

MEASURING PERCEPTIONS OF HEALTH EDUCATION MEDIUMS:
A VALIDATION STUDY

A DISSERTATION
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
IN THE GRADUATE SCHOOL OF
THE TEXAS WOMAN'S UNIVERSITY
COLLEGE OF HEALTH SCIENCES
DEPARTMENT OF HEALTH STUDIES

BY
CHRISTINE RIEDERER-TRAINOR

DENTON, TEXAS

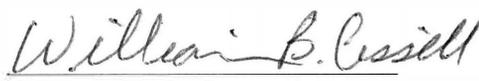
MAY 2000

TEXAS WOMAN'S UNIVERSITY

April 7, 2000

To the Associate Vice President for Research and Dean of the Graduate School:

I am submitting herewith a dissertation written by Christine Riederer-Trainor entitled "Measuring Perceptions of Health Education Mediums: A Validation Study." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirement for the degree of Doctor of Philosophy with a major in Health Education.


Major Professor

We have read this dissertation
and recommend its acceptance:







Chair, Department of Health Studies

Accepted:



Associate Vice President for Research
and Dean of the Graduate School

Copyright © Christine Riederer-Trainor, 2000
All rights reserved.

DEDICATION

This dissertation is dedicated to the millions of men and women of every age, race, ethnicity, and background who become weighed down by the burden of depression during their lifetime. May they realize that there is relief for them, that they are entitled to respectful and fair treatment by health care providers, and that there is no shame in having this brain disorder. May they have the courage, the knowledge, and the resources to obtain the help they need, and never give up until their quest to seek a better quality of life is rewarded.

ACKNOWLEDGEMENTS

I would first like to acknowledge the goodness and benevolence of God who has provided me with abundant blessings most especially in the form of a loving family and many good friends. I am extremely grateful for these riches which He has bestowed upon me.

I would also like to acknowledge my family. My husband, Randy, has always supported my efforts, demonstrated patience, and encouraged my search for more knowledge. My sister, Elizabeth, without whom this paper would never have been completed, selflessly and lovingly gave so much of her time, shared her experiences, imparted wisdom, and taught me how to persevere. She provided countless hours of editing, paid assiduous attention to detail, provided encouragement, advice, support, humor, and friendship. My sister, Barbara, contributed enormously by providing the finances to complete this project, and by believing I could bring the project to completion. My sister, Denise, assisted me by providing solace and her healing touch when I most needed it. My dear friend, Elisabeth, put me in touch with the right people at the right time, and gave me continual encouragement to pursue this goal.

My sincerest appreciation and thanks go to Dr. Jody A. C. Terrell and Dr. William B. Cissell, both of whom motivated me to persevere when I was unsure of the road ahead. Dr. Terrell was indefatigable in her willingness to help me through the process, spending endless hours encouraging, prodding, poking, and

nudging me along until I completed this effort. She has demonstrated the true meaning of friendship by mentoring me through this process. Dr. Terrell's kindness, compassion, and memorable humor will always be appreciated. Dr. Cissell's willingness to listen to questions and to help me find answers bridged the gap between an abstract idea and the concrete project brought to completion. His coaching and his ability to bring humor and perspective to situations was also very beneficial.

My thanks also go to committee members, Dr. Susan Ward and Dr. Eva Doyle, who helped shape this research project and render a firm foundation for writing the paper. I appreciate their guidance.

I would also like to acknowledge the staff members of the behavioral health company which I consulted. They taught me much, and spent innumerable hours assisting me in the development of this project.

ABSTRACT

COMPLETED RESEARCH IN HEALTH STUDIES

Texas Woman's University, Denton, Texas

Riederer-Trainor, C. Measuring Perceptions Of Health Education Mediums: A Validity Study, 2000, 157 pp. (W. Cissell)

Clinical depression, although often unrecognized and underdiagnosed, is a grave public health concern because it has the power to devastate millions of lives, yet remains cloaked in secrecy and shrouded in shame. Despite advances in the prevention and treatment of this disease, many of those who need help, hope and healing do not have the knowledge, or are unaware of the information, resources, and medical advances available to assist them in the recovery process.

There is a demonstrated need for research comparing the effectiveness, understanding, and usefulness of health communication methods as they relate to depressed individuals. A valid and reliable instrument for comparing depressed individuals' responses to the same health message delivered through different mediums is not available.

The purpose of this study was to create a health education message for individuals who had been identified as experiencing depressive symptoms, one that could be delivered through three different mediums, to adapt and validate an instrument measuring perceptions of the health message, and to develop and propose a process for message dissemination and survey implementation in a behavioral health setting.

A simple health education message which could be delivered through three mediums (written, pre-recorded telephone message, and website) was developed in conjunction with staff members of a behavioral health company. The message was designed for depressed clients, and to encourage their follow-up and compliance with recommended care plans.

Test-retest reliability and content validity of the survey instrument were established. A two-phase protocol for message delivery and telephone survey implementation was developed by the researcher for use in a typical behavioral health company that receives and assesses calls from members who present with symptoms of depression. A training program was outlined and proposed to the company.

Health educators have a unique challenge ahead in terms of addressing the needs of those who suffer from depression, and discovering new methods in which to reach this population. Future research should focus on finding and validating instruments which measure the effectiveness of health messages for depressed individuals; on creating meaningful health messages for depressed individuals; and working to provide more powerful health communication campaigns relating to depression.

TABLE OF CONTENTS

DEDICATION.....	iii
ACKNOWLEDGEMENTS.....	iv
ABSTRACT.....	vi
CHAPTER	
I. INTRODUCTION.....	1
Statement of the Problem.....	2
Purpose of the Study.....	2
Research Questions.....	3
Definition of Terms.....	3
Limitations of the Study.....	6
Delimitations of the Study.....	6
Assumptions.....	7
Background and Significance/Justification for Research.....	7
II. REVIEW OF LITERATURE.....	11
Depression.....	11
The Burden of Depression: Public Health Concern.....	15
Depression and Women.....	21
Depression Across the Lifespan.....	26
Ethnic and Cultural Disparities in Mental Illness.....	27
Barriers to Successful Treatment of Depression.....	32
Depression: Underrecognized and Underdiagnosed.....	32
Misunderstanding and Stigma.....	35

Compliance Issues	37
Health Belief Model	39
Health Communication	43
Components of Effective Health Communication	44
Media/Information Richness Model	50
Health Education Mediums	56
Written Materials	58
Audiotaped Health Messages	63
Internet Health Messages	66
No Significant Difference Phenomenon	71
Summary of Review of Literature	72
III. DESIGN AND METHODOLOGY	74
Population and Sample Selection	74
Procedures	74
Message Development	75
Instrumentation	80
Processes Identified for Message Dissemination and Survey Implementation	81
Treatment of Data	89
IV. FINDINGS	90
Test-Retest Reliability	90
Content Validity	93

Research Questions	100
Summary	101
IV. DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS	103
Discussion	103
Mental Illness	103
Health Communications	106
Conclusions	110
Recommendations	114
Summary	115
REFERENCES	116
APPENDICES	132
Appendix A – Purpose of the Study	132
Appendix B – Research Questions.	134
Appendix C – Message for Written Message Group.	136
Appendix D – Message for Telephone Message Group.	139
Appendix E – Message for Computer or Website Message Group.	142
Appendix F – Health Message Mailing Protocol Flow Chart	145
Appendix G – Telephone Survey Protocol Flow Chart	147
Appendix H – Intake Sheet and Survey Form.	149
Appendix I – Survey Questionnaire.	151

LIST OF TABLES

Table

1. Attributes of Effective Health Communication	47
2. Process Development Overview	82
3. Processes Identified for Message Dissemination and Survey Implementation	84
4. Proposed Depression Project Staff Training Session for Employees Of Behavioral Health Company	88
5. Pre- and Post-Test Spearman Correlations for Survey Items 1-5	91
6. Pre- and Post-Test Pearson Correlations for Sub-scale Items in Question Six	92
7. Strengths of the Health Message	98
8. Weaknesses of the Health Message	99

CHAPTER I

INTRODUCTION

Mental health problems are a growing concern for public health today, and depression is the one of the most common manifestations of this health issue. Depression is often unrecognized, underdiagnosed, and under-treated (Callahan et al., 1997; Frank, 1997; Gelenberg, 1999; Tylee, Gastpar, Lepine, & Mendlewicz, 1999). While depression can be successfully treated approximately 80% of the time, about two-thirds of those who are diagnosed go untreated for a variety of reasons. In addition to the lingering stigma attached to mental health problems, the difficulty in communicating effectively with those who need help and the challenge of persuading patients to comply with recommended treatment are cited as common reasons why depression often remains untreated the majority of time (Frank; 1997; Glascoe, Oberklaid, Dworkin, & Trimm, 1998; Parrott, Huff, & Kilgore, 1997).

There have been many advances in the effective communication of health information and the ability to inform and educate the public (Mundt & Driver, 1994; Simonds, 1995) about how to obtain treatment for a wide variety of ailments, including mental disorders. While use of the Internet for health information has exploded (Koski, 1997), and audio and telecommunications methodologies for patient and public health information and awareness have become increasingly common (Beare, 1989; Callahan & Hilty, 1998; Ritchie & Newby, 1919; Tatersall, Butow, Griffin, & Dunn, 1994), treatment for depression

remains a problem for a large segment of the population. Do certain health education mediums or specific modes of communication provide a way for persuading individuals to follow up with recommended treatment options for depression? Do individuals perceive conventional written messages in the same way as the same information when found on the Internet or heard over the telephone? What comparisons can be made between these three different mediums?

Statement of the Problem

There is a demonstrated need for more research comparing the effectiveness, understanding, and usefulness of health communication methods (Simonds, 1995; Tatersall et al., 1994) as they relate to depressed individuals. A valid and reliable instrument for comparing depressed individuals' responses to the same health message delivered through different mediums is not available.

Purpose of the Study

The purpose of this study was to create a simple health education message that could be delivered through three different mediums, to adapt and validate a survey questionnaire designed to compare responses to the message, and to develop a protocol for the message dissemination and survey implementation.

The health education message was developed so that it could be delivered through three different mediums: written, audio, and on a web site. Although the message content was essentially the same, it could be made available to individuals in one of three ways: a written message mailed to the home, a pre-

recorded audio telephone message, and an interactive web site. The purpose of the survey questionnaire was to compare responses to the health education message by measuring individuals' opinions about the strengths and weaknesses of the message, their perceptions of the intent, clarity and believability of the message, and to compare their satisfaction with the health message.

Research Questions

For the purposes of this study, three research questions will be addressed:

1. Is the survey questionnaire valid?
2. Is the survey questionnaire reliable?
3. What steps can be identified and what types of procedures would likely be necessary to develop a protocol for message dissemination and survey implementation?

Definition of Terms

For the purposes of this study, the following definitions will be used:

1. Cluster of Depressive Symptoms. This is a list of symptoms used by the behavioral health company to identify callers who exhibit symptoms of depression, including: suicidality; other forms of self-harm; low mood; loss of appetite; weight loss; sleep pattern changes; uncontrollable or frequent bouts of crying; lack of interest in work or other activities; refusal or inability to go to work.
2. Depression. Depression is described in A Diagnostic and Statistical Manual of Mental Disorders IV as an affective or mood disorder which lasts a

minimum of two weeks “during which there is either depressed mood or the loss of interest and pleasure in nearly all activities” (American Psychiatric Association, 1994, p. 320). In addition to depressed mood most of the day, or loss of interest or pleasure, four of the following symptoms are present in a person who is depressed: significant weight change; insomnia, hyposomnia or hypersomnia; psychomotor agitation or retardation; fatigue or loss of energy; feelings of worthlessness or excessive guilt; diminished ability to think or concentrate, or indecisiveness nearly every day; recurrent thoughts of death or recurrent suicide ideation (American Psychiatric Association, 1994, p. 327). Depression is a unipolar condition, meaning that there are no episodes of mania (excessive joy or excitement), and it is therefore distinguished from bipolar depression (also known as manic depression) which is characterized by alternating moods from deep depression to extreme mania. Depression may be severe, moderate, or mild.

3. Dysthymia. A chronic but less severe form of unipolar depression which occurs when a depressed mood lasts for at least two years, and when at least two symptoms of depression are present. When individuals with dysthymia experience a major depressive episode, they are referred to as having “double depression.”

4. Hypersomnia. Getting more sleep than is needed for good health; excessive sleep.

5. Hyposomnia. Getting too little sleep; inability to sleep enough hours for good health.

6. Major Depressive Disorder (MDD). Refers to the individual who experiences a severe depression, also known as a major depressive episode. MDD occurs when an individual has one or more major depressive episodes, which means they have experienced a depressed mood for at least two weeks, or they have experienced a loss of interest in daily activities, or pleasure, and they have had at least four additional symptoms of depression (see definition for “depression,” above) during the same two-week period (American Psychiatric Association, 1994, p. 327).

7. Mental Illness. Refers to all mental disorders that are diagnosable. “Mental disorders are health conditions that are characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress and/or impaired functioning” (Department of Health and Human Services, A Report of the Surgeon General on Mental Health, 2000, p. 5).”

8. Mood Disorder. Refers to conditions that have “a disturbance of mood as the predominant feature” (American Psychiatric Association, 1994, p. 317). All forms of depression are classified as “affective” or mood disorders.

9. Perception about the health message (perceived intent, clarity, and believability). Perception of the health education message will consist of identifying the perceived intent of the health education message, known as the main message; perceived clarity of the message; and perceived believability of the message.

10. Somatic Complaints. Physical complaints, or complaints referring to bodily sensations or discomfort.

11. Strengths and weaknesses of the health message. Strengths and weaknesses will consist of identifying positive and negatives attributes of the health message.

12. Satisfaction with the health message (likes and dislikes). Satisfaction with the health message will consist of identifying attitudes about the quality of the message in terms of meeting the readers' informational needs and preferences.

Limitations of the Study

This study was subject to the following limitations:

1. The message was developed for individuals who have been identified as experiencing a cluster of depressive symptoms, and who have been recommended for follow-up with a health care professional.

2. The instrument being adapted was generally accepted by health education professionals as a standard pretesting instrument for use with health education messages, but there were no data regarding its validity or reliability.

Delimitations of the Study

This study was subject to the following delimitations:

1. Only adult volunteers between the ages of 21 to 60 read the message and completed the survey questionnaire.

2. The protocol for message dissemination and survey implementation was developed in conjunction with the staff of a behavioral health company in the Midwest.

Assumptions

For the purposes of this study, the following assumptions were made:

1. That the health message being developed does address some of the concerns of adults experiencing a depressive cluster of symptoms, but who are not high risk or suicidal, as well as the concerns of professionals who routinely receive phone calls from individuals who present with these symptoms.

2. That the behavioral health company being consulted for health message development, and for message dissemination and survey implementation protocol, represents a typical Midwestern behavioral health company which serves members who present with a variety of mental health concerns, including those relating to clinical depression.

Background and Significance/Justification for Research

Clinical depression is an affective disorder in which mood changes occur in the affected person. It is “a biologically based brain disorder that affects one’s thoughts, feelings, behavior, and physical health” (National Alliance for the Mentally Ill, 1995, p.1). Depression is much more than the “blues.” It is a disabling disease that has extremely high mortality and morbidity rates. According to Blumenthal (1996), depression is “as disabling as heart disease and as physically painful as angina. Only heart disease was

associated with more hospital and sick days than mood disorders” (p. 1). Yet, experts maintain that clinical depression is vastly underreported. Depression is also a lethal disease due to the fact that 15% of depressed people successfully end their lives by suicide (Blumenthal, 1996, p. 1).

Mental depression has an extensive impact on our society. The economic costs of mental depression are enormous and are said to cost at least 43 billion dollars annually (National Mental Health Association, no date given; Nayer, 1998). Estimates of the prevalence of depression differ, with some sources claiming that more than 17 million Americans suffer from depressive illnesses each year (Leary, 1996; National Mental Health Association, no date given), and others stating that more than 11 million people in the United States are affected by depression (National Alliance for the Mentally Ill, 1995; Nayer, 1998). Yet only 27% (\$11.7 billion) of the 43 billion dollar annual cost of depression stems from the direct treatment of depression. Twenty-eight percent (\$12.1 billion) is due to lost productivity in the workplace, 28% (\$11.7 billion) is due to absenteeism, and the remaining 17% (\$7.5 billion) of this cost is a result of the mortality which is associated with depressive illnesses. Researchers admit that the true cost estimates of depression are far greater than their data can indicate because depression often is neither diagnosed nor treated. Because depression affects more than just the person suffering from the disease, other costs are associated with this condition. Depressive illnesses and the problems they cause also affect family members, friends, co-workers, and employers of those who are suffering

from depressive episodes (Dowling, 1993; U.S. Department of Health and Human Services, 2000).

There appear to be gender differences in the incidence and prevalence of affective disorders, especially depressive disorders. Researchers repeatedly confirm that the prevalence of women diagnosed with depressive disorders is far greater than that of men diagnosed with the same illnesses. Blehar and Oren (1997) assert that “the risk that a woman will experience an affective episode associated with her female gender may be surpassed only by the high risk associated with a family history of affective disorders” (p. 2).

Mental health experts estimate that with medication or counseling or both, 80 to 90% of those who are depressed can be successfully treated (Baird, 1992; Blumenthal, 1996; Mayo Health Quest Newsletter, 1998; National Institute of Mental Health, 1994). Yet, many do not seek any treatment for depression. It is estimated that only “about one-third of those with depression undergo treatment” (Leary, 1996; Nayer, 1998, p. 39). Factors contributing to this lack of treatment may include the social stigma of depression as well as the paucity of effective health education messages for those who experience depressive episodes. Researchers now recognize the devastating impact of this disease, and agree that “clearly, depression must be taken as seriously as any other chronic medical disease for impact on overall medical costs – and, of course, for the suffering, disability, work loss and impaired quality of life this disease brings in its wake” (Mind/Body Health Newsletter, 1996, p. 7).

This data paints a picture of a potentially devastating, chronic, and disabling disease that affects many Americans, yet little public attention has been given to the detection and treatment of this disorder. Little time is spent on mental health issues in many health education curricula, yet according to The National Institutes of Health, “unipolar depression is the leading cause of disability in the United States and worldwide” (1999, p. 1). The Surgeon General of the United States issued the first report on mental health in 1999 because preventing and treating mental disorders is critical to the future of public health in America. While there are numerous educational pamphlets, booklets, and Internet sites available to the general public which deal with the topic of depression, many are very detailed, somewhat confusing, and may not be well-suited to those who most suffer from depression. It is time to respond to this public health concern by focusing more health education efforts in this area, including the development, assessment, and evaluation of health education materials specifically targeting those individuals who experience depression.

CHAPTER II

REVIEW OF THE LITERATURE

Depression is a grave public health concern. Research related to the burden of depression is discussed in this literature review. Depression is defined, and the literature reviewed on the alarming prevalence of depression among females, depression across the lifespan, and ethnic and cultural disparities in the incidence of depression are summarized. An overview of the barriers to successful treatment of depression is also provided. A brief summary of the basic concepts of the Health Belief Model is included because the health message developed during this research study was written based on the key concepts and components of this model. An explanation of the importance of clear communication and a summary of the use of written materials, audiotaped materials, and Internet materials for health education are also included. This chapter is organized under the following major headings: (a) The Burden of Depression, (b) Barriers to Successful Treatment of Depression, (c) The Health Belief Model, (d) Health Communication Theory, (e) Health Education Mediums, and (f) The No Significant Difference Phenomenon.

Depression

Perhaps the most troubling aspect of depression is that the majority of those who suffer from depressive episodes do not seek help. Not only is this condition more common than many people realize, but many of those who could be helped through medication and/or psychological counseling never have that opportunity.

According to the National Foundation for Depressive Illness (1998), “few people are being properly treated or even diagnosed. The costs of this neglect, both in terms of human suffering and economic loss are staggering” (p. 3). The National Institute of Mental Health [NIMH] (1994) and the National Mental Health Association (no date given) estimate that approximately two-thirds of those who experience depression never pursue help. Encouraging people to follow up with a medical and psychological care plan is clearly needed if this condition is to be successfully treated so that more people will experience a decrease in the debilitating symptoms of this brain disorder.

Although depression can become serious and costly, it is highly treatable. Recognizing the symptoms of depression, therefore, becomes very important not just for physicians, but for family members and friends who may be able to encourage someone they love to seek professional help. Symptoms can range from feeling “down” to feeling suicidal, and much of the literature emphasizes the fact that depression is more than just “the blues” and lasts for more than two weeks at a time (Dowling, 1993; Katon et al., 1995; Leary, 1996; Lemonick, 1997).

The literature describes three basic types of depression: Major Depression (Major Depressive Disorder or MDD, also called unipolar depression); Dysthymia; and Bi-Polar, also known as manic-depression (Joiner, 1999). There are many other types and diagnoses for specific kinds of depression; however, for the purpose of this paper, it is important to understand what is meant by major

depression or MDD. I will also briefly describe dysthymia, which is a chronic, longer-lasting mood disorder that is similar to depression.

Depression, also known as major depressive disorder (MDD), is described in A Diagnostic and Statistical Manual of Mental Disorders IV as an affective or mood disorder lasting at least two weeks “during which there is either depressed mood or the loss of interest and pleasure in nearly all activities” (American Psychiatric Association, 1994, p. 320). The loss of pleasure is known as anhedonia and constitutes a loss of the capacity for pleasure or enjoyment of those activities that are normally pleasing for an individual. Depression may occur as a single or first episode and may be diagnosed as mild, moderate, or severe, with or without psychotic episodes, in remission or not, and be described as catatonic, melancholic, atypical, or having postpartum onset. Depression may be recurring for some, and may be classified as NOS, or “not otherwise specified.”

In addition to depressed mood most of the day or loss of interest or pleasure during the same two-week period, four of the following symptoms are present in a person who is depressed (American Psychiatric Association, 1994, p. 327):

1. Significant weight loss or weight gain or decrease or increase in daily appetite
2. Insomnia (difficulty sleeping) or hypersomnia (sleeping more than usual)
3. Psychomotor agitation or retardation (slowing down) nearly every day
4. Fatigue or loss of energy nearly every day

5. Feelings of worthlessness, excessive guilt, or inappropriate guilt nearly every day
6. Indecisiveness, or diminished ability to think nearly every day
7. Recurrent thoughts of death or recurrent suicidal ideation without a specific suicide attempt or a specific plan for committing suicide

It is important to note that, in many cases of depression, these symptoms are not caused by underlying medical conditions, although depression may occur concurrently with a number of chronic diseases such as heart disease or hypertension. Depressive episodes can also be brought on by substance abuse, the use of certain prescribed medications, or physical ailments such as hypothyroidism. Many people feel that they experience some of these symptoms some of the time, but a bout of clinical depression is markedly different from a case of feeling “blue” or “low” and can cause a significant amount of emotional distress and social, occupational, or personal impairment when not recognized or treated (Joiner, 1999).

However, it is important to note that, strictly speaking, dysthymia is not just a “milder form” of depression as is often described. It is differentiated from clinical depression in that it is a chronic mood disorder lasting a minimum of two years (one year for youth) and often may last eight years or longer. In contrast to recurrent depressive episodes, dysthymia is a chronic condition which plagues the individual for long periods of time. Dysthymia is a constant mood disorder that does not go away as quickly as depression, and those who suffer from dysthymia are never without symptoms for less than 2 months. A person with dysthymia has

a depressed mood for more days than not, and experiences at least two of the following symptoms: appetite and/or sleep changes, low energy (anergia), low self-esteem, hopelessness, and difficulty concentrating (Joiner, 1999).

The Burden of Depression: Public Health Concern

Depression has become a grave public health concern because it is common, it is costly, and it affects both genders as well as all ages and races (Kettl, 1998; Preskorn, 1999; U.S. Department of Health and Human Services, Clinician's Handbook of Preventive Services, 1998). It is a leading cause of medical and psychosocial disability and psychiatric morbidity worldwide (Bowden, 1999), occurring in as much as 10% of the population in the United States (Margolis & Rabins, 1996, p. 4) and in up to 13% of patients in the primary care setting (U.S. Department of Health and Human Services, Guide to Clinical Preventive Services, 1998, p. 541). Depression is "one of the most prevalent, serious illnesses in the United States" (Preskorn, 1999, p. 1) as well as a potentially fatal condition, since at least 50% of all suicide victims suffer from it (Kettl, 1998).

In 1999, the Surgeon General of the United States determined that suicide is a public health threat causing grave health concerns and initiated a nationwide call to action to develop a national strategy to prevent suicide (U.S. Department of Health and Human Services, The Surgeon General's Call to Action to Prevent Suicide, 1999). Major depression affects more than nine million Americans and costs the United States as much as 40 to 45 billion dollars annually (Margolis & Rabins, 1996, p. 4; U.S. Department of Health and Human Services, Clinician's Handbook of Preventive Services, 1998, p. 242).

Only recently has the burden of mental illness on public health become recognized. The World Health Organization (WHO), the World Bank, and Harvard University conducted a Global Burden of Disease study and found that mental illness, including suicide, to be the second top-ranking disease burden in the United States as well as in other established market economies. The Disability Adjusted Life Years (DALYs) represent years of life lost to premature death as well as to years lived with a severe, chronic disability. The DALYs for all mental illness is 15.4, second only to all cardiovascular conditions which are ranked at 18.6 (U.S. Department of Health and Human Services, *Mental Health: A Report of the Surgeon General*, 1999, p. 3). Using DALYs as a measure, the burden of major depression specifically is equivalent to that of blindness or paraplegia. “By this measure, major depression alone ranked second only to heart disease in magnitude of disease burden” (U.S. Department of Health and Human Services, *Mental Health: A Report of the Surgeon General*, 1999, p. 4).

Depression (MDD or major depressive disorder) should be recognized as a serious condition that also causes a heavy economic burden. It is serious not only due to the fact that the suicide rate for depressed persons is eight times higher than in the general population, but also because the lower quality of life and loss of productivity that often result from untreated depression can cause longer-range problems. “This effect is widespread and has been shown to be comparable to that associated with major chronic medical conditions such as diabetes, hypertension, or coronary heart disease” (U.S. Department of Health and Human Services, *Guide to Clinical Preventive Services*, 1998, p. 541). Despite treatment

advances in therapies and medications, MDD complicates medical problems by increasing the risk of cardiovascular disease and it contributes to psychiatric mortality by increasing the risk of suicide (Bowden, 1999; Lasley, 1998).

Depression is a pervasive condition that costs far more than money: “Men who suffer from depression have a higher risk of heart disease, including myocardial infarction” (Kettl, 1998, p. 1). In addition, depressive symptoms may also increase the risk of heart disease in elderly women (Gelenberg, 1999). Those who are depressed are more likely to have a serious medical illness, more likely to experience disability and to have higher medical utilization, as well as “greater functional impairment, both vocationally and socially, than patients who have arthritis, diabetes, or hypertension” (cited in Salazar, 1996, p. 432).

The high cost of depression is not limited to the United States. Pomerantz (1999) reports that, recently, the World Bank calculated that only cardiovascular disease will outrank depression “as the most important cause of disability in the world by the year 2020. The author cites a World Health Organization (WHO) study by Ormel and von Korff which shows that the degree of disability produced by psychological distress is equal to that produced by physical disease of all causes” (p. 2).

There are at least three reasons why the economic burden of depression has become so great in recent years. First, depressed persons are more likely to have serious medical illnesses, as stated above. Second, there are the hidden medical costs associated with depressive symptoms that go unrecognized: In such cases the individual may overuse medical services by going through a variety of

diagnostic tests and procedures in an attempt to find out what is causing somatic complaints. It is well-documented that overall medical costs are higher for those who suffer from depression because many individuals who suffer from undiagnosed depression spend time visiting physicians, getting medical tests, obtaining diagnostic exams, and attempting to find relief for a variety of mysterious symptoms that are in fact caused by depressive episodes (Kettl, 1999; Mind/Body Health Newsletter, 1996, p. 7). Finally, the costs associated with sick days, absenteeism, and lost productivity in the workplace are estimated to be much higher for depressed individuals than for the general population. Research substantiates the economic burden of depression:

Results from the Medical Outcomes Study showed that the functioning of patients with depression in terms of their physical condition, social relationships, days spent in bed, and freedom from pain was comparable to or worse than that of patients with major chronic medical conditions. In fact, only patients with heart conditions had the same degree of functioning as patients with depression. In addition, the effects of depression on functioning and well-being are additive with the effects of coexisting medical conditions Greenberg et al. estimated that the economic burden of depression – including both direct costs, such as inpatient care and pharmaceuticals, and indirect costs, such as absenteeism and reduced productivity at work and loss of earnings following suicide – in the United States in 1990 was \$43.7 billion (Gelenberg, 1999, p. 1657).

While these and other estimates of the economic burden of depression are fairly common, there is little research that focuses solely on the overall burden of depression in the workplace. Birnbaum et al. (1999) researched this topic using health insurance claims data from a Fortune 100 manufacturing company. Of the 100,000 beneficiaries, there were 4,220 patients with at least one medical claim for major depression (p. 1). Their medical claims data were included for analysis in order to determine both the direct and the indirect costs of major depression (MD) for this workplace. Direct costs included hospitalization, outpatient care, physician visits, and prescription drugs. Indirect costs included the value of missed work days for disability and sick time, reduced productivity on the job, and the costs associated with searching and training employees as a result of depression-induced turnover (p. 1). Birnbaum et al. found that both the overall use of health care services as well as the disability costs for employees with MD were substantially higher than among the general employee population:

Since MD patients were especially high users of the health care system, it is not surprising that their total medical, pharmaceutical, and disability costs were 4.2 times those of the typical beneficiary in the company (\$8,709 versus \$2,059) for the year 1997. In addition, disability costs in particular represented a much higher proportion of total costs among the MD group, compared with the company as a whole (22% versus 13%).

. . . Whereas the average employee incurred \$3,127 in annual medical, pharmaceutical, and disability costs on a combined basis, the

equivalent total was strikingly higher among *employed* MD patients (\$11,906, or 3.5 times as high), *disabled* MD patients (\$14,598, or 4.7 times), and MD patients who were *disabled due to depression* (\$13,929, or 4.5 times). The additional \$8,000 to \$11,000 in costs was due to treatment of depression and co-morbid conditions of MD patients and to disability payments to MD patients that exceeded the amount incurred by the average employee (p. 3-5).

Keeping in mind that this study reported on the costs associated only with those who sought treatment for MD, it is easy to conclude that the hidden costs of depression for this workplace are unreported and also substantial. It is estimated that the prevalence rate for major depression in the general population exceeds 10% (Kessler, Zhao, & Katz, 1999; Margolis & Rabins, 1996, p. 4). Therefore, as many as 80% of those suffering from depression (or an additional 800 employees) in the workplace “may have been symptomatic but beyond the effective reach of the health care system under current conditions. This group of untreated sufferers likely imposes a vast ‘hidden’ burden of MD over and above the findings reported in this analysis” (Birnbaum et al., p. 7).

Although people of all ages and races experience depression, it is “more common in persons who are young, female, single, divorced, separated, seriously ill, or who have a prior history or family history of depression” (U.S. Department of Health and Human Services, Guide to Clinical Preventive Services, 1998, p. 541). Salazar reports that risk factors for depression include the following:

1. Past history of depression

2. Family history
3. Stressful life events
4. Lack of social support
5. History of anxiety
6. Postpartum period
7. Substance abuse
8. Medical comorbidity
9. Single
10. Older age
11. Lower socioeconomic status
12. Female gender (1996, p. 433).

From these risk factors, it is clear that there are some differences in the incidence and prevalence of depression depending on gender, age, and race.

Depression and Women

Despite the fact that depression affects men as well as women, Blehar and Oren (1977) report that women diagnosed with mood disorders consistently outnumber men diagnosed with the same conditions. Specifically, there are a disproportionate number of women who experience depression (Stotland & Stotland, 1999). Women suffer from depression twice as often as men, “which makes the disorder one of the most gender-specific of all psychological problems” (Ferber, 1997, p. 3). Research studies also indicate that this gender-based difference is not limited to the United States: Regardless of culture or national

origin, women around the world are reported to have more episodes of depression than do men (Downey, 1996; Leibenluft, 1998; Leutwyler, 1995).

Although the magnitude of women's risk for depression is still unknown, reported rates for depression in the female population range from as low as 8% lifetime prevalence to as much as 20%. Yet there is wide variance in the reported prevalence of depression in women. One community-based study showed that 21.3% of women have experienced at least one major depressive episode during their lifetime, while other studies indicated that approximately 80% of women in the United States have experienced a major depressive episode (Downey, 1996, p. 3). The rates of depression may be slightly higher for employed women. Seventeen percent of female employees and 9% of male employees "have experienced a major depressive episode in the past year, with lifetime prevalence rates at 23 percent for men and 36 percent for women" (Nayer, 1998, p. 39). For women the average age of onset for depression is 25 and for men it is 30.

In spite the indisputable relationship between gender and affective disorders, "the causes are decidedly unclear. The reasons for this lack of understanding are complex, but stem largely from limitations that have impeded the study of specific vulnerability factors for mood disorders in women" (Blehar & Oren, 1997, p. 2). Although the reasons for women's vulnerability to depression remain unclear, the disparity between male and female rates of depression is well-documented (Frank, Carpenter, & Kupfer, 1988; Kessler, McGonagle, & Schwartz, 1993; Leibenluft, 1998; Weissman, Bland, & Joyce,

1993; Young, Scheftner, & Fawcett, 1990). Clearly, gender is an important factor to consider when assessing the impact of depression.

Researchers are unsure why major depression is twice as common among women as among men. Historically, it was not certain if the apparent preponderance of women who are depressed was due to more women actually suffering from depression, or to more women reporting their depressed moods and seeking outside professional help. Leutwyler (1995) reports that research studies have consistently found that not only is depression more common for women than it is for men, but women also appear to be more vulnerable to seasonal affective disorder (SAD) and melancholia, a milder form of affective disorder. While incidence rates vary from region to region, a consistent finding is that the rates of depression for women are twice as high as they are for men, regardless of geography. Rates for manic-depressive illness, however, do not differ according to gender (Leutwyler, 1995).

The major factors responsible for women's greater susceptibility to depression are still being debated in part because there are a wide variety of factors that cause depression in different people. Researchers are investigating psychological factors such as social discrimination as well as biological factors such as genetics and hormonal patterns. While neurologists and endocrinologists believe that women are probably more biologically susceptible to depression, genetics do not seem to play more of a role for women than for men. The hormonal changes that women experience throughout their lives are only one explanation for women's proclivity to depression (Stotland & Stotland, 1999).

The causes for higher rates of female depression may in fact be explained by a more holistic and complex set of factors: A number of research studies indicate that depression has psychological, cognitive, social, and environmental roots as well as biologically determined (i.e., hormonal) causes (Leibenluft, 1998; Woolfolk et al., 1999). A host of such factors that are unique to women may explain the gender differences in depression rates and in the higher reporting of depressive episodes by women (Downey, 1996; Ferber, 1997; Frank, Carpenter, & Kupfer, 1988; Leibenluft, 1998; National Mental Health Association, *What Every Woman Should Know*, 1999).

Although the etiology of female depression is highly complex, one theory merits mentioning at this time because it constitutes a somewhat new and unique approach this topic. Leutwyler (1995) reports that hormones and sleep cycles may be partly to blame because each can dramatically alter mood. Because there are gender differences in how people respond to seasonal patterns, sleep patterns, and day and night, researchers at the NIMH believe that such biological responses may be responsible for the preponderance of women who experience depression. They have found that “during the winter, women increase their nightly production of melatonin, a hormone whose levels are governed by the circadian pacemaker; women produce less melatonin during summer nights. In contrast, nocturnal secretions of melatonin in men are unchanging” (Leutwyler, 1995, p. 54).

Other gender differences in these cycles include women’s tendency to sleep more than men when not prompted with cues such as daylight. Hypersomnia, or excessive sleeping, is a common symptom of depression, and

patients suffering from this condition are often responsive to light therapy. In addition, the estrus cycle also seems to play a crucial role in sleep and activity cycles. Findings from epidemiological studies demonstrate that hormones may indeed play a critical role in the origin of depressive episodes: “Equal numbers of boys and girls experience depression before puberty, but shortly thereafter the rate among girls doubles” (Leutwyler, 1995, p. 54). Unfortunately, because women of childbearing age often are excluded from large studies, there are few research findings that indicate explicitly how the menstrual cycle and female hormones affect mood disorders. There is also a paucity of research demonstrating how menopause may affect the incidence of depression in women.

Researchers at the National Institute of Mental Health (NIMH) have studied regions of the brain which experience increased blood flow during periods of sadness. In one study, scientists examined these areas of the brain in men and women and found that, while both sexes labeled themselves equally sad, the patterns in the brain were remarkably different. “Both sexes had equally activated the left prefrontal cortex, but the women showed blood flows in the anterior limbic system that were eight times greater” (Leutwyler, 1995, p. 54). While there do not appear to be any significant biological differences in the brain during feelings of anger, anxiety, or happiness, the differences in blood flow during periods of sadness may hold a significant clue to explaining the gender gap in depressive episodes because two of the regions of the brain active during sadness also malfunction during periods of clinical depression. Leutwyler (1995) writes that Mark S. George at the NIMH “speculates that hyperactivity of the anterior

limbic system in women experiencing sadness could, over time, exhaust that region and lead to the hypoactivity seen there during clinical depression” (p. 54).

Depression Across the Lifespan

In 1990, researchers from Columbia and Cornell Universities examined the incidence and prevalence of affective disorders in 10 nations. The incidence of depression appears to be increasing among those who have reached maturity after 1945 (Leutwyler, 1995). There are conflicting reports regarding the incidence and prevalence of depression across the lifespan. Some groups of adolescents may be more at risk for depression than the general population, but it is also thought that certain segments of the elderly are at high risk for major depressive episodes. Although youth are believed to be more at risk for depression than adults (U.S. Department of Health and Human Services, Guide to Clinical Preventive Services, 1998, p. 541), being an older adult is also listed as a risk factor for major depressive disorder (Salazar, 1996, p. 433).

The study of depression in adolescence is relatively new, due to the fact that most studies consisted of adult populations. Until the 1990s it was assumed that adolescent depression was a fairly rare phenomenon and that its prevalence increased dramatically between childhood and early adulthood. As awareness of adolescent depression has grown, so also has research and findings regarding its impact on youth. Although there are still many unanswered questions, research suggests "a model of adolescent depression in which self-esteem and stressful recent events are significant contributors" (Algood-Merten & Lewisohn, 1990, p. 55).

Irwin, Artin, and Oxman (1999) report that “depressive symptoms and major depression are major public health problems late in life” (p. 1701). While most studies and surveys focus on changes in rates or levels of depression in the elderly, it may be equally important to assess changes in the structure and presentation of depression. Some evidence suggests that older adults may experience different depressive symptoms than younger adults. For instance, the elderly may be plagued more by lack of motivation and lack of energy, feelings of apathy, lethargy, and negative symptoms rather than feelings of guilt and suicide ideation more common to the younger population (Newman, Engle, & Jensen, 1990). Older women in particular may tend to experience a form of depletion syndrome of the elderly, characterized by feelings of worthlessness, a lack of interest in things, and a general sense of hopelessness, which differs slightly from the classic symptoms of depression which include feelings of self-blame, guilt, and a dysphoric mood. More forms of distress such as loneliness may also plague them, such as feelings of enervation, sleep disturbances, and a self-deprecatory attitude. Newman et al. (1990) report that in one sample of elderly women it was found that some symptom patterns suggested the presence of clinical depression, while other symptoms suggested “milder forms of distress that may be normal reactions to the stress and strains of daily life” (p. 113).

Ethnic and Cultural Disparities in Mental Illness

The prevalence of mental illness differs among various racial and ethnic groups, yet it is difficult to pinpoint the exact numbers of minorities who suffer from depression itself. There are four major ethnic minorities classified by the

United States government: Native American/American Indian/Alaskan

Native, Asian/Pacific Islander, Hispanic American/Latino, and African American.

Within each of these major groups there exist many more minorities of diverse backgrounds and cultures. Statistics cited in the first Surgeon General's Report on Mental Health show that African Americans currently constitute the largest United States minority (12.8% of the U.S. population), followed by Hispanics (11.4%), followed by Asian/Pacific Islanders (4.0%), and American Indians (0.9%), as reflected by the U.S. Census Bureau in 1999. By the year 2050, it is projected that Hispanic Americans will be the largest minority group in the United States, representing 24.5% of the entire population (U.S. Department of Health and Human Services, *Mental Health: A Report of the Surgeon General*, 1999, p. 81).

As with many other medical conditions, racial disparities exist in populations at high risk for depression. Because stressful life events can trigger an episode of depression (Gelenberg, 1999, p. 1657), it is not unreasonable to assume that minorities who routinely experience the stress of both overt and subtle racism are more at risk for depression than the majority population. Limited access to treatment as well as the reluctance to see a mental health specialist may also be factors in the undertreatment of depression in minority populations (Hirshfeld et al., 1997).

Minority groups in the United States have traditionally feared the mental health system because it is perceived to have been founded on research involving only whites and is shaped by the values of white, European cultures. Emphasis on providing culturally competent services and linguistically appropriate mental

health offerings continues to be an urgent need so that minority groups who need mental health services will be able to find appropriate treatment and counseling which incorporate an understanding and respect for various cultural and ethnic traditions (Hanes & Greenlick, 1998). The first Surgeon General's Report on Mental Health maintains that "without culturally competent services, the failure to serve racial and ethnic minority groups adequately is expected to worsen, given the huge demographic growth in these populations predicted over the next decades" (U.S. Department of Health and Human Services, Mental Health: A Report of the Surgeon General, 1999, p. 81).

African Americans tend to be overrepresented in inpatient psychiatric care and underrepresented in certain outpatient populations. Although the prevalence of mental disorders appears to be higher among blacks than whites, the apparent difference is most likely due to socioeconomic factors because when these factors are taken into account, the prevalence difference between blacks and whites disappears. "It is the lower socioeconomic status of African Americans that places them at higher risk for mental disorders" (Regier et al., 1993, cited in U.S. Department of Health and Human Services, Mental Health: A Report of the Surgeon General, 1999, p. 84).

There are other factors that contribute to racial inequities in mental health incidence as well as treatment. Reasons why African Americans delay seeking treatment for mental health problems may include a reluctance to look for help, the paucity of culturally appropriate and responsive mental health services, institutionalized racism, clinician bias, poverty, and the overreliance on

emergency room care for general health problems (U.S. Department of Health and Human Services, *Mental Health: A Report of the Surgeon General*, 1999, p. 85).

There are also a variety of financial, clinical, cultural, and organizational reasons why minority groups continue to be underserved by the mental health system in the United States. Members of minority groups identify with various cultures which are often markedly different from western, industrialized societies. Loosely defined, the term “culture” denotes a common background and set of traditions which carries with it a set of beliefs, norms, and values. “Within any given group, an individual’s cultural identity may also involve language, country of origin, acculturation, gender, age, class, religious/spiritual beliefs, sexual orientation, and physical disabilities. Many people have multiple ethnic or cultural identities” (U.S. Department of Health and Human Services, *Mental Health: A Report of the Surgeon General*, 1999, p. 81).

Cultural differences are often reflected in different, preferred styles of coping with mental distress. Cultural norms also dictate how an individual views mental disorders, including mental depression. It is not uncommon in many traditions to perceive mental health problems in the context of spiritual experiences, sometimes even signaling spiritual growth or representing religious significance.

Culturally rooted traditions of religious beliefs and practices carry important consequences for willingness to seek mental health services. In many traditional societies, mental health problems can be viewed as spiritual concerns and as

occasions to renew one's commitment to a religious or spiritual system of beliefs and to engage in prescribed religious or spiritual forms of practice. African Americans and a number of ethnic groups, when faced with personal difficulties, have been shown to seek guidance from religious figures (U.S. Department of Health and Human Services, *Mental Health: A Report of the Surgeon General*, 1999).

Meeting the needs of various cultural and ethnic groups is a challenging process that requires great sensitivity and insight. Providing appropriate mental health services and creating health communications that are relevant to different populations is essential.

Many health plans will need to reorient their programs to care for populations from many cultures who bring their own beliefs about health care. Health plans must incorporate their served populations' cultural beliefs in order to treat patients effectively. In addition, language translation capacity becomes central to many health care transactions. In an era where English is the second language to as many as 32 million people in the United States . . . competence in interpretation and cultural issues is rapidly becoming an essential capability for health care providers. (Andrulis & Carrier, 1999, p. 30).

For reasons that are not well understood, there is a clear association between mental illness and lower socioeconomic status. Higher levels of stress may lead to some types of mental disorders, in particular mental depression. For instance,

impoverished women often experience a greater number of frightening and uncontrollable life events than do members of mainstream society. However, it is not clear whether the disability associated with mental disorders leads to lower socioeconomic status, or whether the reverse is true (U.S. Department of Health and Human Services, *Mental Health: A Report of the Surgeon General*, 1999).

Barriers to Successful Treatment of Depression

Several barriers to the successful treatment of depression include the difficulty in recognizing, diagnosing, and treating depressive symptoms, the misunderstanding and stigma associated with depression and its treatment, and treatment compliance issues. This section briefly addresses each of these barriers.

Depression: Underrecognized and Underdiagnosed

Patients with undiagnosed and untreated depression often present to their physicians with a variety of physical symptoms of unknown origin, -- as many as “three times the number of somatic symptoms of controls in one study. If their depression is not recognized, these patients may be subjected to the risks and costs of unnecessary diagnostic testing and treatment” (U.S. Department of Health and Human Services, *Guide to Clinical Preventive Services*, 1998, p. 541). Primary care physicians and other health care practitioners often do not recognize the symptoms of depression in their patients (Gelenberg, 1999; Hirshfeld, 1997) and consequently this condition is frequently not recognized, nor diagnosed, nor treated. Despite the fact that depression is arguably “the most common chronic condition facing the primary care physician today” (Kettl, 1998, p. 2), it is difficult to spot depression in many patients because most primary care physicians

do not screen for depression in those patients who present with chronic, vague complaints. Yet one reason that patients are not recognized as suffering from depression is due to the fact that many do not complain about emotional or psychological problems. Often the depressed individual will complain about vague somatic symptoms and, because doctors are trained to recognize physical symptoms as having biological explanations, depression per se is not commonly thought of as the root cause (Kettl, 1998; Salazar, 1996). “Many individuals treated in the medical sector with a primary reported diagnosis of ‘migraine headache’ or who are disabled due to ‘strain of the lower back’ . . . actually may be suffering from undiagnosed depression” (Birnbaum et al., 1999, p. 7). As many as 50% of psychosocial and psychiatric problems are not recognized by physicians (Stewart, 1995; Callahan et al., 1997; U.S. Department of Health and Human Services, Clinician’s Handbook of Preventive Services, 1998, p. 240).

This lack of recognition of depression and subsequent under- or non-diagnosis may stem in part from communication problems between the health care practitioner and patient. These communication problems may be caused by the health care practitioner as well as the individual who is depressed. Hirshfeld et al. list both physician-based and patient-based reasons for underrecognition and undertreatment of depression. Physicians may fail to recognize or treat depression because they (a) have not been trained in medical school to make any type of psychiatric diagnosis, (b) have limited training in interpersonal skills, (c) may subscribe to the myth that psychiatric disorders are not “real” illnesses, (d) have inadequate time to treat and evaluate depression, (e) may fail to consider

psychotherapeutic approaches, (f) may want to avoid treating depressed patients due to inadequate insurance coverage, (g) do not collaborate with other health care providers, (h) may prescribe inadequate doses of antidepressants, and (i) may not want to take more time to diagnose and treat depressive disorders. At the other end of the spectrum, patient-based reasons for not obtaining adequate diagnosis or treatment of depression may include: (a) lack of access to medical care, (b) lack of adequate health care coverage, (c) reluctance to see a mental health care specialist, and (d) lack of compliance with recommended treatment (1997, p. 18).

Further complicating the issue, is the fact that at least 50% of those who do have depressive symptoms do not even seek help from a health care practitioner for this very treatable medical condition. Although “80 to 90 percent of those who are depressed can be successfully treated with medication or counseling, or both,” (Depression on the job. Mayo Health Quest Newsletter, October, 1998, p. 1), many do not seek any treatment for depression. It is estimated that only “about one-third of those with depression undergo treatment” (Nayer, 1998, p. 39). Gelenberg (1999) reports on the significant impact of the current rate of unrecognized and untreated depression:

In a large minority of the population, perhaps 10% to 20%, stressful life events or undetectable internal perturbations can trigger an episode of depression. Unfortunately, approximately half of people with symptoms of depression do not seek treatment, and of those who seek treatment, the conditions of about half are misdiagnosed. When the

symptoms of depression are untreated or undertreated, people overuse general medical services, have an increased risk of functional and occupational impairment and suicide, and experience symptoms for longer periods (p. 1657).

Misunderstanding and Stigma

Depression can be successfully treated with therapy, medication, or a combination of both. Treatment options today include the use of a wide variety of antidepressants as well as several forms of therapy (Lemonick, 1997). It is more treatable today than ever before because of the new antidepressants that have become available in the last ten years -- there are at least 22 different antidepressants (Preskorn, 1999, page 1). Although either treatment option can be used, the most successful treatment of depression is a result of antidepressant medication use combined with appropriate therapy. Nevertheless, many people suffering from depression misunderstand treatment options and are not aware of the wide variety of solutions available to alleviate the symptoms of depression. Frank reports that patients and physicians alike continue to hold negative beliefs about antidepressant medications, how they work, and the nature of their side effects (1997, p. 11). Depressed individuals continue to be seriously undertreated and receive inadequate treatment or no treatment at all (Hirschfeld et. al., 1997, p. 338).

The stigma associated with mental illness is another significant barrier for many people. Although currently depression can be described as a brain disorder which often can be successfully treated with antidepressants which alter brain

chemistry, past history and the association of mental illness with being “crazy,” or “nuts,” or “looney” make it difficult for many to admit that they might suffer a mental “illness” such as depression and seek subsequent treatment. This stigmatization of those suffering from any form of mental illness, including depression, has a long history and unfortunately results in additional isolation, hopelessness, and lowered self-esteem for those who experience depression. Even today, some families in the United States still hide and lock up mentally ill family members because they are embarrassed by the stigma of mental illness (Kennedy, 1999, p. 1).

According to the Surgeon General’s First Report on Mental Illness, “in its most overt and egregious form, stigma results in outright discrimination and abuse (and) deprives people of their dignity and interferes with their full participation in society” (U.S. Department of Health and Human Services, *Mental Health: A Report of the Surgeon General*, 1999, p. 8). In addition, the “stigma surrounding the receipt of mental health treatment is among the many barriers that discourage people from seeking treatment” (cited in U.S. Department of Health and Human Services, *Mental Health: A Report of the Surgeon General*, 1999, p. 8). Research on depression repeatedly describes the persistence of stigma as a significant barrier to effective treatment of depression (Joiner, 1999; Lieberman, 1996; and O’Hara, Gorman, & Wright, 1996).

One public education campaign called Depression Awareness, Recognition, and Treatment (DART) has as its aim to educate the public about the

nature of depression, its incidence, prevalence, and treatment. Nationwide campaigns such as this may eventually reduce the stigma of depression, and help the general public to recognize the signs of depression and provide encouragement for those who need help to discuss their symptoms with a medical practitioner (Callahan et al., 1997, p. 175).

Compliance Issues

There are a variety of reasons why depressed patients have a high rate of non-compliance with recommended follow-up and treatment. “An important aspect of patient compliance and recovery is that patients understand their treatment and are clear about what is going to happen to them” (Beenstock, Broadbent, & Castro-Fraser, 1998, p. 32). Communication barriers described in patient surveys revealed that patients often felt that an insufficient amount of information was provided about their condition. The authors reported a second barrier to understanding health conditions directly, and therefore compliance indirectly, was the overuse of technical language. Patients described the literature provided to them by medical and nursing staff as being “too full of jargon and technical terms to be easily understood by a lay reader” (Beenstock et al., p. 32).

Because adherence to antidepressant treatment is crucial in both abating the symptoms of depression and in preventing relapse, compliance issues are critical in the successful treatment of depression. Although many barriers to successful treatment and compliance have been reported, most barriers concern lack of knowledge concerning both the nature of depression and its effective treatment. Surprisingly, this lack of understanding comes from both clinicians

and patients alike. Frank (1997) reports the following barriers to effective treatment adherence for depressed patients:

Lack of knowledge regarding both the nature of depression and its treatment is a major contributor to noncompliance with treatment regimens. A fuller understanding of the nature of the illness on the part of the patient, the patient's family members or other social support system, and the physician serves to clarify the rationale for prescribed regimens and establish the basis of a support system in encouraging compliance. Part of this education must concern the nature of treatments, whether pharmacologic or psychotherapeutic or both, and how the treatments can be expected to work. Currently, deriving optimal results from existing educational programs is hampered by the absence of information about the comparative efficacies of pretreatment education modules (p. 11).

The author further maintains that the lack of knowledge by both doctor and patient concerning the nature of depressive illness is in itself a contributing factor to noncompliance.

Another barrier to compliance may be the difficulty physicians sometimes encounter when communicating risk in primary care populations. In one study which reported on the practices of communication about risk in primary care, 36 primary care professionals often expressed concern about the lack of accessible and updated information available to patients. They felt that the circumstances and contexts in which they needed to discuss treatment options with patients were

often difficult and made it almost impossible to convey patient information in a meaningful way. An important need identified by health care professionals was training in how to effectively communicate with patients about health risks (Edwards, Matthews, Pill, & Bloor, 1998, p. 296). Other researchers also cite lack of good communication skills on the part of physicians as barriers to compliance (Frank, 1997; and Lieberman, 1997).

Health Belief Model

The health message used in this research was developed in response to the desire to increase compliance with treatment recommendations for people with depressive symptoms. Patient follow-up and compliance is often poor, and providing a health message directly to those who are referred for treatment of depression may encourage them to follow up with treatment recommendations such as visiting a mental health professional and taking prescribed antidepressant medication as advised. The health message was written based on the concepts of the Health Belief Model, a theory for individual health behavior change which was developed in the 1950s by social psychologists in the United States (cited in Janz & Becker, 1984). Initially this model was developed by Hochbaum in 1952 in response to widespread failure to participate in disease prevention and detection programs, specifically the TB campaigns offered in the United States. This cognitive-motivational model was an attempt to help explain the use or lack of use of the health care system. It is one of the few social-psychological models for behavior change which was developed specifically to help practitioners understand individual health behaviors and how they could be positively

influenced. Bolton and Brittain (1994) explain the usefulness of this model when developing patient information messages:

The health belief model has proven to be an effective predictor of individuals' responses towards health-related matters. It is described as a useful theoretical framework for medical professionals in deciding the content and quantity of information that each patient should receive (p. 117).

Hochbaum, Kegel, and Rosenstock described the first four variables of this theory in 1958, 1965, and 1966 as perceived susceptibility, severity, benefits, and barriers (cited in Glanz, Lewis, & Rimer, 1990; and in Nemcek, 1990), while a number of other researchers continued to flesh out this theory by adding components such as Bandura's self-efficacy theory in 1977 with its construct of efficacy expectations (cited in Glanz et al., 1990).

The Health Belief Model is based on the concept that the desire to avoid illness or get well is related to the belief that a specific health action will prevent illness. It assumes that, although specific cognitive variables such as social, economic, cognitive, and psychological factors help to explain health behaviors, an individual's perceptions of his or her susceptibility to illness and his or her perception of the benefits of and the barriers to making health behavior changes are even more powerful predictors of whether or not s/he will actually make an effort toward changing a health behavior (Becker, 1974; Glanz, Lewis & Rimer, 1990). The key concepts and definitions of the Health Belief Model are described by Glanz, Lewis, and Rimer (1997): perceived susceptibility, perceived severity,

perceived benefits, perceived barriers, cues to action, and self-efficacy.

These components are described by Rosenstock in Glanz et al., (1997) and Russell (1975) as follows:

1. Perceived susceptibility is the individual's belief that s/he is or is not susceptible to a specific health problem or illness; it is the extent to which s/he believes the health problem will or has affected her/him personally. Glanz et al. (1997) maintain that the concept of susceptibility can be applied by defining the populations at risk, their risk levels, and personalizing risk based on an individual's characteristics or behavior (p. 45).

2. Perceived severity is the extent to which the individual believes that a health problem has serious or severe consequences. Perceived severity of how serious a condition is can be emphasized by focusing on the specific consequences of the illness or behavior.

3. Perceived benefits are the positive effects that an individual believes will result from making a specific behavior change to focus on the benefits of taking the advised action, Glanz et al. recommend that practitioners "define action to take; how, where, when; clarify the positive effects to be expected" (1997, p. 45).

4. Perceived barriers are those personal, environmental, social, or psychological problems that stand in the way of an individual making a behavior change. If the individual believes that the barriers to changing are too high, or the costs are too great, the likelihood of any positive behavior change diminishes. Glanz et al. suggest that one can focus on both the tangible and psychological

costs of an action by identifying and reducing “perceived barriers through reassurance, correction of misinformation, incentives, assistance” (p. 45).

5. Cues to action are those activities or items that trigger a client to take positive action. These cues have not been rigorously studied and it is still not determined how important they are to making behavior changes. Cues to action can be used to provide reminders, awareness, and step-by-step instructions.

6. Self-efficacy is a concept introduced by Bandura in 1977. Self-efficacy is the extent to which an individual believes that s/he is capable of making a specific behavior change such as quitting smoking or losing weight. High self-efficacy for a given behavior change increases the likelihood that an individual will make the behavior change.

Simply put, the Health Belief Model posits that, if sufficient threat (an individual’s perception of susceptibility and severity to a condition is strong enough) and sufficient outcome expectations (the perceived benefits to making a behavior change are stronger than the perceived barriers to preventing a behavior change) exist, an individual will follow through with a health-promoting behavior change. In order to take action toward improving health, the client must first believe that his or her health is in jeopardy (perceived susceptibility) and, second, must believe that the condition is severe enough or could become serious enough to warrant attention (perceived severity or seriousness). If s/he is also convinced that s/he will receive sufficient benefit from making changes, and that the barriers to making those changes are not insurmountable, s/he is likely to make those positive behavior changes. Bandura’s contribution to this theory in terms of

efficacy expectations is the acknowledgement that a client can only make behavior changes if s/he is convinced that s/he is capable of making changes. Rosenstock states that “summary results provide substantial empirical support for the HBM, with findings from prospective studies at least as favorable as those obtained from retrospective research.” He also stated that “‘perceived barriers’ was the most powerful single predictor of the HBM dimensions across all studies and behaviors” (cited in Glanz, Lewis, & Rimer, 1990, pp. 47-48).

Health Communication

Health communication theory and application is an extensive field that is constantly growing and expanding. For the purposes of this research study, this section will briefly address some of the components of effective communication and how the Media Information/Richness Model applies to health communication messages. Health communication is important because it can advance all aspects of health promotion and disease prevention and, when it is effective, it becomes a significant tool for the individual because it can assist in heightening a person’s “awareness of health risks and solutions, provide the motivation and skills needed to reduce these risks, help them to find support from other people in similar situations, and affect or reinforce attitudes” (Healthy People 2010, Conference Edition, Health Communication, 1999, p. 11-3).

While the health message itself is not a primary prevention agent, it is an essential part of health communication. The health message does not usually, in and of itself, constitute a behavior change intervention, yet it serves to strengthen and enhance behavior change components which are designed to facilitate the

adoption of healthy behaviors and the prevention of lifestyle factors which inhibit or diminish healthy outcomes (Bolton & Brittain, 1994). In the context of public education campaigns that attempt to change the social climate in order to encourage healthy behaviors, the dissemination of health messages can “create awareness, change attitudes, and motivate individuals to adopt recommended behaviors” (Healthy People 2010, Conference Edition, Health Communication, 1999, p. 11-3). In addition, patients who feel more informed about medical processes and health information tend to be more satisfied with their health care (Lathrop, 1993).

Components of Effective Health Communication

Failure to use health care communication effectively and efficiently is one reason that is cited for patient and member dissatisfaction with health care providers and systems (Mundt & Driver, 1994, p. 221). Health care consumers today are better educated and more knowledgeable than ever before, and Barber and Ventkatraman (1986) maintain that communication is seen as a crucial factor in enhancing consumer evaluations of health care delivery systems (cited in Mundt et al., p. 222). Improved communication has an immediate and direct effect on consumers of health care for at least three reasons. First, the increasing costs of health care today make communication efficiency and its effectiveness more critical because every encounter with patients and members of health care systems is costly for both providers (financially) and consumers (both time and money). Second, because today’s consumers of health care services are more knowledgeable and educated than in the past, they expect additional, as well as

superior, information on a variety of health topics. Third, research suggests that consumers believe that effective communication enhances their health care systems' services and products (Mundt & Driver, 1994, p. 224).

Bolton and Britain (1994) concur that providing adequate health information and appropriate health messages is integral to the success of patient-provider relationships.

Many patients leave their doctor feeling dissatisfied and therefore go elsewhere, such as the public library or local health information service, for the information they require. The possibility of lack of understanding or miscomprehension of their condition as a result may lead to undue anxiety and stress, which, in turn, may make their condition worse in the long run (p. 129).

Healthy People 2010 (1999) is a national health promotion and disease prevention agenda, which is designed to serve as a roadmap for improving the health of all people. The two goals of this agenda are to increase quality and years of health life and to eliminate health disparities. These two goals are monitored through 467 specific objectives in 28 focus areas, one of which is health communication. Healthy People 2010 defines health communication in the following way:

The art and technique of informing, influencing, and motivating individual, institutional, and public audiences about important health issues. The scope of health communication includes disease prevention, health promotion, health care policy, and the business

of health care, as well as enhancement of the quality of life and health of individuals within the community (p. 11-20).

Healthy People 2010 lists 11 attributes of effective health communication: accuracy, availability, balance, consistency, culturally competent, evidence-based, reach, reliability, repetition, timeliness, and understandable (p. 11-4). This document provides a table which includes short descriptions of each of these attributes of effective health communication. Refer to Table 1, Attributes of Effective Health Communication, on the following page.

The nature of effective health communication has been the subject of ongoing debate and prolific research for years. Despite the framework which Healthy People 2010 provides regarding health communication needs and standards, researchers continue to offer different perspectives on health communication. Nevertheless, the themes which come to light in health communication research consistently emphasize the attributes or characteristics of good health communication which are highlighted by Healthy People 2010. The experts do not always agree on the specifics of health care communication, yet certain fundamental components resurface in several studies and surveys which seek to determine those components which make health communication effective. These fundamental principles suggest that the information provided to the health care consumer be accurate, clear, concise, understandable, and available. More sophisticated studies relate to the impact and usefulness of health messages, but if the health message being communicated is not accurate, clear, and understandable, all else is lost.

Table 1

Attributes of Effective Health Communication

TERM	ABREVIATED DEFINITION
Accuracy	The content is valid and presented accurately.
Availability	The contents (whether targeted message or other information) is delivered or placed where the audience can access it. Placement varies according to audience, message complexity, and purpose, ranging from interpersonal and social networks to billboards and mass transit signs to prime-time TV.
Balance	Where appropriate, the content presents the benefits and risks of potential actions or recognizes different but valid perspectives on the issue.
Consistency	The content remains internally consistent over time and also is consistent with information from other sources (the latter is a problem when other widely available content is not accurate or reliable).
Culturally Competent	The design, implementation, and evaluation process addresses special issues for select population groups (for example, ethnic, racial, and linguistic) and also educational levels and disability.
Evidence-based	The content and strategies are based on formative research with the intended audience and on applicable findings from other communication research.
Reach	The content gets to or is available to the largest possible number of people in the target population.
Reliability	The source of the content is credible, and the content itself is kept up-to-date.
Repetition	The delivery of/access to the content is continued or repeated over time, both to reinforce the impact with a given audience and to reach new generations.
Timeliness	The content is provided or available when the audience is most receptive to, or in need of, the specific information.
Understandable	The reading or language level and format (including multimedia) are appropriate for the specific audience.

Note. Adapted from Healthy People 2010, Conference Edition, Health Communication, 1999, p. 11-4.

Beenstock, Broadbent, and Castro-Fraser (1998) maintain that “an important part of patient compliance and recovery is that patients understand their treatment and are clear about what is going to happen to them” (p 32). In order to determine which health education leaflets provided effective communication for patients, they distributed patient surveys and found that as many as 26% of their patient population were not provided with enough information about their condition. They also found that overuse of technical language was “cited as a barrier to understanding” and that “clinical literature written by medical and nursing staff was too full of jargon and technical terms to be easily understood by a lay reader” (p. 32). They determined that simplifying the language in health education messages is a fundamental requirement. In order to provide individuals with a better understanding of their medical concerns and health conditions, they recommend substituting plain English and jargon-free terms for more commonly used technical terms: Use “because” instead of “as a consequence of”; use “test or treatment” instead of “procedure”; use “pain relief” instead of analgesia; and use “go ahead” instead of “proceed” (p. 32).

Several different surveys sent out by The National Health Service in Britain to identify the public’s needs, concerns, and opinions of health services repeatedly uncovered one major issue that was a problem for consumers of the health service: communication. One survey demonstrated an appalling degree of misunderstanding concerning the terms and phrases which the National Health Service used in their public communication campaigns. About 30% of survey

respondents, for example, “thought that primary care meant life-saving services” (Spiers, 1998, p. 28). The most common complaint about the National Health Service was that ordinary language was not used to explain health care services. Consumers expressed a desire for clear, concise language that would answer their questions and concerns about medical procedures and health information.

Other common survey responses were the desire to access health information by telephone and the belief that patients should be involved in writing patient education information (Spiers, 1998, p. 29). Perhaps most surprising was the discovery that almost all the survey respondents obtained their news from tabloid and free local papers, rather than the paid-for local newspapers. In the tabloid newspapers in question, many paragraphs are only one sentence long and “the average sentence has 25-30 words” (p. 29) and uses the sort of words that are commonly used by most people in casual conversation. Given this information, it stands to reason that, in order to improve health communication, the National Health Service would have to use simpler, more straightforward language, short sentences, and more direct sentence structure. Spiers (1998) concludes that “presenting health service information in the language ordinary people speak – and listening to public feedback – will do much to improve communication” (p. 28).

According to Richardson and Moran (1995), communication “lies at the heart of health care delivery” and the findings from a British audit report on hospital communications which reveal that “patients are experiencing difficulties

with the content of information and with the way it is given,” (p. 27) appear to bear this out. The report concludes that the effectiveness of health care and the efficiency with which it is delivered can be improved with “appropriate, timely and effective communication with patients” (p. 28).

A health care steering committee called “The Trusts’s Quality Assurance Steering Group” was formed to implement the audit recommendations with regard to improving written health communication for patients. After reviewing existing information, the steering committee approached a Community Health Council (CHC) to obtain their opinions on draft standards for written health information. After discussing the standards for developing written materials, an audit tool was established to list the recommendations made for information content, style, and language. Specifically, the standards recommended that written information about in-house patient information should “be clear, informal, and understandable to the lay person (simple words, short sentence); be free of medical jargon” (Richardson & Moran, 1995, p. 29). In addition, the information should include a simple description of the condition, a brief overview of the benefits, clear and unambiguous statements about procedures, and a contact phone number.

Media/Information Richness Model

To address some of the concerns of health communication effectiveness, Mundt and Driver (1994) draw upon the Media/Information Richness (MIR) Model defined by Daft and his colleagues in 1984. Although MIR has been the subject of comprehensive research, it has not been widely cited in the field of health care communications (p. 225). The authors believe that implementation of

MIR principles in health care communication could dramatically improve the efficiency and effectiveness of health care communication. The basis of this theory of communication is that in order for communication to be effective and efficient, one must first consider the “richness” of the particular medium that is used, and that one should then match it to the “richness” of the information that is being conveyed. In order to better understand this premise, it is necessary to address two terms specific to this theory of communication: information richness and media richness.

“*Information richness*” describes the knowledge and data-carrying capacity of the information, or the potential of the information to provide substantial new understanding. Mundt and Driver (1994) explain that, in order to reduce the ambiguity of a message, “there is a need for information to be capable of providing consensual understanding so that interpretations of the parties to the communication are more consistent” (p. 225).

“*Media richness*” is determined by the medium’s capacity for feedback and cues, and therefore a face-to-face communication medium in which there is an opportunity for multiple cues and immediate feedback is richer than a bulletin or numeric documents. Media richness assumes that each type of medium has a certain capacity to resolve equivocality or reduce ambiguity, where equivocality or ambiguity refer to information or data that has more than one meaning, or has multiple, different interpretations. Not only does a rich medium such as face-to-face communication provide ample opportunity for many cues and instantaneous feedback, but it also provides a forum in which the ambiguity or uncertainty of the

information being communicated can be reduced if not eliminated. This is one way in which clean, clear communication can occur. When information is fairly complex and can have a variety of meanings or interpretations, the MIR model assumes that richer media are more appropriate than leaner media because richer media provide for the possibility of greater “interaction between the parties and . . . are thought to enhance the probability of resolving differences in interpretations of the information, thus allowing parties to come to a quicker and better mutual understanding” (Mundt & Driver, 1994, p. 226).

Starting with the leanest media, the hierarchy of media richness is as follows: numeric documents, bulletins, special flyers, memos, notes, letters, telephone calls, and face-to-face communication. Richer media should be used for more complex pieces of information, whereas less rich media suffice for clearly defined data such as specific instructions or precise information.

The authors list the following three fundamental concepts of the MIR model. (1) Information processing is a function of the ambiguity or equivocality of the information. (2) Different mediums have specific capacities for effectively communicating ambiguity or equivocality. (3) Information richness is the connection between the ambiguity of the information and the choice of richer or leaner mediums (Mundt & Driver, 1994, p. 225).

While there is no research which currently applies MIR principles to health messages and communication, Mundt and Driver believe that the application of MIR to health care may provide some useful guidelines when selecting mediums through which to deliver health messages. This theory may have specific use

when applied to health education messages such as those delivered to members of a health maintenance organization or a behavioral health company.

In order to apply this theory of communication to the health care system, it is important to identify several challenges that currently exist in the health care industry. Mundt and Driver (1994) identify three such challenges. First, although the richest type of medium of communication, which is face-to-face communication, does take place routinely in medical clinics and health care offices, the specific aspects of this medium which make it rich are often not taken advantage of. For instance, the multiple channel cues available in a one-on-one communication may include facial expression, verbal cues, hand gestures, and other elements of body language. Due to the constraints of time, many of these nuances of health care provider-to-patient communication are discouraged. Second, although health care delivery often relies on this type of rich communication medium, it is done regardless of the equivocality or ambiguity of the information being delivered. Therefore, Mundt and Driver (1994) maintain that:

Richer media should be used when equivocality is high. This suggests that information regarding complex services, such as some surgeries, should be presented face-to-face, which seems to be the historical and current norm. On the other hand, we argue that less ambiguous situations do not warrant the use of face-to-face (rich and expensive) media. For instance, treatment of symptoms which are recurring and identifiable to the consumer

(e.g., common cold) may be treated via a medium which is only moderately rich (e.g., telephone conversation) (p. 230).

Third, although we are currently living in the “information age” in which there is a glut of information and data that comes to us from a variety of sources, there is often little information available to patients about their specific health conditions (p. 230). Although this situation is rapidly changing due to the explosion of a variety of communication mediums such as the Internet which did not exist even a few years ago, finding information specific to one’s situation or medical condition is not always easy.

Due to these health care communication challenges and the fact that consumers of health care information are more sophisticated, more knowledgeable, and have higher expectations than those of the past, applying MIR principles to the health care industry may have some merit. Specifically, the authors suggest that health care providers communicate more often using leaner mediums such as telephone calls and mailing instructions or flyers directly to health care consumers. They maintain that the MIR model addresses the efficiency as well as the effectiveness of health care communication. Richer mediums correspond to richer information which is also more equivocal (ambiguous) information. Because richer mediums are more costly than leaner mediums, the richer communication mediums “are deemed inefficient for communications which have low equivocality, since those could be dealt with as effectively as using leaner media which are generally less costly” (Mundt & Driver, 1994, p. 228).

Mundt and Driver (1994) list two reasons they believe it is a good idea to judiciously use leaner communications media in health care communication. First, using leaner media when appropriate may have several advantages. Consumers have less time and may wish to expend less effort and money when asking for health information from their health care providers. Talking to someone on the phone or receiving health information in the mail may provide a more efficient method of communication while still providing clear and precise instructions and personal information. Some health care system members may even prefer to stay away from a provider or physician office when possible to reduce their exposure to the illnesses of others who may be visiting medical clinics and provider offices (p. 231). Second, using lean media for less ambiguous situations will give providers more time to spend with those who need more personal attention due to their more ambiguous or equivocal medical needs. Therefore, the health care practitioner can provide a higher quality of care for those who need it by utilizing richer media when necessary. At the same time, providers will be supplying greater consumer satisfaction for those who do need additional attention and who will benefit from richer communication media (p. 231).

To summarize, thoughtful message and media matching may result in more effective and efficient health communications. Both time and financial considerations are factors that should be considered when producing health communications, and the more effective and efficient the message, the clearer the

information becomes to the consumer who stands to benefit greatly from enhanced communication.

Health Education Mediums

Health education messages are delivered through an extensive variety of mediums today. Health maintenance organizations (HMOs) use telephone support, videos, and a variety of other health education mediums to communicate with their members about services available to them, as well as to answer their health questions (Andrulis & Carrier, 1999, p. 31). Messages are delivered through written mediums such as pamphlets, books, patient education sheets, posters, flyers, and magazine advertisements. Health messages can also be heard at various pre-recorded telephone numbers as well as in film, videos, movie, and television. In addition, the Internet provides health information to consumers and promises to continue to expand health education message delivery at an increasingly fast pace. Whether in the form of written information, audiotaped messages, or online materials, health education messages should be clear, understandable, and available to a wide variety of populations.

Educating depressed patients presents a specific challenge to effective health communication because often the affected also exhibit lower levels of cognitive functioning such as impaired memory, as well as diminished interest in everyday activities. Depressed individuals often have difficulty remembering basic concepts, even random lists of words: "One of the most poignant symptoms of depression is the loss of one's cognitive powers" (Dowling, 1993, p. 61). Health education materials that may be well-suited to the general population may

not have the desired impact on individuals who are experiencing depressive symptoms. Nevertheless, well-designed “self-help materials and psychoeducational interventions may play important roles in effective treatment of depression” (Robinson et al., 1997, p. 563).

Research suggests that health education materials for depressed patients will be most successful when multiple levels of care are employed, including support by medical staff members. In one study, two educational booklets and one video were provided to primary care patients who had been identified as depressed. The goal of providing the written and audio messages was to reinforce the primary care response to depressed patients by incorporating five elements: (a) teaching the patient about antidepressant medications and behavioral strategies, (b) requiring the patient to be active in treatment planning, (c) providing structure for interactions between the presenting individual and the doctor, (d) encouraging written medication and behavioral treatment plans, and (e) increasing physician and psychiatrist interactions concerning antidepressant medications (Robinson, p. 563). Study outcomes indicated that all three health education tools (two written booklets and one video) were helpful to the patients, but that patients were not as likely to view the video as they were to read the booklets. The booklets were interactive, asking patients to answer questions, and both the utilization rates and helpfulness ratings for them were high, suggesting that written educational materials concerning depression are a welcome tool for depressed primary care patients.

Written Materials

The proliferation of written health information available to patients has dramatically increased in recent years. The Food and Drug Administration (FDA) found that the availability of written health information tripled between 1982 and 1984. One survey revealed that for prescription drugs, “written information had been provided by a pharmacist at least 70% of the time. In fact, written information was received more frequently than verbal counseling” (Buck, 1998, p. 963). Despite this trend, there is still a need for providing written information that is clear, concise, and easily understandable. The Secretary of Health and Human Services organized a steering committee in 1996 for the purpose of developing a plan to improve written and oral medication information. While this group was charged with establishing guidelines for pharmaceutical information, their goal that “all information provided to the public be scientifically accurate, unbiased, easily understood, and comprehensive enough to be useful to the patient” (Buck, 1998, p. 963) is appropriate for all written health messages.

Providing written materials to patients and health care clients may increase compliance and follow-up:

Written information for even the simplest things means increased patient follow-through and satisfaction, and fewer telephone calls for you later. Written information reinforces what you have said and is particularly important when you are advising a person about more than one thing. For patients at risk for complications, written information is vital, because they are left to watch for those

complications themselves. What should the patient expect?

When should he call you? (Baker, 1998, p. 145).

It is well-known that written information as a supplement to oral communication is an important element in establishing a positive relationship between the patient and the health care giver. Written information may be particularly useful in reducing an individual's anxiety about health conditions (Bolton & Brittain, 1994).

Doak et al. (1996) list the most common and serious shortcomings of written health materials as: (1) including too much information, (2) using a readability level that is too high, (3) impaired learning and recall due to the fact that there is no opportunity for interaction with the material, and (4) unusual or difficult words that are seldom explained with examples (p. 73). Although patient education materials have a wide variety of readability levels, more than half of the materials currently available are too difficult for the average adult in the United States to understand (p. 73).

There are a number of tools available which are designed to improve written health messages for both patients and the public. To predict the difficulty or ease that patients may have with written health materials, Lorig (1996) suggests that the readability level or "literacy" demand be tested (p.122). Ways to achieve this include using readability formulas and the Suitability of Assessment Materials. Readability formulas such as the Fry scale, the SMOG formula, the GRASP estimate, and the Cloze readability formula (Buck, 1998; Spadero, Robinson, & Smith, 1980) determine the extent to which adults understand

specific written materials. Currently there are a minimum of 40 readability formulas, most of which depend on assessing sentence length and word difficulty.

It is commonly accepted that written materials be prepared for a sixth-grade reading level which allows about three-fourths of American adults to understand and follow instructions reasonably well. In addition, “research and experience show that adults at all reading skill levels prefer, remember better with, and learn faster with easy-to-read instructions” (Lorig, 1996, p. 123).

Nevertheless, written health information often consists of inappropriate literacy levels: Many materials are written at a level higher than sixth- to eighth-grade, making them too difficult for the average American citizen to read. “One of the most frequently encountered problems with written health information is the use of language at a level greater than the reading skill level of the average patient or care provider” (Buck, 1998, p. 964).

While it is no surprise that health messages that are difficult to understand lead to non-compliance, the question of whether or not clearer messages lead to compliance is another matter. Simpler written materials may in fact also encourage compliance. Some research suggests that easy-to-read health messages result not only in higher patient follow-through and compliance, but also in improved memory and recall. Doak, Doak, and Root (1996) cite Bradshaw, Ley, and Kinsey: When health care instructions consist of easy-to-read materials, “patients not only have a higher rate of compliance, but they remember better and make fewer mistakes” (p. 74). Their conclusion is that easy-to-read materials benefit even those with higher literacy levels because “even those with college

degrees learned and remembered more from simpler materials. Simpler instructions help everyone” (Doak et al., 1996, p. 74).

In addition to a multitude of readability formulas available, there are several methods of assessing materials for appropriateness. To ensure that readers are likely to both understand and accept health education materials, it is necessary to assess the suitability of the materials being used. Experts often use a list called the Suitability Assessment of Materials which is divided into six separate areas of concern: content; literacy demands; graphics; layout and typography; learning stimulation motivation; and cultural appropriateness (Lorig, 1996, pp. 125-128; Doak, Doak, & Root, 1996, pp. 49-59). Using criteria from each section helps to both formulate new written materials and assess materials which have already been created. Section 2, Literacy Demands, takes into consideration not only the readability of the material, but also the conversational style used, the types of words used, the context, and the advance organizers such as headers or topic captions.

Although there is no ready-made method which can be applied specifically to health education materials, Doak, Doak, and Root (1996) report that the National Adult Literacy Surveys (NALS) explain the criteria which is used “to rate the difficulty of written materials used in the literacy testing of the US population” (p. 41).

Whatever the format, be it CAI (computer assisted instruction), multimedia, hypertext, or hypermedia, Doak, Doak, and Root (1996) recommend three methods “to assess both the difficulty and suitability” (p. 42) of health

education materials: (1) Use a 17-item checklist of attributes for print materials from the Area Health Education Center in Biddeford, Maine. (2) Use a readability formula such as the Fry formula. (3) Use the Suitability Assessment of Materials (SAM) to analyze the information. They maintain that SAM affords a fairly “rigorous and quantified evaluation of materials in any medium” (p. 42), thus answering the problem of how best to evaluate a variety of materials presented through any number of mediums.

Finally, Doak, Doak, and Root (1996) recommend four steps in preparing written health education materials: (1) involve the audience, (2) limit the objective and the message, (3) decide which words need explanation, and (4) test the draft and final versions with patients using a checklist, readability test, and the Suitability Assessment of Materials (SAM) (p. 75).

Although readability formulas ensure the proper literacy level and checklists such as the Suitability Assessment of Materials provide useful guidelines for creating written health information, the question remains as to how to prepare health messages specifically for depressed individuals. Researchers continue to examine this issue, and Robinson et al. (1997) specifically list four recommendations for preparing written health messages for depressed patients: (a) provide written information on behavioral health education, (b) tailor written information on behavioral health to suit the needs of older patients who have moderate to severe symptoms and offer other strategies to support the behavioral health education (such as follow-up phone calls and longer office visits),

(c) offer written instructions on medications and adherence strategies when patients are beginning to take antidepressant medications, and (d) provide written booklets that are brief, are interactive, and encourage patients to be partners in their treatment planning (p. 570).

Audiotaped Health Messages

Why include a taped version of our health education message, which is accessible by phone? Meeting the needs of the members is essential when trying to convey crucial health care information. Because one of every five adults in America reads below the fifth-grade reading level, they do not consult reading materials for their health care information. "Literacy skills of Americans range from the nonreader to the highly literate. Half the U.S. population read at the 9th-grade level or lower. Most current health care instructions are above that level" (Doak, Doak, & Root, 1996, p. 8). For this segment of the population, nonprint alternatives to health information, including audiotapes, are key to communicating the information they need to improve or maintain their health status.

The U.S. population includes more than 27 million adults who are functionally illiterate, and another 45 million with marginal literacy skills. Audiotaped information may be one of the few ways in which health care messages can be understood by these populations who "rarely choose print formats as a source of information; even simply written materials may be discarded" (Doak, Doak, & Root, 1996, p. 130). The authors also cite research that supports the theory that listening to instructions is generally easier than reading. Some patients maintain that they pay more attention to audiotaped

messages than written ones and that they “don’t get lost” (p. 129) when they hear taped information.

The use of the telephone, as well as the use of telemedicine consultation to provide mental health information, has shown promise (Ball, McLaren, Summerfield, Lipsedge & Watson, 1995). In fact, “some of the earliest applications of telemedicine were in the field of mental health” (Callahan, Hilty, & Nesbitt, 1998, p. 363). The results of one study suggest that patient satisfaction with telemedicine mental health consultations is comparable to satisfaction levels of those who obtained telemedicine consultations “in non-mental health medical areas. The results support telemedicine as a means to extend mental health consultation to rural primary-care patients” (Callahan et al., 1998, p. 363). The fear and stigma often associated with seeing a health care practitioner for problems related to depression may be significantly reduced by allowing the individual to obtain information and even a limited amount of counseling over the telephone. Health messages received over the phone are no substitute for the individual medical follow-up needed when someone is suffering from depression, but they may be a useful supplement to medical care by a qualified mental health professional. While individuals with mental health problems may resist following up with health care professionals, one study found that “brief, telephone-based treatment for minor depression in family practice settings may be an efficient and effective method to decrease symptoms of depression and improve functioning” (Lynch, Tamborrino, & Nagel, 1997, p. 293).

Doak, Doak, and Root (1996, p. 136) suggest the following factors facilitate both the understanding as well as the acceptance of audiotaped instructions:

1. Listeners are able to respond to the dynamics of the spoken language
2. People with low literacy skills are able to understand words and concepts at higher rates for speech than they are for written text
3. Interpreting spoken language may be easier than interpreting and decoding the written word
4. Common words are used more often in spoken language than in written text
5. Speech carries more redundancy than written text

Particularly for those who have impaired cognitive functioning, as is often the case with those suffering from depression, making the health communication simpler and easier to interpret, as well as redundant, may facilitate comprehension.

Researchers suggest that, although observational data and visual cues are an important part of face-to-face interactions when delivering health information, this traditional format is not the only successful way for health messages to be delivered. One study compared telephone, hands-free telephone, low-cost videoconferencing, and face-to-face communication in the context of an acute psychiatric clinic (Ball, McLaren, Summerfield, Lipsedge & Watson, 1995).

Although health care providers and patients both preferred communication methods which included visual cues (videoconferencing and face-to-face), using

single measures, there were very few significant differences between communication methods. The authors of this study cite examples of other research with similar findings: Investigators have found “no dramatic differences when comparing telephones and face-to-face interactions in a medical setting. Both patients and doctors were generally satisfied with the interactions and the medical outcomes were similar” (Ball et al., 1995, p. 25).

Internet Health Messages

Use of the Internet as a source for health care information has dramatically increased during the last five years, stimulating an explosion of health care information which is now electronically available to millions world wide (Jadad & Gagliardi, 1998; Widman & Tong, 1997). Sixty million people used the Internet to search for health information during the twelve-month period from February 1998 through January 1999. The results of a recent Harris poll indicate “that 68% of the 88 million people on-line have used the Internet . . . to look for health care information related to a particular disease or medical condition” (1999, Poll: Most Net Users Want Health Information, <http://www.excite.com/computers>). This poll found depression to be the most often sought-after disease topic on the World Wide Web, generating 19% of all disease inquiries, and topping other categories such as allergies (16%) and cancer (15%).

Electronic mail is one way people use the Internet to search for health care information. It is also the most common Internet activity. While personal communication between physician and patient is still augmented by faxed and mailed letters, and telephone conversations and messages, electronic mail has

several advantages over these traditional health communication methods.

Through this medium, doctors can provide quicker follow-up with patients, answer their questions individually and more completely, and clarify medical instructions. Approximately 40% of U.S. patients use e-mail to contact their doctors, nurses, and other health professionals, and up to 90% of these patients use e-mail for health communication activities as varied as setting appointments, obtaining lab results, acquiring prescriptions and refills, and finding out answers to personal health questions (1999, October 25, *Medical Practice Communicator* [Online], p 2). Many patients are now used to acquiring information through e-mail even on “important and sensitive matters,” and

Recent surveys have shown that nearly half of an estimated 40 million U.S. adults had used the Internet within the past year to seek medical or health-related information. It is estimated that there are at least 10,000 such sites on the World Wide Web. Many other thousands of self-support groups, electronic bulletin boards, and mailing lists are also available Patients want to know more than they can obtain from the routine office-based consultation, and they might find contact on the information superhighway less intimidating than face-to-face dialogue with their doctors (1999, October 25, *Medical Practice Communicator* [Online], p 2).

In terms of psychological or emotional issues, some patients have reported that they are “more comfortable with a computer than they were with the clinician while answering questions of a potentially embarrassing or emotionally painful

nature” (Slack, 1997, p. 48). With so much medical and research data available online, even health care practitioners themselves have increasingly come to rely on the Internet for state of the art medical information and research (Ruffin, 1999).

The use of the Internet for health communication concerning psychological issues is well founded. As early as 1968, computer-based psychiatric interviews were developed and conducted with 69 subjects who had been scheduled for a psychiatric evaluation. “The patients reacted favorably. They indicated a slight preference for the computer as an interviewer in comparison with the doctor” (Slack, 1997, p. 47). In traditional psychotherapy, many of the most important topics to discuss are the ones which patients have the most difficulty discussing. For therapy to be effective, the reluctance to discuss difficult topics, such as the symptoms of depression or issues regarding suicide, is a barrier that needs to be removed. Evidence supports the idea that “under some circumstances there is less resistance to such communication when it occurs in the absence of the human clinician, including the psychotherapist Patients have said that even when they were eager for their doctor to be informed, direct communication by means of the computer was easier for them” (Slack, 1997, p. 48). This experience has been confirmed in several studies, including one in which patients were more likely to communicate with a computer regarding sexual problems or attempted suicide than they were with a psychiatrist (Slack, 1997, p. 49).

Despite this seemingly ubiquitous use of the Internet for health care information, challenges with this tool remain. The first is that there are no universally agreed-upon standards for health information on the Internet. Institutions such as the American Medical Association (AMA) and the Agency for Health Care Policy and Research (AHCPR) have become engaged in the process of setting standards and criteria for evaluating the quality of health information on the Internet, but the quality of health care information currently available is very irregular, diverse, and unpredictable (Chase, 1999; Jadad & Gagliardi, 1998). From this vantage point, it is strictly “buyer, beware.” Because health information can be posted on the Internet by anyone, the quality of health information, the validity of findings, and the reliability of medical recommendations may be suspect. This lack of quality information can have frightening and devastating impact on those who use the Internet for medical advice without checking into the source of the health information provided. “There is often no guarantee of quality. Yet there is no field in which inaccurate, incomplete, or biased information is potentially more damaging” (Mitretek Systems, Health Information Technology Institute [HITI] and Agency for Health Care Policy and Research [AHCPR], 1999, p. 6).

The second challenge, however, is one that has grave implications for public health and the use of the Internet as a way to reach the underserved. Internet use presents problems of equity in accessibility. There is a growing “digital divide” not only in the United States, but in many countries around the world as well. This “divide” describes the disparities between the “haves” and the

“have nots,” meaning the difference between those who have access to computer technology and those who do not.

A government report released in July 1999 maintained that there is documentation which demonstrates a “growing gulf between Internet haves and have-nots” (American Library Association, 1999, p. 1). While many Americans are connected to the Internet through their homes and this number increases daily, there are discernable gaps between those who have ready access to the Internet through their homes or at work, and those who do not have this type of immediate access to the Internet. The National Telecommunications and Information Administration (NTIA) Report about Internet connectivity confirms these gaps, and states that public libraries can play a vital role in bridging the gap between the electronic “haves” and “have-nots.”

These gaps tend to exist not only between the rich and the poor, but between other groups of people. Other gaps defined in the report include: racial, income/economic, family status, and location. Research illustrates that there is an increasing “racial ravine” in household Internet access between black, white, and Hispanic families. U.S. Department of Commerce Secretary William M. Daley maintains that “the basic conclusion of the report is that the digital gap is not only widening, but could become one of America’s leading economic and racial issues over the next few years” (American Library Association, 1999, p. 2). The disparities among racial, ethnic, and demographic groups who are lagging behind the general population in terms of Internet access and computer use must be addressed by health communications experts if the intent of health messages is to

reach the populations who most need health information about disease prevention, risk-factor intervention, and promotion of healthy lifestyles. The opportunities that this technology offers are great, but because they are not widely available on an equal basis, “as a nation we are going to have to find ways to ensure that everybody has access or risk the danger of the kind of increasing split between upper and lower classes that foments unrest” (Goldberg, 1999, p. 162).

Libraries can continue to play an important role in reducing these access gaps because currently “sixty percent of Hispanics who are connected to the Internet get access through libraries, and rural African Americans use the library more than any other group” (American Library Association, 1999, p. 1). The NTIA report also finds that the lack of Internet connectivity is greatest in rural areas generally and the rural south specifically. In response to this report, the President of the United States developed an initiative which encourages the development of partnerships between private and non-profit groups so that gaps in technological and telecommunications areas may be more easily bridged. As a result of this initiative, federal grant programs will be available to assist in developing community technology centers. The goals of such programs will be to “increase high-tech skills” and “to encourage innovative and creative ways to decrease the digital divide in rural and low-income areas” (American Library Association, 1999, p. 2).

No Significant Difference Phenomenon

Because effective communication with persons who are depressed is important to their recovery, finding ways to deliver health information which emphasizes

available resources and treatments for this condition is crucial. Which learning technologies are most effective for this population? Much research is being conducted on the differences between learning technologies which have taken place during the last two decades. Studies have compared the differences between distance learning and face-to-face learning (Timpson & Jones, 1989); between television instruction and classroom learning (Whittington, 1987; Ritchie, 1989); between videotape, audiotape, and telelectures; and between distance learning, computer-mediated education, and a variety of other mediums (Garson, 1996; Goldberg, 1996). Russell has summarized the results of dozens of these studies and writes that the vast majority of this research has consistently found “no significant difference” when comparing educational messages from a variety of mediums. He calls this body of research the “No Significant Difference” phenomenon, but acknowledges that the failure of these studies to find significant differences between the impact of learning mediums “also acknowledges the fact that the questions about the comparative impacts of the technologies remains of paramount importance” (Russell, 1997, p. 1). This lack of compelling evidence demonstrates the importance of comparing the impact of health messages delivered through different mediums.

Summary of Review of the Literature

Because the literature on depression is fairly extensive, only the information most pertinent to the present study has been reported in this chapter. Depression is defined; its incidence among the general population, women, and minorities is cited; and some of the barriers to successful treatment of depression are summarized. The Health Belief Model is briefly discussed, as is the Media

Information Richness Model. Components of effective health

communication concerns are listed, and three health communication mediums

(written, audio, and Internet) are briefly described. The No Significant Difference

Phenomenon is briefly mentioned, demonstrating that the research comparing

health education mediums is equivocal and suggesting that further research be

done in this area.

CHAPTER III

DESIGN AND METHODOLOGY

The purpose of this study was to create a simple health education message that could be delivered through three different mediums, to adapt and validate a survey questionnaire designed to compare responses to the message, and to develop a protocol for the message dissemination and survey implementation. This chapter describes the population and sample selection, the message development, the procedures for establishing reliability and validity of the instrument, the protocol development, and the statistical methods employed.

Population and Sample Selection

To determine test-retest reliability measures of the instrument, a convenience sampling of 28 volunteers between the ages of 28 and 57 was used. This message targeted individuals who were experiencing depressive symptoms. The intent of the message was to inform them of the importance of following up on the advice given during the call, and to encourage them to make or keep their appointment with a health care professional.

Procedures

This study consisted of the following steps:

1. Creating a simple one-page health education message
2. Adapting and validating a survey questionnaire to measure perceptions of the health message

3. Developing a process for message dissemination and survey implementation which included a Health Message Mailing Protocol and Telephone Survey Protocol
 - a. Designing a proposed Depression Project Staff Training Session
 - b. Creating a Depression Project Training Packet

The researcher consulted directly with professional staff members employed at a Midwestern behavioral health company for the message content, as well as for the process development for message dissemination and survey implementation.

The study procedures are organized under the following headings: Message Development, Instrumentation, and Processes Identified for Message Dissemination and Survey Implementation.

Message Development

The message was targeted towards individuals who experience a cluster of depressive symptoms and who are seeking help for their symptoms by calling a behavioral health company for information and referral. The health education message was developed so that it could be delivered through three different mediums: written, audio, and on a web site. Although the message content was essentially the same, it could be made available to individuals in one of three ways: a written message mailed to the home, a pre-recorded audio telephone message, and an interactive web site. Therefore, the researcher wrote a simple, one-page message that easily could be recorded as a phone message, as well as replicated for use on the Internet. The researcher identified the following areas

of concern for effective message development: message content, clarity, understanding, cultural competence, and repetition.

The content of the message was based on constructs from the Health Belief Model as described in Chapter II: health motivation, perceived benefits, barriers, susceptibility, and severity as it relates to individuals suffering from the symptoms of depression. Professional staff from a behavioral health company provided suggestions for the content of the message so that the barriers and benefits commonly expressed by depressed clients, hereafter referred to as members, were specifically addressed. Message content also addressed susceptibility and severity issues often described by members of the behavioral health company who had either been recommended for treatment of depression, or who had actually been treated for depression. Therefore, the researcher attempted to explain the following ideas in the health message, in order to address the barriers, benefits, susceptibility, and severity issues regarding depression articulated by professional staff:

1. Depression is common
2. Depression is not the fault of those who experience it
3. People can get better and feel better when they seek professional help
4. Medication currently available is effective
5. Medication takes time to become effective

The message also provided specific guidelines concerning the course of medication and treatment, including timelines for expected improvement of the

symptoms of depression. Therefore, general information concerning depression was reinforced in the message, with particular recommendations for follow-up provided. Findings from a national mass media campaign indicate that “messages reiterating a general theme and then giving specific behavioral recommendations can influence knowledge and attitudes, as well as overt behavior” (Backer and Rogers, 1993, p. 86).

Message content was then reviewed by the Chief Clinical Officer and Vice-President, the Director of Prevention and Supportive Services, the Director of Intake, a staff researcher, and several professional psychologists and counselors who answer phone calls from depressed members of the behavioral health company. They determined that the health message would be appropriate for mailing to their members who telephoned the company for information and referrals, and who were identified as experiencing a cluster of “depressive” symptoms. It was agreed that the message would be appropriate for those members who experienced symptoms of depression, but who were also not deemed to be high-risk, suicidal, or in need of urgent or emergent care.

Based on current health communication recommendations contained in the Healthy People 2010 document available online (web.health.gov/healthy_people/hpscripts.objectivetext, 1999), produced by the federal government, the researcher determined that, in addition to message content, four other characteristics would be essential to effective message development: clarity, understanding, cultural competence, and repetition. To promote both clarity and

understanding of the message, the researcher used the simplest language possible and employed plain words with no technical language.

To promote understanding and cultural competence in terms of educational levels, as defined by Healthy People 2010, the researcher took into account that low literacy levels are the norm for most U.S. populations, and that researchers recommend aiming at a readability level no higher than sixth-grade. The researcher then used the Flesh-Kincaid readability formula to determine that the message was written at a third-grade level, with a Flesch Reading Ease score of 85. This put the written message at a reading level that would be appropriate for the majority of most populations, including minorities, such as those in the deaf and hard-of-hearing communities.

Repetition of the content of the health message would be achieved by virtue of the fact that a depressed member would first hear the medical advice emphasized in the health message on the phone when initially calling for help; s/he would then read or hear the information in the health message mailed to the home; and s/he would then be asked about the same type of information (feelings, medication, or treatment) later, either in the follow-up visit to a professional or when answering a follow-up phone call from the behavioral health company.

Three versions of the same message were then created to be made available to be mailed to individuals who might express a concern regarding depression or who might be identified as experiencing symptoms of depression.

These individuals could be depressed clients or members of a behavioral health company who typically call in seeking information or referral for clinical depression or alleviating its symptoms. The specific criteria for selection of these individuals is described in the Health Message Mailing Protocol.

The first version of the health message was designated the “Message for Written Message Group,” as shown in Appendix C. It contained the written one-page message that could be mailed to one group (written message group) of depressed individuals or members.

The second version of the message was labeled the “Message for Telephone Message Group,” as shown in Appendix D. It consisted of a written message with a phone number of a prerecorded audio message. The prerecorded phone message consisted of the same health message which was created for the written message group. This message could be mailed to a second group (telephone message group) of depressed members.

The third version of the health message was specified as the “Message for Computer or Website Message Group,” as shown in Appendix E. It listed a website address which contained the same health message as both the written message and the pre-recorded version. For those individuals who might be mailed a message with this website address, a phone number was also listed for them in the event that they could not or did not want to access a computer to read the health message on a website.

Instrumentation

The instrument was adapted from a standard pre-testing message questionnaire published by the National Institutes of Health in the Office of Cancer Communications at the National Cancer Institute. It is included in the publication Making Health Communication Programs Work: A Planner's Guide (U.S. Department of Health and Human Services, 1992). See Appendix I, Survey Questionnaire. This instrument is in the public domain, and is commonly adapted and used by various health agencies when pre-testing health education messages.

No data regarding reliability and validity are available. Therefore, the researcher tested the instrument for test-retest reliability using a convenience sampling of adults. The original intention was to use members of a depression support group to complete the questionnaire. Because the researcher was unable to locate an agency that would grant permission for support group members to participate, the researcher used a convenience sampling of 28 adults between the ages of 28 and 57 to read the message and complete the questionnaire. This process was repeated approximately one week later for each individual, and test-retest reliability measures were computed, as were measures of internal consistency.

The researcher also enlisted the help of four professionals to review the instrument for content validity. Each expert was asked if the instrument measured the following: the perception of the health education message, the

satisfaction and dissatisfaction with the health message, and the strength and weaknesses of the health message. Each expert was also asked if she had any additional comments or suggestions to make regarding the instrument, and three of the four provided comments regarding face validity as well as content validity.

Processes Identified for Message Dissemination and Survey Implementation

This section explains how the researcher identified two discrete processes necessary for message dissemination and survey implementation. These processes were identified as the Health Message Mailing Protocol and the Telephone Survey Protocol. These protocols also provided the foundation for a proposed “Depression Project Staff Training” session which could be presented to employees with supporting documentation in a training packet (Depression Project Training Packet).

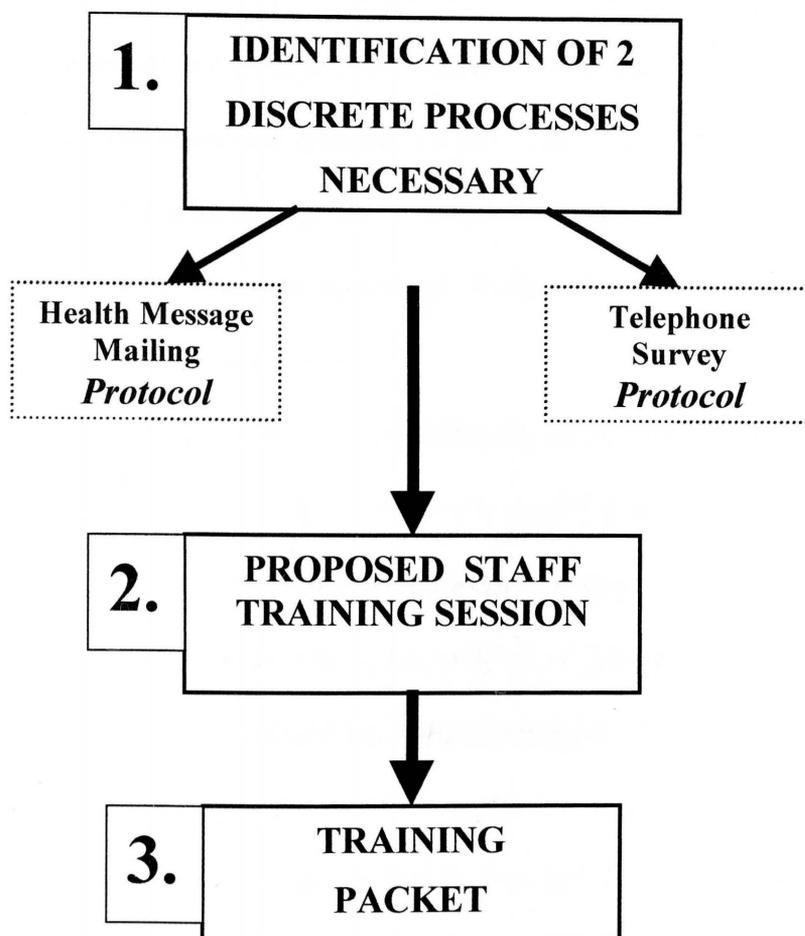
A visual overview of these steps, which evolved during the developmental process in which the researcher consulted with the behavioral health company is illustrated in Table 2 on the following page. The table outlines three steps: identification of the processes necessary to distribute health messages and administer phone surveys, a proposed staff training session, and a staff training packet.

The processes necessary for message dissemination and survey implementation were designed to take place in a corporate setting, such as a behavioral health company or similar corporation which typically receives calls

Table 2

Process Development Overview

**OVERVIEW OF
PROCESS DEVELOPMENT
For Message Dissemination and
Survey Implementation**



Note: The processes identified in Step 1 provided the foundation for the proposed training in Step 2, supported by the recommended training packet materials in Step 3.

from individuals (usually referred to as clients or members) seeking help for depression.

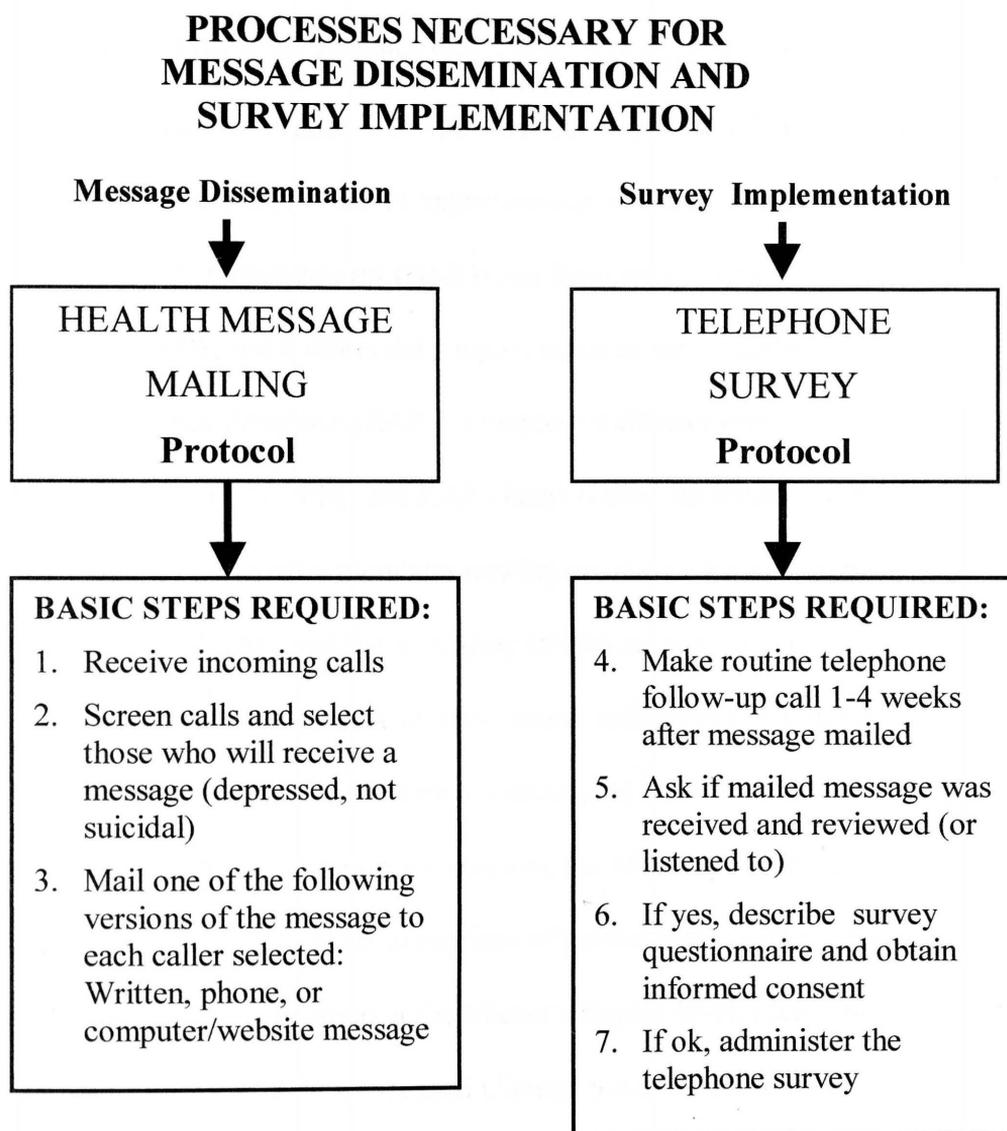
The Health Message Mailing Protocol defines the process necessary to select member callers to whom the health message would be mailed in the event that an organization or a company similar to the behavioral health company wished to initiate a research study. This protocol details the procedures necessary for the selection criteria for those callers who would receive the health message by mail. The researcher developed a flow chart which explicitly outlines these steps for selecting callers, as well as for mailing the health message to one of the three groups designated. Refer to Appendix F, Health Message Mailing Protocol Flow Chart.

The Telephone Survey Protocol describes the process for administering the telephone survey to those member callers who might be selected to receive the health message mailing in one of three mediums. This protocol lists the specific steps required for the data collection process, which can also be described as “survey implementation” or “administering the telephone survey.” The researcher developed a second flow chart which explains this process in detail. Refer to Appendix G, Telephone Survey Protocol Flow Chart.

Table 3 provides more detail concerning both of the protocols established and illustrates the steps required for implementing each process.

Table 3

Processes Identified for Message Dissemination and Survey Implementation



Note: Detailed steps for the suggested procedures are shown in the flow charts in Appendix F (Health Message Mailing Protocol) and Appendix G (Telephone Survey Protocol).

All procedural steps identified for these protocols were developed in concert with professional staff members employed at a large, bi-state behavioral health company in the Midwest. This corporation was chosen as the consulting firm for development of the Staff Training Protocol for Message Dissemination and Survey Implementation because it is representative of a typical Midwestern behavioral health company: It serves approximately 400,000 clients of several Health Maintenance Organizations (HMO) and Preferred Provider Organizations (PPO), and it offers the support services for a number of Employee Assistance Programs (EAP). Company staff members answer the incoming calls from HMO, PPO and EAP clients (called members) on a daily basis, including all those from members seeking assistance for mental health and substance abuse problems, and those relating to clinical depression.

The researcher consulted with professional staff members employed at the company, including the Chief Clinical Officer and Vice-President, the Director of Prevention and Supportive Services, the Director of Intake, a staff researcher, and various call-takers comprised of professionals in the following categories: psychologists licensed at the Master's degree level, Licensed Professional Counselors (LPC), Licensed Clinical Social Workers (LSCW and LSCSW), Registered Nurses (RN), and Advanced Registered Nurse Practitioners (ARNP).

The researcher collaborated with staff members of the behavioral health company to develop a proposed one-hour Depression Project Staff Training

Session during which the protocols would be presented and explained in detail. This Staff Training Session could be used to provide employees with the knowledge of which steps would be required to mail the health message to clients or members who might call in with questions relating to depression. The training would also provide them with the steps necessary to administer the telephone survey questionnaire.

Behavioral health company staff members discussed the proposed training session and reviewed the training packet contents. They agreed that one hour would not be sufficient to provide this type of training in sufficient detail. They suggested that two hours be allowed for the proposed training session.

In consultation with behavioral health company staff members, it was also agreed that the trainer who might present this training session should take great care to explain each step outlined in the flow charts to ensure uniformity of the data collection protocol. This would be especially true for the specific selection criteria for participating clients or members, as well as for exactly what to say to the subjects while administering the telephone survey. During this segment of the training, a copy of the Intake Sheet and Survey Form (Appendix H) and the Survey Questionnaire (Appendix I) would be provided, and specific questions from staff members could be answered. Those who would be collecting the data by administering the telephone survey would receive in-depth training and would be provided with a written script to follow to ensure

uniformity of the data collection protocol. Table 4 summarizes the components of the proposed Depression Project Staff Training Session.

The researcher also developed a prototype of a “suggested” Depression Project Staff Training Packet for use in the proposed Depression Project Staff Training Session. This packet was designed to be used during the training session and could be provided to each staff member who would be trained in the protocols necessary for message dissemination and survey implementation processes.

In order to provide the background and justification for message dissemination and survey implementation in a corporate setting, the prototype Depression Project Training Packet contained general information concerning health communications and the need to provide relevant health messages to individuals suffering from depression. The packet also described the purpose of mailing three versions of health messages and administering the telephone survey in order to obtain feedback from individuals who would receive the message. The Depression Project Training Packet contained the following items:

1. Purpose of the Study (Appendix A)
2. Research Questions (Appendix B)
3. Message for Written Message Group (Appendix C)
4. Message for Telephone Message Group (Appendix D)
5. Message for Computer or Website Message Group (Appendix E)

Table 4

Proposed Depression Project Staff Training Session for Employees of Behavioral Health Company

**COMPONENTS OF
PROPOSED DEPRESSION PROJECT
STAFF TRAINING SESSION**

1.	Provide Depression Project overview and purpose
2.	Distribute individual Depression Project Staff Training Packets
3.	Review health message: written, telephone, and computer/website versions
4.	<p>Explain Health Message Mailing Protocol, and then review Health Message Mailing Protocol Flow Chart (Appendix F)</p> <ul style="list-style-type: none"> ◆ Explain selection criteria for those who will receive message ◆ Mail message to each individual selected, and record the type of health message mailed: written, telephone, or computer/website version
5.	<p>Explain Telephone Survey Protocol, and then review Telephone Survey Protocol Flow Chart (Appendix G)</p> <ul style="list-style-type: none"> ◆ Make routine follow-up phone call within four weeks after message mailed ◆ Determine if message was received; and if yes, if it was read, listened to, or reviewed ◆ If yes, describe the survey questionnaire and the goal of completing it ◆ Obtain informed consent if caller is willing to complete the survey questionnaire over the phone ◆ Assure caller of confidentiality and anonymity ◆ Follow script provided and administer the telephone survey questionnaire
6.	Answer questions

6. Health Message Mailing Protocol Flow Chart (Appendix F)
7. Telephone Survey Protocol Flow Chart (Appendix G)
8. Intake Sheet and Survey Form (Appendix H)
9. Survey Questionnaire (Appendix I)

The researcher presented the final products (the curriculum for the proposed Depression Project Staff Training Session and the contents of the suggested Depression Project Training Packet) to the behavioral health company executive staff for final review. The Chief Clinical Officer and Vice-President, the Director of Prevention and Supportive Services, and the Director of Intake each agreed that a research study comprised of these components would be feasible in a corporate setting similar to theirs.

Treatment of Data

All of the collected information, including qualitative recommendations made by experts judging the content validity of the instrument, were treated as data. Both parametric and non-parametric statistics were used to calculate test-retest reliability of the instrument. The Spearman correlation test was used to calculate reliability for the first 5 survey questions, and the Pearson test was used to calculate test-retest reliability for the last survey question which was comprised of a 19-item sub-scale. In addition, a measure of internal consistency was used to calculate Chronbach's Alpha.

CHAPTER IV

FINDINGS

Qualitative and quantitative methods were used to analyze the data generated by the test-retest reliability measures and the content validity of the instrument. This chapter will present data from test-retest reliability measures and suggestions made by a jury of experts regarding the qualitative analysis of the content validity of the instrument.

Test-Retest Reliability

A total of 28 volunteers completed the survey questions at two different times. The subjects' ages ranged from 28 to 57, with a mean age of 44 years old. Fifty percent (14) of the subjects were male, forty-six percent (13) were identified as female, while the one remaining subject did not identify gender. Days between survey completion (pre and post) ranged from seven to eight.

To calculate test-retest reliability of the survey instrument, the researcher employed non-parametric statistical tests for survey questions one through five and parametric statistics for survey question number six. Spearman's rho (rank order coefficient) was calculated for the first five survey questions, and Pearson correlation coefficients were computed for survey question number six, which was comprised of a 19-item sub-scale. As shown in Table 5, a statistically significant positive correlation was found between all pre- and post-testing for the first five survey items, with correlation coefficients ranging between .478 to .885. Therefore, test-retest reliability for the first five items was firmly established.

Table 5

Pre- and Post-Test Spearman Correlations for Survey Items 1-5

Question	Item	Spearman's Rho
1.	What did you think was the main idea of this educational information?	.89**
2.	What, if anything, about the educational material did you particularly like?	.51**
3.	What, if anything, about the educational material did you particularly dislike?	.48*
4.	Was there anything in the educational information that you found confusing or hard to understand?	.62**
5.	Was there anything in the educational material you found hard to believe?	.51*
** Significant at .01 * Significant at .05		

As shown in Table 6, a statistically significant positive correlation was also found for 17 of 19 sub-scale items in survey question number six, using the Pearson correlation test. Only sub-scale items number 6 (“the message was not serious enough”) and number 11 (“the message gave useful information for other people”) were not significant at least at the .05 level, with correlation coefficients of .33 and .31, respectively. As a measure of internal consistency, Chronbach’s Alpha was run, resulting in an overall alpha of .38. Removal of items 6 and 11 increased this value to .48.

Table 6

Pre- and Post-Test Pearson Correlations for Sub-Scale Items in Question Six:

Sub-scale	Item	Pearson Correlation
1.	The message was interesting	.91**
2.	The message was convincing	.58**
3.	The message was irritating	.78**
4.	The message was confusing	.68**
5.	The message made its point	.73**
6.	The message was not serious enough	.33
7.	The message was offensive	.43*
8.	The message was scary	.73**
9.	The message was believable	.49*
10.	The message gave me useful information	.65**
11.	The message gave useful information for other people	.31
12.	The message captured my attention	.76**
13.	The message will capture the attention of those with depression	.77**
14.	The message was a good reminder to take care of depression	.50**
15.	The message had an overall encouraging tone	.80**
16.	The message was too mild; it should be stronger	.66**
17.	I will be more conscientious about my treatment for depression	.50*
18.	Staying on my treatment program for depression is a struggle for me	.77**
19.	The message convinced me that it's important to control depression	.73**
** Significant at .01 * Significant at .05		

Content Validity

The instrument reviewed in this validity study had not been proven to be valid: When the researcher inquired as to the history of the survey, she was informed that validity studies had never been done on the original instrument despite the fact that this survey instrument is commonly used by health educators for pre-testing of health messages. In addition, the researcher obtained permission as well as encouragement to adapt the instrument for use with the health message about depression. Slight changes were made in the instrument so that it was appropriate for use in measuring the responses to the health message regarding depression.

The researcher's intent was to determine whether or not the survey instrument would appropriately measure the concepts that it was intended to measure: the perceptions of the health education message, the satisfaction and dissatisfaction with the health message, and the strengths and weaknesses of the health message. Validity is the extent to which an instrument measures that which it intends to measure. McKenzie, Wood, Kotecki, Clark, and Brey (1999) maintain that validity measures are more critical to an instrument than are measures of reliability because if an instrument is not measuring "what it is supposed to, then it does not matter if it is reliable" (McKenzie et al., p. 311). The authors cite the definition of validity which is provided by Green and Lewis in their 1986 text, Measurement and Evaluation in Health Education and Health Promotion: "In the broadest terms, validity in measurement addresses the

degree to which the concept or concepts under study are accurately represented by the particular items on your questionnaire, test, self-report form, or other measuring device” (McKenzie et al., p. 311). Several types of validity include content, face, criterion, and construct validity (Aday, 1996; Dignan & Carr, 1992; Sarvella & McDermott, 1993).

Content validity in particular is based on certain types of judgements.

Specifically, it relies on:

Judgements about whether the questions chosen are representative of the concepts they are intended to reflect. More precisely, content validity refers to how good a sample the empirical measures are of the theoretical domain they are presumed to represent. It is, therefore, important that there be some clear idea of the domain or universe of meaning implied in the concept being evaluated (Aday, 1996, p 58).

Content validity is also assessed “by the extent to which the information is represented by measurement” (Digan & Carr, 1992, p. 155).

While content validity is demonstrated by an instrument measuring the concepts or ideas which it claims to measure (Sarvella & McDermott, 1993), face validity is a more superficial measure of validity determined by judgements made about the surface appearance of the instrument. It answers the question of whether or not the instrument *appears to* measure that which it is supposed to be measuring. McKenzie et al. (1999) maintain that it is important not to confuse content validity with face validity. Nevertheless, face validity has some

usefulness, according to Borg, Gall, and Gall (1993). While claims of face validity may be said to be much less significant than content validity, face validity is “an important feature of tests intended for practical use because people generally react more favorably to tests that have high face validity” (Borg, Gall, & Gall, 1993, p. 123). Tests with high face validity tend to demonstrate the following strengths: (1) increased levels of motivation as well as cooperation among those who are answering the questions, (2) assistance in convincing others to use the rest, (3) improvement in public relations due to the fact that those who are not experts can more easily understand the relationship between the tool and what it is supposed to measure, and (4) reduction of feelings of dissatisfaction or injustice for those who score low (Borg, Gall, & Gall, 1993).

In order to establish the content validity of the survey instrument, a “jury” of four experts was contacted. The jury included experts with both practical teaching experience and academic backgrounds. Three of the individuals were college professors and one expert was a teacher of special education. They included a psychometrician with a Ph.D. in Health Education, a health communications researcher with a Ph.D. in Public Health, and a Ph.D. in Organizational Behavior and Management who routinely assists with instrument development and validation. The fourth jury member was a teacher with two Master’s degrees, one in Special Education: Learning Disabilities, and a second Master’s degree in Special Education: Educationally Handicapped.

Qualitative measures are commonly used to measure content validity for an instrument (Aday, 1996; Borg, Gall, & Gall, 1993; McKenzie, Wood, Kotecki, Clark, and Brey, 1999). One method for establishing content validity is to have the researcher “ask expert consultants in the area whether, in their judgment, the questions being asked adequately represent the concept” (Aday, 1996, p. 58). Therefore, each expert was sent a copy of the instrument and was asked to judge the content validity of the survey instrument by assessing whether or not the instrument measured the concepts or “perceptions” that it was supposed to measure. The three specific concepts which the researcher was attempting to measure with this instrument were perception, satisfaction, and strengths/weaknesses of the health message. Each expert was also asked if she had further suggestions or recommendations to make the instrument more accurately reflect the concepts being measured by the survey instrument. Specific information about these three concepts is provided below. Refer to Appendix I, Survey Questionnaire, to review the individual questions included on the survey instrument.

1. Perception about the health message (perceived intent, clarity and believability). Perception of the health education message consisted of identifying the perceived intent of the health education message (survey question number one), known as the main message; perceived clarity of the message (survey question number four); and perceived believability of the message (survey question number five).

2. Satisfaction with the health message (likes and dislikes).

Satisfaction with the health message consisted of identifying the reader's attitudes about the quality of the message in terms of meeting the subjects' informational needs and preferences. Satisfaction was measured by preferences, or what the reader liked about the message (survey question number two), and dissatisfaction was measured by what the reader did not like about the message (question number three).

3. Strengths and weaknesses of the health message. Strengths and weaknesses consisted of identifying positive and negatives attributes of the health message listed in survey question number six, which consisted of a sub-scale of 19 items. As shown in Table 7, sub-scale items numbers 1, 2, 5, 9, 10, 11, 12, 13, 14, 15, 17, and 19 measured positive attributes, or strengths of the health message, described in positive statements.

Several sub-scale items measured the weaknesses of the health message. As shown in Table 8, sub-scale items numbers 3, 4, 6, 7, 8, and 16 measured negative comments, or weaknesses of the health messages.

The researcher reviewed the recommendations made by the experts assessing content validity of the survey instrument. No changes were required for content validity; however, the researcher made minor changes to the survey instrument based on recommendations for strengthening the face validity of the

Table 7

Strengths of the Health Message

Sub-scale Number	Positive Statements (Strengths)
1.	The message was interesting
2	The message was convincing
5.	The message made its point
9.	The message was believable
10.	The message gave me useful information
11.	The message gave useful information for other people
12.	The message captured my attention
13.	The message will capture the attention of those with depression
14.	The message was a good reminder to take care of depression
15.	The message had an overall encouraging tone
17.	I will be more conscientious about my treatment for depression
19.	The message convinced me that it's important to control depression

Note: Sub-scale items from question number six in the Survey Questionnaire describe strengths of the health message.

Table 8

Weaknesses of the Health Message

Sub-scale Number	Negative Statements (Weaknesses)
3.	The message was irritating
4	The message was confusing
6.	The message was not serious enough
7.	The message was offensive
8.	The message was scary
16.	The message was too mild; it should be stronger
18.	Staying on my treatment program for depression is a struggle for me

Note: Sub-scale items from question number six in the Survey Questionnaire describe weaknesses of the health message.

survey questionnaire. Those suggestions were as follows: (1) Refer to subjects as participants in the consent area, in order to make the survey instrument less sterile and formidable. (2) Keep the introductory language and consent language as simple and as friendly as possible. (3) Include a separate Intake Sheet and Survey Form (Appendix H) sheet on top of the survey instrument itself, so that demographic information, study criteria, and consent could be established up front. This separate face sheet would also make it easier for the

survey personnel to establish consent before starting the survey questionnaire itself. (4) Change the columns on the sub-scale items for question six to include version of the specific Likert scale categories to be checked, rather than only using numbers from one to five. The researcher therefore added the following descriptors to the top of the columns in question six: “strongly agree,” “agree,” “neither,” “disagree,” and “strongly disagree.” This would reduce the chances of survey error if the instrument were to be used in an actual study setting.

Research Questions

The following three research questions were addressed during the course of this study. The first two were addressed using the data collected from test-retest reliability and the content validity measures. The third question was addressed during consultation with a behavioral health company to develop the processes necessary for message dissemination and survey implementation.

1. Is the survey questionnaire valid? Qualitative feedback and recommendations provided by the panel of four experts revealed that the instrument has content validity. They agreed that the instrument provides an accurate assessment of the concepts that it was intended to measure: the perceptions of the health education message, the satisfaction and dissatisfaction with the health message, and the strengths and weaknesses of the health message. In addition, several experts provided subjective recommendations which were implemented to improve the face validity of the survey questionnaire.

2. Is the survey questionnaire reliable? Both non-parametric and parametric statistical tests revealed that the instrument is reliable. Spearman's rho (rank order coefficient) was calculated for the first five survey questions, revealing a statistically significant positive correlation between all pre- and post-testing results for these questions. The Pearson Correlation test found a statistically significant positive correlation between 17 of the 19 sub-scale items in question six.

3. What steps can be identified and which types of procedures would likely be necessary to develop a protocol for message delivery and survey implementation? The researcher developed a two-phase protocol for delivering the health message and for administering the telephone survey. She identified the specific steps necessary for this process, including a two-hour training curriculum which she identified as the "Depression Project Staff Training Session," and she created a "Depression Project Training Packet" containing materials she wrote to support the training curriculum for message delivery and survey implementation.

Summary

Both the test-retest reliability and content validity of the instrument were firmly established. In addition, experts made several recommendations to enhance the face validity of the survey instrument in an attempt to assure less chance of survey error. Analysis of the subjective feedback acquired during consultation with a behavioral health company, in order to establish a practical

methodology for message dissemination and survey implementation, was one of the most critical elements of this study: The experience of articulating the steps necessary for this process provided extremely useful qualitative information regarding the barriers and challenges of implementing a study using this instrument to test a similar health message in a corporate setting.

CHAPTER V

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents a general summary of the themes regarding mental illness and health communication that emerged during the literature review. In the “Conclusions” section of this chapter the researcher also comments on the lessons learned during the process of establishing instrument reliability and validity, and in the “Recommendations” section she provides suggestions for future research.

Discussion

Mental Illness

Mental illness, including depression, is a common and serious problem which deserves great attention. It is perhaps the last taboo in public health, for while people have long discussed more intimate matters such as sexual preference and sexual habits in this day of serious and fatal sexually transmitted diseases, few will openly admit to either personal or family history of mental illness, including depression. Some have described the late twentieth century as the beginning of the third epoch of public health, one in which diseases of meaning have become common place. Mental illness, and depression in particular, is one such disease of meaning because our culture still does not allow us to view it for what it is – a chronic and serious medical condition like diabetes or heart disease, which is biologically based. Instead, it remains cloaked in secrecy, weighed down by societal stigma and cultural shame (Phelan, Bromet, & Link, 1998).

That the Surgeon General of the United States has recently issued two reports relating to this topic – one on suicide and one on mental health – attests to the fact that mental illness and its concomitant problems are serious public health concerns. It is time for public health officers, public health planners, and health educators to address this grave health problem by being willing to go beyond the past patterns of stigmatization and secrecy and to openly embrace the challenge of addressing mental health problems. Public health traditionally employs a population approach by concerning itself with the health of large groups of people within a social and environmental context.

Just as the mainstream of public health takes a broad view of health and illness, this Surgeon General's Report on Mental Health takes a wide-angle lens to both mental health and mental illness. In years past, the mental health field often focused principally on mental illness in order to serve individuals who were most severely affected. Only as the field has matured has it begun to respond to intensifying interest and concerns about disease prevention and health promotion (Department of Health and Human Services, 2000, p. 2).

Epidemiologic surveillance of the population's health, disease prevention, and health promotion are as critical to the practice of public health as are the etiology, diagnosis, and treatment of disease. These tools can all be applied with success to the field of mental health, just as they have been successfully directed at physical health concerns. That mental disorders are responsible for greater than 15% of

“the overall burden of disease from all causes and slightly more than the burden associated with all forms of cancer” (Department of Health and Human Services, 2000, p. 1), only emphasizes the gravity of this public health challenge.

A special report in the MMWR (Morbidity and Mortality Weekly Report) lists ten great public health achievements that occurred in the United States from 1900 through 1999 (U.S. Department of Health and Human Services, April 12, 1999). Some of today’s popular themes, such as the recognition of tobacco use as a health hazard, safer workplaces, and motor vehicle safety are among these top ten, but notably absent is any mention of advances in mental health issues, or even the recognition of the severity of the problem. Due to the significant burden of disease caused by depression and its disabling effects, as well as the crippling social stigma which remains a daunting threat to improving the incidence and prevalence of mental illness, it is critical that professional health educators in both the public and private sectors begin to address mental health issues with more commitment, vigor, and resolve.

Educational programs and effective health messages are still needed to encourage appropriate treatment for depression, and may in fact improve compliance (Becker and Maiman, 1980; Tylee, Gastpar, Lepine, & Mendlewicz, 1999; Worrall, Angel, Chaulk, Clarke, & Robbins, 1999). Public health education campaigns directed to the public for the purpose of reducing the stigma and erasing the barriers associated with mental illness serve an essential function “in enhancing public education and awareness and improving professional recognition and management of depression” (Paykel et al., 1997, p. 59).

Health Communications

The Centers for Disease Control (CDC) define health communication as “the study and use of communication strategies to inform and influence individual and community decisions that enhance health” (HealthComm KEY website: <http://www.cdc.gov/od/oc/hcomm/hcomm>, 2000). Health communication is a burgeoning field, which is fueled by the explosive growth of technological tools such as the Internet and multimedia advances in educational technology. That the agenda for Healthy People 2010 has included a focus area specifically dedicated to health communication, speaks to the significance of this field.

The National Association of County and City Health Officials (NACCHO) has also highlighted the importance of framing public health messages for impact. This group addressed critical issues for public health strategies in its Proceedings of the First Public Health Leadership Conference in 1997. Among its suggestions for advancing the goals of public health were recommendations that public health employees learn to pay attention to the language of messages and ensure that messages are targeted to specific populations.

The W. K. Kellogg and Robert Wood Johnson Foundations sponsor a national initiative, Turning Point. The goal of this program is to build stronger and more relevant public health systems by looking toward the future of public health and providing a vision for public health agencies. Many of the statewide “Turning Point” grants funded throughout the United States include task force groups dedicated exclusively to the topic of health communication.

Brownson and Kreuter (1997) summarize 7 future trends which affect the future of public health, including the “explosion of information technologies” (p. 53). These technological tools can provide us with a variety of novel ways to communicate health information. However, because “improved technology does not necessarily result in improved and integrated information” (Brownson & Kreuter, 1997, p. 53), this trend is no guarantee that public health workers will provide better, more useful, and more meaningful health communication to the public that they serve. Rather, these technologies will provide an even greater challenge to public health educators who are dedicated to communicating public health campaigns consisting of valuable health messages which have a significant impact on the health of the population.

The National Commission for Health Education Credentialing (NCHEC) describes Responsibility VII for certified health education specialists as communicating health education needs, concerns, and resources in the Competency-Based Framework for Professional Development of Certified Health Education Specialists (National Commission for Health Education Credentialing [NCHEC], 1996). In 1999, the National Commission for Health Education Credentialing, (NCHEC) published a second manual entitled A Competency-Based Framework For Professional Development Of Certified Health Education Specialists. This document describes Competency C and two sub-competencies relating to “Communicating health and health education needs, concerns, and resources (National Commission for Health Education Credentialing [NCHEC], 1999, p. 40) as follows:

Competency C: Select a variety of communication methods and techniques in providing health information.

Sub-competencies:

1. Utilize a wide range of techniques for communicating health and health education information.
2. Demonstrate proficiency in communicating health information and health education needs (NCHEC, 1999, p. 42).

Therefore, it is imperative that professional health educators keep abreast of the technological, social, and cultural changes which will continue to have an impact on health communication effectiveness in general, and on health message development and implementation, specifically. Researching effective health messages that have a positive impact on public health becomes more critical, as the emphasis on health communication grows, and available multi-media technology and communications methodology increase.

After considering the tremendous amount of research that has been conducted on health communication, the question then becomes: How can health educators develop effective messages that will have a positive impact on the intended audience? The National Institutes of Health in the Office of Cancer Communications as the National Cancer Institute has published a comprehensive guide to health communication which is titled Making Health Communication Programs Work: A Planner's Guide (Di Lima & Schust, 1997, p. 77). It is also available online. This book provides useful guidelines concerning the development and dissemination of health messages. More importantly, it lists

eleven crucial factors which have an impact on how the public perceives and accepts health messages. These items should be taken into consideration when one is attempting to design or formulate any health-related message that needs to be communicated to the public:

1. Health risk is an intangible concept.
2. The public responds to easy solutions.
3. People want absolute answers.
4. The public may react unfavorably to fear.
5. The public doubts the verity of science.
6. The public has other priorities.
7. Individuals do not feel susceptible.
8. The public holds contradictory beliefs.
9. The public lacks a future orientation.
10. The public personalizes new information.
11. The public does not understand science. (Di Lima & Schust, 1997, p. 77).

Health educators would do well to consider all of these elements when developing health communication programs and campaigns. Regardless of the specific theoretical basis (Health Belief Model, Stages of Change Theory, Media Information/Richness Model) being used for message development, using these factors as a basis for creating health messages can assist in developing consistently effective health communications that the public will notice, listen to, and perhaps even heed.

Conclusions

This research experience included the creation of a health education message, the validation of an instrument, and the development of a process for message dissemination and survey implementation. Several valuable lessons learned from this process are described in the following pages.

1. There are hundreds, perhaps thousands of health messages relating to depression. However, none have been proven to be effective with the population they are intended to reach. The researcher was surprised to discover the number of health messages designed for depressed individuals which were confusing to read and hard to understand. Many of these messages contained too much information and were therefore overly lengthy and poorly written. Numerous health messages about depression which were reviewed during the literature review process were replete with technical language and written at a literacy level far exceeding the average literacy level of most Americans. Clearly there is a need for creating short, clear, concise health messages which can more effectively reach depressed individuals who often are cognitively impaired and have difficulty with their memories. More effort could be spent on using the key concepts of the Health Belief Model to create health messages for those who suffer from depression:

Despite the methodological shortcomings of many of the studies using the HBM, the model has shown promise in explaining health beliefs of persons with psychiatric disorders. This model has been used as a framework in research studies concerning

mental health issues, such as predicting compliance to pharmacological treatment, predicting preventive behavior, and predicting treatment-seeking decisions (Saleeby, 2000, p. 84).

2. Following an articulated plan for assessing content validity, which would include quantitative as well as qualitative measures, would provide a more thorough methodology for establishing validity of an instrument. The researcher was unable to find a well-documented and detailed protocol for establishing content validity before she became involved with the validity study. However, an excellent methodology for establishing content validity which employs qualitative and quantitative steps has since been published. McKenzie, Wood, Kotecki, Clark, and Brey (2000) describe a specific process for establishing the content validity of an instrument. Although subjective, qualitative measures are commonly used to establish content validity, McKenzie et al. maintain that it is best established by using quantitative as well as qualitative processes (p 311).

McKenzie, Wood, Kotecki, Clark, and Brey (2000) provide an outline for this methodology which includes 18 steps in the validation process. The authors report:

Until now, a detailed, step-by-step protocol that incorporates both qualitative and quantitative reviews of prospective items has not been described. The procedure described herein provides just such a systematic and logical approach to demonstrating the content validity of an instrument, and results in both qualitative and quantitative evidence (p. 317).

Had this thorough validation process been highlighted in the literature at the time of the research, it would have provided a more formal and helpful structure for the establishment of content validity.

3. The methodology for message dissemination and survey implementation in the “real world” is complex and may be replete with a variety of unavoidable barriers. The researcher was extremely fortunate in being able to work in collaboration with a behavioral health company in the Midwest to establish a two-phase protocol for this process. The behavioral health company was chosen in part because it routinely handles a fairly large number of incoming calls on a regular basis. It is a company consisting of 100 employees serving more than 300,000 members in a major metropolitan area. Members are assisted with a wide variety of mental health issues, including anxiety disorders, eating disorders, depression, psychotic disorders, and alcohol and drug abuse. In 1999 alone, the company received more than 68,000 calls from members. Phone calls come in primarily from two states in the Midwest.

A number of barriers to sending out and testing health messages about depression were identified by company staff members consulted during this phase of the research project. One challenge in distributing health messages to depressed clients is determining who is best reached with a written message, an audio-taped message that can be retrieved over the telephone, or an Internet health message that can be obtained on the computer. The proposed health message mailing protocol answers this challenge by making the message available in one

of these three mediums to every third member caller who is identified as experiencing a cluster of depressive symptoms.

Other challenges to delivering health messages and testing them in a “real-world” setting included determining the selection criteria for those who would receive a health message about depression. Members who were experiencing symptoms of depression, but who were not high-risk, suicidal, or who did not need urgent or emergent care, would be chosen to receive a health message about depression which encouraged them to follow up with their recommended care plan. However, in limiting the criteria in this manner, there must be some assurance that there are a sufficient number of members who fit this particular description. The intent of such research would be to provide a health message for depressed individuals who were not at high risk, but who needed encouragement to keep medical appointments and motivation to comply with prescribed medications. Analysis by the company should confirm that a large number of their member callers do not need urgent care when they place calls concerning depression.

Another hindrance to the successful message dissemination and survey implementation process results from typical but unpredictable circumstances in a corporate setting. From time to time, every company experiences major shifts in employee turnover with concomitant understaffing. As this may lead to a variety of delays, subsequent long-range planning is necessary for the success of projects. These barriers are unavoidable at times, and result from “real world” circumstances when attempting to implement a project in a company setting.

Recommendations

Future research should focus on finding instrumentation related to health messages about depression. Researchers should concentrate on developing and validating instruments that can accurately measure the effectiveness of health messages about depression and related compliance issues. Saleeby (2000) recommends future research investigating the use of the Health Belief Model as it relates to mental illness, noting that “a stable instrument based on the HBM to measure health beliefs about mental illness has the potential for usefulness in both practice and research settings” (p. 93).

Studying mass media campaigns and their effectiveness on those who experience depression would be a valuable field to investigate. Backer, Rogers, and Sopory (1992) state the implications for future research of health messages in the form of a question: “How can mechanisms be developed for the pretesting and evaluation of mass media campaigns . . . ? The federal government at one point sponsored a Health Messages Testing Service. Could such a program be productively restarted?” (p. 173).

A second area of related research might include determining the most effective methods for educating the public about the seriousness of depression and the risk factors for this condition. Investigators need to identify those health communications methods that are most useful in helping people who suffer from depression. Discovering the answers to the following questions are critical:

1. Which health communications methodologies are most appropriate for reaching those who suffer from depression?

2. Which health education mediums should be employed to educate patients and to encourage them to follow up with health care plans?
3. How can health educators motivate people to seek help for symptoms of depression and encourage them to follow up with health care practitioners?
4. Which health education mediums are most effective in encouraging compliance with health care plans?
5. How can we more effectively educate the public about mental health issues?

Summary

Effective health communication is a complex and evolving discipline worthy of future study by health educators and public health agencies. As researchers continue to learn about what works best in the field of health communication, these discoveries can be successfully applied to reaching and educating the underserved yet sizeable population of individuals in this country who suffer from untreated depression.

References

- Aday, L. U. 1996. Designing and conducting health surveys: A comprehensive guide. San Francisco: Jossey-Bass.
- Algood-Merten, B., & Lewinsohn, P. M. (1990). Sex differences and adolescent depression. Journal of Abnormal Psychology, 99(1), 55-63.
- American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders (4th ed). Washington, DC: Author.
- Andrulis, D. P., & Carrier, B. (1999). Managed care in the inner city. San Francisco: Jossey-Bass.
- Author. 1995. Making health communication programs work: A planner's guide. [Online], 107 pages. Available: http://rex.nci.gov/NCI_Pub_Interface/T.
- Backer, T. E., & Rogers, E. M. (1993). Organizational aspects of health communication campaigns: What works? Thousand Oaks, CA: Sage.
- Backer, T. E., Rogers, E. M., & Sopory, P. (1992). Designing health communication campaigns: What works? Thousand Oaks, CA: Sage.
- Baird, P. D. (1992, April). On 115 dark. Men's Health, 90-91.
- Baker, S. K. (1998). Managing patient expectations. San Francisco: Jossey-Bass.
- Ball, C. J., McLaren, P. M., Summerfield, A. B., Lipsedge, M. S., & Watson, J. P. (1995). A comparison of communication modes in adult psychiatry. Journal of Telemedicine and Telecare, 1(1), 22-26.

Beare, P. L. (1989). The comparative effectiveness of videotape, audiotape, and telelectures in delivering continuing teacher education. Moorhead State University.

Becker, M. H. (Ed). (1974). The health belief model and personal health behavior. Health Education Monographs, 2, 324-473.

Becker, M. H., & Maiman, L. A. (1980). Strategies for enhancing patient compliance. Journal of Community Health, 6(2), 113-135.

Beenstock, J., Broadbent, J., & Castro-Fraser, J. (1998, February). Patient information: In the clear. Health Services Journal, 108, 32.

Birnbaum, H.G., Greenberg, P. E., Barton, M., Kessler, R. C., Rowland, C. R., & Williamson, T. E. (1999). Workplace burden of depression: A case study in social functioning using employer claims data. *Drug Benefit Trends*. [Online], 9 pages. Available: <http://www.medscape.com/SCP/DBT/1999/v11.n08/d5943.gree/pnt-d5943.gree.html>.

Blehar, M. C., & Oren, D. A. (1997). Gender differences in depression. (26 pages). Medscape article. [Online] Available: <http://www.medscape.com/Medscape/womens.health/1997/v02.n02/w121.blehar/w121.blehar.html>.

Blumenthal, S. J. (1996, Fall). Women and depression. The Decade of the Brain, VII, 1-4.

Bolton, V., & Brittain, M. (1994, June). Patient information provision: Its effect on patient anxiety and the role of health information services and libraries. Health Libraries Review, 11(2), 117-132.

- Borg, W., Gall, J., & Gall, M. (1993). Applying educational research. New York, London: Longman Publishers.
- Bowden, C. L. (1999, June). Depression: Combination Therapies; Use of Anti-Parkinson Drugs; Effects of Menopause; Risk of Suicide. Paper presented at the meeting of the American Psychiatric Association, Washington, DC.
- Brownson, R. C., & Kreuter, M. W. (1997). Future trends affecting public health: Challenges and opportunities. Journal of Public Health Management Practice, 3(2), 49-60.
- Buck, M. L. (1998, September). Providing patients with written medication information. Annals of Pharmacotherapy, 32(9), 962-969.
- Callahan, E. J., Bertakis, K. D., Azari, R., Helms, L. J., Robbins, J., & Miller, J. (1997, March). Depression in primary care: Patient factors that influence recognition. Family Medicine, 29(3), 172-176.
- Callahan, E. J., Hilty, D. N., & Nesbitt, T. S. (1998, Winter). Patient satisfaction with telemedicine consultation in primary care: Comparison of ratings of medical and mental health applications. Telemedicine Journal, 4(4), 363-369.
- Chase, M. (1999). Doctors in cyberspace, or medical information/doctors on the internet. Wall Street Journal, August 29.
- Depression and health care: The high cost of saving. (1996). Mind/Body Health Newsletter, 7.

- Depression on the job. (1998, October). Mayo Health Quest Newsletter, 1.
- Dignan, M. B., & Carr, P. A. (1992). Program planning for health education and promotion. Philadelphia: Lea & Febiger.
- Di Lima, S. N., & Schust, C. S., Ed. (1997). Community health education and promotion. Gaithersburg, MD: Aspen.
- Doak, C. C., Doak, L. G., & Root, J. H. (1996). Teaching patients with low literacy skills. Philadelphia: J. B. Lippincott.
- Dowling, C. 1993. You mean I don't have to feel this way? New York: Bantam Books.
- Downey, J. I. (August 7, 1996). Recognizing the range of mood disorders in women. (16 pages) Medscape article. [Online] Available: <http://www.medscape.com/Medscape/womens.health/1966/v01.n08/w159.downey.html>.
- Edwards, A., Matthews, E., Pill, R., & Bloor, M. (1998). Communication about risk: Diversity among primary care professionals. Family Practice, 15(4), 296-300.
- E-mail Contact Between Doctor and Patient. (1999, October 25). *Medical Practice Communicator* [Online], 5 paragraphs. Available: <http://www.medscape.com/HMI/mpCommunicator/1999/v06.n04/mpc0604.07.htm>.
- Ferber, J. S., & Levert, S. (1997). A woman doctor's guide to depression. New York: Hyperion.
- Frank, E. Enhancing patient outcomes: Treatment adherence. [Supplement 1]. (1997). Journal of Clinical Psychiatry, 58, 11-14.

Frank, E., Carpenter, L. L., & Kupfer, D. J. (1988). Sex differences in recurrent depression: Are there any that are significant? American Journal of Psychiatry, *145*, 41-45.

Garson, G. D. (1996). The political economy of online education. Unpublished paper. North Carolina State University. Cited in Russell, T. L. (1997). The "no significant difference" phenomenon as reported in 248 research reports, summaries and papers. [Online] Available: <http://www2.ncsu.edu/oit/nsdsplit.htm>.

Gelenberg, A. (1999 August). Depression is still underrecognized and undertreated. Archives of Internal Medicine, *159*(15), 1657-1658.

Ginzberg, E. (1999). US healthcare: A look ahead to 2025. In J. E. Fielding, L. B. Lave & B. Starfield (Eds.), Annual Review of Public Health (pp. 55-66). Palto Alto, CA: Annual Reviews.

Glanz, K., Lewis, F. M., & Rimer, B. K. (Eds.). (1990). Health behavior and health education. San Francisco: Jossey-Bass.

Glanz, K., Lewis, F. M., & Rimer, B. K. (Eds.). (1997). Health behavior and health education. San Francisco: Jossey-Bass.

Glascoc, F. P., Oberlaid, F., Dworkin, P. H., & Trimm, F. (1998). Brief approaches to educating patients and parents in primary care. Pediatrics, *101*(6), 1098-4275.

Goldberg, B. (1999). Overcoming high-tech anxiety. San Francisco: Jossey-Bass.

Goldberg, M. W. (1996). CALOS: First results from an experiment in computer-aided learning. University of British Columbia, Canada. Cited in Russell, T. L. (1997). The "no significant difference" phenomenon as reported in 248 research reports, summaries and papers. [Online] Available: <http://www2.ncsu.edu/oit/nsdsplit.htm>.

Green, L. W., & Lewis, F. M. Measurement and evaluation in health education and health promotion. 1986. Palo Alto: Mayfield Publishing. Cited in McKenzie, J. F., Wood, M. L., Koteckie, J. E., Clark, J. F., & Brey, R. A. (1999). Establishing content validity: Using qualitative and quantitative steps. American Journal of Health Behavior, 23,(4), 311-318).

Hanes, P. H., & Greenlick, M.R. (1998). Grading health care. San Francisco: Jossey-Bass.

HealthComm KEY website. (2000). [Online]. Available: <http://www.cdc.gov/od/oc/hcomm/hcomm>.

Hirschfeld, R. M., Keller, M. B., Panico, S., Arons, B. S., Barlow, D., Davidoff, F., Endicott, J., Froom, J., Goldstein, M., Gorman, J. M., Guthrie, D., Marek, R. G., Maurer, T. A., Meyer, R., Phillips, K., Ross, J., Schwenk, T. L., Sharfstein, S. S., Thase, M. E., & Wyatt, R. J. (1997). The national depressive and manic-depressive association consensus statement on the undertreatment of depression. Journal of the American Medical Association, 277(4), 333-338.

Irwin, M., Artin, K. H., & Oxman, M. N. (1999, August). Screening for depression in the older adult: Criterion validity of the iowa 10-item center for epidemiological studies depression scale (CES-D). Archives of Internal Medicine, 159(15), 1701-1704.

Jadad, A. R., & Gagliardi, A. (1998). Rating health information on the internet: Navigating to knowledge or to babel? Journal of the American Medical Association, 8(279), 611-614.

Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. Health Education Quarterly, 11(1), 1-47.

Joiner, T. (1999). Understanding depression: Diagnosis, treatment, and prevention. Mind Matters Seminar. Mountain View: CA.

Katon, W., Von Korff, M., Lin, E., Walker, E., Simon, G. E., Bush, T., Robinson, P., & Russo, J. (1995, April). Collaborative management to achieve treatment guidelines: Impact on depression in primary care. Journal of the American Medical Association, 273(13), 1026-1031.

Kennedy, R. (1999). First Surgeon General's Report on Mental Health. (2 pages) Medscape article. [Online] Available:
<http://www.medscape.com/Medscape/psychiatry/journal/v04.n>.

Kessler, R. C., McGonagle, K. A., & Schwartz, M. (1993). Sex and depression in the national comorbidity survey I: Lifetime prevalence, chronicity and recurrence. Journal of Affective Disorders, 29, 85-96.

Kessler, R. C., Zhao, S., & Katz, S. J. Past-year use of outpatient services for psychiatric problems in the national comorbidity survey. American Journal of Psychiatry(156), 115-123.

Kettl, P. A. (1999). Major depression: The forgotten illness. *Hospital Medicine*. [Online], 8 pages. Available: <http://www.medscape.com/quadrant/HospitalMedicine/1999/v35.n0.../pnt-hm3502.02.kettl.htm>.

Kobak, K. A., Greist, J. H., Jefferson, J. W., Mundt, J. C., & Katzelnick, D. J. (1999, May). Computerized assessment of depression and anxiety over the telephone using interactive voice response. M.D. Computing, 16(3), 64-68

Lasley, E. (1998, May-June). Scientists put the "brain-body connection" under the microscope. BrainWork, 6-7.

Lathrop, J. P. (1993). Restructuring health care: The patient focused paradigm. San Francisco: Jossey-Bass.

Leary, W. E. (1996, January 17). As fellow traveler of other illness, depression often goes in disguise. The New York Times, 1.

Leibenluft, E. (1998, August 31). Why are so many women depressed? Scientific American Presents Women's Health: A Lifelong Guide, 30-35.

Lemonick, M.D. (1997, September 29). The mood molecule. Time Magazine, 150, 74-82.

Leutwyler, K. (June, 1995). Depression's double standard. Scientific American Special Issue: Mysteries of the Mind, 53-54.

Lieberman, J. A. 3rd. (1996). Compliance issues in primary care. Journal of Clinical Psychiatry 57, 76-82.

Lorig, K. (1996). Patient education: A practical approach. Thousand Oaks, CA: Sage.

Lynch, D. J., Tamburrino, M. B., & Nagel, R. (1997, March). Telephone counseling for patients with minor depression: Preliminary findings in a family practice setting. The Journal of Family Practice, 44(3), 293-298.

Margolis, S., & Rabins, P. V. (1996). Depression and anxiety. Baltimore: The Johns Hopkins Medical Institutions.

Mitretek Systems, Health Information Technology Institute (HITI) and Agency for Health Care Policy and Research (AHCPR). (1999). Criteria for assessing the quality of health information on the internet. [Online]. Available: <http://www.hitiweb.mitretek.org/docs/criteria.html>.

Mundt, J., & Driver, R. W. (1994). The media/information richness model as prescription for some health care service ills. Health Marketing Quarterly, 11(3-4), 221-236.

McKenzie, J. F., Wood, M. L., Koteckie, J. E., Clark, J. F., & Brey, R. A. (1999). Establishing content validity: Using qualitative and quantitative steps. American Journal of Health Behavior, 23(4), 311-318.

National Alliance for the Mentally Ill. (1995). Depression in older americans [Brochure]. Arlington, VA.

National Commission for Health Education Credentialing, Inc. (NCHEC). (1999). A competency-based framework for graduate-level health educators. Allentown, PA: NCHEC.

National Commission for Health Education Credentialing, Inc. (NCHEC). (1996). A competency-based framework for professional development of certified health education specialists. Allentown, PA: NCHEC.

National Foundation for Depressive Illness. (1998). Now we can successfully treat the illness called depression [Brochure]. New York, NY.

National Institute of Mental Health, Office of Scientific Information. (1994). Depressive illnesses: Treatments bring new hope [Brochure]. Rockville, MD.

National Institutes of Health, National Institute of Mental Health. (No date given). Depression: What every woman should know. [Brochure]. Rockville, MD.

National Institutes of Health, Office of Medial Applications of Research. (1991). Diagnosis and treatment of depression in late life: Consensus statement [Brochure]. Bethesda, MD.

National Mental Health Association. (No date given). Depression: What you need to know. [Brochure]. Alexandria, VA.

National Mental Health Association. (1999, October). Depression: Depression in women. [Online] Available: <http://www.nmha.org/infoctr/factsheets/23.cfm>.

Nayer, C. (1998, Fall). Depression: Its impact and treatment. AWHP's Worksite Health, 39-42.

Nemcek, M. A. (1990). Health beliefs and preventive behavior. American Association of Occupational Health Nursing, 37(2), 53-55.

Newman, J.P, Engel, R. F., & Jensen, J. (1990). Depressive symptom patterns among older women. Psychology and Aging, 5(1), 101-118.

O'Hara, M. W., Gorman, L. L., & Wright, E. J. (1996, May). Description and evaluation of the Iowa depression awareness, recognition, and treatment program. American Journal of Psychiatry, 153(5), 645-649.

O'Rourke, T. W. (1999). The importance of an adequate survey response rate and ways to improve it. American Journal of Health Studies, 15(2), 107-109.

Parrott, R., Huff, T., Kilgore, M., & Williams, M. (1997). Peer discussion on training physicians to be competent communicators: Support for a multiple discourse approach. Southern Medical Journal, 90(7), 709-719.

Paykel, E. S., Tylee, A., Wright, A., Priest, R. G., Rix, S., & Hart, D. (1997, June). The defeat depression campaign: Psychiatry in the public arena. American Journal of Psychiatry, 154(6), 59-65.

Phelan, J. C., Bromet, E. J., & Link, B. G. (1998). Psychiatric illness and family stigma. Schizophrenia Bulletin, 24(1), 115-126.

Poll: Most users want health information (1999). [Online]. Available: http://www.excite.com/computers_and_internet/tech_news/other/?article=/news.

Pomerantz, J. M. (1999). 'Corrective plans' are not enough. *Drug Benefit Trends*. [Online], 3 pages. Available: <http://www.medscape.com/SCP/DBT/1999/v11.n08/d5943.gree/d5943.gree-06.html>.

Preskorn, S. H. (1999). Outpatient management of depression: a Guide for the primary-care practitioner. Available: <http://www.medscape.com/PCI/depression/Depression.ch01/pnt-depression.ch01.html>.

Richardson, K., & Moran, S. (1995) Developing standards for patient information: Highlights that effective communication can improve health care delivery. *International Journal of Health Care Quality Assurance*, 8(7), 27-31.

Ritchie, H., & Newby, J. (1989). Classroom lecture/discussion vs. live televised instruction: A comparison of effects on student performance, attitudes, & interaction. *American Journal of Distance Education*.

Robinson, P., Katon, W., Von Korff, M., Bush, T., Simon, G., Lin, E., & Walker, E. (1997). The education of depressed primary care patients: What do patients think of interactive booklets and a video? *Journal of Family Practice*, 44(6), 562-571.

Rosenstock, I. M. (1988). Adoption and maintenance of lifestyle modifications. *American Journal of Preventive Medicine*, 4, 349-352.

Rosenstock, I. M. (1990). The health belief model: Explaining health behavior. In K. Glanz, F. M. Lewis & B. K. Rimer (Eds.), *Health behavior and health education* (39-62). San Francisco: Jossey-Bass.

Rost, K., Humphrey, J., & Kelleher, K. (1994). Physician management preferences and barriers to care for rural patients with depression. Archives of Family Medicine, 3(5), 409-414.

Ruffin, M. G. (1999). Digital doctors. Tampa, FL: Hillsboro Printing.

Russell, R. D. (1975). Health education. West Haven, CT: National Education Association.

Russell, T. L. (1997). The "no significant difference" phenomenon as reported in 248 research reports, summaries and papers. [Online]. Available: <http://www2.ncsu.edu/oit/nsdsplit.htm>.

Salazar, W. H. (1996, March). Management of depression in the outpatient office. Managed Care and Office Practice, 80(2), 431-455.

Saleeby, J. R.. (2000). Health beliefs about mental illness: An instrument development study. American Journal of Health Behavior, 24(2), 83-95.

Sarvela, P. D., & McDermott, R. J. (1993). Health education evaluation and measurement: A practitioner's perspective. Madison, WI: Brown and Benchmark.

Simonds, S. K. (1995). Communication theory and the search for effective feedback. Journal of Human Hypertension, 9(1), 5-10.

Slack, W. V. Cybermedicine: How computing empowers doctors and patients for better health care. (1997). San Francisco: Jossey-Bass.

Spiers, H. (1998, March). Communication: Clarity begins at home. Health Services Journal, 108, 28-30.

Stewart, M. A. (1995). Effective physician-patient communication and health outcomes: A review. Can Medical Association Journal, 152(9), 1423-1433.

Stotland, N. L., & Stotland, N. E. (1999, August). Depression in women. Obstetrical and Gynecological Review, 54(8), 519-525.

Tattersall, M. H., Butow, P. N., Griffin, A. M., & Dunn, S. M. (1994). The take-home message: Patients prefer consultation audiotapes to summary letters. Journal of Clinical Oncology, 12(6), 1305-1311.

The “no significant difference” phenomenon as reported in 248 research reports, summaries and papers. [Online] Available: <http://www2.ncsu.edu/oit/nsdsplit.htm>.

Timpson, W., & Jones, C. (1989). Distance learning via technology. The Gifted Child Today, 12, 10-11. Cited in Russell, T. L. (1997). The “no significant difference” phenomenon as reported in 248 research reports, summaries and papers. [Online] Available: <http://www2.ncsu.edu/oit/nsdsplit.htm>.

Tylee, A., Gastpar, M., Lepine, J.-P., & Mendlewicz, J. (1999). Identification of depressed patient types in the community and their treatment needs: Findings from the DEPRESS II (depression research in European society II) survey. International Clinical Psychopharmacology, 14(3), 153-165.

U.S. Department of Health and Human Services. (2000). A report of the surgeon general on mental health. Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (1998). Clinician's Handbook of Preventive Services (2nd ed.). (U.S. Public Health Service). Washington, DC: Author.

U.S. Department of Health and Human Services. (1999). Executive summary: A report of the surgeon general on mental health. Rockville, MD: U.S. Department of Health and Human Services.

U.S. Department of Health and Human Services. (1998). Guide to Clinical Preventive Services (2nd ed.). (U.S. Public Health Service). Washington, DC: Author.

U.S. Department of Health and Human Services. (1992). Making Health Communication Program Work: A Planner's Guide, NIH Publication # 92-1493. Public Health Service, National Institutes of Health, Office of Cancer Communications, National Cancer Institute.

U.S. Department of Health and Human Services. (April 12, 1999). Ten great public health achievements – United States, 1900-1999. Morbidity and Mortality Weekly Report (MMWR), 48(12), 241-243.

U.S. Department of Health and Human Services. (1999). The Surgeon General's Call to Action to Prevent Suicide. (U.S. Public Health Service). Washington, DC: Author.

Weissman, N. M., Bland, R., & Joyce, P. R. (1993). Sex differences in rates of depression: Cross-national perspectives. Journal of Affective Disorders, 29, 77-84.

Whittington, N. (1987). Is instructional television educationally effective? A research review. The American Journal of Distance Education, 1, 47-57. Cited in Russell, T. L. (1997). The "no significant difference" phenomenon as reported in 248 research reports, summaries and papers. [Online] Available: <http://www2.ncsu.edu/oit/nsdsplit.htm>.

Widman, L., & Tong, D. (1997). Requests for medical advice from patients and families to health care providers who publish on the world wide web. Archives of Internal Medicine, (157), 209-212.

Woolfolk, R. L., Gara, M. A., Ambrose, T. K., Williams, B. A., Allen, L. A., Irvin, S. L., & Beaver, B. A. (1999, July). Self-complexity and the persistence of depression. Journal of Nervous and Mental Disorders, 18(7), 393-399.

Worall, G., Angel, J., Chaulk, P., Clarke, C., & Robbins, M. (1999). Effectiveness of an educational strategy to improve family physicians' detection and management of depression: A randomized controlled trial. Clinical M Journal, 161(1), 37-40.

Young, M.A., Scheftner, W.A., & Fawcett, J. (1990). Gender differences in the clinical features of unipolar major depressive disorder. Journal of Nervous and Mental Diseases, 178, 200-203.

Purpose of the Study

The purpose of this study was to investigate the effectiveness of a new teaching method in improving student learning outcomes. The study was conducted in a large public university in the United States. The research was designed to explore the impact of the new method on student performance, engagement, and retention. The study was a quasi-experimental design, comparing the new method to a traditional method. The data was collected over a period of six months. The results of the study showed that the new method had a positive impact on student learning outcomes. The new method was found to be more effective than the traditional method in improving student performance, engagement, and retention. The study also found that the new method was more cost-effective than the traditional method. The results of the study have important implications for the field of education. The study suggests that the new method should be used in other educational settings. The study also suggests that the new method should be used in other educational settings. The study also suggests that the new method should be used in other educational settings.

APPENDIX A

Purpose of the Study

Purpose of the Study

The purpose of this study was to investigate the effectiveness of a new teaching method in improving student learning outcomes. The study was conducted in a large public university in the United States. The research was designed to explore the impact of the new method on student performance, engagement, and retention. The study was a quasi-experimental design, comparing the new method to a traditional method. The data was collected over a period of six months. The results of the study showed that the new method had a positive impact on student learning outcomes. The new method was found to be more effective than the traditional method in improving student performance, engagement, and retention. The study also found that the new method was more cost-effective than the traditional method. The results of the study have important implications for the field of education. The study suggests that the new method should be used in other educational settings. The study also suggests that the new method should be used in other educational settings. The study also suggests that the new method should be used in other educational settings.

Statement of the Problem

There is a demonstrated need for more research comparing the effectiveness, understanding, and usefulness of health communication methods (Simonds, 1995; Tatersall et al., 1994) as they relate to depressed individuals. A valid and reliable instrument for comparing depressed individuals' responses to the same health message delivered through different mediums is not available.

Depression Research Project GOAL:

Mailing a Health
Message to
Depressed Members;
and Surveying them
for their Responses

Purpose of the Study

The purpose of this project is to create a simple health education message that can be delivered through three different mediums; to adapt and validate a survey questionnaire designed to compare responses to the message; and to develop a protocol for the message dissemination and survey implementation.

The health education message was developed so that it could be delivered to members through three different mediums: written, audio, and on a web site. Message content is the same, but it can be made available to members who call in for help for depression in one of three ways: a written message mailed to the home; a pre-recorded audio telephone message; and an interactive web site. The purpose of the telephone survey questionnaire is to compare responses to the health education message by measuring individuals' opinions about the strengths and weaknesses of the message, their perceptions of the intent, clarity and believability of the message, and to compare their satisfaction with the health message.

APPENDIX B

Research Questions

Research Questions

The purpose of the *Depression Project Research Study* is to compare perception of and satisfaction with the health message we will be mailing out to certain members who are having depressive symptoms. We have answered the first two research questions below:

1. Is the survey questionnaire valid?
2. Is the survey questionnaire reliable?

The third research question centers around the mechanics of how we deliver the message through the mail, and how we obtain valuable feedback from members about the health message using a telephone survey questionnaire. We have developed a step-by-step protocol that will allow us to get the health message out to members and find out what they think and how they feel about the message

Where Do I Fit In?

- ◆ As an employee of this company, you receive many incoming calls for members who are seeking help for a variety of problems, including depression.
- ◆ In order to encourage our members to follow up with medical appointments, their recommended care plan, and with taking prescribed medications, we will be mailing a health message to all callers who are routinely identified as experiencing a cluster of depressive symptoms during the focused telephone screening process.
- ◆ You will be an integral process of making sure that members who fit the study criteria receive the health message, and that attempts are made to obtain their opinion about the health message.
- ◆ During the routine follow-up phone call to the member, you will be asking these members if they received and reviewed their message, and if they would be willing to give you their opinion about the health message over the phone.

This packet of training materials contains all you need to know to participate in making sure that each member who fits the research study criteria receives a message through the mail, and is given the opportunity to provide feedback to us about the message itself.

This research project is strictly voluntary for members, completely confidential, and will protect members' rights to privacy.

*Chapter 10
Depression Does Not Have to Rule Your Life
Please read the message inside*

APPENDIX C

Message for Written Message Group

Depression Doesn't Have to Keep You Down

**There is Hope:
Depression Doesn't Have to Keep You Down . . .
Please read the message inside.**

COMPANY Name
(XXX) 000-1111

Depression Doesn't Have to Keep You Down . . .

You are not alone if you are feeling depressed:

- ◆ More than 17 million people suffer from depression every year
- ◆ Depression is not a sign of weakness
- ◆ Depression is not your fault
- ◆ *You can get better!*

Symptoms of depression differ from person to person, and can include:

- ◆ Constant sadness or irritability
- ◆ Weight loss due to decreased appetite
- ◆ Weight gain due to increased appetite
- ◆ Too much sleep – or can't sleep
- ◆ Uncontrollable or frequent bouts of crying
- ◆ Lack of interest in work or other activities
- ◆ Can't get up to go to work

Over 90% of those who seek treatment for depression get better with medication, counseling or both . . .

- ◆ Make an appointment with a psychotherapist or psychiatrist – you can get better
- ◆ Keep all your appointments – many people feel temporary relief when an appointment is made and they may think that the depression has lifted
- ◆ Talk openly about your feelings – there are many new techniques to help you take control of your depression
- ◆ Call your primary care doctor to find out if there are physical reasons for feeling depressed or sad

If you are given medication:

- ◆ The new medications can help reduce your symptoms
- ◆ It is important to take your medication every single day, even after you start to feel better
- ◆ Anti-depressant medications work gradually and you will continue to feel improvements over the first 4 to 6 weeks

You can get better if you follow-up with recommended treatment:

- ◆ It takes time to feel better. You can get better when you follow-up with your recommended treatment plan. There is hope.
- ◆ Even if you don't feel like it, be sure to keep your appointments with a doctor or therapist, and take any medicines prescribed for your condition
- ◆ If you would like more help, please call (Company Name) at (XXX) 000-1111

APPENDIX D

Message for Telephone Message Group



***There is Hope:
Depression Doesn't Have to Keep You Down . . .
Please read the message inside.***

For important health information

On this card,

Please call the toll-free number

To hear a pre-recorded, confidential phone message.

(XXX) 000-1111



COMPANY Name
(XXX) 000-1111

There is Hope
Depression Doesn't Have to Keep You Down . . .

For important health information

On this topic,

Please call the following number

To hear a pre-recorded, confidential phone message:

(XXX) 000-1111





There is hope

Depression Doesn't Have to Keep You Down

APPENDIX E

Message for Computer or Website Message Group



***There is Hope:
Depression Doesn't Have to Keep You Down . . .
Please read the message inside.***

*On this topic,
Please go to the following
Website address:
<http://www.xyzabc.com>*

*If you can't get to a computer,
call the following number for
a pre-recorded, postcard
Phone a number:
(XXX) 555-1234*

COMPANY Name
(XXX) 000-1111

There is Hope
Depression Doesn't Have to Keep You Down . . .

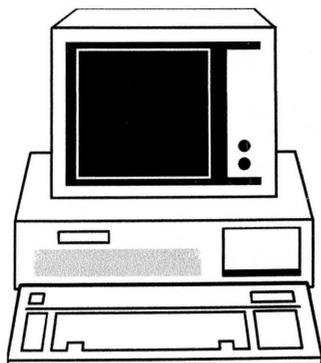
For important health information

On this topic,

Please go to the following

Website address:

<http://www.xyzabc.htm>



If you can't get to a computer,
call the following number for
a pre-recorded, confidential

Phone message:

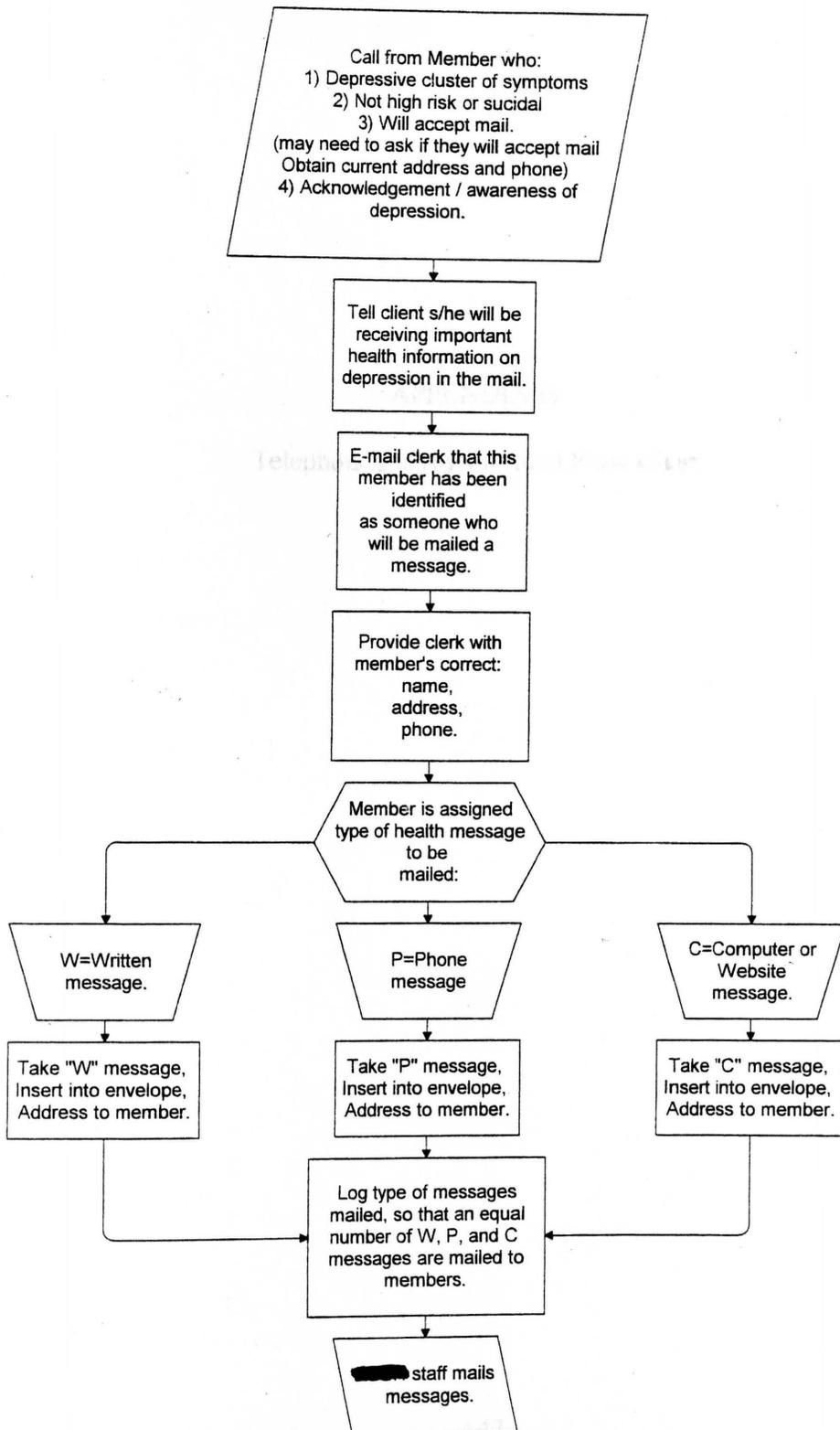
(XXX) 000-1111

Health Message Mailing Protocol

APPENDIX F

Health Message Mailing Protocol Flow Chart

Health Message Mailing Protocol



TELEPHONE SURVEY PROTOCOL

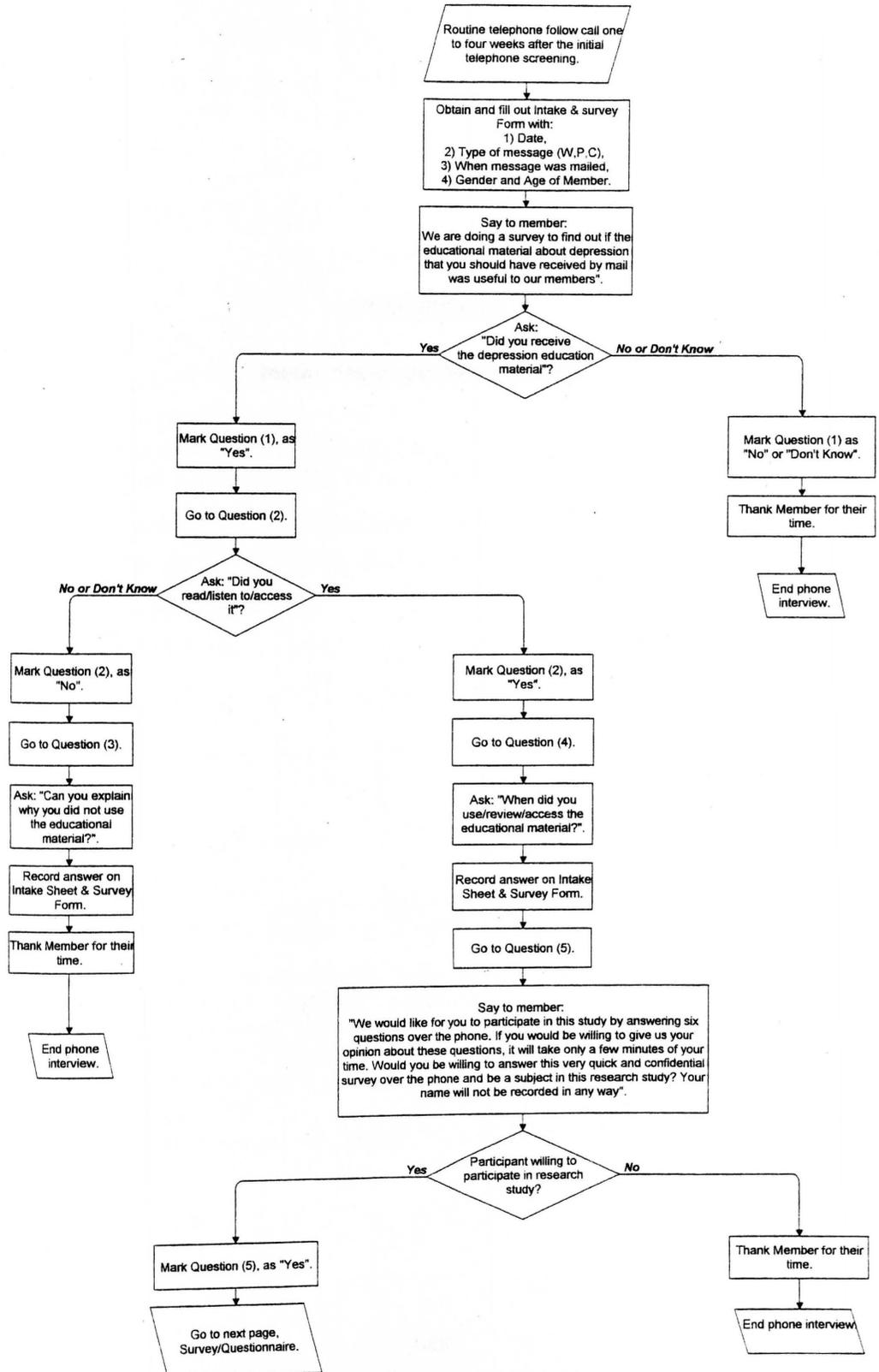
1. Introduction
2. Purpose of the Survey
3. Eligibility Criteria
4. Sampling Method
5. Interview Schedule
6. Interviewer Training
7. Data Collection
8. Data Management
9. Confidentiality
10. Ethical Approval

APPENDIX G

Telephone Survey Protocol Flow Chart



TELEPHONE SURVEY PROTOCOL



Intake Sheet and Survey Form

NOTE: Before asking questions, ask about the following:
Date, Type of Message, When message was mailed, Where you got the message

Date: _____

Type of Message (circle one): Written Recorded Other _____

Date message was mailed: _____

Gender: Female Male

APPENDIX H

Intake Sheet and Survey Form

Thank you for participating in this study. We are doing a survey to find out if the information contained in the message that you should have received by mail was helpful to you.

1. Did you receive the depression education message? YES NO

If the answer is NO or Don't Know, say "Thank you for your time," and end your interview.

2. Did you see a friend to discuss it? YES NO

If the answer is NO, say to (1) and ask member to explain why they did not see a friend to discuss it.

If the answer is YES, (1) or (4) was as follows: _____

3. Can you explain why you did not see the education message? YES NO

If the answer is YES, (1) or (4) was as follows: _____

4. Thank you for your time. _____

5. How long did you see the review article in the journal? YES NO

If the answer is YES, (1) or (4) was as follows: _____

6. We would like for you to return, use a flip phone to make the call, or use the phone. If you would be willing to give us your opinion about the message, we would like to see a review of the message. We can be reached by phone at _____ or by mail at _____ over the phone and by mail at _____ in the return of a flip phone. We would like to see a review of the message in any way.

YES NO

7. Thank you for the next page of your survey questions.

Intake Sheet and Survey Form

**NOTE: Before asking questions, always fill in the following:
Date, Type of Message, When message was mailed, Gender and Age of the member.**

_____ Date:	_____ Subject ID #
Type of Message (circle one): W = written; P = phone; C = computer/website	
_____ Date message was mailed	
Gender _____ Male _____ Female	_____ Age

(Say to the member:) **“We are doing a survey to find out if the educational material about depression that you should have received by mail was helpful to our members.”**

(1) **“Did you receive the depression educational material?”** _____ YES _____ NO _____ Don't Know
(If the answer is NO or Don't Know, say **“Thank your for your time,”** and end phone interview.)

(2) **“Did you read/listen to/access it?”** _____ YES _____ NO
(If the answer is NO, go to (3) and ask member to explain why they did not read/listen to/access the message.
If the answer is YES, go to (4) and ask them when they read/listened to/accessed the message).

(3) **“Can you explain why you did not use the educational material?”** _____ Can't read
_____ Not interested _____ No time _____ No Phone _____ No Computer access
_____ Other

(Record the reason, say **“Thank you for your time,”** and end phone interview.)

(4) **“When did you use/review/access the educational material?”** _____ Within the last week
_____ Within the last 1-3 weeks _____ More than 3 weeks _____ Don't remember

(5) Then say to member: **“We would like for you to participate in this study by answering six questions over the phone. If you would be willing to give us your opinion about these questions, it will take only a few minutes of your time. Would you be willing to answer this very quick and confidential survey over the phone and be a subject in this research study? Your name will not be used or recorded in any way.”**

_____ YES _____ NO

(If YES, go on to the next page and begin survey questions.)

SURVEY QUESTIONNAIRE

APPENDIX I

Survey Questionnaire

SURVEY QUESTIONNAIRE

1. **“What did you think was the main idea of this educational information?”**
 (RECORD FIRST RESPONSE MENTIONED).
“Anything else?” (RECORD ALL OTHER RESPONSES MENTIONED)

	First Mention (Circle only one)	Anything Else (Circle all other mentions that apply)
1. DEPRESSION	1	1
2. It's up to you-- your responsibility to take care of depression	2	1
3. If you don't take care of depression (depressed feelings, depressed mood, feeling bad), you won't be around for other things	3	1
4. Take care of yourself (general)	4	1
5. Take care of depression; control depression	5	1
6. You can get better (have a normal/active/long life) by following recommended treatment plan (by following up with doctor or counselor, by taking meds, etc)	6	1
7. Stay on depression treatment; keep up fight; work at it; don't ease up	7	1
8. Take care of your depression for your loved ones	8	1
9. Treat your depression; do what your doctor says	9	1
10. Control depression or you could become ill or die	10	1
11. Take care of your depression every day; treat it for life	11	1
12. Other	XX	1

RECORD:

2. **“What, if anything, about the educational material did you particularly like?”**
 (RECORD FIRST RESPONSE MENTIONED).
“Anything else?” (RECORD ALL OTHER RESPONSES MENTIONED)

	First Mention (Circle only one)	Anything Else (Circle all other mentions that apply)
1. Everything	1	1
2. Nothing	2	1
3. Liked message in general	3	1
4. Easy to follow/understand	4	1
5. Attention-getting/interesting	5	1
6. Message is important	6	1
7. Message contains useful information	7	1
8. Good reminder	8	1
9. Liked idea of having control/being able to do something about depression to help yourself or others	9	1
10. Message is direct and to the point	10	1
11. Focuses on people with depression	11	1
12. Message is dramatic	12	1
13. Message speaks directly to me	13	1
14. Liked encouraging tone/can have a full life if treat depression	14	1
15. Message and pictures fit well together	15	1
16. Don't know	16	1
17. Other	XX	1

RECORD: _____

3. "What, if anything, about the educational information did you particularly *dislike*?"
 (RECORD FIRST RESPONSE MENTIONED).
 "Anything else?" (RECORD ALL OTHER RESPONSES MENTIONED)

	First Mention (Circle only one)	Anything Else (Circle all other mentions that apply)
1. Everything	1	1
2. Nothing	2	1
3. Disliked message in general	3	1
4. Message was difficult to follow/understand	4	1
5. Material hard to understand	5	1
6. Too light/not serious enough	6	1
7. Too serious/scary/overly dramatic	7	1
8. Disliked voice on phone message	8	1
9. Not especially attention-getting or interesting	9	1
10. Not enough information; information not new or useful	10	1
11. Too pessimistic; grim	11	1
12. Message and pictures didn't fit well together	12	1
13. Message didn't relate to me	13	1
14. Don't know	14	1
15. Other	XX	1

RECORD: _____

4. **“Was there anything in the educational information that you found confusing or hard to understand?”**

(RECORD FIRST RESPONSE MENTIONED).

“Anything else?” (RECORD ALL OTHER RESPONSES MENTIONED)

	First Mention (Circle only one)	Anything Else (Circle all other mentions that apply)
1. Nothing (everything was clear)	1	1
2. Confusing in general	2	1
3. Message not clear	3	1
4. Words were hard to understand	4	1
5. Didn't understand that depression is common	5	1
6. Didn't understand why people get depressed	6	1
7. Too much information presented	7	1
8. Not enough information presented	8	1
9. Message didn't relate to me	9	1
10. Didn't understand why I should get help	10	1
11. Other	XX	1

RECORD _____

5. "Was there anything in the educational material you found hard to believe?"

(RECORD FIRST RESPONSE MENTIONED).

"Anything else?" (RECORD ALL OTHER RESPONSES MENTIONED)

	First Mention (Circle only one)	Anything Else (Circle all other mentions that apply)
1. No, nothing	1	1
2. Message not believable in general	2	1
3. Not believable that someone could die because they didn't take care depression	3	1
4. Not believable that depression is that dangerous to health	4	1
5. Not believable that depression is that hard to control	5	1
6. Other	XX	1

RECORD _____

- (6) "I'm going to read to you a set of statements describing the educational message. For each statement please tell me whether you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree with the statement. On a scale of 1 to 5, with 1 being strongly agree and 5 being strongly disagree, tell me what you think.

(READ STATEMENTS AND USE SCALE)

	STRONGLY Agree (1)	AGREE (2)	NEITHER (3)	DISAGREE (4)	STRONGLY Disagree (5)
1. The message was interesting	SA	A	N	D	SD
2. The message was convincing	SA	A	N	D	SD
3. The message was irritating	SA	A	N	D	SD
4. The message was confusing	SA	A	N	D	SD
5. The message made its point	SA	A	N	D	SD
6. The message was not serious enough	SA	A	N	D	SD
7. The message was offensive	SA	A	N	D	SD
8. The message was scary	SA	A	N	D	SD
9. The message was believable	SA	A	N	D	SD
10. The message gave me useful information	SA	A	N	D	SD
11. The message gave useful information for other people	SA	A	N	D	SD
12. The message captured my attention	SA	A	N	D	SD
13. The message will capture the attention of those with depression	SA	A	N	D	SD
14. The message was a good reminder to take care of depression	SA	A	N	D	SD
15. The message had an overall encouraging tone	SA	A	N	D	SD
16. The message was too mild; it should be stronger	SA	A	N	D	SD
17. I will be more conscientious about my treatment for depression	SA	A	N	D	SD
18. Staying on my treatment program for depression is a struggle for me	SA	A	N	D	SD
19. The message convinced me that it's important to control depression	SA	A	N	D	SD