial Treatment: In controlled trials used to support the efficacy of fluoxetine, patients were administered morning doses ranging from 20 mg to 80 mg/day. Studies comparing fluoxetine 20, 40, and 60 mg/day to placebo indicate that 20 mg/day is sufficient to obtain a satisfactory antidepressant response in most cases. Consequently, a dose of 20 mg/day, administered in the morning, is recommended as the initial dose.

A dose increase may be considered after several weeks if no clinical improvement is observed.

Doses above 20 mg/day may be administered on a once a day (morning) or b.i.d. (i.e., twice a day) schedule and should not exceed a maximum dose of 80 mg/day.

As with other antidepressants, the full antidepressant effect may be delayed until 4 weeks of treatment or longer.

Side Effects

SSRIs can produce stomach upset, headache, nervousness, dizziness, and insomnia (much like having had too much caffeine) until you get used to the drug. Sexual dysfunction may occur in a smaller number of individuals. SSRIs should not be used with other medications or herbal remedies without your doctor's approval because some cause dangerous interactions. This is especially true for other depression remedies.

Cost

As relatively new drugs, SSRIs are not cheap (no generics available yet). Besides the cost of visiting your caregiver, a 3-month supply of the 20-mg dose of Prozac averages around \$200. The cost may be lower depending on the individual's medical insurance. This medication may be prescribed after professional diagnosis at the college health center.

Resource: Much of the material on this sheet is quoted directly from <http://www.rxlist.com/cgi/generic/fluoxetine.htm> and is used with permission.

Handout for Expert Group C

MONOAMINE OXIDASE (MAO) INHIBITORS

[Examples: Isocarboxazid (Rx Marplan), Phenezine (Rx Nardil), and Tranylcypromine (Rx Parnate)]

Pharmacologic Mechanism of Action

Isocarboxazid is a non-selective hydrazine monoamine oxidase (MAO) inhibitor. In vivo and in vitro studies demonstrated inhibition of MAO in the brain, heart, and liver. The mechanism by which MAO inhibitors act as antidepressants is not fully understood, but is thought to involve the elevation of brain levels of biogenic amines.

Indications

Marplan is indicated for the treatment of depression. Because of its potentially serious side effects, Marplan is not an antidepressant of first choice in the treatment of newly diagnosed depressed patients.

The efficacy of Marplan in the treatment of depression was established in 6-week controlled trials of depressed outpatients. These patients had symptoms that corresponded to the DSM-IV category of major depressive disorder; however, they often also had signs and symptoms of anxiety (anxious mood, panic, and or phobic symptoms).

The antidepressant effectiveness of Marplan in hospitalized depressed patients, or in delusionally depressed patients, has not been adequately studied.

Dosage and Administration

For maximum therapeutic effect, the dosage of Marplan must be individually adjusted on the basis of careful observation of the patient. Dosage should be started with one tablet (10 mg) twice daily. If tolerated, dosage may be increased by increments of one tablet (10 mg) every 2 to 4 days to achieve a dosage of four tablets daily (40 mg) by the end of the first week of treatment. Dosage can then be increased by increments of up to 20 mg/week, if needed and tolerated, to a maximum recommended dosage of 60 mg/day. After maximum clinical response is achieved, an attempt should be made to reduce the dosage slowly over a period of several weeks without jeopardizing the therapeutic response.

Beneficial effects may not be seen in some patients for 3 to 6 weeks. If no response is obtained by then, continued administration is unlikely to help.

Side Effects

The commonly observed adverse events that occurred in Marplan patients with an incidence of 5% or greater and at least twice the incidence in placebo patients were nausea, dry mouth, and dizziness.

Marplan can cause serious side effects. It is not recommended as initial therapy but should be reserved for patients who have not responded satisfactorily to other antidepressants.

The most important reaction associated with MAO inhibitors is the occurrence of hypertensive crises, which have sometimes been fatal, resulting from the co-administration of MAOIs and certain drugs and foods. Hypertensive crises have sometimes occurred during Marplan therapy after ingestion of foods with a high tyramine content. In particular, patients should be instructed not to take foods such as cheese (particularly strong or aged varieties), sour cream, Chianti wine, sherry, beer (including non-alcoholic beer), liqueurs, pickled herring, anchovies, caviar, liver, canned figs, raisins, bananas or avocados (particularly if overripe), chocolate, soy sauce, sauerkraut, broad beans (fava beans), yeast extracts, yogurt, meat extracts, meat prepared with tenderizers, or dry sausage.

Cost

Marplan 10 mg 120 tablets cost \$69.48. The cost can be lower depending on the individual's medical insurance. It is available by prescription only, so one must have an appointment with a physician or nurse practitioner for diagnosis and treatment. (Appointments may be available for a minimum cost at the college health center.)

Resource: Much of the material on this sheet is quoted directly from http://www.rxlist.com/cgi/generic/isocarbo_cp.htm and is used with permission.

Handout for Expert Group D

A NATURAL REMEDY FOR DEPRESSION

St. John's Wort

St. John's wort is the most commonly used and most thoroughly researched natural product for the treatment of depression. St. John's wort is a bushy shrub native to Europe but now found throughout the world. The flowering tops are used for medicinal purposes, and use has been documented for thousands of years (Kuhn 1999). The active ingredients in St. John's wort include 10 or more chemical compounds. The most likely active ingredient in affecting depression is *Hypericum perforatum*.

A total of 1,592 patients have been studied in 25 double-blind controlled studies (Murray and Pizzomo 1998). In the studies, St. John's wort extract produced improvements in many symptoms of depression and has been found to be as effective in the treatment of depression as antidepressants (Philipp, Kohnen, and Hiller 1999).

The main advantage of St. John's wort was found to be not a difference in treatment outcome but rather an advantage in terms of reduced incidence and severity of side effects, costs, and increased patient satisfaction.

It is not clear how *Hypericum perforatum* works in its ability to treat some kinds of depression but there are several theories being investigated. Evidence indicates that the inhibition of norepinephrine and serotonin reuptake may underlie the antidepressant activity.

Dosage

St. John's wort is available as a tea, powder, oil, liquid, capsule, and tablet. Dosage: 300 mg of St. John's Wort (9.3% hypericum) three times a day. It should be taken with food to prevent stomach upset.

It takes four to six weeks to be effective.

Side Effects

The major side effect with St. John's wort is mild stomach irritation. It is considered a safe *herb* and incidents of adverse reactions are rare; however, it is not recommended for allergic or photosensitive individuals. *Safety for use in pregnancy has not been established, therefore do not use if pregnant.* Drug interactions include: intensifies action of caffeine and cough and cold remedies; should not be used with other antidepressants; decreases effectiveness of birth control pills; does NOT increase alcohol effects; and does NOT combine well with other sleep aids.

Regulation:

The Food and Drug Administration does not classify herbal medications as drugs. St. John's wort is considered a "nutritional supplement," and as such is not subject to quality control regulations as are standard pharmaceuticals. Products are therefore largely unregulated, and therefore label claims of hypericum content may or may not be reliable (Gaster and Holroyd 2000).

Cost

The retail cost of St. John's wort varies depending upon the vendor. It is readily available in drug stores, groceries, and health food stores. The prices are generally lower than the cost of standard antidepressant therapy. A typical cost for 90 300-mg tablets is \$8.10. This is approximately a one-month's supply. No medical appointment is needed, so careful diagnosis by a professional is not required—this can result in taking a substance that may be inappropriate for the problems the person is experiencing.

Resources: Much of the material on this sheet is quoted directly from <http://www.rxlist.com/cgi/alt/stjohn.htm> and is used with permission. A good second source is <http://www.hypericum.com>.

Handout for Expert Group E

COGNITIVE BEHAVIORAL THERAPY

Psychological Mechanism of Action

Cognitive behavior therapy (CBT) is a structured form of psychotherapy in which the client is taught to recognize and change thought processes that cause or contribute to the deepening of symptoms of depression. For example, in this case, when Peggy felt worthless as a mother and a student her symptoms of depression intensified (she ran off to the restroom in tears). In cognitive therapy she would be taught to recognize this as "all or nothing thinking" or an "overgeneralization." She would be encouraged in therapy to challenge this distortion with more realistic thoughts like, "Just because I'm having problems coping at this time, doesn't mean I'm 'totally worthless.' In fact I am able to help my son get food and I am attending classes and doing some homework." Most patients experience some lifting of the intensity of their depression when they are able to do this type of challenging. This often leads to being able to cope more effectively, which can lift the depression even further. Clients are also taught skills for dealing with things like poor concentration and procrastination that also help relieve dysphoric feelings.

CBT was developed and studied by Aaron Beck and his group of therapist-researchers at the University of Pennsylvania. It was compared with interpersonal psychotherapy (IPT) and imipramine (the main tricyclic antidepressant drug in use at the time) in a major study conducted by the National Institute of Mental Health in 1977.

Indications

CBT was found to be as effective as imipramine and IPT in the treatment of depression. All three treatments were equivalent in the degree of success and for the most part superior to the placebo control group. Imipramine was somewhat faster in reducing symptoms, but by the end of the 16 weeks of treatments, the three groups were equivalent.

On average it may take 3-7 weeks or more for the person to gain enough symptom relief to make a positive difference with CBT.

Some analyses of the data showed that the drug was more effective with severely depressed individuals. Several later studies have disputed this finding. Some studies have shown that patients receiving CBT have been less likely to relapse though there is not clear agreement on this finding. A few studies have shown that cognitive therapy helps make standard antidepressants more effective (probably by reducing the drop-out rate in the antidepressant groups) but most of these studies have failed to show an advantage for combined treatment.

Side Effects

Though there are no obvious side effects with CBT, there are some risks and difficulties. First one needs to be in therapy from 16 to 20 weeks. Finding an hour or more a week and locating a therapist in reasonable driving distance also can be complicating factors. Some research has shown that compatibility with the therapist is a factor in treatment success. It may take some trial and error to find the right therapist and if the therapy is disrupted the client may experience this as a significant "loss" and thus have to deal with a deepened depression.

Cost

Sometimes, especially in the beginning, the person needs to go for two therapy sessions a week. Since most therapists now charge between \$90 and \$120 per session, the cost can be a concern. Over a one-month period, the cost can be between \$360 and \$480. Some health insurance programs cover costs for therapy but few of them cover the full cost and almost none allow an unlimited number of visits. College and university counseling centers often offers diagnosis and this type of therapy free for a limited number of sessions if it is deemed appropriate.

Resource: <http://www.apa.org/journals/anton.html>

NOTE-TAKING SHEET

NAME: _____

NOTES FROM EXPERT GROUP ON _____ TREATMENT

Remember to practice what you are going to say back in your Home Group. Your fellow experts can help make sure you are being accurate.

Terms I Don't Understand (Need to ask Instructor or Teaching Assistant to clarify):

Advantages:

Disadvantages:

How sure are we about how this treatment works?

Costs:

Time to onset of effect:

What kind of a professional does she need to see to get this treatment?

Where on campus do you think a person could see this kind of professional?