INTRAPSYCHIC AND INTERPERSONAL FACTORS RELATED TO HYPOACTIVE SEXUAL DESIRE

by

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ABSTRACT

Hypoactive sexual desire is one of the most prevalent psychosexual problems seen by clinicians, yet there is little consensus as to its etiology, maintenance, appropriate therapeutic intervention or prognosis. Sexual disinterest is considered to be difficult to treat due to severe intrapsychic and/or interpersonal conflict. Few empirical studies exist, however, regarding intrapsychic or interpersonal dynamics in couples where one spouse is assigned the diagnosis of hypoactive sexual desire (HSD).

The purpose of this study was to develop a clearer understanding of the intrapsychic and interpersonal dynamics of the clinical group diagnosed with hypoactive sexual desire. Individual and interactional data was collected from both diagnosed individuals and spouses. The sample consisted of three groups of subjects and their partners. Twenty-two subjects assigned a DSM-III-R diagnosis of lifelong or acquired, generalized Hypoactive Sexual Desire (HSD) and their spouses were compared on intrapsychic and interpersonal variables with two groups consisting of twenty-one sexually dysfunctional subjects displaying a DSM-III-R arousal or orgasm disorder (SDys) and their spouses, and 19 couples with no reported sexual dysfunction (NSD). Only subjects free from other Axis I disorders, medical illness, or substance abuse were selected. Control subjects met similar criteria but had no reported sexual dysfunction. All partners were sexually functional.

Subjects were administered: the Derogatis Sexual Functioning Inventory (DSFI), the Sexual History Form (SHF), the Medical History Questionnaire (MHQ), the Minnesota Multiphasic Personality Inventory (MMPI), the Affect Balance Scale (ABS), the State-Trait Anxiety Inventory (STAI), the Dyadic Adjustment Scale (DAS)
and the *Structural Analysis of Social Behavior* (SASB) over a three week period. Statistical procedures used to analyse the data included Canonical Correlation, ANOVA, Profile Analysis, Hotelling's test ($T^2$) and Student-Newman-Keuls test procedure.

The test results measuring intrapsychic phenomena revealed that although all groups had normal MMPI profiles, the affect/anxiety variate was significantly elevated in the HSD and SDys groups. In addition, self concept as measured by the SASB introject was significantly more negative in the HSD and SDys groups as compared to the control group. No significant intrapsychic differences were found between partners in the three groups.

The interpersonal measures indicated that HSD subjects and SDys subjects perceived their relationships as less nurturing and affirming than did control subjects. Additionally, HSD subjects and their spouses perceived their relationships as measured by the SASB to be more hostile. The study provides some evidence to support the view that HSD subjects have lower self concepts and higher relationship conflicts than do subjects with arousal or orgasm problems or control subjects.

Similar to much of the previous research conducted on nonmedical aspects of human sexuality, the study design was exploratory and descriptive in nature thus removing any possibility of drawing cause and effect conclusions.
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CHAPTER I. INTRODUCTION

A. NATURE OF THE PROBLEM

Hypoactive sexual desire has been recognized in the literature as a distinct clinical entity since 1977 (Kaplan, 1977; Lief, 1977), and as a specific psychosexual disorder since the publication in 1980 of the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition* (D.S.M.-III) (American Psychiatric Association, 1980). The *Diagnostic and Statistical Manual of Mental Disorders, Third Edition - Revised* (D.S.M.-III-R) (American Psychiatric Association, 1987), provides the current diagnostic criteria for hypoactive sexual desire:

A. Persistently or recurrently deficient or absent sexual fantasies and desire for sexual activity. The judgment of deficiency or absence is made by the clinician, taking into account factors that affect sexual functioning, such as age, sex, and context of the person's life.

B. Occurrence not exclusively during the course of another Axis I disorder (other than Sexual Dysfunction), such as Major Depression.

The incidence of hypoactive desire in the general population is not known, yet it is believed to be the most prevalent of all sexual problems presented to clinicians (Crown & D'Ardenne, 1982; Hammond, 1984; Kaplan, 1979; Lief, 1981). Although, historically, lack of sexual desire has been identified as a female issue, present reports suggest a universality of the problem in the general as well as in the clinical population (Hammond, 1984; LaFerla, 1984; Frank, Anderson & Rubenstein, 1978; LoPiccolo, 1980).

Factors related to the problem of hypoactive sexual desire have been
discussed in the literature and there is general agreement in three areas. First, a multiple of determinants, physiological, psychological and sociological are implicated as factors which may affect sexual desire. Second, hypoactive sexual desire constitutes a separate clinical subgroup and specific differences exist (for example, separate neurophysiological systems) between the three phases of the sexual response cycle: desire, arousal and orgasm. Third, hypoactive sexual desire, when treated, does not respond to short term sex therapy treatment strategies (Kaplan, 1979; Lief, 1981; LoPiccolo, 1980).

Hypoactive sexual desire is generally regarded as a disorder with a difficult treatment path and a poor prognosis. It is believed by some clinicians that persons suffering from hypoactive sexual desire are afflicted with deeper, more serious intrapsychic, interpersonal or sexual related problems than are persons exhibiting arousal or orgasm disorders (Kaplan, 1979). As pointed out in the review of the literature, although there is much conjecture regarding the differences between persons who develop desire phase disorders and persons who develop arousal or orgasm disorders in terms of intrapsychic and interpersonal factors, there is a lack of empirical evidence to support or refute the nature of these discrepancies. Kaplan (1979), a leading conceptualizer and author in human sexuality, maintains that subjects experiencing hypoactive sexual desire suffer from more profound and tenacious anxieties, more hostile and neurotic personal associations and/or more psychogenic factors such as depression, than do subjects who experience arousal or orgasm disorders. In fact, Kaplan (1979) puts forward the hypothesis that critical levels of intrapsychic or interpersonal conflict may be related to the type of sexual dysfunction experienced. For instance, she suggests that severe intrapsychic or relationship discord appears to be related to desire
phase disorders whereas less severe intrapsychic or relationship discord appears to be related to arousal or orgasmic disorders. As yet, there is no empirical data to support or refute this hypothesis.

This research was designed to investigate the intrapsychic and interpersonal functioning of individuals currently assigned a diagnosis of hypoactive sexual desire and their spouses. The study explored the view that individuals experiencing hypoactive sexual desire may be afflicted with deeper, more serious intrapsychic and interpersonal problems than persons experiencing dysfunction of arousal or orgasm phases of the sexual response cycle.

B. PURPOSE OF THE STUDY

The purpose of the study was to achieve a clearer description and understanding of the intrapsychic and interpersonal functioning of a clinical group assigned a diagnosis of hypoactive sexual desire. To accomplish this task, the objective of the study was to answer the following questions:

Do individuals experiencing hypoactive sexual desire differ from individuals experiencing arousal or orgasm dysfunction, or from control group individuals, on intrapsychic or interpersonal functioning? If so, how?

Do partners of individuals experiencing hypoactive sexual desire differ from partners of individuals experiencing arousal or orgasm dysfunction, or from control group partners, on intrapsychic or interpersonal functioning? If so, how?

Is hypoactive sexual desire related to deeper, more complex and more serious intrapsychic and/or interpersonal problems compared to arousal and orgasm disorders?

Does intrapsychic or interpersonal functioning differ in spouses where hypoactive
sexual desire is a problem as compared to spouses where arousal or orgasm problems exist? If so, how?

The research was designed to address the questions central to the purpose of the study through the use of both individual and interactional data as recommended by several researchers (Hoch, Safir, Peres & Shepher, 1981; Lo Piccolo & Friedman, 1988; McCarthy, 1984). The investigation questioned the strength of the relationship between sexual and intrapsychic functioning and sexual and interpersonal functioning. The research was also designed to explore whether or not the interpersonal marital functioning between spouses differed in relationships where hypoactive sexual desire was a problem as compared to relationships in which arousal or orgasmic dysfunction was a problem or relationships with no sexual dysfunction.

C. SIGNIFICANCE OF THE STUDY

The study has significance for both clinical practice and for theory refinement. For example, treatment methodologies related to hypoactive sexual desire are presently based on untested assumptions. The idea proposed by Kaplan (1979) of sexual problems occurring as a function of degree or level of psychopathology or relationship discord is an interesting and potentially important concept. It has not only theoretical implications but also implications related to the diagnosis and treatment of hypoactive sexual desire. As such it warrants careful research. For instance, supporting evidence for the idea that critical levels of intrapsychic or interpersonal conflict are related to the type of sexual problem experienced, would support the psychodynamic theory of sexual dysfunction. This theory proposes that critical levels of anxiety, regardless of their underlying
causes, are related to the development and maintenance of sexual problems (Kaplan, 1979; Masters & Johnson, 1970). Evidence supporting the idea that critical levels of intrapsychic or interpersonal conflict are related to the type of sexual problem experienced would help to direct the course of treatment possibilities for problems related to specific phases of the sexual response cycle. For example, group treatment may be considered more appropriate for sexual problems related to less profound anxieties or relationship conflict while long term individual or couple treatment programs may be better suited to sexual problems associated with more profound neurotic or relationship issues. On the other hand, should no supporting evidence result from the investigation for the relationship between sexual functioning and intrapsychic or relationship discord, the idea that hypoactive sexual desire sufferers are more conflicted, either intrapsychically or interpersonally will be challenged. Here again the findings would be valuable in that inaccurate perceptions of the subject/couple would be challenged and new perceptions and treatment strategies explored.

It is important to test the assumptions and models which guide treatment strategies in psychology. Assumptions regarding human sexuality which have provided the basis for treatment of sexual problems have, historically, been inaccurate and misleading. For instance, as Kaplan (1974) points out in her review of the history of treating sexual problems, theoretical speculation once led to the unsubstantiated hypotheses that "vaginal" orgasms expressed normal and healthy functioning while a preference for clitoral stimulation reflected a deep seated neurosis. Unfortunately the misconception not only impaired treatment effectiveness but also led to unnecessary feelings of frustration and shame for many individuals and couples.
Although it is not designed to address causal issues, the present study represents an important step in describing and defining the relationship between hypoactive sexual desire, intrapsychic variables and relationship discord.

D. DEFINITION OF TERMS

Sexual Dysfunction is a subclass of Sexual Disorder in the DSM-III-R (American Psychiatric Association, 1987). The essential feature of the sexual dysfunction is inhibition in the appetitive or psychophysiolgic changes that characterize the complete sexual response cycle. In keeping with the three phase concept of the sexual response cycle, dysfunctions are organized into the following phases: desire, arousal, and orgasm. Inhibition may occur at one or more of these phases. The study groups were designed to separate sexual dysfunction of the desire phase (hypoactive sexual desire) from arousal and orgasm dysfunctions for comparative purposes. In order not to be confusing or repetitive with the term sexual dysfunction in the dissertation, sexual arousal and orgasm disorders will henceforth be referred to under the general term of sexual dysfunction (SDys) while sexual desire disorder will be referred to separately as hypoactive sexual desire (HSD).

Couple. A couple refers to a heterosexual partnership in which subjects are currently living together and are either married or living common law. The word couple in this study is synonymous with a spousal unit or a dyad.

Group One: Hypoactive Sexual Desire (HSD). Group One refers to subjects and partners who met the criteria for inclusion in the study with a diagnosis of Hypoactive Sexual Desire.

Group Two: Sexual Dysfunction (SDys). Group Two refers to subjects and
partners who met the criteria for inclusion in the study with a diagnosis of one of the following four arousal or orgasm disorders: Female Arousal Disorder, Male Erectile Disorder, Premature Ejaculation, or Inhibited Female Orgasm. Group Two subjects and partners were matched according to age with Group One subjects and partners.

**Group Three: No Sexual Dysfunction (NSD).** Group Three refers to control or comparison subjects who met the study criteria of No Sexual Dysfunction. Group Three subjects and partners were matched according to age with Group One subjects and partners.

**Hypoactive Sexual Desire (HSD) subjects.** For the purpose of this study, HSD subjects were defined as those subjects between the ages of 22 and 50 who were diagnosed as suffering from lifelong or acquired, generalized hypoactive sexual desire disorder according to the criteria found in the DSM-III-R (American Psychiatric Association, 1987) (see Appendix A). The operational definitions of the DSM-III-R criteria for the study were as follows: (a) subject reports lack of desire for sexual activities, (b) subject or partner identify lack of sexual desire as a problem, (c) frequency of intercourse being twice a month or less as reported on the *Sexual History Form* (SHF), and (d) score of 13 or less on the *Derogatis Sexual Functioning Inventory* (DSFI) drive scale. Hypoactive Sexual Desire (HSD) in this investigation is used synonymously with the terms Inhibited Sexual Desire (ISD) and Sexual Disinterest (SD). Please refer to Chapter II, pages 29-32 for the reference as to why these criteria were chosen to operationalize HSD.

**Interpersonal variables.** Interpersonal variables refer to measures of marital adjustment as determined by the *Dyadic Adjustment Scale* (DAS) (Spanier, 1976); and transactional behavior patterns of initiating and responding behavior as
indicated by *Structural Analysis of Social Behavior* (SASB) (Benjamin, 1974) interpersonal planes.

**Intrapsychic variables.** Intrapsychic variables refer to clinical characteristics, personality traits, and psychopathology as measured by the ten clinical scales of the *Minnesota Multiphasic Personality Inventory* (MMPI) (Hathaway & McKinley, 1943); affect as measured by the *Affect Balance Scale* (ABS) (Derogatis, 1975a); trait anxiety and sexual state anxiety as indicated by the *State Trait Anxiety Inventory* (STAI) (Spielberger, Gorsuch & Lushene, 1970); and self concept as measured by the intrapsychic plane of the *Structural Analysis of Social Behavior* (SASB) (Benjamin, 1974).

**No Sexual Dysfunction (NSD) subjects.** NSD subjects were defined as those subjects between the ages of 22 and 50 who met the following criteria: (a) subjects score 15 or more on the *Derogatis Sexual Functioning Inventory* (DSFI) drive scale, (b) subjects report a frequency of intercourse four times a month or more on the *Sexual History Form* (SHF) and (c) subjects state that neither spouse suffers from a sexual disorder of desire, arousal or orgasm.

**Sexual Dysfunction (SDys) subjects.** For the purpose of this study, SDys subjects were defined as those subjects between the ages of 22 and 50 who were diagnosed according to the criteria found in the DSM-III-R (American Psychiatric Association, 1987) (see Appendix A) as suffering from one of the following arousal or orgasm disorders: Female Sexual Arousal Disorder, Male Erectile Disorder, Inhibited Female Orgasm or Premature Ejaculation. The orgasm disorder of Inhibited Male Orgasm (Retarded Ejaculation) was not included in study Group 2 for two reasons: inhibited male orgasm tends to be rare as compared to other orgasm disorders and unlike other arousal or orgasm disorders
it is viewed as symptomatic of deep seated disturbance (Kaplan, 1979; Apfelbaum, 1988). Subjects in Group 2 (SDys) must score 15 or more on the Derogatis Sexual Functioning Inventory (DSFI), drive scale.

**Partner of Subject.** Partner of Subject refers to the marital or the common-law spouse of the subject in Group One and Two and the randomly assigned partner in Group Three. For inclusion in the study, partners and subjects must report that the partner’s sexual response (desire, arousal and orgasm) was functional.

**Subject.** Subject refers to the hypoactive sexual desire individuals in Group One, the sexually dysfunctional individuals in Group Two and the randomly assigned subjects in Group Three.

Operational definitions for the study variables are listed below:

**Sexual Functioning.** Sexual information, experience, drive, attitude, role perception, fantasy, body image, satisfaction, and sexual functioning index scores as measured by the Derogatis Sexual Functioning Inventory (DSFI).

Twenty-eight sexual history question scores as measured by the Sexual History Form (SHF).

**Intrapsychic Functioning.** Hypochondriasis, depression, hysteria, psychopathic deviate, masculinity/femininity, paranoia, psychasthenia, schizophrenia, hypomania and social introversion scores as measured by the Minnesota Multiphasic Personality Inventory (MMPI).

Affect score as measured by the Affect Balance Scale (ABS).

Trait and sexual state anxiety scores as measured by the State-Trait Anxiety Inventory (STAI).

Self Concept scores as measured by the Structural Analysis of Social Behavior (SASB) intrapsychic plane.
Interpersonal Functioning. Marital satisfaction, cohesion, consensus, affection and adjustment scores as measured by the *Dyadic Adjustment Scale* (DAS). Spousal initiating and responding scores and Self initiating and responding scores as measured by the *Structural Analysis of Social Behavior* (SASB) interpersonal planes.

E. OVERVIEW OF THE STUDY

In order to answer the questions and hypotheses proposed in this study, three groups of couples were sought. Group One consisted of spouses wherein one partner suffered from a lack of sexual desire (hypoactive sexual desire). Group Two included spouses wherein one partner suffered from an arousal or orgasm dysfunction. Group Three was composed of spouses with no sexual dysfunction. All individuals (subjects and partners) in the three groups were interviewed and completed questionnaires measuring variables in three domains, sexual, intrapsychic and interpersonal functioning.

Two separate analyses were undertaken on different data. First, in order to explore the differential importance of the many variables measured which are associated with sexual functioning and hypoactive sexual desire, the multivariate analysis technique of canonical correlation was chosen as the preliminary statistical procedure. Canonical variates generated by the canonical analysis were subsequently employed as criterion variables in analyses of variance (ANOVA) to answer the research questions regarding group difference. The significance of group difference was tested using the Student-Newman-Keuls test procedure.

Second, in order to explore whether or not interpersonal marital behavior differed in some way between spouses where hypoactive sexual desire was a
problem and spouses where sexual arousal or orgasm dysfunction was a problem, profile analyses were performed on data generated from the battery of questions (INTREX questionnaire form A and B) associated with Benjamin's (1974) *Structure Analysis of Social Behavior* (SASB). The significance of group profile difference was tested using Hotelling's $T^2$ procedure. Profiles were further studied using the Student-Newman-Keuls test procedure to identify variables contributing to group differences.

**F. RESEARCH QUESTIONS**

The research questions for the study arise out of the review of the literature and are organized in the dissertation according to the measures and analyses chosen to answer the research question. Individuals assigned a diagnosis (subjects) were analysed separately from their partners and will precede the latter in presentation.

**A. Analysis I**

a. *Subjects*

1. What is the maximum strength of the statistical relationship between sexual functioning variables and intrapsychic variables? What is the conceptual nature of this relationship?

2. Is there a statistically significant difference between subjects in the three groups (HSD, SDys, NSD) on the canonical variates obtained in the canonical analyses? Does the group representing hypoactive sexual desire subjects differ significantly from the other two groups of subjects on these variates?

3. What is the maximum strength of the statistical relationship
between sexual functioning variables and interpersonal variables? What is the conceptual nature of this relationship?

4. Is there a statistically significant difference between subjects in the three groups (HSD, SDys, NSD) on the canonical variates obtained in the canonical analyses? Does the group representing hypoactive sexual desire subjects differ significantly from the other two groups of subjects on these variates?

b. Partners of Subjects

5. What is the maximum strength of the statistical relationship between sexual functioning variables and intrapsychic variables? What is the conceptual nature of this relationship?

6. Is there a statistically significant difference between partners of subjects in the three groups (HSD, SDys, NSD) on the canonical variates obtained in the canonical analyses? Does the group representing partners of hypoactive sexual desire subjects differ significantly from the other two groups of partners on these variates?

7. What is the maximum strength of the statistical relationship between sexual functioning variables and interpersonal variables? What is the conceptual nature of this relationship?

8. Is there a statistically significant difference between partners of subjects in the three groups (HSD, SDys, NSD) on the canonical variates obtained in the canonical analyses? Does the group representing the partners of hypoactive sexual desire subjects differ significantly from the other two groups of partners on
these variates?

B. Analysis II

a. Subjects

9. Is there a statistically significant difference between the three groups of subjects (HSD, SDys, NSD) on how they respond to the intrapsychic questions associated with Benjamin’s (1974) *Structural Analysis of Social Behavior* (SASB)?

10. Is there a statistically significant difference between the three groups of subjects (HSD, SDys, NSD) on how they respond to the interpersonal questions associated with Benjamin’s (1974) *Structural Analysis of Social Behavior* (SASB)?

b. Partners of Subjects

11. Is there a statistically significant difference between the three groups of partners (HSD, SDys, NSD) on how they respond to the intrapsychic questions associated with Benjamin’s (1974) *Structural Analysis of Social Behavior* (SASB)?

12. Is there a statistically significant difference between the three groups of partners (HSD, SDys, NSD) on how they respond to the interpersonal questions associated with Benjamin’s (1974) *Structural Analysis of Social Behavior* (SASB)?

The research questions stated above are translated into research hypotheses which appear at the end of Chapter II.
G. SUMMARY

An introduction to the study has been presented in Chapter I. The conceptual foundation for the research is provided in Chapter II which contains a general review of the literature related to sexual desire disorder. Chapter III outlines the methodology and statistical procedures used in the study. Chapter IV reports the results of the investigation and Chapter V provides a discussion of the results in relation to the research questions and current literature. Chapter VI summarizes the research and discusses the limitations of the study. Suggestions for future research conclude the chapter.
CHAPTER II. REVIEW OF THE LITERATURE

A. INTRODUCTION

This is a general review of literature relevant to the topic of sexual disinterest. The goal of the literature review was to synthesize and integrate what has been thought and researched in the area of disorders of sexual desire. The general overview nature of the review is necessary because, although clinical literature regarding the problem of hypoactive sexual desire is abundant, empirical literature is limited to four or five studies. The review commences with an historical overview of the evolution in conceptualization of the human sexual response cycle which has led to the recognition of desire phase disorders. This is followed by a theoretical discussion of sexual desire. This section is concerned with current conceptual models and theoretical views of sexual desire. The next section addresses biological, intrapsychic and interpersonal factors believed to be related to desire phase disorders. Clinical data and current research concerning sexual desire problems are presented in this section. The final section of the literature review outlines questions arising from the review which this study has undertaken to answer and then the research hypotheses of the study are presented.

B. HISTORICAL AND CURRENT VIEWS OF SEXUAL RESPONSE

Understanding of human sexuality and the subsequent therapeutic approaches developed to treat sexual dysfunctions have endured a remarkable transformation over the past years precipitated by rapidly expanding knowledge in the domain of human sexuality. The extent of the metamorphosis reflects the
dramatic reappraisal of the concept of sexuality since the birth of modern medicine in the seventeen century. At that time, for instance, female sexual expression, formerly viewed as immoral became viewed as unhealthy. Some French physicians maintained that any sexual excitement in women was a melancholic affliction while others stigmatized the open display of sexual desire as a sure sign of mental disease (Money, 1985). An idea that masturbation posed a grave medical hazard materialized in the eighteenth century. The treatment for both nymphomania and masturbation was bloodletting from the 'afflicted' individual. This method evolved from the belief that sperm were precious and in need of preservation, whereas the blood of the sick was seen as poisonous and hence in need of elimination (Money, 1985). The doctrine of masturbatory insanity was firmly endorsed by the civilized world until the advent of the revolutionary psychoanalytic theory of sexuality (Freud, 1905). This theory was at once a treatment method and also a model of personality and psychopathology which enabled the understanding and prediction of otherwise inexplicable human behavior. In emphasizing the power of sexuality in human behavior, psychoanalytic theory addressed the importance of childhood experience in shaping adult behavior and destiny and offered the concepts of libido and unconscious motivation as well as the constructs of repression and resistance.

This transition in sexual doctrine in the early twentieth century led to the wide acceptance of sexual dysfunctions as symptoms of an individual's general personality and neurotic problems. It was felt that sexual problems reflected the influence of instinctual drives, maturational changes in focus of sexual responsiveness from the oral to the anal to the genital zone, and early childhood experiences (Fenichel, 1945; Freud, 1905). Within this view, treatment of sexual
dysfunction was dominated by two major therapies, Freudian Psychoanalysis and Jungian Analytic Psychology. However, not only was no special attention directed toward sexual problems as such, but the subject was treated in isolation with no involvement of the sexual partner. Psychotherapy was an individual, insight-oriented long term treatment process. Psychotherapy from this perspective, although providing the context for personal development and understanding, did not result in the successful treatment of sexual problems *per se*.

In the early twentieth century, the human sexual response was viewed as a unitary event. Little was known, then, of the physiology or emotional concomitants of the sexual response cycle. No distinctions were made between phases of the response cycle, nor were distinctions made between various sexual dysfunctions. For instance, females who reported discomfort during intercourse, lack of orgasm, or disinterest in sexual activity were all diagnosed as frigid. Males who suffered from erectile failure along with those who reported the problem of premature ejaculation, both received the diagnosis of impotence. All sexual dysfunctions were grouped together as a single entity according to the sex of the subject. The unitary view of the sexual response cycle resulted in a unitary diagnosis of the problem followed by a unitary treatment. Failures in treating sexual problems from the conceptual view of the sexual response cycle as a unitary event eventually led to a reconceptualization of the process. For example, James Semans (1956) advanced the understanding and study of the male sexual response when he separated ejaculatory impotence from the catch all diagnosis of male impotence and proposed a specific behavioral treatment for the problem of premature ejaculation. Semans' insightful separation foreshadowed the conceptual separation of the arousal phase from the orgasm phase of the human
sexual response (Kaplan, 1974). This two phase conceptualization represented a significant theoretical advance in the understanding and research of human sexuality.

Ten years after Semans separated ejaculatory problems from the problem of general impotence, Masters and Johnson (1966) published their pioneer volume on sexual physiology as a result of their research in human sexuality. *Human Sexual Response* (Masters & Johnson, 1966) provided the first objective, scientific data and description of the physiology of the human sexual response in both males and females. Masters and Johnson identified four distinct physiological phases of the sexual response cycle: excitement, plateau, orgasm and resolution. Observations describing male and female sexual responses led to improved methodology in the therapeutic approach to sexual inadequacy and new behaviorally focused programs were developed to treat human sexual problems (Masters & Johnson, 1970). Thus insight oriented treatments were joined by the more pragmatic and directive view of psychological treatment in which learning or relearning, or the acquisition of healthy habits has been the basic theme. Practical behavioral approaches were based on the theoretical principles of learning derived from laboratory experiments. The publication of *Human Sexual Inadequacy* by Masters and Johnson in 1970 established a framework and terminology within which specific sexual problems might be perceived and treated. Masters and Johnson (1970) hypothesized a psychosomatic concept of sexual dysfunction. From this point of view, sexual dysfunction is seen as the product of the physiological concomitant of anxiety. The source of sexually disruptive anxiety was believed to be much simpler and more consciously perceived than was postulated by traditional psychoanalysis and psychiatry. A new clinical
approach advocated time limited, directive counselling of the couple, rather than the individual. Treatment was aimed at symptom removal rather than attainment of insight, uncovering of repressions or resolution of unconscious conflict. The results of this approach to treatment were positive and many couples experiencing sexual problems were helped.

In terms of conceptualization of the stages of the sexual response cycle, theorists continued to debate and redefine the sexual response cycle. For example, in *The New Sex Therapy*, Kaplan (1974) proposed a biphasic conceptualization of the sexual response cycle in contrast to Masters and Johnson's four phase conceptualization. Kaplan described the four successive physiological stages of the sexual response cycle elucidated by Masters and Johnson as a descriptive schema which "...has proven extremely useful for descriptive purposes in that it 'assures inclusion and correct placement of the specifics of the physiological response within the sequential continuum of human response to sexual stimuli'" (p. 13).

Kaplan (1974) suggested, however, that clinical and physiological evidence supported the view that the sexual response cycle was biphasic in nature. A biphasic framework proposes two distinct and relatively independent components of the sexual response rather than proposing a single continuous entity. Kaplan (1974) wrote of the two phases:

Actually, the underlying separateness of the two phases is so apparent that it is surprising that this has not generally been recognized. First, the two components involve different anatomical structures which are innervated by different parts of the nervous system. Erection is mediated by the parasympathetic division of the autonomic nervous system, while ejaculation is primarily a sympathetic function.
Furthermore, vasocongestion and orgasm differ with respect to their vulnerability to the effects of physical trauma, drugs and age. Finally, the impairment of erection and ejaculation in the male and of lubrication and orgasm in the female results in distinctly different syndromes which are probably caused by different psychopathological mechanisms and which respond to different treatment procedures. (p. 13)

In applying the biphasic model to sexual dysfunctions, it was theoretically and physiologically understood that an arousal stage dysfunction, such as erectile failure would have different underlying mediating factors than an orgasmic dysfunction. These two components of the sexual response cycle are viewed as separate and independent of each other (Kaplan, 1974).

Kaplan (1979) later pointed out that Masters' and Johnson's four phase descriptive classification of the sexual response cycle fits into the conceptual model of a biphasic classification system in that the excitement and plateau stages refer to different degrees of the vasodilatory arousal phase while the orgasm stage corresponds to the orgasm phase. Kaplan (1979) suggests that Masters' and Johnson's resolution phase merely refers to the absence of sexual arousal. In her more recent publication, Kaplan (1979) states:

The biphasic concept, i.e. the notion that excitement and orgasm disorders are separate syndromes, has been confirmed by clinical observations and is also supported by the response to the specific treatment strategies devised for these dysfunctions. The separation of excitement and orgasm phase dysfunctions has improved the prognosis
of the orgasmic disorders of males and females considerably. (p. xiii)

In the late 1970's however, due to failures in sex therapy, clinicians and researchers were increasingly aware of an important preliminary stage to sexual arousal or excitement. For example, in 1977 Lief wrote, “Unless there is a readiness for sexual activity, a mental set, a psychic state, in other words, sexual desire, sexual arousal or excitement usually will not ensue even in situations of intense stimulation and provocation” (p. 94). In the same year, as a result of her study regarding treatment failures in sex therapy, Kaplan (1977) wrote, “The sexual response of males and females may be divided into three phases: desire, excitement and orgasm. Desire is an appetite that has its locus in the brain, excitement and orgasm involve autonomic reflexes of the genitals” (p. 13).

The resulting triphasic conceptualization of the human sexual response introduced by Kaplan (1977, 1979) and Lief (1977) represents another significant conceptual advance in understanding the complexity of the human sexual response cycle. Prior to it, sexual desire had not been addressed by theorists or therapists. The new synthesis brought the emerging field of sex therapy closer to the actual complexities of sexual life.

With the publication of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1980) in 1980, the desire phase of the human sexual response cycle was recognized as a distinct diagnostic category under psychosexual disorders and Inhibited Sexual Desire (ISD) was recognized as a distinct syndrome. The revised edition, The Diagnostic and Statistical Manual of Mental Disorders, Third Edition - Revised (American Psychiatric Association, 1987) renamed the disorder Hypoactive Sexual Desire (HSD).
The DSM-III classification, however, as Levine (1984) points out, must be viewed in light of several considerations. First, all problems of desire are not deficiencies. Desire problems range on a continuum from total absence (Kaplan, 1979) through incompatible levels (Zilbergeld & Ellison, 1980) to frequent (Barlow & Abel, 1976) and relentless (Levine, 1982). Secondly, as proposed by Kaplan (1979), the inhibitions at the low end of the continuum may have unique etiological sources, both physical and psychological. Levine (1984) concludes: “These simple observations suggest the conclusion that the nature of sexual desire is quantitative, and that quantity can fluctuate. The concept of sexual desire as a quantity is, however, wholly inferential as sexual desire cannot be directly measured” (p. 84).

The theoretical framework through which the concept of sexual desire is viewed will influence the dimensions chosen to assess and treat the problem. The following section will focus on the concept of sexual desire and how it is represented in medical and psychological theories. The four perspectives represented in current literature are psychoanalytic theory, learning theory, interpersonal theory and medical theory. Each theory addresses different physical and/or psychological points of view regarding the concept of desire and the etiology and treatment of disorders of sexual desire.
C. SEXUAL DESIRE

1. Theoretical Views and Concept

The idea of sexual desire appears simple to grasp, yet the concept is not easy to define. The DSM-III-R (American Psychiatric Association, 1987) lacks a clear diagnostic definition for hypoactive sexual desire. For instance, the terms hypoactive and sexual desire are not clearly defined and what constitutes an objective criteria of low desire is not addressed (Zilbergeld & Ellison, 1980). The lack of a clear definition of both sexual desire and lack of sexual desire is a major concern to many researchers and clinicians interested in investigating and treating desire phase disorders (Bancroft, 1984; Kaplan, 1979; Levine, 1984; LoPiccolo, 1980; Maurice, 1980; Schover & LoPiccolo, 1982; Schover, Friedman, Weiler, Heiman & LoPiccolo, 1982; Zilbergeld & Ellison, 1980). Four theoretical views have contributed valuable conceptualizations to the current understanding of sexual desire and the lack of it. They are, the psychoanalytic view, the learning theory view, the interpersonal view and the medical view.

Psychoanalytic View

The presence in humans of an innate, biological instinctive drive such as sexual instinct (libido) was proposed by Freud (1905) in Three Essays on the Theory of Female Sexuality. Psychoanalytic theory suggests that libido is innate and is determined by heredity, chemical processes and individual variation in constitution. The traditional psychoanalytic approach to sexual dysfunction is based on an intrapsychic conflict model which postulates that failure to accomplish childhood developmental tasks is associated with the oral, anal and phallic stages of development. For example, the resolution of the oedipal complex has remained
the major etiological factor in sexual dysfunctions (Freud, 1905). Low sexual desire from a psychoanalytic viewpoint is conceptualized as a dissociation of the sexual instinct. Such dissociation is the result of excessive defense inhibition during sexual maturation. According to Freud's theory, low sexual desire would be more common in women since he believed women had a greater tendency than men to become anxious and to inhibit and repress sexual drives. Freud also postulated that males possessed a greater intensity of innate libido (Freud, 1905).

**Learning Theory View**

The learning theory approach does not propose an innate, biological instinctual sex drive but rather proposes that one's behavior is a tapestry of learned sets of responses. The underlying assumption is that behaviors which lead to orgasm would, under normal conditions, be reproduced due to the pleasure received from the experience. Wolpe (1958) conceptualized sexual dysfunctions as conditioned anxiety responses to the sexual situation. Learning theory does not make reference to unconscious processes. Advocates of this theory would interpret a subject's lack of sexual desire in terms of past and present learning. For instance, low desire could result from a lack of learning as well as from prior learning and conditioning that sexual activity is bad, unhealthy, dangerous or humiliating.

**Interpersonal View**

Interpersonal theory views the individual as an integral part of the physical and interpersonal contexts in which he exists rather than a fixed entity (Anchin & Kiesler, 1982). Interpersonal theory was first articulated by H.S. Sullivan (1953). The theory offered an interpersonal alternative to the intrapsychic
emphasis that prevails in psychoanalytic theory. Interpersonal explanations of human personality and behavior focus on the study of human transactions (Kiesler, 1982). One assumption of interpersonal theory is that a person’s pattern of behavior represents distinct combinations of two or three basic dimensions of interpersonal behavior: control, affiliation and inclusion (Leary, 1957). Problems in living, such as lack of sexual intimacy in a relationship, are defined as resulting from, and being maintained by defeating aspects of the relationship in terms of the three basic dimensions of interpersonal behavior: control, affiliation and inclusion (Keisler, 1982). Although a comprehensive model of sexual desire based on interpersonal theory has yet to emerge (Levine, 1987), one basic assumption, as in psychoanalytic theory, is that sexual desire reflects an innate biological drive. The clinical approach to problems of desire from this theoretical position is from an interpersonal conflict model. Treatment emphasis is focused on the spousal relationship and the interpersonal determinants blocking sexual intimacy. Interpersonal theory views anxiety as an interpersonal phenomenon resulting from malintegrations between people along the dimensions of control (dominance-submission), affiliation (love-hate) and inclusion (Keisler, 1982). In interpersonal literature (LoPiccolo, 1980) it has been identified that the role of the partner may be underestimated in sexually dysfunctional couples. In fact, it is suggested that the partners’ response pattern may be an important variable in the development of specific sexual problems (Chesney, Blakeney, Chan & Cole, 1981; Cole, Blakeney, Chan, Chesney & Creson, 1979).

**Medical View**

From a medical point of view, sexual desire is perceived as an appetite. Like other appetites or drives, sexual desire is studied from a physiological basis,
and like other appetites or drives, is thought to be organized so that it is kept in balance by inhibitory and activating mechanisms. Although a clear explanation and understanding of the normal physiology of this appetite is not yet available, researchers believe that sensory and psychic stimuli for instance, auditory, visual, olfactory, gustatory, tactile or imaginative stimuli, reaching the limbic system are involved in the process (Buffum, 1982). Sexual appetite is dependent on testosterone in both males and females (Bancroft, 1984; Kaplan, 1983; Schiavi, 1981) and anything that interferes with testosterone or the balance between estrogen and testosterone or anything which acts as a central nervous system depressant can decrease sexual desire.

In varying degrees, the theoretical views discussed above all contribute valuable conceptualizations to the current understanding and treatment of low sexual desire. For example, the understanding that sexual disinterest can result medically from low testosterone levels, psychologically from deep unconscious conflict derived in early childhood as well as from more simple behavioral performance fears or negative past or present relationship dynamics, has resulted in an integrated approach to the understanding and treatment of the problem.

2. Terminology and Conceptual Descriptions of Sexual Desire

For researchers and practitioners the problem of conceptualizing, defining, and operationalizing sexual desire and lack of sexual desire remains one of the most perplexing and unresolved problem in the literature (Davidson, 1984; Fish, Fish & Sprenkle, 1984; Hammond, 1984; Henker, 1984; LaFerla, 1984; Levine, 1984; LoPiccolo, 1980; Okhowat, 1985).

As a pioneer author and conceptualizer in the area of desire phase
disorders, Kaplan (1977, 1979, 1983) has been influential in establishing definitions and terminology in the literature. For instance, Kaplan (1979) makes the following distinctions:

For conceptual clarity, the term ISD is reserved here for those situations of abnormally low libido in which an etiologic diagnosis has been made, i.e. when it is established that sexual desire is inhibited by psychic factors. The term hypoactive sexual desire (HSD) is preferable when the etiology of low libido has not yet been determined. (p. 58)

Later, Kaplan (1983) states: “I use the term impaired sexual desire to designate a deficiency in drive before the differentiation between psychogenic inhibition and organic impairment has been made” (p. 239).

Schover, Friedman, Weiler, Heiman and LoPiccolo (1982) disagree with Kaplan’s (1979, 1983) terminology and definitions and suggest that a crucial limitation of the existing system is the tendency to confuse etiological hypotheses with behavioral descriptions. Schover et al., (1982) point out that Kaplan attempts to:

...dichotomize between exclusively psychogenic and exclusively organic factors. She divides problems of low desire into the category of inhibited sexual desire when the etiological factor is clearly psychogenic and into the category of hypoactive sexual desire when the etiological factor is unclear. (p. 615)

Schover et al. (1982), argue that, “given the great gaps in our knowledge of the
interaction of neurological, hormonal and behavioral components of human sexual desire, this dichotomy seems premature” (p. 615). In support of Schover et al.'s (1982) position, Maurice (1980) states a preference for the term sexual disinterest over inhibited sexual desire because it projects a broader concept, is more descriptive and does not imply an etiological understanding of the syndrome.

There is an emerging consensus regarding the need for a multidimensional approach to the conceptualization of sexual desire (Leiblum & Rosen, 1988; Levine, 1987; Rosen & Leiblum, 1987). Current articles by Steven Levine (1984, 1988) have addressed the nature of sexual desire and proposed a useful new model of the concept. In defining what sexual desire is, Levine (1988) writes, “Sexual desire is the psychobiological energy that precedes and accompanies arousal and tends to produce sexual behavior. It has two essential characteristics:

1. Its energy fluctuates.
2. Its sources are often personally baffling” (p. 23).

Levine (1988) proceeds from this definition to propose a model of sexual desire which consists of three basic elements:

1. **Sexual Drive** which he defines as the product of the neuroendocrine generator of sexual impulses. The neuroendocrine system is testosterone-dependent and its activity has a frequency or rhythm pattern over one’s life cycle. Clinically, this is apparent in high, moderate, low, or absent sexual drive.

2. **Sexual Wish**: Despite the absence or presence of sex drive manifestations, Levine suggests that the wish to behave sexually is a separate component of sexual desire. For example, an individual with a low or absent sex drive component may have a decided wish to behave sexually. Conversely, an individual who is frequently aroused spontaneously (high drive component), may
simultaneously wish not to behave sexually.

3. **Sexual Motive**: Levine suggests that the clinical understanding of sexual motivation requires "an immersion in the individual's and couple's psychodynamics" (p. 27). The major determinants of sexual motivation he proposes are: sexual identity, quality of the relationship, self and partner regulation and transference from past attachments.

Levine (1988) summarizes his model of sexual desire by stating, "Sexual desire is the product of the interaction of the neuroendocrine system that produces drive, the cognitive processes that generate wish, and the motivational processes that result in willingness to behave sexually" (p. 33). Levine's model of sexual desire is a multidimensional approach to the articulation of the concept and provides a clinically useful description of the complexity of the sexual response.

Discrepancies are apparent in the literature concerning the conceptualization and the operational definition of sexual desire and sexual disinterest. For instance, Schover *et al.*, (1982) set forth several criteria for a definition of low sexual desire in their research. The criteria include:

1. a low frequency of sexual activity, for example, less than once every two weeks, unless a higher rate is due to reluctant compliance with spouse for sexual activity; and

2. a subjective lack of desire for sexual activity; desire here includes sexual dreams and fantasies, attention to erotic materials, awareness of wishes for sexual activity, noticing attractive potential partners, and feeling of frustration if deprived of sex (p. 180).

An objective measure of sexual behavior and a subjective assessment of one's own erotic cues are what Schover *et al.* use to operationalize the concept of
sexual desire.

In contrast to the above definition, Zilbergeld and Ellison (1980) conceptualize desire and low desire as a subjective element of any relationship. For example, they suggest, “It is not that one person has too much desire and another too little on some absolute scale; it is rather a discrepancy in two peoples’ styles or interests. Such discrepancies have much in common with other relationship differences” (p. 68). This is an interactional rather than an individual behavioral view of sexual desire. Zilbergeld and Ellison (1980) argue that if sexual appetite is subjective no precise definition of desire or low desire is sensible.

Kolodny, Masters and Johnson (1979) make the point that in no way is inhibited sexual desire synonymous with disparate levels of sexual interest in a relationship. Fish, Fish and Sprenkle (1984) expand on Zilbergeld and Ellison’s concept of desire discrepancy and propose that the desire phase of the human sexual response cycle is inadequately conceptualized as part of an individual triphasic model and must be reconceptualized as not only part of an individual human sexual response, but as part of an interpersonal system.

Kaplan (1979) in addressing the definition issue comments that it is not feasible to wait until more accurate data have been accumulated on normal sexual desire before attending to the needs of the population suffering from inhibited desire. Therefore, Kaplan diagnoses hypoactive sexual desire by comparing the subject’s individual and dyadic experience with a sense of what the normal range of sexual desire is and from reports of a subject’s desire pattern prior to low desire. The normal range Kaplan (1979) explains, is inferred from various statistical surveys of the frequency of intercourse and orgasm as
well as from diverse clinical observations and from personal experience. A useful typology has been proposed by Kaplan (1979) for classifying cases of low desire. Low desire can be primary (a total lack of sexual desire throughout the individual's life) or secondary (desire present at some point but absent now) and situational (lack of desire in particular situations while not in others) or global (no desire regardless of situational variables). This typology is presently reflected in the DSM-III-R (American Psychiatric Association, 1987).

Several criteria were employed in this study to operationalize the concepts of sexual desire. An objective measure of sexual behavior and a subjective assessment of one's own erotic nature were employed as well as an interpersonal assessment as to whether or not sexual desire was a problem in the relationship. Derogatis (1979) has developed a drive scale on the DSFI questionnaire which was used in the study as one of the criterion measures of sexual desire. The Derogatis drive scale measures explicit sexual behavior using an approach analogous to that taken by Kinsey, Pomeroy, and Martin (1948) and Kinsey, Pomeroy, Martin and Gebhard (1953). Kinsey et al. (1948, 1953) utilized a composite definition of sexual drive which he termed total sexual outlet. This score reflected contributions from autoerotic, heterosexual and homosexual activities. The drive scale of the DSFI is modeled after Kinsey's concept in that it too is a summary measure composed of five components which reflect frequency of intercourse, masturbation, kissing and petting, sexual fantasies, and the ideal or preferred frequency of intercourse indicated by the individual. Each class of behavior is measured on a 9-point frequency scale and these values are summed to produce a total score. Derogatis (1979) states that although the drive scale does miss some of the more subtle manifestations of sexual drive, it is,
“highly correlated with clinical impressions and has revealed high discriminative
sensitivity” (p. 250).

Although the DSFI (Derogatis, 1979) drive scale was chosen as one of the
operational definition components of sexual desire in the study, it is important to
point out that the construct measured is sexual behavior, and although sexual
behavior may be a manifestation of erotic drive, it can also be a manifestation
of other emotion, for instance, anger, jealousy, or revenge. In addition, not all
erotic impulses are necessarily translated into explicit sexual behaviors, even if
the construct is extended in terms of behavior to include thoughts and fantasies.
Cataloging of sexual activities in and of itself, although fundamental to any
consideration or understanding of individual sexual drive, does not insure that one
is measuring sexual drive accurately. Therefore, an additional subjective criteria of
sexual desire similar to that chosen by Schover et al. (1982) and Schreiner-Engel
and Schiavi (1986) was employed in the study. For example, subjects in the
study had to report their subjective desire or lack of desire for sexual activities.
Subjective desire for sexual activity referred to the attention one paid to erotic
materials, the generation of sexual dreams or fantasies, one’s experience of
noticing sexual cues and one’s feelings of frustration if deprived of sex. The final
criterion in the study, relative to assessing an individual as hypoactive or not in
terms of sexual desire was an interpersonal consideration. Both partners in the
dyad were asked if the issue of sexual desire was a problem in the relationship.
To be assigned to the HSD group, one or both partners had to acknowledge lack
of sexual desire as a problem.

In summary, sexual desire or the lack of it was operationalized in the
study by objective sexual behavior measures, by subjective measures of desire for
sexual activity and by an interpersonal measure of whether or not sexual desire was considered a problem in the relationship.

3. Incidence of Lack of Sexual Desire

The incidence of lack of sexual desire in the North American population is believed to be high. However, sexual desire problems have been addressed in the literature under many descriptive terms, for example, diminished libido (Henker, 1983), frigidity (McGuire & Steinhilber, 1973), sexual anhedonia (Chapman, 1983), inhibited desire (Lief, 1977), hypoactive desire (Kaplan, 1977), low sexual desire (LoPiccolo, 1980), and sexual disinterest (Maurice, 1980). Most authors, although not unified on the terminology or criteria for assigning a diagnosis of hypoactive sexual desire, do agree that there is a high incidence of individuals and couples seeking help for the general problem of sexual disinterest. For example, Kaplan (1979) states, "hypoactive sexual desire is probably the most prevalent of all sexual dysfunctions" (p. 57). Lief (1977) reveals, "we are discovering with increasing frequency that relatively large numbers of people have a significant problem in feeling enough desire to initiate or to respond to sexual cues" (p. 94). Several researchers and clinicians verify this point of view (Henker, 1984; Kolodny, Masters & Johnson, 1979, McCarthy, 1984). A study carried out at the Marriage Council of Philadelphia and reported by Lief (1977) found that 28.5% of their sample (115 subjects) were given a primary diagnosis of inhibited sexual desire (ISD) using the proposed classification system for the DSM-III (American Psychiatric Association, 1980). According to a division by sex, 18% of the males and 37% of the females were assigned the diagnosis.

Frank, Anderson and Rubinstein (1978) reported that 35% of the women
and 16% of the men in their study of well adjusted married couples, reported disinterest in sexual activity. According to age, 23% of the wives in their twenties and 11% of the husbands in their twenties reported lack of sexual interest. The percentages increased slightly among women (28%) and men (13%) in their thirties. Sexual disinterest peaked in the forties for both women (32%) and men (40%). Men and women over fifty reported sexual disinterest less frequently than other age groups.

Steele (1976) found a similar incidence of low desire. He noted that out of 500 couples seen for infertility, 20% reported loss of libido.

In a sample of 365 husbands and wives between the ages of 20 to 39, Edwards and Booth (1976) found that one third of the sample had ceased having intercourse for a definable period of time. After marital discord (40%) and physical illness (20%), declining interest in sex accounted for 12% of the cessation.

LoPiccolo (1980) makes the clinical observation that clients with low sexual desire are increasing in number. He hypothesizes that this is due to either societal pressures to be more sexually active or clinicians' increased attention to this phase of sexual functioning. LoPiccolo (1980) reported that out of 39 consecutive treatment cases at the Sex Therapy Centre at Stoney Brook, 69% included an assignment of the diagnosis of low sexual desire in at least one spouse. This included 63% of all male partners and 37% of all female partners. It is interesting to note that LoPiccolo's (1980) study and Frank et al.'s (1978) study provide evidence that males as well as females suffer in large numbers from this problem.

Although these studies contain various discrepancies in terminology and
definition of lack of desire, they do, nevertheless, provide adequate evidence that great numbers of individuals whether happily married or seeking therapy for marital, sexual or fertility problems, whether recently married or established in wedlock, whether young or old and whether male or female, report problems with the desire phase of their sexual life with increasing frequency.

D. FACTORS RELATED TO HYPOACTIVE SEXUAL DESIRE

The literature review regarding variables associated with hypoactive sexual desire addresses organic, intrapsychic and interpersonal factors. Organic factors refer to neuroendocrine irregularities, medical illnesses, and medication or alcohol presence in the system. Intrapsychic factors refer to affective variables such as anxiety and depression, while interpersonal factors refer to relationship dynamics such as marital quality and interpersonal communication. In separating the organic, intrapsychic and interpersonal variables identified in the literature as being related to hypoactive sexual desire, it is recognized that in the clinical setting the interactional dynamics of organic, emotional, cognitive and relationship variables are extremely complex and lack of sexual desire may result from many diverse influences as well as from innumerable combinations of these factors.

1. Organic Factors

   Organic factors related to sexual behavior are presented in the literature review because they are relevant to the understanding of the exclusion criteria of the study (see page 60). In order to screen subjects for organic factors associated with sexual functioning in general, and lack of sexual desire in particular, individuals presenting with evidence of hormonal or medical disorders, or
presenting with dependency on medication, drugs or alcohol were excluded from the study.

Hormonal Issues

Sexual appetite is dependent on testosterone in both males and females (Bancroft, 1984; Kaplan, 1983; Schiavi, 1981) and anything that interferes with testosterone and/or the balance between estrogen and testosterone or anything which acts as a central nervous system depressant can decrease sexual desire. To date, most of the medical research concerning low sexual desire has focused on hormonal levels in relationship to sexual behavior and several studies have produced evidence that androgens are necessary for sexual drive to occur (Davidson, Camargo & Smith, 1979; Knusmann, Christiansen & Couwenbergs, 1986).

In a recent study of males exhibiting hypoactive sexual desire (HSD), Schiavi, Schreiner-Engel, White and Mandeli (1988) investigated whether or not the pituitary-gonadal function during sleep differed in these male subjects as compared to control subjects. They found the total group of HSD men had significantly lower plasma testosterone, measured hourly through the night, than did the control group. No difference was found between groups in prolactin, luteinizing hormone or estradiol. This study presents some evidence that healthy men with HSD may differ in pituitary-gonadal function. Schiavi et al. (1988) concluded that it is possible that men with a generalized lack of sex drive may constitute a group with distinct hormonal psycho-physiologic and psychologic characteristics.

Recent hormonal studies on female populations have focused on the correlation between sexual desire and the menstrual cycle (Bancroft, Sanders,
Davidson and Warner, 1983; Stanislaw and Rice, 1988). Bancroft et al. (1983) found that in women with a marked cyclical mood change, there was an associated pattern of sexual feelings. However, the association between plasma testosterone levels, feelings of well being and sexual desire was not clear. For instance, although plasma testosterone levels showed a substantive midcycle rise (late follicular and early luteal phases), it did not show the variability through the menstrual cycle found with other steroids. In addition, there was no evidence of periovulatory increase in sexual interest or activity to correlate with the rise in testosterone level. Subjective sexuality for these women was maximal in the mid-follicular (postmenstrual) and late luteal (premenstrual) phases. An extremely interesting finding of this study was that the mean testosterone levels were correlated with masturbation frequency but not with sexual expression involving the partner. Bancroft et al. (1983) question whether there is some difference between masturbating and nonmasturbating women that would account for their apparently different response to testosterone. In discussing this question, Bancroft et al. (1983) point out that some studies have found a relationship between testosterone levels and life style (Bancroft, 1981; Purifoy & Koopmann, 1980). They suggest that if testosterone is causally related to, or a consequence of lifestyle such effects could cause or result in increased conflict within heterosexual relationships whereby hormones affect behavior and behavior affects hormones. Although based on limited evidence as yet, Bancroft et al. (1983) suggest a valid area of enquiry to be the interactional or interdisciplinary enquiry involving androgen levels and lifestyle as they relate to sexual desire in women.

In a more recent study of the correlation between sexual desire and menstrual cycle characteristics, Stanislaw and Rice (1988) found that sexual
desire was usually first experienced a few days before the basal body temperature (BBT) shift, around the expected ovulation date. In relationship to Bancroft et al. (1983) study BBT shift prior to ovulation occurs in the late follicular phase and coincides with the elevation of testosterone levels. Stanislaw and Rice (1988) suggest that their findings should not be interpreted as demonstrating that hormonal factors are the sole determinants of desire but rather that hormones contribute to the timing and/or magnitude of sexual desire in women. In addition, although testosterone may be implicated as the single hormone responsible for sexual desire, they caution that several hormones, not just a single hormone, may mediate the correlation between sexual desire and the BBT shift. These results are consistent with a model in which sexual desire is affected by the same hormonal processes that regulates the menstrual cycle.

However, the role of reproductive hormones in low sexual desire in women was further studied by Schreiner-Engel, Schiavi, White and Ghizzani (1989). Schreiner-Engel et al. (1989) compared two groups of subjects with markedly different levels of sexual desire but no other current psychological or medical problem. Results indicated that hypoactive sexual desire (HSD) women had normally fluctuating hormones over the menstrual cycle which were not significantly different from the control subjects at any phase. No difference was detected in testosterone or prolactin levels between subjects with lifelong versus acquired HSD. These findings did not provide evidence that reproductive hormones are important determinants of individual differences in the sexual desire of women.

The result of recent hormonal studies in the female population then are not consistent in defining the role of hormones in female sexual desire. It would
appear from Schreiner-Engel et al. (1989) latest study however, that there is no difference between HSD women and control women on any fluctuating hormonal level which would help to explain lack of sexual desire.

Despite suggestions of a relationship between androgen levels and sexual desire in some studies, particularly in the male population, there is no evidence to date that problems of sexual desire in otherwise healthy individuals can be reversed by androgen administration. It is widely believed for instance that above a plasma threshold of about 3.0-3.5 ng/ml in males further circulating androgen increases are behaviorally irrelevant (Bancroft, 1980). And although this assumption has been challenged (O’Carroll & Bancroft, 1984), attempts to heighten desire by administration of high levels of testosterone is currently felt to be medically unsound and ethically questionable (Rosen & Leiblum, 1987; Seagraves, 1988).

**Medical Issues**

Chronic disease processes may potentially inhibit sexual desire depending on the individual’s psychosocial adaptation to the disease. Kaplan (1983) states that chronic diseases are believed to be related to low sexual desire because of the diseases’ general debilitating and depressing effect on the individual. Maruta, Osborne, Swanson and Halling (1981) found that subjects with chronic pain experienced a deterioration of sexual desire even though they were not ingesting analgesics or narcotics.

Several systemic diseases alter the metabolic state of the individual through either directly or indirectly affecting testicular function and testosterone secretion (Horwith & Imperato-McGinley, 1983). For example, Holdsworth, Atkins and de Kretser (1977) found that chronic renal failure affected both
gonadotrophin secretion and testicular function which resulted in decreased plasma testosterone levels. In subjects with cirrhosis, testicular atrophy and gynecomastia are common. This results in low testosterone levels and increased sex hormone binding globulin, the result of which is a decrease in sexual desire.

Endocrine diseases such as Cushing’s syndrome, adrenal insufficiency, estrogen producing tumors and hypothyroidism are also associated with low testosterone levels and complaints of loss of sexual desire (Horwith & Imperato-McGinley, 1983). In males, abnormally high prolactin levels, a hormone secreted by pituitary tumors, may impair sexual interest (Segraves, Schoenberg & Ivanoff, 1983). In a controlled case study of the behavior of a hyperprolactinemic man, Bancroft (1984) reports success in assessing loss of sexual desire and erectile impotence separately. Initially, the subject received a placebo together with counselling. At the end of treatment and at a six month followup, there was a substantial improvement in the couple’s sexual relationship despite his remaining hyperprolactinemic. Erectile failure was no longer a problem although sexual disinterest, which had improved somewhat during counselling, had declined. Upon administration of bromocriptine, there was a significant improvement in his level of sexual interest. Bancroft explains this finding in terms of the original decline in the subject’s previous (normal) level of sexual interest. The basic decline of sexual interest caused tensions within the marriage which subsequently caused erectile failure in the male. Counselling addressed the issue of the couple’s attitude toward male and female initiation. An attitude change resulted in his wife becoming more prepared to initiate love making. As the husband was released from the pressure to initiate sexual activity erectile failure vanished. His spontaneous sexual interest remained low, however, until treated with
bromocriptine. Bromocriptine lowered the subject's prolactin level. This study offers evidence that abnormally high prolactin levels in males impairs sexual interest but may not impair other stages of the response cycle.

Abnormal hypothalamic-pituitary functions can decrease secretion of gonadotropins. This in turn leads to decreased testosterone production and/or increased secretion of prolactin (Horwith & Imperato-McGinley, 1983). Other problems associated with decreased plasma-testosterone levels or primary testicular disease are Klinefelter's syndrome, testicular atrophy secondary to autoimmune disease or vascular insufficiency and infectious diseases such as mumps in adulthood which damage the gonads.

Medication, Drug and Alcohol Issues

The pharmacology of drug-induced sexual dysfunctions is not a well researched area with regard to human studies (Buffum, 1982). Most of the work published regarding central mechanisms has been related to animal studies or the male sexual response. Female drug studies are almost non existent. Drugs which produce dysfunction of the desire phase of the sexual response cycle act on central mechanisms. Certain drugs block dopamine receptors, others, such as antiandrogens act to block the action of testosterone (Buffum, 1982). However, any drug which affects the central nervous system function, for example alcohol, the tricyclic MAO inhibitors or opiates, can affect desire and sexual performance. Hypnotics generally decrease desire as will any drug which causes chronic central nervous system depression (Horwith & Imperato-McGinley, 1983). For an excellent review of the effects of drugs on sexual function, the reader is referred to Buffum (1982).
2. Intrapsychic Factors

Major intrapsychic factors implicated in the literature as co-existing with desire phase disorders are anxiety, psychopathology and depression (LoPiccolo, 1980; Kaplan, 1983).

Anxiety

Anxiety is considered by many to be a major factor in the etiology and maintenance of sexual dysfunctions (Jehu, 1979; Kaplan, 1974, 1979, 1983; Masters & Johnson, 1970). For example, Kaplan (1979) states, "...the physiological concomitants of anxiety are always the same, no matter what its source or depth of intensity, no matter what the relationship to conscious experience and no matter what the level of insight" (p. 24). Kaplan (1979) suggests that subjects who suffer from lack of sexual desire suffer from more intense anxieties than those subjects whose sexual dysfunctions are associated with arousal and orgasm difficulties. However, although anxiety about sex has been implicated in the etiology of several sexual dysfunctions, for example, erectile failure (Annon, 1975; Cooper, 1969) and premature ejaculation (Cooper, 1968, 1969; Wolpe, 1973), there have been no controlled studies to date focusing on anxiety as a factor related to lack of sexual desire although clinically, anxiety is regarded as the most predominant factor related to the problem.

In their review of the literature concerning the role of anxiety in sexual dysfunctions, Norton and Jehu (1984) found that the studies suggested that anxiety is common among people with sexual dysfunctions but the level and nature of the anxiety may vary greatly between individuals. None of the studies reviewed focused on anxiety related to hypoactive sexual desire. Some researchers and clinicians suggest that high levels of generalized neurotic anxiety tend to
impair sexual performance (Pinderhughes, Grace & Reyna, 1972), while others suggest that anxiety specific to sexual behavior may be more important than neurotic anxiety in the study of factors related to sexual dysfunction (Cooper, 1968, 1969). Cooper (1968) attempted to clarify the relationship between neurotic anxiety and sexual dysfunction in male subjects. Cooper (1968) studied 53 men diagnosed with a potency disorder (impotence, premature ejaculation or retarded ejaculation). His investigation showed that only 10% of his sample of sexually dysfunctional males could be classified as clinically neurotic. Cooper (1968) concluded that most potency disorders were likely not of neurotic origin. However, during an attempt to replicate these findings, Cooper (1969) showed that while only 12% of his subjects were defined as clinically neurotic, 51% had marked coital anxiety. Cooper (1969) defined coital as, “anxiety related temporarily to the act of coitus (either imagined or actual) or sexual overtures and stimulations (either imagined or actual) short of intercourse, but which the male subject believed at the time would culminate in a coital attempt” (p. 143-144). Sources of coital anxiety were found to be related to fear of failure (73%), sexual inferiority (43.5%), and fear of ridicule (40%). Cooper (1969) concluded that coital anxiety itself seldom caused sexual dysfunction. He hypothesized that relationship problems are related to performance (coital) anxiety which in turn is related to sexual dysfunctions. Cooper's (1969) findings are important because they suggest that anxiety and sexual dysfunctions of the arousal and orgasm phases may be related to specific events associated with relationship dynamics rather than to deep-rooted, unconscious neurotic conflicts.

In another study using the Minnesota Multiphasic Personality Inventory (MMPI), Munjack, Kanno and Oziel (1978) attempted to determine if sexually
dysfunctional and non dysfunctional males differed with respect to anxiety levels. Munjack et al. (1978) found that sexually dysfunctional males experienced more anxiety and more psychopathology than did nondysfunction males. For example, subjects exhibiting retarded ejaculation scored higher than normals on 5 out of 8 measures of anxiety and on two out of two measures of depression. In a subsequent study, Munjack, Oziel, Kanno, Whipple and Leonard (1981) found that the level of psychopathology and neurotic anxiety varied between different groups of sexually dysfunctional men depending on whether they were subjects of a hospital or a private clinic. Although Munjack et al. (1981) showed that men with sexual dysfunction exhibit more anxiety and psychopathology than normals, the authors point out that other factors as well must be important in modulating the relationship between anxiety, psychopathology and sexual dysfunction.

**Psychopathology**

Most research regarding psychopathology and anxiety associated with sexual dysfunction has focused on a male sample assigned a diagnosis of arousal or orgasm dysfunction (see above Munjack et al., 1978, 1981). There is a paucity of research exploring psychopathology or anxiety in a female sample suffering from arousal or orgasm problems, or in males or females diagnosed with sexual desire disorders. Two current investigations are of particular interest.

One of the first studies to appear which addressed intrapsychic variables related to sexual desire (hypoactive sexual desire) was reported by Stuart, Hammond and Pett (1986). This study examined differences in biopsychosocial characteristics between women who complain of inhibited sexual desire (ISD) and women who reported normal sexual desire. Using the Minnesota Multiphasic Personality Inventory (MMPI) to generate group profiles, these researchers found no
statistically significant difference between ISD and non-ISD subjects with regard to the 10 clinical scales of the MMPI. Both group profiles were classed as subclinical with no evidence of serious psychological disturbance.

The second study to report on psychopathology related to sexual desire dysfunction was authored by Schreiner-Engel and Schiavi (1986). These researchers studied lifetime psychopathology in individuals with low sexual desire. Schreiner-Engel and Schiavi (1986) found that, despite the fact that all ISD subjects in their study had nearly normal psychological profiles as measured by the SCL 90-R (Derogatis, 1983), more ISD subjects than controls had a significantly elevated lifetime prevalence rate of affective disorder as measured by the Schedule for Affective Disorders and Schizophrenia, Lifetime Version (SADS-L) (Endicott and Spitzer, 1978). They concluded that the remarkable lifetime rate of affective illness in ISD suggests that there may be a common biological etiology or that affective psychopathology may be contributing to pathogenesis of the ISD dysfunction.

Studies which have evaluated anxiety levels and psychopathology related to subjects diagnosed with sexual dysfunctions have used a wide variety of self report measures rating anxiety and psychopathology. Spielberger, Gorsuch and Lushene (1970) concluded that different measures of anxiety, even those that have been validated, appear to measure different components of anxiety. Norton and Jehu (1984) in their review of the literature regarding the role of anxiety in sexual dysfunctions, recommend that future studies use similar tests for evaluating anxiety in subjects with sexual dysfunctions. For instance, they suggest the MMPI be used as a measure of general psychopathology and generalized anxiety, and the Derogatis Sexual Functioning Inventory (DSFI; Derogatis &
Meyer, 1979) or the Sexual Arousal Inventory (SAI; Hoon, Hoon & Wincze, 1976) for measuring coital anxiety.

**Depression**

Another psychological variable implicated in the literature as being related to hypoactive sexual desire is depression. Decreased libido is a relatively common finding in persons suffering from depression (Garvey, 1985). Winokur, Clayton and Reich (1969) reported that 75% of subjects diagnosed as depressed suffered from loss of sexual interest. Garvey (1985) found that 57% of 126 depressives in his study suffered from loss of sexual interest. Although the cause of decreased libido in depression is unknown, evidence suggests that bio-chemical derangements of the brain's neurotransmitter system may be the pathogenic mechanism of many depressions (Garvey, 1985). It is thought that these neural malfunctions may underlie numerous symptoms of depression such as insomnia, loss of libido and loss of pleasure. What causes the original bio-chemical derangements of the brain's neurotransmitter system, however, is unknown.

However, being that depression is a common and often undiagnosed and untreated disorder in the general population, knowledge and understanding of its relationship to sexual desire is important. For instance, the association of divorce with major depression is common. Brisco, Smith and Robins (1973) found in their study of recently divorced couples that 40% of the women and 34% of the men suffered from a major depression. In 40% of these cases, the depression appeared to be a factor contributing to the divorce and not merely a result of it. This study suggests that it may be important to pay attention to the status of relationships in which affective disorders are present. Garvey (1985) suggests that individuals and couples who present with complaints of marital problems and/or
loss of sexual desire need to be assessed for depression.

Chapman (1983) studied 39 subjects who were unresponsive to conventional sex therapy and who were subsequently diagnosed as suffering from sexual anhedonia (lack of sexual desire), and compared them to 30 randomly selected control subjects who were normal. Depression was assessed by the Jung Self Rating Depression Scale (SDS) in both the study group and the control group. Depression was indicated by a SDS index of .63 or more. The control group exhibited SDS indices ranging from .25 to .43 while the study group exhibited a range of .63 to .98 on the average over multiple occasions of measuring the depression factor. Chapman’s (1983) study clearly indicates that depression is a factor correlated with sexual anhedonia in his subjects. Further, Chapman suggests that the depression factor rose in his study group when either real or imagined sexual pressures were exerted upon the individuals. Partners with high sex drives became a factor that affected thirty of his study group. Although what constituted high sex drive or low desire was not specified in the study, the study remains important because an endocrine system analysis was undertaken on all subjects and controls. Chapman (1983) did not find that endocrine data suggested differences between the control group and the study group. Chapman concluded that since diminished sexual desire is not definable (at this time) on a hormonal level, researchers and clinicians must focus on interpersonal and social factors which may cause depression and subsequently affect desire, or vice versa.

Measures chosen to assess anxiety, psychopathology and depression in this research were: the State-Trait Anxiety Inventory, the 10 clinical scales of the MMPI and the Affect Balance Scale (see page 68).
3. **Interpersonal Factors**

Clinically, interpersonal problems of many varieties are frequently related to the lack of sexual desire. Low sexual interest in a relationship may be a symptom of marital discord or a larger relationship dysfunction (Kaplan, 1979), or it may serve as a distance regulator between spouses (Kaplan, 1977; Verhulst & Heiman, 1979; Zilbergeld & Ellison, 1980). Couples contending with anxiety as a result of hostility, resentment, deceit, poor communication, and lack of respect or affection, may experience low sexual desire according to Kolodny, Masters and Johnson (1979).

While several authors have focused on the interface between marital conflict and sexual dysfunction (Epstein, 1982; Hartman, 1980), other clinicians have explored interpersonal dynamics in low sexual desire relationships and proposed various interpersonal and systemic treatment paradigms for the problem (Bagarozzi, 1987; McCarthy, 1984; Fish, Fish & Sprenkle, 1984; Lazarus, 1988; LoPiccolo & Friedman, 1988; Regas & Sprenkle, 1984; Verhulst & Heiman, 1988). However, there are few empirical studies to draw on as yet which investigate specific relationship factors that may be related to hypoactive sexual desire. Highly unequal levels of sexual desire (Reckless & Byrd, 1983), and severe marital discord (LoPiccolo & Friedman, 1988; Talmadge & Talmadge 1986), are acknowledged by many authors and clinicians as valid relationship factors which may naturally contribute to a functional lack of sexual desire. However, hypoactive sexual desire in healthy individuals within committed, stable relationships where extremes of desire are not apparent remains an interpersonal mystery and an area nearly void of research.

Only two empirical studies have been reported to date which include
interpersonal data. Stuart, Hammond and Pett (1987) reported on their multifaceted study of inhibited sexual desire in women. They examined 59 women who complained of inhibited sexual desire (ISD) and 31 women who expressed normal sexual desire (Non-ISD), on personality, endocrine, relationship and sexual dimensions using the MMPI, the Dyadic Adjustment Scale, radioimmunoassay of testosterone and prolactin levels and a demographic, relationship and sexual information questionnaire designed for the study. The results of their inquiry showed nonsignificant between-group differences on demographic characteristics, personality variables (MMPI) and hormonal evaluation. Statistically significant differences were reported between the two groups on sexual history (i.e., Non-ISD women perceived their parents attitudes toward sex, and their parent’s affectionate interactions with one another to be significantly more positive than the ISD group) and marital interaction and satisfaction. In the latter finding, ISD women reported significantly greater dissatisfaction with nearly every reported relationship issue. Stuart et al. (1987) propose that sexual desire for the subjects in their study was greatly influenced by interaction with the spouse. For instance, the two variables in the study which were found to best predict ISD or non-ISD group membership were the respondent’s feeling of romantic love for the spouse and satisfaction with one’s own listening ability. It appears from this study that the majority of disorders of sexual desire (as defined for the research) bear some relationship to the quality of the marriage, and vice versa.

Another current study by Churchill (1989) reported on personality (MMPI) and developmental variables associated with males who were assigned a diagnosis of inhibited sexual desire (ISD). Thirty ISD males were compared with thirty males diagnosed with a DSM-III psychosexual disorder other than ISD. There
was no nondysfunctional control group in the study. Churchill's (1989) results indicate no significant difference between groups on personality variables measured by the MMPI. However, the mean number of scales elevated above a T score of 70 was greater than two for both groups. This would indicate that Churchill's (1989) sample of sexually dysfunctional subjects was from a population more disturbed than the population from which the norms were derived. Churchill (1989) concludes that in his sample, ISD subjects reported more disturbed object relations (defined as less satisfying relations with both mother and father) and a significantly higher incidence of extramarital affairs than did nonISD subjects.

Both Stuart et al. (1987) and Churchill (1989) suggest further research needs to be conducted with instruments more sensitive to interpersonal dynamics in order to assess how couple interaction may be related to sexual desire. In this study, interpersonal adjustment was assessed using the Dyadic Adjustment Scale and interpersonal behavioral dynamics were assessed using the Structural Analysis of Social Behavior (see page 75).

Kaplan (1979) hypothesizes that persons who suffer from desire phase disorders have more profound and tenacious anxieties stemming from relationship problems, hostile and neurotic associations, and psychogenic factors such as neurotic anxiety and depression than do persons who suffer from arousal or orgasm phase disorders. Furthermore, Kaplan (1979) suggests a working hypothesis that critical levels of anxiety which may be driven by a wide spectrum of underlying causes (intrapsychic and/or interpersonal), result in variability of sexual dysfunction. From clinical experience Kaplan (1979) suggests:
A wide spectrum of underlying causes, varying in content and ranging from the mildest to the deepest and most tenacious, can be associated with sexual symptoms. If a critical level of anxiety is aroused in the sexual situation, dysfunction will result irrespective of the underlying source and the conditions of acquisition or of the reality of the danger. When this population is studied from the perspective of the triphasic concept, it appears, that while the content of the sexual conflict is highly variable, the quality of the underlying anxiety is not evenly distributed among the three groups of dysfunctions. It appears that subjects with desire phase dysfunctions, as a group, are afflicted with more serious intrapsychic and/or marital problems, while the subjects with orgasm problems are more often, but not invariably, found to have relatively milder and less tenacious underlying problems. Excitement phase disorders fall in the middle of the spectrum. (p. 28)

This study was designed to explore Kaplan's belief that HSD is related to deeper more conflicted intrapsychic and interpersonal dynamics than is arousal or orgasm dysfunction.

Finally, Rosen and Leiblum (1987) and Leiblum and Rosen (1988) point out that due to the increased demand for treatment, therapeutic approaches have been developed in the absence of recognized theoretical models of sexual desire. For example, present psychological treatment approaches are adapted from psychodynamic and interpersonal perspectives (Apfelbaum, 1988; Levine, 1988; Scharff, 1988); from cognitive and behavioral perspectives (Lazarus, 1988; LoPiccolo & Friedman, 1988; Rosen & Leiblum, 1987; Zilbergeld & Hammond, 1988); and from systems and interactional perspectives (Schwartz & Masters,
yet basic empirical research on the topic of hypoactive sexual desire has been surprisingly sparse since sexual desire was conceptualized as an initial phase in the currently accepted model of the human sexual response cycle.

After reviewing the literature relevant to sexual desire and the issue of lack of sexual desire, three problems were apparent. First, lack of sexual desire is a relatively new area of investigation which has not received much research attention, and second, all studies to date, whether controlled or uncontrolled have used different criteria or have not stated the criteria used to assign subjects to the lack of sexual desire group. In addition, various studies have used different labelling systems to identify this group. Third, with the exception of two recent studies (Schreiner-Engel and Schaivi, 1986; Stuart et al., 1986) all other non medical investigations of low sexual desire have been uncontrolled. Therefore, this research project was designed with these problems in mind and an attempt was made to correct for some of the problems apparent in this area of research. For example, the terminology used, and the diagnostic criteria for the sexual dysfunctions follows the procedure outlined in the DSM-III-R (American Psychological Association, 1987). Operational definitions of the DSM-III-R criteria used in the study are clearly stated in the definition of terms section. Finally, a control or comparison group of sexually functional couples was included in the research design.

Several questions arising from the review of the literature regarding hypoactive sexual desire and the intrapsychic and interpersonal characteristics of the population suffering from the problem are addressed by this investigation. For example, (1) Are specific intrapsychic or interpersonal variables related to lack of
sexual desire? (2) Is hypoactive sexual desire related to deeper, more complex and more serious intrapsychic and/or interpersonal problems compared to arousal and orgasm disorders? (3) Does intrapsychic or interpersonal functioning differ in individuals or their partners where hypoactive sexual desire is a problem as compared to couples where arousal or orgasm problems exist? If so, how? This research was subsequently designed to explore these questions. The design of the study, the subject selection criteria and the study questionnaires employed to operationalize intrapsychic and interpersonal variables can be found in Chapter III. The following section presents the research hypotheses of the study.

E. RESEARCH HYPOTHESES

The structure and organization of the research hypotheses was determined by the method chosen to analyse the data: canonical correlation analysis or profile analysis. Data from Group 1, 2 and 3 subjects was analysed separately from partner data and precedes the latter in presentation within each analysis. The rationale for the research hypotheses concludes each section.

1. Analysis I: Canonical Analysis and Analysis of Variance

a. Subjects

Research Hypothesis 1:

There will be a statistically significant relationship between sexual functioning variables as measured by the SHF and DSFI and intrapsychic variables as measured by the MMPI, STAI and ABS.
Research Hypothesis 2:

There will be a statistically significant difference between the three groups of subjects (HSD, SDys, NSD) on the sexual functioning and intrapsychic canonical variates obtained in the canonical analysis.

Research Hypothesis 3:

There will be a statistically significant relationship between sexual functioning variables as measured by the SHF and DSFI and interpersonal variables as measured by the DAS.

Research Hypothesis 4:

There will be a statistically significant difference between the three groups of subjects (HSD, SDys, NSD) on the sexual functioning and interpersonal canonical variates obtained in the canonical analysis.

Rationale for Research Hypotheses One Through Four

It is proposed in the literature that intrapsychic neurosis or pathology and interpersonal conflict are important variables of sexual dysfunction (Kaplan, 1983, 1979). Hypotheses one through four are consistent with the writings of Chapman (1983), Derogatis and Meyer (1979), Garvey (1985) and Kreuz, Rose and Jennings (1972) concerning the strong relationship between sexual dysfunction and intrapsychic and interpersonal conflict. The conjecture of group difference on canonical variates is consistent with the writings of Kaplan (1983, 1979), Masters and Johnson (1970, 1966) and Verhulst and Heiman (1979). For example, based on the concept of sexual dysfunction occurring in relationship to the three phases of the sexual response cycle, desire, arousal or orgasm, the severity of intrapsychic or interpersonal conflict is proposed to vary in degree and intensity from phase to phase with desire disorders representing the most
intense intrapsychic/interpersonal conflict, and arousal and orgasm disorders representing less intense intrapsychic/interpersonal conflict (Kaplan, 1979). It is conjectured that Group 1 and Group 2 will be more conflicted intrapsychically or interpersonally than Group 3. It is also conjectured that Group 1 will be more intrapsychically or interpersonally conflicted than Group 2.

b. Partners of Subjects

Research Hypothesis 5:

There will be a statistically significant relationship between sexual functioning variables as measured by the SHF and DSFI and intrapsychic variables as measured by the MMPI, STAI and ABS.

Research Hypothesis 6:

There will be no statistically significant difference between the three groups of partners (HSD, SDys, NSD) on the sexual functioning and intrapsychic canonical variates obtained in the canonical analysis.

Research Hypothesis 7:

There will be a statistically significant relationship between sexual functioning variables as measured by the SHF and DSFI and interpersonal variables as measured by the DAS.

Research Hypothesis 8:

There will be a statistically significant difference between the three groups of partners (HSD, SDys, NSD) on the sexual functioning and interpersonal canonical variates obtained in the canonical analysis.

Rationale for Research Hypotheses Five Through Eight

The four hypotheses concerning partners of diagnosed individuals are
exploratory in nature. The focus on exploring partner dynamics in sexually dysfunctional spousal units is encouraged and supported by the writing of Cooper (1969), Kaplan (1979, 1977) and LoPiccolo (1980), Verhulst and Heiman (1979). For example, LoPiccolo (1980) suggests that the role of the partner may be underestimated in sexually dysfunctional couples. The four hypotheses relating to partners of diagnosed individuals parallel hypotheses 1 through 4 relating to diagnosed subjects. However, it is conjectured that spouses of hypoactive sexual desire subjects will not differ on intrapsychic measures whereas they will differ on interpersonal measures because they are part of the dyadic system.

2. Analysis II: SASB Profile Analysis

a. Subjects

Research Hypothesis 9:
Profiles of the eight mean cluster scores for the three groups (HSD, SDys, NSD) of subjects generated from SASB questions measuring self concept (Introject) will not be parallel and coincident.

Research Hypothesis 10:
Profiles of the eight mean cluster scores for the three groups (HSD, SDys, NSD) of subjects generated from SASB questions measuring interpersonal behavior (a. spouse initiates; b. spouse responds; c. self initiates; d. self responds) will not be parallel and coincident.
b. Partners of Subjects

Research Hypothesis 11:

Profiles of the eight mean cluster scores for the three groups (NSD, SDys, NSD) of partners generated from SASB questions measuring self concept (Introject) will not be parallel and coincident.

Research Hypothesis 12:

Profiles of the eight mean cluster scores for the three groups (HSD, SDys, NSD) of partners generated from SASB questions measuring interpersonal behavior (a. spouse initiates; b. spouse responds; c. self initiates; d. self responds) will not be parallel and coincident.

Rationale for Research Hypotheses Nine to Twelve

The conjecture that Introject and Relationship profiles resulting from subjects' ratings of the INTREX Questionnaires will differ, according to research group membership, is based on the review of the literature. For instance, several researchers and clinicians identify relationship problems and the quality of the nonsexual relationship as contributing factors to sexual dysfunction (Kaplan, 1979; Levine, 1988; Verhulst & Heiman, 1988; Zilbergeld & Ellison, 1980). Relationship problems are thought to be more prevalent and/or more conflictual in low sexual desire cases (Verhulst & Heiman, 1988). The conjecture that subjects' ratings of their partners and themselves on the four relationship surfaces will vary according to diagnostic group is consistent with the notion of increased interpersonal conflict being related to sexual desire disorder. The parallel conjecture regarding the subjects' rating of themselves on the intrapsychic introjective surface (self concept) is consistent with both theoretical hypotheses regarding hypoactive sexual desire (Kaplan, 1983) and the theoretical foundation...
of the SASB model. The model is based on the work of Sullivan (1953) who suggested that we treat ourselves in the way that important others have treated us. Self concept in the SASB model is an intrapsychic reflection of how a person views the self as a result of the relationship being studied. The profile of a person’s self concept is conjectured to vary as a result of the nature of the interpersonal relationship. The literature review suggests that individuals suffering from lack of sexual desire have more profound interpersonal conflict than do individuals whose dysfunction is of an arousal or orgasmic nature (Kaplan, 1979).

F. SUMMARY

The review of the literature commenced with an historical overview of the conceptual advances made in the study of the human sexual response. A three phase model of the sexual response cycle was presented which conceptually and physiologically separates desire, arousal and orgasm into three discrete stages of sexual response. The focus in this chapter shifted then to sexual desire. First, the various theoretical views and conceptual descriptions of sexual desire were reviewed and second the terminology and incidence of sexual disinterest were examined. Finally, organic, intrapsychic and interpersonal factors related to the sexual disorder were discussed.

Several questions arising from the literature review which this study addresses were then identified. Finally, the research hypotheses of the study were stated.
CHAPTER III. METHODOLOGY

This chapter commences with an outline of the research design. The population of interest and the subject sample are then discussed. Next the instruments employed to measure the sexual functioning, intrapsychic and interpersonal variables are discussed and the variables of the study are identified. Data collection procedures are outlined and the statistical hypotheses are presented. A description of the procedures utilized in the data analysis conclude the chapter.

A. DESIGN OF THE STUDY

This study was non-experimental in nature and involved a three group comparison, ex post facto design. The three groups were: Group One, Hypoactive Sexual Desire (HSD); Group Two, Sexual Dysfunction (SDys); and Group Three, No Sexual Dysfunction (NSD). Group One was composed of individuals assigned a diagnosis of lifelong or acquired, generalized Hypoactive Sexual Desire and their spouses. Group Two was composed of spousal units wherein one subject was assigned a diagnosis of an arousal or orgasm disorder. Group Three was a comparison group of sexually functional spouses. The three study groups were matched for age. The rationale for selecting Group Two to include arousal and orgasm dysfunctions is related to the human sexual response cycle and the purpose of the study. The sexual response cycle is referred to in three phases: desire, arousal and orgasm. The purpose of this study was to compare subjects experiencing sexual desire problems with subjects experiencing more genitally related sexual disorders. Sexual desire is activated by specific neural systems in the brain whereas arousal and orgasm phase responses involve physiological
reactions, for instance, reflex vasodilation of genital blood vessels and reflex contractions of genital muscles (Kaplan, 1979). This investigation compared subjects experiencing the problem of generalized lack of sexual desire with subjects experiencing problems related to the genital reflex stages of the sexual response cycle.

B. SUBJECTS

The target population for the study was heterosexual couples, between the ages of 22 and 50 years old in which one spouse was experiencing a psychosexual dysfunction of desire, arousal or orgasm. The population of couples from which the sample was chosen consisted of couples who were living together as husband and wife in a committed, stable relationship for a duration of 18 months or longer. No distinction was made in the study between a marriage or a commonlaw relationship.

The subjects in the study were 22 individuals suffering from lifelong or acquired, generalized hypoactive sexual desire and their spouses (Group 1, Hypoactive Sexual Desire); 21 individuals with an arousal or orgasm dysfunction and their spouses (Group 2, Sexual Dysfunction); and 19 sexually functional comparison subjects and their spouses (Group 3, No Sexual Dysfunction). The unequal numbers of subjects can be accounted for by five couples who were accepted into the study and who were subsequently disqualified from participation. Three subjects were disqualified from the control group for the following reasons: one subject refused to complete the questionnaires, one subject was over 50 years old and one subject unknown to his spouse was taking medication for a depressive illness. Group Two was reduced by one couple because both spouses
suffered from sexual dysfunction. To participate in the research, all partners of hypoactive sexual desire subjects and sexually dysfunctional subjects, had themselves to be sexually functional.

Because the investigation was designed to study hypoactive sexual desire in spousal units, subjects and their spouses were investigated and gender differences were not studied. Although it would have been preferable to choose only male or female subjects, the number of subjects required, the availability of subjects and time constraints led to the decision not to consider gender differences. This decision resulted in unequal gender ratios in the three groups. The sample size required to study both spousal dynamics and gender differences however, is such that disproportionate cell sizes would arise. This places a serious restraint on the factorial design and analysis so the question of gender effect could not be addressed unambiguously. Nevertheless, Meyers (1979) suggests that in multifactor designs with disproportionate cell frequencies, linear multiple regression analysis can be helpful. Therefore, in order to understand the effect of gender on the data used to test Hypotheses 2 and 4, additional analyses were performed. Following Meyers' (1979, p. 378) suggested procedure, analyses of variance were carried out on a 2X3 factorial design with disproportionate cell sizes where gender was one factor and groups was a second factor. The results were that the null hypothesis of no gender effects was tenable at the .05 level of significance. And, in keeping with the analyses reported later for Hypotheses 2 and 4 in Chapter III, the results of testing the null hypothesis of no significant difference between groups was upheld. Further support for the decision to focus on partner dynamics at the expense of gender differences comes from Leiblum and Rosen (1988) who report that there has been an overall trend in
the last two decades to minimize male-female differences in all aspects of sexual response. Although the decision not to use gender as a variable was based on practical grounds, it is recognized that this places a limitation on the investigation.

All couples in the study were sampled from a large urban area on the Canadian West Coast and were voluntary participants. Some subjects were clients who had been referred from medical or health care practitioners to a sex therapy practice over a 15 month period and who consented to participate in the study. Other subjects responded to the request for volunteers. Couples were notified of the study through posters, newspaper articles and word of mouth. Notification of the Sexuality Research Project (Appendix B) was sent to potential subjects by a local Sexual Medicine Clinic. A newspaper interview regarding the Sexuality Research Project resulted in 350 telephone enquiries and many potential volunteers to the study.

The general inclusion criteria for all subjects and partners in the study were: (a) ages 22 to 50 years; (b) married or living together in a stable relationship for at least 18 months and (c) spouse's self report that their relationship was stable and committed.

The general exclusion criteria for all subjects and partners were: (a) evidence of a medical disorder; (b) evidence of drug intake or substance abuse; (c) presence of a major psychopathology classifiable as a DSM-III-R, Axis I disorder; and (d) current ingestion of medication which would inhibit the central nervous system. Since almost any disease process or substance dependency has the potential for inhibiting the sexual response, all subjects included in the study were screened for such illnesses (Kaplan, 1979, 1983; Kolodny et al., 1979;
Munjack et al., 1981).

The specific inclusion criteria for each study group is presented below.

**Group One: Hypoactive Sexual Desire (HSD) Inclusion Criteria:** Subjects selected for Group One (HSD) displayed lifelong or acquired, generalized hypoactive sexual desire. Subjects met the following DSM-III-R (American Psychiatric Association, 1987) diagnostic criteria and the study's operational definition of the DSM-III-R criteria:

**Diagnostic Criteria for 302.71 Hypoactive Sexual Desire Disorder**

A. Persistently or recurrently deficient or absent sexual fantasies and desire for sexual activity. The judgment of deficiency or absence is made by the clinician, taking into account factors that affect sexual functioning, such as age, sex, and the context of the person's life.

B. Occurrence not exclusively during the course of another Axis I disorder (other than a Sexual Dysfunction), such as Major Depression. (p. 293)

The DSM-III-R criteria for hypoactive sexual desire (HSD) were operationally defined as: (a) subject reports lack of desire for sexual activities, (b) subject and/or partner identify lack of sexual desire as a problem, (c) intercourse frequency of twice a month or less as reported on the Sexual History Form (SHF), and (d) score of 13 or less on the Derogatis Sexual Functioning Inventory
(DSFI) drive scale, Information about the presence and development of the disorder was sought from both spouses.

**Group Two: Sexual Dysfunction (SDys) Inclusion Criteria:** In order for subjects to be assigned to Group Two (Sexual Dysfunction) one of the following DSM-III-R (American Psychiatric Association, 1987) diagnostic criteria had to be met along with the study's operational definition of the DSM-III-R criteria:

**Diagnostic Criteria for 302.72 Female Sexual Arousal Disorder**

A. Either (1) or (2):

(1) persistent or recurrent partial or complete failure to attain or maintain the lubrication-swelling response of sexual excitement until completion of the sexual activity

(2) persistent or recurrent lack of subjective sense of sexual excitement and pleasure in a female during sexual activity

B. Occurrence not exclusively during the course of another Axis I disorder (other than a Sexual Dysfunction), such as Major Depression. (p. 294)

The DSM-III-R criteria for female sexual arousal disorder was operationally defined for the study by the subject's response of (1) 50% of the time or more and/or (2) 50% of the time or less to the following questions from the *Sexual History Form* (SHF): (1) Is the vagina so dry that intercourse cannot occur? (2) When you have sex with your mate, including foreplay and intercourse, do you notice some of these things happening: your breathing and pulse speeding up, wetness in your vagina, pleasurable sensations in your breasts and genitals?
Diagnostic Criteria for 302.72 Male Erectile Disorder

A. Either (1) or (2):

(1) persistent or recurrent partial or complete failure in male to attain or maintain erection until completion of the sexual activity

(2) persistent or recurrent lack of subjective sense of sexual excitement and pleasure in a male during sexual activity

B. Occurrence not exclusively during the course of another Axis I disorder (other than a Sexual Dysfunction), such as Major Depression. (p. 294)

The DSM-III-R criteria for Male Erectile Disorder was operationally defined for the study as an insufficient erection before or during intercourse such that the sexual encounter was abandoned on 50% or more of the occasions attempted as reported on the Sexual History Form (SHF).

Diagnostic Criteria for 302.73 Inhibited Female Orgasm

A. Persistent or recurrent delay in, or absence of, orgasm in a female following a normal sexual excitement phase during sexual activity that the clinician judges to be adequate in focus, intensity, and duration. Some females are able to experience orgasms during noncoital clitoral stimulation, but are unable to experience it during coitus in the absence of manual clitoral stimulation. In most of these females, this represents a normal variation of the female sexual response and does not justify the diagnosis of Inhibited Female Orgasm. However, in some of these
females, this does represent a psychological inhibition that justifies the diagnosis. This difficult judgment is assisted by a thorough sexual evaluation, which may even require a trial of treatment.

B. Occurrence not exclusively during the course of another Axis I disorder (other than a Sexual Dysfunction), such as Major Depression. (p. 294)

The DSM-III-R criteria for Inhibited Female Orgasm was operationally defined for the study as the inability to achieve orgasm through masturbation or genital caress or intercourse as reported on the Sexual History Form (SHF). Information about the presence and history of the disorder was sought from the subject.

**Diagnostic Criteria for 302.75 Premature Ejaculation**

Persistent or recurrent ejaculation with minimal sexual stimulation or before, upon, or shortly after penetration and before the person wishes it. This clinician must take into account factors that affect duration of the excitement phase, such as age, novelty of the sexual partner or situation, and frequency of sexual activity. (p. 295)

The DSM-III-R criteria for Premature Ejaculation was operationally defined for the study as, (1) ejaculation before subject wishes; (2) the subject reaching orgasm 50% of the time or more while trying to enter the vagina; (3) intercourse duration of less than 2 minutes as reported on the Sexual History Form (SHF). Information about the presence and development of the disorder was sought from the subject. A general inclusion criteria for all Group Two subjects was a score of 15 or greater on the drive scale of the DSFI (Derogatis, 1975b).
Group Three: No Sexual Dysfunction (NSD) Inclusion Criteria:

In order for subjects to be assigned to Group Three (No Sexual Dysfunction) the following criteria had to be met: (a) subjects had to score 15 or more on the Derogatis Sexual Functioning Inventory (DSFI) drive scale; (b) subjects had to report a frequency of intercourse four times a month or more on the Sexual History Form (SHF); and (c) subjects had to state that neither spouse suffered from a sexual disorder of desire, arousal or orgasm.

Group One, Group Two and Group Three subjects were matched for age. Control subjects were all volunteers who responded to the Sexuality Research Project's advertisement for subjects. Twelve Group Two subjects and six Group One subjects had been assessed by their physician and referred to a sex therapy practice for psychosexual therapy. They subsequently volunteered to participate in the research. Of the nine remaining subjects in Group Two, four were referred to the Sexuality Research Project by other health care practitioners and five responded themselves to the advertisement for subjects. Of the sixteen remaining subjects in Group One, three were referred to the Sexuality Research Project by other health care practitioners and thirteen responded themselves to the advertisement for subjects. Assignment of the participating subjects to one of the three study groups was undertaken by the researcher. The spouses' verbal description of their sexual problem and sexual functioning, the referring medical practitioner's assessment of the problem and the subject's written responses to the Derogatis Sexual Functioning Inventory (DSFI) and the Sex History Form (SHF) provided diagnostic information. On the basis of the referral information, the subjects description of the problem, objective data and clinical judgement,
subjects were assigned to one of the three study groups.

C. INSTRUMENTATION

The choice of measures selected for the study was predicated on appropriate measurement of intrapsychic, interpersonal and sexual functioning concepts identified in the review of the literature as being relevant in the development of hypoactive sexual desire. Instruments which displayed a history of reliability and validity in measuring the pertinent psychological and interpersonal constructs were chosen. Consideration was given to questionnaires which were found in the review of the literature to be used most consistently in interpersonal and human sexuality studies.

Psychopathology and depression were measured by the Minnesota Multiphasic Personality Inventory (MMPI); trait anxiety and sexual state anxiety were assessed by The State-Trait Anxiety Inventory (STAI); affect was investigated by the Affect Balance Scale (ABS); and self concept was measured by the intrapsychic plane of the Structure Analysis of Social Behavior (SASB). Interpersonal interactions were measured by the use of the Structural Analysis of Social Behavior (SASB). Marital adjustment was assessed by the Dyadic Adjustment Scale (DAS). Sexual Functioning Variables were measured by the Derogatis Sexual Functioning Inventory (DSFI) and the Sexual History Form (SHF).
1. Instruments Assessing Sexual Functioning

a. Derogatis Sexual Functioning Inventory (DSFI)

The DSFI (Derogatis, 1975b) is a self-report multidimensional psychological inventory that is comprised of 10 distinct subtests designed to measure the current level of sexual functioning. The ten subtests are designed to sample behavioral and psychological variables of sexual functioning. The subtests include: (1) Information, (2) Experience, (3) Drive, (4) Attitudes, (5) Symptoms, (6) Affect, (7) Gender Role Definition, (8) Fantasy, (9) Body Image, and (10) Sexual Satisfaction. The substantive domains of the DSFI were derived from clinical experience, theory, and empirical measurement (Derogatis, 1975b).

The DSFI provides a single summary score of the subject's global level of sexual functioning entitled the Sexual Functioning Index (SFI), and a qualitative profile measuring the subject's self-perception of his/her strengths and weaknesses in current levels of sexual functioning entitled the Global Sexual Satisfaction Index (GSSI). In addition, the subtests may be examined for individual content item information. These indices, combined with the ten primary domain scores of the DSFI provide a relatively complete quantitative summary of the individual's level of sexual functioning. Weis (1985) states in the Mental Measurement Yearbook that the DSFI is, "... one of the most thoroughly empirically investigated instruments, and best composite measure of overall sexual functioning available in the realm of sexual research" (p. 454).

Reliability for the various subtests of the DSFI are reported to be good, with both internal consistency and test-retest coefficients over a 14 day retest interval relatively high and within the acceptable range (Derogatis, 1975b;
Derogatis and Melisaratos, 1979). However, the internal consistency coefficients for information (.56), drive (.60), and body image (.58) appear to be low since the majority of the coefficients are above .80 and .90. The clinical and theoretical rationales for the selection of items, as well as the basis for the development of subtest items have been well described (Derogatis & Melisaratos, 1979). These operations provide content validity for the inventory. Evidence for discriminative validity is provided in studies dealing with sexually dysfunctional individuals and partners of sexually dysfunctional individuals (Derogatis & Melisaratos, 1979) and with male and female gender role definition (Derogatis, Meyer & Dupkin, 1976).

Norms are available on over 200 normals, plus comparable data on approximately 200 sexually dysfunctional subjects. In a review of the DSFI as a self-report technique for assessing sexual functioning, Conte (1983) found it useful for measuring the current sexual functioning of a wide variety of individuals.

b. Sexual History Form (SHF)

The SHF is authored by Joseph LoPiccolo as a pre-intake questionnaire for the Sex Therapy Centre in the University of New York at Stony Brook. It provides current sexual history and sexual functioning data that are compared with norms for well-functioning couples matched to the clinical population at Stony Brook on demographic variables. The 28 questions are written in a likert scale format using a range from never to always, and are designed to be a structured aid to the interview and diagnostic process during assessment.
2. Instruments Measuring Intrapsychic Domain

a. Affect Balance Scale (ABS)

The Affect Balance Scale (ABS) is a self report, adjective mood scale developed by Derogatis (1975a). It is comprised of 40 items which have been factorially derived to represent eight primary mood dimensions which reflect four positive and four negative principal mood dimensions. The premise underlying the ABS is that the brief adjective mood scale represents a sensitive, valid mechanism for registering affective status and general well being. Global scores are comprised of a Positive Affect Total, a Negative Affect Total and the Affect Balance Index (ABI) which reflects an area-standardized difference score between the positive and negative total scores. The Affect Balance Scale (ABS) has been used for research and clinical purposes for over ten years.

Northouse and Swain (1987) have shown the ABS to have high predictive validity in studies regarding the emotional status of cancer subjects. In addition, the manual reports that Derogatis and Meyer (1979) have demonstrated high sensitivity for the ABS among sexually dysfunctional cohorts, and also within samples of both male (Derogatis, Meyer & Vazquez, 1978) and female (Derogatis, Meyer & Boland, 1981) gender dysphoric subjects. Hoehn-Saric (1983) have demonstrated high discriminative validity for the ABS in drug trials with a variety of anxiety disorders. Internal consistency for the ABS is reported at .94 while test-retest reliability is reported at .75 (Derogatis and Melisaratos, 1979).
b. *Minnesota Multiphasic Personality Inventory*

The MMPI (Hathaway & McKinley, 1943) was chosen to obtain a clinical profile of each subject with measures of personality and psychopathology. The MMPI was designed to assess major personality characteristics of literate adolescents and adults by the use of ten primary scales: (1) Hypochondriasis, (2) Depression, (3) Hysteria, (4) Psychopathic Deviate, (5) Masculinity-Femininity, (6) Paranoia, (7) Psychasthenia, (8) Schizophrenia, (9) Hypomania and (10) Social Introversion.

One reason for choosing the MMPI is due to its reputation for being a valid measure of personality and psychopathology. Data reported on the reliability of the MMPI in the administration manual is from four sources: Hathaway and McKinley (1942); Cottle (1950); Rosen (1966) and Gocka (1965). Hathaway and McKinley (1942) reported test-retest coefficients ranging from .57 to .93 for six of the clinical scales of the MMPI. Cottle (1950) reported test-retest coefficients ranging from .56 to .91 for the ten clinical scales of the MMPI from a sample of unselected normals (n = 100). Rosen (1966) and Gocka (1965) reported comparable data for psychiatric cases. McKinley and Hathaway (1943) in reporting on the validity of the MMPI state that a high score on the scale has been found to predict positively the corresponding final clinical diagnosis or estimate in more than 60 percent of new psychiatric admissions.

The MMPI normative data is derived from a sample of approximately seven hundred "normal" individuals with an age range between sixteen and fifty-five from a crosssection of a metropolitan population. Historically there have been several attempts in sex therapy research to link psychopathology to sexual dysfunction (Munjack, Oziel, Kanno, Whipple & Leonard, 1981; Munjack &
Staples, 1976; Roffe & Britt, 1981; Staples, Ficher, Shapiro, Martin & Gonick, 1980). Several of these research endeavors employed the MMPI to measure clinical characteristics and psychopathology. These studies were conducted prior to sexual desire being recognized as an initial phase in the sexual response cycle. More recently, two studies, Stuart, Hammond and Pett (1986), and Churchill (1989) have reported on personality variables related to hypoactive sexual desire in their study samples using the MMPI. In the interest of continuity and comparison with other human sexuality research projects, the MMPI was chosen as the most appropriate measure.

c. The State-Trait Anxiety Inventory (STAI)

The STAI is one of the most widely used measures of anxiety because it measures both the relatively stable trait anxiety level of individuals and the more situational state anxiety level of the individual which may fluctuate depending on the situation in which the individual finds himself. Spielberger, Gorsuch, Lushene, Vagg and Jacobs (1968, 1977) developed the STAI in response to the need to separate measures of general levels of anxiety from measures of situational levels of anxiety. This is an important distinction in terms of anxiety and how it operates in sexually dysfunctional individuals, therefore, this instrument was been chosen as the most appropriate for the study to measure general levels of anxiety as well as sexual state anxiety.

The STAI (Form Y) was used in this investigation. Reliability data for form Y is reported in the administration manual in two forms: test-retest and internal consistency. Test-retest correlations for the Trait Anxiety scale ranged from .73 to .86 and for the State Anxiety scale from .16 to .62. Spielberger et
al. (1983) reports that, "...relatively low stability coefficients were expected for the S-Anxiety scale because a valid measure of state anxiety should reflect the influence of unique situational factors that exist at the time of testing" (p. 13). The following internal consistency alpha coefficients [computed by Formula KR-20 as modified by Cronbach (1951)] for normative samples are reported by Spielberger et al. (1983): Form Y S-Anxiety Scale, alpha coefficients range from .86 to .95 and for the T-Anxiety Scale, alpha coefficients range from .89 to .91. Spielberger et al. (1983) argue that the alpha coefficient provides a more meaningful index of the reliability of the S-Anxiety scales because of the transitory nature of anxiety states.

Correlation of the T-Anxiety scale with other trait anxiety measures provides a measure of concurrent validity. The STAI T-Anxiety scale correlated with the IPAT Anxiety Scale (Cattell & Scheier, 1963) produced a coefficient of .75 and correlated with the Taylor Manifest Anxiety Scale (Taylor, 1953) produced a coefficient of .80.

d. The Structural Analysis of Social Behavior (SASB)

The INTROJECT plane of the SASB provides a measure of self concept as perceived by an individual as a result of the relationship being studied. For further information regarding the SASB (INTROJECT), please see SASB under instruments measuring Interpersonal Domain.
3. Instruments Measuring Interpersonal Domain

a. Dyadic Adjustment Scale (DAS)

The DAS was developed by Graham B. Spanier in 1976. The DAS is a 32 item scale designed for use with either married or unmarried cohabiting couples. The overall resulting score of the DAS ranges from 0-151. Sub-scores are derived from four subscales measuring dyadic consensus, dyadic satisfaction, dyadic cohesion and dyadic affectional expression. Spanier (1976) views dyadic adjustment as an ever changing process with a qualitative dimension which can be evaluated at any point in time on a continuum from well adjusted to maladjusted. Items in the DAS were evaluated by three judges for content validity. Items were included only if the judges considered the items: (1) relevant measures of dyadic adjustment for contemporary relationships, (2) consistent with the nominal definitions, for adjustment and its components: satisfaction, cohesion, consensus and affection, and (3) carefully worded with appropriate fixed choice responses.

The scale was administered to a married sample of 218 persons and a divorced sample of 94 persons to achieve criterion related validity. Each of the 32 items in the scale correlated significantly with the external criterion of marital status. Sample A differed significantly from Sample B (p < .001) using a t-test for assessing differences between sample means (Spanier, 1976). In addition, the mean total scale scores for the married and divorced samples were 114.8 to 70.7 respectively. These scores are significantly different at the p < .001 level.

Since all the items with content validity used in previous marital
adjustment scales were included in the research instrument originally tested, it was possible to correlate the DAS with other marital adjustment scales to achieve construct validity. The correlation with the Locke Wallace Marital Adjustment Scale was .86 among married respondents and .88 among divorced respondents (Spanier, 1976). Factor analysis of the final 32 items was also undertaken. Four factor components were established, dyadic satisfaction, dyadic cohesion, dyadic consensus and affectional expression.

Reliability coefficients are available for each of the components of the scale as well as for the total scale. Internal consistency reliability was calculated using Cronbach’s Coefficient Alpha. The following coefficients were established: Total dyadic adjustment scale, \( r = .96 \); Dyadic consensus scale, \( r = .90 \); Dyadic satisfaction scale, \( r = .94 \); Dyadic cohesion scale, \( r = .86 \); Affection expression scale, \( r = .73 \).

b. The Structural Analysis of Social Behavior (SASB)

The Structural Analysis of Social Behavior (SASB) was chosen for this study in order to investigate differences in the complex interpersonal patterns of couples’ behavior between the three research groups. The SASB is a circumplex model of interpersonal behavior developed by Benjamin (1974) which offers a conceptually compatible and comprehensive assessment system permitting analysis of behavior on an interpersonal/system level. It’s model of psychosocial behavior and self-concept is based on the interpersonal theory of Sullivan (1953) and prior circumplex models by Leary (1957) and Schaffer (1965). Wiggins (1982) described the SASB as “the most detailed, clinically rich, ambitious and conceptually demanding of all contemporary models” (p. 18). Pinsoff (1981) stated that
"Benjamin has developed a theoretically sophisticated, complex, dynamic and multi-purpose system for analysing a wide variety of interpersonal and intrapsychic transactions" (p. 273) and that the potential for its use in family research is just beginning to be tapped.

The SASB Model (see Figure 1, cluster version) consists of three planes or surfaces which classify interpersonal transactions in terms of focus. The first plane is called Other and represents transitional actions (initiations) focused on another person. The second plane is called Self and represents intransitive states (responses) in reaction to another person. Thus, the first two planes, for example, He Initiates and She Responds, are complementary. The third surface, the Intrapsychic (INTROJECT) Plane describes behaviors which reflect the person's self-concept in terms of the interpersonal relationship being considered (Benjamin, 1974). Each surface is based upon the same two primary, orthogonal dimensions, termed affiliation (horizontal) and interdependence (vertical). Combinations of varying degrees of affiliation and interdependence characterize any interpersonal or intrapsychic event.

The horizontal axis in the model in Figure 1 represents the dimension of affiliation and contains components ranging from friendly on the right to hostile on the left. The vertical axis represents a dimension of interdependence and ranges from independent or differentiated in the upper halves to interdependent or emeshed in the lower halves. The clockwise progression around a given surface, therefore, represents stepwise changes in the proportions of underlying dimensions of affiliation and interdependence.

Benjamin's SASB model has been tested, refined and revised by the use of statistical analysis over the past 15 years (Benjamin, 1974, 1979). Construct
Figure 1
Cluster Version of Benjamin’s SASB Model

The top two planes describe complimentary positions for two members of a dyad. The bottom plane describes the intrapsychic result when behaviors described by the top plane are turned inward on the self. Reprinted from *Intrex Users Manual* (p. 1) by L.S. Benjamin, 1983, Madison, WI: Intrex Interpersonal Institute. Copyright 1983 by Intrex Interpersonal Institute. Reprinted by permission.
validity of the 1980 version of the model is supported by autocorrelations, factor and circumplex analyses, as well as a dimensional rating procedure. Autocorrelation is a statistical procedure whereby the relationship between the individual points of the circumplex is determined. This statistic provides a measure of internal consistency of the circumplex model (Benjamin, 1974, 1979, 1982). The correlation coefficients in which judges related items regarding the degree of autonomy and affiliation ranged from .90 to .95. The model can be satisfactorily reconstructed by the use of factor analysis, thus validating the basic structure in terms of affiliation, autonomy and focus. Canonical correlations of dimension ratings support the principles of complementarity and the introject. For further information pertaining to the validity of the SASB model, the reader is referred to Benjamin (1974, 1982).

INTREX Questionnaire Forms A (INTROJECT) and B (Interpersonal) (1983) which are related to the SASB model were used in this study. INTREX Form A consists of 36 questions. The subject is asked how well (on a scale from 0 to 100) each question describes him/herself. The ratings from INTREX Form A compose the data for the intrapsychic (INTROJECT) portion of the study.

INTREX Form B consists of 144 questions. For the first 72 questions the subject is asked to rate how well (on a scale of 0 to 100) each question describes his/her spouse, and for questions 73 to 144, how well each question describes him/herself in the relationship. The ratings from INTREX Form B composed the data for the four interpersonal planes of the study: Spouse Initiates, Spouse Responds, Self Initiates and Self Responds. Thus subjects were asked for their views on how they saw themselves behaving towards their
partners and how they in turn respond to their partners. Partners were correspondingly asked how they saw themselves behaving toward their spouses (the subject group) and how they in turn responded to their spouses.

Instructions on the INTREX forms indicate a score of 0 means that the item never applies, 100 means the item always perfectly applies and 50 is the demarkation between true and false. The use of a broad range scale for scoring, as opposed to a dichotomous, yes-no response, cuts down on the amount of variance attributed to the nuisance factor or acquiescence, which "reflects individual differences in the use of the response format rather than differences in the perception of self or others" (p. 283) (Wiggins, Steiger & Gaelick, 1981). "The questionnaires operate on the assumption of good faith and acknowledgement of principles of psychiatric defensiveness" (p. 405) (Benjamin, 1977). This means that there is no conscious distortion of ratings. Computer scoring programs are required.

For the purpose of this study, the computer program Figure (FIG) was used to mark the INTREX questionnaires. FIG organized the data into eight quadrants or clusters according to focus (self, other, introject). Rater assigned values on the INTREX Questionnaire were averaged within each quadrant to yield eight mean cluster scores for each of the five surfaces of the SASB model. The five surfaces are: (1) Introject, (2) Spouse Initiates, (3) Spouse Responds, (4) Self Initiates and (5) Self Responds. The eight cluster names for each of the five surfaces are represented in Figure 2. Benjamin (1985) states that researchers can interpret individual mean cluster scores with confidence due to the fact that cluster scores are independent of each other. Patterns among clusters therefore are entirely due to orderliness in the perception of the rater.
### Figure 2
Names for the Eight Clusters Related to the Three Foci of the SASB: Other, Self, and Introject

Besides organizing the data into eight mean cluster scores for each surface, the FIG program (1) graphs the average cluster scores for every rating, (2) identifies a best-fit theoretical curve that comes closest to describing the curve graphed, and (3) correlates the actual curve with the theoretical best-fit curve (pattern coefficient) and provides a test of statistical significance of the best-fit curve (Benjamin, 1984). There are 21 theoretical best-fit curves which characterize the various patterns of profiles generated from INTREX ratings of the intrapsychic and interpersonal planes. Psychological names of the 21 best-fit curves range from, (1) Friendly Initiative to (21) Attachment Double-Bind on the Other Focus, and from (1) Friendly Response to (21) Ambivalent Attachment on the Self Focus (Benjamin, 1984).
In this study, Profile Analysis will be conducted on the eight mean cluster scores of the three groups (HSD, SDys, NSD) for each surface: (1) INTROJECT, (2) Spouse Initiates, (3) Spouse Responds, (4) Self Initiates and (5) Self Responds. Pattern coefficients generated by program FIG, which correlated each of the group profiles to a best-fit profile, are reported in the upper right hand corners of Figures 9 through 18. Figures 9 through 18 are the graphed representation of the results of the Profile Analyses.

4. Variables

After data collection, scores on variables in the three separate domains were recorded for subjects and partners. Figure 3 provides an overview of the design and the variables of the study.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Sexual Functioning</th>
<th>Intrapsychic</th>
<th>Interpersonal</th>
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<tbody>
<tr>
<td></td>
<td>DSFI</td>
<td>SHF</td>
<td>ABS</td>
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<tr>
<td>Group 1 Subject</td>
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<tr>
<td>(HSD) Partner</td>
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<tr>
<td>Group 2 Subject</td>
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<tr>
<td>(SDys) Partner</td>
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<tr>
<td>Group 3 Subject</td>
<td></td>
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<tr>
<td>(NSD) Partner</td>
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Figure 3
Design of the Study, Domains of Variables, Groups and Subjects of the Study
D. DATA COLLECTION PROCEDURE

All subjects were either referred to the research investigation or responded to advertising requests for subjects to enter the Sexuality Research Project. Subjects contacted the researcher by phone or in person. The research project and study procedure were explained to the respondents at that time. Respondents interested in participation in the research project then agreed to, and underwent a screening procedure related to the general criteria of the study (i.e., age, relationship status and duration, sexual orientation, sexual problem, and marital quality). Appropriate subjects were invited to participate in the sexuality research project and an appointment time was set for the first session. The structure of the first session was explained to the subjects and an estimate of one and one half hours was provided for the procedure.

Session One: The research procedure was reviewed for each couple. This was followed by a one half hour clinical assessment of the current presenting sexual dysfunction. Subjects fitting the criteria of the study were then presented with written information about the sexuality research project. If they agreed to participate in the study both spouses were asked to sign a consent form (see Appendix C). Following this procedure, spouses were required to complete the following questionnaires: Demographic Form, Medical History Form (MHF), Sexual History Form (SHF), and the Derogatis Sexual Functioning Inventory (DSFI). Upon completion subjects were each given an envelope which contained the following questionnaires to be completed at home prior to the next appointment: Dyadic Adjustment Scale (DAS) and Structural Analysis of Social Behavior (SASB) INTREX Questionnaires, Form A (intrapsychic) and Form B (interpersonal). Directions for completing the questionnaires were discussed with
each couple and an appointment time for the second session was booked. Subjects were asked to return their package of completed questionnaires on the following session.

**Session Two** began with an informal discussion addressing any questions the spouses may have had regarding the study or the material they had completed. The questionnaires completed at home were collected at this time. Each subject then completed a State Trait Anxiety Inventory (STAI) and a Minnesota Multphasic Personality Inventory (MMPI). Upon completion, of the questionnaires, each couple was paid $25.00 for participation in the research. Sixty-five couples completed the study material and accepted the $25.00 payment. Subjects who requested the free feedback/debriefing session were given an appointment time for two weeks hence.

**Feedback Session** The third session began with an informal discussion about the sexuality research project and an opportunity was provided for subjects to discuss their reactions to filling out the research material. All questionnaires were marked in preparation for the session and feedback on the study material was provided on request. Educational and/or resource information was offered to couples if requested. Forty couples requested and received the feedback session (17 from Group One, 12 from Group Two and 11 from Group Three).

Sixty-seven couples started and 65 couples completed the research program. Three couples were subsequently dropped from the study leaving 62 couples in the research data base. Of the five couples not included in the study, two were excluded after the first session. The first couple was excluded because one subject’s partner suffered from a transvestic fetish. The second couple was
excluded because the partner refused to complete the questionnaires. Three couples
completed the research project but were subsequently dropped from the study. In
one couple, both partners suffered from sexual dysfunction. In the second couple,
one partner was receiving medication for a manic depressive illness. In the third
couple, one partner was well over 50 years old.

E. STATISTICAL HYPOTHESES

1. Analysis I: Canonical Analysis and Analysis of Variance

a. Subjects

Statistical Hypothesis 1: $^*H_0$: $R_{cj} = 0$

The canonical correlation between the two sets of variables, sexual
functioning and intrapsychic functioning, will not be significantly different from
zero at the alpha = .05 level of significance.

Statistical Hypotheses 2:

$^{**}H_0$: (a) $\mu_1 = \mu_2 = \mu_3$, ($\hat{y}^{(1)}$ mean scores)

(b) $\mu_1 = \mu_2 = \mu_3$, ($\hat{x}^{(1)}$ mean scores)

There will be no statistically significant difference between the three
groups of subjects on each of the canonical variate mean scores.

Statistical Hypothesis 3: $^*H_0$: $R_{cj} = 0$

The canonical correlation between the two sets of variables, sexual
functioning and interpersonal functioning, will not be significantly different from
zero at the alpha = .05 level of significance.

* see key on page 88

** see key on page 88
Statistical Hypotheses 4:

**H₀: (a) \( \mu_1 = \mu_2 = \mu_3, (\hat{y}^{(1)} \text{ mean scores}) \)

(b) \( \mu_1 = \mu_2 = \mu_3, (\hat{x}^{(1)} \text{ mean scores}) \)

There will be no statistically significant difference between the three groups of subjects on each of the canonical variate mean scores.

b. Partners of Subjects

Statistical Hypothesis 5: *H₀: \( R_{cj} = 0 \)

The canonical correlation between the two sets of variables, sexual functioning and intrapsychic functioning, will not be significantly different from zero at the alpha = .05 level of significance.

Statistical Hypotheses 6:

**H₀: (a) \( \mu_1 = \mu_2 = \mu_3, (\hat{y}^{(1)} \text{ mean scores}) \)

(b) \( \mu_1 = \mu_2 = \mu_3, (\hat{x}^{(1)} \text{ mean scores}) \)

There will be no statistically significant difference between the three groups of partners on each of the canonical variate mean scores.

Statistical Hypothesis 7: *H₀: \( R_{cj} = 0 \)

The canonical correlation between the two sets of variables, sexual functioning and interpersonal functioning, will not be significantly different from zero at the alpha = .05 level of significance.

Statistical Hypotheses 8:

**H₀: (a) \( \mu_1 = \mu_2 = \mu_3, (\hat{y}^{(1)} \text{ mean scores}) \)

(b) \( \mu_1 = \mu_2 = \mu_3, (\hat{x}^{(1)} \text{ mean scores}) \)

* see key on page 88

**

***

****
There will be no statistically significant difference between the three groups of partners on each of the canonical variate mean scores.

2. Analysis II: SASB Profile Analysis

a. Subjects

Statistical Hypothesis 9:

\[ **H_0^1: \mu_1 = \mu_2 = \mu_3 \]

This is a test of whether or not the profiles are parallel.

\[ ****H_0^2: \mu_1' = \mu_2' = \mu_3' \]

Given the profiles are parallel, this is a test of whether or not the profiles are coincident.

Statistical Hypothesis 10:

\[ **H_0^1: \mu_1 = \mu_2 = \mu_3 \]

This is a test of whether or not the profiles are parallel.

\[ ****H_0^2: \mu_1' = \mu_2' = \mu_3' \]

Given the profiles are parallel, this is a test of whether or not the profiles are coincident.

b. Partners of Subjects

Statistical Hypothesis 11:

\[ **H_0^1: \mu_1 = \mu_2 = \mu_3 \]

This is a test of whether or not the profiles are parallel.

\[ ****H_0^2: \mu_1' = \mu_2' = \mu_3' \]

Given the profiles are parallel, this is a test of whether or not the profiles are
coincident.

**Statistical Hypothesis 12:**

\[ ***H_{01}: C\mu_1 = C\mu_2 = C\mu_3 \]

This is a test of whether or not the profiles are parallel.

\[ ****H_{02}: 1'\mu_1 = 1'\mu_2 = 1'\mu_3 \]

Given the profiles are parallel, this is a test of whether or not the profiles are coincident.

**Key**

* \( R_{cj} \): denotes the population canonical correlation coefficient.

** \( \hat{\gamma}^{(j)} \) and \( \hat{x}^{(j)} \): denote canonical variate pairs resulting from the canonical analysis. The superscript denotes the number of the canonical pair.

*** \( C\mu_1 \): Bold face letters are used as matrix or vector notations. \( C \) denotes a transformation matrix and \( \mu_1 \) refers to a mean vector on \( P \) variables for Group One. Subscript denotes group.

**** \( 1'\mu_1 \): \( 1' \) denotes the transpose of a unit vector. Bold face is used as matrix notation. Subscript denotes group (Johnson & Wichern, 1988, pp. 244-249).

**F. DATA ANALYSIS**

This study was based on a three group ex post facto comparison design. Variables were examined in the domains of sexual functioning, intrapsychic characteristics and interpersonal dynamics. Two multivariate analyses were performed on separate research data to address the hypotheses of the study.
Analysis I involved a Canonical Correlation Analysis. Analysis II involved Profile Analysis of the SASB data. A flow chart of the statistical procedures used in the study is presented in Figure 4.

1. Canonical Correlation Analysis

Canonical correlation analyses were performed initially to determine the strength and complexity of the relationship between sexual functioning and intrapsychic variables as well as sexual functioning and interpersonal variables for subjects and for their partners (Hypotheses 1, 3, 5, 7). The overall objective of canonical correlation is to generate pairs of variable combinations (canonical variates) so that the correlations between them are maximized. The purpose of the Canonical analysis was to reduce the number of variables of the study down to a manageable size while at the same time to achieve conceptual clarity as to the importance and strength of individual variables. Each canonical variate was a new variable generated from the larger set of original variables and as such, the canonical variates measured constructs underlying the original variables.

The canonical variates obtained in this study were characterized in terms of the underlying constructs. The underlying constructs were derived from a pattern analysis of the standardized weights given to each variable on the canonical variate and, in addition, on the loadings (structure coefficients) of the original variable on each principal component-like canonical variate. Pattern analysis focused on the relative size of the weights in each variate while structure analysis centered on the structural coefficients or factor-like loadings of the variables on each composite or canonical variate. The canonical variates obtained in the Canonical analysis were then used as the criterion variables for
### Analysis

#### I. Canonical Correlation Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Step I</th>
<th>Step II</th>
<th>Step III</th>
<th>Step IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Sexual Functioning Domain; SHF: desire arousal orgasm emotion - during sexual activity DSFI; SFI - current sexual functioning</td>
<td>Four Canonical Correlations</td>
<td>Pattern Analysis</td>
<td>ANOVA; to test for significance of group difference on canonical variates generated in canonical analysis</td>
<td>Student Newman–Keuls test procedure</td>
</tr>
<tr>
<td>II. Intrapsychic Domain; MMPI hypochondrasis, depression, hysteria, psychopathic deviate, masculine/feminine, paranoia, psychopathia, schizophrenia, hypomania, social introversion STAI sexual anxiety, trait anxiety ABS affect balance</td>
<td></td>
<td>Structure Coefficient Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III. Interpersonal Domain; DAS consensus cohesion affection satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### II. Profile Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Ten Profile Analyses</th>
<th>Group profiles tested for parallelism using Hotelling’s test (T²)</th>
<th>Group profiles tested for coincidence using ANOVA procedures</th>
<th>Student Newman–Keuls test procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBS Interpersonal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spouse Responds</td>
<td>(8 cluster scores)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self Initiates</td>
<td>(8 cluster scores)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self Responds</td>
<td>(8 cluster scores)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Figure 4
Flow Chart for Statistical Procedures, Steps I to IV
further study of group differences (Hypotheses 2, 4, 6, 8) by means of analysis of variance (ANOVA).

Canonical correlation analysis has been termed most appropriate for examining the relationship between two sets of variables (Cooley & Lohnes, 1971; Green, 1978; Thorndike, 1977). The objective of canonical correlation is to generate pairs of variable combinations (canonical variates) so that the correlations between them are maximized. In this sense, canonical correlation provides us with an examination of the overall significance and magnitude of relationships between two sets of variables. The objective of the analysis is to determine the complexity and the nature of that relationship.

A number of basic assumptions underlie canonical correlation analysis. No collinearities, or near collinearities should be present in either variable set. Therefore, variables highly correlated within the same set should not be included. Sample size should be large compared to the total number of variables to ensure that the solution is stable (Marascuilo & Levin, 1983). Although there is no requirement that the variables be normally distributed when canonical correlation is used descriptively, inferences regarding number of significant canonical variate pairs proceeds on the assumption of multivariate normality which is enhanced if univariate normality is established (Tabachnick & Fidell, 1983). Univariate normality can be determined by an examination of skewness and kurtosis. With minimally skewed variates and large samples, the central limit theorem can be invoked to speak to multivariate normality, which in itself is difficult to establish (Tabachnick & Fidell, 1983).

Outliers affect canonical analysis as they do other multivariate techniques. Univariate outliers can be detected among continuous variables by checking that
all cases have standardized scores ±3.00. Any standard score above or below ±3.00 can be viewed as an outlier although with a large sample size one would anticipate a few standard scores in excess of ±3.00 (Tabachnick & Fidell, 1983).

Stability of the canonical solution for subjects (n=62) and partners (n=62) was first tested by running a canonical correlation for the total subject sample (n=124). The solution was stable in both analyses. Two (n=62) data sets were then chosen for further analyses to address the first eight research questions.

Bartlett's test of statistical significance of the sets of canonical variates was applied to determine how many significant sets of variates were generated in each correlation. Bartlett's test indicates the number of canonical variables necessary to express the dependency between the two sets of variables. The necessary number of canonical variables is the smallest number of eigenvalues such that the test of the remaining eigenvalues is nonsignificant. Bartlett's test is based on partitioning the chi-squared statistic associated with Wilk's Lambda sequentially to each of the canonical correlations (Tabachnick & Fidell, 1983).

Significance is thus determined by examining the canonical correlations, the eigenvalues (which represent the percentage of overlapping variance between the first pair of canonical variates) and the results of the chi-square test. Correlations with $r<.30$ are usually not interpreted even if they are significant because they represent less than 10% of the variance (Tabachnick & Fidell, 1983).

The structure coefficients indicate the most significant relationships for the dimensions underlying the variable sets. The average amount of variance of a canonical variate that can be attributed to the original set of variables contributing to the variate is called the percentage of variance. For example, the
percentage of variance in the canonical composite $y^{(i)}$, is accounted for by the variables underlying that variate. On the other hand, the Redundancy Index indicates the proportion of variance of the variables of one set that is accounted for by the linear combination of the variables of the other set.

If the canonical correlation between the sets of variables is high, prediction between the sets is also expected to be high (Thorndike, 1977). In the analysis of the canonical correlation, further examination was carried out by means of ANOVA on the canonical variate scores after the underlying constructs of the variates were characterized.

\textit{a. Analysis of Variance (ANOVA)}

Corresponding to research hypotheses 2, 4, 6, and 8, canonical variates generated in the canonical analysis were used as criterion variables in subsequent ANOVA's to determine if the three groups differed significantly on the canonical variates. ANOVA's were conducted for each canonical variate generated from the subjects and from the partners data. Significance of group differences were tested using the Student-Newman-Keuls test procedure.

Canonical Analyses and Analyses of Variance were undertaken to answer Research Hypotheses 1 through 8. These eight hypotheses addressed the question as to the strength and nature of the relationship between sexual functioning variables and intrapsychic and interpersonal variables and whether or not these relationships varied according to group membership.
2. Profile Analysis of the SASB

Group Profile Analyses were undertaken to answer Research Hypotheses 9 through 12. These hypotheses addressed the question as to whether or not interpersonal marital behavior and self concept differs in some way in spouses where hypoactive sexual desire is a problem as compared to spouses in which arousal or orgasm difficulties occur or spouses with no sexual dysfunction at all.

The data for the profile analyses were generated from subjects' ratings of 180 questions comprising INTREX forms A (Intrapsychic) and B (interpersonal) which are the questionnaires relating to the SASB model (Benjamin, 1983). INTREX form A, for example, is composed of 36 questions each of which relates to one of the eight cluster points on the SASB model. There are 4 or 5 questions associated with each cluster point. The subjects' ratings of the 4 or 5 questions concerned with one specific point are averaged to provide a mean score for that cluster. There are 8 mean cluster scores per profile. The 144 questions associated with interpersonal INTREX form B are divided into 4 interpersonal surfaces composed of 36 questions per surface. There are 8 mean cluster scores for each interpersonal surface and there are 4 interpersonal surfaces: spouse initiates, spouse responds, self initiates and self responds.

Group profile analyses were performed on the one intrapsychic and four interpersonal surfaces of the SASB for subjects' and for partners' data. Profile analysis is appropriate in situations where a battery of questions is administered to different groups of subjects and one wishes to know if the groups differ in some way on their response (Johnson & Wichern, 1988). Two assumptions of profile analysis are that responses for the different groups are independent of one another, and that all responses are expressed in similar units. These two
assumptions are true of the SASB data.

In profile analysis the question of statistically significant difference between group profiles is formulated in a stepwise fashion. The first question addressed is: Are the profiles parallel in the sense that the line segments of the graphs are parallel? The second question addressed is: Assuming the profiles are parallel, are they coincident, or, are there significant groups differences? Again, assuming parallelism, the third question addressed is: Are the profiles level, for example, are the responses to each question the same? The null hypotheses for step one and two of the analysis are represented by Johnson and Wichern (1988, p. 245) as follows:

\[ H_{01}: C\mu_1 = C\mu_2 = C\mu_3 \]  
\[ H_{02}: 1'\mu_1 = 1'\mu_2 = 1'\mu_3 \]

The symbols are to be interpreted as follows: Bold faced letters are used as matrix notations. Subscript notations denote group membership. In \( H_{01} \), \( C \) denotes a transformation matrix and \( \mu \) refers to a mean vector on \( p \) variables. In \( H_{02} \), \( 1' \) denotes the transpose of a unit vector (Johnson & Wichern, 1988).

In this study, the third test for level profiles will not be undertaken. The rationale for this decision lies in the circumplex nature of the SASB model. The circumplex order of the model results in a curved graph output of mean cluster scores for every surface, which precludes a flat or level profile. Profile coefficients for the best-fit theoretical curve from the SASB model, however, will be reported as discussed in Chapter III. To review, SASB computer marking program FIG employed in this study, identifies a best-fit theoretical curve that comes closest to describing the data curve graphed. The FIG program correlates the data curve with one of the 21 theoretical best-fit curves of the SASB model.
and provides a test of statistical significance of the best-fit curve. For interpretive purposes, the SASB best-fit correlation coefficient will be recorded along with the graphically organized results of the profile analyses. The SASB best-fit correlation coefficients are reported in the upper right hand corner of Figures 9 through 18 in Chapter IV.

SPSSX profile analysis (SPSS Inc., 1988) was chosen to analyse group differences in SASB data. Each of the five surfaces of the SASB was analysed separately. The five surfaces again were: (1) Introject, (2) spouse initiates, (3) spouse responds, (4) self initiates and (5) self responds.

Profiles were generated for each of the five surfaces and tests of significance applied to determine if the group profiles differed significantly. SPSSX profile analysis generated tests of significance pertinent to the hypotheses related to parallelism and coincidence of profiles. To test the first null hypothesis of parallel profiles, $H_{01}$, Hotelling's $T^2$ procedure was used according to Johnson and Wichern (1988, p. 245). The second null hypothesis concerning coincident group profiles, $H_{02}$, was tested in accordance with Johnson and Wichern's procedure (1988, p. 246). If $H_{01}$ was rejected, the second analysis does not apply. If $H_{01}$ was tenable, $H_{02}$ was then tested and reported. An alpha level of .05 was set throughout.

G. SUMMARY

Chapter III has presented the methodology of the study from design and subject selection, through to methods of data analysis. The following chapter presents the results of the data analyses.
CHAPTER IV. RESULTS

The results of the analyses are divided into three sections. The first section presents a summary of descriptive data concerning the three groups: Hypoactive Sexual Desire, Sexual Dysfunction and No Sexual Dysfunction. Section two presents the results of the Canonical Correlation Analyses and the Analyses of Variance relevant to research and statistical hypotheses 1 through 8. Section three reports the results of the Profile Analyses of the SASB data relevant to research and statistical hypotheses 9 through 12.

A. SUMMARY OF DESCRIPTIVE DATA

A total of 62 couples were assigned to one of three groups according to the criteria outlined in Chapter III. On the basis of the criteria, twenty-two couples were assigned to the Hypoactive Sexual Desire (HSD) group. Of the 22 subjects in the HSD group, 5 (23%) were assigned a diagnosis of lifelong, generalized HSD and 17 (77%) were assigned a diagnosis of acquired, generalized HSD. Four subjects assigned the diagnosis of lifelong, generalized Hypoactive Sexual Desire had been referred for psychosexual therapy by their physician after it was concluded that the problem was not organically based. The fifth subject who was assigned a diagnosis of lifelong, generalized Hypoactive Sexual Desire had been referred for psychosexual therapy by a physician after an extensive hormonal analysis. All the relative hormonal values were found to be within the normal range. Eighteen (82%) of the subject group were female and 4 (18%) were male.

Twenty-one couples were assigned to the Sexual Dysfunction (SDys) group. Of the 21 subjects in the SDys group, 9 (43%) were females and 12 (57%)
were males. Of the females, 7 (33%) were assigned a diagnosis of inhibited female orgasm, lifelong, generalized, and 2 (10%) were assigned a diagnosis of inhibited female orgasm, lifelong, situational. Of the males, 5 (25%) were assigned a diagnosis of premature ejaculation, and 7 (33%) were assigned a diagnosis of male erectile disorder, acquired, situational. Group 2 was matched with Group 1 for age.

Nineteen couples were assigned to comparison Group 3, entitled No Sexual Dysfunction. Group 3 was matched with Group 1 for age. The mean age of Group 1 was 38.0 (sd 6.6); the mean age of Group 2 was 37.2 (sd 7.8); and the mean age of Group 3 was 35.0 (sd 6.4). There was no statistically significant difference between the ages of the subjects in the three groups [F(2,121) = 2.02, p > .05] indicating that the age matching procedure was adequate. Spouses in Group 3 were randomly assigned to a subject or partner category for data analysis. To check for any significant difference between randomly assigned subject/partner variable scores, t-tests were performed on the DSFI, DAS, MMPI and STAI scores and demographic data. There was no significant difference between the randomly assigned subject/partner categories on any of the variables or demographic data. Of the randomly assigned subject group, 11 (58%) were male and 8 (42%) were female. As reported in Chapter III, multiple regression analyses of the ANOVAs relevant to Hypotheses 2 and 4 were carried out to test for gender effects because of the disproportionate cell frequencies across groups. The results of the analyses were that the null hypotheses of no gender effects were tenable at the .05 level of significance in each instance. Demographic characteristics of the three groups are presented in Table 1.

The total sample population was composed of predominantly white, middle
Table 1
Demographic Characteristics of the Three Groups: Hypoactive Sexual Desire (HSD), Sexual Dysfunction (SDys), and No Sexual Dysfunction (NSD)

<table>
<thead>
<tr>
<th>Demographic Characteristic</th>
<th>Group 1 (HSD)</th>
<th>Group 2 (SDys)</th>
<th>Group 3 (NSD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>x = 38.0</td>
<td>x = 37.2</td>
<td>x = 35.0</td>
</tr>
<tr>
<td></td>
<td>SD = 6.6</td>
<td>SD = 7.8</td>
<td>SD = 6.4</td>
</tr>
<tr>
<td></td>
<td>range: 24-50</td>
<td>range: 23-50</td>
<td>range: 23-47</td>
</tr>
<tr>
<td>Duration of Relationship</td>
<td>x = 11.5</td>
<td>x = 9.8</td>
<td>x = 5.9</td>
</tr>
<tr>
<td>(cohabitation) (years)</td>
<td>SD = 6.4</td>
<td>SD = 6.2</td>
<td>SD = 4.4</td>
</tr>
<tr>
<td>Marital Status (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/Commonlaw</td>
<td>84.1</td>
<td>88.1</td>
<td>92.1</td>
</tr>
<tr>
<td>Remarried</td>
<td>15.9</td>
<td>11.9</td>
<td>7.9</td>
</tr>
<tr>
<td>Education (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 10 or less</td>
<td>2.3</td>
<td>4.8</td>
<td>2.6</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>27.3</td>
<td>16.7</td>
<td>15.8</td>
</tr>
<tr>
<td>Post Secondary (2 years)</td>
<td>13.6</td>
<td>16.7</td>
<td>13.2</td>
</tr>
<tr>
<td>Community College Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed</td>
<td>27.3</td>
<td>11.9</td>
<td>15.8</td>
</tr>
<tr>
<td>University Degree</td>
<td>11.4</td>
<td>33.3</td>
<td>44.7</td>
</tr>
<tr>
<td>Graduate Degree</td>
<td>18.2</td>
<td>16.7</td>
<td>7.9</td>
</tr>
<tr>
<td>Religious Affiliation (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>13.6</td>
<td>11.9</td>
<td>2.6</td>
</tr>
<tr>
<td>Protestant</td>
<td>34.1</td>
<td>42.9</td>
<td>15.8</td>
</tr>
<tr>
<td>Jewish</td>
<td>0.0</td>
<td>0.0</td>
<td>2.6</td>
</tr>
<tr>
<td>Other</td>
<td>52.2</td>
<td>45.2</td>
<td>78.9</td>
</tr>
</tbody>
</table>

¹The percentages given are not additive.

class, well educated individuals. All subjects were second generation North Americans and were residents of a westcoast urban Canadian city. The average age of the 124 participants was 36.7 years (sd = 7.0 years). For 81 (65.3%) of the respondents, this was their first marriage. Fifteen (12%) had been married twice while 28 (23%) were living commonlaw. The average length of a relationship was 9.2 years (sd = 6.2 years). Thirteen (10%) of respondents had one child; 26% had two children; 13% had three children; 7% had four children; 2%
had 5 children and 39% were childless. Fifty percent of respondents had children presently living at home. Information regarding religious preference indicated that 10% of the respondents were Catholic; 32% Protestant; 1% Jewish. Fifty-seven percent of the respondents either left the question unanswered (47%) or indicated an affiliation with an “Other” religion which was unspecified (10%).

Respondents were generally well educated. Eighteen respondents had attended graduate school; 36 had completed a university degree; 23 had attended college while 18 had completed two years of post secondary training. Twenty-five had achieved high school graduation. Only 4 had completed grade 10 or less. A chi-square test indicated that there was no significant difference between the three groups on level of education ($\chi^2 = 15.3; p > .05$). Analysis of variance indicated a significant difference in the duration of the relationship, however, between the groups $[F(2,121) = 9.84, p < .05]$. Student-Newman-Keuls test procedure indicated no significant difference between the length of the relationships for Group 1 and 2 but a significant difference between Group 3 and the other two groups. The probability of differences between the control group (NSD) and the two sexually dysfunctional groups (HSD, SDys) being due to the difference in the length of relationship between the groups was investigated using the analysis of covariance procedure in which the covariate was length of relationship and the independent variable was groups. The results showed that the assumption of equality of slope for the analysis of covariance procedure was tenable and that the amount of variance in the dependent variables (i.e., the canonical variates relative to Hypotheses 2 and 4) was never more than 3%. Following this, an adjustment of the means for the differences on the covariates between the groups was undertaken and a test for the significance of the group difference on the
adjusted means was calculated. The adjusted means were statistically significant at the .05 level as indicated in the later analyses (ANOVAs) reported for testing Hypotheses 2 and 4.

The means and standard deviations of the study questionnaires can be found in Appendix G. As the variables were transformed for the data analyses in the study the descriptive statistics of the study questionnaires are not presented in the main body of the dissertation.

B. RESULTS: CANONICAL ANALYSIS AND ANALYSIS OF VARIANCE

In the following section, the research and statistical hypotheses are restated for clarity of presentation. Sexually dysfunctional subjects were analysed separately from their partners and precede the latter in presentation. Interpretation of the results relevant to the research hypotheses will conclude each section.

1. Subjects

Research Hypothesis 1

There will be a statistically significant relationship between sexual functioning variables as measured by the SHF and DSFI and intrapsychic variables as measured by the MMPI, STAI and ABS.

Statistical Hypothesis 1

\[ H_0: R_{cj} = 0 \]

The canonical correlation between the two sets of variables, sexual functioning and intrapsychic functioning, will not be significantly different from zero at the alpha = .05 level of significance.
i. Results of Testing Statistical Hypothesis 1

A canonical correlation analysis was performed between a set of sexual functioning variables and a set of intrapsychic variables using BMDP6M (Dixon, 1985). The sexual functioning set included frequency of feelings of sexual desire (desire), feelings of sexual arousal with mate (arousal), ability to achieve orgasm (orgasm), and affective state during sexual activity with mate (emotion) as measured by the Sexual History Form (SHF), and a measure of the subjects' current level of sexual functioning (SFI) as measured by the Derogatis Sexual Functioning Inventory (DSFI). The intrapsychic set included personality characteristics, as measured by the 10 clinical scales of the Minnesota Multiphasic Personality Inventory (MMPI): hypochondriasis, depression, hysteria, psychopathic deviate, masculinity/femininity, paranoia, psychasthenia, schizophrenia, hypomania, and social introversion; affect as measured by the Affect Balance Scale (ABS); and sexual anxiety and trait anxiety as measured by the State-Trait Anxiety Inventory (STAI).

In the sexual functioning variable set, increasingly large positive numbers reflect increasing levels of sexual functioning (SFI) and decreasing frequency of sexual desire, arousal and orgasm, and the expression of negative emotions during sexual activity. Large negative numbers on the same measures reflect decreasing levels of current sexual functioning (SFI), and increased frequency of sexual desire, arousal and orgasm as well as the absence of negative emotions during sexual activity with partner. In the intrapsychic variable set, increasingly large positive numbers reflect increasingly higher T-score values on the MMPI scales, increasing levels of sexual anxiety and trait anxiety and positive affect balance while increasingly large negative numbers reflect negative
affect balance as measured by the *Affective Balance Scale* (ABS).

ii. Assumptions

An examination of univariate normality indicated nonexcessive skewness and kurtosis of each variable. The assumption of non-multicollinearity was upheld (see Table 3) since the multiple correlations of every variable in each set with all other variables in the same set were less than .99 (Tabachnick & Fidell, 1983). The plot in Figure 5 indicates that the assumption of a linear relationship between the first pair of canonical variates was reasonable. All standardized score values were within $\pm 3.00$ standard score units which indicates no serious outliers. There were no missing data.

iii. Results

The canonical correlation and the results of the $\chi^2$ test for statistical significance of the canonical correlations are contained in Table 4. The first canonical correlation was .83. Subsequent $\chi^2$ tests were not significant. The eigenvalue is the square of the canonical correlation coefficient and indicates the proportion of variance shared by the two sets of variables. The results show that 70% of the variance is shared by the two sets of variables. The first canonical correlation therefore accounts for the significant linkage between the two sets of variables. Canonical correlations exceeding .80 are considered to be strong while correlations between .60 and .79 are considered to be moderate. Canonical correlations of .59 and lower are considered to be weak (Thompson, 1984).

Analyses of the first pair of canonical variates [$\hat{y}^{(1)}$ and $\hat{x}^{(1)}$] appear in Table 5. The percentage of variance, redundancy figures and the size of the canonical correlation coefficient indicate that the canonical analysis was efficient.
Table 3
Canonical Analysis: Test for Multicollinearity of Variables

Squared multiple correlations of each variable in second set with all other variables in second set

<table>
<thead>
<tr>
<th>Variable</th>
<th>R-Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMPI</td>
<td></td>
</tr>
<tr>
<td>1 Hypochondriasis</td>
<td>.71</td>
</tr>
<tr>
<td>2 Depression</td>
<td>.64</td>
</tr>
<tr>
<td>3 Hysteria</td>
<td>.80</td>
</tr>
<tr>
<td>4 Psychopathic deviate</td>
<td>.69</td>
</tr>
<tr>
<td>5 Maculinity/femininity</td>
<td>.14</td>
</tr>
<tr>
<td>6 Paranoia</td>
<td>.61</td>
</tr>
<tr>
<td>7 Psychasthenia</td>
<td>.78</td>
</tr>
<tr>
<td>8 Schizophrenia</td>
<td>.86</td>
</tr>
<tr>
<td>9 Hypomania</td>
<td>.42</td>
</tr>
<tr>
<td>10 Social introversion</td>
<td>.55</td>
</tr>
<tr>
<td>Sexual Anxiety</td>
<td>.54</td>
</tr>
<tr>
<td>Affect Balance Scale</td>
<td>.73</td>
</tr>
<tr>
<td>Trait Anxiety</td>
<td>.71</td>
</tr>
</tbody>
</table>

Squared multiple correlations of each variable in first set with all other variables in first set

<table>
<thead>
<tr>
<th>Variable</th>
<th>R-Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desire</td>
<td>0.38</td>
</tr>
<tr>
<td>Arousal</td>
<td>0.46</td>
</tr>
<tr>
<td>Orgasm</td>
<td>0.08</td>
</tr>
<tr>
<td>Emotion</td>
<td>0.38</td>
</tr>
<tr>
<td>SFI</td>
<td>0.40</td>
</tr>
</tbody>
</table>

Table 4
Bartlett’s Test for Significance of Canonical Correlation

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Canonical Correlation</th>
<th>$\chi^2$</th>
<th>DF</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>.70</td>
<td>.83</td>
<td>117.60</td>
<td>65</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Bartlett's test indicates the number of canonical variables necessary to express the dependency between the two sets of variables. The necessary number of canonical variables is the smallest number of eigenvalues such that the test of the remaining eigenvalues is non-significant.
Figure 5
Linearity of Relationship Between the First Pair of Canonical Variates
Table 5
Canonical Correlations, Canonical Variable Loadings (Structure Coefficients), Standardized Canonical Weights, Percentage of Variance and Redundancy Between Sexual Functioning and Intrapsychic Variables and Their Corresponding Canonical Variates

<table>
<thead>
<tr>
<th>Independent Variable Set</th>
<th>Canonical Variate Set [x(1)]</th>
<th>Canonical Variable Set [y(1)]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sexual Functioning Set</strong></td>
<td><strong>Structure Coefficient</strong></td>
<td><strong>Canonical Variable Loading</strong></td>
</tr>
<tr>
<td>Desire</td>
<td><strong>.64</strong></td>
<td></td>
</tr>
<tr>
<td>Arousal</td>
<td><strong>.84</strong></td>
<td></td>
</tr>
<tr>
<td>Orgasm</td>
<td><strong>-0.00</strong></td>
<td></td>
</tr>
<tr>
<td>Emotion-during sexual activity</td>
<td><strong>.81</strong></td>
<td></td>
</tr>
<tr>
<td>SFI-current sexual functioning</td>
<td><strong>-0.77</strong></td>
<td></td>
</tr>
<tr>
<td>Percent of Variance</td>
<td><strong>.47</strong></td>
<td></td>
</tr>
<tr>
<td>Redundancy</td>
<td><strong>.33</strong></td>
<td></td>
</tr>
<tr>
<td><strong>MMPI</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Hypochondriasis</td>
<td><strong>.32</strong></td>
<td></td>
</tr>
<tr>
<td>2 Depression</td>
<td><strong>.28</strong></td>
<td></td>
</tr>
<tr>
<td>3 Hysteria</td>
<td><strong>.43</strong></td>
<td></td>
</tr>
<tr>
<td>4 Psychopathic deviate</td>
<td><strong>.53</strong></td>
<td></td>
</tr>
<tr>
<td>5 Masculinity/femininity</td>
<td><strong>-0.17</strong></td>
<td></td>
</tr>
<tr>
<td>6 Paranoia</td>
<td><strong>.21</strong></td>
<td></td>
</tr>
<tr>
<td>7 Psychasthenia</td>
<td><strong>.31</strong></td>
<td></td>
</tr>
<tr>
<td>8 Schizophrenia</td>
<td><strong>.35</strong></td>
<td></td>
</tr>
<tr>
<td>9 Hypomania</td>
<td><strong>-0.10</strong></td>
<td></td>
</tr>
<tr>
<td>10 Social introversion</td>
<td><strong>.18</strong></td>
<td></td>
</tr>
<tr>
<td>Sexual Anxiety</td>
<td><strong>.90</strong></td>
<td></td>
</tr>
<tr>
<td>Affect Balance Scale</td>
<td><strong>-0.80</strong></td>
<td></td>
</tr>
<tr>
<td>Trait Anxiety</td>
<td><strong>.63</strong></td>
<td></td>
</tr>
<tr>
<td>Percent of Variance</td>
<td><strong>.22</strong></td>
<td></td>
</tr>
<tr>
<td>Redundancy</td>
<td><strong>.15</strong></td>
<td></td>
</tr>
<tr>
<td>Canonical Correlation</td>
<td><strong>.83</strong></td>
<td></td>
</tr>
<tr>
<td>Eigenvalue</td>
<td><strong>.70</strong></td>
<td></td>
</tr>
</tbody>
</table>

Canonical variable loadings greater than .30 are highlighted with boldface type and are considered meaningful (Tabachnick & Fidell, 1983).
In interpreting the pair of canonical variates, each variate represents a dimension underlying one set of variables or is seen as a weighted linear composite of one set of variables that is highly correlated with a dimension, or weighted linear composite of the other set of variables. One interprets the pattern of weights in each linear composite or canonical variate. Pattern analysis focuses on the relative sizes of the weights in each variate while structure analysis centers on the structural coefficients or factor-like loadings of the variables on each composite or canonical variate. Loadings of .32 represent 10% of the variance and, although given as a cutoff point for interpretation, are considered rather poor loadings. Loadings of .45 are considered fair; .55 are considered good; .63 very good and .75 and above are considered excellent (Thompson, 1984).

With the cutoff correlation of .30, the structure coefficients and the standardized canonical weights indicate that the first dimension underlying the Y-variable set is primarily a sexual dysfunction construct characterized by low desire and arousal frequency, negative thoughts during sexual activity and a low sexual functioning index. In order of magnitude, the four highest structure coefficients were arousal (.84), emotion (.81), SFI (-.77) and desire (.64).

The first dimension underlying the X-variable set is primarily an anxiety/affective dimension with sexual anxiety playing a major role in the relationship. In order of magnitude, the structure coefficient loadings in excess of .30 were sexual anxiety (.90), affect balance (-.80), trait anxiety (.63) and MMPI scales psychopathic deviate (.53), hysteria (.43), schizophrenia (.35), hypochondriasis (.32) and psychasthenia (.31). Since all the MMPI T scores were within the normal, nonclinical range (between T score 30 and 70) intrapsychic characteristics
related to the normal range which may assist interpretation are provided. MMPI scales correlating with the sexual function variables are concerned with: characteristics of mild independence and nonconformity (psychopathic deviate). This MMPI scale was developed as an index to measure personality features such as low frustration tolerance and impulsivity (Lachar, 1974). Scale hysteria measures personality traits related to an hysterical personality which is described as self centered and naive and displaying a tendency toward somatization. Scales schizophrenia, hypochondriasis, and psychasthenia will not be interpreted due to their borderline contribution to the variate and the subsequent difficulty in interpretation.

Taken as a pair, the canonical variates indicate that those who lack feelings of sexual arousal, have negative emotional reaction during sexual activity (such as fear, guilt, shame and disgust), score low on current sexual functioning and who seldom experience sexual desire also tend to experience strong sexual anxiety, negative affect and elevated levels of general anxiety. The canonical analysis suggests a strong relationship between the two variable sets ($R_c = .83$).

The Percent of Variance indicates that the original sexual functioning Y-variables account for 47% of the variance in the first canonical variate ($\hat{y}^{(1)}$) and the original intrapsychic X-variables account for 22% of the variance in the first canonical variate ($\hat{x}^{(1)}$).

The Redundancy Index indicates that the original X-variables account for 33% of the variance in the first canonical variate ($\hat{y}^{(1)}$). This means that 33% of the variance on the $\hat{y}^{(1)}$ variate is predictable from a linear combination of the independent variable set. The Redundancy Index indicates that the original Y-variables account for 15% of the variance in the intrapsychic variable set.
An examination of the standardized canonical weights indicates the relative order of importance of the variables on the underlying dimension. For the first set of canonical variates, pattern analysis indicated arousal (.50), emotion (.36) and SFI (-.32) were the three most important variables to the dimension underlying the sexual functioning set while sexual anxiety (.64), and affect (-.28) were the most important variables to the dimension underlying the intrapsychic variable set.

Both the structure coefficients and the pattern analysis of the standardized weights suggest that sexual dysfunction bears a significant relationship to sexual anxiety and negative affect.

iv. Summary

The results of this canonical analysis led to the rejection of $H_0$ since $R_{c1}$ was statistically significant at the .05 level. Both pattern analysis and the structure coefficients from the canonical analysis suggest there were four major variables weighted on the first linear composite of dependent variables. The underlying construct was interpreted to be one of sexual dysfunction primarily of desire and arousal which included strong negative affect during sexual activity. The first linear composite of the independent variables was weighted most heavily by sexual anxiety, negative affect, and trait anxiety. Therefore, the construct was considered to be an anxiety/affective dimension with sexual anxiety assuming a prominent role.

Statistical Hypothesis 1 was rejected in favour of the conclusion that the canonical correlation between the two sets of variables, sexual and intrapsychic functioning was significantly different from zero. The result of this analysis supports Research Hypothesis 1 which states that a statistically significant
relationship will be found between sexual functioning and intrapsychic variables.

**Research Hypothesis 2**

There will be a statistically significant difference between the three groups of subjects (HSD, SDys, NSD) on the sexual functioning and intrapsychic canonical variates obtained in the canonical analysis.

**Statistical Hypotheses 2**

\[ H_0: \begin{align*}
(a) \quad & \mu_1 = \mu_2 = \mu_3, \quad (\hat{\gamma}^{(1)} \text{ mean scores}) \\
(b) \quad & \mu_1 = \mu_2 = \mu_3, \quad (\hat{x}^{(1)} \text{ mean scores})
\end{align*} \]

There will be no statistically significant difference between the three groups of subjects on each of the canonical variate mean scores.

i. **Results of Testing Statistical Hypothesis 2**

A one-way analysis of variance (ANOVA) was applied to the standardized scores on the canonical variates, \( \hat{\gamma}^{(1)} \) and \( \hat{x}^{(1)} \), with groups, (HSD, SDys, NSD), as the independent variable, to test if the groups differed significantly on the latent constructs underlying \( \hat{\gamma}^{(1)} \) and \( \hat{x}^{(1)} \).

(a) **Results of ANOVA based on the \( \hat{\gamma}^{(1)} \) Variate (Sexual Dysfunction)**

The results of the ANOVA based on the \( \hat{\gamma}^{(1)} \) variate led to the rejection of Statistical Hypothesis 2(a) at \( F(2,59)=16.50, \ p<0.00 \). Table 6 summarizes the results of the ANOVA. The result of this analysis supports Research Hypothesis 2 which states that statistically significant differences will be found between the three groups of subjects on the sexual functioning canonical variate.
Table 6
ANOVA Between the Three Groups of Subjects: Hypoactive Sexual Desire, Sexual Dysfunction and No Sexual Dysfunction Based on the Sexual Dysfunction Canonical Variate

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>21.88</td>
<td>10.94</td>
<td>16.50</td>
<td>0.00</td>
</tr>
<tr>
<td>Within Groups</td>
<td>59</td>
<td>39.12</td>
<td>.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>60.99</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A post hoc analysis was conducted using the Student-Newman-Keuls test procedure to establish which of the groups differed significantly on the latent construct of negative sexual-functioning. The results showed that all three groups differed significantly from each other at alpha = .05 level. The results of the analysis are presented in Table 7.

Table 7
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Mean</th>
<th>Group</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>-.83</td>
<td>NSD 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.10</td>
<td>SDys 2</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.62</td>
<td>HSD 1</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha = .05 level

The results of the ANOVA and Student-Newman-Keuls test confirm the difference between the three research groups in terms of the latent construct interpreted as sexual dysfunction characterized by negative feelings during sexual activity and infrequent sexual desire and arousal. HSD subjects reflected the
highest positive mean score on the latent construct while the NSD subjects reflected a high negative mean score. Increasingly large negative numbers in the sexual functioning variable set reflect increased frequency of sexual desire, arousal and orgasm and more positive emotions during sexual activity.

(b) Results of ANOVA based on the $\hat{x}^{(1)}$ Variate (Intrapsychic)

The results of the ANOVA based on the $\hat{x}^{(1)}$ variate led to the rejection of Statistical Hypothesis 2(b) at $F(2,59)=12.93$, $p<0.00$. Table 8 summarizes the results of the ANOVA. The result of this analysis supports Research Hypothesis 2 which states that statistically significant differences will be found between the three groups of subjects on the intrapsychic canonical variate.

### Table 8
ANOVA Between the Three Groups of Subjects: Hypoactive Sexual Desire, Sexual Dysfunction and No Sexual Dysfunction Based on the Sexual Dysfunction Canonical Variate

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>18.58</td>
<td>9.29</td>
<td>12.93</td>
<td>0.00</td>
</tr>
<tr>
<td>Within Groups</td>
<td>59</td>
<td>42.41</td>
<td>.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>60.99</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A post hoc analysis was conducted using the Student-Newman-Keuls test procedure to establish which of the groups differed significantly on the latent construct. The results showed that Group 3 differed significantly from Groups 1 and 2 at alpha=.05 level. The results of the analysis are presented in Table 9.
Table 9
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Mean</th>
<th>Group</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.80</td>
<td>NSD 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.19</td>
<td>SDys 2</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>0.51</td>
<td>HSD 1</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha = .05 level

The results of the ANOVA and Student-Newman-Keuls test confirm the statistically significant difference between the comparison group (NSD) and the other two study groups (HSD, SDys) in terms of the latent construct characterized by strong sexual anxiety, negative affect and elevated levels of general anxiety. And although Groups 1 and 2 do not differ significantly from each other, it is important to note that the HSD Group’s (Group 1) mean score on the construct is considerably higher than the SDys Group’s (Group 2) mean score. HSD subjects reflected the highest positive mean score on the latent construct while NSD subjects reflected high negative mean scores. Large negative numbers reflect increasing frequency of sexual desire, arousal and orgasm and more positive affect during sexual activity.

**Research Hypothesis 3**

There will be a statistically significant relationship between sexual functioning variables as measured by the SHF and DSFI and interpersonal variables as measured by the DAS.

**Statistical Hypothesis 3**

$H_0: R_{cj} = 0$

The canonical correlation between the two sets of variables, sexual
functioning and interpersonal functioning, will not be significantly
different from zero at the alpha = .05 level of significance.

i. Results of Testing Statistical Hypothesis 3

A canonical correlation analysis was performed between a set of sexual
functioning variables and a set of interpersonal variables using BMDP6M (Dixon,
1985). The sexual functioning set included frequency of feelings of sexual desire
(desire), feelings of sexual arousal with mate (arousal), ability to achieve orgasm
(orgasm), and affective state during sexual activity with mate (emotion) as
measured by the Sexual History Form (SHF), and a measure of the subjects' current
level of sexual functioning (SFI) as measured by the Derogatis Sexual Functioning
Inventory (DSFI). The interpersonal variable set included dyadic consensus, dyadic satisfaction, dyadic cohesion and dyadic affection as
measured by the Dyadic Adjustment Scale (DAS).

In the sexual functioning variable set, increasingly large positive numbers
reflect increasing levels of sexual functioning (SFI) and decreasing frequency of
sexual desire, arousal and orgasm and the experience of negative emotions
during sexual activity. Large negative numbers on the same measures reflect
decreasing levels of current sexual functioning (SFI), and increasing frequency of
sexual desire, arousal and orgasm as well as the absence of negative emotions
during sexual activity with partner. In the interpersonal variable set increasingly large positive numbers reflect higher scores on measures of marital consensus, satisfaction, cohesion, and affection.

ii. Assumptions

An examination of univariate normality indicated nonexcessive skewness
and kurtosis of each variable. The assumption of non-multicollinearity was upheld
(see Table 10) since the multiple correlations of every variable in each set with all other variables in the same set were less than .99 (Tabachnick & Fidell, 1983). The plot in Figure 6 indicates that the assumption of a linear relationship within the two pairs of canonical variates was reasonable.

### Table 10

**Canonical Analysis: Test for Multicollinearity of Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R$-Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desire</td>
<td>0.38</td>
</tr>
<tr>
<td>Arousal</td>
<td>0.46</td>
</tr>
<tr>
<td>Emotion</td>
<td>0.38</td>
</tr>
<tr>
<td>Orgasm</td>
<td>0.08</td>
</tr>
<tr>
<td>SFI</td>
<td>0.40</td>
</tr>
</tbody>
</table>

Squared multiple correlations of each variable in second set with all other variables in second set

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R$-Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consensus</td>
<td>0.40</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>0.59</td>
</tr>
<tr>
<td>Cohesion</td>
<td>0.51</td>
</tr>
<tr>
<td>Affection</td>
<td>0.43</td>
</tr>
</tbody>
</table>

All standardized score values were within ±3.00 standard score units which indicates no serious outliers. There were no missing data.

### iii. Results

The canonical correlation and the results of the $\chi^2$ test for statistical significance of the canonical correlations are contained in Table 11. Canonical correlations exceeding .80 are considered to be strong while correlations between
Figure 6
Linearity of Relationship Between the First Pair of Canonical Variates and the Second Pair of Canonical Variates
.60 and .79 are considered to be moderate. Canonical correlations of .59 and lower are considered to be weak (Thompson, 1984). The first canonical correlation was moderate at .65, the second canonical correlation was weak at .49. Subsequent $\chi^2$ tests were not significant. The eigenvalue is the square of the canonical correlation coefficient and indicates the proportion of variance shared by the two sets of variables. The results show that 42% of the variance is shared by the two sets of variables in the first canonical solution and 24% of the variance is shared by the two sets of variables in the second canonical solution. The first two canonical correlations therefore account for the significant linkages between the two sets of variables.

### Table 11
Bartlett’s Test for Significance of Canonical Correlation

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Canonical Correlation</th>
<th>$\chi^2$</th>
<th>DF</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>.42</td>
<td>.65</td>
<td>52.22</td>
<td>20</td>
<td>0.00</td>
</tr>
<tr>
<td>.24</td>
<td>.49</td>
<td>21.93</td>
<td>12</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Bartlett’s test indicates the number of canonical variables necessary to express the dependency between the two sets of variables. The necessary number of canonical variables is the smallest number of eigenvalues such that the test of the remaining eigenvalues is non-significant.

Analyses of the first and second pair of canonical variates [$\hat{y}^{(1)}, \hat{x}^{(1)}$] and [$\hat{y}^{(2)}, \hat{x}^{(2)}$] appear in Table 12. With a cutoff correlation of .30, the structure coefficients and the standardized canonical weights indicate that the first dimension underlying the first Y-variable set is primarily one of relationship adjustment characterized by affection, satisfaction and cohesion. In order of magnitude, the structure coefficients of the three most significantly weighted
Table 12
Canonical Correlations, Canonical Variable Loadings (Structure Coefficients), Standardized Canonical Weights, Percentage of Variance and Redundancy Between Sexual Functioning and Interpersonal Variables and Their Corresponding Canonical Variates

<table>
<thead>
<tr>
<th>Dependent Variable Set</th>
<th>First Canonical Variates</th>
<th>Second Canonical Variates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standardized Structure</td>
<td>Standardized Structure</td>
</tr>
<tr>
<td></td>
<td>Canonical Weight</td>
<td>Canonical Weight</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Interpersonal Set</td>
<td>( \hat{y}^{(1)} )</td>
<td>( \hat{y}^{(2)} )</td>
</tr>
<tr>
<td>Dyadic Consensus</td>
<td>.07</td>
<td>.13</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>.41</td>
<td>-.10</td>
</tr>
<tr>
<td>Cohesion</td>
<td>.34</td>
<td>.66</td>
</tr>
<tr>
<td>Affection</td>
<td>.90</td>
<td>.21</td>
</tr>
<tr>
<td>Percent of Variance</td>
<td>.27</td>
<td>.13</td>
</tr>
<tr>
<td>Redundancy</td>
<td>.11</td>
<td>.03</td>
</tr>
<tr>
<td>Independent Variable Set</td>
<td>Sexual Functioning Set</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( \hat{x}^{(1)} )</td>
<td>( \hat{x}^{(2)} )</td>
</tr>
<tr>
<td>Desire</td>
<td>-.26</td>
<td>-.61</td>
</tr>
<tr>
<td>Arousal</td>
<td>-.69</td>
<td>.10</td>
</tr>
<tr>
<td>Orgasm</td>
<td>-.73</td>
<td>.16</td>
</tr>
<tr>
<td>Emotion-during sexual activity</td>
<td>-.39</td>
<td>-.09</td>
</tr>
<tr>
<td>SFI-current sexual functioning</td>
<td>.79</td>
<td>.54</td>
</tr>
<tr>
<td>Percent of Variance</td>
<td>.37</td>
<td>.14</td>
</tr>
<tr>
<td>Redundancy</td>
<td>.15</td>
<td>.15</td>
</tr>
<tr>
<td>Canonical Correlation</td>
<td>.65</td>
<td>.49</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>.42</td>
<td>.24</td>
</tr>
</tbody>
</table>

Canonical variable loadings greater than .30 are highlighted with boldface type and are considered meaningful (Tabachnick & Fidell, 1983).

variables were: affection (.90), satisfaction (.41) and cohesion (.34). The first dimension underlying the first X-variable set is primarily a sexual functioning dimension characterized by positive sexual functioning. In order of magnitude, the structure coefficients of the four most significantly weighted variables were: SFI (.79), orgasm (-.73), arousal (-.69) and emotion (-.39).
Taken as a pair, the first set of canonical variates indicate that the experience of affection, satisfaction and cohesion in a relationship is moderately related to the tendency of being sexually functional, and experiencing sexual arousal and orgasm during a positive emotional state.

The structure coefficients and the standardized canonical weights of the second pair of variates \([\hat{y}^{(2)}, \hat{x}^{(2)}]\) indicate that relationship cohesion is somewhat related to the experience of sexual desire and functioning. In the second Y-variable set variable cohesion (.66) was the single variable receiving a structure coefficient loading greater than .30. In the X-variable set, desire (-.61) and SFI (.54) weighted significantly on the variate.

The canonical analysis suggests a moderately strong relationship between the dependent and independent variables \(R_{c1} = .65\), and a second weak relationship between the dependent and independent variables \(R_{c2} = .49\).

The Percentage of Variance indicates that the original Y-variables account for 27% of the variance in the first canonical variate \([\hat{y}^{(1)}]\) and 13% of the variance in the second canonical variate \([\hat{y}^{(2)}]\). The original X-variables account for 37% of the variance in the first canonical variate \([\hat{x}^{(1)}]\) and 14% of the variance in the second canonical variate \([\hat{x}^{(2)}]\).

The Redundancy Index indicates that for the first canonical variate \([\hat{y}^{(1)}]\) 11% of the variance is accounted for by the variables in the independent variable set (orgasm, SFI, arousal, emotion). However, for the second canonical variate \([\hat{y}^{(2)}]\) only 3% of the variance is accounted for by the variables in the independent variable set. This means that only 3% of the variance on the interpersonal subtests set [for \([\hat{y}^{(2)}]\)] is predictable from linear combination of the independent variable set on the second canonical variate. For this reason, there
will be no further interpretation of the second canonical variate; only variates with a Redundancy Index of ≥10% will be considered for further interpretation.

An examination of the standardized canonical weights indicates the relative order of importance of the variables on the underlying dimension. For the first set of canonical variates pattern analysis indicated affection (1.16) and consensus (-.49) were the two most important variables to the dimension underlying the interpersonal variable set while SFI (.63), desire (.44), orgasm (-.39) and arousal (-.34) were the most important variables to the dimension underlying the sexual functioning variable set. Both the structure coefficients and the pattern analysis of the standardized canonical weights suggest that sexual functioning bears a significant relationship to marital affection and satisfaction.

iv. Summary

The results of the canonical analysis led to the rejection of H₀ since $R_{c1}^2$ and $R_{c2}^2$ were statistically significant at the .05 level. Both pattern analysis and the structure coefficients from the canonical analysis indicate three major variables weighted on the first linear composite of dependent variables. The underlying construct was interpreted to be one of relationship adjustment characterized by affection, satisfaction and cohesion. The first linear composite of the independent variables was weighted most significantly by four sexual functioning variables which included the ability to become more frequently aroused and orgasmic and feel pleasure during sexual activity within the relationship without experiencing negative affect. Statistical Hypothesis 3 was rejected in favour of the conclusion that the canonical correlation between the two sets of variables, sexual and interpersonal functioning was significantly different from zero. The result of this analysis supports Research Hypothesis 3 which states
that a statistically significant relationship will be found between sexual functioning and interpersonal variables.

**Research Hypothesis 4**

There will be a statistically significant difference between the three groups of subjects (HSD, SDys, NSD) on the sexual functioning and interpersonal canonical variates obtained in the canonical analysis.

**Statistical Hypotheses 4**

\[
H_0: (a) \mu_1 = \mu_2 = \mu_3, \quad (\hat{y}^{(1)} \text{ mean scores})
\]

\[
(b) \mu_1 = \mu_2 = \mu_3, \quad (\hat{x}^{(1)} \text{ mean scores})
\]

There will be no statistically significant difference between the three groups of subjects on each of the canonical variate mean scores.

**i. Results of Testing Statistical Hypothesis 4**

A one-way analysis of variance (ANOVA) was applied to the standardized scores on the canonical variates, \(\hat{y}^{(1)}\) and \(\hat{x}^{(1)}\), with groups, (HSD, SDys, NSD), as the independent variable to test if the groups differed significantly on the latent constructs underlying \(\hat{y}^{(1)}\) and \(\hat{x}^{(1)}\).

(a) **Results of ANOVA Based on the \(\hat{y}^{(1)}\) Variate (Interpersonal)**

The results of the ANOVA based on the \(\hat{y}^{(1)}\) variate led to the rejection of Statistical Hypothesis 4(a) at \(F(2,59)=5.29, \ p<0.01\). Table 13 summarizes the results of the ANOVA. The result of this analysis supports Research Hypothesis 4 which states that statistically significant differences will be found between the three groups of subjects on the interpersonal canonical variate.
A post hoc analysis was conducted using the Student-Newman-Keuls test procedure to establish which of the groups differed significantly on the latent construct. The results showed that Group 3 differed significantly from both Group 1 and Group 2 on the latent construct interpreted as relationship adjustment characterized by affection, satisfaction and cohesion. The results of the analysis are presented in Table 14.

Table 14
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Mean</th>
<th>Group</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>-.31</td>
<td>HSD 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-.20</td>
<td>SDys 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.58</td>
<td>NSD 3</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha = .05 level

The results of the ANOVA and Student-Newman-Keuls test confirm the difference between the three groups in terms of the latent construct interpreted as positive relationship affection/adjustment. The NSD group differed significantly
from the other two study groups (HSD, SDys) indicating a higher degree of affectional expression, satisfaction and cohesion. There was no significant difference between the HSD and the SDys groups on the variable.

(b) Results of ANOVA Based on the $\hat{x}^{(1)}$ Variate (Sexual Functioning)

The results of the ANOVA based on the $\hat{x}^{(1)}$ variate led to the rejection of Statistical Hypothesis 4(b) at $F(2,59)=6.41$, $p<0.00$. Table 15 summarizes the results of the ANOVA. The result of this analysis supports Research Hypothesis 4 which states that a statistically significant difference will be found between the three groups of subjects on the sexual functioning canonical variate.

Table 15
ANOVA Between the Three Groups of Subjects: Hypoactive Sexual Desire, Sexual Dysfunction and No Sexual Dysfunction Based on the Sexual Functioning Canonical Variate

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>12.81</td>
<td>6.41</td>
<td>7.85</td>
<td>0.00</td>
</tr>
<tr>
<td>Within Groups</td>
<td>59</td>
<td>48.18</td>
<td>.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>60.99</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A post hoc analysis was conducted using the Student-Newman-Keuls test procedure to establish which of the groups differed significantly on the latent construct characterized by positive arousal, orgasm and sexual functioning. The results showed that Group 3 differed significantly from Group 1 and Group 2 at alpha=.05 level. The results of the analysis are presented in Table 16.
Table 16
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Mean</th>
<th>Group</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>-.30</td>
<td>HSD 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-.30</td>
<td>SDys 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-.68</td>
<td>NSD 3</td>
<td>*</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha = .05 level

The results of the ANOVA and Student-Newman-Keuls test confirm the difference between the NSD group (Group 3) and the other two study groups (HSD and SDys) on the sexual functioning construct. There was no significant difference between the HSD and SDys groups on the variable.

2. Partners of Subjects

Research Hypothesis 5

There will be a statistically significant relationship between sexual functioning variables as measured by the SHF and DSFI and intrapsychic variables as measured by the MMPI, STAI and ABS.

Statistical Hypothesis 5

\[ H_0: R_{cj} = 0 \]

The canonical correlation between the two sets of variables, sexual functioning and intrapsychic functioning, will not be significantly different from zero at the alpha = .05 level of significance.
i. Results of Testing Statistical Hypothesis 5

A canonical correlation analysis was performed between a set of sexual functioning variables and a set of intrapsychic variables using BMDP6M (Dixon, 1985). The sexual functioning set included frequency of feelings of sexual desire (desire), feelings of sexual arousal with mate (arousal), ability to achieve orgasm (orgasm), affective state during sexual activity with mate (emotion) as measured by the Sexual History Form (SHF) and a measure of subjects current level of sexual functioning (SFI) as measured by the Derogatis Sexual Functioning Inventory (DSFI). The intrapsychic set included personality characteristics as measured by the 10 clinical scales of the Minnesota Multiphasic Personality Inventory (MMPI): hypochondriasis, depression, hysteria, psychopathic deviate, masculinity/femininity, paranoia, psychasthenia, schizophrenia, hypomania, social introversion; affect as measured by the Affect Balance Scale (ABS); and sexual anxiety and trait anxiety as measured by the (State-Trait Anxiety Inventory (STAI).

In the sexual functioning variable set, increasingly large positive numbers reflect increasing levels of sexual functioning (SFI) and decreasing frequency of sexual desire, arousal and orgasm, and the expression of negative emotions during sexual activity. Large negative numbers on the same measures reflect decreasing levels of sexual functioning, and increased frequency of sexual desire, arousal and orgasm as well as the absence of negative emotions during sexual activity with partner. In the intrapsychic variable set, increasingly large positive numbers reflect increasingly higher T-score values on the MMPI scales, increasing levels of sexual anxiety and trait anxiety and positive affect balance while increasingly large negative numbers reflect negative affective balance as measured
by the Affective Balance Scale (ABS).

ii. Assumptions

An examination of univariate normality indicated nonexcessive skewness and kurtosis of each variable. The assumption of non-multicollinearity was upheld (see Table 17) since the multiple correlations of every variable in each set with all other variables in the same set were less than .99 (Tabachnick & Fidell, 1983). The plot in Figure 7 indicates that the assumption of a linear relationship

Table 17
Canonical Analysis: Test for Multicollinearity of Variables

<table>
<thead>
<tr>
<th>Squared multiple correlations of each variable in second set with all other variables in second set</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>MMPI</td>
</tr>
<tr>
<td>1 Hypochondriasis</td>
</tr>
<tr>
<td>2 Depression</td>
</tr>
<tr>
<td>3 Hysteria</td>
</tr>
<tr>
<td>4 Psychopathic deviate</td>
</tr>
<tr>
<td>5 Maculinity/femininity</td>
</tr>
<tr>
<td>6 Paranoia</td>
</tr>
<tr>
<td>7 Psychasthenia</td>
</tr>
<tr>
<td>8 Schizophrenia</td>
</tr>
<tr>
<td>9 Hypomania</td>
</tr>
<tr>
<td>10 Social introversion</td>
</tr>
<tr>
<td>Sexual Anxiety</td>
</tr>
<tr>
<td>Affect Balance Scale</td>
</tr>
<tr>
<td>Trait Anxiety</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Squared multiple correlations of each variable in first set with all other variables in first set</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Desire</td>
</tr>
<tr>
<td>Arousal</td>
</tr>
<tr>
<td>Orgasm</td>
</tr>
<tr>
<td>Emotion</td>
</tr>
<tr>
<td>SFI</td>
</tr>
</tbody>
</table>
Figure 7
Linearity of Relationship Between the First Pair of Canonical Variates and the Second Pair of Canonical Variates
within the two pairs of canonical variates was reasonable. All standardized score values were within \( \pm 3.00 \) standard score units which indicates no serious outliers. There were no missing data.

### iii. Results

The canonical correlation and the results of the \( \chi^2 \) test for statistical significance of the canonical correlations are contained in Table 18. Canonical correlations exceeding .80 are considered to be strong while correlations between .60 and .79 are considered to be moderate. The first canonical correlation was .80, the second canonical correlation was .71. Subsequent \( \chi^2 \) tests were not significant. The eigenvalue is the square of the canonical correlation coefficient and indicates the proportion of variance shared by the two sets of variables. The results show that 64% of the variance is shared by the two sets of variables in the first canonical solution and 51% of the variance is shared by the two sets of variables in the second canonical solution.

**Table 18**

Bartlett's Test for Significance of Canonical Correlation

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Canonical Correlation</th>
<th>( \chi^2 )</th>
<th>DF</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>.64</td>
<td>.80</td>
<td>125.52</td>
<td>65</td>
<td>0.00</td>
</tr>
<tr>
<td>.51</td>
<td>.71</td>
<td>73.36</td>
<td>48</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Bartlett's test indicates the number of canonical variables necessary to express the dependency between the two sets of variables. The necessary number of canonical variables is the smallest number of eigenvalues such that the test of the remaining eigenvalues is non-significant.

Analysis of the first and second pairs of canonical variates \([\hat{y}^{(1)}, \hat{x}^{(1)}]\) and \([\hat{y}^{(2)}, \hat{x}^{(2)}]\) appear in Table 19. With a cutoff correlation of .30, the
Table 19
Canonical Correlations, Canonical Variable Loadings (Structure Coefficients), Standardized Canonical Weights, Percentage of Variance and Redundancy Between Sexual Functioning and Intrapsychic Variables and Their Corresponding Canonical Variates

<table>
<thead>
<tr>
<th>Dependent Variable Set</th>
<th>First Canonical Variates</th>
<th>Second Canonical Variates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standardized Structure Coefficient</td>
<td>Standardized Canonical Weight</td>
</tr>
<tr>
<td>Sexual Functioning Set</td>
<td>([\hat{y}^1])</td>
<td>([\hat{y}^2])</td>
</tr>
<tr>
<td>Desire</td>
<td>-.25</td>
<td>-.12</td>
</tr>
<tr>
<td>Arousal</td>
<td>-.50</td>
<td>-.27</td>
</tr>
<tr>
<td>Orgasm</td>
<td>-.47</td>
<td>-.16</td>
</tr>
<tr>
<td>Emotion-during sexual activity</td>
<td>-.15</td>
<td>.16</td>
</tr>
<tr>
<td>SFI-current sexual functioning</td>
<td>.91</td>
<td>.86</td>
</tr>
</tbody>
</table>

Percent of Variance
Desire: .28
Arousal: .18

Redundancy
Desire: .18
Arousal: .14

Independent Variable Set
Intrapsychic Set

<table>
<thead>
<tr>
<th>MMPI</th>
<th>([\hat{z}^1])</th>
<th>([\hat{z}^2])</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Hypochondriasis</td>
<td>-.20</td>
<td>-.06</td>
</tr>
<tr>
<td>2 Depression</td>
<td>-.59</td>
<td>-.59</td>
</tr>
<tr>
<td>3 Hysteria</td>
<td>-.15</td>
<td>.18</td>
</tr>
<tr>
<td>4 Psychopathic deviate</td>
<td>-.20</td>
<td>-.18</td>
</tr>
<tr>
<td>5 Maculinity/femininity</td>
<td>.45</td>
<td>.41</td>
</tr>
<tr>
<td>6 Paranoia</td>
<td>-.36</td>
<td>-.14</td>
</tr>
<tr>
<td>7 Psychasthenia</td>
<td>-.43</td>
<td>.39</td>
</tr>
<tr>
<td>8 Schizophrenia</td>
<td>-.41</td>
<td>-.16</td>
</tr>
<tr>
<td>9 Hypomania</td>
<td>.18</td>
<td>-.31</td>
</tr>
<tr>
<td>10 Social introversion</td>
<td>-.66</td>
<td>-.09</td>
</tr>
<tr>
<td>Sexual Anxiety</td>
<td>-.64</td>
<td>-.25</td>
</tr>
<tr>
<td>Affect Balance Scale</td>
<td>.85</td>
<td>.57</td>
</tr>
<tr>
<td>Trait Anxiety</td>
<td>-.75</td>
<td>.26</td>
</tr>
</tbody>
</table>

Percent of Variance
Sexual Anxiety: .25
Affect Balance Scale: .85

Redundancy
Sexual Anxiety: .16
Affect Balance Scale: .03

Canonical Correlation
Sexual Functioning: .80
Affect Balance Scale: .71

Eigenvalue
Sexual Functioning: .64
Affect Balance Scale: .51

Canonical variable loadings greater than .30 are highlighted with boldface type and are considered meaningful (Tabachnick & Fidell, 1983).
structure coefficients and the standardized canonical weights indicate that the
dimension underlying the first dependent Y-variate set is primarily a sexual
functioning construct characterized by positive sexual functioning. In order of
magnitude, the three highest structure coefficient loadings are SFI (.91), arousal
(-.50) and orgasm (-.47).

The dimension underlying the first independent X-variable set is primarily
an affective dimension characterized by positive affect balance and low sexual and
trait anxiety. Structure analysis identified nine significant loadings. In order of
magnitude, the structure coefficient loadings were affect balance (.85), trait
anxiety (-.75), sexual anxiety (-.64) and five scales from the MMPI: social
introversion (-.66), depression (-.59), masculinity/femininity (.45),
psychasthenia (-.43), schizophrenia (-.41) and paranoia (-.36). Since all MMPI
scales were within the normal, nonclinical range (between T score 30 and 70),
intrapsychic characteristics related to the normal range, which may assist
interpretation are provided. MMPI scales correlating with the sexual functioning
variables are concerned with the capacity to maintain rewarding relationships:
social introversion; an average balance of optimism and pessimism, depression;
an average male/female vocational and avocational interest pattern, masculinity/
femininity; a capacity for work and living without undue worry and self-doubt,
psychasthenia; and basically normal interests, schizophrenia (Lachar, 1974).

Taken as a pair, the first set of canonical variates indicate that those
who score high on the index of sexual functioning and record higher frequency of
arousal and orgasm also tend to score in the high positive direction on affect
balance as well as score low on sexual anxiety and trait anxiety.

The structure coefficients and the standardized canonical weights of the
second pair of variates $[\hat{y}^{(2)}, \hat{x}^{(2)}]$ indicate a relationship between low sexual functioning characterized by decreased frequency of sexual arousal (.78), orgasm (.68), desire (.41) and SFI (.37); and hypochondriasis (-.53) and affect balance (.33). Although the canonical analysis suggests a moderate relationship between the dependent and independent variable set ($R_{c2}^2=.71$), interpretation will not proceed due to the low percentage of variance and redundancy coefficients for the $\hat{x}^{(2)}$ canonical variates (.06 and .03, respectively).

In the first canonical variate pair, the Percent of Variance indicates that the original Y-variables account for 28% of the variance in the $\hat{y}^{(1)}$ variate. The original X-variables account for 25% of the variance in the $\hat{x}^{(1)}$ variate.

The Redundancy Index indicates that for the first $\hat{y}^{(1)}$ canonical variate, 18% of the variance is accounted for by the variables in the X-independent variable (intrapsychic) set, whereas in the $\hat{x}^{(1)}$ variate, 16% of the variance is accounted for by the Y-variable (sexual functioning) set.

An examination of the standardized canonical weights indicates the relative order of importance of the variables on the underlying dimension. For the first set of canonical variates, pattern analysis indicated current sexual functioning SFI (.86) and arousal (-.27) were the two most important variables to the dimension underlying the sexual functioning set while affect balance (.57), depression (-.59), masculinity/femininity (.41) and psychasthenia (-.43) were the most important variables to the dimension underlying the intrapsychic variable set.
iv. Summary

The results of this canonical analysis led to the rejection of $H_0$ since $R_{c1}$ and $R_{c2}$ were statistically significant at the .05 level. Both pattern analysis and the structure coefficients from the canonical analysis suggest there were three variables significantly weighted on the first linear composite of the dependent variable set. The underlying construct was interpreted to be one of positive sexual functioning. The first linear composite of the independent variable set was weighted significantly by nine variables. The underlying construct was interpreted to be primarily an affective dimension characterized by positive affect.

Statistical Hypothesis 5 was rejected in favour of the conclusion that the canonical correlation between the two sets of variables, sexual and intrapsychic functioning was significantly different from zero. The result of this analysis supports Research Hypothesis 5 which states that a statistically significant relationship will be found between sexual functioning and intrapsychic variables.

Research Hypothesis 6

There will be no statistically significant difference between the three groups of partners (HSD, SDys, NSD) on the sexual functioning and intrapsychic canonical variates obtained in the canonical analysis.

Statistical Hypotheses 6

$H_0$: (a) $\mu_1 = \mu_2 = \mu_3$, ($\hat{y}^{(1)}$ mean scores)
(b) $\mu_1 = \mu_2 = \mu_3$, ($\hat{x}^{(1)}$ mean scores)

There will be no statistically significant difference between the three groups of partners on each of the canonical variate mean scores.

i. Results of Testing Statistical Hypothesis 6

A one-way analysis of variance (ANOVA) was applied to the standardized
scores on the canonical variates, $\hat{y}^{(1)}$ and $\hat{x}^{(1)}$, with groups, (HSD, SDys, NSD), as the independent variable to test if the groups differed significantly on the latent constructs underlying $\hat{y}^{(1)}$ and $\hat{x}^{(1)}$.

(a) Results of ANOVA Based on the $\hat{y}^{(1)}$ Variate (Sexual Functioning)

The results of the ANOVA of the $\hat{y}^{(1)}$ variate led to the rejection of Statistical Hypothesis 6a at $F(2,59)=2.87$, $p=0.05$. Table 20 summarizes the results of the ANOVA. The result of this analysis does not support Research Hypothesis 6 which states that statistically significant differences will not be found between the three groups of partners on the sexual functioning canonical variate.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>5.74</td>
<td>2.87</td>
<td>3.06</td>
<td>0.05</td>
</tr>
<tr>
<td>Within Groups</td>
<td>59</td>
<td>55.26</td>
<td>.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>61.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A post hoc analysis was conducted using the Student-Newman-Keuls test procedure to establish which of the groups differed significantly on the latent construct characterized by positive sexual functioning. The results showed that Group 1 (HSD) and Group 2 (SDys) differed significantly from the NSD group (Group 3) on the latent construct. This result was interpreted to mean that although partners of HSD subjects and SDys subjects were themselves sexually
functional, the interpersonal sexual dynamics between partners and spouses were dysfunctional as compared to the NSD group (Group 3). The results of the analysis are presented in Table 21.

**Table 21**

<table>
<thead>
<tr>
<th>Mean</th>
<th>Group</th>
<th>2</th>
<th>Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>-.39</td>
<td>SDys 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.06</td>
<td>HSD 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.36</td>
<td>NSD 3</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha=.05 level

The results of the ANOVA and Student-Newman-Keuls test confirm the difference between the NSD group (Group 3) and the other two study groups (HSD and SDys) in terms of the latent construct interpreted as positive sexual functioning. There was no significant difference between the HSD and SDys groups on the variable.

(b) Results of ANOVA Based on the $\hat{x}^{(1)}$ Variate (Intrapsychic)

The results of the ANOVA based on the $\hat{x}^{(1)}$ variate (positive affect) led to the acceptance of Statistical Hypothesis 6(b) since there was no significant difference between the partner groups at alpha=.05 level on the variate. Results of this analysis support Research Hypothesis 6 which states that statistically significant differences will not be found between the three groups of partners on the intrapsychic canonical variate.
Research Hypothesis 7

There will be a statistically significant relationship between sexual functioning variables as measured by the SHF and DSFI and interpersonal variables as measured by the DAS.

Statistical Hypothesis 7

$H_0: R_{cj} = 0$

The canonical correlation between the two sets of variables, sexual functioning and interpersonal functioning, will not be significantly different from zero at the alpha = .05 level of significance.

i. Results of Testing Statistical Hypothesis 7

A canonical correlation analysis was performed between a set of sexual functioning variables and a set of interpersonal variables using BMDP6M (Dixon, 1985). The sexual functioning set included frequency of feelings of sexual desire (desire), feelings of sexual arousal with mate (arousal), ability to achieve orgasm (orgasm), and affective state during sexual activity with mate (emotion) as measured by the Sexual History Form (SHF) and a measure of the subjects' current level of sexual functioning (SFI) as measured by the Derogatis Sexual Functioning Inventory (DSFI). The interpersonal variable set included dyadic consensus, dyadic satisfaction, dyadic cohesion and dyadic affection as measured by the Dyadic Adjustment Scale (DAS).

In the sexual functioning variable set, increasingly large positive numbers reflect increasing levels of sexual functioning (SFI) and decreasing frequency of sexual desire, arousal and orgasm, and the experience of negative emotions during sexual activity. Large negative numbers on the same measures reflect decreasing levels of current sexual functioning (SFI), and increased frequency of sexual desire, arousal and orgasm, as well as the absence of negative
emotions during sexual activity with partner. In the interpersonal variable set increasingly large positive numbers reflect higher scores on measures of marital consensus, satisfaction, cohesion, and affection.

ii. Assumptions

An examination of univariate normality indicated nonexcessive skewness and kurtosis of each variable. The assumption of non-multicollinearity was upheld (see Table 22) since the multiple correlations of every variable in each set with all other variables in the same set were less than .99 (Tabachnick & Fidell, 1983). The plot in Figure 8 indicates that the assumption of a linear relationship between the first pair of canonical variates was reasonable. All standardized score values were within ±3.00 standard score units which indicates no serious outliers. There were no missing data.

Table 22
Canonical Analysis: Test for Multicollinearity of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>R-Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desire</td>
<td>0.07</td>
</tr>
<tr>
<td>Arousal</td>
<td>0.52</td>
</tr>
<tr>
<td>Emotion</td>
<td>0.51</td>
</tr>
<tr>
<td>Orgasm</td>
<td>0.13</td>
</tr>
<tr>
<td>SFI</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Squared multiple correlations of each variable in first set with all other variables in first set

<table>
<thead>
<tr>
<th>Variable</th>
<th>R-Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consensus</td>
<td>0.45</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>0.66</td>
</tr>
<tr>
<td>Cohesion</td>
<td>0.48</td>
</tr>
<tr>
<td>Affection</td>
<td>0.56</td>
</tr>
</tbody>
</table>
Figure 8
Linearity of Relationship Between the First Pair of Canonical Variates
iii. Results

The canonical correlation and the results of the $\chi^2$ test for statistical significance of the canonical correlations are contained in Table 23. The first canonical correlation was .60. Subsequent $\chi^2$ tests were not significant. The results show that 36% of the variance is shared by the two sets of variables. The first canonical correlation therefore accounts for the significant linkage between the two sets of variables. Canonical correlations exceeding .80 are considered to be strong while correlations between .60 and .79 are considered to be moderate (Thompson, 1984).

Table 23
Bartlett's Test for Significance of Canonical Correlation

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Canonical Correlation</th>
<th>$\chi^2$</th>
<th>DF</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>.36</td>
<td>.60</td>
<td>44.06</td>
<td>20</td>
<td>.00</td>
</tr>
</tbody>
</table>

Bartlett's test indicates the number of canonical variables necessary to express the dependency between the two sets of variables. The necessary number of canonical variables is the smallest number of eigenvalues such that the test of the remaining eigenvalues is non-significant.

Analysis of the first pair of canonical variates $[\hat{y}^{(1)}, \hat{x}^{(1)}]$ appear in Table 24. With a cutoff correlation of .30, the structure coefficients and the standardized canonical weights indicate that the first dimension underlying the Y-variable set is primarily one of relationship adjustment, characterized by dyadic affection, cohesion and satisfaction. In order of magnitude, the structure coefficients of the three most significantly weighted variables were: affection (.91), cohesion (.76) and satisfaction (.69). The first dimension underlying the independent X-variable set is primarily a sexual functioning dimension.
**Table 24**

Canonical Correlations, Canonical Variable Loadings (Structure Coefficients), Standardized Canonical Weights, Percentage of Variance and Redundancy Between Sexual Functioning and Interpersonal Variables and Their Corresponding Canonical Variates

<table>
<thead>
<tr>
<th>Dependent Variable Set</th>
<th>Structure Coefficient or Canonical Variable Loading</th>
<th>Standardized Canonical Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interpersonal Set</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dyadic Consensus</td>
<td>.26</td>
<td>-.47</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>.69</td>
<td>.22</td>
</tr>
<tr>
<td>Cohesion</td>
<td>.76</td>
<td>.36</td>
</tr>
<tr>
<td>Affection</td>
<td>.91</td>
<td>.77</td>
</tr>
<tr>
<td>Percent of Variance</td>
<td>.48</td>
<td></td>
</tr>
<tr>
<td>Redundancy</td>
<td>.17</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Variable Set</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sexual Functioning Set</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desire</td>
<td>.05</td>
<td>.17</td>
</tr>
<tr>
<td>Arousal</td>
<td>-.16</td>
<td>.19</td>
</tr>
<tr>
<td>Orgasm</td>
<td>-.52</td>
<td>-.39</td>
</tr>
<tr>
<td>Emotion during sexual activity</td>
<td>-.18</td>
<td>-.12</td>
</tr>
<tr>
<td>SFI-current sexual functioning</td>
<td>.92</td>
<td>.87</td>
</tr>
<tr>
<td>Percent of Variance</td>
<td>.23</td>
<td></td>
</tr>
<tr>
<td>Redundancy</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>Canonical Correlation</td>
<td>.60</td>
<td></td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>.36</td>
<td></td>
</tr>
</tbody>
</table>

Canonical variable loadings greater than .30 are highlighted with boldface type and are considered meaningful (Tabachnick & Fidell, 1983).

characterized by positive sexual functioning. In order of magnitude, the structure coefficients of the two most significantly weighted variables are: SFI (0.91) and orgasm (-0.52).

Taken as a pair, the canonical variates indicate that positive sexual functioning in a relationship is related to relationship affection, cohesion and satisfaction. The canonical analysis suggests a moderate relationship between the
dependent and independent variable sets ($R^2_{c1} = .60$). The Percentage of Variance indicates that the original $Y$-variables account for 48% of the variance in the first canonical $[\hat{y}_1^{(1)}]$ variate, and the Redundancy Index indicates that for the first canonical $[\hat{y}_1^{(1)}]$ variate, 17% of the variance is accounted for by the variables in the independent variable set.

An examination of the standardized canonical weights indicates the relative order of importance of the variables on the underlying dimension. For the first set of canonical variates, pattern analysis indicated SFI (.87) and orgasm (-.39) were the two most important variables to the dimension underlying the sexual functioning set while affection (.77), consensus (-.47) and cohesion (.36) were the most important variables underlying the interpersonal variable set.

iv. Summary

The results of this canonical analysis led to the rejection of $H_0$ since $R^2_{c1}$ was statistically significant at the .05 level. Both pattern analysis and the structure coefficients from the canonical analysis indicate three variables significantly weighted on the first linear composite of the dependent variable set. The underlying construct was interpreted to be one of relationship adjustment characterized by affection, cohesion, and satisfaction. The first linear composite of the independent variables was weighted most significantly by two sexual functioning variables. The underlying construct was interpreted to be one of positive sexual functioning.

Statistical Hypothesis 7 was rejected in favour of the conclusion that the canonical correlation between the two sets of variables, sexual and interpersonal functioning was significantly different from zero. The result of this analysis supports Research Hypothesis 7 which states that a statistically significant
relationship will be found between sexual functioning and interpersonal variables.

**Research Hypothesis 8**

There will be a statistically significant difference between the three groups of partners (HSD, SDys, NSD) on the sexual functioning and interpersonal canonical variates obtained in the canonical analysis.

**Statistical Hypotheses 8**

\[ H_0: (a) \mu_1 = \mu_2 = \mu_3, \quad (\hat{y}(1) \text{ mean scores}) \]

\[ (b) \mu_1 = \mu_2 = \mu_3, \quad (\hat{x}(1) \text{ mean scores}) \]

There will be no statistically significant difference between the three groups of partners on each of the canonical variate mean scores.

**i. Results of Testing Statistical Hypothesis 8**

A one-way analyses of variance (ANOVA) was applied to the standardized scores of the canonical variates, \( \hat{y}(1) \) and \( \hat{x}(1) \), with groups, (HSD, SDys, NSD), as the independent variable to test if the groups differed significantly on the latent constructs underlying \( \hat{y}(1) \) and \( \hat{x}(1) \).

*(a) Results of ANOVA Based on the \( \hat{y}(1) \) Variate (Interpersonal)*

The results of the ANOVA based on the \( \hat{y}(1) \) variate led to the rejection of Statistical Hypothesis 8(a) at \( F(2,59) = 7.43, p<0.00 \). Table 25 summarizes the results of the ANOVA. The result of this analysis supports Research Hypothesis 8 which states that statistically significant differences will be found between the three groups of partners on the interpersonal canonical variate.
Table 25
ANOVA Between the Three Groups of Partners: Hypoactive Sexual Desire, Sexual Dysfunction and No Sexual Dysfunction Based on the Relationship Adjustment Canonical Variate

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>14.85</td>
<td>7.43</td>
<td>9.49</td>
<td>0.00</td>
</tr>
<tr>
<td>Within Groups</td>
<td>59</td>
<td>46.16</td>
<td>.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>61.01</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A post hoc analysis was conducted using the Student-Newman-Keuls test procedure to establish which of the groups differed significantly on the latent construct. The results showed that Group 3 differed significantly from both Group 1 and Group 2 at alpha = .05 level on the latent construct interpreted as relationship affection and adjustment. The results of the analysis are presented in Table 26.

Table 26
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Mean</th>
<th>Group</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>-.43</td>
<td>HSD</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>-.21</td>
<td>SDys</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>.72</td>
<td>NSD</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha = .05 level

The results of the ANOVA and Student-Newman-Keuls test confirm the difference between the research groups of partners in terms of the latent
construct interpreted as positive relationship adjustment. The comparison group, Group 3 (NSD), differed significantly from the other two study groups (HSD and SDys) indicating a higher degree of affectional expression, cohesion and satisfaction.

(b) Results of ANOVA Based on the $\tilde{x}^{(1)}$ Variate (Sexual Functioning)

The results of the ANOVA based on the $\tilde{x}^{(1)}$ variate led to the rejection of Hypothesis 8(b) at $F(2,59)=6.19$, $p<0.00$. Table 27 summarizes the results of the ANOVA. The result of this analysis supports Research Hypothesis 8 which states that statistically significant differences will be found between the three groups of partners on the sexual functioning variate.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>12.38</td>
<td>6.19</td>
<td>7.51</td>
<td>0.00</td>
</tr>
<tr>
<td>Within Groups</td>
<td>59</td>
<td>48.62</td>
<td>.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>61.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A post hoc analysis was conducted using the Student-Newman-Keuls test procedure to establish which of the groups differed significantly on the latent construct. The results showed that Group 3 differed significantly from Groups 1 and 2 at alpha=.05 level. The results of the analysis are presented in Table 28.
Table 28
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Mean</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.41</td>
<td>SDys 2</td>
</tr>
<tr>
<td>0.18</td>
<td>HSD 1</td>
</tr>
<tr>
<td>0.66</td>
<td>NSD 3</td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha= .05 level

The results of the ANOVA and Student-Newman-Keuls test confirm the difference between the comparison group of partners (Group 3) and the other two study groups of partners (Groups 1 and 2) on the sexual functioning construct.

3. Summary of Results

a. Subjects

Testing of statistical hypotheses 1, 2, 3 and 4 led to rejection of the null hypotheses in each instance. The results of testing statistical Hypothesis 1 indicated a strong significant canonical correlation between sexual functioning and intrapsychic variables (Rc = .83).

The results of testing statistical Hypothesis 2 indicated significant group differences on both the sexual dysfunction variate and the intrapsychic variate. In the first instance, all groups were significantly different from each other on the sexual dysfunction measure with the HSD group (Group 1) recording the highest mean score on the variate followed by the SDys group (Group 2). The NSD group (Group 3) mean score was inversely related to the concept of sexual dysfunction. On the intrapsychic affect variate, the mean scores of Group One (HSD) and Group Two (SDys), although not significantly different from each
other, were significantly different from the mean score of the NSD group (Group 3). The HSD and SDys groups did not differ significantly (statistically) on the intrapsychic affect variate. However, they did differ nonsignificantly in the direction proposed by Kaplan (1979). For instance, Kaplan (1979) proposed that if studied from the perspective of a triphasic concept of the sexual response cycle, anxiety would not be evenly distributed among the three groups of dysfunctions. Kaplan states, “It appears that subjects with desire phase dysfunction, as a group, are affected with more serious intrapsychic . . . problems, where the subjects with orgasm problems are . . . found to have relatively milder and less tenacious underlying problems. Excitement phase disorders fall in the middle of the spectrum” (p. 28). Although the result of testing Hypothesis 2 did not offer statistical support for this position, the HSD group’s mean score on the intrapsychic/affect variate was considerably higher (.51) than that of the SDys group (.19) which implies a greater degree of anxiety in the HSD group. However, this difference was not statistically significant.

The result of testing Statistical Hypothesis 3 indicated a moderately strong and significant canonical correlation between sexual functioning and interpersonal variables (Rc = .65).

The results of testing statistical Hypothesis 4 indicated significant group differences on both the sexual functioning variate and the interpersonal adjustment variate. In both instances, Group 3 (No Sexual Dysfunction) mean scores were significantly higher than the mean scores of Group 1 (Hypoactive Sexual Desire) or Group 2 (Sexual Dysfunction). There was no significant difference between the HSD group and the SDys group on the sexual functioning variate or the interpersonal-affection variate. The result of testing statistical Hypothesis 4
suggested that the experience of sexual intimacy without negative thoughts, and the experience of affection and satisfaction in a relationship differ significantly between the NSD group (Group 3) and sexually dysfunctional groups (HSD and SDys) but not between the two groups with sexual problems (HSD and SDys).

a. Partners of Subjects

Testing of statistical hypothesis 5, 6, 7 and 8 led to rejection of the hypothesis in each instance. The result of testing statistical Hypothesis 5 indicated a strong, significant canonical correlation between sexual functioning and intrapsychic variables ($R_c = .80$).

The results of testing statistical Hypothesis 6 indicated significant group differences on the sexual functioning variate but no significant group differences on the intrapsychic variate for partners of Group 1 (HSD, Group 2 (SDys) and Group 3 (NSD).

The results of testing statistical Hypothesis 7 indicated a moderate canonical correlation between sexual functioning variables and interpersonal variables ($R_c = .60$).

The results of testing statistical Hypothesis 8 indicated significant group difference on both the sexual functioning variate and the interpersonal adjustment variate. In both instances Group 3 (NSD) mean scores were significantly higher than Group 1 (HSD) or Group 2 (SDys) mean scores. There was no significant difference between the Group 1 partners (HSD) and the Group 2 partners (SDys) on the sexual functioning variate or the interpersonal-affection variate.
C. RESULTS: PROFILE ANALYSIS OF SASB DATA

Data analysis of the SASB was conducted in three steps. The first step included the creation of the eight mean clusters scores for each profile. This was achieved by averaging the SASB INTREX items pertinent to each cluster to produce eight mean cluster scores per profile. For example, the first mean cluster score on the *Introject* profile was created by the sum of scores on five SASB items (#317, #318, #320, #327 and #328) divided by five. Mean cluster scores of the profiles are given names. In the case of cluster score 1 of the *Introject* profile mentioned above, the name is *spontaneous self*. The name reflects the psychological concept underlying the original five questions (Benjamin, 1974).

The second step in the data analysis was to conduct profile analyses using SPSSX Profile Analysis (SPSS Inc., 1988) on the eight mean cluster scores across the three groups for each of the five profiles: *Introject, spouse initiates, spouse responds, self initiates, self responds*. In profile analysis, the question regarding the equality of mean vectors is divided into two possibilities as discussed in Chapter III (Data Analysis). To review, the first possibility is $H_0^1$: Are the three profiles parallel? Hotelling’s $T^2$ procedure, as described by Johnson and Wickern (1988, p. 245), provides the test for $H_0^1$. If the hypothesis of parallelism is tenable, the second possibility, $H_0^2$: Are the group profiles coincident, is tested using Hotelling’s $T^2$ procedure as described by Johnson and Wickern (1988, p. 246).

If significant group difference is established, the final step in the procedure, post hoc comparisons of means for particular cluster scores was undertaken using Student-Newman-Keuls test procedure.
a. Assumptions

Two assumptions specific to profile analysis were met: all responses were expressed in similar units and responses for different groups were independent of each other. The multivariate approach used considers the measurements on the subjects sample to be a sample from a multivariate normal distribution. Although the assumption of multivariate normality is untestable, univariate normality provides a conservative requirement of the variable overall for multivariate procedures (Tabachnick & Fidell, 1983). The Kolmogorov-Smirnov test was conducted on each variable to test for normality of distribution. The test results indicated the scores for each variable were normally distributed with means ranging from 10.22 to 66.86 and standard deviations ranging from 12.70 to 24.20. An alpha level of .05 was set throughout the analyses.

Results of the hypothesis testing for each SASB profile will be reported first. This will be followed by an interpretation of the results taking into consideration the SASB model. To assist the reader in following the interpretation of the profiles a few points regarding the SASB model itself will be helpful. First, subjects assign rating values to the INTREX questions ranging on a scale from 0 to 100. A score of 50 or above on the profile indicates that the respondents consider items in the cluster to be, in different degrees, true about themselves or their spouses. A score below 50 indicates the respondent considers the items to be, in some degree false.

Secondly, two central dimensions of the SASB model are affiliation and interdependence. The affiliation dimension ranges from extremely friendly to extremely hostile. In terms of the profile, clusters 2, 3 and 4 can be viewed as "friendly" clusters while clusters 6, 7 and 8 can be viewed as "hostile" clusters.
Profiles from the normative sample progressively increase in ratings from Cluster 1 to 3 (the friendly attachment pole) and decrease ratings in an orderly fashion to reach a minimum at Cluster 7 (the hostile pole) (Benjamin, 1984). The second dimension of the SASB model is interdependence. The interdependence dimension ranges from independent behavior to dependent behavior. In terms of the profiles, Cluster 1 is interpreted as the range of response available on the concept of independence while Cluster 5 is interpreted as the range of response available on the concept of dependence. Profiles of the normative sample indicate a score between 40 and 55 on Cluster 1 and between 20 and 30 on Cluster 5 reflect autonomous noncontrolling relationships. Appendix E provides the profiles of average cluster scores for 133 normals rating their relationship with their mate at best and at worst on the self initiates and self responds surfaces.

Results of the profile analyses are reported for sexually dysfunctional subjects first followed by their partners’ results.

1. Subjects

Research Hypothesis 9

Profiles of the eight mean cluster scores for the three groups of subjects (HSD, SDys, NSD) generated from 'SASB questions measuring self concept (Introject) will not be parallel and coincident.

Statistical Hypothesis 9

$H_{01}: \mu_1 = \mu_2 = \mu_3$

This is a test of whether or not the profiles are parallel.

$H_{02}: 1' \mu_1 = 1' \mu_2 = 1' \mu_3$

Given the profiles are parallel, this is a test of whether or not the profiles are coincident.
Results: Hypothesis 9, Introject Profile

$H_{01}: \mu_1 = \mu_2 = \mu_3$

The result of Hotelling’s $T^2$ analysis indicates the hypothesis of parallel profiles is tenable since $F(7, 53) = 1.58, < .95 F(7.53) = 2.17$. Assuming the profiles are parallel, $H_{02}$ was tested.

$H_{02}: \mu_1' = \mu_2' = \mu_3'$

The hypothesis of coincident introject profiles was rejected in favor of the conclusion that the profiles, overall, are significantly different and separate $F(2, 59) = 6.12, p<.05$ (see Figure 9).

Post hoc analysis indicates significant group difference at three points along the profile: Cluster 3, *self nourishing and cherishing*; Cluster 4, *self protecting and enhancing*; and Cluster 6, *self indicting and oppressing* (see Table 29).
The correlation between data points and theoretical points of the SASB model within each group is represented by the profile coefficient and its corresponding profile. Coefficient > .80 are significant at alpha = .05 level or better.

Figure 9: Subjects’ Introject Profiles. Subject profiles of SASB mean cluster scores for Group 1: Hypoactive Sexual Desire (n=22), Group 2: Sexual Dysfunction (n=21) and Group 3: No Sexual Dysfunction (n=19) from Introject ratings.
Table 29
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-nourishing/Cherishing</strong></td>
<td><strong>Self protecting/Enhancing</strong></td>
</tr>
<tr>
<td>Mean</td>
<td>Group</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>45</td>
<td>1</td>
</tr>
<tr>
<td>47</td>
<td>2</td>
</tr>
<tr>
<td>63</td>
<td>3 *</td>
</tr>
</tbody>
</table>

Cluster 6
Self-indicting/Oppressing

<table>
<thead>
<tr>
<th>Mean</th>
<th>Group</th>
<th>2</th>
<th>3</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>1 *</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha = .05 level

As can be seen from the Introject profile, the Hypoactive Sexual Desire Group (Group 1) and the Sexual Dysfunction Group (Group 2) rated themselves significantly less self nourishing and cherishing (Cluster 3) and self protecting and enhancing (Cluster 4) than did Group 3 (No Sexual Dysfunction). In addition, HSD subjects (Group 1) rated themselves significantly more self indicting and oppressing (Cluster 6) than did the SDys group. The SASB model views the Introject profile as an intrapsychic measure of one's self concept as a result of the relationship being measured. It would appear from the data that HSD subjects (Group 1) and SDys subjects (Group 2) are intrapsychically more conflicted in terms of their relationships than are NSD subjects (Group 3). Hypoactive sexual desire subjects (Group 1) are significantly more self indicting and oppressing than SDys subjects (Group 2) which may contribute to a more
vulnerable self concept for HSD subjects as compared to subjects with arousal or orgasm problems.

**Research Hypothesis 10**

Profiles of the eight mean cluster scores for the three groups of subjects (HSD, SDys, NSD) generated from SASB questions measuring interpersonal behavior (a. spouse initiates; b. spouse responds; c. self initiates; d. self responds) will not be parallel and coincident.

**Statistical Hypothesis 10**

\[ H_0 \]: \( C \mu_1 = C \mu_2 = C \mu_3 \)

This is a test of whether or not the profiles are parallel.

\[ H_{02} \]: \( 1' \mu_1 = 1' \mu_2 = 1' \mu_3 \)

Given the profiles are parallel, this is a test of whether or not the profiles are coincident.

**Results: Hypothesis 10a, Spouse Initiates Profile**

\[ H_0 \]: \( C \mu_1 = C \mu_2 = C \mu_3 \)

The result of Hotelling's \( T^2 \) analysis indicates the hypothesis of parallel profiles is tenable since \( F(7,53) = 1.79, < .95 \) \( F(7,53) = 2.17 \). Assuming the profiles are parallel, \( H_{02} \) was tested.

\[ H_{02} \]: \( 1' \mu_1 = 1' \mu_2 = 1' \mu_3 \)

The hypothesis of coincident group profiles (spouse initiates) was rejected in favor of the conclusion that the profiles are, overall, significantly different and separate, \( F(2,59) = 7.28, p<.05 \) (see Figure 10).

The Student-Newman-Keuls test identified significant group differences at four points along the profile: Cluster 2, **affirming and understanding**; Cluster 3, **nurturing and comforting**; Cluster 6, **belittling and blaming**; and Cluster 7,
The correlation between data points and theoretical points of the SASB model within each group is represented by the profile coefficient and its corresponding profile. Coefficient > .80 are significant at alpha = .05 level or better.

Figure 10: Subjects Rate Spouse's Initiating Behavior. Subject profiles of SASB mean cluster scores for Group 1: Hypoactive Sexual Desire (n=22), Group 2: Sexual Dysfunction (n=21) and Group 3: No Sexual Dysfunction (n=19) from rating Spouse's initiating behavior.
attacking and rejecting (see Table 30).

Table 30
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affirming/Understanding</td>
<td>Nurturing/Comforting</td>
</tr>
<tr>
<td>Mean</td>
<td>Group</td>
</tr>
<tr>
<td>Mean</td>
<td>Group</td>
</tr>
<tr>
<td>52</td>
<td>1</td>
</tr>
<tr>
<td>57</td>
<td>2</td>
</tr>
<tr>
<td>68</td>
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<td>45</td>
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<tr>
<td>57</td>
<td>1</td>
</tr>
<tr>
<td>65</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster 6</th>
<th>Cluster 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belittling/Blaming</td>
<td>Attacking/Rejecting</td>
</tr>
<tr>
<td>Mean</td>
<td>Group</td>
</tr>
<tr>
<td>Mean</td>
<td>Group</td>
</tr>
<tr>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>17</td>
<td>2</td>
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<td>8</td>
<td>2</td>
</tr>
<tr>
<td>18</td>
<td>1</td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha=.05 level

As can be seen from the profiles of how subjects rate their spouse's initiating behavior, there is a significant difference between Groups 1 and 2 (HSD, SDys) and the comparison group (NSD). Viewing the “friendly” clusters first (2, 3, and 4), the HSD subjects rated their spouses as significantly less affirming and understanding (Cluster 2) than did NSD subjects. On the other hand, subjects with sexual dysfunctions (SDys) rated their spouses significantly less nurturing (Cluster 3) than did NSD subjects. However, the Hypoactive Sexual Desire Group and the Sexual Dysfunction Group (Groups 1 and 2) were not significantly different from each other in how they perceived their spouses affirming and nurturing behavior. Regarding the “hostile” clusters (6, 7 and 8)
the result is different. Hypoactive sexual desire subjects rate their spouses significantly more belittling and blaming (Cluster 6) and attacking and rejecting (Cluster 7) than do either of the other two groups.

**Results: Hypothesis 10b, Spouse Responds Profile**

\[ H_{0.1}: C\mu_1 = C\mu_2 = C\mu_3 \]

The result of Hotelling's \( T^2 \) analysis indicates the hypothesis of parallel profiles is tenable since \( F(7, 53) = 1.39, < .95 \) \( F(7, 53) = 2.17 \). Assuming the profiles are parallel, \( H_{0.2} \) was tested.

\[ H_{0.2}: 1'\mu_1 = 1'\mu_2 = 1'\mu_3 \]

The hypothesis of coincident group profiles (spouse responds) was rejected in favor of the conclusion that the profiles are significantly different and separate, \( F(2, 59) = 7.05, \ p<.05 \) (see Figure 11).

The Student-Newman-Keuls test identified significant group differences at three points along the profile: Cluster 2, disclosing and expressing; Cluster 3, approaching and enjoying; and Cluster 4, trusting and relying (see Table 31).
The correlation between data points and theoretical points of the SASB model within each group is represented by the profile coefficient and its corresponding profile. Coefficient > .80 are significant at alpha = .05 level or better.

Figure 11: Subjects Rate Spouse’s Responding Behavior. Subject profiles of SASB mean cluster scores for Group 1: Hypoactive Sexual Desire (n=22), Group 2: Sexual Dysfunction (n=21) and Group 3: No Sexual Dysfunction (n=19) from rating Spouse’s responding behaviour.

<table>
<thead>
<tr>
<th>Key:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ Group 1: Hypoactive Sexual Desire</td>
</tr>
<tr>
<td>● Group 2: Sexual Dysfunction</td>
</tr>
<tr>
<td>□ Group 3: No Sexual Dysfunction</td>
</tr>
<tr>
<td>* Significant group difference</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SASB Profile Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1: ( r = .88 ) (1)</td>
</tr>
<tr>
<td>Group 2: ( r = .91 ) (1)</td>
</tr>
<tr>
<td>Group 3: ( r = .94 ) (1)</td>
</tr>
</tbody>
</table>
Table 31
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disclosing/Expressing</td>
<td>Approaching/Enjoying</td>
</tr>
<tr>
<td>Groups</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>Group</td>
</tr>
<tr>
<td>49</td>
<td>2</td>
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<tr>
<td>51</td>
<td>1</td>
</tr>
<tr>
<td>66</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster 4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trusting/Relying</td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>Group</td>
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<tr>
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<td>2</td>
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<tr>
<td>57</td>
<td>1</td>
</tr>
<tr>
<td>63</td>
<td>3</td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha=.05 level

As can be seen from the profiles of how subjects rated their spouse's responding behavior, there are significant group differences on the "friendly" clusters of the profile and no significant differences between groups on the "hostile" clusters of the profile. The HSD and SDys groups rated their spouses reaction to them as less open, for example, less disclosing and expressing (Cluster 1) than did the NSD group. Group 2 subjects (SDys) also rated their partners significantly lower on behaviors of approaching and enjoying (Cluster 3) and trusting and relying (Cluster 4) than did the HSD group or the NSD group. Except for rating partners as less disclosing towards themselves, HSD subjects did not find their spouses' responding style significantly different from how the NSD group (Group 3) rated their spouses' responding style.
Results: Hypothesis 10c, Self Initiates Profile

$H_{0,1}: C\mu_1 = C\mu_2 = C\mu_3$

The result of Hotelling's $T^2$ analysis of parallelism between self initiate profiles was statistically significant, $F(7,53) = 2.89$, $p<.05$. The hypothesis of parallel group profiles was rejected in favor of the conclusion that the profiles are significantly different (see Figure 12).

The Student-Newman-Keuls test identified significant group differences at three points along the profile: Cluster 3, nurturing and comforting; Cluster 4, helping and protecting; and Cluster 6, belittling and blaming (see Table 32).

Table 32
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Cluster 3</th>
<th>Nurturing/Comforting</th>
<th>Cluster 4</th>
<th>Helping/Protecting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>Group</td>
<td>Groups</td>
<td>Mean</td>
</tr>
<tr>
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<td>-------</td>
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<td>64</td>
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<td>*</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster 6</th>
<th>Belittling/Blaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>Group</td>
</tr>
<tr>
<td>-----------</td>
<td>-------</td>
</tr>
<tr>
<td>14</td>
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<td>15</td>
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</tr>
<tr>
<td>26</td>
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</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha = .05 level
The correlation between data points and theoretical points of the SASB model within each group is represented by the profile coefficient and its corresponding profile. Coefficient > .80 are significant at alpha = .05 level or better.

**Figure 12: Subjects Rate Their Own Initiating Behavior.** Subject profiles of SASB mean cluster scores for Group 1: Hypoactive Sexual Desire (n=22), Group 2: Sexual Dysfunction (n=21) and Group 3: No Sexual Dysfunction (n=19) from rating their own initiating behaviour.
On rating their own behavior towards their spouses, Group 1 (HSD) and Group 2 (SDys) subjects were significantly different from control subjects on Cluster 3, *nurturing and comforting* and Cluster 4, *helping and protecting*. They rated themselves significantly less nurturing and helping towards their spouses than did the NSD group. On the “hostile” Cluster 6, hypoactive sexual desire subjects rated their own behavior as significantly more *belittling and blaming* (Cluster 6) than did either the SDys or NSD subjects.

**Results: Hypothesis 10d, Self Responds Profile**

$H_{01}: \mu_1 = \mu_2 = \mu_3$

The result of Hotelling’s $T^2$ analysis of parallelism between self responds profiles was statistically significant, $F(7,53) = 3.08$, $p < .05$. The hypothesis of parallel group profiles was rejected in favor of the conclusion that the profiles are significantly different (see Figure 13).

The Student-Newman-Keuls test identified significant group differences at three points along the profile: Cluster 2, *disclosing and expressing*; Cluster 3, *approaching and enjoying*; and Cluster 4, *trusting and relying* (see Table 33).
The correlation between data points and theoretical points of the SASB model within each group is represented by the profile coefficient and its corresponding profile. Coefficient > .80 are significant at alpha = .05 level or better.

Key:
- ∆ Group 1: Hypoactive Sexual Desire
- * Group 2: Sexual Dysfunction
- □ Group 3: No Sexual Dysfunction
- * Significant group difference

SASB Profile Coefficients
- Group 1: $r = .91$ (1)
- Group 2: $r = .95$ (1)
- Group 3: $r = .97$ (1)

Figure 13: Subjects Rate Their Own Responding Behavior. Subject profiles of SASB mean cluster scores for Group 1: Hypoactive Sexual Desire (n=22), Group 2: Sexual Dysfunction (n=21) and Group 3: No Sexual Dysfunction (n=19) from rating their own responding behaviour.
Table 33
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disclosing/Expressing</td>
<td>Approaching/Enjoying</td>
</tr>
<tr>
<td>Mean</td>
<td>Group</td>
</tr>
<tr>
<td>59</td>
<td>2</td>
</tr>
<tr>
<td>63</td>
<td>1</td>
</tr>
<tr>
<td>76</td>
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</tbody>
</table>

Cluster 4
Trusting/Relying

<table>
<thead>
<tr>
<th>Mean</th>
<th>Group</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
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<tr>
<td>66</td>
<td>3</td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha = .05 level

The results of the post hoc analysis indicate no significant difference between the HSD subjects and the SDys subjects on their own rating of how they respond or react to their spouses. Both groups, however, rate themselves less friendly in their response to spouses than did the comparison group. Group 1 and Group 2 subjects view themselves as significantly less disclosing and expressing (Cluster 2) and approaching and enjoying (Cluster 3) in reaction to their spouses than do Group 3 subjects. In addition, HSD subjects rate themselves as significantly less trusting and relying (Cluster 4) in response to their spouses than did NSD subjects.
2. Partners of Subjects

Research Hypothesis 11

Profiles of the eight mean cluster scores for the three groups (HSD, SDys, NSD) of partners generated from SASB questions measuring self concept (Introject) will be parallel and coincident.

Statistical Hypothesis 11

$H_{01}$: $C\mu_1 = C\mu_2 = C\mu_3$

This is a test of whether or not the profiles are parallel.

$H_{02}$: $1^\prime \mu_1 = 1^\prime \mu_2 = 1^\prime \mu_3$

Given the profiles are parallel, this is a test of whether or not the profiles are coincident.

Results: Hypothesis 11, Introject Profile

$H_{01}$: $C\mu_1 = C\mu_2 = C\mu_3$

The result of Hotelling's $T^2$ analysis indicates the hypothesis of parallel profiles is tenable since $F(7,53) = .95, < .95$. $F(7.53) = 2.17$. Assuming the profiles are parallel, $H_{02}$ was tested.

$H_{02}$: $1^\prime \mu_1 = 1^\prime \mu_2 = 1^\prime \mu_3$

The result of Hotelling's $T^2$ analysis indicates the hypothesis of coincident introject profiles is tenable since $F(2,59) = .35 < .95$. $F(2,59) = 3.15$ (see Figure 14).

The results of the profile analysis of mean cluster scores on self concept measures indicate the profiles are parallel and not significantly different in overall mean response across all cluster points. It was concluded that there is no statistically significant difference between Group 1, 2, and 3 partners on their response to questions measuring self concept.
The correlation between data points and theoretical points of the SASB model within each group is represented by the profile coefficient and its corresponding profile. Coefficient > .80 are significant at alpha = .05 level or better.

Key:
- Group 1: Hypoactive Sexual Desire
- Group 2: Sexual Dysfunction
- Group 3: No Sexual Dysfunction
- Significant group difference

SASB Profile Coefficients
- Group 1: $r = .90$ (1)
- Group 2: $r = .94$ (1)
- Group 3: $r = .96$ (1)

Figure 14: Partner's Introject Profiles. Partner profiles of SASB mean cluster scores for Group 1: Hypoactive Sexual Desire (n=22), Group 2: Sexual Dysfunction (n=21) and Group 3: No Sexual Dysfunction (n=19) from Introject ratings.
Research Hypothesis 12

Profiles of the eight mean cluster scores for the three groups (HSD, SDys, NSD) of partners generated from SASB questions measuring interpersonal behavior (a. *spouse initiates*; b. *spouse responds*; c. *self initiates*; d. *self responds*) will not be parallel and coincident.

Statistical Hypothesis 12

\[ H_{01}: C\mu_1 = C\mu_2 = C\mu_3 \]

This is a test of whether or not the profiles are parallel.

\[ H_{02}: 1'\mu_1 = 1'\mu_2 = 1'\mu_3 \]

Given the profiles are parallel, this is a test of whether or not the profiles are coincident.

Results: Hypothesis 12a, Spouse Initiates Profile

\[ H_{01}: C\mu_1 = C\mu_2 = C\mu_3 \]

The result of Hotelling's $T^2$ analysis indicates the hypothesis of parallel profiles is not tenable since $F(7,53) = 2.80, p < .05$. The hypothesis of parallel group profiles was rejected in favor of the conclusion that group profiles resulting from how partners rated their spouses' *initiating behavior* are, overall, significantly different and separate (see Figure 15).

The Student-Newman-Keuls test identified significant group differences at six points along the profile: Cluster 2, *affirming and understanding*; Cluster 3, *nurturing and comforting*; Cluster 4, *helping and protecting*; Cluster 6, *belittling and blaming*; Cluster 7, *attacking and rejecting*; and Cluster 8, *ignoring and neglecting* (see Table 34).
The correlation between data points and theoretical points of the SASB model within each group is represented by the profile coefficient and its corresponding profile. Coefficient > .80 are significant at alpha = .05 level or better.

Figure 15: Partners Rate Spouse’s Initiating Behavior. Partner profiles of SASB mean cluster scores for Group 1: Hypoactive Sexual Desire (n=22), Group 2: Sexual Dysfunction (n=21) and Group 3: No Sexual Dysfunction (n=19) from rating Spouse’s initiating behaviour.
Table 34
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Cluster 2</th>
<th>Affirming/Understanding</th>
<th>Cluster 3</th>
<th>Nurturing/Comforting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>Group 1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>49</td>
<td>1</td>
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<tr>
<td>60</td>
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</tr>
<tr>
<td>72</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster 4</th>
<th>Helping/Protecting</th>
<th>Cluster 6</th>
<th>Belittling/Blaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>Group 2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>49</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>1</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>64</td>
<td>3</td>
<td>*</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster 7</th>
<th>Attacking/Rejecting</th>
<th>Cluster 8</th>
<th>Ignoring/Neglecting</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>16</td>
<td>1</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha=.05 level

As indicated by the profiles, partners of Group 1 (HSD) and Group 2 (SDys) subjects rated their spouses' initiating behavior significantly less affirming and understanding (Cluster 2), nurturing and comforting (Cluster 3) and helping and protecting (Cluster 4) and significantly more belittling and blaming (Cluster 6), attacking and rejecting (Cluster 7) and ignoring and neglecting (Cluster 8) than did partners in the comparison group (Group 3).

Between Groups 1 and 2, there was no statistically significant difference
between partner ratings on the “friendly” clusters. However, on the hostile clusters partners of HSD spouses rated the behavior of their mates as significantly more belittling and blaming (Cluster 6), attacking and rejecting (Cluster 7) and ignoring and neglecting (Cluster 8).

The results of the analyses of how partners experience the initiating behavior of their spouses indicate less friendly and more hostile interaction in the hypoactive sexual desire (Group 1) couples and less friendly but not hostile interaction in sexual dysfunction (Group 2) couples and friendly not hostile interaction in the no sexual dysfunction (Group 3) couples.

Results: Hypothesis 12b, Spouse Responds Profile

\( H_{01} : \ C_\mu_1 = C_\mu_2 = C_\mu_3 \)

The result of Hotelling’s \( T^2 \) analysis indicates the hypothesis of parallel profiles is tenable since \( F(7,53) = 1.51, < .95 \). \( F(7,53) = 2.17 \). Assuming the profiles are parallel, \( H_{02} \) was tested.

\( H_{02} : \ 1' \mu_1 = 1' \mu_2 = 1' \mu_3 \)

The hypothesis of coincident group profiles (spouse responds) was rejected in favor of the conclusion that the profiles are significantly different and separate, \( F(2,59) = 5.30, p<.05 \) (see Figure 16).

The results of profile analysis of the mean cluster scores generated from partners rating their spouses’ responding behavior showed that while the profiles could be viewed as parallel, there is a significant difference between the level of the profiles across the three groups.

Post hoc analysis indicates significant group difference at five points along the profile: Cluster 2, disclosing and expressing; Cluster 3, approaching and
The correlation between data points and theoretical points of the SASB model within each group is represented by the profile coefficient and its corresponding profile. Coefficient > .80 are significant at alpha = .05 level or better.

Figure 16: Partners Rate Spouse's Responding Behavior. Partner profiles of SASB mean cluster scores for Group 1: Hypoactive Sexual Desire (n=22), Group 2: Sexual Dysfunction (n=21) and Group 3: No Sexual Dysfunction (n=19) from rating Spouse's responding behaviour.
enjoying; Cluster 6, sulking and appeasing; Cluster 7, protesting and withdrawing; and Cluster 8, walling off and avoiding (see Table 35).

Table 35
Student-Newman-Keuls Test Results

<table>
<thead>
<tr>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disclosing/Expressing</td>
<td>Approaching/Enjoying</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td><strong>Group</strong></td>
</tr>
<tr>
<td>51</td>
<td>1</td>
</tr>
<tr>
<td>55</td>
<td>2</td>
</tr>
<tr>
<td>75</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster 6</th>
<th>Cluster 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulking/Appeasing</td>
<td>Protesting/Withdrawing</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td><strong>Group</strong></td>
</tr>
<tr>
<td>14</td>
<td>3</td>
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<td>27</td>
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</table>

<table>
<thead>
<tr>
<th>Cluster 8</th>
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</thead>
<tbody>
<tr>
<td>Walling off/Avoiding</td>
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</tr>
<tr>
<td><strong>Mean</strong></td>
<td><strong>Group</strong></td>
</tr>
<tr>
<td>17</td>
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</tr>
<tr>
<td>34</td>
<td>1</td>
</tr>
</tbody>
</table>

* denotes pairs of groups significantly different at alpha=.05 level

As can be seen from the profiles, partners of HSD and SDys spouses (Group 1 and 2) rated their spouse's responding behavior as significantly less friendly than the NSD group (Group 3) on Cluster 2, disclosing and expressing and Cluster 3, approaching and enjoying. There was no significant difference
between Group 1 (HSD) or Group 2 (SDys) on these mean cluster scores.

On the “hostile” clusters, the HSD subjects (Group 1) were rated by their spouses as significantly more sulking and appeasing (Cluster 6), protesting and withdrawing (Cluster 7) and walling off and avoiding (Cluster 8) than the NSD group (Group 3) and with the exception of Cluster 6, than the SDys group (Group 2).

The results of the analysis regarding how partners of subjects experience their spouses’ responding behavior indicated less friendly and more hostile interaction in HSD (Group 1) couples; less friendly but not as hostile reactions in SDys (Group 2) couples, and friendly with no hostile reactions in the NSD (Group 3) couples.

**Results: Hypothesis 12c, Self Initiates Profile**

\[ H_{01}: C\mu_1 = C\mu_2 = C\mu_3 \]

The result of Hotelling’s \( T^2 \) analysis indicates the hypothesis of parallelism is tenable since \( F(7,53) = 1.32 < .95 \) \( F(7,53) = 2.17 \). Assuming the profiles are parallel, \( H_{02} \) was tested.

\[ H_{02}: 1^1\mu_1 = 1^1\mu_2 = 1^1\mu_3 \]

The result of Hotelling’s \( T^2 \) analysis indicates the hypothesis of coincident profiles is tenable since \( F(2,59) = 2.83 < .95 \) \( F(2,59) = 3.15 \).

The results of the profile analysis of mean cluster scores generated from partners rating their own initiating behavior indicates the profiles of the three groups are parallel and not significantly different in overall mean response across all cluster points (see Figure 17). It was concluded that there was no overall statistically significant difference between Group 1, 2 and 3 partners on their
The correlation between data points and theoretical points of the SASB model within each group is represented by the profile coefficient and its corresponding profile. Coefficient > .80 are significant at alpha = .05 level or better.

**Key:**
- Δ Group 1: Hypoactive Sexual Desire
- * Group 2: Sexual Dysfunction
- □ Group 3: No Sexual Dysfunction
- * Significant group difference

| SASB Profile Coefficients | Group 1: $r = .97 (1)$ | Group 2: $r = .94 (1)$ | Group 3: $r = .96 (1)$ |

Figure 17: Partners Rate Their Own Initiating Behavior. Partner profiles of SASB mean cluster scores for Group 1: Hypoactive Sexual Desire ($n=22$), Group 2: Sexual Dysfunction ($n=21$) and Group 3: No Sexual Dysfunction ($n=19$) from rating their own initiating behaviour.
Response to questions rating their own interpersonal initiating behavior.

**Results: Hypothesis 12d, Self Responds Profile**

$H_{0,1}: C\mu_1 = C\mu_2 = C\mu_3$

The result of Hotelling's $T^2$ analysis indicates the hypothesis of parallel profiles is tenable since $F(7,53) = 1.24 < .95$ $F(7,53) = 2.17$. Assuming the profiles are parallel, $H_{0,2}$ was tested.

$H_{0,2}: 1'\mu_1 = 1'\mu_2 = 1'\mu_3$

The result of Hotelling's $T^2$ analysis indicates the hypothesis of coincident profiles is tenable since $F(2,59) = 2.10 < .95$ $F(2,59) = 3.15$.

The results of the profile analysis of mean cluster scores generated from partners rating their own responding behavior indicate the profiles of the three groups are parallel and not significantly different in overall mean response across all cluster points (see Figure 18). It was concluded that there was no overall statistically significant difference between Group 1, 2 and 3 partners on their response to questions rating their own interpersonal responding behavior.

**3. Summary of Results**

**a. Subjects**

The introject profile of the SASB is an intrapyschic measure of self concept resulting from the interpersonal dynamics of the relationship being measured. There was a significant difference between the two sexually dysfunctional groups and the comparison group on this profile and a significant difference between the HSD and SDys groups on the “hostile” clusters of the
The correlation between data points and theoretical points of the SASB model within each group is represented by the profile coefficient and its corresponding profile. Coefficient > .80 are significant at alpha = .05 level or better.

Figure 18: Partners Rate Their Own Responding Behavior. Partner profiles of SASB mean cluster scores for Group 1: Hypoactive Sexual Desire (n=22), Group 2: Sexual Dysfunction (n=21) and Group 3: No Sexual Dysfunction (n=19) from rating their own responding behaviour.
profile.

Specifically, Group 1 (HSD) and Group 2 (SDys) subjects rated themselves significantly less *self nourishing* and *self protecting* than did the sexually functional subjects (Group 3). Hypoactive sexual desire subjects (Group 1) rated themselves significantly more *self indicting* and *self oppressing* than the SDys group (Group 2). In summary, Group 1 and Group 2 were significantly less "friendly" to themselves than the NSD group (Group 3) but, in addition, the HSD subjects were significantly more "hostile" or self oppressing than were the other subjects (see Table 29).

The *interpersonal* profiles reflected how an individual experiences his/her partner's behavior from two points of view. First, subjects rated how their spouse initiated behavior toward them, and secondly how their spouse responded or reacted behaviorally to them. The results indicated significant group differences in these experiences. For example, Group 1 (HSD) subjects experienced their partners as significantly less *affirming and understanding* and *disclosing* than the NSD group (Group 3), but also more *belittling and blaming* and *attacking and rejecting* than either of the other two groups (Groups 2 and 3). The sexual dysfunction group (Group 2) did not rate their spouses significantly different from the comparison group (Group 3) on any of the "hostile" clusters. Group 2 (SDys) subjects did experience significantly less *nurturing and comforting* behavior and less *disclosing and approaching* behavior as compared to Group 3 (NSD) subjects (see Tables 30 and 31).

The significant difference between the HSD group (Group 1) and the SDys group (Group 2) was in increased hostility, for example, *belittling and attacking* behavior, experienced by the HSD group (Group 1).
The second perspective reflected by the **interpersonal** profiles is how an individual experienced his or her own behavior in the relationship from the same two perspectives: initiating behavior towards a spouse and reacting or responding behavior to a spouse. Again, there were significant group differences between the two sexually dysfunctional groups (Group 1 and 2) and the no sexual dysfunction group (Group 3). Group 1 and Group 2 subjects experienced themselves as significantly less nurturing, comforting, helping and protecting in their initiating behavior and significantly less disclosing, expressing, approaching, enjoying and trusting in their responding behavior than did Group 3 subjects. In addition, HSD subjects (Group 1) experienced themselves as significantly more belittling and blaming in their relationships than did either of the other two groups (Groups 2 and 3) of subjects.

**b. Partners of Subjects**

There was no significant difference overall between Groups 1, 2 and 3 partners on three of the five profiles: the introject (self concept) profile and the two interpersonal profiles which rated how partners experienced their own initiating and responding behavior in the relationship.

Results of the analysis of the other two profiles, partners rating how they experienced their spouses behavior (initiating and responding) in the relationship, indicated significant group difference. Group 1 (HSD) partners rated their hypoactive sexual desire spouses as significantly less friendly and more hostile in both behaviors as compared to the NSD group (Group 3).

Between Groups 1 (HSD) and Group 2 (SDys) there were no statistically significant differences on mean scores of the “friendly” clusters for either
initiating or responding behaviors. However, partners of HSD spouses rated their mates’ behavior as significantly more belittling and blaming, attacking and rejecting, protecting and withdrawing and avoidant than did the SDys group (Group 2) (see Tables 34 and 35).

D. SUMMARY

This chapter has presented the results of the Canonical Correlation Analyses and Profile Analyses pertinent to the hypotheses proposed in the study. The following chapter will discuss the research questions and hypotheses in light of the study findings.
CHAPTER V. DISCUSSION

The discussion chapter examines the demographic characteristics and research hypotheses in view of the study findings and integrates these results with current clinical and theoretical literature.

A. DISCUSSION OF DEMOGRAPHIC DATA

The 124 subjects who participated in this investigation were screened for alcohol and substance abuse, medication intake, evidence of severe medical impairment and the presence of major psychopathology. Subjects were also screened regarding: age range (22-50 years), relationship status (married and commonlaw), cohabitation duration (18 months or longer) and relationship committment (stable and committed). Subjects and their partners were then assigned to one of three study groups according to preset criteria outlined in Chapter III. The study results are based on the following group participation: Hypoactive Sexual Desire (n=44), Sexual Dysfunction (n=42) and No Sexual Dysfunction (n=38). All partners in the study met the additional study criteria of displaying sexual desire (score of 15 or more on the DSFI) and being sexually functional. The three study groups were matched for age. Analysis of variance and chi-square statistical procedures indicated that there was no significant difference between the three study groups on age, relationship status or education level (see Table 1).

There was a significant difference, however, between the control group (NSD) and the other two study groups (HSD and SDys) on duration of cohabitation. Group 3 subjects (NSD) reported an average relationship duration of 5.9 years (SD=4.4 years) whereas Group 1 (HSD) subjects reported an average
duration of 11.5 years (SD=6.4 years) and Group 2 (SDys) subjects an average
duration of 9.8 years (SD=6.2 years). The difference can be accounted for by
the broader range of ages in Group 1 (24 to 50 years) and Group 2 (23 to 50
years) as compared to Group 3 (23 to 47 years). Although the mean age of the
subjects in the three groups was not significantly different, the age range in
Group 1 spanned 26 years and in Group 2 spanned 27 years, whereas in
Group 3, the age range spanned 24 years. The probable effects of the difference
in length of relationship was examined by analysis of covariance. The test for
significance of group difference on the adjusted means was statistically significant
at the .05 level indicating no effect of length of relationship on the results.

The results from this investigation were derived, therefore, from a group
of subjects who met strict operational criteria for inclusion in the study. The
hypoactive sexual desire group in addition met the restricted criteria for lifelong
or acquired generalized loss of sexual drive for sexual activity and thought as
opposed to lifelong or acquired, situational loss of sexual desire. Most discussions
about loss of sexual desire in the literature do not differentiate between
generalized and situational hypoactive sexual desire. For example, in much of the
literature distinctions are not made between lack of desire for any form of
sexual expression and lack of desire for one's sexual partner (Schreiner-Engel and
Schiavi, 1986). This is an important distinction in the assessment of sexual
problems which has been overlooked in most empirical studies to date. In
addition, the study subjects were screened carefully for severe medical and
psychiatric impairment in an attempt to control for organic problems related to
the interruption of sexual function. Current literature suggests that hormonal
factors do not play a significant role in the pathogenesis of sexual dysfunction in
otherwise healthy females (Schreiner-Engel et al., 1989) and males (Bancroft, 1980).

B. DISCUSSION OF RESEARCH HYPOTHESES

1. Discussion of the Results of the Canonical Analyses and ANOVAs

Research Hypothesis 1:

There will be a statistically significant relationship between sexual functioning variables as measured by the SHF and DSFI and intrapsychic variables as measured by the MMPI, STAI and ABS.

Research Hypothesis 2:

There will be a statistically significant difference between the three groups of subjects (HSD, SDys, NSD) on the sexual functioning and intrapsychic canonical variates obtained in the canonical analysis.

When no physiological disorder can be detected, sexual dysfunction is often attributed to psychological (i.e., intrapsychic) causes, and there remains a belief that sexual dysfunction is related to deep-rooted psychological conflict and/or affective illness (Kaplan, 1979). The nature of the relationship between psychological adjustment and sexual dysfunction remains equivocal in that a number of studies report a significant relationship between sexual dysfunction and psychopathology (Derogatis, Meyer and King, 1981; Munjack, Kanno and Oziel, 1978; Maurice and Guze, 1970) while others find no such relationship (Munjack and Staples, 1976). Three current studies have addressed psychopathology specifically in the HSD population (Churchill, 1989; Schreiner-Engel and Schiavi, 1986; Stuart, Hammond and Pett, 1987) and have reported conflicting results.
For example, in a sample of female subjects assigned the diagnosis of inhibited sexual desire (ISD) by Stuart et al. (1987), no significant difference was found between the ISD and NonISD groups on the 10 clinical scales of the MMPI. Both group profiles were in the nonclinical range. Churchill (1989), on the other hand, in a study of inhibited sexual desire (ISD) in a male sample, compared the ISD males with a group of sexually dysfunctional males (dysfunction other than ISD) and found that both groups displayed clinically relevant MMPI profiles (ie., both groups had T scores above 70 on two or more clinical scales). They concluded that their sexually dysfunctional sample was more psychologically disturbed than the normal population.

Schreiner-Engel and Schiavi (1986) measured their male and female ISD subjects on current and lifetime psychopathology. They found that all of their subjects were free of psychopathology and displayed normal psychological profiles. However, although currently free of other Axis I disorders specified in the DSM-III (American Psychiatric Association, 1980), their sample had a markedly elevated lifetime prevalence of affective disorders. Schreiner-Engel and Schiavi (1986) suggest that the remarkable rate of affective illness in ISD subjects indicates that ISD may have a common etiology with affective disorders. The intrapsychic study findings of this research are discussed in relationship to these interesting, yet conflicting findings.

Research Hypothesis 1 was tested by the canonical correlation method which generated one canonical variate pair accounting for 70% of the variance shared between sexual functioning and intrapsychic functioning (Rc=.83). The sexual functioning variate was characterized by low sexual desire and arousal accompanied by a low index of sexual functioning and negative thoughts during
sexual activity. This was interpreted as a variable describing sexual dysfunction. The result of testing Hypothesis 2 indicated that all groups, as conjectured, were significantly different on this sexual dysfunction measure. The difference was interpreted to be a function of the discrete sexual problem of each diagnostic group. The intrapsychic variate, on the other hand, did not distinguish between the two sexually dysfunctional groups (HSD and SDys) as conjectured although the Hypoactive Sexual Desire group and the Sexual Dysfunction group were both significantly different from the No Sexual Dysfunction group on this affective measure. The intrapsychic variate measured primarily affect distinguished by high sexual anxiety and general anxiety and negative affect balance.

Of interest to the intrapsychic solution of the canonical correlation was, that out of 13 variables entering the analysis, the highest canonical variable loadings were affect measures other than MMPI scale scores. Two MMPI scales, hysteria and psychopathic deviate, did load mildly on the variate, however, which led to further analysis of the MMPI to assist in interpreting the results. It was found that there was no significant difference between Groups 1, 2 or 3 on MMPI mean scale scores except for Scale 3 (hysteria) and Scale 4 (psychopathic deviate). Group 1 scores were significantly higher than Group 2 or Group 3 scores on these scales. Mild elevations on MMPI Scale 3 (Hysteria) may indicate personality features such as self centeredness and naivety while elevation on Scale 4 (psychopathic deviate) reflects a reasonable level of conformity to social mores and authority (Lachar, 1974). However, all the MMPI T scores for all three groups were within the normal range (i.e., between T=30 and T=70) and, therefore, did not reach clinical significance. Similar results which failed to find a relationship between current psychopathology and sexual dysfunction have been
reported by Stuart, Hammond and Pett (1987), and Scheiner-Engel and Schiavi (1986).

Out of the 13 intrapsychic variables entering the canonical analysis, however, sexual anxiety, trait anxiety and negative affect were the three variables which defined the variate. The study results clearly indicate that hypoactive sexual desire and sexual dysfunction of arousal and orgasm are associated with the concept underlying this variate which is interpreted to be an anxiety/affect construct. This finding supports the view that sexual dysfunction is related to anxiety and affect rather than psychopathology (Kaplan, 1979; Leiblum & Pervin, 1980).

While the study results lead to the conclusion that sexual dysfunction is associated with an anxiety/affect vulnerability, and not to current psychopathology, they do not indicate a significant difference between affective functioning in subjects with HSD as compared to subjects with arousal and orgasm dysfunction (SDys).

**Research Hypothesis 3:**

There will be a statistically significant relationship between sexual functioning variables as measured by the SHF and DSFI and interpersonal variables as measured by the DAS.

**Research Hypothesis 4:**

There will be a statistically significant difference between the three groups of subjects (HSD, SDys, NSD) on the sexual functioning and interpersonal canonical variates obtained in the canonical analysis.

In the interpersonal literature, there is some empirical evidence to support the view of a significant correlation between sexual functioning and aspects of
the marital relationship. For example, open sexual communication (Banmen and Vogel, 1985), feelings of happiness (Gebhard, 1978) and trust (Fields, 1983) have been shown to correlate with sexually well adjusted marriages. However, information regarding the impact of conflict, anger, power struggles, lack of affection and many more interpersonal feelings and behaviors upon sexual desire, or vice versa, is largely anecdotal and relies heavily upon clinical impression (Kaplan, 1979). In assessing and treating sexual desire problems some clinicians have recently drawn attention to the interpersonal and social context of the problem and developed interpersonal/systemic models of treatment (Apfelbaum, 1988; Levine, 1984; LoPiccolo and Friedman, 1988; Regas and Sprenkle, 1984; Talmadge and Talmadge, 1986; Verhulst and Heiman, 1988; and Zilbergeld and Ellison, 1980). However, empirical research directed toward the study of factors in relationships which may be related to sexual desire are few. Only three recent studies have reported results of studying relationship variables associated with hypoactive sexual desire (Churchill, 1989; Murphy and Sullivan, 1981; and Stuart, Hammond and Pett, 1987).

Although not a major focus of her research, Churchill (1989) studied a sample of 30 males assigned a diagnosis of inhibited sexual desire and reported that compared to 30 males with other types of sexual dysfunction, the ISD males reported significantly less satisfying relationships with both mother and father and a significantly higher incidence of extramarital affairs than did non-ISD subjects. Churchill (1989) interpreted these results as evidence of more disturbed object relations associated with the ISD group as compared to non-ISD group. Murphy and Sullivan (1981) studied a group of women assigned the diagnosis of ISD and compared them on measures of interpersonal communication
with a group of women displaying normal sexual functioning. Ninety-one percent of the women in the normal group rated their partner's communication as good compared to 35% of the women with sexual desire disorder. The third study, by Stuart, Hammond and Pett (1987), looked at a sample of 59 married women who complained of lack of sexual desire and compared them on several relationship variables with 31 married women who experienced normal sexual desire. They found significant differences between ISD and non-ISD groups on a variety of marital relationship factors, for example, marital adjustment as measured by the consensus, satisfaction, cohesion and affectional subscales and the total score on the Dyadic Adjustment Scale (Spanier, 1976), satisfaction with communication, feelings of love, romantic love and emotional closeness. On all these dimensions, Stuart et al. (1987) reported the non-ISD group showed significantly more positive responses than did the ISD group. These studies provide some evidence to support the view that the quality of the relationship may affect sexual desire, or conversely, the lack of sexual desire affects the quality of the relationship. The interpersonal study findings of this research will be discussed in relationship to the above studies.

Hypothesis 3 was tested by the canonical correlation method which generated one significant canonical variate pair accounting for 42% of the variance shared between sexual functioning and interpersonal functioning (Rc = .65). The resulting canonical variates were interpreted to be positive sexual functioning and positive relationship adjustment characterized by affection and satisfaction.

The results of testing Hypothesis 4 indicated a statistically significant difference between the two sexually dysfunctional groups (HSD and SDys) and the control group on both the sexual functioning and the relationship adjustment
variables. There was no significant difference between the Hypoactive Sexual Desire group and the Sexual Dysfunction group, however, on either canonical variate. This result supports the view that committed, stable, relationships of Group 1 (HSD) and Group 2 (SDys) subjects were perceived as being significantly less affectionate, satisfying and cohesive than were the relationships of control subjects.

Stuart et al. (1987) reported a similar finding in their study of ISD subjects and control subjects. However, Stuart et al. (1987) did not compare inhibited sexual desire subjects with subjects having other types of sexual dysfunction. It would appear that although HSD subjects in the present study experience their relationships as less affectionate and satisfying than do the control subjects (NSD), their experience is no different from that of other subjects who suffer from different sexual dysfunction (SDys). This finding does not support the view expressed by Kaplan (1979) that, "desire phase dysfunctions, as a group, are afflicted with more serious . . . marital problems, while the patients with orgasm problems are more often . . . found to have relatively milder and less tenacious underlying problems" (p. 28). The total Dyadic Adjustment Scale score for subjects provides further evidence that the HSD and SDys groups are no different from each other on perceived marital adjustment. For example, the means and standard deviations for the DAS total score across groups was: Group 1 (HSD) mean score, 96.6 (SD 14.7); Group 2 (SDys) mean score, 100.6 (SD 15.9); Group 3 (NSD) mean score, 110.8 (SD 13.9). An ANOVA based on the total DAS scores for the three groups indicated a significant difference between the groups at F(2,59) = 4.86, p < .05. A Student-Newman-Keuls test procedure established that the control group was significantly different from
Groups 1 (HSD) and 2 (SDys) on the DAS total score but the HSD and SDys groups were not significantly different from each other on the same measure.

While the study results lead to the conclusion that sexual dysfunction is related to relationship adjustment (characterized by affection, satisfaction and cohesion), the finding does not support the view that hypoactive sexual desire is related to more severe relationship discord than arousal or orgasm problems.

Research Hypothesis 5:

There will be a statistically significant relationship between sexual functioning variables as measured by the SHF and DSFI and intrapsychic variables as measured by the MMPI, STAI and ABS.

Research Hypothesis 6:

There will be no statistically significant difference between the three groups of partners (HSD, SDys, NSD) on the sexual functioning and intrapsychic canonical variates obtained in the canonical analysis.

The four hypotheses concerning partners of subjects diagnosed with sexual dysfunction were exploratory in nature. Several authors have suggested that the role of partners in sexually dysfunctional couples may be underestimated (Cooper, 1969; Kaplan, 1977, 1979; LoPiccolo, 1980; Verhulst & Heiman, 1979). These authors encourage research which includes partner exploration and systemic dynamics.

Hypothesis 5 was tested by the canonical correlation method which generated one significant canonical variate pair accounting for 64% of the variance between sexual functioning and intrapsychic measures in the partner group (Rc=.80). This strong correlation was between two variates interpreted to be positive sexual functioning and positive affect. The result of testing Hypothesis
indicated that control group partners (Group 3) were significantly more functional sexually than Group 1 (HSD) and Group 2 (SDys) partners. This result was interpreted as a reflection of the lack of regular, satisfying sexual activity in Group 1 and Group 2 dyads. There was no significant difference between any of the groups of partners on the intrapsychic variate interpreted as positive affect. This finding led to the conclusion that partners of Group 1 (HSD) and Group 2 (SDys) subjects, unlike their spouses, do not display intrapsychic vulnerability related to anxiety and negative affect.

Research Hypothesis 7:

There will be a statistically significant relationship between sexual functioning variables as measured by the SHF and DSFI and interpersonal variables as measured by the DAS.

Research Hypothesis 8:

There will be a statistically significant difference between the three groups of partners (HSD, SDys, NSD) on the sexual functioning and interpersonal canonical variates obtained in the canonical analysis.

Hypothesis 7 was tested by the canonical correlation method which generated one significant canonical variate pair accounting for 36% of the variance between the sexual functioning and interpersonal measures in the partner group (Rc=.60). Although significant, this correlation was only moderate between the two variates interpreted to be positive sexual functioning and relationship adjustment characterized by affection, cohesion and satisfaction. It is interesting to note the similarity between the Canonical Variable loadings on the relationship adjustment variates generated from the subjects' data (Table 12) and their partners' data (Table 24). The structure coefficient loadings on the subjects'
data were: affection (.90), satisfaction (.41) and cohesion (.34) and on the partners' data were: affection (.91), cohesion (.76) and satisfaction (.69). This indicates that the concept underlying the interpersonal variate in the two spousal groups is similar.

The result of testing Hypothesis 8 indicated a statistically significant difference between partners in Group 1 (HSD) and Group 2 (SDys) compared to partners in Group 3 (NSD) on the sexual functioning and the relationship adjustment variate. There was no difference between the Group 1 (HSD) and Group 2 (SDys) partners on either canonical variate.

Again, the difference between the sexually dysfunctional groups (HSD, SDys) and the control group (NSD) on the sexual functioning variate was interpreted as a reflection of the lack of regular satisfying sexual activity in Group 1 and Group 2 dyads. The analysis of the interpersonal variate indicates that partners (as well as subjects) of Group 1 (HSD) and Group 2 (SDys) experience their relationships as less affectionate, satisfactory and cohesive than do control subjects. However, there is no evidence to support the view that hypoactive sexual desire is related to more severe relationship discord than arousal or orgasm problems. The total Dyadic Adjustment Scale score for partners provides further evidence that HSD and SDys groups are no different from each other on perceived marital adjustment as measured by the DAS. For example, the means and standard deviations for the DAS total score across groups for partners was: Group 1 (HSD) mean score, 97.8 (SD 17.3); Group 2 (SDys) mean score, 95.7 (SD 15.9); Group 3 (NSD) mean score, 110.8 (SD 13.9).
2. Discussion of the Results of the Profile Analyses

“Sexual desire is an extraordinarily complicated aspect of human life, and it requires a multifaceted approach to its understanding” (p. vii), writes H. Lief in the forward to Leiblum and Rosen’s (1988) book entitled Sexual Desire Disorders. In acknowledging the complex nature of sexual desire, this research studied intrapsychic and interpersonal variables related to sexual desire in two ways: first, sexually dysfunctional subjects and their sexually functional partners were both subjects in the study, and second, intrapsychic and interpersonal data were collected from both spouses on questionnaires designed to elicit individual data (MMPI, STAI, DAS, ABS) and interpersonal systemic data (SASB). Contemporary conceptualizations of lack of sexual desire implicate disturbed marital relationships and intrapsychic vulnerability as possible factors related to and/or maintaining the disorder (Levine, 1988; LoPiccolo & Friedman, 1988; Verhulst & Heiman, 1979, 1988; Zilbergeld and Ellison, 1980). However, elusive marital processes related to disturbed relationships which may be related to sexual desire have not been defined. Researchers in the field have failed to demonstrate that any specific relationship or interactional pattern is related to lack of sexual desire although there is evidence that the overall quality of the marriage bears some relationship to the disorder (Stuart, 1985). The SASB approach provides objective measurement of complex interpersonal marital behavior and self concept (Benjamin, 1974) which may help to define marital processes related to the quality of the relationship and associated with the lack of sexual desire. Research hypotheses 9 and 10 (subjects) and research hypotheses 11 and 12 (partners of subjects) were based on the SASB data measuring such complex interpersonal behavior and self concept.
Research Hypothesis 9:

Profiles of the eight mean cluster responses on the Introject surface of the SASB for the three groups of subjects (HSD, SDys, NSD) will not be parallel and coincident.

Research Hypothesis 10:

Profiles of the eight mean cluster responses on the four interpersonal surfaces of the SASB (Spouse Initiates, Spouse Responds, Self Initiates, Self Responds) for the three groups of subjects (HSD, SDys, NSD) will not be parallel and coincident.

The results of testing Hypotheses 9 and 10 indicated a statistically significant difference between the self concept profiles and the interpersonal profiles of the three groups of subjects.

The SASB self concept profile (introject) is an interactionally derived measure of one’s self concept. The self concept from an interactional point of view results from treating the self as significant others have (Benjamin, 1984). Significant group differences were established between all three groups on the self concept dimension. The HSD and SDys groups perceived themselves as significantly less self-loving as compared to the control subjects. Hypoactive Sexual Desire subjects, in turn, were significantly more self-hating as compared to subjects in Group 2 (SDys). For example, in terms of self-love, Groups 1 and 2 subjects rated themselves less self nourishing and cherishing and self-protecting and enhancing than did Group 3 subjects. Some examples of the questions related to self nourishing and cherishing behavior are: (1) I naturally and easily provide for, nurture and take care of myself; (2) I like myself very much and feel very good when I have a chance to be with myself; (3) I keep myself open to
connecting with people, places, or things which would be very good for me. Some examples of the questions related to self-protecting and enhancing behavior are:

(1) Because I want to help myself, I try to figure out what is really going on within me; (2) I practice and work on developing worthwhile skills, ways of being; (3) I comfortably look after my own interests and protect myself. The responses of the HSD and SDys subjects to these questions were generally at, or below a score of 50 out of 100, which indicates the respondents consider the items to be in some degree false about themselves. Control subjects scored between 60 and 70 on these same items. The discrepancy between the HSD and SDys subjects and the control subjects on the self-love reflects a lower self concept in the former groups as compared to the latter group.

In addition to these differences in the self concept profiles, HSD subjects (Group 1) rated themselves significantly different from the SDys subjects (Group 2) on self indicting and oppressing behavior. Some examples of the questions related to self indicting and oppressing behavior are: (1) I accuse and blame myself until I feel guilty, bad and ashamed; (2) I make myself do and be things which are known not to be right for me. I fool myself; (3) I put myself down, tell myself that I have done everything wrong and that others can do better. The content of the questions comprising the self indicting cluster demonstrates the measures used to define self-hostility. The significant difference between the HSD and SDys subjects on self-hostility reflects a more conflicted and restrained self concept for HSD subjects as compared to subjects with arousal or orgasm problems (SDys). According to SASB theory, self concept is affected more by how we experience the world, than by how it really is (Benjamin, 1984). Therefore, the SASB measure of self concept is based on the
subjects' perception of his/her relationship. The result of the profile analysis supports the view that HSD subjects give themselves substantially stronger or more frequent negative messages. SASB theory of introjection states that a person is self-indicting and oppressing as a result of the experience of belittling and blaming behavior directed toward him/her by one or more important figures in his/her social milieu (Benjamin, 1986). The result of negative messages is a more conflicted, controlled and punitive self concept. The profile analyses on the SASB introject ratings were consistent with, yet extended, the results of testing Research Hypothesis 2. For instance, significant group difference was established on the self concept measure between the control group (NSD) and the two sexually dysfunctional groups (HSD and SDys) and in addition, there was a significant difference established between HSD subjects and SDys subjects on the self concept dimension of self-hate. This result provides some evidence to support Kaplan's (1979) view that HSD is associated with increased intrapsychic conflict or vulnerability.

The SASB relationship profiles describe how subjects in the three groups experience interaction with their spouses in their relationships. The results of testing Research Hypotheses 10a to 10d indicated a statistically significant difference between all the interpersonal profiles of the three groups. Subjects enduring sexual problems (HSD and SDys) experienced their marital relationships as significantly less 'friendly' than did control subjects. For instance, they perceived less affiliation and affection in their marriages as compared to control subjects. Furthermore, hypoactive sexual desire subjects rated their spouses behavior toward them, as significantly more hostile than did either of the other groups (SDys or NSD). For example, they rated their spouses as significantly
more belittling and blaming and attacking and rejecting. Some examples of questions related to spouse's belittling and blaming behavior are, my partner: (1) Puts me down, tells me my ways are wrong and his/her ways are better; (2) Accuses and blames me. He/she tries to get me to believe and say I am wrong; (3) Harshly punishes and tortures me, takes revenge. Examples of questions related to attacking and rejecting behavior are, my partner: (1) Angrily leaves me out. Completely refuses to have anything to do with me; (2) Looking very mean, he/she follows me and tries to hurt me; (3) Angrily leaves me to go without what I need very much even when she/he easily could give it to me. These behaviors in the SASB model are described as hostile and controlling. On the SASB dimension of interdependence, which ranges from independent or differentiated to interdependent or enmeshed, high ratings on the hostile clusters represent interdependence or "enmeshment" (Benjamin, 1984). It is interesting to note that the hypoactive sexual desire subjects rated their partners initiating behavior but not their partner's responding behavior as more hostile than did the other two groups. They did, however, rate their partners responding behavior as significantly less friendly than did the other two groups, specifically in terms of self disclosing and expressive behavior.

When HSD subjects rated how they perceived their own behavior toward their spouses, they rated themselves as significantly less friendly (i.e., nurturing and comforting and helping and protecting) than did the control subjects. More interesting, however, is the fact that they also rated themselves as more belittling and blaming toward their spouses as compared to the other two groups of subjects (SDys and NSD). HSD subjects described their own hostile behavior as similar to their spouses hostile behavior. This suggests that rather than
complementarity in the marital relationship of HSD subjects there is more mutual belittling and blaming and hostility than is found in the other two groups of committed couples (SDys and NSD). Benjamin (1984) suggests that there is maximal instability in a relationship if two persons are trying to control the relationship by mutual blaming or mutual rejecting. Benjamin (1984) argues that if both people have the same rather than complementary focus, there is no “connection” and stable transactions are impossible.

Severely distressed couples are highly reciprocal in their exchanges of negative behaviors (Gottman, 1979; Jacobson & Holtzworth-Munroe, 1986). If distress can be viewed on a continuum from no distress to severe distress, it could be conjectured from the analysis of the subject groups' data that hypoactive sexual desire couples, although committed to their relationship, experience increased exchanges of negative behavior which result in a greater degree of marital distress. It is interesting and informative to compare the HSD subjects' perception of this relationship dynamic with their partners' perception of the same relationship dynamic as expressed in the result of testing Hypothesis 12.

**Research Hypothesis 11:**

Profiles of the eight mean cluster responses on the Introject surface of the SASB for the three groups of partners (HSD, SDys, NSD) will not be parallel and coincident.

**Research Hypothesis 12:**

Profiles of the eight mean cluster responses on the four interpersonal surfaces of the SASB (Spouse Initiates, Spouse Responds, Self Initiates, Self Responds) for the three groups of partners (HSD, SDys, NSD) will not be parallel and coincident.
The findings based on the SASB introject ratings addressing Hypothesis 11 were consistent with the results of Hypothesis 6. Analysis of the partner profiles measuring self concept indicated no significant difference between Group 1, Group 2 or Group 3 partners on self concept as measured by SASB introject. This result was interpreted to mean that partners of HSD, SDys and NSD subjects did not differ in any psychological way on either of the two intrapsychic measures of the study (intrapsychic canonical variate or self concept). This finding is extremely interesting in view of the results of the interpersonal profile analyses related to Hypothesis 12a to 12d. In these analyses, it was found that partners of Group 1 and Group 2 subjects experienced their spouses as significantly less friendly and affiliative as compared to control subjects. As can be seen by Figures 15 and 16, the difference in ratings on the ‘friendly’ clusters of the profile (clusters 2, 3 and 4) are substantial. For instance, the HSD and SDys subjects were rated by their partners at or below a score of 50 on the behaviors of: affirming and understanding, nurturing and comforting, helping and protecting, disclosing and expressing and approaching and enjoying. These ratings are very low as compared to scores ranging from 65 to 75 for the control group. The discrepancy between the groups on measures of ‘friendly’ behavior reflects less affiliation and affection and less openness in the HSD and SDys groups as compared to the control group.

More interesting yet is the finding that partners of HSD subjects (Group 1), as compared to partners of SDys (Group 2) and NSD (Group 3) subjects, rated their spouses as significantly more hostile as expressed by belittling and blaming, attacking and rejecting, ignoring and neglecting, sulking and appeasing, protecting and withdrawing and walling off and avoiding behaviors. As discussed
earlier, this view, to a lesser degree, is also the view held by HSD subjects regarding their own behavior in the relationship. It could be suggested from this result, that HSD subjects and their partners have a similar perception, albeit varying in degree and intensity, of the lack of affection and presence of hostility in their relationship. However, there is a discrepancy regarding the spouses' perception of the source of this lack of affection and presence of hostility. For example, whereas HSD subjects perceived both their partner's behavior and their own behavior as lacking in friendliness and affection and fostering hostility, their partners, on the other hand, perceived their own behavior in the relationship as relatively strong in 'friendly' and weak in 'hostile' interactions. In fact, there was no significant difference between the profiles of the three groups of partners on how they rated their own behavior in their relationships. This result is curious. It appears that partners of HSD subjects experience their spouses as relatively unfriendly, withholding and hostile in their relationship but do not view their own interpersonal behavior as unfriendly or hostile. This perception of the relationship has not impacted on their self concept as measured by the SASB. Sexually disinterested subjects (HSD), on the other hand, perceive both themselves and their spouses as unfriendly, withholding and hostile in the relationship relative to the other two groups (SDys and NSD). This perceived dynamic in turn has affected the HSD subject's self concept in a negative way as is projected by SASB theory.

The result of this analysis raises some important questions. Given that the perception of interpersonal behavior of HSD couples is significantly different from the other groups of couples (SDys and NSD) in terms of nurturing and hostile interactions, how can we account for the different perceptions held by the
spouses involved regarding the source of this dynamic? Is the HSD subject over sensitive to interpersonal dynamics? Is his/her partner insensitive to or denying negative interpersonal actions? Although the answers to these questions are not addressed by this investigation the questions are important to explore in order to define the elusive interactional and intrapsychic dynamics operating in couples experiencing lack of sexual desire.

3. General Discussion

This section reflects on the overall results of the study in relationship to the questions which guided the research project. The three basic questions which guided the study were: (1) Are specific intrapsychic or interpersonal variables related to hypoactive sexual desire? (2) Is hypoactive sexual desire related to deeper more complex or more serious intrapsychic and/or interpersonal problems as compared to arousal or orgasm problems? and (3) Does intrapsychic or interpersonal functioning differ in individuals or their partners where hypoactive sexual desire is a problem as compared to couples where arousal or orgasm problems exist?

The study was designed to explore differences between hypoactive sexual desire and sexual dysfunction of arousal and orgasm in response to the hypothesis of intrapsychic and interpersonal differences as proposed by Kaplan (1979).

Considering the findings of all the analyses of the study, there is not much support for the hypothesis which suggests that HSD subjects differ from SDys subjects on intrapsychic conflict. First, the HSD and SDys subject groups did not differ significantly from the control group on 8 out 10 MMPI scale
scores. All 10 of the MMPI scale scores for all groups were in the non clinical range indicating normal functioning as opposed to extreme intrapsychic discord or psychopathology. The construct underlying the intrapsychic canonical variate in the first analysis was an anxiety/affect construct which separated the two sexually troubled groups (HSD and SDys) from the control group (NSD) but there was no significant difference between the HSD and SDys groups on the variates. This result indicates that the HSD group is not significantly different from the SDys group in terms of state or trait anxiety or negative affects, although these variables are clearly related to sexual dysfunction (HSD, SDys). The only evidence which may support Kaplan's (1979) proposal of increased intrapsychic discord in HSD subjects comes from the profile analysis of the SASB self concept. HSD subjects indicated a lower or more conflicted self concept on the dimension of hostility as compared to SDys subjects. HSD subjects reported significantly more self indicting and oppressing behavior than did the SDys group. However, HSD subjects and SDys subjects were more alike than different on the other 7 clusters describing self concept. For example, both HSD and SDys subjects were significantly less self nourishing and self protecting than the control subjects but there was no significant difference between the three groups on five of the eight clusters. Although the results of the self concept analysis are interesting and important they provide only weak support for Kaplan's hypothesis of increased intrapsychic conflict in HSD subjects. However, although not reaching statistical significance between the HSD and SDys groups, several of the results were in the hypothesized direction. For example, in Hypothesis 2, the mean scores of the intrapsychic canonical variate for the HSD group was .51; for the SDys group was .19 and for the NSD group was -.80. This indicates that the
HSD group scored highest on the variate while the NSD group score was inversely related to the construct. It could be that different results would have occurred should Group 2 (SDys) have consisted of only orgasm problems. Kaplan's hypothesis is based on the premise that:

subjects with desire phase dysfunctions, as a group, are afflicted with more serious intrapsychic and/or marital problems, while subjects with orgasm problems are more often, but not invariably, found to have relatively milder and less tenacious underlying problems. Excitement phase disorders fall in the middle of the spectrum. (p. 28)

Perhaps future research could be conducted with Group 2 representing only orgasm dysfunction rather than a combined subject pool of arousal and orgasm disorders to explore more precisely Kaplan's hypothesis as it relates to intrapsychic variables.

Again, considering the findings of all the analyses in the study there is strong support for the hypothesis which suggests that HSD subjects differ from SDys subjects on interpersonal distress. Collecting information on marital adjustment (DAS) and behavior (SASB) was an important component of the research design because differences between the HSD and SDys groups on interpersonal behavior were only apparent on the responses to the more intricate and detailed interpersonal measure (SASB). The basic assessment of dyadic adjustment (DAS) did distinguish between the sexually dysfunctional groups (HSD, SDys) and the control group (NSD) but it did not differentiate between the HSD and SDys groups. The SASB, on the other hand, provided a rich description of
the different marital behavior patterns as described by HSD spouses and SDys spouses. Five important findings resulted from the SASB analysis which support Kaplan's (1979) hypothesis. First, HSD subjects and SDys subjects rated themselves as significantly less friendly, open and nurturing in their marriages as compared to control group (NSD) subjects. Second, HSD subjects described themselves and their partners as significantly more hostile and attacking in their marriages as compared to the other two groups (SDys, NSD). Third, partners of HSD subjects rated their spouses, but not themselves as significantly more hostile in the marriage as compared to the other two groups. Fourth, partners across groups did not differ on any intrapsychic measure or interpersonal ratings of their own behavior. And finally, in the HSD group there were different perceptions expressed by the spouses as to the source of the hostility in the relationship. Generally, these findings support Kaplan's hypothesis which states that HSD subjects experience more serious marital problems than do subjects with orgasm or arousal dysfunction.

It is important to keep in mind that this investigation focused on committed, stable relationships and not on highly conflictual relationships. Overall, the profiles generated from SASB data have resulted in S-shaped patterns of data. The S-shaped pattern of data is described by a cluster 1 score averaging near 50, and subsequent cluster scores increasing up to the affiliation pole (cluster 3) and then decreasing in an orderly fashion to minimize at the hostility pole (cluster 7). Patterns of data so described (see Figures 9 through 18) are centered around friendliness and are typical of individual subject ratings on SASB which describe basically friendly relationships (Benjamin, 1984). The centering of the SASB subject and partner profiles around 'friendliness' validates the subject
selection goal which was to study committed, stable relationships which were experiencing sexual problems but which were free from extreme marital conflict or disruption. Using the S-shaped profiles generated by subjects and partners, the study sought additional precision in understanding the differences between groups by studying the relative extent of their endorsement of affiliation or hostility.

Figures 12, 13, 15 and 16 are profiles generated by HSD, SDys and NSD subjects rating themselves. A noticeable deviation of data from the S-shaped curve is suggested by a drop rather than a peaking at the attachment/affiliation pole (cluster 3). Benjamin (1985) states that, "such a drop at cluster 3 is almost always seen in friendly relationships which are not sexual" (p. 3). The pattern of friendliness represented by a drop of endorsement at the affiliation pole would be more appropriate for a parent-child relationship because the items close to the attachment pole are intensely affectionate in ways usually confined to sexual relationships (Benjamin, 1985). The SASB proposal is that friendliness is synonymous with attachment.

The results of this study validate and extend earlier findings based on Stuart's work (1983). Stuart found significant differences between ISD and non ISD groups in several marital relationship factors including marital affection, feelings of love, emotional closeness, and marital adjustment. This study confirms Stuart's (1983) findings and extends them in two ways: first, by the addition of the Group 2 (SDys) subjects which provides a comparison of the data between HSD problems and arousal or orgasm problems, and second, by the use of the SASB which defines behaviorally elusive marital dynamics contributing to marital adjustment and distress.

The findings of this study suggest that hypoactive sexual desire bears
some relationship to affective functioning as well as to levels of relationship affection and hostility. Due to the nature of the study, however, cause and effect conclusions can not be addressed. Nonetheless, speculation based on clinical experience can be entertained. One possible clinical interpretation of the results could be that affective vulnerability might predispose an individual toward lack of interest in sexual activity. This predisposition could then be increased if the relationship dynamic is perceived to be non affectionate or hostile. This interpretation is supported by the work of Schreiner-Engel and Schiavi (1986) in their study of lifetime psychopathology in individuals with low sexual desire. These researchers concluded that the remarkable lifetime rate of affective problems in hypoactive sexual desire subjects may indicate an affective vulnerability that contributes to the manifestation of inhibited sexual desire.
CHAPTER VI. SUMMARY AND CONCLUSIONS

This chapter provides a summary of the purpose, objective, method and results of the study. Conclusions drawn from the results of the investigation are presented along with the limitations of the study. Implications for theory development along with suggestions for future research conclude the chapter.

A. SUMMARY

The purpose of the study was to achieve a clearer understanding of the intrapsychic and interpersonal functioning of a clinical group diagnosed with hypoactive sexual desire. The review of the literature pointed out that the relationship between intrapsychic variables such as anxiety and depression, interpersonal dynamics, and sexual dysfunction is, as yet, ambiguous and although there is some conjecture regarding factors related to hypoactive sexual desire and the difference between persons who develop desire phase disorders and persons who develop arousal or orgasm disorders, there is a lack of empirical evidence to support or refute the different viewpoints. The objective of the study was to answer the question as to whether or not subjects assigned a diagnosis of hypoactive sexual desire and their spouses differed in some way, psychologically or interpersonally, from subjects diagnosed with sexual arousal or orgasm disorders or from subjects with no sexual dysfunction. The investigation used a three group ex post facto design to explore the study questions.

One hundred and twenty-four subjects representing 62 couples participated in the study and were assigned by a preset criteria to one of the three study groups. Group 1 was composed of 22 couples in which one partner met the study criteria for lifelong or acquired generalized hypoactive sexual desire. Group
2 consisted of 21 couples in which one partner met the study criteria for an arousal or orgasm dysfunction. Group 3 was made up of 19 comparison couples who wore sexually functional. All subjects were heterosexual, between the ages of 22 and 50 and had been married or living together in a stable relationship for a period of 18 months or longer. Groups 1, 2 and 3 were matched for age and controlled for alcohol and substance abuse, medication intake and severe medical and psychiatric impairment.

Research questions seeking possible relationships between sexual, interpersonal and intrapsychic functioning as well as research questions seeking differences between the three study groups guided the study.

Sexual functioning variables were measured by the *Derogatis Sexual Functioning Inventory* and the *Sexual History Form*. Intrapsychic variables were measured by the *Minnesota Multiphasic Personality Inventory*, the *State-Trait Anxiety Index*, the *Affect Balance Scale*, and the self concept (Introject) measure of the *Structural Analysis of Social Behavior*. Interpersonal variables were measured by the *Structural Analysis of Social Behavior* four interpersonal planes and the *Dyadic Adjustment Scale*.

Data analysis consisted of appropriate descriptive and inferential statistics that have been made available through the *Biomedical Computer Programs* (BMDP) (Dixon, 1985) and the *Statistical Package for the Social Sciences* (SPSS-X) (SPSS Inc., 1988). The level of statistical significance throughout the investigation was set at p<.05.

Three significant relationships were found between sexual, intrapsychic and interpersonal functioning. There was a statistically significant relationship between positive sexual functioning and positive affect, and a comparable relationship
between sexual dysfunction and negative affect characterized by high sexual and trait anxiety. A third significant relationship was established between positive sexual functioning and positive marital adjustment.

Three areas of the investigation yielded no significant difference between groups. First, the demographic profiles appeared equivalent in all groups with the exception of length of relationship. Analysis of covariance using length of relationship as the covariate was performed and the adjusted means were tested across groups. The results indicated that the length of relationship factor was not significant and that the study results were due to group difference and not to the difference in length of relationship across groups. Second, personality variables as measured by the MMPI indicated a lack of current psychopathology in all study groups. Third, partners in the three study groups did not differ on any intrapsychic comparisons, nor did they differ on how they rated their own interpersonal behavior in their relationships.

The intrapsychic and interpersonal areas that did reveal statistical significance included affective measures, self concept measures, marital adjustment measures and interpersonal behavior. On intrapsychic measures, Group 1 (HSD) and Group 2 (SDys) subjects were significantly different from control subjects (NSD) on the affect/anxiety variate and the SASB self concept measure. HSD subjects in turn were significantly more distressed as compared to the SDys subjects on the measure of self concept. On the interpersonal measures, HSD subjects and SDys subjects perceived their relationships to be significantly less friendly and nurturing than did control subjects. In addition, HSD subjects perceived their relationships to be significantly more hostile than did SDys or NSD subjects. Specifically, as compared to the other couples, Group 1 (HSD)
subjects and partners viewed their mates as more belittling and blaming, and attacking and rejecting. When reviewing the relationship interaction data several interesting factors were identified specific to the interpersonal dynamics of couples where hypoactive sexual desire was a problem. For instance, spouses in Group 1 (HSD) agreed on the presence of hostility and the lack of adequate affectional expression in their relationships. HSD subjects perceived both themselves and their spouses as relatively passive in offering affection and active in expressing hostility. Partners of HSD subjects, on the other hand, perceived their spouses and not themselves as unaffectionate and hostile. These partners also experienced their HSD spouses as sulky, withdrawn and avoidant.

The summary of the results of the study leads to the following tentative conclusions:

1. There is a significant relationship between sexual functioning and affect/anxiety measures.

2. There is a significant relationship between sexual functioning and interpersonal measures.

3. There is a significant relationship between hypoactive sexual desire, arousal and orgasm problems and negative affect characterized by high sexual and trait anxiety.

4. Sexually dysfunctional relationships (HSD and SDys) are perceived as less affiliative (nurturing, affirming and expressive) relative to sexually functional relationships (NSD).

5. Relationships involving hypoactive sexual desire are perceived as more hostile (belittling, rejecting and neglecting) relative to relationships involving arousal and orgasm problems or no reported sexual problems.
6. Spouses in relationships involving hypoactive sexual desire hold discrepant perceptions as to the source of the negative interactional dynamic in their relationships.

7. HSD and SDys subjects experience their own self concept as more conflicted (less self nourishing and protecting) as compared to control subjects.

8. Subjects with hypoactive sexual desire perceive their own self concept as more conflicted (self hostile) as compared to subjects with arousal or orgasm dysfunctions.

9. Partners living with sexually dysfunctional spouses (HSD and SDys) are no different from control partners (NSD) on self concept or anxiety/affect measures.

B. LIMITATIONS OF THE STUDY

The study is limited to subjects who were assigned the diagnosis of hypoactive sexual desire or arousal and orgasm dysfunction as defined in the study. As the objective of the research was to explore the nature of hypoactive sexual desire in terms of intrapsychic and interpersonal functioning, other related factors such as hormonal, environmental or developmental variables which may be related to the dysfunction were not studied. In addition the study is limited to heterosexual individuals, between the ages of 22-50, who are married or who have been living together for a period of time not less than 18 months, and who describe their relationship as stable and committed. The decision not to use gender as a variable in the study places another limitation on the investigation. Although this study tested for gender effects and found them to be nonsignificant, only replication of the results and parallel research comparing
gender pure groups on the same variables would satisfactorily address the gender issue.

The generalizability of the study from a statistical point of view is limited due to the absence of randomization. Kerlinger (1973) takes the position that it is difficult and inappropriate to generalize from one study in the social sciences regardless of randomization. Generalizability is more appropriately established over time as a result of replication and/or convergence of information. From a clinical point of view, generalizability may be cautiously approached when applied to other subjects who fall within the rules of membership of the study.

Similar to much of the previous research conducted on non medical aspects of human sexuality, the study design for this investigation was exploratory and descriptive in nature thus removing any possibility of drawing cause and effect conclusions.

C. IMPLICATIONS

It was hoped that the information derived from this study would add to the general knowledge of the poorly understood area of lack of sexual desire. On the basis of the findings and interpretations of the study some implications and recommendations for future research are offered.

There is a profound need for the development of a comprehensive model on the nature of sexual desire. Levine's (1984, 1987) recently proposed model of sexual desire suggests that sexual desire is not simply correlated with hormone levels but is a complex integration of biological, intrapsychic and interpersonal factors. The ideas incorporated in Levine's model are supported by the intrapsychic and interpersonal results of this investigation. For instance, the
intrapsychic findings clearly showed a relationship between general anxiety, negative affect, sexual anxiety, self concept and hypoactive sexual desire. However, there was no evidence of psychopathology being related to the problem. The interpersonal findings showed that hypoactive sexual desire bears a relationship to the perceived degree and source of affection and hostility in the partnership, as well as to a discrepancy in perception between HSD spouses. Any theoretical model of sexual desire and the understanding of lack of sexual desire must consider not only biological and psychological dynamics but also the interpersonal dimensions of an individual’s life. Important in terms of the interpersonal dynamics, as this research has illuminated, is the relationship between HSD and hostility and affection as well as the discrepancy in perception of marital dynamics between HSD spouses. In committed relationships it appears that loyalty and commitment expressed by the marital spouses can mask subtle systemic problems. For instance, LoPiccolo (1980) found that in low desire relationships there was often the presence of marital problems as assessed by the clinician but denied by the couple. Relationship dynamics may be a key factor in the maintenance, if not in the development, of low sexual desire. Theoretical development concerning hypoactive sexual desire can best be approached from an integrated or systemic perspective which takes into consideration the biological, psychological and interpersonal complexity of a response like sexual desire.

On the basis of the findings and interpretation of the study, the following suggestions for future research are offered:

1. I would hope that this research project will be replicated in order to validate and extend the understanding of its findings. Three possible
improvements to the study would be to control for length of relationship, to control for the gender ratio in each target group, and to compare HSD with orgasm disorders only rather than with a mixed group of arousal and orgasm dysfunctions.

2. Whenever possible, gender pure groups should be studied with a control or contrast group composed of the same gender whose sexual desire and sexual functioning are considered normal and whose spouses have no sexual dysfunction.

3. Whenever it is possible to obtain a large enough sample, the hypoactive sexual desire subjects should be studied in homogeneous groupings: a group with lifelong, generalized HSD; a group with lifelong, situational HSD; and a group with acquired, generalized HSD. There may be characteristics of sufficient variability between the diagnostic types of HSD to distinguish one subgroup from another.

4. Links between psychological variables and HSD should continue to be explored. Results from such studies will likely be more enlightening if a variety of intrapsychic measures is employed. The MMPI, for instance, has been effective in studying the presence or absence of current psychopathology. However, other measures focusing on past and present affective vulnerability and illnesses would provide a broader view of intrapsychic functioning over one’s lifetime.

5. Links between interpersonal variables and HSD should continue to be studied. Research in interpersonal dynamics should include both spouses of couples wherein HSD is a problem. Behavioral, cognitive and emotional systemic data should be studied. Future research regarding interpersonal
variables related to sexual desire needs to consider specific and detailed questions regarding marital interaction, family of origin developmental experiences and attitudes toward sexuality.
REFERENCES


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APPENDIX A

DSM-III-R DIAGNOSTIC CRITERIA
Diagnostic Criteria for 302.71 Hypoactive Sexual Desire Disorder

A. Persistently or recurrently deficient or absent sexual fantasies and desire for sexual activity. The judgment of deficiency or absence is made by the clinician, taking into account factors that affect sexual functioning, such as age, sex, and the context of the person's life.

B. Occurrence not exclusively during the course of another Axis I disorder (other than a Sexual Dysfunction), such as Major Depression.

Diagnostic Criteria for 302.72 Female Sexual Arousal Disorder

A. Either (1) or (2):

(1) persistent or recurrent partial or complete failure to attain or maintain the lubrication-swelling response of sexual excitement until completion of the sexual activity

(2) persistent or recurrent lack of subjective sense of sexual excitement and pleasure in a female during sexual activity

B. Occurrence not exclusively during the course of another Axis I disorder (other than a Sexual Dysfunction), such as Major Depression.

Diagnostic Criteria for 302.72 Male Erectile Disorder

A. Either (1) or (2):

(1) persistent or recurrent partial or complete failure in male to attain or maintain erection until completion of the sexual activity

(2) persistent or recurrent lack of subjective sense of sexual excitement and pleasure in a male during sexual activity

B. Occurrence not exclusively during the course of another Axis I disorder (other than a Sexual Dysfunction), such as Major Depression.

Diagnostic Criteria for 302.73 Inhibited Female Orgasm

A. Persistent or recurrent delay in, or absence of, orgasm in a female following a normal sexual excitement phase during sexual activity that the clinician judges to be adequate in focus, intensity, and duration. Some females are able to experience orgasms during noncoital clitoral stimulation, but are unable to experience it during coitus in the absence of manual clitoral stimulation. In most of these females, this represents a normal variation of the female sexual response and does not justify the diagnosis
of Inhibited Female Orgasm. However, in some of these females, this does represent a psychological inhibition that justifies the diagnosis. This difficult judgment is assisted by a thorough sexual evaluation, which may even require a trial of treatment.

B. Occurrence not exclusively during the course of another Axis I disorder (other than a Sexual Dysfunction), such as Major Depression.

Diagnostic Criteria for 302.75 Premature Ejaculation

Persistent or recurrent ejaculation with minimal sexual stimulation or before, upon, or shortly after penetration and before the person wishes it. This clinician must take into account factors that affect duration of the excitement phase, such as age, novelty of the sexual partner or situation, and frequency of sexual activity.
APPENDIX B

NOTICE OF SEXUALITY RESEARCH PROJECT
APPENDIX C

CONSENT FORM AND DEMOGRAPHIC FORM
Demographic Information

Your Sex: _____ Male _____ Female

Your Age: ____________

Marital Status: _________ Married/Commonlaw
                  _________ Remarried

Length of Present Relationship/Marriage: ________________________________

Your Religious Preference: ____________________________________________

Your Cultural Background: ____________________________________________

Have you ever been Married _____ Divorced _____ or Widowed _____

Your Educational Level:
  Grade 10 or less _____
  Grade 12 or less _____
  2 years of post secondary education _____
  Community college program completed _____
  University degree completed _____
  Graduate Program completed _____

How many children do you have? _____

Your Children's Ages: Ages of Boys _____ Ages of Girls _____

How many Children presently live with you? _____

Is yours a Blended Family? Yes _____ No _____

Have you ever been Abused?
  Mentally Yes _____ No _____
  Physically Yes _____ No _____
  Sexually Yes _____ No _____
APPENDIX D

MEDICAL HISTORY FORMS: MALE AND FEMALE

RESULTS OF MEDICAL HISTORY FORMS FOR GROUP 1, GROUP 2 AND GROUP 3
Medical History  Male

1. Instructions: Please check (✓) if you have ever experienced the following illnesses:

- Hormone difficulties
- Thyroid disease
- Adrenal gland disease, e.g. Cushing's or Addison's Disease
- Diabetes in self; in family
- Heart disease in self; in family
- High blood pressure in self; in family
- Arteriosclerosis or hardening of the arteries in self; in family
- Chest pain
- Pain in arms or legs during exercise
- Shortness of breath
- Vitamin deficiency
- Anemia
- Leukemia
- Liver disease
- Bladder infections
- Genital Infections or Irritations
- Venereal disease
- Vasectomy
- Head injury
- Stroke
- Brain tumor
- Epilepsy
- Brain infection
- Spinal cord injury, infection or degeneration
- Multiple sclerosis
- Paralysis of any extremity
- Tingling, numbness and/or pain of extremities
_____ Low back pain
_____ Hip and/or low back arthritis
_____ Surgery, injury or cancer of:
   _____ lower abdomen
   _____ bowel
   _____ prostate
   _____ bladder
   _____ other (please describe):

_____ Emotional problems requiring treatment in self; in family
Describe:

_____ Other serious illnesses which you have had
Describe:

II. Please check (✓) and if possible list specific medications taken during the past year for the following conditions:

   _____ Drugs for blood pressure or body swelling:

   _____ Drugs causing blurry vision, dry mouth, constipation, and/or difficulty urinating:

   _____ Drugs for allergies:

   _____ Drugs for mental illness (antipsychotic and/or antidepressant medications):

   _____ Drugs for nervousness and sleep:

   _____ Any other medications currently taken
List:
III. Please answer the following regarding alcohol consumption during a typical week:

Beer: How many times per week _____
   How many cans each time _____
   Ever drink more? _____

Wine: How many times per week? _____
   How many glasses each time? _____
   Ever drink more? _____

Hard Liquor: How many times per week? _____
   How many drinks each time? _____
   Ever drink more? _____

Please check (✓) if your drinking has changed during the past year. _____, if so, how.

Please check (✓) how frequently you use alcohol to improve sexual performance:
   Never • Usually
   Sometimes • Always

Please use the remaining space to make any comments you wish.
# Medical History

**Female**

I. Instructions: Please check (✓) if you have ever experienced the following illnesses:

- [ ] Hormone difficulties
- [ ] Thyroid disease
- [ ] Adrenal gland disease, e.g. Cushing's or Addison's Disease
- [ ] Diabetes in self; in family [ ]
- [ ] Heart disease in self; in family [ ]
- [ ] High blood pressure in self; in family [ ]
- [ ] Arteriosclerosis or hardening of the arteries in self; in family [ ]
- [ ] Chest pain
- [ ] Pain in arms or legs during exercise
- [ ] Shortness of breath
- [ ] Vitamin deficiency
- [ ] Anemia
- [ ] Leukemia
- [ ] Liver disease
- [ ] Bladder infections
- [ ] Vaginal or genital infections or irritations
- [ ] Venereal disease
- [ ] Clitoral adhesions
- [ ] Painful menstrual cramps
- [ ] Birth control problems
- [ ] Cysts and/or tumors of the ovaries
- [ ] Endometriosis
- [ ] Injury while giving birth
- [ ] Abortions
- [ ] Mastectomy
- [ ] Tubal ligation
- [ ] Hysterectomy
Head injury
Stroke
Brain tumor
Epilepsy
Brain infection
Spinal cord injury, infection or degeneration
Multiple sclerosis
Paralysis of any extremity
Tingling, numbness and/or pain of extremities
Low back pain
Hip and/or low back arthritis
Surgery, injury or cancer of:
   lower abdomen
   bowel
   prostate
   bladder
   other (please describe):

Emotional problems requiring treatment in self; in family
Describe:

Other serious illnesses which you have had
Describe:
II. Please check (✓) and if possible list specific medications taken during the past year for the following conditions:

- Drugs for blood pressure or body swelling:
- Drugs causing blurry vision, dry mouth, constipation, and/or difficulty urinating:
- Drugs for allergies:
- Drugs for mental illness (antipsychotic and/or antidepressant medications):
- Drugs for nervousness and sleep:
- Any other medications currently taken including birth control pills

List:

III. Please answer the following regarding alcohol consumption during a typical week:

Beer:
- How many times per week ______
- How many cans each time ______
- Ever drink more? ______

Wine:
- How many times per week? ______
- How many glasses each time? ______
- Ever drink more? ______

Hard Liquor:
- How many times per week? ______
- How many drinks each time? ______
- Ever drink more? ______

Please check (✓) if your drinking has changed during the past year? ______ If so, how:

Please check (✓) how frequently you use alcohol to improve sexual performance?
- Never
- Usually
- Sometimes
- Always
Table 2
Results of the Medical History Questionnaire
Medical History Characteristics of the Three Groups: Sexual Disinterest (SD), Other Sexual Dysfunction (OSD) and No Sexual Dysfunction (NSD) in Percentage of Subjects Who Responded “Yes” to Ever Experiencing the Following Illnesses

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<th>Group 2</th>
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<tr>
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<tr>
<td>1. Hormone difficulties</td>
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<td>2. Thyroid disease</td>
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<td>3. Adrenal gland disease</td>
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<td>4. Diabetes in self</td>
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<tr>
<td>5. Diabetes in family</td>
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<td>26</td>
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<td>6. Heart disease in self</td>
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<td>7. Heart disease in family</td>
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<td>8. High blood pressure in self</td>
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<td>12. Pain in arms or legs during exercise</td>
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APPENDIX E

SASB AVERAGE CLUSTER SCORES FOR 133 Normals
FREEING AND FORGETTING
AFFIRMING AND UNDERSTANDING
NURTURING AND COMFORTING
HELPING AND PROTECTING
WATCHING AND MANAGING
ELITTING AND BLAMING
ATTACKING AND REJECTING
IGNORING AND NEGLECTING
ASSERTING AND SEPARATING
DISCLOSING AND EXPRESSING
APPROACHING AND ENJOYING
TRUSTING AND RELYING
DEFERRING AND SUBMITTING
SULKING AND APPEASING
WITHDRAWING AND AVOIDING
NECK TO MY SIGNIFICANT OTHER AGAIN
1
2
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4
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17
18
APPENDIX F

SEXUAL HISTORY FORM (SHF)
SEXUAL HISTORY FORM

(Please find the most appropriate response for each question.)

1. How frequently do you and your mate have sexual intercourse or activity?
   1) more than once a day
   2) once a day
   3) 3 or 4 times a week
   4) twice a week
   5) once a week
   6) once every two weeks
   7) once a month
   8) less than once a month
   9) not at all

2. How frequently would you like to have sexual intercourse or activity?
   1) more than once a day
   2) once a day
   3) 3 or 4 times a week
   4) twice a week
   5) once a week
   6) once every two weeks
   7) once a month
   8) less than once a month
   9) not at all

3. Who usually initiates having sexual intercourse or activity?
   1) I always do
   2) I usually do
   3) my mate and I each initiate about equally often
   4) my mate usually does
   5) my mate always does

4. Who would you like to have initiate sexual intercourse or activity?
   1) myself, always
   2) myself, usually
   3) my mate and I equally often
   4) my mate, usually
   5) my mate, always

5. How often do you masturbate?
   1) more than once a day
   2) once a day
   3) 3 or 4 times a week
   4) twice a week
   5) once a week
   6) once every two weeks
   7) once a month
   8) less than once a month
   9) not at all

6. How frequently do you feel sexual desire? This feeling may include wanting to have sex, planning to have sex, feeling frustrated due to a lack of sex, etc...
   1) more than once a day
   2) once a day
   3) 3 or 4 times a week
   4) twice a week
   5) once a week
   6) once every two weeks
   7) once a month
   8) less than once a month
   9) not at all
7. For how many years have you and your mate been having sexual intercourse?

1) less than 6 months  
2) less than 1 year  
3) 1 to 3 years  
4) 4 to 6 years  
5) 7 to 10 years  
6) more than 10 years

8. For how long do you and your mate usually engage in sexual foreplay (kissing, petting, etc.) before having intercourse?

1) less than one minute  
2) 1 to 3 minutes  
3) 4 to 6 minutes  
4) 7 to 10 minutes  
5) 11 to 15 minutes  
6) 16 to 30 minutes  
7) 30 minutes to 1 hour

9. How long does intercourse usually last, from entry of the penis until the male reaches orgasm (climax)?

1) less than 1 minute  
2) 1 to 2 minutes  
3) 2 to 4 minutes  
4) 4 to 7 minutes  
5) 7 to 10 minutes  
6) 11 to 15 minutes  
7) 15 to 20 minutes  
8) 20 to 30 minutes  
9) more than 30 minutes

10. Does the male ever reach orgasm while he is trying to enter the woman's vagina with his penis?

1) never  
2) rarely, less than 10% of the time  
3) seldom, less than 25% of the time  
4) sometimes, 50% of the time  
5) usually, 75% of the time  
6) nearly always, over 90% of the time

11. Overall, how satisfactory to you is your sexual relationship with your mate?

1) extremely unsatisfactory  
2) moderately unsatisfactory  
3) slightly unsatisfactory  
4) slightly satisfactory  
5) moderately satisfactory  
6) extremely satisfactory

12. Overall, how satisfactory do you think your sexual relationship is to your mate?

1) extremely unsatisfactory  
2) moderately unsatisfactory  
3) slightly unsatisfactory  
4) slightly satisfactory  
5) moderately satisfactory  
6) extremely satisfactory

13. When your mate makes sexual advances, how do you usually respond?

1) usually accept with pleasure  
2) accept reluctantly  
3) often refuse  
4) usually refuse
14. When you have sex with your mate, do you sexually aroused (i.e. feeling “turned on”, pleasure, excitement)?

1) nearly always, over 90% of the time 4) seldom, about 25% of the time
2) usually, about 75% of the time 5) never
3) sometimes, about 50% of the time

15. When you have sex with your mate, do you have negative emotional reactions, such as fear, disgust, shame or guilt?

1) never 4) sometimes, 50% of the time
2) rarely, less than 10% of the time 5) usually, 75% of the time
3) seldom, less than 25% of the time 6) nearly always, over 90% of the time

16. If you try, is it possible for you to reach orgasm through masturbation?

1) nearly always, over 90% of the time 4) seldom, about 25% of the time
2) usually, about 75% of the time 5) never
3) sometimes, about 50% of the time

17. If you try, is it possible for you to reach orgasm through having your genitals caressed by your mate?

1) nearly always, over 90% of the time 4) seldom, about 25% of the time
2) usually, about 75% of the time 5) never
3) sometimes, about 50% of the time 6) have never tried to

18. If you try, is it possible for you to reach orgasm through sexual intercourse?

1) nearly always, over 90% of the time 4) seldom, about 25% of the time
2) usually, about 75% of the time 5) never
3) sometimes, about 50% of the time 6) have never tried to

19. What is your usual reaction to erotic or pornographic materials (pictures, movies, books)?

1) greatly aroused 3) not aroused
2) somewhat aroused 4) negative -- disgusted, repulsed, etc.

20. Does the male have any trouble in getting an erection, before intercourse begins?

1) never 4) sometimes, 50% of the time
2) rarely, less than 10% of the time 5) usually, 75% of the time
3) seldom, less than 25% of the time 6) nearly always, over 90% of the time

21. Does the male have any trouble keeping an erection, once intercourse has begun?

1) never 4) sometimes, 50% of the time
2) rarely, less than 10% of the time 5) usually, 75% of the time
3) seldom, less than 25% of the time 6) nearly always, over 90% of the time
22. Does the male ejaculate (climax) without having a full, hard erection?

1) never  4) sometimes, 50% of the time
2) rarely, less than 10% of the time  5) usually, 75% of the time
3) seldom, less than 25% of the time  6) nearly always, over 90% of the time

23. Is the female’s vagina so “dry” or “tight” that intercourse cannot occur?

1) never  4) sometimes, 50% of the time
2) rarely, less than 10% of the time  5) usually, 75% of the time
3) seldom, less than 25% of the time  6) nearly always, over 90% of the time

24. Do you feel pain in your genitals during sexual intercourse?

1) never  4) sometimes, 50% of the time
2) rarely, less than 10% of the time  5) usually, 75% of the time
3) seldom, less than 25% of the time  6) nearly always, over 90% of the time

25. (WOMEN ONLY, MEN GO ON TO QUESTION 28). Can you reach orgasm through stimulation of your genitals by an electric vibrator or any other means such as running water, rubbing with some object, etc.?

1) nearly always, over 90% of the time  4) seldom, about 25% of the time
2) usually, about 75% of the time  5) never
3) sometimes, about 50% of the time  6) have never tried to

26. (WOMEN ONLY) Can you reach orgasm during sexual intercourse if at the same time your genitals are being caressed (by your self or your mate or with a vibrator, etc.)

1) nearly always, over 90% of the time  4) seldom, about 25% of the time
2) usually, about 75% of the time  5) never
3) sometimes, about 50% of the time  6) have never tried to

27. (WOMEN ONLY) When you have sex with your mate, including foreplay and intercourse, do you notice some of these things happening: your breathing and pulse speeding up, wetness in your vagina, pleasurable sensations in your breasts and genitals?

1) nearly always, over 90% of the time  4) seldom, about 25% of the time
2) usually, about 75% of the time  5) never
3) sometimes, about 50% of the time  6) have never tried to

28. (MEN ONLY) Do you ever ejaculate (climax) without any pleasurable sensation in your penis?

1) never  4) sometimes, 50% of the time
2) rarely, less than 10% of the time  5) usually, 75% of the time
3) seldom, less than 25% of the time  6) nearly always, over 90% of the time
APPENDIX G

MEANS AND STANDARD DEVIATIONS FOR SUBJECTS AND PARTNERS
ON MMPI, STAI, ABS, DAS AND DSFI
Means and Standard Deviations for Subjects on MMPI, STAI, ABS, DAS and DSFI

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## Means and Standard Deviations for Partners on MMPI, STAI, ABS, DAS and DSFI

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Figure 1
Cluster Version of Benjamin's SASB Model

The top two planes describe complimentary positions for two members of a dyad. The bottom plane describes the intrapsychic result when behaviors described by the top plane are turned inward on the self. Reprinted from Intrex Users Manual (p. 1) by L.S. Benjamin, 1983, Madison, WI: Intrex Interpersonal Institute. Copyright 1983 by Intrex Interpersonal Institute. Reprinted by permission.
1 = FREEING AND FORGETTING
2 = AFFIRMING AND UNDERSTANDING
3 = NURTURING AND COMFORTING
4 = HELPING AND PROTECTING
5 = WATCHING AND MANAGING
6 = BELITTLING AND BLAMING
7 = ATTACKING AND REJECTING
8 = IGNORING AND NEGLECTING

Figure 12.4. Average cluster scores for 153 normals rating relations with significant other at best and at worst. Circumplex order is preserved.

1 = ASSERTING AND SEPARATING
2 = DISCLOSING AND EXPRESSING
3 = APPROACHING AND ENJOYING
4 = TRUSTING AND RELYING
5 = DEFERRING AND SUBMITTING
6 = SULKING AND APPEASING
7 = PROTESTING AND WITHDRAWING
8 = WALLING OFF AND AVOIDING
INTERPERSONAL
TRANSITIVE-FOCUS ON OTHER

INTRANSPARENT
INTRANSITIVE-FOCUS ON SELF

INTRAPSYCHIC
INTROJECTION

Figure 1
Cluster Version of Benjamin's SASB Model

The top two planes describe complementary positions for two members of a dyad. The bottom plane describes the intrapsychic result when behaviors described by the top plane are turned inward on the self. Reprinted from Intrex Users Manual (p. 1) by L.S. Benjamin, 1983, Madison, WI: Intrex Interpersonal Institute. Copyright 1983 by Intrex Interpersonal Institute. Reprinted by permission.
Figure 4.2c The SASB model, intrapsychic focus: introject (I) of other to self. See Figure 4.2a legend for explanation. Figures 4.2a, b, and c each show three levels of complexity of the SASB model: the quadrant version (4 categories), the cluster version (8 categories), and the full version (36 categories). © 1979 by the William Alanson White Psychiatric Foundation. Copyright on the cluster model has been registered by INTREX Interpersonal Institute, Inc., 1981; copyright on the questionnaire items, by Lorna Smith Benjamin, 1983. Reprinted by permission.
Figure 4.2a The SASB model, interpersonal other (O) focus. The quadrant version appearing at the center of the figure simply divides each type of focus into four sections. The middle ring provides names for eight clusters or sub-divisions for each type of focus. The outer ring contains eight boxes corresponding to each of the eight clusters; the boxes contain 1983 questionnaire items for each of the model's versions from Figure 4.1 belonging to a cluster. The clusters are numbered from 1 to 8, starting at 12 o'clock on the top of each surface and proceeding clockwise. Familiarity with cluster numbers is important in interpreting the cluster profiles to be described subsequently. The quadrant model is from "Structural Analysis of Differentiation Failure" by L. S. Benjamin, Psychiatry, 1979, 42, 1-23. © 1979 by the William Alanson White Psychiatric Foundation. Copyright on the cluster model has been registered by INTREX Interpersonal Institute, Inc., 1981; copyright on the questionnaire items, by Lorna Smith Benjamin, 1983. Reprinted by permission.
Figure 4.2b The SASB model, interpersonal self (S) focus. See Figure 4.2a legend for explanation. © 1979 by the William Alanson White Psychiatric Foundation. Copyright on the cluster model has been registered by INTREX Interpersonal Institute, Inc., 1981; copyright on the questionnaire items, by Lorna Smith Benjamin, 1983. Reprinted by permission.
Figure 12.1. Average cluster scores for 133 normals rating relations with significant other at best and at worst. Circumplex order is preserved in both states, but at worst, there is less friendliness and more hostility.

1 = Freeing and Forgetting
2 = Affirming and Understanding
3 = Nurturing and Comforting
4 = Helping and Protecting
5 = Watching and Managing
6 = Belittling and Blaming
7 = Attacking and Rejecting
8 = Ignoring and Neglecting

1 = Asserting and Separating
2 = Disclosing and Expressing
3 = Approaching and Enjoying
4 = Trusting and Relying
5 = Deferring and Submitting
6 = Sulking and Appeasing
7 = Protesting and Withdrawing
8 = Walling Off and Avoiding
SEXUAL HISTORY FORM

(Please find the most appropriate response for each question.)

1. How frequently do you and your mate have sexual intercourse or activity?
   1) more than once a day
   2) once a day
   3) 3 or 4 times a week
   4) twice a week
   5) once a week
   6) once every two weeks
   7) once a month
   8) less than once a month
   9) not at all

2. How frequently would you like to have sexual intercourse or activity?
   1) more than once a day
   2) once a day
   3) 3 or 4 times a week
   4) twice a week
   5) once a week
   6) once every two weeks
   7) once a month
   8) less than once a month
   9) not at all

3. Who usually initiates having sexual intercourse or activity?
   1) I always do
   2) I usually do
   3) my mate and I each initiate about equally often
   4) my mate usually does
   5) my mate always does

4. Who would you like to have initiate sexual intercourse or activity?
   1) myself, always
   2) myself, usually
   3) my mate and I equally often
   4) my mate, usually
   5) my mate, always

5. How often do you masturbate?
   1) more than once a day
   2) once a day
   3) 3 or 4 times a week
   4) twice a week
   5) once a week
   6) once every two weeks
   7) once a month
   8) less than once a month
   9) not at all

6. How frequently do you feel sexual desire? This feeling may include wanting to have sex, planning to have sex, feeling frustrated due to a lack of sex, etc...
   1) more than once a day
   2) once a day
   3) 3 or 4 times a week
   4) twice a week
   5) once a week
   6) once every two weeks
   7) once a month
   8) less than once a month
   9) not at all
7. For how many years have you and your mate been having sexual intercourse?
   1) less than 6 months
   2) less than 1 year
   3) 1 to 3 years
   4) 4 to 6 years
   5) 7 to 10 years
   6) more than 10 years

8. For how long do you and your mate usually engage in sexual foreplay (kissing, petting, etc.) before having intercourse?
   1) less than one minute
   2) 1 to 3 minutes
   3) 4 to 6 minutes
   4) 7 to 10 minutes
   5) 11 to 15 minutes
   6) 16 to 30 minutes
   7) 30 minutes to 1 hour

9. How long does intercourse usually last, from entry of the penis until the male reaches orgasm (climax)?
   1) less than 1 minute
   2) 1 to 2 minutes
   3) 2 to 4 minutes
   4) 4 to 7 minutes
   5) 7 to 10 minutes
   6) 11 to 15 minutes
   7) 15 to 20 minutes
   8) 20 to 30 minutes
   9) more than 30 minutes

10. Does the male ever reach orgasm while he is trying to enter the woman’s vagina with his penis?
   1) never
   2) rarely, less than 10% of the time
   3) seldom, less than 25% of the time
   4) sometimes, 50% of the time
   5) usually, 75% of the time
   6) nearly always, over 90% of the time

11. Overall, how satisfactory to you is your sexual relationship with your mate?
   1) extremely unsatisfactory
   2) moderately unsatisfactory
   3) slightly unsatisfactory
   4) slightly satisfactory
   5) moderately satisfactory
   6) extremely satisfactory

12. Overall, how satisfactory do you think your sexual relationship is to your mate?
   1) extremely unsatisfactory
   2) moderately unsatisfactory
   3) slightly unsatisfactory
   4) slightly satisfactory
   5) moderately satisfactory
   6) extremely satisfactory

13. When your mate makes sexual advances, how do you usually respond?
   1) usually accept with pleasure
   2) accept reluctantly
   3) often refuse
   4) usually refuse
14. When you have sex with your mate, do you feel sexually aroused (i.e. feeling "turned on", pleasure, excitement)?

1) nearly always, over 90% of the time
2) usually, about 75% of the time
3) sometimes, about 50% of the time
4) seldom, about 25% of the time
5) never

15. When you have sex with your mate, do you have negative emotional reactions, such as fear, disgust, shame or guilt?

1) never
2) rarely, less than 10% of the time
3) seldom, less than 25% of the time
4) sometimes, 50% of the time
5) usually, 75% of the time
6) nearly always, over 90% of the time

16. If you try, is it possible for you to reach orgasm through masturbation?

1) nearly always, over 90% of the time
2) usually, about 75% of the time
3) sometimes, about 50% of the time
4) seldom, about 25% of the time
5) never

17. If you try, is it possible for you to reach orgasm through having your genitals caressed by your mate?

1) nearly always, over 90% of the time
2) usually, about 75% of the time
3) sometimes, about 50% of the time
4) seldom, about 25% of the time
5) never
6) have never tried to

18. If you try, is it possible for you to reach orgasm through sexual intercourse?

1) nearly always, over 90% of the time
2) usually, about 75% of the time
3) sometimes, about 50% of the time
4) seldom, about 25% of the time
5) never
6) have never tried to

19. What is your usual reaction to erotic or pornographic materials (pictures, movies, books)?

1) greatly aroused
2) somewhat aroused
3) not aroused
4) negative -- disgusted, repulsed, etc.

20. Does the male have any trouble in getting an erection, before intercourse begins?

1) never
2) rarely, less than 10% of the time
3) seldom, less than 25% of the time
4) sometimes, 50% of the time
5) usually, 75% of the time
6) nearly always, over 90% of the time

21. Does the male have any trouble keeping an erection, once intercourse has begun?

1) never
2) rarely, less than 10% of the time
3) seldom, less than 25% of the time
4) sometimes, 50% of the time
5) usually, 75% of the time
6) nearly always, over 90% of the time
22. Does the male ejaculate (climax) without having a full, hard erection?

1) never                    4) sometimes, 50% of the time
2) rarely, less than 10% of the time  5) usually, 75% of the time
3) seldom, less than 25% of the time  6) nearly always, over 90% of the time

23. Is the female's vagina so "dry" or "tight" that intercourse cannot occur?

1) never                    4) sometimes, 50% of the time
2) rarely, less than 10% of the time  5) usually, 75% of the time
3) seldom, less than 25% of the time  6) nearly always, over 90% of the time

24. Do you feel pain in your genitals during sexual intercourse?

1) never                    4) sometimes, 50% of the time
2) rarely, less than 10% of the time  5) usually, 75% of the time
3) seldom, less than 25% of the time  6) nearly always, over 90% of the time

25. (WOMEN ONLY, MEN GO ON TO QUESTION 28). Can you reach orgasm through stimulation of your genitals by an electric vibrator or any other means such as running water, rubbing with some object, etc.?

1) nearly always, over 90% of the time  4) seldom, about 25% of the time
2) usually, about 75% of the time  5) never
3) sometimes, about 50% of the time  6) have never tried to

26. (WOMEN ONLY) Can you reach orgasm during sexual intercourse if at the same time your genitals are being caressed (by your self or your mate or with a vibrator, etc.)

1) nearly always, over 90% of the time  4) seldom, about 25% of the time
2) usually, about 75% of the time  5) never
3) sometimes, about 50% of the time  6) have never tried to

27. (WOMEN ONLY) When you have sex with your mate, including foreplay and intercourse, do you notice some of these things happening: your breathing and pulse speeding up, wetness in your vagina, pleasurable sensations in your breasts and genitals?

1) nearly always, over 90% of the time  4) seldom, about 25% of the time
2) usually, about 75% of the time  5) never
3) sometimes, about 50% of the time  6) have never tried to

28. (MEN ONLY) Do you ever ejaculate (climax) without any pleasurable sensation in your penis?

1) never                    4) sometimes, 50% of the time
2) rarely, less than 10% of the time  5) usually, 75% of the time
3) seldom, less than 25% of the time  6) nearly always, over 90% of the time