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DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Steven M. Judah, B.A., M.A.

* * * * *

The Ohio State University
1982

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CHAPTER I

INTRODUCTION

The inter-relationship between the mind and the body remains a beckoning, still predominantly uncharted, intriguing frontier. One need not look far to be inundated with evidence sufficient to document this interrelationship. The effect of placebos (Shapiro, Morris, 1978) and the temporal correlation of stress and the etiology of disease (Minter and Kimball, 1980), provide two classic cases in point. This research contributes to the further charting of the mind-body interrelationship by investigating the effects of three different psychological treatment procedures upon a duodenal ulcer population.

It has been loosely and commonly estimated that psychological factors influence fifty percent of all illnesses. In some cases, these psychological factors contribute to the initiation and exacerbation of a given disease. In other cases, these psychological factors may result as the consequence of the experience of the given disease pathology (Millon, Green, and Meagher, 1982).
Certain diseases evidence more dramatic influence by psychological factors than others. Generally, these are referred to as the psychosomatic illnesses or diseases. Peptic ulcer is a case in point (Anthony, 1967). Peptic ulcer disease refers to ulcers which occur in the upper gastrointestinal tract (Hertz and Rosenbaum, 1977). Ulcers occurring in the stomach wall are referred to as gastric ulcers, those occurring in the duodenum are referred to as duodenal ulcers.

The literature reveals that a wide range of factors may play a role in the development of duodenal ulcers. Some factors appear (1) environmental in nature, while others appear more (2) physiological or (3) psychological in nature. For illustrative purposes, a number of factors fall within the categories mentioned above.

Environmental: Fordtran (1983, 1979) refers to the striking temporal correlation between stressful environmental factors and the development of the ulcer. He refers to this as the "precipitating stressful event or situation." This precipitating stressful event tends to accentuate certain ulcerogenic "chronic psychic conflicts" and "physiological responses." Examples of precipitating stressful events could include external deprivations such as the loss or threatened loss of a person upon whom the patient has become dependent, leaving home, losing money,
losing a position that has given the patient a sense of security. Examples could also include the assumption of increased responsibility such as in marriage, the birth of a child, and assuming a new position or job.

Fordtram goes on to cite research (Davies and Wilson, 1937) indicating that if the patient has adequate physiological predisposition toward ulcerogenesis that the stressful event will be followed by development of the ulcer crater. Usually this occurs in four to seven days.

Physiological: Grossman (1979) considers hyperpepsinogenemia or the increased level of serum pepsinogen I to be one of the strongest physiological factors yet identified. Presumably it indicates an excessive number of parietal and chief cells in the stomach and a greater than normal capacity for acid-pepsin secretion. About half of all duodenal ulcer patients possess this trait. Persons with the trait are five to eight times more likely to develop duodenal ulcers.

To follow this theme further, other researchers (Fordtram, 1973; Grossman, 1967; Weiner, 1977) note that higher basal and stimulated levels of gastric secretion correlate with a higher number of parietal cells. Ultimately the higher levels of gastric secretion resulting from the large mass of parietal cells correlate with the development of ulcers. Duodenal ulcers almost never occur in persons whose maximal or stimulated acid output is less than 10-12 mEq/hour (Taylor and Walsh,
1980). These unfortunate persons are predisposed to ulcerogenic acid overproduction due to their high count of parietal cells. The parietal cells which line the stomach wall produce acid when stimulated. The stimulation which activates the excessive acid production can be produced by food, environmental stress, or varied intrapsychic factors.

Psychological: Weiner (et al., 1957) developed an impressive predictive study to evaluate the role of the intrapsychic factor of dependency upon duodenal ulcer development. The research findings empirically linked dependency to hypersecretion. The combined features of psychological dependency and hypersecretion permitted the researchers to significantly predict U.S. Army draftees most likely to develop duodenal ulcers.

Other studies have linked the intrapsychic factor of anxiety with increased gastric secretion and possible ulcer development. Mahl (1950) for example, found gastric hypersecretion associated with a state of chronic anxiety. He found higher levels of gastric acid in the stomachs of college students scheduled for exams later in the day.

Thus, the literature dramatizes how environmental, physiological, and psychological factors can play a role in the development of duodenal ulcers. Figure 1 graphically depicts the same.
Environmental Factors

Psychological Factors

Physiological Factors

Precipitating stressful event or situation

Dependency on Anxiety

Activation of large partial cell mass acid-pepsin hypersecretion

Duodenal ulcer formation

Figure 1. Factors in ulcer formation.

Due to the likely wide range of factors a comprehensive treatment procedure is indicated. Rational Stage Directed Hypnotherapy (Tosi, 1974; Tosi and Marzella, 1975; Tois, 1980; Tosi and Baisden, 1982) provides such a comprehensive treatment procedure when coupled with routine medical intervention for duodenal ulcer. In this modality both cognitive restructuring and hypnosis are merged as complimentary psychotherapeutic change agents. The nature and design of this treatment procedure permits it to potentially and beneficially impact upon the environmental, cognitive, affective, physiological, and behavioral domains. Therefore, the wide range of factors involved in ulcer formation may be comprehensively addressed through Rational Stage Directed Hypnotherapy.

Theoretically the application of Rational Stage Directed Hypnotherapy to psychosomatic disorders is logical. Psychosomatic disorders, duodenal ulcers being the case in point, are evidently influenced by environmental, psycho-
logical, and physiological factors. Theoretically a multidimensional disorder should be most responsive to a clearly delineated multi-dimensional treatment procedure such as Rational Stage Directed Hypnotherapy.

Rational Stage Directed Hypnotherapy has already been shown to be an effective psychotherapeutic technique with psychosomatic, as well as, clinical and non-clinical disorders. Case studies treating migraine (Howard, Reardon and Tosi, 1982) and hypertension (Rudy, Tosi and Reardon, 1977) provide clinical support for the application of this treatment procedure to psychosomatic disorders. A comprehensive multivariate study on hypertension (Tosi, Rudy and Lewis, 1982) provides still further support.

These theoretical and empirically based reasons provide a rationale for examining the effectiveness of Rational Stage Directed Hypnotherapy as a treatment procedure for a duodenal ulcer population will be evaluated. To further elucidate the possible action of Rational Stage Directed Hypnotherapy, the effects of hypnosis only and cognitive restructuring only will also be evaluated with this group of people.

Historically, hypnosis has a well documented application to the psychosomatic disorders. In particular, hypnosis has been used to effect changes in the gastric environment (Ikemi et al., 1959; Kehoe and Ironside, 1963 and 1964; Peterfy, 1977; Kroger, 1977). Due to the
historic significance of hypnosis as a treatment procedure for psychosomatic disorders, and due to the fact that hypnosis is a vital subfactor in Rational Stage Directed Hypnotherapy, it was separately evaluated in this study.

Of late, cognitive restructuring has been gaining attention as a possible treatment procedure for psychosomatic disorders (Ellis and Abrams, 1978). In particular, cognitive restructuring has demonstrated beneficial application to factors often associated with duodenal ulcers (Goodwin and Mahoney, 1975; Meichenbaum, 1972 and 1975). Also, cognitive restructuring is a vital subfactor in Rational Stage Directed Hypnotherapy. Due to these combined reasons cognitive restructuring was separately evaluated in this study as well.

As independent variables, this experimental study will manipulate the psychotherapeutic processes of cognitive restructuring and hypnosis.

These independent variables were manipulated to create four (4) groups:

I) Control
II) Cognitive Restructuring (CR)
III) Hypnosis Only (HO)
IV) Cognitive Restructuring plus Hypnosis or Rational Stage Directed Hypnotherapy (RSDH)
It was intended that measurable psychological and physiological differences would result from the varied interventions applied in these four groups. The primary psychological and physiological factors which came under analysis as dependent variables included:

1) Basic coping styles
2) Psychogenic attitudes
3) Psychosomatic correlates
4) Prognostic indices
5) Evaluation
6) Locus of control
7) Gastrointestinal disturbances

These were elaborated upon later.

Purpose of the Study

This study examined the changes which occur as a result of manipulating the treatment components of cognitive restructuring and hypnosis.

This should afford a determination of the relative superiority of (1) no treatment control technique, (2) cognitive restructuring only, (3) hypnosis only, or (4) RSDH treatment - a combination of 2 and 3. A major research question is whether the application of the control group procedure, CR, HO, or RSDH can significantly and beneficially modify the dependent variables under analysis. The dependent variables have been chosen as representative of cognitive, affective, physiological, or behavioral
tendencies toward duodenal ulcer development.

The four groups were evaluated at three intervals (pretest, post-test, and follow-up) on seven (7) dimensions as dependent variables. Three (3) standardized instruments and questionnaire data were utilized in this examination.

This study undertook to empirically demonstrate the benefit derived from the selected psychotherapies of cognitive restructuring, hypnosis only, and RSDH. The study explicated, in part, the potential benefit of psychological management for the psychosomatic disease of duodenal ulcer.

Need for the Study

As current drug treatment for duodenal ulcer has become more effective, the well documented psychosomatic dimensions have become more neglected (Fordtran, 1971; Walsh, 1981). This study seeks to demonstrate the benefit of attending to these psychological and psychosomatic factors (Fordtran, 1979).

It would be helpful to first review the medical developments which have encouraged the trend away from the psychosomatic perspective. The recent advent of the drug cimetidine, manufactured by Smith, Kline, and French, greatly improved the medical treatment for duodenal ulcers. For example, the drug is normally effective in healing the ulcer within four to six weeks (Walsh, 1981). Historically, the time required to heal an ulcer was much longer
and much less effective. However, if drug therapy with cimetidine is terminated at the end of the initial four to six week treatment period, follow-up data indicates that approximately fifty percent of these cured patients will have a recurrence of duodenal ulcer within twelve months, and as high as eighty to ninety percent will have a recurrence of the duodenal ulcer within twenty-four months (Isenberg, 1980; Hoffman, 1982).

In order to address the problem of recurrence, research conducted by Smith, Kline and French has documented the benefit of prophylactic therapy with cimetidine. That is, following the initial four to six week treatment period, patients who have evidenced a tendency to have recurrent ulcers, are put on a prophylactic therapy with cimetidine of 400 mg. - 800 mg. nightly for up to one year. Under these conditions of prophylactic therapy, the recurrence rate of duodenal ulcer drops to approximately ten percent (Isenberg, 1980; Hoffman, 1982; Chapman, 1980).

The effectiveness of the drug cimetidine stands, therefore, well documented. It is beneficial to the patient of duodenal ulcer, both during the initial treatment period and thereafter, as a treatment reducing the high percentage of ulcer recurrence. The drug is relatively efficient and produces minimal side effects (Chapman, 1980).
The effectiveness of cimetidine in the treatment of duodenal ulcers and other disturbances of the gastrointestinal tract has resulted in cimetidine becoming this year the world's leading dollar volume single drug. Gross sales in 1981 alone surpassed the one billion dollar mark (Hill, 1981).

Perhaps because of the effectiveness of this drug, a problem has been created. There appears to be a tendency in medical circles to simply treat the duodenal ulcer patient with cimetidine and to ignore the well-established psychological factors (Hoffman, 1982). The psychological factors have been sufficiently documented in a wide variety of both human subject and animal studies (Weiner, 1977). Therefore, today the need exists to re-examine the psychological management of the duodenal ulcer patient. There is a need to examine the potential benefit from attending to the underlying psychological dimensions (Isenberg 1980; Fordtran, 1979). There is a need to determine which psychotherapy (RSDH, CR, or HO) yields the greatest benefit to the duodenal ulcer sufferer. This study addresses that need.

Hypothesis

Individuals who receive a multimodal intervention (RSDH), will do significantly better than individuals exposed to a unimodal intervention (CR or HO), or individuals who receive no psychological intervention (control),
as measured by appropriate standardized psychological instruments.

\[ H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 \]

\[ H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \]

Limitations

A limitation of this study was that sex, age, socio-economic status, and new versus recurrent ulcer cases were not separately evaluated. Evidence exists suggesting that young males are most susceptible to duodenal ulcers (Weiner, 1977; Chapman, 1980). Future studies could benefit by evaluating the above mentioned factors which were not included in this study, due to our available population, sample size restriction, and research design.

Nor did this study, due to time restraints, evaluate the recurrence rate of duodenal ulcers or gastrointestinal disturbances for longer than a six month period. It would be meaningful if recurrence rates could be studied for a 12 to 24 month period.

Some researchers have identified sub-groups of psychological functioning within the ulcer population. For example, Engle (1975) identified three psychological sub-groupings:

1) Pseudo-independent patients
2) Passive-dependent patients
3) Acting-out patients
A limitation of this study was that it did not take these psychological differentiations into consideration. Future studies could benefit by independently evaluating these three or other identified psychological sub-types.

This study is also limited in its ability to differentiate and study physiological determinants among ulcer patients (Weiner, 1977). For example, some duodenal ulcers appear to result due to gastric hypersecretion. Others appear to result from an unusually large number of parietal cells within the stomach lining which is referred to as the parietal cell mass. Others appear to occur as a result of inadequate mucosal resistance. Still others appear to result from hormonal and neural irregularities. The list could go on. Future research could potentially benefit by studying an ulcer group who was characterized exclusively as hypersecreters, or as having an inadequate mucosal resistance, and so forth. This study, however, does not have the potential due to its available population and the current status of medical technology to study each of these separate or combined physiological determinants of duodenal ulcers.

It would be meaningful to study the recurrence rate of duodenal ulcers among patients who have been recipients of psychotherapy only. Such as RSDH, as contrasted to patients who have received cimetidine only. At this point, however, it appears to be difficult to study this phenomena
because of the proven effectiveness of cimetidine. Furthermore, certain patients could be at risk if denied cimetidine due to possible scarring effects or other complications which could in some cases necessitate corrective surgery.

Another limitation was the use of a single therapist to administer all treatments. Offsetting this somewhat, was the utilization of standardized tapes for 50 percent of the RSDH and Hypnosis group sessions. Standardized tapes were used to a lesser degree in the CR group. However, both the CR and the RSDH groups followed a very structured outline in conjunction with the Self-Directed Behavior change instrument.

Lastly, the therapist was monitored by an outside observer to insure that each session and group treatment followed the structured design.

A final limitation of this study is that it is virtually impossible to study all the major types of psychotherapy currently being used to address psychosomatic illnesses. Across-the-board comparison of the major modalities of psychotherapeutic intervention would be most interesting. Such a study has not, to my knowledge, yet been conducted, but perhaps by repeating similar methodology, utilizing different psychotherapeutic mediums, a basis for comparison can be established.
Definition of Terms

Duodenal Ulcer:

A circumscribed discontinuity of gastrointestinal mucosa in the duodenum.

Rational:

Rationality is a dynamic concept based on the idea that logical correct thinking behaviors, relative to a given set of data or facts, lead to more positive and appropriate emotions, physiological responses and behaviors. Multsby (1971) identified the following criteria of rational thinking:

1. Rational thinking processes are based on objective reality.
2. Rational thinking processes tend to minimize personal stress.
3. Rational thinking processes tend to minimize environmental stress.
4. Rational thinking processes are engaged in the preservation of life.
5. Rational thinking processes tend to help one attain his/her goals.

Rational Stage Directed Hypnotherapy:

Rational Stage Directed Hypnotherapy is a stage oriented directive psychotherapeutic technique which utilizes hypnosis/relaxation and guided imagery to help the client recondition negative or uncomfortable cognitive, affective, physiological or behavioral states. It is based on the premise that individuals have cognitive control over these aforementioned states. Cognitive restructuring skills are taught and reinforced via guided imagery during hypnotic/relaxation periods.

Cognitive Restructuring:

A therapeutic approach in which irrational thoughts and beliefs are identified, challenged and finally replaced with more rational beliefs and attitudes. This approach assumes high cognitive control over behaviors and points out that negative feelings and behaviors are associated with irrational thinking patterns (Ellis, 1962).
Hypnosis/relaxation:

A heightened level of attention, relaxation and awareness which is produced by leading the subject through an induction process composed of the following four parts (Wolberg, 1964):

1. Deep breathing
2. Cognitive muscle relaxation
3. Imagining a relaxing scene
4. A deepening procedure through counting

(Fuller, 1982)

Hypnosis was further defined as a state of heightened awareness and focused attention of light to moderate depth. (Research suggests that light to moderate depth is best suited to cognitive restructuring procedures (Tosi, 1982).

Definition of Anagrams

CBSEVAL:

The Evaluation score of the Common Beliefs Survey III (Bessai, 1978) which is composed of three subscales:

1. Blame Proneness
2. Self Downing
3. Perfectionism

CBSLOCO:

The Locus of Control score of the Common Beliefs Survey III which is composed of three subscales:

1. Importance of the Past
2. Importance of Approval
3. Control of Emotions
GIDIST:
The patient's report on the frequency of individual gastrointestinal disturbances. It was collected from pretest and follow-up questionnaire data.

HGSHS:

MBHIA:
Section A of the Millon Behavioral Health Inventory (Millon, et al., 1980) called the Basic Coping Styles. It is composed of eight substyles:
1. Introversive
2. Inhibited
3. Cooperative
4. Sociable
5. Confident
6. Forceful
7. Respectful
8. Sensitive

MBHIB:
Section B of the Millon Behavioral Health Inventory called Psychogenic Attitudes Scales. It is composed of six subscales:
1. Chronic Tension
2. Recent Stress
3. Premorbid Pessimism
4. Future Despair
5. Social Alienation
6. Somatic Anxiety
MBHIC:

Section C of the Millon Behavioral Health Inventory called the Psychosomatic Correlates Scale. Only one of three scales composing this section was applicable to our study:

1. Gastrointestinal Susceptibility

MBHID:

Section D of the Millon Behavioral Health Inventory called the Prognostic Indices Scales. It is composed of three subscales:

1. Pain Treatment Responsivity
2. Life Threat Reactivity
3. Emotional Vulnerability

D₁MBHIA, D₁...:
Difference 1 scores i.e., MBHIA posttest scores minus pretest scores, etc.

D₂MBHIA, D₂...:
Difference 2 scores i.e., MBHIA follow-up scores minus pretest scores, etc.

Summary

This study investigated the effects of Rational Stage Directed Hypnotherapy, cognitive restructuring, and hypnosis upon the factors associated with duodenal ulcer disease. Those factors were environmental, physiological, and psychological in nature. Resultantly, dependent variables were chosen as representing cognitive, affective, physiological, and behavioral tendencies toward duodenal ulcer development. The multi-dimensional nature of these factors create a need for a comprehensive and multi-dimensional treatment procedure. RSDH provides such a
comprehensive treatment procedure. Theoretically, RSDH is multidimensional. Empirical case studies and multivariate research on psychosomatic disorders further recommend RSDH.

Hypnosis and cognitive restructuring were individually evaluated due to two primary considerations: (1) historically both treatment procedures have been successfully applied to the psychosomatic disorders; and (2) both treatment procedures are critical subparts of the integrative RSDH procedure.

Finally, the recent development of cimetidine has predisposed the medical community to neglect the psychological dimensions of duodenal ulcer disease. Hopefully, this trend may be reversed in part as the hypothesized superiority of a multimodal intervention (RSDH) is tested against unimodal interventions (CR or HO) or no psychological intervention (control). Limitations of this study and meaningful definitions were also included in this chapter.
CHAPTER II

REVIEW OF RELATED LITERATURE

The major issue addressed in this study focuses upon the effectiveness of Rational Stage Directed Hypnotherapy, Hypnosis Only and Cognitive Restructuring Only on the modification of factors associated with duodenal ulcer disease. A review of the literature contained within this chapter will include the following sections:

1. Expanded definition and epidemiological data for duodenal ulcer.
2. A hypothetical framework for conceptualizing the literature.
3. Physiological factors predisposing development of duodenal ulcer.
4. Psychological factors predisposing development of duodenal ulcer.
5. Hypnosis.
7. Rational Stage Directed Hypnotherapy.

**Definition and Epidemiological Data for Duodenal Ulcer**

Obviously the duodenal ulcer is an ulcer which is located in the duodenum. The duodenum is the first part
of the small intestine. The stomach empties directly into the duodenum. The duodenum is usually 8 to 12 inches long.

An ulcer is technically a hole in the mucosa which exposes the submucosa. This is referred to as a simple ulcer. In cases where the lesion does not penetrate the mucosa, it is referred to as an erosion. When the lesion penetrates not only the mucosa, but the submucosa as well, exposing the muscularis, it is referred to as an acute ulcer. It should be noted that almost all superficial ulcers are of these two types. Two other meaningful classifications are the chronic ulcer and the perforated ulcer. A chronic ulcer is so designated when the lesion penetrates deeply into the muscularis. The chronic ulcer is further distinguished by marginal inflammatory reaction and fibrosis. Lastly, the perforated ulcer is when the remaining tissue layer of the duodenal wall, the serosa, is penetrated (Chapman, M.L., 1980; Brooks, 1978). The duodenal ulcer, therefore, is a circumscribed discontinuity of gastrointestinal mucosa in the duodenum.

The symptoms of a duodenal ulcer often include a gnawing pain which is localized in the stomach or back. The pain is frequently eased by taking food. As that food is passed, pain returns. Clammy or cold sweating, heartburn, nausea, chronic indigestion, vomiting and loss of appetite are common. Constipation and/or diarrhea and
weight loss may occur. When the ulcer penetrates a vein or artery, bleeding may result in black or tarry stools, and blood in the vomit. Ulcers of this latter type are referred to as complicated ulcers. Epigastric pain may be absent or diminished in the morning. It is often present two to three hours after meals and may be most severe at night. Typically episodes of the symptoms will be clustered in periods lasting for days or perhaps weeks with pain-free intervals of weeks or months interspersed (Miller, 1976; Silverstein, 1979).

In the United States, epidemiological data indicates that about 300,000 new cases of peptic ulcer (ulcers occurring in the upper section of the gastrointestinal tract) are diagnosed each year. The ratio of men to women is about 2:1 for duodenal ulcers and 1:1 for gastric ulcers. The ratio of duodenal to gastric ulcer is about 5:1 in men and about 2:1 in women. There is indication that the incidence of duodenal ulcer continues to increase up to about age 40, after which it levels off. Whereas in gastric ulcer, the incidence will increase up to about age 50 before leveling off. There is indication that over the past 2 decades the incidence of ulcer, that is new cases of the disease diagnosed per year in this defined population, is decreasing. In 1978 about 350,000 patients with primary diagnosis of peptic ulcer were hospitalized in the United States, among these roughly 6,000 died,
15,000 had perforation, 8,000 had bleeding, and 50,000 had operations (Grossman, 1979). It is estimated that 4,000,000 Americans are ulcer sufferers at any one time, that is roughly 2 percent of our population (Walsh, 1981). Based on the estimates above, greater Columbus, Ohio, with a population of about one million would have about 20,000 ulcer sufferers. The sheer number of individuals suffering from this psychosomatic disorder dramatizes the need for this study. Any measure of improvement should be welcomed.

A Framework for Conceptualizing the Literature

One of the most often quoted researchers regarding duodenal ulcers is Weiner (Weiner et al., 1957). The author makes a noteworthy point in his final summary.

Neither a high rate of gastric secretion nor a specific psychodynamic constellation is independently responsible for development of peptic ulcer. Together, however, these two parameters constitute the essential determinant in the precipitation of peptic ulcer on exposure to social situations noxious to the individual.

The author emphasizes the necessary interrelationship between both psychological and physiological factors. That is, for the duodenal ulcer to develop in his research project, it took both certain physiological predispositions and certain psychological predispositions. Not all individuals who had the physiological predisposition developed an ulcer. Perhaps it could be assumed that they did not additionally possess the necessary psychological
predisposition. On the other hand, not all individuals who had the psychological predisposition developed an ulcer. Again, perhaps it could be assumed that they did not additionally possess the necessary physiological predisposition.

Weiner's principle sounds simple enough. However, the literature and research often tends to neglect his well documented theory. The result is over focus on exclusively psychological or exclusively physiological explanations of ulcerogenesis. Ultimately then, some findings appear contradictory. As a preface to the review of literature a "hypothetical framework" is offered to assist in organizing what may otherwise appear to be contradictory findings:

In spite of the contradictory explanations presented in the literature, some factors do seem to become clear.

1. There is a grouping of physiological factors that seem to, with some degree of uniformity, predispose an individual toward ulcer development.

2. In like manner, there is also a grouping of psychological factors which seem to uniformly predispose an individual toward the development of a duodenal ulcer.

But as you will note in the following literature review of both the physiological and psychological factors,
sometimes these factors may only minimally express themselves in certain individuals with duodenal ulcers. It might be explained as follows:

An individual who possesses very few of the physiologically predisposing factors, could be said to have a high level of physiological resistance. This could be represented as follows:

```
Hi
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Level of physiological resistance - Hi</td>
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<tr>
<td>(i.e., Low physiological predisposition)</td>
</tr>
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</table>

Lo
<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Level of psychological predisposition - Hi</td>
</tr>
</tbody>
</table>

No Ulcer
```

Figure 2. Level of physiological resistance stronger than psychological predisposition - no ulcer.

Furthermore, because this individual has a very high level of physiological resistance (low physiological predisposition), conceivably this person could possess an extremely high psychological predisposition to ulcer, but still not develop one. That is, if this person's psychological predisposition is not significant enough to cross the barrier of their level of physiological resistance, no ulcer would form. This could be represented by the vertical dotted line which falls below the solid line, representing the level of physiological resistance.
Walsh (1981) notes that there is no correlation between individuals who are in highly stressful positions, such as executives, and the development of an ulcer. He goes on to argue then, that there are no psychological factors involved in the etiology of the ulcer. However, I feel Walsh may be overlooking the fact that a fair number of these highly stressed individuals may possess a high level of physiological resistance. This physiological resistance would prevent the ulcer development even though these individuals may be severely stressed psychologically or have a psychological predisposition toward the ulcer.

Another example could be the case in which an individual again has a high level of physiological resistance, but this time the individual may possess an unusually high psychological predisposition toward the development of an ulcer. In this case, the individual may develop the ulcer in spite of his/her high level of physiological resistance.

Figure 3. High psychological predisposition overrides high physiological resistance, ulcer develops.
Certain individuals develop an ulcer when they have only a slight psychological predisposition for it. It is difficult to explain how these individuals can develop an ulcer with a very low level of psychological predisposition. Figure 4 is one way to conceptualize how that could occur.

![Figure 4](image)

In this case, it is possible that the individual actually has a very low level of physiological resistance, that is to say that he/she has a high physiological predisposition toward the ulcer. In that case, it may take only a very low psychological predisposition toward the ulcer in order to develop it.

It is also possible, however, that even though an individual has a very low level of physiological resistance, that they may still avert the ulcer, particularly if they have a very low level of psychological predisposition. That is, the psychological predisposition is lower than the critical level of physiological resistance.
Summary on a Framework for Conceptualizing the Literature

In summary, then, it could be argued that individuals who have a low level of physiological resistance (high physiological predisposition) as well as a high psychological predisposition, would be most prone to ulcer formation. This conclusion, was substantiated by Weiner's (1957) predictive study. In this study he predicted that individuals who had a high psychological predisposition (that is they were gastric hypersecreters), who also had a high psychological predisposition (that is they evidenced psychological dependency), would develop an ulcer. And indeed they did, at a statistically very robust level. But, as indicated in the remaining literature review, some people who are very significantly prone toward ulcer development, physiologically, still may not do so. And likewise, individuals who are very psychologically predisposed toward the ulcer may not do so.
Hopefully this framework will provide a basis for conceptualizing how the contradictory findings or explanations can be reconciled. This is not presented as a hypothesis to be tested in our research, but rather as a simple means of integrating the sometimes divergent findings of the literature. The primary point here was made by Weiner in the introduction to this section regarding physiological and psychological factors. Either factor viewed independently will be an unreliable predictor of ulcer development, but when viewed simultaneously a pattern begins to develop.

Fordtran (1979) presents a similar model. It is here included to give an additional example of efforts to explain ulcer formation by way of the interaction between both psychological and physiological factors (Figure 6).

Physiological Factors Predisposing
Development of Duodenal Ulcer

This is an investigation into the effects of psychological treatment procedures upon a "psychosomatic" disorder. Therefore, a list of physiological factors predisposing development of duodenal ulcers is included. An expanded knowledge of the physiological factors involved assists in an understanding of how the treatment procedures may benefit the individual.

Recall how Pavlov conditioned a dog to salivate in response to the ringing of a bell. The dog naturally salivated when offered food. Pavlov paired the ringing
Figure 6. Interaction between physiological and psychological factors in formation of ulcers.
of a bell with the presentation of food. After a brief period of condition in this manner the food was taken away. But it was found that the dog would salivate in response to the stimulus of ringing the bell. In similar fashion humans may be conditioned to hypersecrete gastric acid and pepsin in response to various stimuli. For example, research indicates that gastric hypersecretion naturally occurs during emotional states of rage or anxiety. Sometimes humans associate these emotional states with specific people, places, experiences or thoughts. In some cases these specific associations may be generalized to related stimuli.

As an example, perhaps a boy would repeatedly become enraged at his unfair father and get a stomach ache due to gastric hypersecretion and muscle tension. Later in life this response pattern may generalize to discomfort with authority figures regardless of whether they were fair or unfair. In time perhaps duodenal ulcer would develop due to this generalized association and the resultant prolonged gastric hypersecretion.

It should be reemphasized that certain thoughts or cognitions may be associated with ulcerogenic affective states and physiological response patterns. This study examined whether or not the restructuring or modification of such cognitions would reduce or inhibit ulcerogenic affective and/or physiological response tendencies.
That is to say in as much as Pavlov's salivating dog could be deconditioned, perhaps humans may be deconditioned from gastric hypersecretion using cognitively oriented treatment procedures such as RSDH.

A final point in this regard, the drug cimetidine mentioned earlier competitively inhibits the action of histamine (a hormone) at the histamine $H_2$-receptors in the parietal cells. It represents a new class of pharmacological agent, the histamine $H_2$-receptor antagonist. Cimetidine inhibits gastric secretion stimulated by a wide variety of factors. Those factors could include psychological factors such as rage or anxiety states, chemical factors such as caffeine, or food. The point is that gastric hypersecretion may be reduced by (1) use of cimetidine, the $H_2$-receptor antagonist, or (2) elimination of factors (whether psychological, chemical, etc.) that activate the histamine system.

A knowledge of both physiological and psychological factors as well as their interaction is critical to this area of inquiry. So it is fitting that the literature review include a careful listing of the primary physiological factors predisposing development of duodenal ulcer.

This section offers a brief overview of the salient physiological factors associated with the predisposition for duodenal ulcer formation.
1. The genetic presence of blood group O.
2. Decreased secretion of blood group antigens.
3. Increased presence of the genetic factor HLA-B5.
4. Increased presence of hyperpepsinogenemia-I.
5. Increased cigarette smoking.
6. Increased alcoholism.
7. Increased salicylates.
8. Increased number of parietal cells.
9. Increased potential for maximal acid output, and increased plasma pepsinogen I.
10. Increased sensitivity to gastrin.
11. A decreased inhibition of acid in gastrin secretion.
12. An increased gastric emptying rate.
13. An often present chronic atrophic antral gastritis.
14. An increased postprandial serum gastrin level.
15. Hypersecretion of acid.


The list of possible physiological factors involved in the predisposition of duodenal ulcer development is long. Any one of these factors may or may not be involved in a given case. But it is clear that the presence of one, or a combination of these factors is significantly related to an increase in the potential to develop the
duodenal ulcer. It should be noted, however, as I stated earlier, that even though a significant number of these physiological factors may be present, this does not, in and of itself, guarantee that the ulcer will form.

Next the more significant individual physiological factors which predispose ulcer development are elaborated.

**Genetics**

A number of studies have documented the potential genetic factor in duodenal ulcers. For example, in a study of adults, Vesely (Vesely et al., 1968), discovered that approximately 25 percent of patients surveyed with duodenal ulcer reported that close relatives within their families had a history of duodenal ulcer as well. Similar results have also been found in studies of children with duodenal ulcer. Habbick (Habbick, et al., 1968) identified a family incidence of 50 percent. Also in 1968, Eberhard studied 116 pairs of same-sex twins. It should be noted that this study did not differentiate between gastric or duodenal ulcer. However, the study determined a rate of concordance of the peptic ulcer disease of 17 percent for dizygotic twins and 54 percent for monozygotic twins.

Even though these figures are impressive, one must be cautious of interpreting them literally. In a review of these and other studies Weiner (1977) notes that the diagnostic criteria for determining the presence of the ulcer was far less than ideal. He further suggests that
there is not overwhelming evidence that these results could not have been accounted for by environmental rather than genetic influences.

Grossman (1979) claims, based upon his review of literature, that first degree relatives of patients with duodenal ulcers have about a three fold increase in risk of getting a duodenal ulcer.

Two studies conducted in the 1950's are noteworthy. Mirsky (Mirsky et al., 1952) found that serum pepsinogen levels for identical twins tended to be somewhat similar. In 1957, Pilot (Pilot et al.) verified the same phenomenon in a similar study.

Before leaving the subject of genetics, it is important to make a point that moves toward the integration that was suggested in the second section of this chapter. In a study of 25 children with radiographically confirmed peptic ulcer, all of which where duodenal ulcers, Christodoulou (Christodoulou et al, 1977) came to some interesting conclusions. This descriptive study concluded that the genetic findings of their investigation suggested a genetic background in the development of duodenal ulcer; however, the findings of this study also suggested that the manifestation of the genetic background is strongly influenced by environmental factors and factors associated with the personalities of the children. The study suggested that such factors as
psychotraumatic environmental events, and anxious and over-protective parents, preceded, or were found in the onset of, the ulcer symptomology of these patients. Notable differences were discovered between the patients and their parents and controls.

In summary, this rather recent study is again suggesting that there is an important manner in which genetic predisposition for duodenal ulcer development must be understood in respect to both environmental and/or psychological factors.

**Hyperpesinogenemia**

This physiological anomaly, characterized by abnormally high levels of pepsin in the blood, often appears in patients with duodenal ulcer. Grossman considers it one of the strongest genetic markers identified so far. About half of the patients with duodenal ulcer have the trait. And persons with the trait have a five to eight-fold risk of getting duodenal ulcer (Grossman, 1979).

**Blood Group 0**

Individuals with duodenal ulcers are from blood group 0 more frequently (Grossman, 1979; Hanley, 1964; Marcus 1969; Sievers, 1959; Veseley et al, 1968; Carbary, 1969; Buckwalter et al., 1956). There appears to be a connection between this blood group and a decrease
in the secretion of the blood group antigens ABH.
Stated simply in summary, persons of blood type O who
do not secrete ABH antigens are 25 to 35 percent more
inclined to develop peptic ulcer than individuals of
blood type A, B, or AB who do secrete these antigens
(Weiner, 1977). It is not known precisely how these
physiological factors interact to create a predisposition
to duodenal ulcer. One possibility suggested by Weiner
(1977), is that the genes involved do not play a role
in causing the disease, but rather they may control the
severity of the duodenal ulcer.

Gastric Acid

Gastric acid hypersecretion is concomitant with
the duodenal ulcer syndrome (Ivy et al., 1950; Mirskey
in an excellent review of the various types of ulcers
occurring and identified to date, state that the old
adage is true, "no acid, no ulcer." Resultantly, each
ulcer type thus far identified is characterized, among
other things, by the deleterious influence of gastric
acid.

In some cases, the acid concentration may be
abnormally high due to one or more of a variety of
factors, such as, for example, an increased parietal
cell mass. Still in other cases, the average rate of
acid secretion may be normal, but other factors, such
as the resistance of the mucosa to the acid, come into play (Grossman, 1979).

Duodenal ulcers almost never occur in persons whose maximal acid output is less than 10-12 mEq/hour. The average rate of acid secretion is higher in patients with duodenal ulcer than in control subjects, but about 2/3 of the patients with duodenal ulcers have secretion rates which fall in the normal range.

The duodenal ulcer seemingly results in part from an imbalance between the load of acid and pepsin to which the mucosa is exposed and the ability of the mucosa to resist its damaging action. It should be noted, in spite of the fact that abnormal levels of acid secretion occur in many cases of duodenal ulcer, that the majority of patients with duodenal ulcer secrete normal levels of acid and pepsin. What some researchers are assuming at this point is that the problem may rest in part with the decreased resistance of the mucosa.

**Parietal Cell Mass**

One of the most important research findings regarding acid secretion has been the role of the parietal cell mass. An increased number of acid secreting parietal cells in the stomach wall tissue can account for the higher basal or stimulated secretion rates among persons with duodenal ulcers, even though vagal tonic
discharge is normal. This finding discounts Alexander's contention (1950) that increased vagal tonic discharge exclusively accounts for secretion rate increases. Attempts to prove, indirectly, chronic increases in tonic vagal discharge have failed (Fordtran, 1973; Grossman, 1967; Weiner, 1977).

**Mucosal Resistance**

Grossman (1979) reviews the several factors that may contribute to the breakdown in the resistance of the mucosa. He warns that although each mentioned factor is a possible candidate for ulcerogenesis, no direct evidence yet implicates any one of them. They are: mucosal blood flow; integrity of the mucosal barrier to back diffusion of hydrogen ions; secretion of mucus; regeneration of epithelial cells; and local synthesis of prostaglandins which protect the gastric mucosa.

**Hormones**

Taylor and Walsh (1980) review the gastrointestinal hormones involved in peptic ulcer disease. Their review indicates that 14 gastrointestinal peptides affecting gastric acid secretion have been identified. Only one, however, serum gastrin, has had any significant impact on the clinical management of the peptic ulcer patient. Gastrin, of course, stimulates acid secretion, which further aggravates or can potentially
cause the duodenal ulcer.

Cigarette Smoking

Wormsley (1978) has recently challenged the data suggesting the correlation between smoking and ulcer development. He claims that many studies should be dismissed because they did not rely enough upon endoscopy or double contrast radiology to ascertain the presence of ulcers. In spite of Wormsley's criticism, the literature would suggest that cigarette smoking is associated with a doubling of the expected frequency of duodenal ulcer. It is also associated with a decreased rate of ulcer healing and with increased mortality from the ulcer (Grossman, 1979).

Alcohol

It is plausible that distressed individuals may medicate themselves with drugs that are ulcerogenic or drink alcohol in order to attempt to alleviate the stress. Alcohol is a stimulant of acid secretion (Elwin, 1969). But this finding in and of itself is not sufficient to inclusively implicate alcohol in the pathogenesis of duodenal ulcer.

Weiner (1977) reviewing the literature on alcohol, says that alcohol, liver disease and peptic ulcer are obviously related in some manner, however, it is unclear precisely how they are related, perhaps only in a very
complicated manner. Weiner states that in his view, alcoholic intake should be considered a precipitant rather than the result of peptic ulcer disease. The major questions still remain: Does alcohol exacerbate the symptoms of the ulcer, reactivate the symptoms or play a more direct pathogenic role in peptic ulcer disease?

Summary on Physiological Factors Predisposing Development of Duodenal Ulcers

The preceding has been a literature review of the salient physiological features pertinent to the development of the duodenal ulcer. The following factors have been explored in some detail: genetics, hyperpesinogenemia, blood group O, gastric acid, parietal cell mass, mucosal resistance, hormones, cigarette smoking, and alcohol. All of the above factors are clearly and predominantly physiological in nature except for cigarette smoking and alcohol. These latter two factors are perhaps more environmental or behavioral in nature. They were, however, included in this section because of their clear and direct impact upon the physiological domain.

Hopefully, as a result of this review, there is a better understanding of the physiological mechanisms which the psychological treatment procedures may alter
and thereby reduce ulcer predisposition.

Psychological Factors
Predisposing Development of Duodenal Ulcer

This section will review the literature on the psychological factors most often cited as pertinent to the development of duodenal ulcers. The studies cited appear highly varied in nature. Some are case studies, some are longitudinal. At least one is predictive. Very few are controlled experimental studies. Perhaps the majority are descriptive. At times these studies conflict with one another and yield confusing interpretations. Part of the difficulty, certainly, stems from the fact that even though researchers may agree upon a common name for a factor (e.g., dependency), they may not agree upon the common dimensions to measure the factor being named. Nonetheless, this literature does provide a loosely consistent and adequate descriptive foundation for the psychological variables which are pertinent to this particular experimental study. This review divides the literature into two broad areas: (1) anxiety related literature and (2) dependency related literature.

Anxiety Related Literature

Anxiety has received frequent mention in a variety of studies on peptic and duodenal ulcer patients over the past 40 plus years. Taken as a whole, the duodenal
ulcer literature pertinent to anxiety tends to suggest that heightened and prolonged elevations of gastric secretion correlate with higher levels of anxiety.

Wolf and Wolff (1947) conducted the famous study with "Tom" who had a fistula. They studied increases in gastric acid secretion, motility, and the color of the mucosa in response to a variety of planned and unplanned psychological stimuli. In response to conversations evoking feelings of hostility and resentment, Wolf and Wolff documented: increases in color of the mucosa, that is reddening; increased secretion of hydrochloric acid; and increased gastric motility. In a condition which the researchers described as "transitory anxiety," a short range increase in total acid output occurred up to about 60 minutes. But they measured an overall decline in both the total acid output as well as the secretion of hydrochloric acid over approximately 2½ hours in this condition. It appears that the changes in gastric secretion may be somewhat influenced by a function of time. Seemingly, in the long range certain antagonistic defense mechanisms compensate for the short term spike in gastric output during the transitory anxiety state. By examining this study alone, the complexity of the literature become apparent.
Mahl (1950) associated gastric hypersecretion with what he termed "chronic anxiety." Mahl found higher levels of free hydrochloric acid in the stomachs of six college students scheduled for exams later that day. Their levels measured higher than for two students who, reportedly, were not anxious regarding the same examination. Their evaluations in hydrochloric acid also measured above elevations recorded on control days, where no examinations were scheduled. In contrast, Mahl believed that decreased gastric activity correlated with what he termed "acute anxiety." Again, in this study the level of gastric secretion varies in respect to different types of anxiety and functions of time. Here the main issues center on short versus long term and acute versus chronic manifestations of anxiety.

In a series of studies with seven healthy subjects, Kehoe and Ironside (1963) utilized hypnotic suggestion. The highest gastric secretory rates were identified in conditions of anger followed next by anxiety. The anger rate of gastric output was significant at a P value of .07 or less. Lower rates of gastric output in order, were found for contentment, depression and helplessness-hopelessness.

Similarly, Engel (Engel et al., 1956) studied an infant girl with a gastric fistula. These researchers found the highest rate of secretory output associated with
the condition identified as rage. The lowest rate occurred in the affective state of depression. The researchers also scaled the "interest in things or persons in the environment." In correlating these scaled ratings with the various levels of gastric secretion, they found that higher levels of secretory rate correlated with the condition of interest.

In 1953 Mahl and Karpe did a psychoanalytic case study on a patient seen on a daily basis for four weeks. The researchers kept detailed session notes and took periodic measures of gastric secretion following the sessions. Mahl and Karpe found a higher level of gastric secretion associated with times that they identified the patient as anxious. In contrast, the secretory rate was lower in sessions where the patient expressed dependency wishes.

Alexander (1953) reanalyzed the same verbal content and arrived at a different evaluation. Alexander concluded that higher secretory rates correlated with discussions of oral dependent motives. In this particular experimental research project, levels of both anxiety and dependency were examined. Also, the effects of the psychological interventions under evaluation upon both anxiety and dependency were studied.

Weisman (1956) conducted another early but signi-
ficant study. He interviewed six patients who had recurrent peptic ulcers during periods of both exacerbation and remission. Generally, Weisman found that the exacerbation occurred during times of conflict, when the subjects vacillated between active-seeking and passive-yielding behavior. The conflict took such forms as masculinity versus feminity, self-indulgence versus self-discipline, dependence versus independence or security versus exposure to danger. Weisman found that exacerbations could not be associated with any single factor, but rather, the integrated presences of such factors as: conflict, fear, ego-defense, and ambivalent interpersonal relationships. It should also be noted that an inverse relationship was obtained between depression and ulcer symptoms.

Greenfield and Sternback (1972) summarized the literature on duodenal ulcer, and anxiety in particular, by saying that it is difficult to understand the relationship between "anxiety" and gastric function from the present data. Other researchers, while admitting that difficulties and uncertainties exist, feel that the literature reveals a reasonably consistent pattern regarding anxiety.
The most current and extensive evaluation on duodenal ulcer comes from Weiner (1977). This section on anxiety is concluded by referring to some of his evaluations of this literature.

Weiner concludes that a variety of studies have demonstrated that anxious patients usually show an increase in the volume of gastric secretion and a fall in pH for brief or prolonged periods. He cites the following studies as examples of research measuring the effects of stress produced anxiety: Patients exposed to stressful interviews or asked to participate in clinical tests which have not been explained to them in advance (Goldman, 1963; Mittleman and Wolff, 1942; Seymour and Weinberg, 1959; Shay et al., 1958; Sun et al., 1958; Szasz et al., 1947; and Wolf, 1965) and patients threatened with an injection (Coddington et al., 1964; Heller et al., 1953; Jungmann and Venning, 1955; Sternback, 1962; and Wolff and Levine, 1955). It should be noted that other affective states such as humiliation, guilt, anger, or resentment have also been identified as eliciting changes in the gastric environment similar to those caused by anxiety.

Several of the studies which used gastric fistula patients as subjects have been reviewed. Weiner's (1977) summarization of psychophysiological studies on patients with gastric fistula is significant. He concludes that in certain subjects, certain dominant affects, such
as anxiety and anger positively correlate with an elevation in the gastric secretion of acid. Furthermore, if these affects persist, the elevations may continue for several days. He adds, however, that the other affective states also seem to interact with the gastric environment but in a more complex pattern. This pattern has not yet been meaningly correlated with psychological events.

Finally, Weiner (1977) agrees with Greenfield and Sternback (1972) that the literature in this area of investigation is confusing. However, he suggests that on the whole, it appears that feelings of anger and anxiety increase both the volume and the acidity of gastric juice, and that a depressive feeling or mood tends to suppress both basal and maximal secretion, citing Crundy et al. (1967).

Summary on Anxiety Related Literature

In summary, this section has reviewed a wide variety of studies and literature which have examined the effect and role of anxiety on the gastric environment of duodenal ulcer patients. Certainly a number of methodological weaknesses flaw several of these studies. However, the preponderance of evidence suggests that anxiety should be taken into consideration in a research project of this nature. For this reason, this particular study will specifically evaluate the effectiveness of three different
psychological interventions on managing levels of anxiety in known duodenal ulcer patients. It was the goal of this study to determine which psychological intervention most effectively reduces anxiety.

Each of the three psychological interventions under investigation have effectively reduced levels of anxiety in prior research efforts. For example, Bontin and Tosi (1982) demonstrated the effectiveness of Rational Stage Directed Hypnotherapy in reducing test anxiety. Kehoe and Ironside (1963, 1964) demonstrated the ability of hypnosis to induce and moderate various affective states including anxiety. Others document the effective use of hypnosis in moderating anxiety (Crasilneck and Hall, 1975; Hammer, 1954; Lodato, 1968; Armstrong, 1974; Frankel, 1974; Isham, 1962; and Perin, 1968). Finally, Michenbaum (1972) demonstrated the ability of cognitive restructuring to reduce test anxiety.

Dependency Related Literature

John S. Fordtran is a noted and current theorist and researcher of the psychological factors in duodenal ulcer development. Fordtran (1973, 1979) describes a three-part psychosomatic theory model.

A. Chronic psychic conflict

This precedes the development of ulcer by a long time, and usually it is subconscious. The most common psychic conflict involves dependency versus non-dependency needs. Psychiatrists believe that such patients are basically highly dependent, but that they often compensate by a
show of independence, self-sufficiency, and perfectionism.

Other conflicts may be more prominent in some patients. Some of these are aggression versus non-aggression, masculinity versus femininity, heterosexuality versus homosexuality, passivity versus activity, indulgence versus discipline, security versus exposure, attachment to father versus reliance on mother and compliance versus defiance. It must be emphasized that the patient is not aware of the existence of the conflict.

B. Physiological response

This chronic psychic conflict as described above, predisposes to ulcer formation by stimulating acid-pepsin secretion and/or by reducing gastroduodenal mucosal resistance. These effects are mediated by the vagus nerve and/or hormones.

C. Precipitating event

A precipitating stressful event or situation occurs that accentuates "A" and "B."

As you can see, Fordtran cites dependency as the most common source of chronic psychic conflict in duodenal ulcer patients.

Dependency appears frequently in the duodenal ulcer literature. This section reviews the literature relevant to the concept of dependency. And in this research project, dependency was evaluated both theoretically and empirically.

In passing it should be noted that all three parts of Fordtran's psychosomatic theory of duodenal ulcer development were addressed in this dissertation. Part A (Chronic psychic conflict-dependency) was addressed
primarily in this section. Part B (Physiological response) has already been covered. And finally, part C (Precipitating event) was included in the review of RSDH.

The formulation which early set the stage for evaluations of dependency came from Alexander (1934, 1950, 1965). Stated simply, Alexander and his colleagues from the Chicago Institute for Psychoanalysis, formulated the concept that duodenal ulcers were formed in patients who had oral-receptive longings which were frustrated. In some cases, the patients compensate for the oral-receptive longing by oral-aggressive responses, which would lead to guilt and anxiety. Furthermore, Alexander felt that these various oral-receptive longings predisposed the individual to ulcer by neural and hormonal mechanisms, chiefly the mechanism of vagal tonic discharge. That is, due to the frustrated oral craving, the vagus nerve mediated an increased secretion of gastric acid, which caused the ulcer. This oral-receptive longing was the essence of the unconscious conflict, which was primarily a state of dependency and resultant frustration.

Implicit, due to the unconscious nature of the conflict, was the supposition that the suffering individual would compensate with tendencies toward independence, achieving success, upward social mobility and the possible attainment of high ranking. Alexander's research utilized
patients of high socio-economic status.

Many patients with duodenal ulcer come from poor, depressed socio-economic status and may also be quite passive in general nature. Helping understand this are such theorists as Engle (1975) who identified three characteristic ways in which dependency could be manifested. The "pseudo-independent" patient manifests his dependency through a facade of independence. The "go-getting" executive would be an example of this type of dependency manifestation. Secondly, the passive-dependent individual would express their dependency in the classic manner that we might expect, which is by being compliant, passive, clinging, repressing anger, and being eager to please. Thirdly, the acting-out patient would manifest their dependency need by blatantly acting-out and demonstrative demands which might at times, assume an anti-social nature.

Alexander's formulations have been criticized due to their central conflict theory. That is, that the conflict was based exclusively upon a rather narrowly defined concept of dependency versus independence. Investigators who opposed Alexander's formulation on this point felt that the specific constellation of dependency should be replaced by something more non-specific. Mahl and Karpe (1953) proposed that the conflict developed from the more non-specific source of
"chronic anxiety." In this case, they felt that the anxiety was not unconscious, but conscious. Other research by Mahl expands on this theory (Mahl, 1949, 1950, 1952, 1953).

In spite of the criticism, Alexander's work certainly endures as noteworthy. The formulations by researchers such as Engel, Mahl and Karpe, as well as the recent physiological data which we have already discussed, should be viewed primarily as elaborations, expansions, and refinements of the basically excellent foundation that Alexander provided. In fact some of the more substantial work done in this field was done early-on in the 40's and 50's. Recent contributions center primarily in the physiological area and in the appropriate broadening of the psychological model to include factors other than just dependency.

Next, it would be meaningful to look at the major research studies which built upon the early foundation laid by Alexander's formulation.

Mirsky et al. (1952) postulated that the hypersecretion of pepsin, which could be measured in the blood as pepsinogen, was a necessary condition for the development of the duodenal ulcer. This postulate regarding high levels of serum pepsinogen, laid the ground work for what is probably the most classic study yet done on the duodenal ulcer.
Weiner et al. (1957) developed an elaborate predictive study to test Mirsky's postulate. Serum pepsinogen levels were taken on 2,073 U. S. Army draftees. They were then randomly selected and separated into groups of hyper and hyposecretors of serum pepsinogen. The hyposecretor group consisted of 57 men who were selected randomly out of 179. The hypersecretor group was composed of 63 men who were chosen out of 300 who had the highest level of serum pepsinogen.

As basic training began, both groups were subjected to a battery of tests, including the Rorschach, Draw-A-Person test, Blacky pictures, the Cornell Medical Index, and the Saslow Screening Inventory. Additionally, they were given gastrointestinal x-ray examinations. After eight weeks or more of basic training, the majority of these men were again given the psychological battery as well as an x-ray re-examination. Based upon a combination of Mirsky's and Alexander's theory, it was hypothesized that hypersecretors would manifest intense oral cravings and thereby be likely to develop ulcers. The psychological data was provided to three investigators who were ignorant of the patients' medical status. These investigators were able to identify 71 percent of those who were hypersecretors and 51 percent of those who were hyposecretors. Furthermore, from the overall group 10 were selected, based on the psychological test data, as being
most likely to either have or to develop a duodenal ulcer. Their prediction was correct for seven of the ten subjects. Later these blind investigators were provided with the serum pepsinogen levels. Combining the medical data with the previously developed psychological data, the researchers developed a scale of 20 factors by which 85 percent of the men could be assigned to the correct group, that is hyper or hyposecretors, at a .001 level of significance.

This impressive study demonstrates that certain physiological conditions such as elevated levels of pepsin secretion in combination with certain specified psychological characteristics, can permit the thoroughly effective prediction of individuals with a high risk for development of duodenal ulcers. Stated most simply, in an empirical manner dependency was linked with hypersecretion, which was then linked with the probability of the development of duodenal ulcer.

Other researchers have also contributed to this literature regarding dependency. Cleveland and Fisher (1960) compared 33 male veterans with duodenal ulcer with 23 male veterans who had rheumatoid arthritis. The researchers utilized the Holtzman ink blot test. Their conclusion was that the ulcer patients perceived their bodies as not having a firm boundary and thereby easily penetrated. That is, the ulcer patients had lower barrier
scores and higher penetration scores than the arthritics.

DeM'Uzan and Bonfils (1961), Sapir (1962), and Meeroff and Weitzman (1963) have all identified patterns of conscious or unconscious oral motives, that is, oral passivity and dependency. However, this dependency, although identified as common among the peptic duodenal ulcer patients, expressed itself in a variety of ways. Some patients were driven. This group would be most readily identified with the group described in Alexander's original formulation. Other patients expressed dependency by being parasitic, that is overtly passive-dependent. Still others were not particularly competitive, and others vacillated between expressions of both independence and dependence.

Weiner (1977) summarized the literature on the psychological characteristics of women with peptic ulcer disease. He stated that explicitly or implicitly, evidence exists that women with peptic ulcer disease conform with Alexander's clinical findings on men with duodenal ulcer disease. That is, patients of either sex, appear to have unconscious motives to be taken care of by others. Furthermore, these dependency needs may be varyingly expressed as excessive independence or as more classically recognized dependent operations.

Alexander et al. (1968) conducted a study on seven individuals with classic psychosomatic illnesses. These
patients were interviewed by psychoanalysts who did not know the illness of the patient. The interview team of both internists and psychoanalysts were asked, based upon edited interview material and a knowledge of Alexander's psychodynamic formulation, to diagnose the illnesses of these cases. Another group of physicians were asked to judge their diagnosis based on sources of bias such as clues to the medical illness found in the edited interview material. The psychoanalysts blindly diagnosed correctly 49 percent of the psychosomatic diseases of the men and 16 percent of those of the women. The internists successfully diagnosed the psychosomatic illnesses for 40 percent of the men and 10 percent of the women. It was estimated that the probability of assigning a patient to any one of the six disease categories was 14 percent. This validated the hypothesis that male patients with peptic ulcer disease can be characterized and identified by unconscious oral passivity and dependent wishes.

By contrast the attitude specific theory of psychosomatic illness was not supported by Forman's research (Forman, 1979). Forman's research did, however, suggest a possible set of general attitudes which appear to correlated with a variety of psychosomatic illnesses.

Baugh and Stanford (1964), Silverstone and Kissen (1968), Thaler et al. (1957) all found that all fantasy
content and passive strivings appeared in the test material of peptic ulcer patients. By contrast, Kanter (1958) and Kanter and Hazelton (1964) studied five groups. Three were patients with duodenal ulcers and two were controls. In this study, no differences were found between the five groups on the dimensions of oral dependence or agressive content, however, the ulcer patients tended to score higher on the neuroticism category and lower on the extroversion category compared with the controls.

Summary on Dependency Related Literature

In summary, this section on the psychological factors associated with duodenal ulcer has reviewed the literature regarding dependency. Alexander's formulation that duodenal ulcer patients would be characterized by a psychologically identifiable predisposition toward dependency and hypersecretion was very successfully validated by Weiner's predictive study. Certainly, subsequent researchers have elaborated upon and broadened the concept of dependency to incorporate the varied manifestations of dependency. These manifestations range from behavioral demonstrations of independence, presumably to compensate for dependency, to more classic expressions of dependency. Subsequent researchers have also demonstrated that psychological factors other than dependency can cause conflict and also thereby alter levels of gastric secretion.
Formulations regarding dependency have played a major role, both historically and currently, in theories and research on the development of duodenal ulcer. Dependency, therefore, has been specifically chosen as a factor which will be evaluated in this study. Our goal is to determine which psychological intervention under analysis (RSDH, CR, or HO) can most successfully moderate the measured levels of dependency to more desirable levels.

**Hypnosis**

Many perspectives or models for hypnosis exist. This study will utilize what has been described as the "emerging rational perspective" (Tosi, 1982). In this rational or cognitive perspective higher cortical functions are emphasized thus de-mystifying the hypnotic process. It is felt that these higher cortical functions operate quite effectively even while the person is in the hypnotic state. This model attempts to maximize the person's ability to concentrate and direct their attention to meaningful foci above and below the threshold of awareness. At the same time this model seeks to minimize distractions that inhibit learning. Hypnosis in this system provides a vehicle where cortical and sub-cortical brain functioning can be integrated (Kroger, 1977; Fromm and Shor, 1979; Tosi, 1980; Tosi, 1982).
The mechanisms for operationalizing this rational perspective of hypnosis will become more evident in the methods section of this paper on hypnosis and RSDH. The mechanisms, however, could be characterized as utilizing concentration, focused awareness, reflective thought, relaxation, and selective attention and inattention (Tosi, 1982).

Next it should be noted that a relatively large number of studies have validated the effects of hypnotic suggestion, or hypnosis upon the gastric environment. Because hypnosis may alter the gastric environment we may readily infer that it also alters the duodenal environment since the two are anatomically connected. Some of the salient literature on hypnosis pertinent to the management of the duodenal ulcer is reviewed.

Peterfy (1977) cites a case study of a 28 year old nurse who had suffered five recurrent bleeding episodes of duodenal ulcer during the past seven year period. She met with the operator for two 30-minute sessions per week for five years. During this time, she "enjoyed perfect health, and did not have a single relapse, and did not need to follow any diet or take any medications." However, when treatment was discontinued, due to a move to another part of the country, within one year, the symptoms returned with two exacerbations of the ulcer with bleeding. Subsequently, the patient underwent subtotal gastrectomy.
Kehoe and Ironside (1963, 1964) monitored the rate of gastric acid secretion of hypnotized subjects during five minute segments of a 2½-hour hypnotic trance. The authors were able to correlate gastric secretion with various affective states. For example, anger could be correlated with the highest mean secretory rates, contentment and anxiety correlated with moderate rates of secretion; depression, helplessness, and hopelessness were correlated with the lowest rate of acid secretion.

Ikemi et al, (1959) in a study utilizing hypnosis, found that sadness decreased acid secretion and motility of the stomach. Other researchers have found that other affective states changed the gastric environment. Eichorn and Tractir (1955) identified fear as associated with the greatest increase in gastric rate of secretion.

Kroger (1977) in his text, _Clinical and Experimental Hypnosis_ , makes recommendations to assist the hypnotic therapist in encouraging the patient to recognize and to express angry feelings. Kroger also suggests that since ulcer patients crave love, affection and recognition, that hypnotherapy must be directed toward augmenting these emotional needs. Once that is addressed, Kroger suggests that the patient can be trained in auto-hypnosis and sensory-image-conditioning permitting them to independently manage their own psychologically induced gastrologic condition. He cites an ulcer patient successfully treated
Summary on Hypnosis

Hypnosis, as applied in this study, utilized the rational or cognitive perspective which emphasizes higher cortical functions thus demystifying the hypnotic process. This perspective or model seeks to maximize a person's ability to concentrate and direct their attention to meaningful foci along the awareness continuum. The model seeks to minimize distractions that inhibit learning. The chief mechanisms for operationalizing the model utilize concentration, focused awareness, reflective thought, relaxation, and selective attention and inattention.

Although this researcher has not been able to identify any controlled studies utilizing hypnosis in the psychological management of duodenal ulcers, the several studies reviewed demonstrate that hypnotic procedures produce measurable effects upon gastric secretion. Research on the use of hypnosis has demonstrated a correlation between hypnotically induced mental experiences and the mean gastric secretory rate (Kehoe and Ironside, 1963, 1964). Hypnotically induced or spontaneously occurring affective states such as anger or fear are associated with higher than normal levels of gastric secretion (Kehoe and Ironside, 1963, 1964; Eichorn and Tractir, 1955). Whereas, hypnotically induced or spontaneously occurring
affective states such as anxiety and contentment are associated with moderate elevations in the level of gastric secretion (Kehoe and Ironside, 1963, 1964), it is felt that for these combined reasons, it would be meaningful to evaluate the effects of hypnosis in a controlled experimental study on duodenal ulcer patients.

Cognitive Restructuring

Cognitive restructuring, initially popularized by Albert Ellis, suggests that in response to activating situations (labeled "A"), an individual's cognitions or beliefs (labeled "B") result in a consequence, or set of emotions (labeled "C") (Ellis, 1962; Ellis and Abrams, 1978). Ellis' treatment is referred to as Rational Emotive Therapy (R.E.T.). Through this mechanism, an individual is encouraged at point "B" to refute his or her irrational ideas, to replace them with far more rational ideas, far more rational cognitions, which will result in a beneficial altercation of emotions at point "C." Said simply, this therapeutic technique permits one to alter emotional states by way of altering cognitions, beliefs or evaluations regarding the myriad of situations and stimuli to which individuals are exposed.

A growing body of research has substantiated the voracity of this technique in modifying emotional states through the restructuring of cognitions (Mahoney and Arnkoff, 1978). However, controlled research using
cognitive restructuring in the management of psychosomatic illnesses has been limited. The majority of the research conducted thus far has utilized single organism studies. This researcher has identified no controlled experimental studies utilizing cognitive restructuring on a duodenal ulcer population. Studies which do apply to our area of inquiry will be cited at this time.

Ellis and Abrahms (1978) identified several applications for cognitive restructuring in their book titled "Brief Psychotherapy in Medical and Health Practice." Utilizing cognitive restructuring (Rational Emotive Therapy) they addressed the management of anxiety, hostility, and varied psychosomatic and somatic conditions. They presented several portions of case studies as evidence for the efficacy of cognitive restructuring.

Tosi et al (1982) studied a group of hypertensives in a yet unpublished research project. This study compared cognitive restructuring to rational stage directed hypnotherapy, hypnosis, and a control group in a comprehensive multivariate analysis. Interestingly, Forman (1979) identified a set of cognitive factors common to both hypertensive and duodenal ulcer as well as, low back pain patients. Preliminary analyses on the Tosi et al. study suggest that the common cognitive factors identified by Forman of perfectionism, self-downing, and blame-proneness can be beneficially and varyingly moderated.
by CR, RSDH, and HO. Therefore, since hypertensive and duodenal ulcer patients share common cognitive factors, perhaps the duodenal ulcer population can also respond beneficially to CR, RSDH, or HO.

A variety of studies present evidence regarding the effectiveness of cognitive restructuring in improving a number of psychological and psychobiological conditions pertinent to our area of inquiry. These varied studies demonstrate the value of cognitive restructuring treating such conditions as headaches, pain, anxiety, tension, stress, aggression, and anger (Goodwin and Mahoney, 1975; Levendusky and Pankrantz, 1975; Meichenbaum, 1972 and 1975; Novaco, 1975 and 1976; Reeves 1976; Sanches-Craig, 1976; Spanos, 1975; and Heller, 1975).

Summary on Cognitive Restructuring

Cognitive restructuring has demonstrated beneficial applications to conditions frequently associated with a duodenal ulcer population such as pain, anxiety, tension, stress, aggression, and anger. For this reason cognitive restructuring will be compared to RSDH, HO, and a control condition to assess its relative effectiveness on a duodenal ulcer population.

Rational Stage Directed Hypnotherapy

Rational Stage Directed Hypnotherapy (RSDH) has been developed by Tosi (1974) and Tosi and Marzella (1975). It
is a cognitive experiential therapeutic technique which emphasizes cognitive control over affective, physiological, and behavioral functions of a person. It emphasizes the restructuring of cognitions. Ellis' (1962) "ABC" model of human functioning is expanded to include point "D" (physiological response) and point "E" (behavioral responses). This elaboration includes various levels within each of the "A, B, C, D, & E" components (Tosi, 1981). It also elaborates Mooney's (1963) model of person-environment interaction. Further, RSDH merges cognitive restructuring with a state of deep relaxation or hypnosis. Tosi (1982) theorizes that "the hypnotic state amplifies and heightens the cognitive restructuring of emotional, physiological, and behavioral processes." Finally, utilizing the hypnotic vehicle RSDH operates on a dynamic time and awareness continua while progressively advancing through six identified developmental stages of awareness, exploration, commitment, implementation, internalization, and behavioral stabilization. These identified stages have been modified and operationalized from Quaranta's (1971) original formulation by Tosi (1974, 1980) and Tosi and Marzella (1975). Next these components are described in more detail. (1) First there is an elaboration of the ABCDE model. (2) Next the role of hypnosis is briefly mentioned. (3) Then the developmental stages are elaborated. (4) Finally, this section concludes with a review of related literature.
Figure 7 depicts Tosi's revised version of Monney's (1963) person and environment model. In this figure the self or person, represented by the large broken circle, interacts as an open system with the environment (labeled A₁...). The self consists of (B) cognitive, (C) affective, (D) physiological, and (E) behavioral sets of operations. The self or person also interacts with internal factors such as bodily reactions, sensation, and images. The internal and external factors could be real or imagined (Tosi, 1981).

Tosi suggests that the A's, B's, C's, D's and E's operate as a network of interrelationship. The emotional response, for example, only makes sense as it relates to the person's cognitive appraisals, situational events, or changes in bodily functioning. To understand this better let us further elaborate the ABCDE model presented in Figure 7.

Environmental or situational conditions (A₁...Aₙ) and its component parts (a₁...aₙ) may generate individual interpretations, appraisals, or beliefs (B) about the environment or its subparts. Tosi (1981) theorizes that these cognitive operations (B) are comprised of four level cognitive sets (b₁, b₂, b₃, and b₄). The cognitive set may operate above or below the threshold of awareness. b₁ represents an appraisal, belief or judgment about the situation.
$b_2$ represents an appraisal of the individual's response (i.e., a thought, image, cognitive operation, emotion, physiological response, or behavioral response) to the situation.

$b_3$ represents the generalization to the entire self that results from $b_1$ and $b_2$.

$b_4$ represents a set of learned and well integrated cognitive coping strategies that may be self-enhancing or self-defeating.

Examples of $b_4$ and a summary of the entire theorized cognitive operation is found in Table 1.

The cognitive operations either generate or become associated with a set of affective responses (labeled $C - c_1 \ldots c_n$). Simple or complex emotional responses may be experienced such as happiness, depression, anxiety, and so forth.

Varying physiological concomitants (labeled $D - d_1 \ldots d_n$) result from the emotional arousal or affective state. In the case of the duodenal ulcer population this could include hormonal activation or inhibition, gastric hypersecretion or hyposcretion, or possibly changes in the blood supply to the mucosal barrier.

Finally, the above cognitive, affective, and physiological processes may translate in behavioral responses or action tendencies (labeled $E - e_1 \ldots e_n$). Note that these behavioral responses may be overt and/or covert.
A = SITUATIONAL CONDITIONS \( (a_1, a_2, a_3, a_4) \)

B = COGNITIVE FUNCTIONS \( (b_1, b_2, b_3, b_4) \)

C = AFFECTIVE RESPONSES \( (c_1, c_2, c_3, c_4) \)

D = PHYSIOLOGICAL RESPONSES \( (d_1, d_2, d_3, d_4) \)

E = BEHAVIORAL RESPONSES \( (e_1, e_2, e_3, e_4) \)

Figure 7. Person and environment interaction.
<table>
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<td>Cognitive Symbolic Operations</td>
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- **B₁** -- Appraisal of events
- **B₂** -- Appraisal of response to event
- **B₃** -- Generalized appraisal of self system
- **B₄** -- Cognitive-symbolic coping strategies
  1. Disassociation-association
  2. Appraisal of response to event
  3. Denial-regression-suppression-projection
  4. Logical-critical-divergent thinking
  5. Imagining
  6. Distortion
     a. Mislabelling
     b. Overgeneralizing
     c. Arbitrary inference
     d. Magnification/minimization
     e. Selective abstraction
     f. Cognitive polarization (either-or)
     g. Projection
  7. Destructive/constructive behavioral approach - avoidance options
  8. Proliferation

*(Tosi, 1981)*
The ABCDE model as presented in Figure 7 has been elaborated upon in the preceding pages. To review examine the five experiential themes of the ABCDE model as summarized by Tosi on Table 2.

To conclude this subsection and to further clarify the ABCDE model examine Table 3 which is an example of the elaborated ABCDE model for a hypothetical duodenal ulcer patient.

**RSDH - Hypnosis**

In the RSDH model hypnosis is an important vehicle that assists in cognitive restructuring along time and awareness continua. In the hypnotic state persons may focus more efficiently on meaningful human experiences which can be organized along dimensions of time (ranging from the distant past to the projected future), and of awareness (ranging from what is least consciously known to what is fully conscious) (Tosi, 1982). Hypnosis also facilitates cognitive restructuring as learning and experiential processes are heightened and as distractions ideally are minimized.

Hypnosis will not be reviewed more extensively at this time since RSDH-hypnosis is based on the same emerging rational or cognitive perspective which was presented earlier in this chapter. The methods section of this paper will further detail the precise manner in which hypnosis is utilized in the RSDH procedure to facilitate cognitive restructuring.
Table 2

Experiential Themes

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<tr>
<td>A</td>
<td>Refers to an event or set of events ( (a_1, a_2, a_3, a_4) ) occurring in the internal or external world of a person related to a present, past, or future time occurring along an awareness continuum.</td>
</tr>
<tr>
<td>B</td>
<td>Refers to a set of cognitive responses ( (b_1, b_2, b_3, b_4) ) to an event or set of events ( (a_1, a_2, a_3, a_4) ) internal or external, along an awareness and time continuum.</td>
</tr>
<tr>
<td>C</td>
<td>Refers to a related set of affective responses ( (c_1, c_2, c_3, c_4) ) to B about A along an awareness and time continuum.</td>
</tr>
<tr>
<td>D</td>
<td>Refers to a set of physiological concomitants ( (d_1, d_2, d_3, d_4) ) or resultants of C occurring along an awareness and time continuum.</td>
</tr>
<tr>
<td>E</td>
<td>Refers to a set of overt or covert actions or behavioral possibilities ( (e_1, e_2, e_3, e_4) ) toward A occurring along an awareness and time continuum.</td>
</tr>
</tbody>
</table>

(Tosi, 1981)
Table 3

Example of Elaborated ABCDE Model

| A. Event | Mr. Smith is rushing out of the house to get to a party on time when he spills the meat sauce on his white shirt. |
| R. Cognitive Responses | B₁ Mr. Smith evaluates the situation with the thought: "This is awful and the worst thing that could have happened now." |
| | B₂ Mr. Smith evaluates his response to the situation with the thought: "I should know better than to make such a stupid and clumsy mistake." |
| | B₃ Mr. Smith evaluates himself with the thought: "I am an inadequate, bumbling, and stupid person." |
| | B₄ Mr. Smith engages in a self-destructive coping strategy of distortion in the form of projection with the thought: "This just proves that I'm bound to mess-up whatever I try." |
| C. Affective Responses | C₁ Anger |
| | C₂ Self-contempt |
| | C₃ Anxiety |
| D. Physiological Responses | D₁ Increased gastric secretions |
| | D₂ Indigestion |
| | D₃ Mild gastrointestinal pain |
| E. Behavioral Responses | E₁ Mr. Smith first rushes around frantically trying to get ready. |
| | E₂ Later he just quits and starts drinking beer excessively. |
| | E₃ He never gets to the party. |
RSDH - Developmental Stages

RSDH utilizes six stages of therapeutic experience to transfer the learning experience into concrete actions and meaningful situations outside the therapeutic context. These stages evolved from the work of Mooney (1963) and Quaranta (1971). Quaranta identified six stages in experiencing, those being: awareness, exploration, commitment, skill development, skill refinement, and reaffirmation or redrection.

The six stages of therapeutic experience are outlined below by Tosi (1980).

Awareness

In this first stage clients are introduced to healthier conditions which oppose self-defeating thoughts, feelings, physiological responses and behavior. Self observation and monitoring are given special emphasis, leading the person to discriminate between adaptive and maladaptive behavioral patterns. The focus is upon cognitive functioning. The therapist assists the client: 1) to redirect attention to new information about the self and the behavioral modifying process; 2) to consider interrelationships among cognitive, affective, physiological, behavioral and social processes; and 3) to consider possible course of action as well as goals.

Awareness may be passive-reflective or active-subjective. Passive-reflective awareness utilizes the human ability to be conscious of self and to treat the self as object. Essentially, one becomes an observer of one's thoughts, feelings, body responses and behavior. This form of awareness is somewhat dissociative in that one views oneself as a camera might, from a distance, but the attention here is selectively focused on relevant themes as described within the ABCDE framework.

Active awareness, on the other hand, implies a more subjective participation in thought, feelings, and action - a greater involvement with self and
environment in the immediate moment. Where passive-reflective awareness is dissociative, active-subjective awareness seems associative and integrative. As experienced, it seems to be characterized by an integration of thought, affect, bodily response and behavior analogous to what is referred to as the "gestalt" experience.

Reflective awareness gives perspective to subjective experience. Both serve different purposes and both need to be addressed in a therapeutic learning process.

**Exploration**

In the second stage clients are encouraged to experiment with ideas derived from therapy. Both in the imagination, via hypnosis/imagery and in "safe" real life situations, cognitive restructuring skills can be applied and consequences experienced and evaluated. Self-exploration reinforces the development and expansion of self-awareness, but in this stage awareness is directed to more realistic and concrete matters.

Cognitively, exploration involves the directing of attention to psychological content occurring in each quadrant of the awareness and time continua. The therapist can guide the client's focus of attention to specific areas of concern, or can suggest free movement within the experiential life space until some ABCD or E event becomes figural and demands its own attention. This type of cognitive operation, termed divergent thinking by Guilford (1967), is heavily emphasized in the exploration stage. It is multi-directional, as opposed to the linear or convergent thinking generally used in problem solving. The hypnotic modality facilitates divergent operations by: 1) maximizing awareness along several levels of brain functioning; 2) maximizing focused attention and concentration; and 3) minimizing distraction and interference from other sources of stimuli.

**Commitment**

After giving full consideration to new information and skills learned in the first two stages, the client reaches a point of commitment to implement constructive action. This stage is often accompanied by mixed emotions and high anxiety. Commitment implies choice, decision and risk: the decision to change
is weighed against the costs and rewards of old but familiar behavior. Some clients may terminate, some may develop psychosomatic symptoms—all require patience and acceptance on the part of the therapist, as well as encouragement to take constructive, positive action.

Decisions made at this stage are, after all, ones that the client has determined to have some probability of success. Furthermore, empirical validation is available in the real life situations. Possibilities only glimpsed in earlier stages come within reach, as individuals sense movement to higher and more integrated levels of functioning. The stage of commitment serves as the threshold for a heightened motivation that tends to be realized in the following stage, via the implementation of responsible actions that impact both on the environment and the self. Commitment is an act of the intellect that gives full consideration to emotional, physiological, behavioral and social consequences.

**Implementation**

Implementation, the fourth stage, implies deliberate and constructive use of cognitive/behavioral skills that are being developed. Commitments need to be translated into situationally appropriate action if they are to be reinforced, maintained, and generalized to other situations. Desirable social consequences are self-reinforcing, and tend to increase further participation in the therapeutic learning both inside and outside the relationship.

While cognitive experiential therapy makes extensive use of imagery and hypnosis, steps need to be taken to ensure that behaviors occurring in the imagination also occur in real life. Implementation of constructive actions often require significant effort.

**Internalization**

The fifth stage, internalization, is characterized by an integration of more constructive thoughts, feelings, bodily responses and behavior into the self-system to the point where they operate more natural to the person. Aronfreed (1968) states "Concepts of internalization...rest very heavily on the extraordinary ability of human beings to acquire cognitive structures with which they can process information about their behavior and their environ-
ment." While integrated behavioral patterns appear to be internalized under certain stimulus conditions, such as therapy, some form of mediational bridging is required if outcomes of significant value are to be maintained. Luria (1976) suggests that verbal-semantic labels serve as those bridges and later activate responses in a manner that is integrative and natural. Such semantic labelling of affective, physiological and behavioral responses may occur at levels below the threshold of awareness.

The RSDH approach is predicated on the belief that internalization is facilitated when an individual has an extensive opportunity: 1) to become aware of the relationships among the response sets described in the ABCDE framework; 2) to explore these relationships via hypnosis/imagery; 3) to make more conscious choices to discriminate among functional and dysfunctional tendencies; and 4) to implement constructive action. The degree of internalization of what has been learned through these stages is dependent upon the extent to which awareness has been expanded to include material that had previously existed below the threshold of awareness—thus building those mediational and verbal-semantic bridges noted by Aronfreed and Luria.

Behavioral Stabilization

The final stage of experience, behavioral stabilization, is evidenced when behavioral changes realized through the preceding stages become more frequent and permanent. Personal and social development continue, but now are based on new experiential themes and patterns that become the foundation for more constructive actions in the future.

Three different types of stage directed therapy have been developed and empirically investigated.

These are as follows:

1. Rational Stage Directed Therapy—Cognitive skills are developed within the stage-directed framework, but all therapy is conducted during the normal waking state.
2. **Rational Stage Directed Imagery**—the development of cognitive skills (within the stage directed framework) is enhanced by imagery and relaxation procedures (progressive muscle relaxation, meditation, or simply imagining a scene, with eyes closed, within a non-distracting atmosphere).

3. **Rational Stage Directed Hypnotherapy**—hypnosis and hypnotic imagery is used to facilitate the cognitive-behavioral restructuring process. Furthermore, during hypnosis the individual is directed through the stages, thus increasing the experiential quality of the therapy.

(Fuller, 1982)

**RSDH - Literature**

An increasingly varied array of cognitively, affectively, physiologically, and behaviorally oriented research studies substantiate the effectiveness of RSDH. Marzella (1975) studied the emotional stress of graduate students enrolled in a counseling practicum. The clinical scales of the MMPI were used as dependent variables to compare the effects of psychological interventions with RSDH, RSDI, ("I" stands for imagery), hypnosis only, or a control group. Measured levels of emotional stress were not reduced for the control group but a reduction occurred in the treatment groups. This affectively oriented study provided conditional support for the effectiveness of the interventions in minimizing affective pathology.
Two related studies provided insight into the relationship among cognitive, affective physiological, and behavioral factors. Tosi and Eshbaugh (1978) performed a hierarchial factor analysis on the Hartmann Personal Beliefs Inventory. Several lower order factors emerged composed of items that were cognitive, affective, and behavioral in nature. The highest order factor to emerge was low self-worth. Similarly, Forman (1979) examined the belief patterns of three diagnosed psychosomatic groups - migrane, peptic ulcer, and low-back pain. All the groups were more prone to perfectionism, self-downing, and blame-proneness than a medical control group.

Reardon and Tosi (1977) conducted a study with delinquent females that assessed both the cognitive and affective domains. It investigated levels of self-concept and emotional stress. RSDI was compared to cognitive restructuring only, placebo, and control groups. RSDI proved to be significantly more effective. Also, during a two month follow-up period, the RSDI group demonstrated further improvement as compared to the other groups.

An affectively and behaviorally oriented study with test anxious nurses was conducted by Boutin and Tosi (1982). The study compared an RSDH treatment group to hypnosis only, placebo, and control groups. RSDH and hypnosis only demonstrated significant results but RSDH
proved most effective. A two month follow-up demonstrated further improvement in the RSDH treatment group while the level of test anxiety among the other groups remained relatively unchanged.

Other studies evidence this same trend. Howard (1979) studied neuro-muscular performance, facilitation of muscular growth, anxiety reduction, and enhancement of self-concept with members of a barbell club. Fuller (1982) studied the enhancement of self-concept and the reduction of depression with a nursing home population. Corley and Tosi (1980) studied underachievers in a university setting evaluating study habits, self-concept, irrational thinking, and anxiety. In all these studies the RSDH or RSDI treatment groups proved significantly more effective than the other treatment or control groups. And furthermore, in each case the positive effects of RSDH tended to hold up better over time than the other groups. Boutin and Tosi (1982) hypothesized that this latter trend results from the superior ability of RSDH treatment groups to internalize the treatment procedure and to continue to utilize what they learn in therapy.

Tosi (1982) cites the following case studies to provide further clinical support for the RSDH treatment modality: guilt (Tosi and Reardon, 1976); depression (Reardon, Tosi, and Gwynne, 1977); test anxiety (Boutin, 1978); non-assertion (Howard and Tosi, 1978); learning
disability and hyperactivity (Tosi, Fuller, and Gwynne, 1980); migraine (Howard, Reardon, and Tosi, 1982); crisis intervention (Tosi and Eshbaugh, 1981); anxiety neurosis (Tosi, Howard, and Gwynne, 1982); and hypertension (Rudy, Tosi, and Reardon, 1977).

Tosi, Rudy and Lewis (1982) conducted a comprehensive multivariate study on hypertensives. Our study with duodenal ulcer patients is patterned after the model of this study. This study evaluated the effectiveness of RSDH, CR, HO, and a control condition in moderating cognitive, affective, and physiological aspects of the hypertensive. The results of the study are not available at the time of this writing.

The meta-analysis of therapy outcome studies conducted by Smith, Glass, and Miller (1980) showed, prior to correcting for confounding variables, that the highest effect size was achieved by the cognitive therapies other than but similar to Ellis' Rational Emotive Therapy. RSDH was included in that superior group. These results provide qualified support for the effectiveness of RSDH.

This RSDH literature action clearly suggests that RSDH can beneficially moderate several factors which have been associated with duodenal ulcers. These include such factors as anxiety, anger, non-assertion, and guilt. Also, RSDH has demonstrated its ability to beneficially and directly impact upon the psychosomatic domain as with
migraines or hypertension.

**Summary on RSDH**

RSDH has been elaborated in detail. The person environment model and the ABCDE model have been explored. This has included a detailed expansion of the various cognitive symbolic operations. Clarification was provided by examination of the experiential themes and a hypothetical example of an elaborated ABCDE model for a duodenal ulcer patient. Certainly the interrelationship between the environmental, cognitive, affective, physiological and behavioral aspects of RSDH have been presented.

Next, the utilization of the hypnotic medium in RSDH was briefly reviewed. This was followed by a presentation of the developmental or growth stages used in RSDH. Rational Stage Directed Therapy, Imagery, and Hypnotherapy were defined.

Finally, the review of research studies cited case studies and reviewed experimental studies. The overall impact of this review of the research is noteworthy. It strongly suggests that RSDH may hold promise for beneficially moderating factors which have been determined in prior research to contribute to ulcerogenesis.
CHAPTER III

METHODS

This chapter presents the methods employed in this study. The chapter is organized into six sections:
(1) selection of the subjects, (2) selection of instruments, (3) research design and statistical procedure,
(4) treatment therapist, (5) treatments, and (6) summary.

Selection of the Subjects

The population under study was comprised of patients referred to, or regular patients of, the Millhon Medical Clinic, 3730 Olentangy River Road, Columbus, Ohio. In this medical clinic operated by internists, two are gastroenterologists. The seven other internists also maintain a family practice in addition to their given speciality. Resultantly, all the physicians in the clinic, but particularly the gastroenterologists, may carry duodenal ulcer patients. The subjects, therefore, were from the regular and referred patients of this clinic population who agreed to participate in this study. Patient population was of the middle and upper-middle class socio-economic status.
Inclusion in this study was based upon positive gastroscopic and/or radiographic confirmation of duodenal ulcer or ulcerous erosion by a radiologist and/or primary care physician within the past twenty-four months, or clinical confirmation of duodenal ulcer within the past twenty-four months and positive historic radiographic or gastroscopic evidence.

The subjects included without differentiation, both new and recurrent ulcer patients as well as males and females. It was an assumption of this study that psychological features are relatively stable regardless of whether the ulcer is new or recurrent, or whether the patients are male or female. Therefore, random assignment was utilized to equalize the various groups. Patients were randomly assigned to one of four groups. Each group included 5-8 patients.

Most of the participants in this study had historically received initial treatment with cimetidine. Some participants may currently be on a prophylactic therapy with cimetidine. This study did not alter the participant's medical treatment program in any way. There are no reported indications that the administration of cimetidine alters the gross psychological characteristics of the duodenal ulcer patient.
Selection of Instruments

The Millon Behavioral Health Inventory (MBHI), the Common Beliefs Survey III (CBSIII), and the Harvard Group Scale of Hypnotic Susceptibility (HGSHS) were the standardized instruments selected to measure the dependent variables. The rationale behind the selection of the dependent variables is supported by the reported research. In reviewing duodenal ulcer literature, the following psychological and emotional variables seem to occur as significant factors with frequency: dependency, anxiety (both state and trait), repressed anger and/or resentment, guilt, fear, perfectionism, and self-criticism (Weiner, 1977). Herbert Weiner compiled an extensive review on peptic ulcer. These emotional variables were culled from relevant research which he cites in his review. Literature not included in his review tends to consistently identify the same emotional and psychological factors. An attempt was made to select dependent variables and instruments which would capture the essence of these emotional and psychological factors. Therefore, the primary dependent variables reflective of the literature, which will be analyzed in this study include:

1) Basic coping styles -

Eight substyles from section A of the Millon Behavioral Health Inventory collapse to form this
dependent variable. They are:

a) Introversive style  
b) Inhibited style  
c) Cooperative style  
d) Sociable style  
e) Confident style  
f) Forceful style  
g) Respectful style  
h) Sensitive style

2) Psychogenic Attitudes -
Six subscales from section B of the Millon Behavioral Health Inventory collapse to form this dependent variable. They are:

a) Chronic tension  
b) Recent stress  
c) Premorbid pessimism  
d) Future despair  
e) Social alienation  
f) Somatic anxiety

3) Psychosomatic Correlate -
One subscale from section C of the Millon Behavioral Health Inventory forms this dependent variable. It is:

a) Gastrointestinal susceptibility

4) Prognostic indices -
Three subscales from section D of the Millon Behavioral Health Inventory collapse to form this dependent variable. They are:

a) Pain treatment responsivity  
b) Life threat reactivity  
c) Emotional vulnerability

5) Evaluation -
Three subscales from the CBS III combine to form
this dependent variable. They are:

a) Blame proneness
b) Self-downing
c) Perfectionism

6) Locus of control -

Three subscales from the CBS III combine to form this dependent variable. They are:

a) Importance of the past
b) Importance of approval
c) Control of emotions

7. Gastrointestinal disturbances -

The frequency of gastrointestinal disturbances as recorded on patients questionnaires forms this dependent variable.

Common Belief Survey III

The Common Belief Survey (CBS III) was developed by Bessai (1976, 1977, 1978). This instrument has been successfully utilized to identify patterns of irrational cognitions or irrational thinking. Factor analysis has identified six common and significant irrational belief units, three of which are known, based upon research conducted thus far, to occur within the population of duodenal ulcer patients surveyed (Forman, 1979). This instrument was utilized to assess variations in identified cognitions among the treatment groups which occur as a result of therapeutic intervention. The instrument provides six scales of evaluation. Three of the six combine to form the Evaluation Scale. The remaining three form the Locus of Control Scale.
A more complete description of the CBS III and a successful replication of the factor analysis used by Bessai in the development of this instrument can be found in M.A. Forman's 1979 dissertation (Forman, 1979). See Appendix D for a copy of the instrument.

Millon Behavioral Health Inventory

Theodor Millon is a noted researcher and test developer. This published instrument is being marketed in January 1982, by the National Computer Service (Millon, et al., 1980). The MBHI yields twenty scales which are grouped into four clusters. This research evaluated the four clusters. They are as follows:

1. Basic Coping Styles
2. Psychogenic Attitude Scales
3. Psychosomatic Correlates Scales

The scales comprising this section are designed for use only with individuals whose diagnosis corresponds with the respective scales. The three scales are: a) Allergic inclination; b) Gastrointestinal susceptibility; and c) Cardiovascular tendency. Only the scale for Gastrointestinal susceptibility will be utilized.

4. Prognostic Indices Scales

Reliability measures obtained on the MBHI proved satisfactory. The mean test-retest reliability for the personality styles scales was .82. The psychogenic
attitudes scales reliability was about .85. The remaining scales had reliabilities of about .80 with the single exception of the emotional vulnerability scale whose reliability was .59. (Millon, et al., 1980). The mean time lapse between test and retest was 4.5 months. See Appendix C for a copy of the instrument.

Harvard Group Scale of Hypnotic Susceptibility

This instrument produces a single score ranging from 0-12. Scores are grouped into three clusters of low, medium, and high predisposition to hypnotic susceptibility: 0-6 = low, 7-9 = medium, 10-12 = high (Shor and Orne, 1962).

This instrument was used to evaluate group differences at pretest only. Resultantly, it did not assess any of the primary dependent variables under analysis in this study. See Appendix E for a copy of the instrument which is designed to be filled out at the end of playing the HGS/HS standardized tape.

Research Design and Statistical Procedure

A 4 X 3 factorial design with repeated measures was used to analyze the data. There were four levels of treatment and three time periods (pretest, posttest, and follow-up) over which the subjects were observed. The MANOVA was conducted using the Statistical Analysis System (SAS) computer program. Other analyses including
ANOVA, Duncan's Multiple Range Test, and difference analyses were also utilized to further evaluate significant results obtained by the MANOVA procedure.

Pretest was conducted on each subject prior to receiving any psychological interventions. The pretest provided data to equalize the groups as necessary. Since subjects were randomly assigned, it was anticipated that they would be nearly statistically equal. Post-test was conducted 8 to 10 weeks following each subject's pretest date. A follow-up was conducted 6 to 8 weeks following the initial post-test to examine possible deterioration effects.

Under evaluation in this study was the difference of mean scores among the treatment groups on seven dependent variables selected for analysis.

Design
\[ R \ 0_{1} \ X_{1} \ 0_{2} \ 0_{3} \]
\[ R \ 0_{4} \ X_{2} \ 0_{5} \ 0_{6} \]
\[ R \ 0_{7} \ X_{3} \ 0_{8} \ 0_{9} \]
\[ R \ 0_{10} \ X_{4} \ 0_{11} \ 0_{12} \]
\[ X_{1} = \text{control group} \]
\[ X_{2} = \text{CR group} \]
\[ X_{3} = \text{HO group} \]
\[ X_{4} = \text{RSDH group} \]
Anticipated findings

$X_4$ (RSDH) will be significantly different from $X_3$ (HO), $X_2$ (CR), or $X_1$ (control) on several identified dependent variable measures at both post-test and subsequent follow-up.

Treatment

Treatment Therapist

And advanced doctoral student from the Department of Counseling with 15 years of counseling experience served as therapist in all groups. A licensed psychologist directly observed all sessions which utilized any hypnotic procedures. The psychologist, whose presence was required by the Human Subjects Review Board, did not participate in the treatment procedure but did answer occasional questions in the debriefing period which terminated each session.

Treatments

Control (Group I)

The control group was the no treatment condition. The group convened once in order to receive the Harvard Group Scale of Hypnotic Susceptibility. Otherwise all testing (pretest, post-test, and follow-up) was conducted via correspondence. See Appendix F for a copy of the introductory transcript.

Cognitive Restructuring Only

(CR) (Group II)

The CR treatment group focused on cognitive restructuring using Ellis' (1962) ABC model and Tosi's (1974)
expanded ABCDE model. If a patient brought up relaxation the therapist merely acknowledge the patient's comment and immediately returned the focus of discussion to cognitive restructuring.

An abbreviated outline of each session is presented below. Appendices I, J, K, and L are complete textual outlines followed by the therapist.

**CR Session 1**

A. Read general introduction for session 1 (Appendix F).
B. Administer the HGSHS (Appendix E).
D. Answer final questions then dismiss.

**CR Session 2**

See Appendix I for the meeting plan used by the therapist.
A. Read introduction to session 2 (Appendix H).
B. Play the "Introduction to Cognitive Restructuring" tape.
C. Discuss the tape.
D. Discuss the SBDCI (Appendix G).
E. Answer final questions then dismiss.

**CR Session 3**

See Appendix J for the meeting plan used by the therapist.
A. Review last week's session.

B. Make sure all participants received the tape "Introduction to Cognitive Restructuring."

C. Discuss critical aspects of the tape. (ABC model and rational versus irrational thinking.)

D. Discuss "denial."

E. Work on pages 6-7 and 12-14 of the SDBCI.

F. Discuss "perfectionism."

G. Instruct patients to read chapters 3 and 4 of the "New Guide to Rational Living." (Ellis and Harper, 1975)

H. Answer final questions then dismiss.

CR Session 4

The therapist used the outline below, do not look for an expansion in the appendices.

A. Review last week's session and answer miscellaneous questions.

B. Discuss how irrational thinking often leads to two irrational conclusions:

1. Something is terribly wrong with me. "Self-downing."

2. Something is terribly wrong with others. "Blame-proneness."

C. Discuss chapters 3 and 4 from the "New Guide to Rational Living" (Ellis and Harper, 1975).

D. Continue to work on the SDBCI.
E. Instruct patients to read chapters 6 (on anxiety) and 7 (on hostility) of the "Brief Psychotherapy in Medical and Health Practice" (Ellis and Abrahms, 1978).

F. Answer final questions then dismiss.

**CR Session 5**

See Appendix K for the meeting plan used by the therapist.

A. Discuss: How is your life being changed as a result of this program?

B. Discuss how irrational thinking and non-assertion may lead to emotional consequences of "hostility" or "anger" and behavioral tendencies toward "explosiveness."

C. Discuss chapters 6 and 7 from the "Brief Psychotherapy in Medical and Health Practice" (Ellis and Abrahms, 1978).

D. Continue to work on the SDBCI.

E. Answer final questions then dismiss.

**CR Session 6**

See Appendix L for the meeting plan used by the therapist.

A. Review

B. Explain how irrational beliefs may generate "dependency" and "chronic tension."

Discuss: dependency; repression of thoughts,
emotions, and behaviors; false independence; over-achievement; and chronic tension. Then summarize.

C. Discuss the rational alternative and results or consequences.

D. Discuss remainder of the SDBCJ.

E. Answer final questions then dismiss.

CR Session 7

The final session was used to review and reinforce the major resources and themes such as:

A. SDBCJ - ABCDE model

B. "Introduction to Cognitive Restructuring" - tape.

C. Rational versus irrational thinking.

D. Denial

E. Perfectionism

F. Self-downing

G. Blame-proneness

H. Anxiety

I. Hostility/anger

J. Non-assertion

K. Dependency

L. Chronic tension

Hypnosis Only (HO) Group III

The hypnosis only group utilized an induction procedure which included the use of (1) focusing on slowed deep breathing, (2) progressive muscle relaxation moving from the head to the feet area, (3) a reverse
counting deepening procedure, (4) appropriate suggestions such as, "Concentrate on your abdominal muscles. Let them become very soft, comfortable, and relaxed. You may even notice that your entire gastrointestinal system appears to slow down, decelerate, and comfortably relax." Refer to Appendix M for a transcript of the standard induction procedure which was used for both the HO and the RSDH groups. At no time were ideas, such as those used in the CR group, presented.

A summary and description of the sessions is presented below.

**HO Session 1**

A. Read general introduction for session 1 (Appendix F).

B. Administer the HGSHS (Appendix E).

C. Answer final questions then dismiss.

**HO Session 2-7**

A. Review last week's session.

B. Open a time for questions, answers, and discussion.

C. Play the standard hypnotic induction tape (Appendix M).

D. Conclude with a final discussion period then dismiss.

On the second session, after listening to the hypnotic induction tape, the subjects were given the tape. They were encouraged to listen to it daily if possible for
a minimum of 4-6 times weekly. During the discussion period of sessions 2 through 7 a variety of questions such as the following were asked:

A. What seems to help you relax most?
B. Do you think you can learn to relax under any circumstance?
C. Do you realize that relaxation can indirectly but ultimately reduce gastrointestinal disturbances?
D. When relaxed are you conscious?
E. Do you sometimes imagine words or scenes to help you relax?
F. Does any discomfort now remind you to relax?
G. How has this experience altered your ulcer symptoms or your life in general?

Rational Stage Directed Hypnotherapy (RSDH) Group IV

The RSDH group received both hypnosis and cognitive restructuring. The subjects did not know that they were receiving a combinational treatment. They simply knew that each group was different. This RSDH experimental application included all the classic elements of RSDH which were described in the literature review section on RSDH.

An abbreviated outline of each session is presented below. Appendices N, O, and P are the complete textual outlines followed by the therapist.
RSDH Session 1
A. Read general introduction for session 1 (Appendix F).
B. Administer the HGSHS (Appendix E).
C. Distribute the SDBCI (Appendix G).
D. Answer final questions then dismiss.

RSDH Session 2
A. Read the introduction to session 2 (Appendix H).
B. Play the standard hypnotic induction tape (Appendix M). Then follow with discussion.
C. Discuss the SDBCI (Appendix G).
Concentrate on the ABCDE model. Place emphasis on point D (physiological responses) especially gastrointestinal disturbances.
D. Explain and distribute the "Introduction to Cognitive Restructuring" tape with instructions for home listening. (Note: Subjects were asked to listen to the "Introduction to Cognitive Restructuring" tape only twice. Subjects were asked to listen to the hypnotic induction tape daily for a minimum of 4-6 times weekly.)
E. Answer final questions then dismiss.

RSDH Session 3
See Appendix N for the meeting plan used by the therapist.
A. Review last week's session.
B. Make sure all participants have two tapes:
1. "Introduction to Cognitive Restructuring"
2. Standard hypnotic induction tape.
C. Discuss critical aspects of the "Introduction to Cognitive Restructuring" tape.
D. Discuss "denial."
E. Work on pages 6-7 and 12-14 of the SDBCI.
F. Discuss "perfectionism."
G. Play side A of the RSDH group tape which emphasizes the stages of "Awareness" and "Exploration" (Appendix Q). Follow with discussion.
H. Instruct patients to read chapters 3 and 4 of the "New Guide to Rational Living" (Ellis and Harper, 1975).
I. Distribute the RSDH tape with instructions.
J. Answer final questions then dismiss.

RSDH Session 4

The therapist used the outline below, do not look for an expansion in the appendices.
A. Review last week's session and answer miscellaneous questions.
B. Discuss how irrational thinking often leads to two irrational conclusions:
   1. Something is terribly wrong with me. "Self-downing."
   2. Something is terribly wrong with others. "Blame-proneness."
C. Discuss chapters 3 and 4 from the "New Guide to Rational Living" (Ellis and Harper, 1975).

D. Discuss:
   1. Awareness - We want you to be aware of irrational, as well as, rational ideas which may impact upon emotions, physiology, and behavior.
   2. Exploration - We want you to explore the consequences of the irrational versus the rational sequence. This exploration includes experiencing these consequences in your imagination.

E. Play the RSDH tape side A with the above in mind. Follow with discussion.

F. Continue to work on the SDBCI.

G. Instruct patients to read chapters 6 (on anxiety) and 7 (on hostility) of the "Brief Psychotherapy in Medical and Health Practice" (Ellis and Abrahms, 1978).

H. Answer final questions then dismiss.

RSDH Session 5

See Appendix O for the meeting plan used by the therapist.

A. Discuss: How have you been influenced as a result of this treatment?

B. Review "Awareness" and "Exploration" stages then
introduce and discuss "Commitment" and "Implementation" stages.

C. Discuss how irrational thinking and non-assertion may lead to emotional consequences of "hostility" or "anger" and behavioral tendencies toward "explosiveness."

D. Play the RSDH tape side B (Commitment, Implementation, Internalization, and Behavioral Stabilization Stages) (Appendix R). Follow with discussion.

E. Discuss chapters 6 and 7 from the "Brief Psychotherapy in Medical and Health Practice" (Ellis and Abrahms, 1978).

F. Continue to work on the SDBCI.

G. Instruct subjects to listen to the RSDH tape side B daily for the next two weeks.

H. Answer final questions then dismiss.

RSDH Session 6

See Appendix P for the meeting plan used by the therapist.

A. Review

B. Discuss dependency and chronic tension. Also discuss repression, false independence, and overachievement. Summarize.

C. Discuss rational alternatives and the results or consequences.

D. Play side B of the RSDH tape. Then discuss.
E. Discuss remainder of the SDBCI.
F. Answer final questions then dismiss.

RSDH Session 7

The RSDH tape side B was played for this session. The final session was also used to review and reinforce the major resources and themes such as:

A. SDBCI - ABCDE model
B. Tapes:
   1. "Introduction to Cognitive Restructuring"
   2. Standard "Hypnotic Induction"
C. Rational versus irrational thinking
D. Denial
E. Perfectionism
F. Self-downing
G. Blame-proneness
H. Anxiety
I. Hostility/anger
J. Non-assertion
K. Dependency
L. Chronic tension
Methods Summary

This chapter has covered the following major areas:
the selection of duodenal ulcer patients with random
assignment to four treatment levels; the selection of
basic coping styles, psychogenic attitudes, psychosomatic
correlates, prognostic indices, evaluation, locus of
control, gastrointestinal disturbances as dependent
variables; the selection of the CBSIII, the MBHI, and
the HGSHE as the instruments to measure the dependent
variables; the utilization of a 4 X 3 factorial design
with repeated measures; the use of a single experienced
therapist to deliver all treatment procedures; the detailed
presentation of the treatment procedures utilized in the
Control, CR, HO, and RSDH groups.
CHAPTER IV

ANALYSIS OF DATA

This chapter presents: 1) an introductory review setting forth the hypothesis being addressed by this analysis of the data, the design of the study, and the various statistical analyses required; 2) the pretest analysis; 3) the Multivariate Analysis of Variance (MANOVA) for overall effects; 4) Univariate Factoral Analysis of Variance (ANOVA), Duncan's Multiple Range Test, Difference Analysis, and Duncan's Test on the Difference Analysis for the seven primary dependent variables; and 5) analyses on two secondary dependent variables.

The analysis of data examined the hypothesis set forth in Chapter 1. The effects of Rational Stage Directed Hypnotherapy (RSDH) were hypothesized to be superior to those of Cognitive Restructuring (CR), Hypnosis Only (HO) or the Control condition for a duodenal ulcer population as measured by appropriate standardized psychological instruments. The internal design evaluates the hypothesized superiority of a multi-modal (or holistic) intervention (RSDH) over its component parts - those being the unimodal (or atomistic) interventions of CR or HO.
A 4 X 3 factorial design with repeated measures was used to analyze the data. There were four treatment levels (Control, CR, HO, and RSDH) and three time periods (pretest, posttest, and follow-up) over which the subjects were evaluated. During each evaluation period seven dependent variables were measured using three instruments. 1) Basic coping styles, 2) psychogenic attitudes, 3) psychosomatic correlates, and 4) prognostic indices were measured using the Millon Behavioral Health Inventory. 5) Evaluation and 6) locus of control were measured using the Common Beliefs Survey III. 7) Gastrointestinal disturbances were measured using questionnaire data.

The statistical design required the following tests: 1) a multivariate analysis of variance was used to analyze overall group, time, or interaction effects; 2) analysis of variance was used to analyze the univariate factors; 3) the Duncan's Multiple Range Test was used as a means separation procedure; and 4) difference analysis tests were used to equate certain inequalities and to analyze more accurately change over time.

Pretest Analysis

Critical to the overall validity of outcome measures is the establishment of pretest similarity among the treatment levels. The pretest Analysis of Variance (ANOVA) and Duncan's Multiple Range Test provided this assurance. No significant differences among the four
groups were identified on the primary dependent variables of: MBHIA, MBHIB, MBHIC, MBHID, CBSLOCO, AND GIDIST. (See Table 4 to review the full name, source, and composition of the dependent variables named. See Appendix A for the means, ANOVA, and Duncan's test results for the primary and secondary dependent variables.) Minor variation occurred on variable CBSEVAL where group 2 (CR) differed significantly from group 4 (RSDH). (F was significant at .0493 level.) Perhaps more importantly, both these groups were not significantly different from the control group on this dimension as determined by the Duncan's Multiple Range Test. Furthermore, this variation was corrected for in later analyses using a difference test procedure.

The four groups were not significantly different on the secondary dependent variable of the Harvard Group Scale of Hypnotic Susceptibility (HGS). This variable was only measured at pretest to insure that the groups did not differ in their overall hypnotic susceptibility. The approximate similarity at pretest among the four groups suggests that variances found on repeated measures (i.e., posttest and follow-up) are the result of group treatment, time, or group*time interaction effects.

To summarize, the four groups were not significantly different at pretest on 6 of 7 primary dependent variables. As mentioned before, on dependent variable CBSEVAL group
Table 4

Dependent Variables: Name, Source and Composition

CBSEVAL:

The Evaluation score of the Common Beliefs Survey III (Bessai, 1978) which is composed of three subscales.

1. Blame Proneness
2. Self Downing
3. Perfectionism

CBSLOCO:

The Locus of Control score of the Common Beliefs Survey III which is composed of three subscales -

1. Importance of the past
2. Importance of approval
3. Control of emotions

GIDIST:

The patient's report on the frequency of individual gastrointestinal disturbances. It was collected from pretest and follow-up questionnaire data.

MBHIA:

Section A of the Millon Behavioral Health Inventory (Millon, et al., 1980) called the Basic Coping Styles. It is composed of eight substyles -

1. Introversive
2. Inhibited
3. Cooperative
4. Sociable
5. Confident
6. Forceful
7. Respectful
8. Sensitive

MBHIB:

Section B of the Millon Behavioral Health Inventory called Psychogenic Attitudes Scales. It is composed of six subscales -

1. Chronic tension
2. Recent stress
Table 4, Continued.

3. Premorbid pessimism
4. Future despair
5. Social alienation
6. Somatic anxiety

MBHIC:

Section C of the Millon Behavioral Health Inventory called the Psychosomatic Correlates Scale. Only one of three scales composing this section was applicable to our study -

1. Gastrointestinal susceptibility

MBHID:

Section D of the Millon Behavioral Health Inventory called the Prognostic Indices Scales. It is composed of three subscales -

1. Pain treatment responsivity
2. Life threat reactivity
3. Emotional vulnerability
2 significantly differed from group 4. However, this variation does not critically impair the overall similarity of the groups at pretest. Also the pretest analysis revealed that the groups were not significantly different in their hypnotic susceptibility.

**Multivariate Analysis of Variance (MANOVA) for Overall Effects**

**Overall Interaction Effect**

Overall interaction effects (group*time) were substantiated with significance at the .0006 level. The overall interaction effect observed as the repeated measures were submitted to MANOVA indicated the prospect of important findings. Further analysis identified where these significant interactions occurred.

**Overall Time Effect**

Overall time effects were substantiated with significance at the .0449 level. Therefore, posttest and/or follow-up measures differed significantly from pretest measures.

**Overall Group Effect**

Overall group effects were not significant with F at the .0911 level. This lower level finding hinted that modest changes were occurring among the groups, but that likely, group changes were best understood as an interaction with time.
Null Hypothesis Rejected

The above levels of significance were derived using the Hotelling-Lawley Trace Procedure. The null hypothesis stated in Chapter 1 was rejected.

Univariate Factor Analysis of Variance (ANOVA)

This section summarizes the results of the univariate factorial analysis of variance. The statistical design permitted a test for interaction, as well as, group and time effects.

Significant interaction, group, or time effects were obtained on four of the seven dependent variables - those being dependent variables MBHIA, CBSEVAL, CBSLOCO, and GIDIST. No effects were obtained on dependent variables MBHIB, MBHIC, and MBHID. (Refer to Table 5 for a summary of the significant findings. Table 6 lists dependent variable means by group across time. See Appendix A for the actual univariate ANOVA on each dependent variable. See Appendix A for a listing of dependent variable scores by subject ID and group across time.)

Significant interaction effects were found on dependent variables MBHIA, CBSEVAL, CBSLOCO, and GIDIST. Significant time effects were found on dependent variables CBSEVAL and CBSLOCO. A significant group effect was only found on dependent variable CBSEVAL. This lone group effect should be interpreted cautiously. The pretest analysis found significant difference between groups 2 and 4 at


<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Effect Observed</th>
<th>F Level of Significance</th>
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</thead>
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<td>MBHIA</td>
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</tr>
<tr>
<td>CBSEVAL</td>
<td>Interaction</td>
<td>.0025</td>
</tr>
<tr>
<td></td>
<td>Time</td>
<td>.0006</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>.0403</td>
</tr>
<tr>
<td>CBSLOCO</td>
<td>Interaction</td>
<td>.0001</td>
</tr>
<tr>
<td></td>
<td>Time</td>
<td>.0015</td>
</tr>
<tr>
<td>GIDIST</td>
<td>Interaction</td>
<td>.0569*</td>
</tr>
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*Level of significance exceeded the .05 level.
Table 6
Dependent Variable Means by Group Across Time

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<th>Group</th>
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<th>MBHIB</th>
<th>MBHIC</th>
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<tbody>
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<td>50.6250000</td>
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<td>194.625000</td>
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<td>54.00000000</td>
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Table 6 Continued
pretest on dependent variable CBSEVAL. That pretest inequality may have precipitated the significant group effect found in this analysis. (A subsequent difference analysis further clarified this area.)

Overall these results could be interpreted as suggesting that the effects of the treatment levels are best understood in respect to time. Such is the nature of interaction effects. To better visualize the results see Figures 8, 9, 10 and 11 for a graphic representation of the treatment effects of the groups across time on dependent variables MBHIA, CBSEVAL, CBSLOCO, and GIDIST.

It has been statistically established that significant interaction, time, and possibly group effects occurred on dependent variables MBHIA, CBSEVAL, CBSLOCO and GIDIST. Further analyses were required to precisely determine what treatment levels or time periods accounted for the observed effects.

**Duncan's Multiple Range Test**

The Duncan's Multiple Range Test provided the first step in determining which treatment levels or time periods accounted for the significant observed effects. Duncan's Test provided a useful means separation procedure. Using this procedure, significant results were obtained on dependent variables CBSEVAL and CBSLOCO. See Tables 7 and 8.

On dependent variable CBSEVAL the Duncan's test separated or identified group 4 as superior to groups 1, 2 and 3.
Figure 8. Treatment effects of group across time.

1 = control group
2 = cognitive restructuring group only
3 = hypnosis only group
4 = R.S.D.H. group
Figure 9. Treatment effects of group across time.
Figure 10. Treatment effects of groups across time.
Figure 11. Treatment effects of groups across time.
Table 7
Duncan's Multiple Range Test on Variable CBSEVAL
General Linear Models Procedure

<table>
<thead>
<tr>
<th>GROUPING</th>
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<th>N</th>
<th>GROUP</th>
</tr>
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<tbody>
<tr>
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<td>2</td>
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<tr>
<td>A</td>
<td>81.666667</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>A</td>
<td>81.541667</td>
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<tr>
<td>B</td>
<td>64.333333</td>
<td>18</td>
<td>4</td>
</tr>
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<table>
<thead>
<tr>
<th>GROUPING</th>
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<th>TIME</th>
</tr>
</thead>
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<td>FUP</td>
</tr>
<tr>
<td>B</td>
<td>75.320000</td>
<td>25</td>
<td>POST</td>
</tr>
</tbody>
</table>

Means with the same letter are not significantly different.

Alpha Level = .05  DF = 21  MS = 464.551

Means with the same letter are not significantly different.

Alpha Level = .05  DF = 42  MS = 26.9224
### Table 8
Duncan's Multiple Range Test on Variable CESLOCO

**General Linear Models Procedure**

<table>
<thead>
<tr>
<th>Group&lt;sup&gt;a&lt;/sup&gt;</th>
<th>GROUPING</th>
<th>MEAN</th>
<th>N</th>
<th>GROUP</th>
</tr>
</thead>
<tbody>
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<td>77.600000</td>
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<td>3</td>
</tr>
<tr>
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<td>A</td>
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<td></td>
</tr>
<tr>
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<td>71.708333</td>
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<td>1</td>
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<tr>
<td></td>
<td>B</td>
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</tr>
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<td></td>
<td>B</td>
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<td>B</td>
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<table>
<thead>
<tr>
<th>Time&lt;sup&gt;b&lt;/sup&gt;</th>
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<th>MEAN</th>
<th>N</th>
<th>TIME</th>
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</thead>
<tbody>
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<td>67.120000</td>
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<td>FUP</td>
</tr>
</tbody>
</table>

<sup>a</sup>Means with the same letter are not significantly different.

Alpha Level = .05  DF = 21  MS = 320.434

<sup>b</sup>Means with the same letter are not significantly different.

Alpha Level = .05  DF = 42  MS = 38.7142
Also on this variable time post-test was identified as superior to time pretest.

On dependent variable CBSLOCO the Duncan's test separated or identified group 4 as superior to group 3 but not superior to group 1 (the Control). Also on this variable both times posttest and follow-up were identified as superior to time pretest.

Regarding dependent variable CBSEVAL, recall that on the pretest analysis group 4 was only significantly different from group 2. With the addition of posttest and follow-up data, group 4 is significantly different from all groups. This reflects a significant reduction in tendencies toward perfectionism, self-downing, and blame-proneness among group 4 members. This beneficial reduction in cognitive pathology due to RSDH was predicted. A subsequent difference analysis (follow-up minus pretest) revealed that group 2 obtained the greatest overall reduction in cognitive pathology on this variable at follow up. Again it would be predicted that cognitive restructuring (the treatment of group 2) would produce this effect.

Regarding dependent variable CBSLOCO, Table 8 indicates that group 4 significantly differs only from group 3. However, data in Figure 10 indicates that an interactive effect was caused as the cognitive pathology of the RSDH group (4) was reduced at posttest and follow-up. A subsequent difference analysis on variable CBSLOCO
(post-test minus pretest and follow-up minus pretest) revealed that group 4 was significantly different from all groups at both post-test and follow-up. These results indicated that RSDH produced a significant reduction in the cognitive pathology characterized by the importance of the past, the importance of approval, and the control of emotions.

**Difference Analysis**

After evaluating the data, it appeared that a difference analysis might provide further elucidation. The difference analysis permitted a slightly more sensitive assessment of changes that occurred due to the varied treatment procedures over time. For purposes of this study this procedure was coded as follows:

\[
\begin{align*}
D1 & . . . = \text{posttest minus pretest} \\
D2 & . . . = \text{follow-up minus pretest}
\end{align*}
\]

Difference analysis procedures D1 and D2 were performed on all variables where significant results were obtained earlier (i.e., MBHIA, CBSEVAL, CBSLOCO and GIDIST). Then an ANOVA was applied to the difference scores. (A summary of the difference analysis ANOVA results appears on Table 9.) These results should, however, be interpreted cautiously. An assumption of ANOVA is independence. Performing the ANOVA on difference scores, given the repeated measures design of this study, may violate that assumption.
Table 9

Difference Analysis ANOVA

<table>
<thead>
<tr>
<th>Difference Analysis</th>
<th>Variable</th>
<th>F Level of Significance</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>D2</td>
<td>MBHIA</td>
<td>.0124</td>
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<td>D1</td>
<td>CBSEVAL</td>
<td>.0006</td>
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<td>D2</td>
<td>CBSEVAL</td>
<td>.0782*</td>
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<td>D1</td>
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<td>D2</td>
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<tr>
<td>D1</td>
<td>GIDIST</td>
<td>.0031</td>
</tr>
<tr>
<td>D2</td>
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<td>.0689</td>
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</tbody>
</table>

*Level of significance exceeded the .05 level.
The difference analysis ANOVA yielded significant results in 5 or 8 possible cases. In the remaining 3 possible cases significant results were not obtained. The results of this analysis strongly indicated that meaningful and significant changes occurred at times post-test and follow-up when compared to time pretest.

It remained then to determine which treatment procedures accounted for these robust results. Again a Duncan's Multiple Range Test provided the needed means separation procedure.

**Duncan's Test on the Difference Analysis (D1 and D2)**

The Duncan's Multiple Range Test provided a means separation procedure for the difference analysis. This procedure determined which treatment level(s) accounted for the significant results obtained by the difference analysis ANOVA. Table 10 summarizes the significant results of Duncan's Test on the difference analysis (D1 and D2).

On all dependent variables at the D1 measure where significant effects were observed, group 4 (RSDH) was superior. On all but one dependent variable at the D2 measure where significant effects were observed, group 4 (RSDH) was superior. (The anomaly on CBSEVAL D2 has been discussed previously.) On dependent variable MBHIA at the D1 measure group 4 (RSDH) was not significantly
Table 10
Duncan Test on D1 and D2 Summary of Significant Findings

<table>
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<tr>
<th>Dependent Variable</th>
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<td>GDIST</td>
<td>4 s.d. 1,2,3</td>
<td>4 s.d. 1</td>
</tr>
</tbody>
</table>

D1 = posttest minus pretest
D2 = follow-up minus pretest
s.d. = significantly different from (F = .05 level)
1 = Control group
2 = Cognitive Restructuring group
3 = Hypnosis only group
4 = RSDH group
superior to the control group. However, more importantly, at D2 (the follow-up measure) group 4 was superior to the critical control group.

These findings provide further evidence for the hypothesized superiority of the RSDH treatment procedure which combines cognitive restructuring with a hypnotic state.

Miscellaneous Secondary Analyses

To conclude this section the following miscellaneous secondary analyses, which are based on subjective data drawn from the follow-up questionnaires in contrast to the objective data used in the primary analyses, are presented. (Note Appendix B for further details.)

Psychological Status at Follow-up - Subjective

On the follow-up questionnaire the patients were asked to rate their overall psychological status now in contrast to how they remembered it six months ago. An ANOVA on the data produced an F value at the .1360 level. Subsequently, a Duncan Test identified group 4 (RSDH) as significantly different from group 1 (Control).

It should be noted simply that the patients subjective overall assessment of their psychological status at follow-up accurately corresponded to the objective data. Overall group 4 (RSDH) at follow-up was psychologically superior to the other groups, particularly the control
group. It was reassuring that the primary objective empirical analyses harmonized with this secondary subjective empirical analysis.

Physical Status at Follow-up - Subjective

On the follow-up questionnaire the patients also were asked to rate their overall physical status now in contrast to how they remembered it six months ago. An ANOVA on the data produced an F value significant at the .0339 level. Subsequently, a Duncan Test identified group 4 (RSDH) as significantly different from all other groups.

Again it should be noted simply that the patients overall assessment of their physical status at follow-up accurately corresponded to the objective data. The exception being, on dependent variable GIDIST, group 4 was significantly different from only the Control group. Whereas here, group 4 patients subjectively felt physically better than all groups. It is again reassuring that the primary objective empirical analyses harmonized with this secondary subjective empirical analysis.

Summary on Analysis of Data

This section began with an introductory review setting forth the hypothesized superiority of the multimodal treatment procedure RSDH. Next a pretest analysis demonstrated the relative equality of the four groups at
the pretest measure. The MANOVA test demonstrated the presence of overall interaction, time, and possible group effects. Then subsequent analyses using the ANOVA, Duncan's Test, a difference analysis, and a Duncan's Test on the difference analysis demonstrated the compelling overall superiority of the RSDH treatment procedure. Finally, miscellaneous secondary and subjectively based analyses further confirmed the primary objective and clinical empirical findings.
CHAPTER 5

SUMMARY AND CONCLUSIONS

Summary

This study evaluated the effects of Rational Stage Directed Hypnotherapy (RSDH), Cognitive Restructuring (CR), Hypnosis Only (HO), and a No Treatment Control Condition on a duodenal ulcer population. Seven primary dependent variables were evaluated using two standardized instruments plus questionnaire data. 1) Basic coping styles, 2) psychogenic attitudes, 3) psychosomatic correlates, and 4) prognostic indices were measured using the Millon Behavioral Health Inventory. 5) Evaluation, and 6) locus of control were measured using the Common Beliefs Survey III. Finally, 7) gastrointestinal disturbances were measured using questionnaire data.

Twenty-six volunteers from a population of duodenal ulcer patients at the Millhon Medical Clinic served as subjects for the study. A pretest Analysis of Variance indicated that the subjects across groups performed similarly on dependent variable measures. The one exception to this case occurred on variable CBSEVAL where group 2 and 4 were not equal. Adjustments for this anomaly
were made in subsequent analyses. ANOVA on the results of the Harvard Group Scale of Hypnotic Susceptibility, which was only administered at pretest, also demonstrated no difference.

A 4 X 3 factorial design with repeated measures was used to analyze the data. There were four treatment levels (Control, CR, HO, and RSDH) and three time periods (pretest, posttest and follow-up) over which the subjects were evaluated. The statistical design required the following tests: 1) a Multivariate Analysis of Variance (MANOVA) to analyze overall group, time, and interaction effects; 2) Analysis of Variance (ANOVA) was used to analyze the univariate factors; 3) the Duncan's Multiple Range Test was used as a means separation procedure; and 4) Difference Analysis tests were used to equate certain inequalities and to analyze more accurate change over time.

Utilizing the MANOVA, significant overall interaction and time effects were observed. Overall group effects also neared significant levels (F = .09 level).

Utilizing the ANOVA, univariate analysis demonstrated: significant interaction effects on variables MBHIA, GIDIST, CBSEVAL and CBSLOCO; significant group effects on variable CBSEVAL; and significant time effects on variables CBSEVAL and CBSLOCO.
A Duncan's Multiple Range test further elucidated the above. Using this procedure, on variable CBSEVAL group 4 (RSDH) was significantly superior to groups 1, 2, and 3. Also time posttest was determined to be significantly superior to time pretest. Utilizing the same procedure on variable CBSLOCO group 4 was significantly superior to group 3 (HO). Also times posttest and follow-up were determined to be significantly superior to pretest.

A difference analysis procedure was next used on variables MBHIA, CBSEVAL, CBSLOCO, and GIDIST to permit a slightly more sensitive assessment of changes that were occurring in the treatment groups over time. Utilizing the ANOVA with this difference analysis, significant or near significant changes were determined to be occurring at times posttest and follow-up when compared to the pretest.

Finally, Duncan's Test demonstrated that group 4 (RSDH) was accounting for the above significant changes. To a much lesser degree group 2 (CR) may account for some of the significant changes on variable CBSEVAL only. (Refer to Table 9.)

Also a miscellaneous secondary analysis on subjectively based questionnaire data reinforced the prior substantial superiority of the RSDH treatment procedure.
Conclusions

The original hypothesis stated: Individuals who receive a multimodal intervention (RSDH), will do significantly better than individuals exposed to a unimodal intervention (CR or HO), or individuals who receive no psychological intervention (Control), as measured by appropriate standardized psychological instruments.

The null hypothesis of no difference between the groups was rejected. The empirical data conditionally validated the superiority of the multimodal intervention (RSDH) as contrasted to the unimodal interventions of Cognitive Restructuring or Hypnosis Only or the no psychological intervention Control.

Regarding the validity of this experimental design, group 4 (RSDH) received the same cognitive restructuring material as group 2 (Cognitive Restructuring). Group 4 (RSDH) received the same hypnotic induction procedure and physiological suggestions as group 3 (Hypnosis Only). The primary difference was that group 4 received both procedures somewhat simultaneously. That is, a major portion of the cognitive restructuring material was delivered while patients were in a hypnotic state of heightened and focused attention. The empirical evidence provided by this study supports Tosi's (1974, 1982) hypothesis that the hypnotic medium facilitates the process of cognitive restructuring as learning and experiential
processes are heightened and as distractions are minimized.

Multiple Criterion Measures

The voracity of the RSDH procedure was enhanced by the use of multiple criterion measures of its effectiveness. All major domains (excluding perhaps the environment) were assessed in the analysis.

Summary:

<table>
<thead>
<tr>
<th>Domain</th>
<th>Assessed by Dependent Variable</th>
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<tr>
<td>1. Cognitive</td>
<td>*CBSEVAL</td>
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<tr>
<td>2. Affective</td>
<td>MBHIB</td>
</tr>
<tr>
<td>3. Physiological</td>
<td>*GIDIST</td>
</tr>
<tr>
<td>4. Behavioral</td>
<td>*MBHIA</td>
</tr>
</tbody>
</table>

*Empirical support for the conditional superiority of RSDH exists on variables identified.

It is reasonable to assume that the more effective therapeutic procedure would beneficially impact upon a larger number of domains. The multiple criterion measures used in this analysis permitted us to assess just that. And RSDH did quite well impacting beneficially and significantly upon the cognitive, physiological, and behavioral domains.

Control Group

The Control group is basically unremarkable. The Control group was not significantly different from the
experimental groups on any variable measure at pretest. On each variable the scores of the Control group remained relatively stable over the repeated measures time interval.

**Cognitive Restructuring Group**

The Cognitive Restructuring group did significantly differ from the RSDH group at pretest on dependent variable CBSEVAL only. The implications of this have been discussed earlier. However, evaluation of the analyses on this variable indicated that cognitive restructuring is significantly effective in reducing attitudes of blame proneness, self-downing, and perfectionism.

Forman, Tosi, & Rudy (1979) empirically identified blame proneness, self-downing, and perfectionism as associated with the duodenal ulcer population. There is now some evidence that cognitive restructuring can reduce these identified cognitive pathologies. However, the results of our investigation imply that the reduction of these cognitive pathologies may not singularly be sufficient to significantly reduce the physiological pathology associated with duodenal ulcer.

**Hypnosis Group**

The Hypnosis group showed the least overall positive response among the experimental groups. In fact, contrasting the follow-up and the pretest measure, the Hypnosis group was worse at follow-up on five of the seven
dependent variables. The literature review clearly demonstrated that hypnosis can effectively alter the GI environment (Kehoe and Ironside, 1964 and 1964; Ikem, et al., 1959; Tractir, 1955). However, the experimental results, particularly evaluating the follow-up data, suggest that changes in the GI environment produced by hypnosis may be quite transient. The transient utility of hypnosis only with a duodenal ulcer patient is evident in the case study of a 28 year old girl by Peterly (1977). He reports that she staved off duodenal ulcer attacks for 5 years by meeting with an operator for two 30-minute sessions weekly over that period. However, upon terminating therapy the ulcer returned at which time the patient underwent sub-total gastrectomy.

Rational State Directed Hypnotherapy

Rational Stage Directed Hypnotherapy or Cognitive Experiential Therapy as it is sometimes called yielded impressive outcomes in this experimental study. These outcomes have been carefully elucidated throughout this dissertation (Chapters 4 and 5). RSDH significantly reduced measures of pathology on four of seven dependent variables under primary investigation. The reductions in pathology occurred in a variety of domains as established through multiple criterion measures. Significantly beneficial reductions of pathology occurred in the
cognitive, behavioral, and perhaps most impressive, the physiological domain. Furthermore, these beneficial changes tend to maintain their positive trend over time. This point deserves further elaboration.

Follow-up assessment occurred at least two months following the termination of active treatment. In 50 percent of the cases where significant reductions of pathology occurred the follow-up measure was superior to the posttest measure. That is dependent variables CBSEVAL and CBSLOCO both demonstrated slight deterioration effects, whereas dependent variables GIDIST and MBHIA both demonstrated the trend toward further reduction of pathology.

To say this another way, two months following the termination of active treatment the RSDH group continued to demonstrate improvement in the behavioral (MBHIA) and the physiological (GIDIST) domains. At this point slight deterioration effects occurred in the cognitive domain (CBSEVAL and CBSLOCO), but this was not sufficient to impair the significant superiority of the RSDH group.

Most dependent variables analyzed in this study were composed of several components. However, the sample size of this study did not permit a more definitive breakdown of the dependent variables. The significant results obtained suggest an overall reduction in pathology among the components of the composite dependent variables. By
inference, the results suggest that group 4 (RSDH) likely experienced reductions in pathology characterized by the term or phrase: blame proneness, self-downing, perfectionism, importance of the past, importance of approval, control of emotions, introversion, inhibited, cooperative, sociable, confident, forceful, respectful, sensitive and GI disturbances. Future research may further elucidate the components of the composite dependent variables analyzed.

In summary, the short and longer term empirical evidence indicates that the RSDH treatment procedure has substantial promise in its applicability to the duodenal ulcer population. Further clinical trial and research efforts appear warranted if not demanded.

**Practical Application**

**Empirical Support for Specific Psychological Intervention**

Paraphrasing, it has frequently been stated by the medical community that "psychological intervention for the duodenal ulcer patient may be helpful but this has not been experimentally confirmed." Such is no longer the case. This rigorously designed experimental study with control group has now substantiated significant benefits from appropriate psychological interventions. These benefits accrue in the cognitive, behavioral and physiological domains.
However, as this study indicates, if a benefit is to be derived the type of therapy appears critical. Based upon the existing literature both hypnosis and cognitive restructuring appeared promising. But only by combining these therapies in the form of RSDH did significant benefit occur.

Reduction in Ulcer Recurrence

The recurrence of duodenal ulcers, among those who have this psychosomatic disease, continues to be a problem. Recurrence rates within 12 months are approximately 50 percent, and approximately 85 percent within 24 months. Prophylactic therapy with cimetidine reduces the recurrence rate to approximately 10 percent over a 12 month period (Isenberg, 1980, Hoffman, 1982; Chapman, 1980).

The study included both patients who were and those who were not on prophylatic drug therapy. The data indicates that with both type patients RSDH can measurably reduce the frequency of GI disturbances. RSDH may be practically applied then to the problem of ulcer recurrence among duodenal ulcer patients.

Brief Mode of Therapy

All experimental groups met for seven sessions. Comparatively, at less than ten sessions, this would be classified as a brief mode of therapy. RSDH demonstrated measurable and significant positive results within the
limits of this brief mode. One might say that the brief-er the therapy, if effective, the more practical the application.

Tape Administration

Approximately 50 percent of the actual RSDH session time was administered by tape. The success obtained with this type of presentation enhances the utility or practical application of this type therapy in a variety of settings.

Implications for Future Research

Long Term Follow-up

Long term follow-up always provides meaningful insight. Since the RSDH group demonstrated further improvement on dependent variables MBHIA and GIDIST at the follow-up, longer term follow-up is indicated. This would possible indicate at what point these beneficial trends level off or deteriorate.

Simultaneously Versus Together

A beneficial interaction occurred by combining cognitive restructuring and hypnosis. It is not known what caused this beneficial interaction. Future research might address this question by presenting cognitive restructuring and hypnosis simultaneously versus together. This study primarily melted cognitive restructuring and hypnosis into a simultaneous mode. Future study could determine what would happen if the first half of a session was the cognitive restructuring unit and the last half was the hypnotic induction unit.
Drug Versus Drug-Free Application

This study did not control for patients who were and those who were not on active prophylactic drug therapy. Perhaps RSDH differentially impacts upon these two sub-populations. It would be interesting to determine whether RSDH more dramatically reduced the recurrence of ulcers or GI disturbances among the drug free patients or the drug using patients. Future research could address these questions.

Summary

The original hypothesis of the suspected superiority of a multimodal intervention (RSDH) over unimodal interventions (Cognitive Restructuring and Hypnosis Only) or a control group was supported on seven occasions. Only one significant difference contrary to this hypothesis occurred. The superiority of the RSDH treatment group was established in the cognitive, physiological and behavioral domains by using multiple criterion measures. In all cases, except dependent variable GIDIST where questionnaire data were used, the multiple criterion measures came from standardized test instruments. In one case cognitive restructuring was superior on one criterion measure for the cognitive domain (dependent variable CBSEVAL) at the follow-up using a difference analysis (D2).

Empirical evidence now exists suggesting that duodenal ulcer patients can measurably and significantly profit from psychological RSDH intervention.


Chapman, M. L. "Axioms on peptic ulcer disease." Hospital Medicine, January 1980.


Heller, M. H., Levine, J. and Sohler, T. P. Gastric acidity and normally produced anxiety. Psychosomatic Medicine, 15:509, 1953.

Hill, C. - Interview. Interview with Chuck Hill, sales representative of Smith, Kline and French by this researcher.

Hoffman, D. E. - Interview. Interview with D. E. Hoffman, M.D. by the researcher. Hoffman et al. of Millhon Medical Clinic participated in a national study conducted by Smith, Kline and French which evaluated the effectiveness of cimetidine.


Kanter, V. B. A comparison by means of psychological tests. Young men with duodenal ulcer and controls. (In Weiner 1977)


Mahl, G. F. Relationship between acute and chronic fear and the gastric acidity and blood sugar levels in "Macaca mulatta" monkeys. Psychosomatic Medicine, 14:182. 1952.


Rudy, D. R., Tosi, D. J., and Reardon, J. P. "Holistic approach to patients combining a medical model with direct cognitive experiential psychotherapy." Paper was presented to American Society of Clinical Hypnosis, October 1977.

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Tosi, D. J. Youth Toward Personal Growth: A Rational Emotive Approach, Columbus, Ohio: Charles E. Merrill, 1974.


Tosi, D. J. Unpublished paper on Rational Stage Directed Therapy, The Ohio State University, 1982.

Tosi, D. J. and Black, V. Self directed behavioral changes in the cognitive, affective, physiological and behavioral domains: An expanded cognitive-experiential perspective based on rational emotive theory. Unpublished research paper. The Ohio State University, 1981.


Tosi, D. J. and Reardon, J. P. The treatment of guilt through rational stage directed imagery (RSDI). Rational Living, 2, 18-12, 1976.


Tosi, D. J., Rudy, D. R. and Lewis. Unpublished paper on a study on hypertensives at Riverside Methodist Hospital, Columbus, Ohio, forthcoming, 1982.


APPENDIX A1

Pretest Analysis – MANOVA and Duncan’s Test Results

MBHIA1

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Means with the same letter are not significantly different. Alpha level=.05, df=21, MS=720.334

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GENERAL LINEAR MODELS PROCEDURE
DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE MBHIB1
MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05  DF=21  MS=16658.3

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GENERAL LINEAR MODELS PROCEDURE
DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE MBHIC1

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

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MS=391.657

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MBHID1

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| Group | 3 | 17817.94 | 5939.31 | .68 | .5716 |
| Error | 21 | 182262.71 | 8679.18 | - | - |

GENERAL LINEAR MODELS PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE MBHID1

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

ALPHA LEVEL=.05 DF=21 MS=8679.18

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**GENERAL LINEAR MODELS PROCEDURE**

**DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE CBSEVAL1**

*Means with the same letter are not significantly different.*

**Alpha Level = .05**

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**GENERAL LINEAR MODELS PROCEDURE**

**DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE CBSLOCO1**

Means with the same letter are not significantly different.

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#### GENERAL LINEAR MODELS PROCEDURE

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**General Linear Models Procedure**

**Duncan's Multiple Range Test for Variable HGSNS**

Means With The Same Letter Are Not Significantly Different

**Alpha Level = .05**  **DF = 21**  **MS = 7.19206**

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APPENDIX A2

Univariate ANOVA Results for Each Dependent Variable

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Note: ID(GroupName) used as error to test GROUP.

| Corrected Total | 74 | 1380346.88 | -     | -   | -                                           |
| Group           | 3  | 212738.37  | 70912.79 | 1.45 | .2578                                       |
| ID(GroupName)   | 21 | 1029787.18 | 49037.48 | 17.08| .0001                                       |
| Time            | 2  | 3497.65    | 1748.83  | .61 | .5486                                       |
| Group* Time     | 6  | 11820.03   | 1980.00  | .69 | .6618                                       |
| Error           | 42 | 120596.18  | 2871.34  | -   | -                                           |

Note: ID(GroupName) used as error to test GROUP.
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Note: ID(Group) used as error to test GROUP.

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Note: ID(Group) used as error to test Group.
APPENDIX A

Dependent Variable Component Scores by Subject ID and Group Across Time

MBHIA1* = INTROVE1 + INHIBIT1 + COOPERA1 + SOCIABL1 + CONFIDE1 + RESPECT1 + SENSITI1;
MBHIA2 = INTROVE2 + INHIBIT2 + COOPERA2 + SOCIABL2 + CONFIDE2 + RESPECT2 + SENSITI2;
MBHIA3 = INTROVE3 + INHIBIT3 + COOPERA3 + SOCIABL3 + CONFIDE3 + RESPECT3 + SENSITI3;
MBHIB1 = CHRTENS1 + RECSTRE1 + PREMPES1 + FUTDESP1 + SOCALIE1 + SOMAAX1;
MBHIB2 = CHRTENS2 + RECSTRE2 + PREMPES2 + FUTDESP2 + SOCALIE2 + SOMAAX2;
MBHIB3 = CHRTENS3 + RECSTRE3 + PREMPES3 + FUTDESP3 + SOCALIE3 + SOMAAX3;
MBHIC3 = GASTSUS3;
MBHIC2 = GASTSUS2;
MBHIC1 = GASTSUS1;
MBHID1 = PAINTRR1 + LIFETH1 + EMOTVUL1;
MBHID2 = PAINTRR2 + LIFETH2 + EMOTVUL2;
MBHID3 = PAINTRR3 + LIFETH3 + EMOTVUL3;
CBSEVAL1 = BLAMPR01 + SELFDOW1 + PERFECT1;
CBSEVAL2 = BLAMPR02 + SELFDOW2 + PERFECT2;
CBSEVAL3 = BLAMPR03 + SELFDOW3 + PERFECT3;
CBSLOC01 = IMPAST1 + IMPAPP1 + CONEMOT1;
CBSLOC02 = IMPAST2 + IMPAPP2 + CONEMOT2;
CBSLOC03 = IMPAST3 + IMPAPP3 + CONEMOT3;
D1MBHIA = MBHIA2 - MBHIA1;
D2MBHIA = MBHIA3 - MBHIA1;
D3MBHIA = MBHIA3 - MBHIA2;
D1MBHIB = MBHIB2 - MBHIB1;
D2MBHIB = MBHIB3 - MBHIB1;
D3MBHIB = MBHIB3 - MBHIB2;
D1MBHIC = MBHIC2 - MBHIC1;
D2MBHIC = MBHIC3 - MBHIC1;
D3MBHIC = MBHIC3 - MBHIC2;
D1GIDIST = GIDIST2 - GIDIST1;
D2GIDIST = GIDIST3 - GIDIST1;
D3GIDIST = GIDIST3 - GIDIST2;
D1CBSEVA = CBSEVAL2 - CBSEVAL1;
D2CBSEVA = CBSEVAL3 - CBSEVAL1;
D3CBSEVA = CBSEVAL3 - CBSEVAL2;
D1CBSLOC = CBSLOC02 - CBSLOC01;
D2CBSLOC = CBSLOC03 - CBSLOC01;
D3CBSLOC = CBSLOC03 - CBSLOC02

*The number suffix (i.e. .......1) codes the time level.
1 = time pretest
2 = time posttest
3 = follow-up

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|    | 13 | 2  | 24 | 18 | 24 | 31 | 32 | 28 | 39 | 31 | 30 | 30 | 23 | 27 | 34 | 30 | 34 | 34 | 25 | 21 | 22 | 4 |
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|    | 15 | 2  | 18 | 19 | 18 | 26 | 31 | 30 | 30 | 26 | 19 | 19 | 18 | 37 | 29 | 28 | 22 | 23 | 26 | 79 |
|    | 16 | 3  | 19 | 23 | 19 | 21 | 21 | 22 | 33 | 36 | 30 | 29 | 30 | 24 | 26 | 26 | 26 | 17 | 22 | 22 | 79 |
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| 10 | 2  | 11 | 17 | 115 | 95 | 95 | 45 | 85 | 82 | 12 | 12 | 12 | 12 | 18 | 12 | 63 | 17 |
|    | 11 | 2  | 57 | 36 | 72 | 50 | 57 | 40 | 75 | 45 | 15 | 24 | 22 | 8 | 18 | 18 | 63 | 9 |
|    | 12 | 2  | 115 | 100 | 65 | 72 | 40 | 45 | 40 | 45 | 38 | 29 | 58 | 40 | 31 | 59 | 25 | 43 |
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|    | 16 | 3  | 83 | 61 | 32 | 32 | 8 | 67 | 81 | 78 | 37 | 70 | 73 | 38 | 38 | 59 | 15 | 6 |
|    | 17 | 3  | 50 | 40 | 79 | 71 | 81 | 45 | 52 | 81 | 26 | 26 | 12 | 17 | 17 | 47 | 22 |

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|    | 12 | 2  | 50 | 47 | 50 | 50 | 19 | 26 | 2 | 18 | 13 | 8 | 0 | 0 | 0 | 30 | 50 |
|    | 13 | 2  | 90 | 27 | 37 | 21 | 115 | 78 | 115 | 100 | 105 | 100 | 67 | 75 | 80 | 100 | 89 |
|    | 14 | 2  | 47 | 64 | 64 | 60 | 21 | 15 | 33 | 37 | 40 | 59 | 47 | 70 | 86 | 55 | 52 |
|    | 15 | 2  | 75 | 85 | 78 | 70 | 21 | 53 | 59 | 76 | 76 | 55 | 15 | 31 | 25 | 49 | 73 |
|    | 16 | 3  | 10 | 67 | 60 | 70 | 21 | 10 | 15 | 30 | 12 | 12 | 35 | 16 | 47 | 34 | 34 |
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APPENDIX B

Miscellaneous Secondary Analysis

Overall Psychological Status - Subjective

The assessments analyzed in this section are secondary to the primary analysis. They are subjective subject evaluations rather than objective or clinical assessments.

The subjects were asked: Think of how you psychologically felt six months ago. Today do you psychologically feel: about the same worse better than you psychologically felt then?

The researcher converted the answers in this manner: Worse = 3; About the same = 2; Better = 1.

An ANOVA on the group means was not significant with F at the .1360 level.

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However, the Duncan procedure placed group 4 (RSDH) as significantly different from group 1 (Control).
General Linear Models Procedure
Duncan's Multiple Range Test for Variable Psychological Means With The Same Letter Are Not Significantly Different.

Alpha Level = .05
DF - 20
MS - 0.341667

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Overall Physical Status - Subjective

Nest the subjects were asked: Think of how you physically felt six months ago. Today do you physically feel:

| ____ | about the same |
| ____ | worse          |
| ____ | better         |

than you physically felt then?

The researcher converted the answers in this manner:

Worse - 3; About the Same = 2; Better = 1.

An ANOVA on the group means was significant with F at the .0339 level.
The Duncan procedure placed group 4 (RSDH) as significantly different from all groups.

General Linear Models Procedure
Duncan's Multiple Range Test For Variable Physical Means With The Same Letter Are Not Significantly Different
Alpha Level = .05 DF = 20 MS = 0.24

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Both these assessments were conducted at follow-up. The assessments were subjective with no prior measured criterion. However, the significant results found here in group 4 (RSDH) are consistent with the superior overall trend of this group found in the objective and clinical data. Therefore, these subjective outcomes could well be interpreted as valid.
PLEASE NOTE:

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

These consist of pages:

P. 180-184 Millon Behavioral Health Inventory

P. 185-187 Common Beliefs Survey III

P. 188-195 Harvard Group Scale of Hypnotic Susceptibility
APPENDIX F

Introduction to Session 1 for Groups I, II, III and IV

Welcome to this research project. My name is _______. I am reading this introduction to make it identical for each group.

This group is one of 3 experimental groups which will meet weekly for the next six consecutive weeks at this same time and place. It is very important that you attend all sessions to gain the maximum potential benefit from our psychological procedures. (The immediately preceding bracketed section was not read to the control group.)

Today a psychologist will be in this building to offer additional assistance to you if for any reason it is needed. We doubt that any assistance will ever be required. However, a regulatory board which has approved this project requires that a psychologist be available during the course of psychological investigations such as this.

Today we will be playing for you a tape cassette developed at Harvard University that is designed to measure how susceptible each of you are to hypnosis, that is how capable you are of using your imagination to concentrate upon or experience various ideas mentioned by the speaker.
on the tape.

We have all experienced what it is like to concentrate upon and to become involved in something that has caught our interest such as a good movie or a well prepared or delivered sermon or speech. This tape developed by Harvard is the best instrument available to psychological researchers to identify how people are different in their ability to do this.

This tape is very professionally done, is non-threatening, and actually quite interesting. Even though our study will not use hypnosis as presented on this tape, the results of today's session will provide an important way for us to measure individual difference in your ability to use your imaginations and creative thoughts. This ultimately may relate to a person's ability to psychologically manage certain types of ulcer tendencies.

Do you have any questions so far?

(Answer questions then begin the tape.)
APPENDIX G

SELF-DIRECTED BEHAVIOR CHANGE
IN THE COGNITIVE, AFFECTIVE,
PHYSIOLOGICAL AND BEHAVIORAL DOMAINS

AN EXPANDED
COGNITIVE-EXPERIENTIAL
PERSPECTIVE
BASED ON
RATIONAL EMOTIVE THEORY

DONALD J. TOSI, PH. D., & VIRGINIA BLACK, M.A.
THE OHIO STATE UNIVERSITY
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INTRODUCTION

The purpose of this instrument is to provide a structured exercise in self-directed behavioral change that focuses on the cognitive, affective, physiological, and behavioral functioning of a person. The exercise is especially valuable because it can be performed by using the actual instrument as well as through imagery. This self-directed intervention is an extension and revision of rational emotive theory that emphasizes the ABC model of human emotions and behavior.

Rational-emotive theory, developed by Albert Ellis, holds that most sustained negative emotions that interfere with effective behavior (problem solving, self-assertiveness, decision making, etc.) are the result of irrational ideas which take the form of biased, prejudiced, internalized sentences. Rarely do events external to us cause our discomfort; instead, it is our own perceptions, attitudes, or internalized sentences about those events that affect us most, especially when they are of an irrational nature.

Specifically, this exercise should (1) enable a person to explicate his thinking about significant events that are associated with areas of ineffective functioning, and (2) help that person to generate more reasonable thoughts that would ultimately result in more effective and constructive behavior.

Thought and behaviors tend to be irrational when they (1) lead to distortion of reality, (2) interfere with the accomplishment of goals, (3) are not life preserving and (4) lead to significant personal and environmental stress. On the contrary, thought and behaviors are more rational when they (1) tend to consider objective reality, (2) facilitate the accomplishment of personal goals, (3) are life preserving and (4) reduce significant personal and environmental stress.

An elaborated ABCDE model of human functioning is presented next.
AN EXPANDED ABCDE MODEL OF HUMAN FUNCTIONING

A - Represents real or imagined events or situational conditions that are meaningful to individuals. These events may have occurred in the past, may be happening in the present, or may be about to occur in the future.

B - Represents the manner in which people perceive, appraise, or evaluate events, their responses to events, and themselves as human beings. B also signifies the internal dialogue people have with themselves – that is - how they talk to themselves. This internal dialogue or self talk may often escape one's awareness. B may be of a rational or irrational nature.

C - Represents the full range of emotional experiences people have in response to how they deal with significant events at point B. Sometimes people are unaware of their feelings and how they may relate to A and B. Emotional responses may be appropriate or inappropriate, constructive or destructive.

D - Represents the full range of physiological or bodily responses that result from emotional experiences or that go along with emotional experiences. D develops significantly with C and B. Physiological responses may be of a life enhancing or life inhibiting nature.

E - Represents the way individuals translate their thoughts, feelings, and bodily responses into behavior that impacts on the self and the environment. Behavior may be constructive or destructive, appropriate, inappropriate, rational, irrational.

Some persons report that their physiological responses (D), behaviors (E), and feelings (C) are caused by external events (A). They appear to be unaware of how their thoughts give rise to their feelings and influence their behavior.

Other people may report that their physiological responses (D), and behaviors (E) are the result of their thoughts (B) but are unaware of their emotions (C). Moreover, because of our social conditioning it is very easy not to make appropriate and meaningful connections between events (A), thoughts (B), feelings (C), physiological responses (D) and behavior (E).

Thus, appropriate psychological interventions assist persons initially to become fully aware of the entire ABCDE sequence. Once a person becomes fully aware of the sequence, the counselor or therapist can introduce the more sophi-
ticated concept of "the proliferation effect," i.e., an irrational belief can become so integrated and ingrained into a person's conceptual system that a (B), (C), (D) or (E) can emerge as an event (A). For example, there is an (A) event:

A - Your mother tells you that you are a lazy, troublesome child.
B - You tell yourself, "My mother is an intelligent, powerful adult. She must be right. I'm worthless.
C - You feel angry and depressed.
D - You experience stomachaches, headaches, or bowel problems.
E - You withdraw from your mother or other critical people in a sullen way.

The aforementioned is a primary sequence. Once the pattern is set you may experience a proliferation of events initiated by any component of the ABCDE sequence. For example, (B) I'm worthless becomes an event at some moment that you are sitting in a group of people and unfavorably comparing yourself to them, which activates a (C) angry or depressed feeling, resulting in (D) headaches, stomachaches, etc., (E) sullen withdrawal. This may create another event (A), that is, critical evaluation by others who perceive you as unfriendly, setting off the whole primary ABCDE sequence again.
ACTIVATING EVENTS

Each one of us has experienced some unhappiness in our daily life in the context of school, work, home, and recreational environments. The unhappy event may have occurred in an interaction with family, strangers or acquaintances or when we were by ourselves. Interactions with others would include such events as marital arguments, unreasonable demands by a boss, harassment by unruly students, separation from a loved one through work or divorce, etc. Unhappy events or situations which focus on the individual's interaction with self may include taking exams, deciding on a career, struggling with dieting, alcohol consumption, drug abuse or simply procrastination with tasks.

Take a couple of minutes to try to think of several events that represent psychological discomfort to you. These may be events that occurred in the past, ones that you are involved in at present, or even ones that you expect to occur in the future. As you think of them, list each of them twice — once in the blocks under activating events on Form A and again in the blocks under Activating Events on Form B.

ACTIVATING EVENT EXAMPLES

1. You drink too much at an important social event, and have to sleep it off for several hours on the host's porch.

2. A student harasses you, the teacher, daily during the class period that you instruct the student and during the period she/he is in your study hall.

3. A driver cuts in front of your car unsafely, you blow the horn and get a very obscene gesture in return. You don't do anything because the other person looks tough and is driving a battered car.

4. You are a new employee and it is obvious that there are several cliques in the office. Furthermore, no one is making an effort to get acquainted with you.

5. You are a university student and an important exam has been returned to you. Unfortunately, the grade on the exam is much lower than you expected.

6. An important report, which you worked overtime to produce, has just sat on your boss's desk for several weeks. He barely acknowledged that you produced it.
PART I -- THE IRRATIONAL SEQUENCE

UNDERSTANDING IRRATIONAL AND SELF-DEFEATING HUMAN TENDENCIES

Part I of this exercise shows how to become aware of and analyze self-defeating thoughts, emotions, physiological responses, and behaviors. This will be accomplished through the ABCDE model of human functioning just described.
THE IRRATIONAL BELIEFS OR IDEAS

The following are commonly held irrational ideas or beliefs that are direct sources of emotional disturbances. From the list, choose those irrational ideas that occur between the Activating Events and the negative emotions you generally experience. At first this may prove to be difficult because such thinking generally occurs in symbolic or shorthand form and may not be in one's awareness. The idea here is to bring into awareness those implied beliefs associated with situations or events and to focus on them. You may wish to translate the following ideas into words that are more familiar to you. Record those irrational beliefs you select under implied beliefs on Form A.

(1) I must be loved or approved by everyone for virtually everything I do. Or, if not by everyone, by persons I deem significant to me.

(2) I believe that certain acts are sinful, wicked, or villainous and that people who perform such acts should be severely punished and blamed.

(3) I can't stand it when things are not the way I would like them to be.

(4) When I am unhappy it is because something external to me such as persons or events causes me to be that way.

(5) I should be terribly concerned about things that may be dangerous or fearsome to me.

(6) Although I want to face difficult situations and self responsibilities, it is easier for me to avoid them.

(7) I need someone stronger or greater than myself on whom to rely.

(8) In order to have a feeling of worth, I should and must be thoroughly competent, adequate, intelligent, and achieving in all possible respects.

(9) If something once strongly affects me, it will always affect me.

(10) I don't have much control over my emotions or thoughts.

(11) I should never be angry or express my anger because such expression is bad and a sign of personal weakness.
(12) I should rarely confront other people or assert my own thoughts or feelings about another person because people are fragile and are hurt easily.

(13) Most of the time I must please other people even if I have to forego my own pleasure because it is the nice or right way to behave.

(14) I am happiest when I just remain inactive and passive.

(15) In order to be perfectly fulfilled as a human being I must have a close, personal, involved, and intimate relationship with another person.
UNDESIRABLE EMOTIONAL STATES
ASSOCIATED WITH PSYCHOLOGICALLY SIGNIFICANT EVENTS

The following list depicts emotional reactions that can be self-defeating when inappropriately associated with real or anticipated events. Identify those emotional reactions that accompany the activating events you already listed on Form A. Record the reactions in the space provided for **Undesirable Emotions**. Refer to page 3 for an example if necessary.

<table>
<thead>
<tr>
<th>Undesirable Emotions</th>
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<tbody>
<tr>
<td>1. Anger or great irritability</td>
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<td>2. Anxiety</td>
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<td>3. Severe worry</td>
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<tr>
<td>4. Worry</td>
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<td>5. Boredom or dullness</td>
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<td>6. Frustration</td>
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<td>7. Guilt or self-condemnation</td>
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<td>8. Hopelessness or depression</td>
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<td>9. Great loneliness</td>
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<td>10. Helplessness</td>
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<tr>
<td>11. Self-pity</td>
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<tr>
<td>12. Uncontrollability</td>
</tr>
<tr>
<td>13. Worthlessness or inferiority</td>
</tr>
<tr>
<td>14. Stubbornness</td>
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<tr>
<td>15. Laziness</td>
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<tr>
<td>16. Sinfulness</td>
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<td>17. Self-hate</td>
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<tr>
<td>18. Excessive shyness</td>
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<tr>
<td>19. Hate towards others</td>
</tr>
<tr>
<td>20. Vulnerability</td>
</tr>
<tr>
<td>21. Dependency</td>
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<tr>
<td>22. Mistrust</td>
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<td>23. Rigidity</td>
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<td>24. Embarrassment</td>
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<tr>
<td>25. Jealousy</td>
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<tr>
<td>26. Other (Specify)</td>
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</table>
While people vary in their physiological response to negative situations, some develop back trouble while others may develop headaches, fatigue, or rapid heart beat, there are symptoms that tend to cluster around particular emotional states. (This is not to say that a physical symptom is only indicative of an emotional state. There may be an organic cause.) Below is a list of responses or symptoms and associated emotional states. Record the appropriate one for you under physiological response on Form A.

UNDESIRABLE PHYSIOLOGICAL RESPONSES

1. Thirst or hunger
2. Loss of touch in fingers
3. Lump in throat
4. Excessive perspiration
5. Pains in heart or chest
6. Dizziness
7. Fatigue
8. Heaviness in arms or legs
9. Headaches
10. Loss of memory
11. Burning in stomach
12. Itchy, tingling skin
13. Nausea
14. Belching
15. Diarrhea
16. Loss of weight
17. Menstrual discomfort
18. Dry mouth
19. Flushing
20. Shortness of breath
21. Heart palpitations
22. Grinding teeth
23. Hair raising
24. Ringing in ears
25. Blurring of vision
26. Hands trembling
27. Elevated blood pressure
28. Hives
29. Pimples
30. Skin rashes
31. Frequent urination
32. Other (Specify)
This is a list of behaviors generally considered to be self-defeating or undesirable, especially when they are of a high frequency, intensity, and duration. From the list below, choose those behaviors that are most often associated with the activating event(s) you specified and the undesirable emotional or affective states you have already determined for yourself. Record these on Form A. You may need to be more specific than suggested by the below behaviors.

**UNDESIRABLE BEHAVIORS**

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1.</td>
<td>Avoiding responsibility</td>
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<tr>
<td>2.</td>
<td>Acting unfairly to others</td>
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<td>3.</td>
<td>Being late to appointments</td>
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<td>4.</td>
<td>Demanding attention</td>
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<td>5.</td>
<td>Physically attacking others</td>
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<td>6.</td>
<td>Procrastinating</td>
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<td>7.</td>
<td>Telling people off harshly</td>
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<td>8.</td>
<td>Whining or crying</td>
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<td>9.</td>
<td>Withdrawing from activity</td>
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<td>10.</td>
<td>Excessive drinking of alcohol</td>
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<td>11.</td>
<td>Overeating</td>
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<td>12.</td>
<td>Undersleeping</td>
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<td>13.</td>
<td>Oversmoking</td>
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<td>14.</td>
<td>Excessively manipulating</td>
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<td>15.</td>
<td>Taking too many drugs or pills</td>
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<td>16.</td>
<td>Being sarcastic</td>
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<td>17.</td>
<td>Lying</td>
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<td>18.</td>
<td>Cheating</td>
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<td>19.</td>
<td>Overprotecting</td>
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<td>20.</td>
<td>Ruminating about failure</td>
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<tr>
<td>21.</td>
<td>Other (Specify)</td>
</tr>
</tbody>
</table>
PART II -- THE RATIONAL SEQUENCE

RESTRUCTURING IRRATIONAL AND SELF-DEFEATING HUMAN TENDENCIES

Part II of this exercise introduces you to the basis of cognitive restructuring. In this section you will learn how to challenge logically those irrational ideas you determined to be of personal significance in Part I. Additionally, you will see how more rational thinking can lead to more positive emotional, physiological and behavioral responses.
The following ideas are contrasted to those irrational ideas presented in the last section. When people substitute these ideas for their previously-held irrational ideas, they eventually experience more desirable emotional, physiological, and behavioral functioning.

This part of the exercise has two purposes: (1) to introduce persons to more rational ways of thinking about events associated with emotional, physiological, and behavioral disturbance and (2) to assist persons in the contradicting and challenging of those self-defeating ideas that support those negative behavioral states.

The following rational ideas or beliefs correspond to the irrational ideas or beliefs in the preceding section. Record the preferred rational belief in the designated column on Form B. While recording the rational belief, try to imagine yourself using them in real life settings which have become a personal source of disturbance.

(1) While it is desirable to be approved and accepted by others, it is not an absolute necessity. My life doesn't really depend upon such acceptance, nor can I really control the minds and behavior of other persons.

(2) Many persons do commit acts that are inappropriate, self-defeating, or antisocial, but needless blame and punishment rarely stops such persons who are usually ignorant, emotionally disturbed, or stupid from committing such acts. Demanding that persons should not commit stupid acts oftentimes is nothing more than a demand that reality be different.

(3) When things don't go the way I want them to go, it is too bad or inconvenient — but not catastrophic. And, it may be in my best interest to change them or arrange conditions so that they may become more satisfactory. But, if I can't change or modify situations to my liking, I would be better off accepting their existence rather than telling myself how awful they are.

(4) Human unhappiness is usually caused by one's thoughts, appraisals, evaluations, or perceptions of events. That is, I create my own disturbance. Since I am human, I can expect to disturb myself often. But, that doesn't mean I have to continually disturb myself forever.
(5) If something is or may be dangerous or fearsome, it is probably in my best interest to face it and try to render it less dangerous. I may even discover that most of the danger was imaginary.

(6) While it is humanly normal to want to take the easy way out of such things as avoiding life's difficulties and self-responsibilities, in the long run I would probably be better off confronting openly such difficulties, facing them squarely, and trying to solve them.

(7) Although the socio-cultural system teaches and reinforces one's tendencies to be dependent on others and things, I would be better off standing on my own two feet in facing life.

(8) Since I am a human being with biological, sociological, and psychological limitations, I cannot reasonably expect to be perfect in any endeavor. But, I certainly can strive to perform well in those tasks I deem as significantly contributing to my self-development. In those areas where I am deficient, I certainly can strive to improve those areas. If I fail, though — too bad.

(9) Although I have been influenced greatly by my past experiences and believe that specific instances of the past greatly affect me today, I can profit by such experiences but not be overly prejudiced or biased by them. Nor do I need to be dominated by them in the future.

(10) Human beings, including myself, are happiest when they are actively involved in creative pursuits or when they devote themselves to people or projects outside of themselves. Long term withdrawal from the world or inaction rarely are associated with happiness. Therefore, it would be in my best interest to force myself into productive or creative activity.

(11) I could probably develop the skills necessary to control enormously my own emotions or feelings if I decide to commit myself to that process. And, it would be in my best interest if I would take the necessary risks in order to achieve a greater control over my own destiny. Of course, I don't really expect to develop these skills overnight.

(12) Anger is a normal human emotion and its expression is not a sign of personal worthlessness. Moreover, being aware of my anger and expressing it as a communication of current feelings without indiscriminately attacking the personal worth of others may be in my best interest.

(13) If I share most of my thoughts and feelings (negative or positive) honestly and openly, it will probably help me communicate more effectively with others in the long run — even though in the short run I might experience some temporary discomfort.

(14) Striving to know and to accept others for their humanness is a reasonable goal. Moreover, it is in my best interest to try to act fairly with others so I may receive the full benefit of their
humanness. However, trying to please others at the expense of my own well-being is not personally growth-enhancing. Therefore, I can only do my best in trying to please others. If I fail -- tough!

It is desirable for me to be able to develop meaningful and intimate relationships with other people. However, if I demand intimate and satisfying relationships with others, I will tend to focus on the outcome of such interpersonal relationships rather than the process of getting to know and accept another person. Therefore, I would be better off not demanding but trying to be spontaneous, responsive, and accepting towards significant persons.
DESIRABLE EMOTIONS

This list consists of emotions that are generally positive or desirable. Although persons do not experience these always, these emotions are experienced under a variety of conditions with varying degrees of frequency, intensity, and duration. From this list, choose those emotional responses that would be more desirably associated with those activating events and rational ideas you have already listed. Also, it is important that you imagine these more positive feelings as emotional responses to those activating events and rational beliefs. Record your choices under C on Form B.

DESIRABLE EMOTIONAL STATES

1. Relaxed
2. Joyful
3. Worthwhile
4. Loving
5. Hopeful
6. Warmth
7. Guiltless
8. Shameless
9. Elation
10. Gentle
11. Energetic
12. Merry
13. Cheerful
14. Confident
15. Self-Accepting
16. Dependable
17. Caring
18. Able
19. Lively
20. Happy
21. Patient
22. Trusting
23. Satisfied
24. Stable
25. Pleasant
26. Other (Specify)
DESIRABLE PHYSIOLOGICAL RESPONSES

Below are some examples of desirable physiological responses that suggest a decrease in the frequency, intensity, and duration of those undesirable physiological responses listed and reported in Part I. Record the appropriate physiological response on Form B.

DESIRABLE PHYSIOLOGICAL RESPONSES

1. Normal thirst and hunger
2. Less dizziness
3. Fewer pains
4. Fewer headaches
5. Less menstrual discomfort
6. Fewer skin problems
7. Normal bowel and bladder functions
8. Normal heart rate
9. Lowered blood pressure
10. Normal vision
11. Normal breathing
12. Fewer stomach symptoms
13. Desirable weight
14. Other (Specify)
DESIRABLE BEHAVIORS, ACTIONS, OR HABITS

The following behaviors are generally considered desirable or self-enhancing. Choose those behaviors that are associated with more reasonable ways of thinking and feeling. You may need to be more specific than suggested below. Again, try to imagine yourself utilizing these more self-enhancing behaviors as a response to those (?) you have already determined: Record them on Form B.

DESIRABLE BEHAVIORS

1. Taking responsibility
2. Acting fairly
3. Being punctual
4. Asserting myself
5. Behaving spontaneously
6. Drinking alcohol in moderation
7. Being kind
8. Performing in an honest manner
9. Being considerate
10. Helping others
11. Being reliable
12. Expressing tenderness
13. Developing a responsive style of communication
14. Being frank with others
15. Eating normally
16. Sleeping normally
17. Cultivating patience
18. Minimizing dependence on people, drugs, etc.
19. Taking decisive actions
20. Efficiently managing responsibilities
21. Other (Specify)
<table>
<thead>
<tr>
<th>Activating Event</th>
<th>Irrational Belief</th>
<th>Undesirable Emotions</th>
<th>Undesirable Physiological Response</th>
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<td>Activating Event</td>
<td>Rational Belief</td>
<td>Desirable Emotions</td>
<td>Desirable Physiological Response</td>
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ADDITIONAL COMMENTS

Thoughts, emotions, physiological responses, and behaviors you would like to change as a result of completing this exercise:


Strategies or solutions you might develop and use in achieving desirable cognitive behavioral outcomes.


APPENDIX H

Introduction to Session 2 for Groups II, III and IV

Welcome to today's session.

My name is Jim Gebhart. I am a psychological counselor with offices at the corner of Kenny and WN Broadway. I am also a friend and colleague of Steve Judah and am looking forward to working with you on this research project.

Today's session marks the start of the active treatment phase of this program. From this point on each of our groups will receive a different form of psychological treatment. We have selected 3 of the best forms of psychological treatment for psychosomatic disease. We believe each treatment form, including the treatment form used by this group, has the potential to measurably help in the management of duodenal ulcers. These studies will permit us to determine which of the treatments being examined, are most effective, with what type of people.

If any of our treatment procedures are more effective than the procedure used in this group - you will have an opportunity to receive that treatment form, at our expense, when this research project is concluded.
I want to first answer any questions you might have about what I've said or about last week's session.

Today we will listen to a 30 minute therapeutic tape which has been prepared exclusively for your group. You will each be given the tape to take home and you are encouraged to listen to it often, hopefully once each day, throughout the remainder of this project unless you are instructed otherwise.

(Show the tape. Demonstrate how to put it into a cassette recorder. Encourage them to borrow or purchase a cassette recorder if they have none. Tell them that often libraries or churches have recorders which can be borrowed for a few weeks." Contact us if you need one and cannot find one.

After we listen to today's tape we will discuss your reaction to it and any other materials which have been given to you.

Do you have any questions. Then please get comfortable as we prepare to listen to this tape.
APPENDIX I

Group II Session 2 - Cognitive Restructuring

DO NOT DISCUSS RELAXATION

1. Read the introduction to session 2.
2. Play the tape "Introduction to Cognitive Restructuring".
3. Discuss their reaction to the tape.
4. Discuss the "Self Directed Behavior Change..." instrument. Concentrate on the ABCDE model. Place emphasis on point D (physiological responses) especially gastrointestinal disturbances.
5. Answer miscellaneous questions then dismiss group.
GROUP II Session 3 - Cognitive Restructuring

DO NOT DISCUSS RELAXATION

1. Do you have any questions from last weeks session?

2. Did each of you get a tape titled "Introduction to Cognitive Restructuring?"

3. As you have listened to the tape during this week, what are your reactions?
   
   a. Do you fully understand the ABC model?
      A--activating event, issue, person, etc.
      B--beliefs (cognitions) regarding A
      appraisal of the situation
      appraisal of your response to the situation
      appraisal of yourself
      C--consequences, emotional

   b. Do you understand the difference between rational and irrational beliefs or thinking?
      Irrational beliefs Negative G.I. disturbances
      Rational beliefs Positive G.I. quieting

4. Discuss "DENIAL"

   Apparently many persons who have psychosomatic disturbances tend to have denial operations. That is they tend to deny, gloss-over, or repress, etc. certain things such as: the presence of problems, emotions, true thoughts, etc.

   Constrain this to the rational approach which faces problems head-on and then seeks to creatively, rationally restructure via rational thinking.

5. If you have not already done so go to page 6 & 7 of your "Self Directed Behavior Change..." handout.

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a. Go through this list right now and check the "Irrational Beliefs" which may apply to you.

b. Would some of you care to share with this group the " " which you have checked?

c. How could this be refuted so as to make it a Rational Belief? Refer to page 12 - 14 of the handout and find the Rational alternative.

6. Discuss "PERFECTIONISM" in the time that remains.

Refer to page 6 number 8 of the handout as an example of Irrational Perfectionism.

7. Read chapter 3 and 4 of "New Guide to Rational Living" (Ellis and Harper, 1975) for next week. Please read and bring to group next week to discuss same. Please continue to listen to the tape.

8. Answer final questions then dismiss.
APPENDIX K

Group II Session 5 - Cognitive Restructuring

1. How is your life being changed as a result of this program if at all?

2. Discuss how irrational thinking and non-assertion may lead to emotional consequences of "hostility" or "anger" and behavioral tendencies toward "explosiveness."

   Discuss the myths of assertion: (FOAM)

   F riendship - don't make waves with friends.
       (Irrational)
   O bligation - if asked, I'm obligated to consent.
       (Irrational) versus It is O.K. to refuse
       (Rational)
   A nxiety - I should never be anxious when making a point (Irrational) versus Anxiety is common and need not stop you (Rational).
   M odesty - I must be modest at all times (Irrational) versus I may need to appear slightly immodest while being assertive but probably will be respected for it (Rational).

3. Discuss chapters 6 and 7 from the "Brief Psychotherapy in Medical and Health Practice" (Ellis and Abrahms, 1978).

4. Continue to work through the list of rational versus irrational beliefs in the SDBCI.

5. Answer final questions then dismiss.
APPENDIX L

Group II Session 6 - Cognitive Restructuring

1. Review and answer questions.

2. Explain how irrational beliefs may generate "dependency" and "chronic tension."

   a. Dependency is defined as the feeling that you must have the support, or approval, or love of most people you know - or at least of the people you deem to be significant. "I can't stand it when Mom, Dad, Boss, Mate, Friend,... doesn't like something about me or rejects me."

   b. Many times dependency leads to a repression of: true beliefs, ideas, or thoughts; true emotional feelings resulting in bottled up anger, fear, etc.; true behavioral tendencies. Often these true beliefs, emotions, and behaviors are repressed because the dependent individual fears that expressing true beliefs, emotions, and behaviors would cause the person upon whom they are dependent to reject them or withdraw their love, etc.

   c. Some persons appear to mask this with a show of macho independence, when in fact, inside, at the core, these persons are very painfully dependent or vulnerable to others acceptance or rejection.

   d. Some persons mask this with over-achievement. When actually their goals are not so much their own goals but rather an attempt to gain some key person's approval.

   e. Because these individuals are so sensitive to certain persons' rejection or disapproval of them they tend to be in a state of chronic tension.

   Ironically, sometimes the person they fear or dread, may even no longer be living.

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3. Summary

a. "I must be loved or approved."

b. "I must not risk expressing my true thoughts, feelings, or behavioral tendencies."

c. Some individuals attempt to compensate for this by shows of false independence.

d. Others attempt to compensate for this with over-achievement.

e. This person ultimately is in a state of chronic tension due to these dynamics.

4. Discuss the rational alternative to dependency and chronic tension.

a. While it would be nice and desirable to have everyone's, or at least key persons, constant love, acceptance, and approval - I realize that this is not possible.

b. It is not the end of the world if certain people reject me as a result of my being honest with my thoughts, feelings, and behavioral tendencies.

c. My sense of happiness in life need not depend solely or primarily upon how others respond to me.

d. Certainly I should reasonably try to be diplomatic and to get others to like me but I need not carry this to a compulsive extreme.

e. I can choose to not disturb myself when others disapprove of me, or reject me - particularly when I am being fair and truthful and as gentle as possible.

5. This rational approach leads to decreased tension, freer expression of beliefs and emotions, physical calming, and behavioral competence and assertiveness.

6. Discuss the lists of irrational and rational beliefs that have not yet been covered in the SDBCI.

7. Answer final questions then dismiss.
Hypnotic Induction

This induction procedure was originally prepared by Donald Tosi for use with a hypertensive population (Tosi et al., 1982). It has been modified here only slightly for application to a duodenal ulcer population.

I am going to ask you to just close your eyes and begin to take slow, deep breaths. Your breathing should be deep; almost as if you are filling your lungs and your entire stomach with fresh, relaxing air. Your breathing becomes very rhythmic and has a nice, rhythmic pattern. As you breathe slowly and deeply you can feel the air circulating around your lungs to the very pit of your stomach. Breathe slowly, deeply and rhythmically. It's as if you are inhaling relaxation with each deep breath you take, and exhaling tension. You find yourself becoming very relaxed and very comfortable with each breath that you take. Concentrate on becoming relaxed, and concentrate on inhaling relaxation and exhaling tension, so that with each deep and rhythmic breath you take you find you are becoming very comfortable, and very, very relaxed. Inhale relaxation; exhale tension. That's the formula you place in the back of your mind throughout this exercise. Inhale relaxation, exhale tension. You
may notice that your eyes and your body become heavier and heavier with each deep breath that you take. As your body becomes more comfortably heavy, you begin to feel more comfortably relaxed. You may notice outside noises but you will not be bothered by them or distracted by them. Nothing will affect your becoming very deeply and comfortably relaxed. With each deep breath you take you simply go deeper and deeper into relaxation. You will begin to notice that your mind and your body slow themselves down, very gradually and pleasantly. That is, your bodily processes begin to slow down to the point where you feel exquisitely relaxed, yet your mind remains sharp and alert and clear. In this state of relaxation we are going to emphasize a clear mind and as a matter of fact, it is almost as if your body is going to enter a sleeplike state. As you continue to relax, and slow down your mind and your body you begin to feel the sensation of a deep sleeplike state except you are aware and your mind is free to concentrate and focus its attention on whatever suggestion I may make. At this point you can concentrate on allowing all the muscles of your body to become completely relaxed. You can concentrate on all the muscles in your forehead, and begin feeling them losing their tension as they are becoming very very relaxed. Now let the relaxation spread through all the
through all the muscles around your mouth and nose and around your chin and jaws, so that every muscle in your face is becoming very softly and beautifully and pleasantly relaxed. Now with all the muscles in your face completely relaxed, concentrate on all the muscles in your neck. Allow every muscle to relax. There is no need for tension in your neck muscles, and they continue to become very, very, relaxed. Allow every muscle in your face and in your neck to become very, very relaxed. Concentrate next on allowing your shoulders and back to become very pleasantly, enjoyably, relaxed. You can feel these very powerful muscles relax. A feeling of comfort is beginning to come over you. From your shoulders to your back, and round your side to your chest, these muscles automatically become relaxed. As you concentrate on allowing them to become more relaxed they do so. As you breathe slowly, deeply and rhythmically, the muscles in these parts of your body become exquisitely relaxed. And as all these muscles become more and more relaxed and as you can feel your mind and your body slowing down even more, . . . your mind is remaining sharply focused and alert. You begin to feel absolutely relaxed. You may even experience a very warm and very comfortable floating sensation, a very secure, safe feeling. Now with each muscle in your chest, your back, your neck, and your face relaxed, concentrate on all the muscles in your arms, all the muscles in your fingers, all the muscles in the entire
half of your upper body. Concentrate on your abdominal muscles. Let them become very soft, comfortable, and relaxed. You may even notice that your entire gastrointestinal system appears to slow down, decelerate, and comfortably relax. Concentrate on allowing every muscle to become completely relaxed in the upper part of your body. And with each deep breath you take the exquisite sensations of relaxation become more and more intense, more and more pleasant. Start now to relax all the muscles in your legs, your feet, and even your toes. As you do so you can feel the strong thigh muscles becoming soft and comfortable and very, very relaxed. The muscles feel like they are just hanging on your bones as they are completely relaxed. Now concentrate on the whole lower half of your body becoming relaxed. From your knees to the tips of your toes, you find yourself in a very deep state of relaxation, a deep and pleasant state, a very beautiful and comfortable state of relaxation. I am going to count backwards from 25 to 0. As I approach the sensations of relaxation and sleep will become more and more intense and your mind will become even more clearly focused. You will begin to notice that your body will continue to slow down as it reaches a point of deep relaxation, nearly perfect relaxation. I am going to begin to count. Twenty-five, 24, 23, 22, 21, 20, 19, 18, 17, keep relaxing, continue to become more and more
relaxed, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0. If you are comfortably relaxed, simply indicate by raising your left index finger. Very good. Now you have entered a very deep stage of relaxation and you should be very comfortable. You can continue to relax and remain in this very exquisite state of relaxation by breathing rhythmically and slowly. Notice how alert and sharp your mind has become, it has become free to function, very, very effectively. Notice also the extent to which you are able to concentrate, and focus your attention on just about anything you would like to concentrate on....Notice how clear your mind seems....how free it seems. Notice how you are able to see things very clearly, to hear things very clearly, and to feel things very clearly. But most importantly notice how effectively you can concentrate. Your mind can concentrate very effectively in this exquisite state of relaxation and focused attention.

In this state human beings are capable of thinking very clearly about personal issues in their lives, are very capable of imaging things very effectively. And they are very capable of experiencing feelings about present, past, and future events... They can also notice that their awareness has expanded to the point where they can get in touch or even see thoughts and feelings that they were previously unaware of. It is a state of concentration
that allows us to expand our mind, a very comfortable relaxed state. We believe this state provides one of the ultimate forms of self control. Because of its emphasis on concentration, it frees the mind to function at a high level at which one controls one's bodily responses and behaviors. So, continue to relax, to experience almost the complete absence of tension. You will begin to notice that your mind and body are operating as one in an almost perfectly integrated fashion. Continue to notice how exquisitely relaxed you are.

You may also want to know that the procedures that I am showing you at this time will be remembered, will be recorded in your mind and you will be able to practice this procedure, and use this procedure anytime you would like... perhaps at home in a comfortable and secure setting.

Through this state we will try to accomplish a couple of things: First, a total relaxation of the body; secondly, maximizing or maximization of the focus of attention where you increase your ability to concentrate; and thirdly, the expansion of awareness through which we can explore many areas of personal concern. So, continue to relax, and enjoy this most exquisite experience.

You may also find that when you are in this state of concentration that time seems to become less important. Time may proceed very quickly. I want to emphasize again and again that this is a procedure that you have total control. You will only concentrate and accept those
suggestions I may make that are of therapeutic value for
you. You will not accept suggestions or ideas that will
not serve your own best interests as human beings. In
other words, you will only want to accept or concentrate
on those ideas or certainly explore those ideas that I
may suggest that would serve your best interests. If for
some reason suggestions are made that do not serve your
interests you would simply not accept those suggestions.
We want to emphasize that you are free to think, free to
act, and free to decide in this process. Again, this is
a process that you have complete control over. I am
simply going to help you to direct some of your thoughts
in a more constructive manner. If you understand, please
signal by raising your left index finger. Very good.

I'm just going to ask you to continue to relax.
Letting all the muscles in your body relax more thoroughly
and more exquisitely...Notice how comfortable you feel.
Notice how comfortably relaxed you are. Notice how clear
your mind is. How very clear your mind is. And notice
how you are able to produce these sensations with little
or no effort. Just relax and let your mind and your body
slow themselves down...you may begin to notice that the
sensations of warmth begin to be experienced in your body.
But yet your mind is clear. Perhaps you experience
sensations of coolness in your forehead. Your body is
very relaxed and comfortably warm. You may notice your
eyes becoming heavier and heavier and your mind sharper and sharper. Continue to relax... You may wish to concentrate on the following ideas: my body is comfortably heavy and comfortably warm. My forehead is comfortably cool. My body is comfortably heavy and comfortably warm, my forehead is comfortably cool. (Repeat). My body is exquisitely relaxed and my mind is clear.

In a few minutes I will count from one to ten. When I reach ten, your eyes will open. You will feel extremely relaxed, as if you have just experienced a very restful sleep. Your mind will be clear, and very alert, and you will feel very good all over. You will have experienced a very positive set of sensations. I will now count from one to ten. One, 2, 3, 4, 5, 6, 7, 8, 9, 10.
1. Do you have any questions from last week's session?

2. Did each of you get the tapes titled:
   1. "Introduction to Cognitive Restructuring?"
   2. "Introduction to Relaxation?"

3. As you have listened to the tapes during this week—what are your reactions?
   a. Do you fully understand the ABC model?
      A—activating event, issue, person, etc.
      B—beliefs (cognitions) regarding A
         appraisal of the situation
         appraisal of your response to the situation
         appraisal of yourself
      C—consequences, emotional
   b. Do you understand the difference between rational and irrational beliefs or thinking?
      Irrational beliefs
      Negative G.I. disturbances emotions
      Rational beliefs
      Positive G.I. quieting emotions

4. Discuss "DENIAL"

   Apparently many persons who have psychosomatic disturbances tend to have denial operations. That is they tend to deny, gloss-over, or repress, etc. certain things such as: the presence of problems, emotions, true thoughts, etc. Sometimes referred to as "Chronic"

   Contrast this to the rational approach which faces problems head-on and then seeks to creatively, rationally restructure via rational thinking.

5. If you have not already done so go to page 6-7 of your "Self Directed Behavior Change...." handout.
a. Go through this list right now and check the "Irrational Beliefs" which may apply to you.

b. Would some of you care to share with this group the " " which you have checked?

c. How could this be refuted so as to make it a Rational Belief? Refer to page 12-14 of the handout and find the Rational alternative.

6. Discuss "PERFECTIONISM" in the time that remains. Refer to page 6 number 8 of the handout as an example of Irrational Perfectionism.

7. Play side A of the RSDH group tape which emphasizes the stages of "Awareness" and "Exploration" (Appendix Q). Follow with discussion.

8. Instruct patients to read chapters 3 and 4 of the "New Guide to Rational Living" (Ellis and Harper, 1975).

9. Distribute the RSDH tape with instructions to listen to side A only daily for the next two weeks. Subjects may listen to the other two tapes if they wish but this is not necessary.

10. Answer final questions then dismiss.
APPENDIX O

Group IV Session 5 - RSDH

1. Discuss: How have you been influenced as a result of this treatment procedure? Have your attitudes or life changed any?

2. So far we have been becoming "Aware of our own A's, B's, C's, D's, and E's and Exploring the Rational versus Irrational option or alternative.

Today we want to concentrate upon:
Commitment i.e., making a very profound personal commitment to live in more rational ways.
Implementation i.e., implementing the commitment which you have just made in your real world. i.e., beginning to aggressively and actively practice these procedures in real life.

Today and from this point on listen to side B of the latest tape. (4-6 times weekly). It addresses commitment and implementation.

3. Discuss how irrational thinking and non-assertion may lead to emotional consequences of "hostility" or "anger" and behavioral tendencies toward "explosiveness."

Discuss the myths of assertion: (FOAM)
Friendship - don't make waves with friends. (Irrational) versus Friendships can endure stress and challenge. (Rational)
Obligation - if I'm asked, I'm obligated to consent (Irrational) versus it is O.K. to refuse. (Rational)
Anxiety - I should never be anxious when making a point (Irrational) versus Anxiety is common and need not stop you. (Rational)
Modesty - I must be modest at all times. (Irrational) versus I may need to appear slightly immodest while being assertive but probably will be respected for it. (Rational)

4. Play the RSDH tape side B (Commitment, Implementation, Internalization, and Behavioral Stabilization stages) (Appendix R) Follow with discussion.
5. Discuss chapters 6 and 7 from the "Brief Psychotherapy in Medical and Health Practice" (Ellis and Abrahms, 1978).

6. Continue to work on the SDBCI (Appendix G).

7. Instruct subjects to listen to the RSDH tape side B daily for the next two weeks.

8. Answer final questions then dismiss.
APPENDIX P

Group IV Session 6 - RSDH

1. Review and answer questions.

2. Explain how irrational beliefs may generate "dependency" and "chronic tension."
   a. Dependency is defined as the feeling that you must have the support or approval, or love of most people you know - or at least of the people you deem to be significant. "I can't stand it when Mon, Dad, Boss, Mate, Friend... doesn't like something about me or rejects me."
   b. Many times dependency leads to a repression of: true beliefs, ideas, or thoughts; true emotional feelings resulting in bottled up anger, fear, etc.; true behavioral tendencies.

      Often these true beliefs, emotions, and behaviors are repressed because the dependent individual fears that expressing true beliefs, emotions, and behaviors would cause the person upon whom they are dependent to reject them or withdraw their love, etc.

   c. Some persons appear to mask this with a show of macho independence, when in fact, inside, at the core, these persons are very painfully dependent or vulnerable to others acceptance or rejection.

   d. Some persons mask this with over-achievement. When actually their goals are not so much their own goals but rather an attempt to gain some key person's approval.

   e. Because these individuals are so sensitive to certain persons' rejections or disapproval of them they tend to be in a state of chronic tension.

      Ironically, sometimes the person they fear or dread, may even no longer be living.

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3. Summary
   a. "I must be loved or approved."
   b. "I must not risk expressing my true thoughts, feelings, or behavioral tendencies."
   c. Some individuals attempt to compensate for this by shows of false independence.
   d. Others attempt to compensate for this with over-achievement.
   e. This person ultimately is in a state of chronic tension due to these dynamics.

4. Discuss the rational alternative to dependency and chronic tension.
   a. While it would be nice and desirable to have everyone's, or at least key persons, constant love, acceptance, and approval - I realize that this is not possible.
   b. It is not the end of the world if certain people reject me as a result of my being honest with my thoughts, feelings, and behavioral tendencies.
   c. My sense of happiness in life need not depend solely or primarily upon how others respond to me.
   d. Certainly I should reasonably try to be diplomatic and to get others to like me but I need not carry this to a compulsive extreme.
   e. I can choose to not disturb myself when others disapprove of me, or reject me - particularly when I am being fair and truthful and as gentle as possible.

5. This rational approach leads to decreased tension, freer expression of beliefs and emotions, physical calming, and behavioral competence and assertiveness.

6. Play side B of the RSDH tape. Then discuss with emphasis on the stage Implementation adn Internalization (Appendix R).
7. Discuss remainder of the SDBCI (Appendix G).
8. Answer final questions then dismiss.
Cognitive Restructuring in the Stages of Awareness and Exploration

This transcript was originally prepared by Donald Tosi for use with a hypertensive population (Tosi et al., 1982). It has been modified here only slightly for application to a duodenal ulcer population.

I want you to concentrate on a few critical points pertaining to the ABCDE's of personal functioning. If you simply allow your body to relax you will be able to observe in your mind some of those important events that have occurred over the years and that have been sources of personal discomfort to you. Often those events become associated with negative emotional states such as anger, rage, guilt and anxiety; those negative emotional states are related to negative physiological states such as increased gastric acid secretion; and alos to inappropriate behaviors such as a lack of assertiveness and other forms of self inhibition.

You may wish to concentrate on any significant disturbing event that may have occurred in the past, that may be happening to you in the present, or that you may believe will happen to you in the future. Take a little time and allow your mind to permit itself to visualize such an event....While you are visualizing the event allow
yourself to remain very calm and relaxed - as relaxed as possible - This although may be difficult for some of you now, it will not be so difficult for you later on since you will have ample time to practice procedures here or at home - So just continue to relax and allow your mind to reflect on the event now - Just simply reflect on the event - as if you are observing yourself on a T.V. screen. Suppose that you are in a situation where you ordinarily experience feelings of threat and fear, and maybe frustration and anger that you normally inhibit - just normally keep inside yourself - As you experience the holding back of your anger or other feelings, you may also observe that your rate of gastric acid secretion seems to rise somewhat - as you fail to act the way you would like in that situation for fear of reprisals. You may see yourself acting cowardly, unassertively, or inconsistently, you may really want to express your feelings but you don't for fear that others will disapprove of you, reject you, punish you or embarrass you - you simply feel guilty - maybe frustrated.

Observe any feelings of intense range, anger, fear or guilt. You may see that at times you are unaware of such feelings. Simply reflect on these events, emotional reactions, and possible changes occurring in your body - Just continue to relax while in this state of passive reflective thought. At this time it is not necessary to
experience many of those sensations you are observing — it is only important that you remain calm and relaxed and observant. You are simply becoming more aware of a behavioral sequence that has been a source of discomfort. At this stage of awareness you need only to observe how events of personal significance that we label A — have become associated with emotional reactions — that we label C — Physiological reactions — that we label D — and behavioral tendencies — that we label E.

Now, after having passively taken note of that sequence, just continue the relaxation, perhaps even going deeper, into this exquisite state of focused concentration. (15 seconds or so of silence...) Your breathing is becoming more rhythmic, and your body more and more relaxed.

At this point you may have noticed that you have been concentrating on A, C, D, and E in the negative sequence. Now you may direct the focus of your attention to B — those thoughts, ideas, or beliefs you have about 1) the situation, 2) your responses to the situation, and 3) your self-concept in that situation. This sometimes proves difficult for some, only because they have not learned to concentrate nor to focus their attention on the thinking patterns that often activate their negative feelings and bodily responses, and motivate their behavior.

Focus your attention now on the thoughts you were having in the sequence you were previously or are now observing. For the most part the thoughts you are probably
having are similar to ones you became aware of through the listening to tapes and the use of the special ABCDE exercises. I will simply suggest some of those thoughts you are having in your unique sequence - If those thoughts I suggest are relatively accurate - you will want to give full consideration to them. If they are not accurate or are inappropriate to your personal sequence - you may simply concentrate on those thoughts that you believe to be most characteristic of your situation.

We have hypothesized that when people experience disturbing emotional reactions such as rage, hostility, anxiety, and guilt and negative bodily reactions such as increased gastric acid secretion, certain internalized thoughts or sentences tend to activate those reactions - Such thoughts may often occur below the threshold of one's awareness or simply without the person being consciously aware.

Now let us concentrate on the entire ABCDE negative sequence with emphasis being placed on "B" - What you are telling yourself - The internal dialogue you have with yourself in that sequence - those ideas that may be part of an irrational nature. Once again it is only necessary that you observe these thoughts at B in connection with As, Cs, Ds, and Es.

Let us depart somewhat at this time and move into a slightly more structured sequence. If possible, I am
going to ask you to concentrate on a situation in your life, a time in the present, past, or future wherein you believed a significant person such as your mother, father, friend, boss, teacher, husband, or wife placed you in a position where you felt intimidated or afraid that the person would view you as a failure if you did not live up to their expectations and consequently would do something to hurt you - such as withdraw their love and approval that you so desperately need, refuse recognition of you - or simply give you the impression that you better be ready for something bad to happen.

I am sure that most if not all of you could relate to some situation like that. If at this time you cannot identify with such a situation try to imagine what it would be like with something like this happening to you.

At this time simply passively reflect on this event - like you did earlier.

Now, focus your attention on point B - what you are telling yourself about the situation at point A. I will guide your thoughts or simply suggest what you may be thinking. My suggestions will be based on what we hypothesize about may people's attitudes and thinking patterns associated with duodenal ulcer.

Concentrate passively on these ideas.
1. I must be alert and on guard. (Repeat)
2. I have to be ready for anything. (Repeat)
3. I cannot let anybody get ahead of me - I must be
an effective person and must not fail under any circumstances. I could not cope with failure. (Repeat)

4. If I would fail, people would know that I am worthless or inadequate. (Repeat)

5. I can't stand being placed in such a situation - I would like to strike out but I had better inhibit my anger. (Repeat)

6. I should never feel anger or express it. (Repeat)

7. I must compete but it frightens me, because people, especially authorities, can somehow hurt me. (Repeat)

8. I need some people to rely on, but this makes me feel so weak and inferior that I get very frustrated and angry, but can't seem to express it. I sometimes hate myself. (Repeat)

9. I have found myself feeling this way in the past many times. I will always feel this way. (Repeat)

You are now reflecting on many of the ideas that supported, reinforced, or gave rise to many of the emotional and bodily states that have been problematic for you. Be aware of these internal sentences. Be aware of how you evaluated your situations, and how you evaluate yourself. Notice how these thoughts "I must be alert and on guard." "I have to be ready for anything." "I must not let anyone get ahead of me," frustrate you, produce anxiety, cause your gastric acid level to rise, and lead to ineffective ways of coping or dealing with many life situations.

In between our sessions with you, you will notice that you will become increasingly aware of those irrational ideas that you have associated with many life situations. You will allow yourself to see how these ideas influence
your emotions, your bodily responses to your emotions, and your behavior. You will find that you may become more accepting of these tendencies, less frustrated by them, and become more desirous to overcome them.

For just a moment you may stop reflecting on these thoughts, feelings, bodily responses, and behaviors and let yourself actually experience them. For instance, you probably have begun to notice that as you think of certain previously described events and tell yourself certain irrational thoughts that you become anxious, frustrated and/or angry. You can feel your stomach becoming somewhat tense and acidic. You can envision yourself acting ineffectively. Experience for a moment, your entire ABCDE sequence. Notice how uncomfortable you are. (Pause) Now, STOP imagining and experience the sequence. Just relax and allow your mind to clear itself. (Pause) Concentrate on relaxation. Your mind is clear and comfortably alert. Your body is deeply relaxed. (Pause).

If you will, we are now going to move into a second part of this experience - rational restructuring. At first I am going to ask you to reflect passively on this experience - just like you did earlier. But this time visualize the more rational self enhancing ABCDE sequence.

Let us begin: At Point A. Imagine the same event or events you determined to be of personal significance to you in the previous sequence. Simply reflect on this
situation for a moment or two. Visualize clearly the event at Point A. This time, however, you may wish to slow your mind and observe a more self enhancing or rational set of thoughts occurring at Point B. Observe at Point B your thoughts about the situation. They may be something like this "I don't like what is happening to me or could happen to me in this situation and it is important for me to see clearly what is going on so I could deal more effectively with it. I can respond rather calmly to this situation and cope with it. Rarely is any situation a matter of life or death. Even if I did not deal effectively with this situation, that hardly makes me a failure as a human being. I can express my feelings in spite of what others may think - although it would be in my best interest to try to act appropriately - even if I don't have things exactly the way I would like. Even though I need to be concerned over what is going on I don't have to be overly preoccupied with this situation. Nor do I have to be terribly preoccupied with what I think may happen in the future. Frankly, it is doubtful that any major catastrophes are really going to happen. Even if the worst occurred I would probably have the ability to cope with it. How can anybody really disturb me - unless I allow them to? While in the past I have often depended on others for their approval or disapproval of me, I don't have to be so dependent on their approval
for a sense of personal worth. Most likely, I am of value to myself because I exist. I do have the right to express myself and need not punish myself with blame, guilt, anger, and fear. I certainly have the right to be frustrated at times and also have the right to express my feelings - Even if people retaliate or disapprove of me, I don't have to personalize their behavior. If someone disapproves of something I do, that doesn't mean they are disapproving of me.

As you observe these more self-enhancing or rational thoughts or ideas you begin to notice a lessening of tension - a lessening of anxiety, a lessening of anger - a more comfortable emotional state. You are yourself becoming calmer and more relaxed. You notice that your mind become sharper and clearer - Your forehead becomes comfortably cool - your body becomes comfortably warm. Notice how these more rational thoughts become associated with more desirable feelings and bodily states. Observe your body relax - Observe your forehead - notice how comfortably cool it becomes. Notice how clear your mind becomes. Notice how your thoughts, feelings, and bodily responses set the stage for a more effective way of dealing with uncomfortable situations. You may even notice your stomach calming as your thoughts become more rational and more appropriate.
You may now wish to allow yourself to participate fully in this more rational sequence. As you talk to yourself more rationally about problematic situations, you begin to experience more pleasant emotions, and you become less distressed, your body becomes more relaxed, and you observe yourself acting more effectively. Allow yourself to enjoy this more self enhancing sequence. For a few moments capture this more desirable sequence and continue to relax. (Pause)

As you continue to relax, you may wish to concentrate on several ideas about some work you may wish to do in between our session. First, try to listen to the tapes we have prepared for you at least four to six times this week. Second, continue to read Ellis' New Guide to Rational Living. Third, give some time each day to relearning the technique of cognitive restructuring in real life situations. With practice you will be able to achieve greater mastery over the procedures. I would also suggest that you practice the relaxation exercise as frequently as possible. You will also find that as you practice these procedures, as you concentrate on the techniques you are learning - you will remember these procedures. And you will be able to use them in many, many situations in your life. You'll begin to find that the use of these procedures at the highest levels of consciousness, will begin to filter into the lowest levels of consciousness. And you may find in time that you may
be able to use these procedures unconsciously, at levels below the threshold of awareness. But for now its only important that you practice these procedures. Just continue to relax a few more moments.

I will now count from 1 to 10. When I reach 10 your eyes will open - you will be comfortable and relaxed - your mind will be clear and alert, 1, 2, 3, r, 5, 6, 7, 8, 9, 10.
APPENDIX R

Cognitive Restructuring in the Stages of Commitment, Implementation, Internalization and Behavioral Stabilization

This transcript was originally prepared by Donald Tosi for use with a hypertensive population (Tosi et al., 1982). It has been modified here only slightly for application to a duodenal ulcer population.

At this time, I will ask you to close your eyes and begin to take slow deep breaths. With each deep breath you take, you will simply allow yourself to go deeper and deeper into relaxation. Because you have had extensive opportunities to practice self-relaxation, you will be able to take yourself into a very relaxed state in just a few short seconds. Your eyes, your arms, your legs will become more and more relaxed. You may notice your mind and your body slowing themselves down and your mind becoming very clear. I will now count backwards from ten to zero. When I reach zero, your body will be very relaxed. You may begin to feel the sensations of a sleeplike state, your mind will be alert, sharp and able to concentrate very, very effectively. 10...9...8...7...6...5...4...3...2...1...0. You make take yourself deeper and deeper into this exclusive state of relaxation and focused concentration by breathing rhythmically. Over the past several weeks you have engaged in some rather significant therapeutic work. You have become...
aware of how your thoughts effect your body, your bodily responses, and your behavior. You have become increasingly aware of the process of self-exploration, that your thoughts influence your feelings, the way your body responds, and the way you respond to life situations. (Pause) For instance, you have absorbed and explored that when you talk to yourself in irrational ways, such as those described earlier, you have a greater tendency to become upset and to experience changes in your body. For instance, you may observe that when you talk to yourself in irrational ways, you find that your stomach sometimes tenses and becomes more acidic. You have explored both irrational ways of thinking and more rational ways of thinking. Now this evening, I want you to concentrate only on the more rational thoughts you have recently become aware of and have explored. Focus on these more rational thoughts, such as, "When things don't go the way I would like them to go, I can stand it. I can deal more effectively with things that don't go the way I would like them to go. I can respond more calmly and cope with such situations. Rarely is any situation a matter of life or death. Even if I did not deal effectively with the situation, or those situations that I have determined to be of significance to me, that hardly makes me a failure as a human being." Remember, even though you may not deal effectively with a situation, you are not a failure as a human being. "I can express my feelings
and my thoughts in spite of what others may think, although it is in my best interest to try and act appropriately even if I don't have things exactly the way I would like. I do not have to be terribly preoccupied with what I think may happen in the future. What major catastrophes are really going to happen that I cannot properly cope with? How can anybody disturb me unless I allow them to. While in the past, I have often depended on others for their approval or disapproval of me, I don't have to be so dependent on their approval for a sense of personal worth; I am of value to myself because I exist. I do have the right to express myself and need not punish myself for the blame, guilt, anger and fear. As I observe these more self enhancing or rational ideas, I begin to notice a lessening of tension, a lessening of anxiety, a lessening of anger a more comfortable emotional state. I begin to notice that my mind become sharper and clearer, I begin to notice that my body responds more appropriately and I may even notice my stomach relaxing and becoming less acidic." Notice how clear your mind becomes. Notice how clear your mind becomes and notice your stomach relaxes as these more rational thoughts become more and more apparent. Now, as you concentrate on these more rational thoughts, you begin to notice yourself becoming more committed to them. You become more and more committed toward thinking and acting
in more rational ways, you find that you are better able to implement such thinking and acting on a day to day basis. Notice how much more self enhancing it is to think and act in more rational ways and how pleasant it is to control your own behavior, emotions and bodily responses. Recall some of the different ways of acting rationally that we have explored earlier. See yourself beginning to implement these ways of behaving. You will find them easier to transfer outside of the sessions after you have practiced implementing them here. You may see yourself implementing these more rational ways of thinking and behaving, to which you have made a commitment, you begin to notice that they become a part of you. You begin to internalize these more rational ways of thinking and behaving. They become part of your system, both consciously and unconsciously. You can now imagine that you are in the act of internalizing the process of rational thinking and acting that lead to more desirable feelings, bodily responses and behavior. Allow yourself to experience that process of internalization, a process of translating more rational ways of thinking into more positive emotions, bodily responses and behavior. Notice as you do this, your stomach relaxes and becomes less acidic, your behavior becomes more and more effective. As you continue to relax and continue to concentrate on talking to yourself in more rational ways,
the process of internalization become easier and easier. As you internalize more rational ways of thinking, notice the lessening of tension, the lessening of anxiety, the lessening of anger, not only in the present, but even in the future. Internalization occurs over a period of time. Such rational ways of thinking will be internalized over a period of time, having implications for a lessening of anxiety and anger over an extended period of time. (Pause) Continue to relax and to concentrate on talking to yourself in more rational ways. (Pause) Let me repeat the process once again for you. As you concentrate on the ideas (Pause) that you have explored over the past several weeks, those ideas of more rational nature, you will find that you have become increasingly committed to implementing them and internalizing them. For instance, the idea that "I must be alert and on guard all the time, or else," simply translates into, "I can be appropriately alert. I can be sharp; I can be responsive." The idea that "I have to be ready for anything, or else," simply translates into, "if I'm alert, I can be responsive. I can be responsive in an appropriate manner." The idea that "I cannot let anyone get ahead of me. I must be an effective person and must not fail under any circumstances," translates into, "I can achieve a more effective life, failure is not horrible because there is no such thing as total failure, even though I may fail at a task, that hardly
makes me a failure as a human being." The idea that "if I would fail, people would know that I'm a worthless human being," translates into, "failure, a failure, can never make me worthless." Notice as you concentrate on the more rational parts or these more rational ideas, you become increasingly committed to implementing these on a day to day basis in your life. You become increasingly committed to not only implementing these ideas but to internalizing them. You can even begin to see yourself, perhaps in the future, thinking more rationally, feeling more desirable feelings, being more calm and more effective as a human being over an extended period of time. The thought of that is very, very desirable. (Pause) You will find that our work here will continue even though our sessions will come to an end shortly. Many of the things that you have learned here about yourself will become part of you. You will find that many of these things or these ideas that you have explored, that you have tested out, become committed, to, ultimately implemented and internalized, will remain with you. As you become more and more committed to some of these ideas and implement them more frequently in your life, you will find that your awareness of yourself will increase more and more. You will realize that life is never perfect, that we as human beings are never perfect, be we certainly can strive for a far more effective existence. You will
find that your awareness of yourself will become more
and more expanded as you study, read, practice new thoughts
and behaviors. Rehearse these new thoughts and behaviors
in your mind. Continue to practice these procedures and
exercises. And the incredible thing is that you will
find that the procedures that you have explored and that
you have learned here and internalized, will become
easier, and easier, and easier and more and more automatic.
It's as if you have through extensive practice achieved
a higher degree of personal and self-control. There will
be many things in life that will remind you of many of
the things that we have done here. For instance, when
events occur in your life that you thought were the major
sources of your personal disturbance, you will almost
automatically ask yourself: "What am I telling myself?
How am I appraising the situation? How am I appraising
my responses to the situation? How am I appraising myself?"
You may find that your abilities to discriminate between
situations, your responses, and your entire self, will
become much more effective. You will continue working on
yourself even though you do not have to work on yourself.
You may want to continue to work on yourself, simply
because you know such work serves your best interest as a
human being. We have concentrated our attention on commit-
ment, implementation and internalization. Notice as you
internalize these more rational ways of thinking, they
become a part of you. They become a part of your system. I will now count from one to five. When I reach five, your eyes will open if you so desire. 1...2...3...4...5.